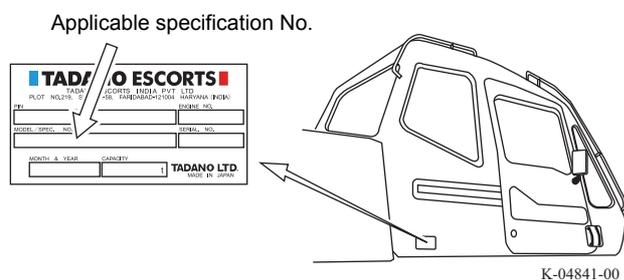




Introduction

This manual describes how to properly use the machine of the specification No. shown below.

This manual also describes inspection and maintenance, and measures to be taken in an emergency. Be sure to read this manual before use.



Applicable specification No.	
1	CTI-500-1-00101

This manual is divided into the following sections: "Traveling", "Operation", "Inspection and Maintenance", "Emergency Operation", and "Information and Data".

For operation, inspection and maintenance of the item below, read the separately attached manuals.

- Engine
- Monitor

Keep this manual in the cab so that it can be consulted at any time.

If this manual is lost or damaged, immediately place an order from Tadano Escorts India Private Ltd. or a dealer.

When transferring this machine, also transfer this manual together with the machine.

If you have any questions regarding this machine, contact Tadano Escorts India Private Ltd. or a dealer.

Warranty

Check the details of the warranty policy.

The engine in this machine is warranted as specified in the warranty policy issued by the engine manufacturer.

Do not handle this machine in any way other than described in this manual. Note that the warranty of Tadano Escorts or the engine manufacturer will not cover any failure or accident caused by improper handling.

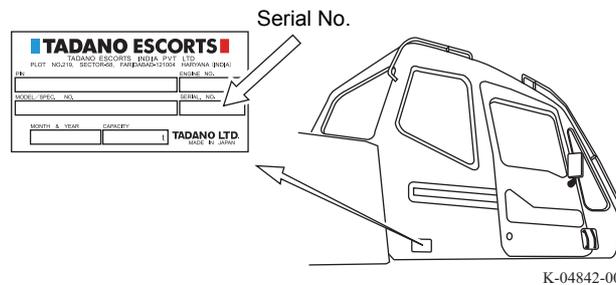
Do not modify this machine.

Failure or accidents caused by modification by the customer shall not be covered by the warranty.

In Event of Failure

If a failure occurs in this machine, contact Tadano Escorts India Private Ltd. or a dealer and inform them of the items below.

- (1) Serial No.
- (2) Details of the failure



Before Using Crane Out of Country of Purchase (Including Satellite/Mobile Communication Terminal)

This machine is made to the specifications conforming to the laws and standards of the country where this machine is purchased. If you use this machine out of the country of purchase, you must observe the laws and standards of the country where the machine is used. Do not use this machine until it is confirmed that the machine conforms to the laws and standards of the country.

For the machines equipped with satellite/mobile communication terminals, termination of communication contracts and removal of the satellite/mobile communication terminals are required before shipping the machine out of the country of purchase.

Please contact Tadano Escorts India Private Ltd. or a dealer.

For Safety

Read all the precautions for safety and understand them before operation, inspection, and maintenance. Many accidents during operation, inspection, and maintenance are caused by ignoring the basic safety rules and precautions. Be aware that disregarding even one safety precaution can result in a serious accident involving persons and properties around the machine.

In order to prevent accidents, it is important to predict danger.

The responsible manager and operator shall recognize the potential dangers specific to the operation, and take proper measures according to the degree of danger.

Safety is described in "Safety Precautions", "Precautions for Inspection and Maintenance", and also in each corresponding section.

It is also described on the warning labels (nameplates) on the machine.

This manual and warning labels (nameplates) use the terms "DANGER", "WARNING", "CAUTION", and "NOTICE" to call attention and to emphasize that they are important for safety and in work procedures. The meanings of these terms are as follows.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE indicates an important measure or condition for handling, and indicates that, if not observed, there is a risk of damaging the equipment or device, or degrading performance and function of the machine.



: Reference indicates a description of useful information or things desirable to be known.



NG

: Indicates prohibited actions in the illustrations.

Any operation shall comply with the descriptions in this manual.

In actual operation, risks associated with the machine vary greatly depending on the conditions such as operation method, environment at the site, and weather.

Therefore, observe the safety precautions described in this manual and on the warning labels, and also pay sufficient attention to anticipate potential risks regarding operation to prevent accidents and damage to the machine.

Your most important duty is to secure safety of yourself, your co-workers, and persons around the machine.

Contents

Introduction	1	TRAVELING	53
Warranty	1	Before Traveling	55
In Event of Failure	2	Check of Traveling Configuration	55
Before Using Crane Out of Country of Purchase (Including Satellite/Mobile Communication Terminal)	2	Status of Traveling Controls	55
For Safety	2	Inspection before Traveling	56
Contents	4	Entering Cab	57
Name of Each Part	9	Opening/Closing Door	57
Contents with Illustrations	10	Opening/Closing Window	59
Traveling System	10	Adjustment of Seat	59
Crane Control System	14	Adjustment of Steering Wheel	60
Other Controls	18	Adjustment of Mirrors	60
Safety Precaution	21	Stowing Control Levers	62
Precautions before Starting Engine	21	Sunshade	62
Precautions for Traveling on Roads	26	Fastening/Unfastening Seat Belt (Option)	63
Precautions during Operation	31	Reading Instrument Panel	64
Warning Labels	44	Meters and gauges	65
Label Location and Content of Warnings	45	Warning lamp	67
		Error Codes Shown on Hour Meter	70
		Starting and Stopping Engine	75
		Starter switch	75
		Idling Adjuster Knob	76
		How to Start Engine	76
		How to Stop Engine	78
		Transmission Operation	79
		Positions and Functions of Shift Lever	79
		Shift Lever Operation	80
		Brake Operation	83
		Foot Brake Operation	85
		Parking Brake Operation	85
		Operating Exhaust Brake	86
		Steering Operation	87
		Selecting Steering Mode	88
		Drive Mode Selection	93
		Drive Mode Selection	94
		Differential Lock Operation	96
		Activate/deactivate Differential Lock	96
		Lighting Switch and Other Switches	97
		Lighting Switch	97
		Turn Signal Lever	98
		Hazard Lamp Switch	99
		Horn Switch	99
		Wiper	99

Accessories in Cab	102	OPERATION	117
Fuel Consumption Monitor	103	Terminology	119
Air Conditioner	106	Anchor Points for Safety Belt	121
Cab Lamp	111	Location of Anchor Points	121
Cigarette Lighter	112	Before Crane Operation	122
Outside Cab Accessories	113	Pre-operational Inspection	122
Steps	113	Preparing for Crane Operation	122
Handling Tires	114	How to Read Performance Data Plates	124
Tire Air Pressure	114	Working Range Chart	124
Operation in Cold Season	115	Rated Lifting Capacity Table	125
Winterization	115	Reduction of Rated Lifting Capacity	134
		Automatic Moment Limiter (AML)	136
		How to Read Indication	138
		Selecting Display	141
		Crane Status Indicator	142
		Registration of Operating Status and AML Function Check	144
		Alarm and Recovery Operation	156
		Other Functions	162
		Action against AML System Errors	182
		Other Safety Devices	183
		Anti-two-block Device	183
		AML External Warning Lamps (2 colors)	184
		AML External Warning Lamps (3 colors)	185
		Emergency Stop Switch	185
		Beacon Lamp (Option)	187
		Over-unwinding Cutout Function (Option)	187
		Anemometer (Option)	188
		PTO	192
		PTO "ON" Operation	192
		PTO "OFF" Operation	193
		Outriggers	194
		Inside Cab	194
		Extension Width of Outriggers and Appearance of Marks on Side of Outrigger Beam	195
		Outrigger Set-up	196
		Extending Outriggers	197
		Horizontal Set-up	201
		Stowing Outriggers	203
		Control Lever Adjustment	206
		Control Lever Adjustment	206
		Hoisting	208
		Hoisting Up/Down	208
		Drum indicator	211

Boom Telescoping Operation	212	Outside Cab Accessories	333
Boom Telescoping Operation	213	Winch Drum Monitoring Mirror	333
Elevating Boom	219	Boom Head Mirror (Option).....	333
Elevating Boom	219	Boom Top Flood Lamp (Option).....	334
Slewing Boom	221		
Slewing Boom	222		
Slewing Free/Lock Selector Switch.....	224		
Automatic Slewing Stop Function	225		
On-rubber Operation.....	226		
On-rubber Stationary Operation.....	226		
On-rubber Creep Operation	228		
Taking Out and Stowing Hook Block	230		
Taking Out the Main Hook Block	230		
Stowing Main Hook Block	233		
Reeving Wire Rope	236		
Standard number of parts of line.....	236		
Reeving Procedure	240		
Pulling Out and Stowing Auxiliary Wire Rope ...	245		
Auxiliary hook block with safety latch lock function (Option).....	256		
Single top.....	257		
Mounting Single Top.....	258		
Stowing Single Top	263		
Jib.....	268		
Registering Jib Mounting/dismounting Status ...	271		
Jib Lift.....	272		
Outline of Jib Mounting	273		
Mounting of Jib.....	274		
Changing Jib Offset Angle	290		
Changing Jib Length	296		
Outline of Jib Stowing	308		
Stowing Jib.....	309		
Dismounting Jib	323		
Mounting Removed Jib	325		
Accessories in Cab	328		
Flood Lamp Switch	329		
Roof Washer Switch	329		
Roof Wiper Switch	329		
ECO Mode Switch.....	330		
Fire Extinguisher (Option).....	330		
Monitor (Option).....	331		

INSPECTION AND MAINTENANCE..... 335

Precautions for Inspection and Maintenance....337

Precautions for Inspection and Maintenance...337

Inspection and Maintenance345

About Inspection and Maintenance.....345

Under Severe Use (Severe Condition)346

Conditions of Severe Use347

Periodic Replacement Part348

Inspection and Maintenance Interval (Carrier) ..351

Inspection and Maintenance Interval (Crane) ...357

Inspection before Traveling363

Irregularities detected on the previous day or operation364

Inspection around carrier365

Inspection of the Engine Room372

Inspection at Driver's Seat375

Pre-operational Inspection382

Hydraulic system.....383

Control system385

Outrigger system.....386

Slewing system388

Boom, Jib System389

Lifting device391

Inspection of Crane Structure.....397

Boom Structure397

Jib Structure.....397

Slewing frame398

Outrigger Structure398

Chassis frame398

Greasing.....399

Greasing Chart.....401

Greasing (Centralized Greasing Supply Unit) ...405

Using Centralized Greasing Supply Unit (Option)405

Gear Oil408

Winch Speed Reducer (Main/Auxiliary Winch) .408

Slewing Speed Reducer410

Axle (Carrier).....412

Axle (Planetary Gear)414

Engine416

Radiator Fin417

Engine Cooling System418

Coolant Filter.....419

Transmission System 420

Transmission..... 420

Line filter..... 424

Fuel System 425

Fuel tank 426

Engine fuel filter 427

Water separator 428

Axle..... 429

Differential Lock Function..... 429

Propeller shaft..... 431

Brake System..... 432

Brake Fluid Reservoir..... 432

Disc brake pad 433

Air dryer..... 435

Air Tank..... 435

Parking Brake Pad 436

Tire, Wheel 439

Tires 439

Wheel nut..... 441

Hydraulic System 442

Hydraulic Oil Tank..... 443

Return filter (front of hydraulic oil tank) 446

Line filter (steering/slewing pump circuit) 446

Slewing System 448

Slewing bearing mounting bolt..... 448

Electrical System..... 451

Fuse Replacement..... 451

Air Conditioner System 454

Condenser..... 454

Refrigerant Level..... 455

Refrigerant piping connection 455

Inside air filter 456

V-belt..... 457

Periodic Replacement Part 457

Water Pump 458

Wire Rope..... 459

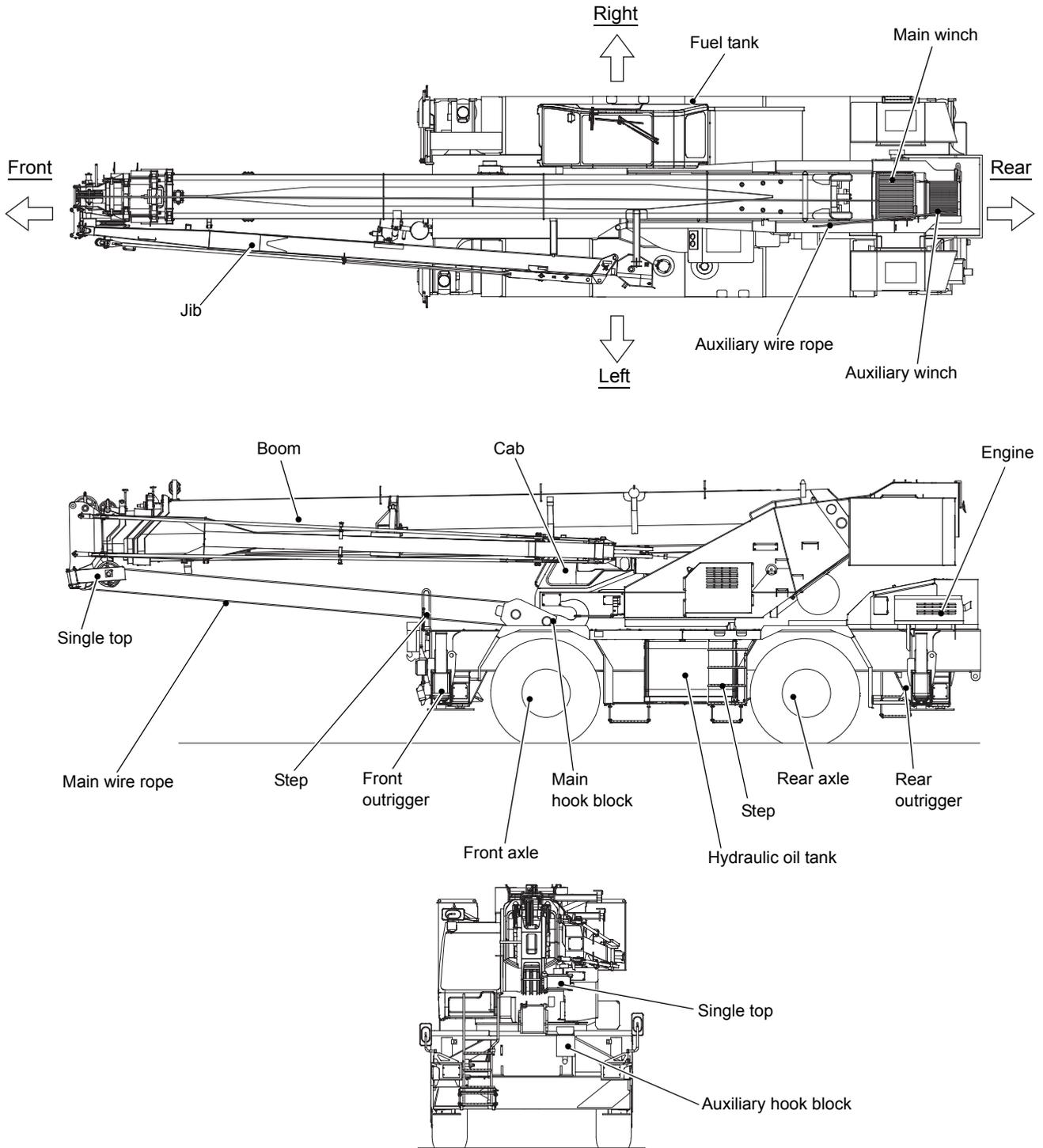
Replacing Wire Rope 459

Handling Wire Ropes 465

EMERGENCY OPERATIONS	467	INFORMATION AND DATA.....	487
Action in Emergency	469	Conversion Tables	489
If Failure Occurs while Traveling on a Road	469	Major Specifications	490
If Stalled at a Railroad Crossing	469	Crane Specifications	490
If Transmission Cannot Be Operated.....	470	Carrier Specifications	491
If Engine Speed Does Not Increase.....	473	Overall Dimensions	492
When Overheating Occurs.....	474	Mass.....	493
When Towed (Vehicle with Emergency Steering		Wire Rope	493
Pump)	476	Others	493
If Error Occurs in AML System	478	Oils and Greases	494
When Over-unwinding Cutout Function Hinders		Oil and Grease Table	494
Operation	480	Recommended Oils and Greases	496
If boom telescoping is not possible	482	Transportation of Crane	499
If Outrigger Status Is Not Detected	484	Checking the Transportation Configuration.....	499
		Binding Point	500
		Service Data.....	501
		Service Data.....	501

Name of Each Part

"Front", "rear", "left", and "right" are the directions seen from the operator's seat when the boom is directed toward the front of the frame. These directions are fixed regardless of the slewing direction of the superstructure.



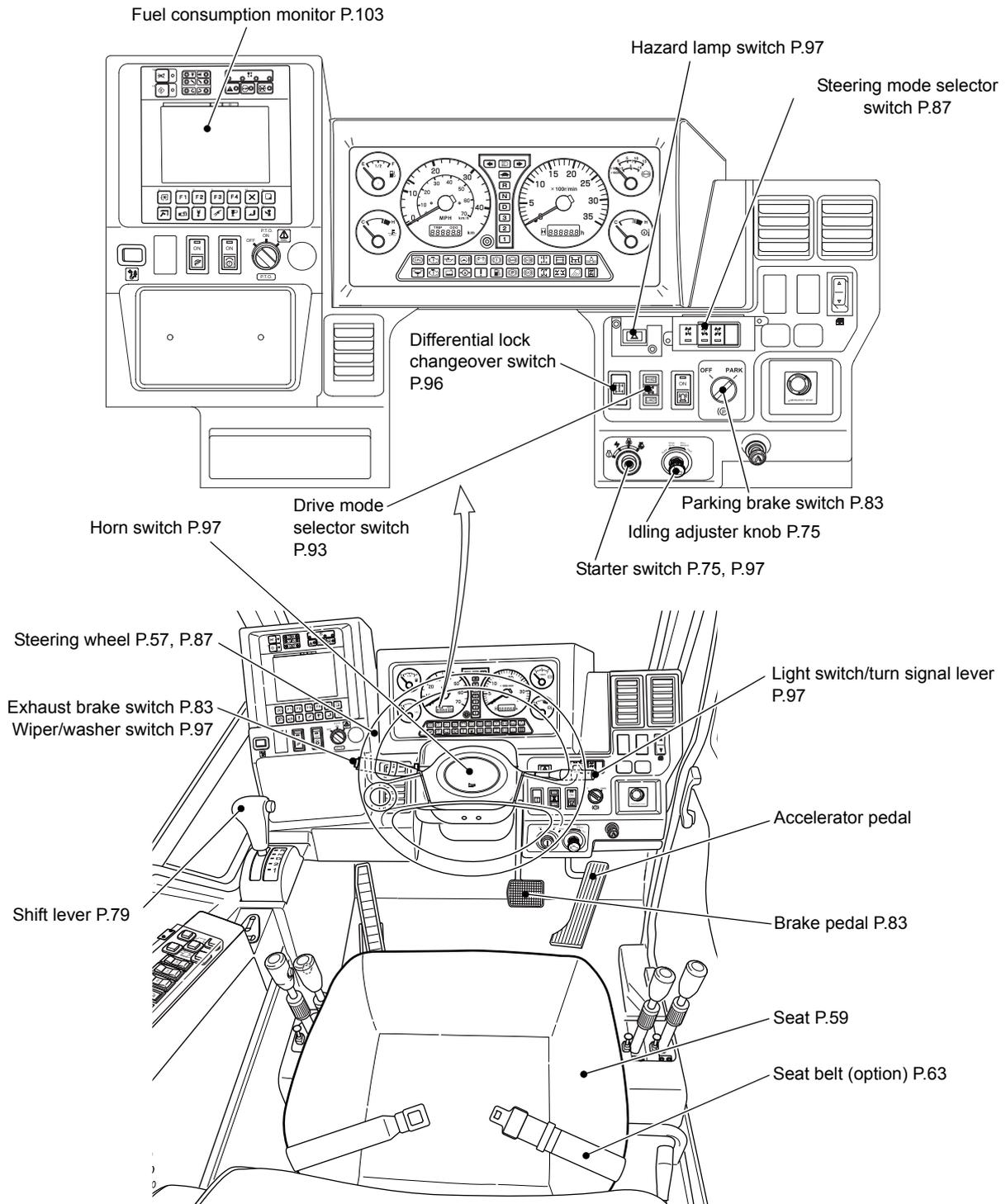
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CTI-500XL-1_OM1-11E

Contents with Illustrations

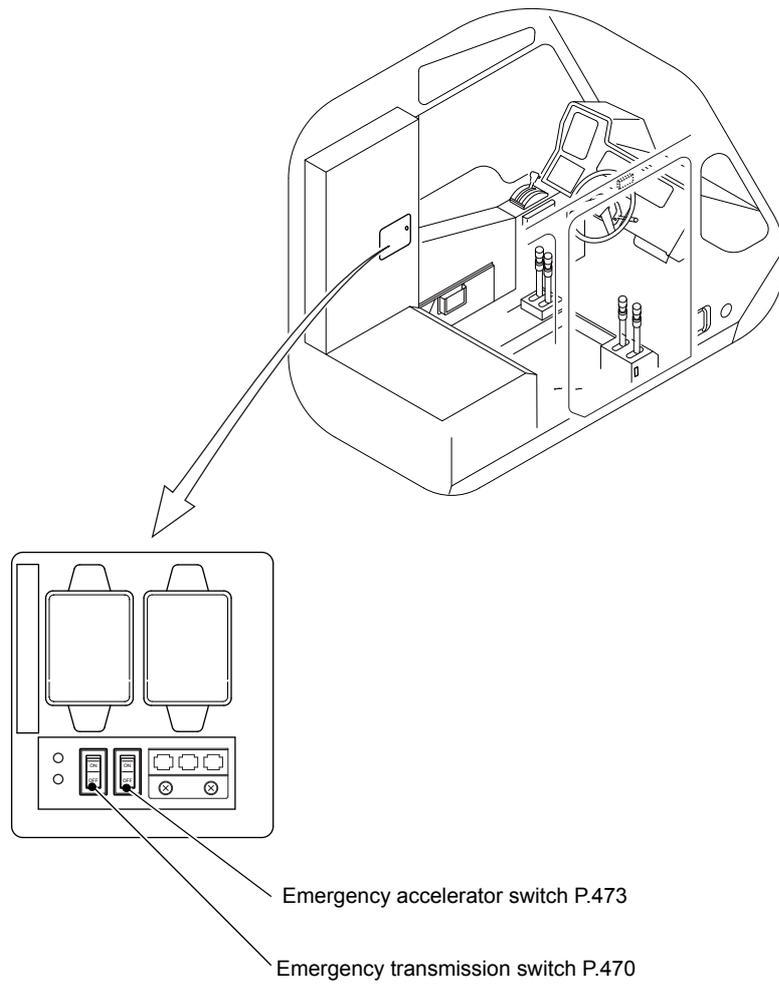
Traveling System

Inside Cab

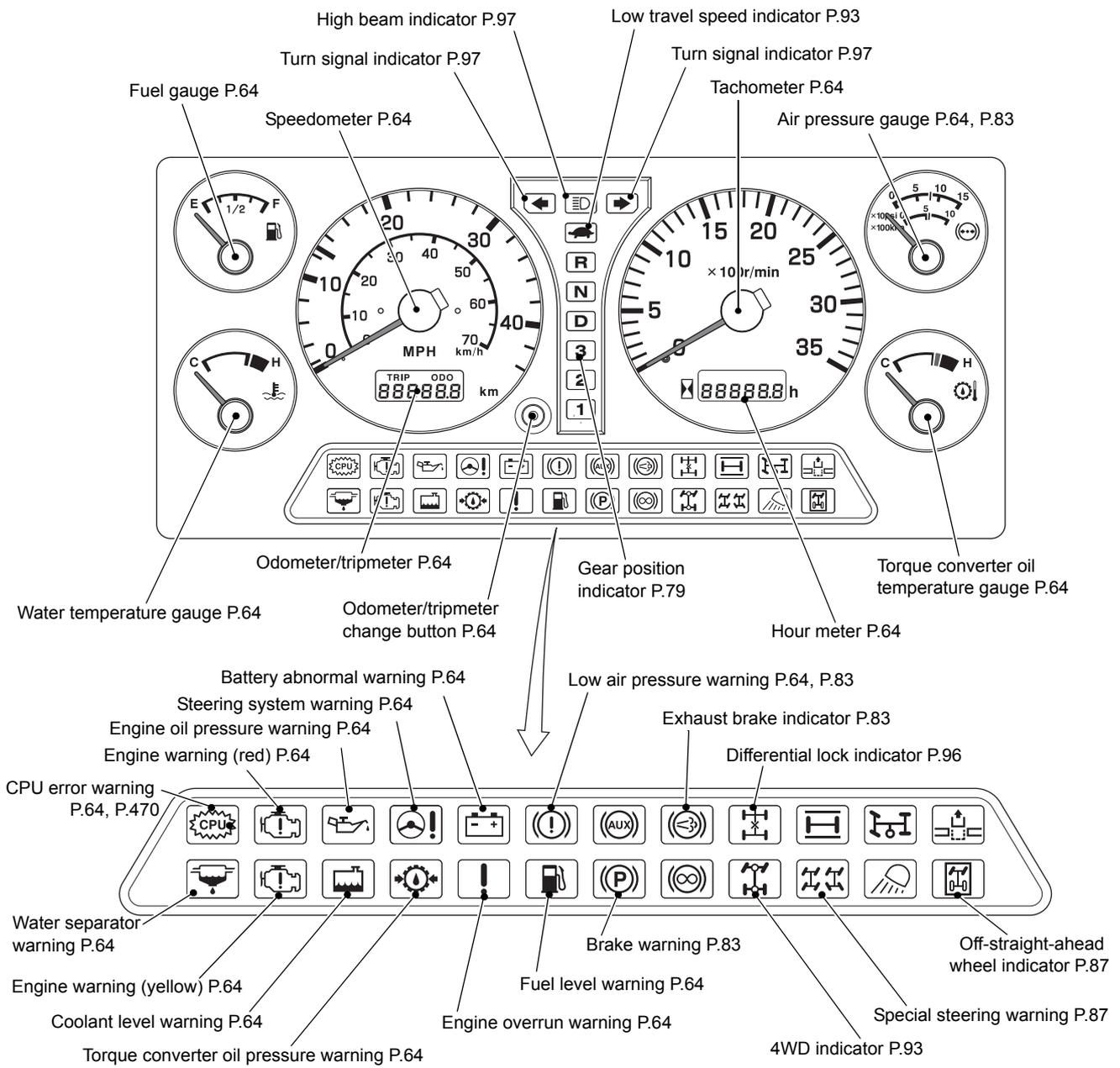


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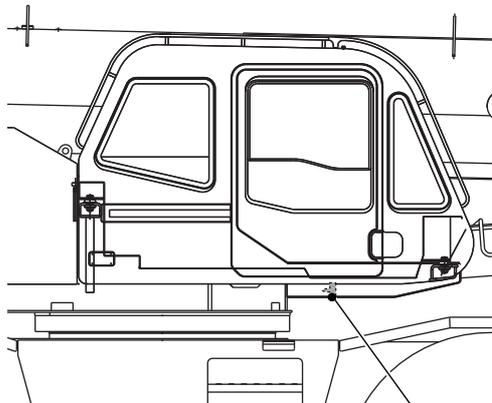


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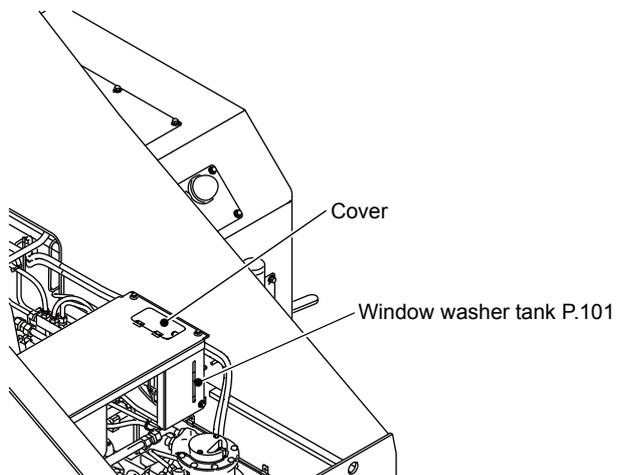


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Outside the Cab



Power window close switch P.59



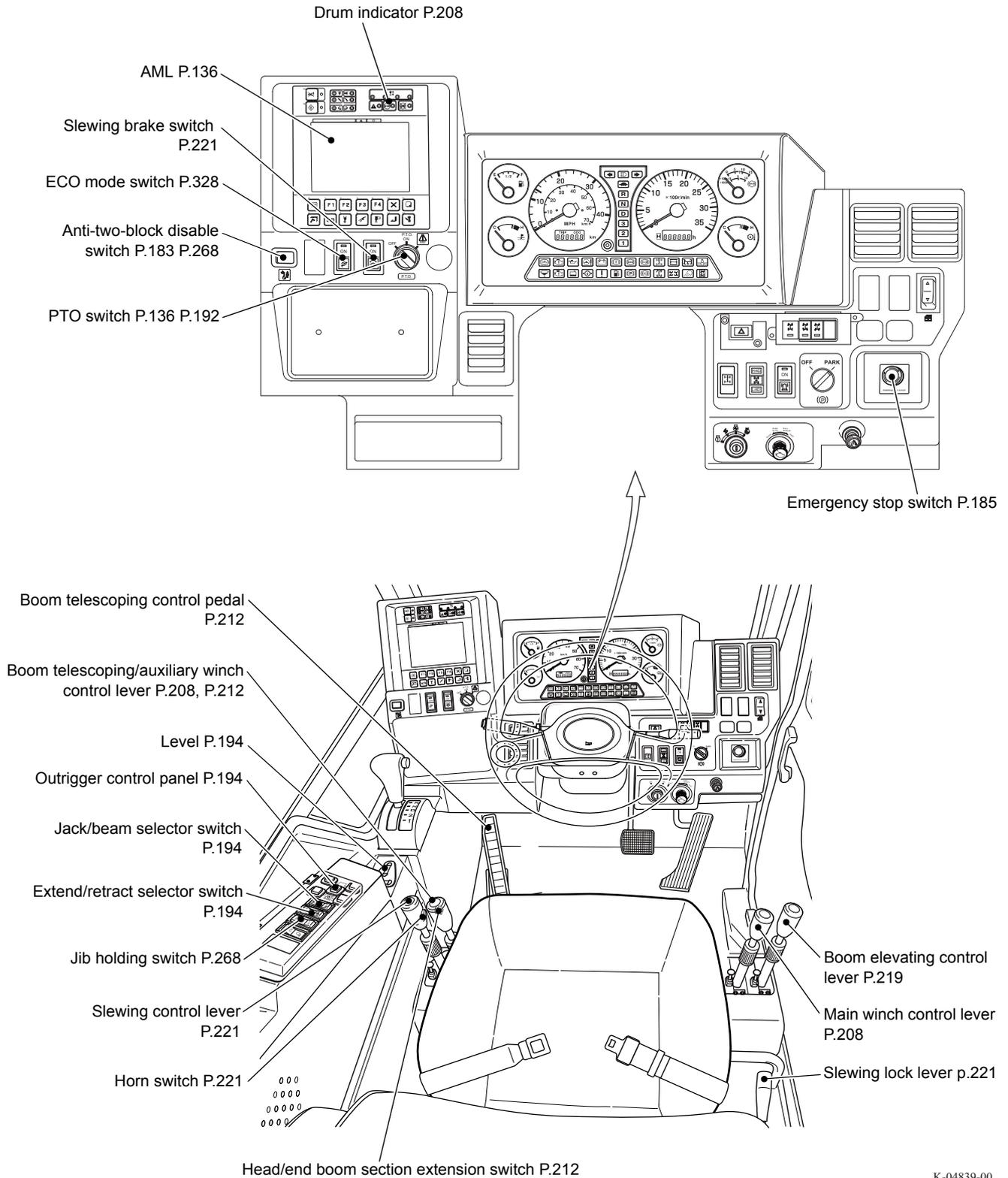
Cover

Window washer tank P.101

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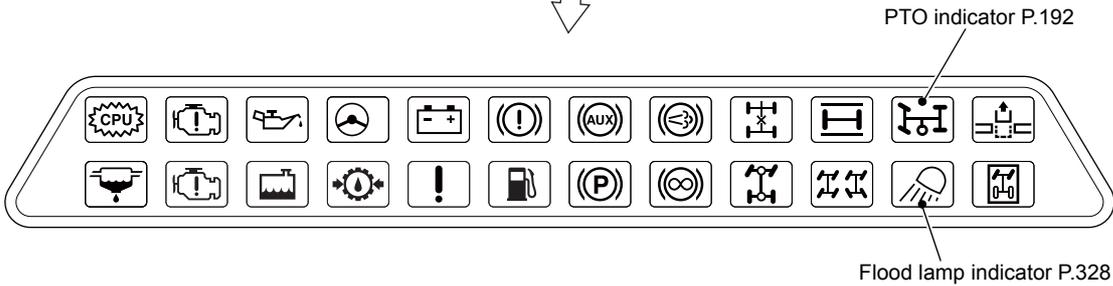
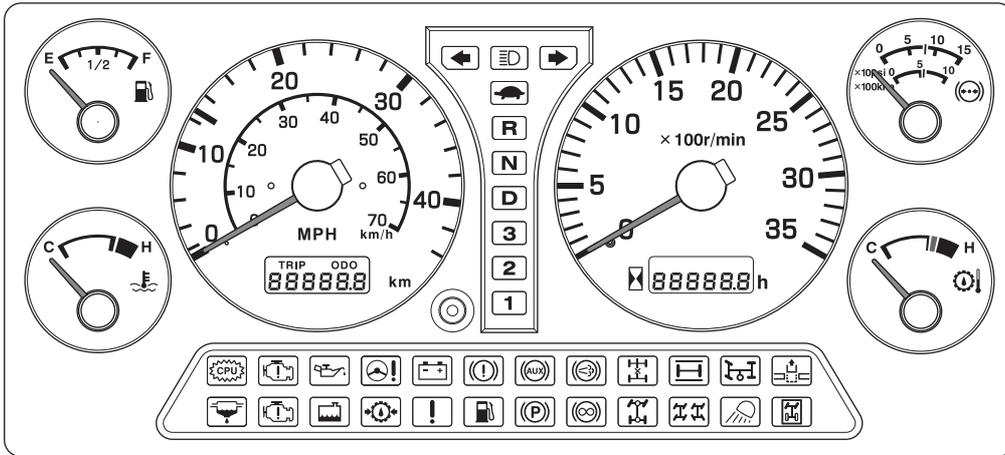
Crane Control System

Inside Cab

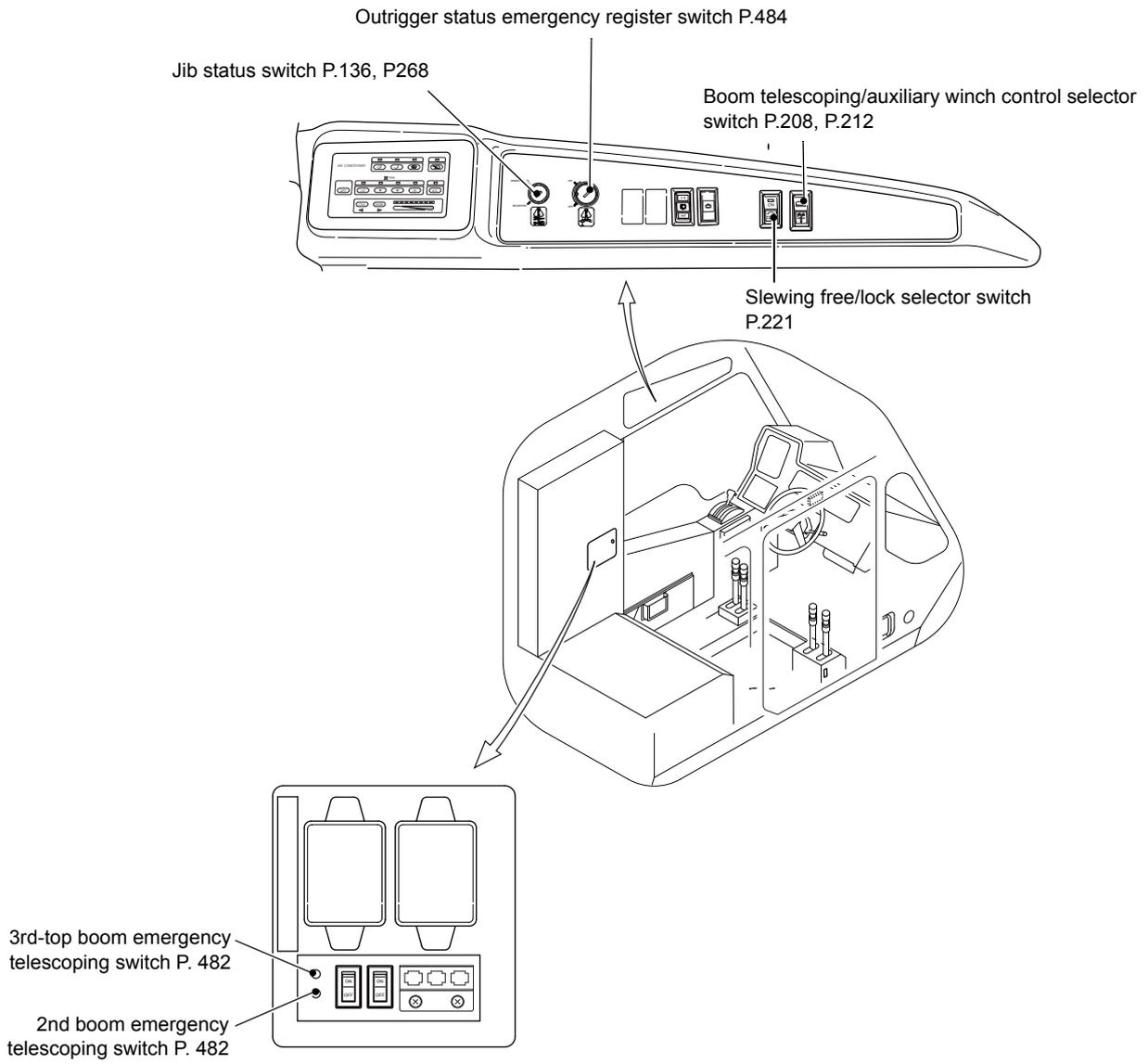


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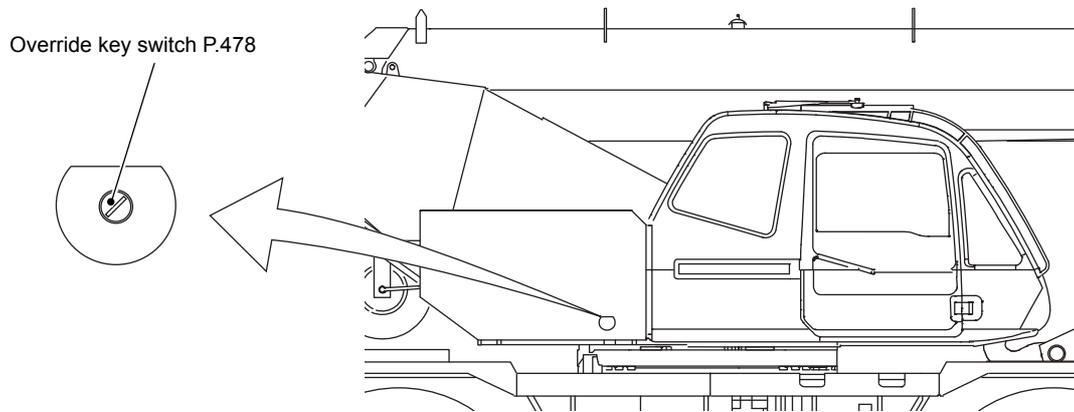


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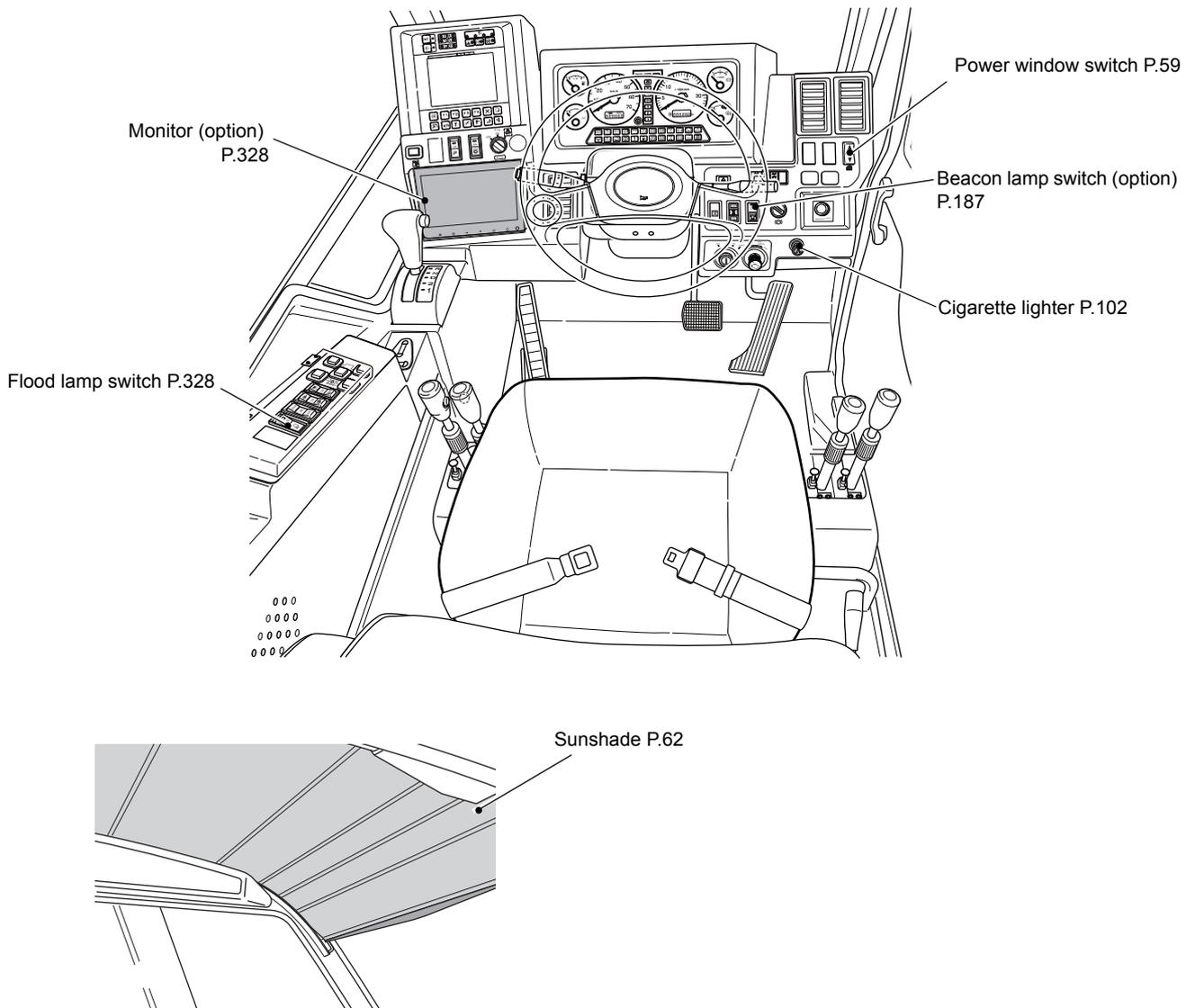
Outside the Cab



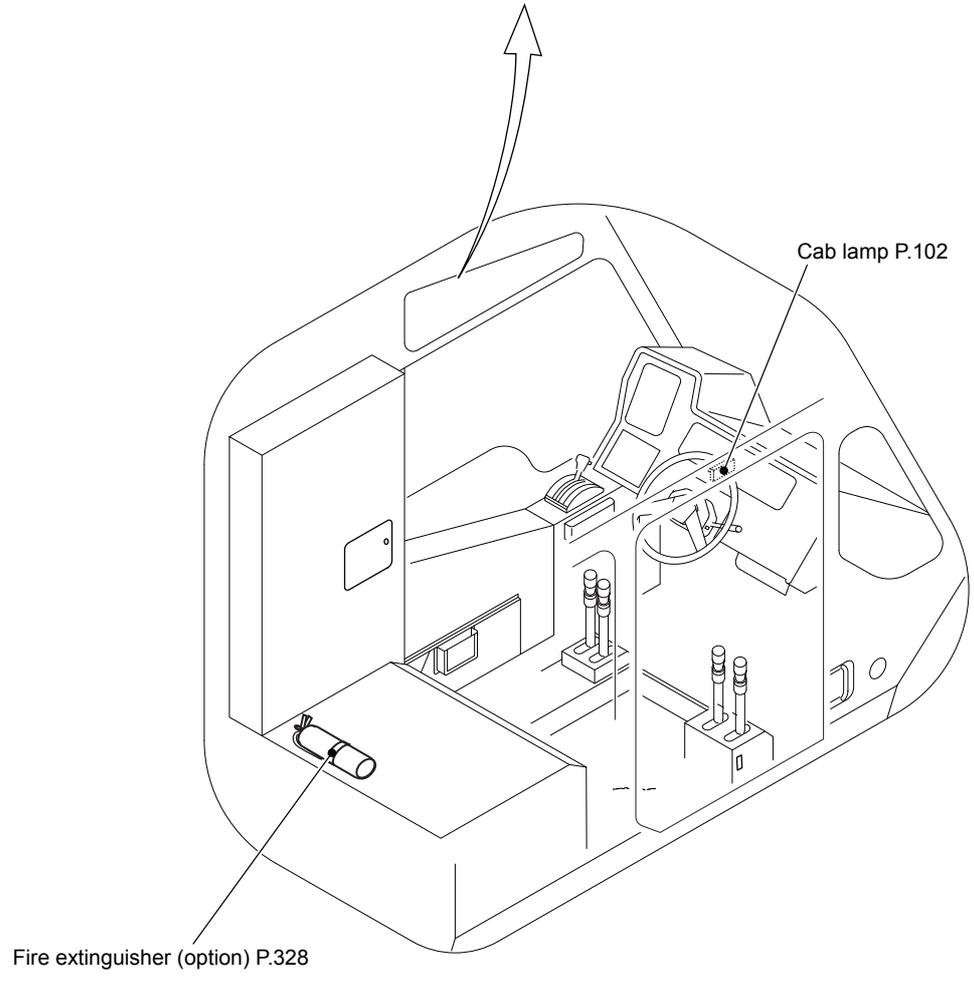
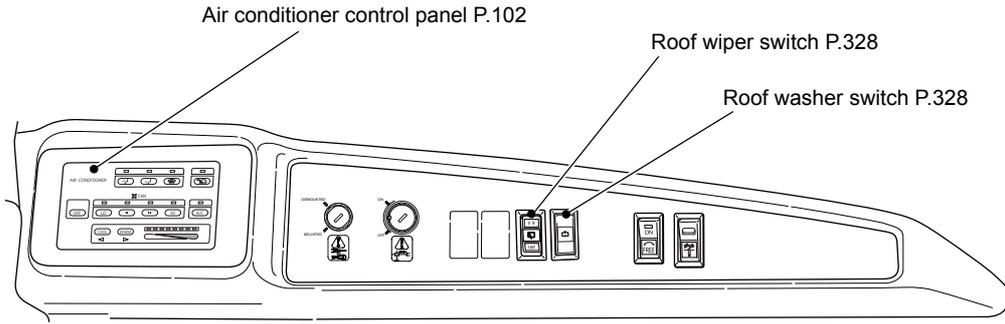
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Other Controls

Inside Cab



K-04840-00



K-01195-00

CTI-500XL-1_OM1-11E

MEMO

Safety Precaution

⚠️WARNING

"Safety Precaution" section describes the precautions necessary to prevent accidents during machine use.

For specific precautions, refer to the corresponding paragraphs in the main text of this manual (white pages).

Illustrations supplement the precautions and show you where the important points are. Note that the shapes, etc. in the illustrations can be different from the actual machines.

- Precautions before Starting Engine (page 21)
- Precautions for Traveling on Roads (page 26)
- Precautions during Operation (page 31)

Precautions before Starting Engine

• Read This Manual

Incorrect machine operation, inspection, and maintenance can damage the machine and cause an injury or death.

Read this manual thoroughly to understand fully how to operate, inspect, and maintain the machine. Do not start work until you understand this manual.

Keep this manual in the cab so that you can consult it at any time.



K-00013-00

• Follow Instructions and Warnings

This manual and warning labels (nameplates) give instructions and warnings necessary for safe operation. Read and understand them first. If you neglect the instructions and warnings, an injury or death can occur.



K-00014-00

- **Care of Warning Labels (Nameplates)**

The warning labels (nameplates) attached on the machine give important precautions necessary when you use the machine. Always keep the warning labels (nameplates) clean and readable.

If any warning label is lost or damaged, order a new one from Tadano Escorts India Private Ltd. or a dealer and attach it.

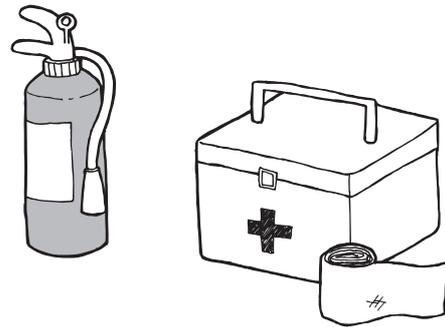


K-00015-00

- **Prepare for Emergency**

Make sure you know where the first-aid kit and fire extinguishers are kept, and how to use them in case of an accident or fire.

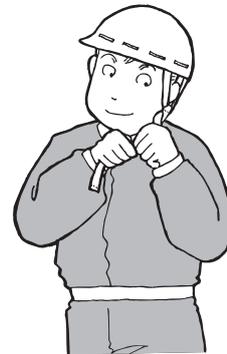
In addition, prepare a list of emergency contact persons and communication methods beforehand.



K-00016-00

- **Wear Proper Clothing**

If you do not wear your clothes properly, they can catch levers or protrusions of the machine, and an accident can occur. Always wear your clothes properly.

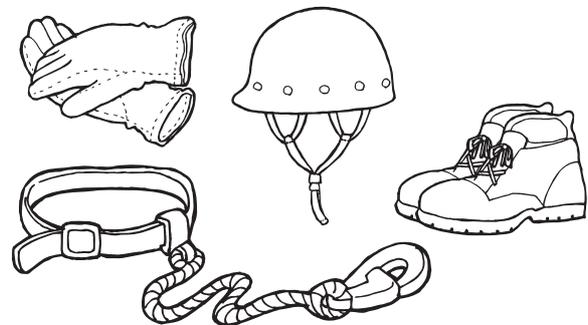


K-00017-00

- **Wear Protective Equipment**

Wear protective equipment such as a hard hat, safety shoes, and protective gloves to ensure safety while you work.

Wear a safety belt when you work at an elevated area (height of 2 m or more).



K-00018-00

- **Do Not Operate Crane When You Are Tired or Under Influence of Alcohol**

You cannot focus your attention if you are tired, short of sleep, or under influence of medication or alcohol. Do not operate the machine in such cases. It affects your judgment required for operation.

- **Keep Floors and Shoe Soles Clean**

Oil and mud on the shoe soles, pedals, steps or passage floors make your foot slip. This can cause a falling accident or an operation error.

Completely wipe off oil and mud from shoe soles and floors before operation, and always keep them clean.

The operators and other workers should wear slip-proof shoes.

Do not place parts or tools in the footwell of the operator's seat or on the passages, which will obstruct safe operations.

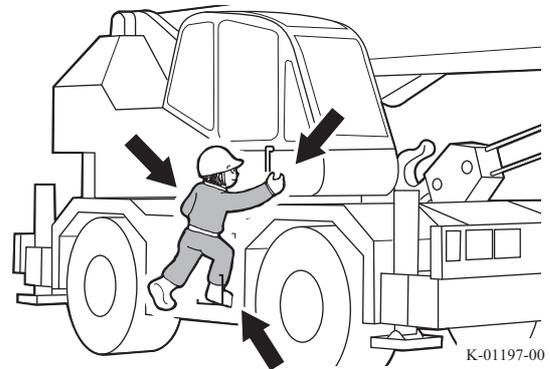


- **Get On/Off Machine Safely**

Do not jump on or off the machine.

Do not get on or off the machine while carrying something in your hand. Only after the machine has stopped completely, get on and off the machine with your front body facing the machine. Always support your body at 3 or more points by using handrails and steps.

Do not use the steering wheel or control levers to support your body.

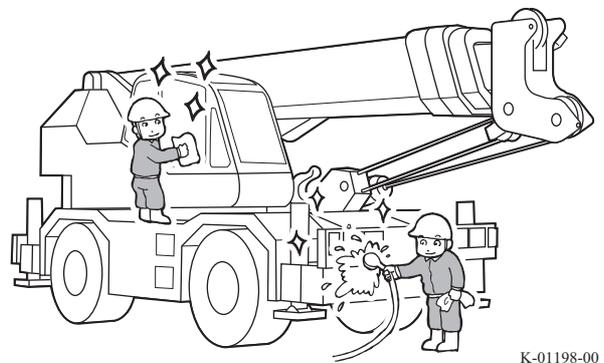


- **Keep Visibility in Good Condition**

If window glasses, lights, or mirrors are dirty, poor visibility hinders safe operation.

Always keep the window glasses and lights clean to ensure a good visibility.

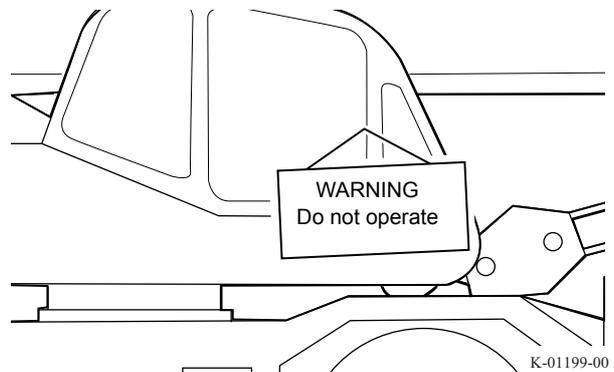
Adjust the mirrors so that you can have a best view from the driver's seat.



- **Never Operate Machine during Inspection and Maintenance**

If you operate the machine during inspection and maintenance, it can cause an accident or a damage to the machine.

While a warning tag is hung on a door or control lever, do not operate the machine. Wait until the warning tag is removed by the maintenance technician.



• **Hold Staff Meeting Before Work**

An accident can occur if pre-work staff meetings are not held or are inadequate.

Before starting work, make arrangements in detail with the workers such as the supervisor, rigging workers, and signal persons about the points listed below. Make sure that the decisions are obeyed.

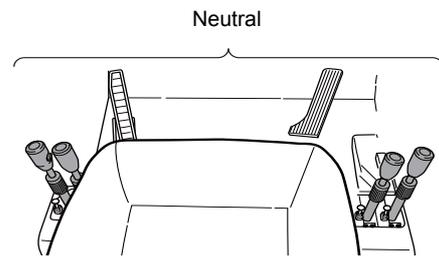
- Based on the rated lifting capacity table, the masses of the loads to be lifted, lifting heights, places for loading and unloading, places for crane set-up, work procedures, rigging methods, etc.
- Check of ground conditions where the crane is set-up, and presence of buried objects such as water/gas pipes
- Methods of preventing overturning, such as extension of outriggers and use of steel plates on the ground
- Selection of rigging workers and signal persons, and agreement about the signaling methods
- Setting of off-limits zones, fencing and installing ropes
- Check of work positions of the workers
- Check of emergency communication methods, contact addresses, and safety and health organizations in charge



K-00023-00

• **Check Control Lever Positions before Starting Engine**

If control lever positions are wrong, the machine can start moving when the engine is started. This is very dangerous. Check that all the control levers are at the correct positions before starting the engine.

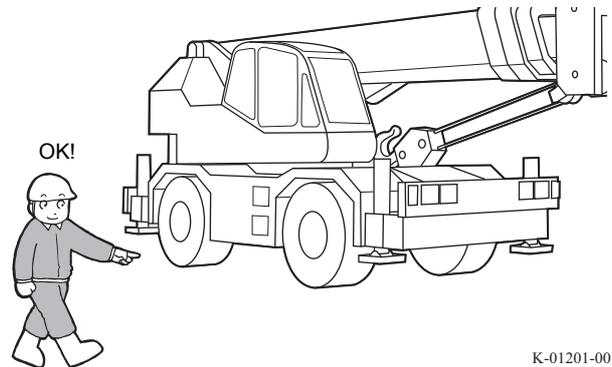


K-01200-00

• **Check Safety around Machine before Starting Engine**

If you start the engine without checking safety around the machine, it can cause a damage to the machine, or an injury or death.

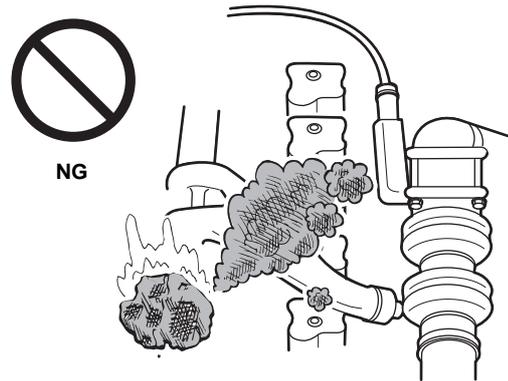
Before starting the engine, make sure that there are no persons or obstacles under or around the machine. Before starting the engine, sound the horn to alert people around the machine.



K-01201-00

- **Keep Surroundings of Engine Clean**

Flammable objects such as dead leaves, wastepaper, and oil stains near the engine can cause a fire. Remove them before operation.



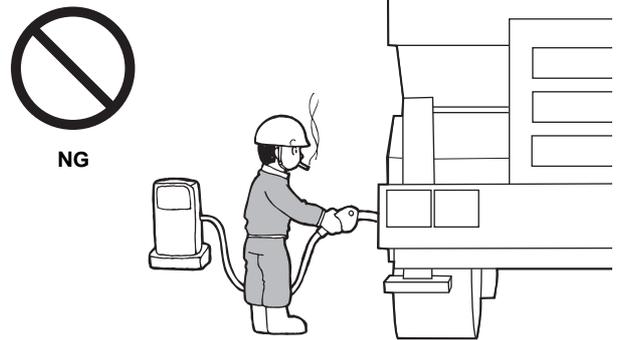
K-00026-00

- **Be Careful when Refueling**

Fuel and other oil and grease are highly flammable and dangerous. When you handle them, pay sufficient attention.

When you refuel the machine, observe the precautions below.

- Stop the engine.
- Refuel the machine in a well-ventilated open place.
- Keep away open fire such as a lit cigarette.



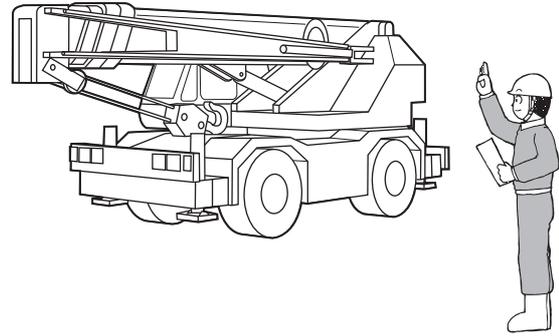
K-00027-00

Precautions for Traveling on Roads

• Inspection before Traveling

If the machine has any defects, it is dangerous to drive the machine without repairing them. Inspect the machine according to the chapter "Inspection before Traveling" and "Pre-operational Inspection" in this manual before traveling.

If you find any irregularities, report them to the person in charge and have the machine repaired before traveling.



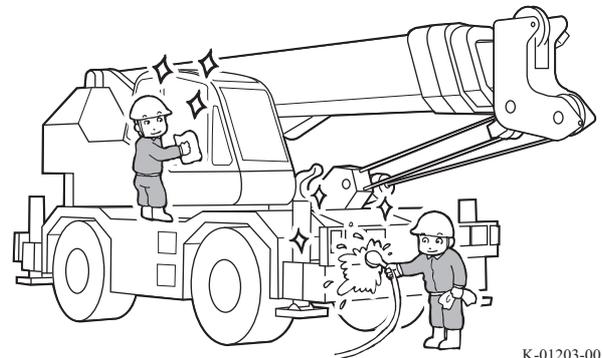
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• Keep Visibility in Good Condition

If window glasses, lights, or mirrors are dirty, poor visibility hinders safe operation.

Always keep the window glasses and lights clean to ensure a good visibility.

Adjust the mirrors so that you can have a best view from the driver's seat.



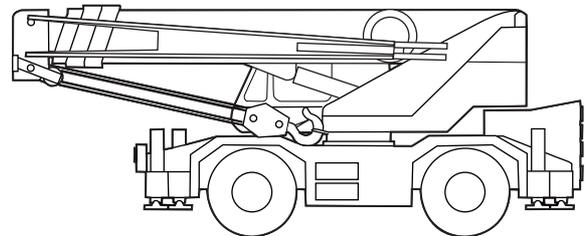
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• Set the Machine in Traveling Configuration Before Traveling on Roads

It is dangerous if the hook block or boom sways, or an outrigger beam extends while traveling.

A mounted jib makes a large protrusion from the front and creates hazards while traveling. Stow the hook block, boom, and jib to the specified positions, and secure the outrigger beams with the lock pins.

Set the machine into the traveling configuration following the instructions in the manual before traveling.

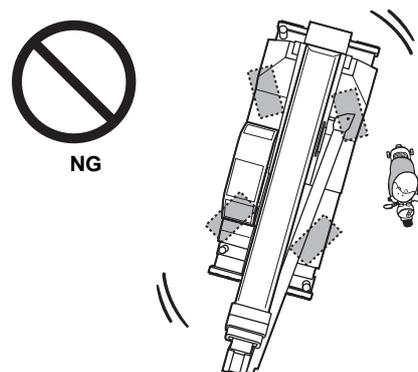


K-01204-00

• Travel on Roads in Two-Wheel Steering Mode

Do not travel on roads in special steering mode. It is dangerous for other road users.

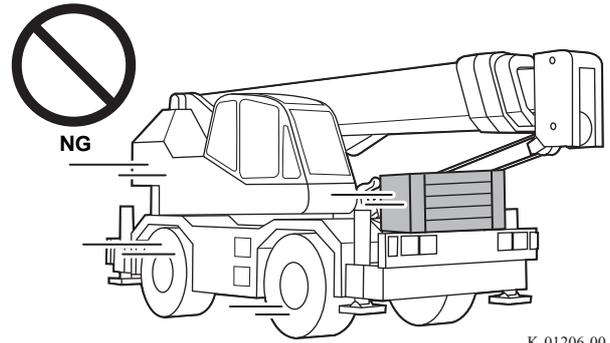
Travel on roads in the two-wheel steering mode only.



K-01205-00

- **Do Not Travel with Cargo Loaded on Machine**

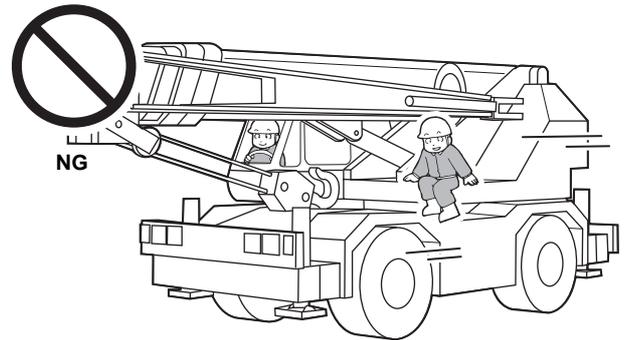
Traveling with cargoes loaded (except the standard equipment) can cause accidents such as a falling of the cargo. To carry a cargo, use a dedicated machine such as a truck.



K-01206-00

- **Observe Seating Capacity**

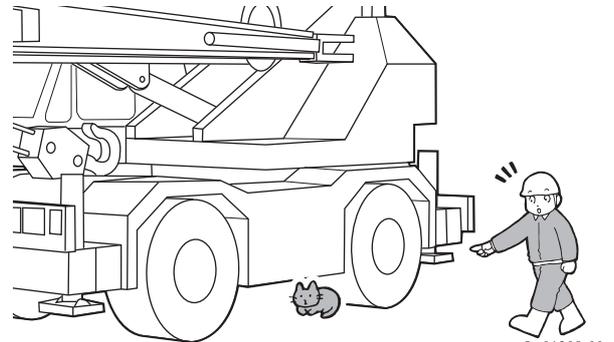
Carrying passengers exceeding the seating capacity is a violation of applicable laws and regulations. Also, it can cause an accident.



K-01207-00

- **Check Safety around Machine before Starting**

Check that there are no persons or obstacles around the machine before starting.



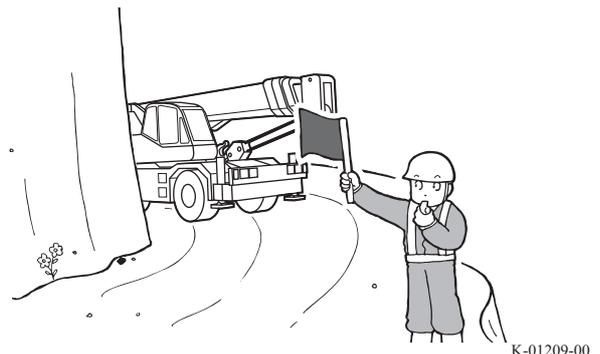
K-01208-00

- **Pay Attention to Safe Driving**

Keep a sufficient distance from the preceding vehicles, maintain a moderate speed, and apply brakes early. Do not drive in an aggressive manner such as overspeeding, sudden starting, sudden braking or steering.

- **Post Guide Person at Places Where Visibility Is Poor**

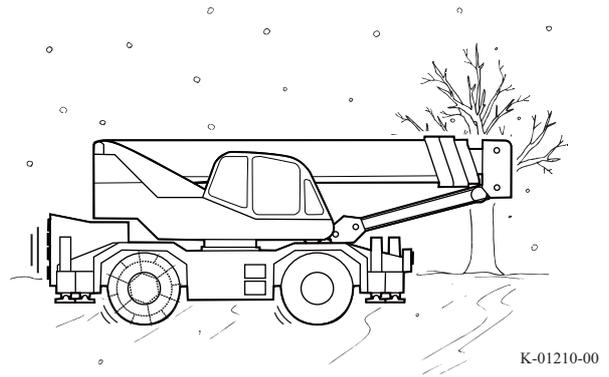
To prevent collisions, post a guide person when traveling at a tight area or corner with poor visibility, and when reversing the machine.



K-01209-00

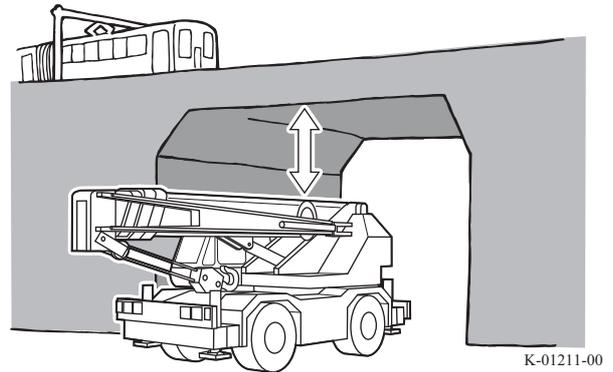
- **Be Careful of Road Surface Conditions**

A road with poor surface conditions can cause slipping or loss of steering control, resulting in an accident. If you drive the machine on a snow-covered or frozen road, rough ground or slope, pay extra care to ensure safety. Check the road surface conditions before traveling, and attach tire chains as necessary.



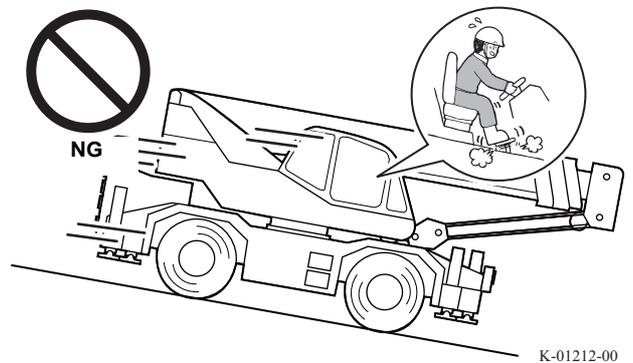
- **Be Careful of Overhead Objects**

The machine can hit an overhead object such as an electric wire if its height is not sufficient. Check major specifications of the machine before traveling, and be careful of the overhead clearance from the objects such as the electric wires for the trains, overpasses, and tunnels.



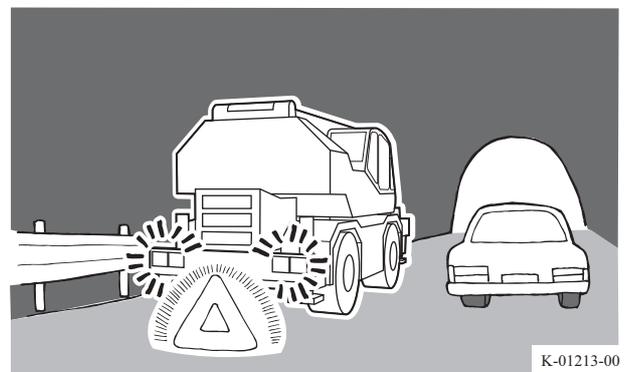
- **If Engine Stops While Traveling**

If you drive the machine with its engine stopped on a downhill slope, etc., the air will not be supplied to the air tank, and resulting low air pressure causes a brake failure. If the engine stops during traveling, immediately stop the vehicle at a safe place.



- **If Failure Occurs in Tunnel**

Immediately flash the hazard lamps and put a triangle reflector behind the machine to alert the following vehicles. After that, have the machine towed out of the tunnel. Do not repair the machine in a tunnel to avoid a secondary accident.



- **Avoid Excessive Use of Foot Brake**

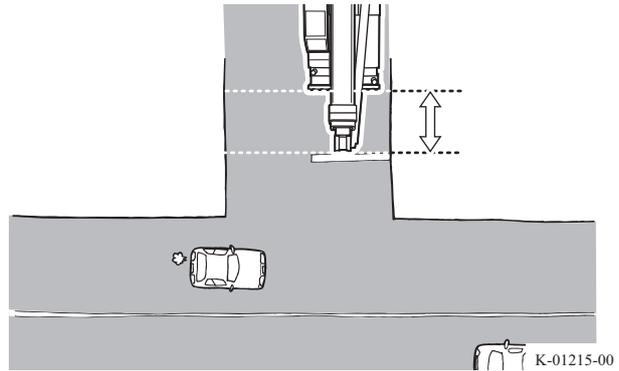
If you use the foot brake too frequently, the braking system overheats and brake failure can occur. When traveling on a long downward slope, downshift the gear and use the engine brake together with the exhaust brake.



K-01214-00

- **Keep Enough Distance When Stopping Machine**

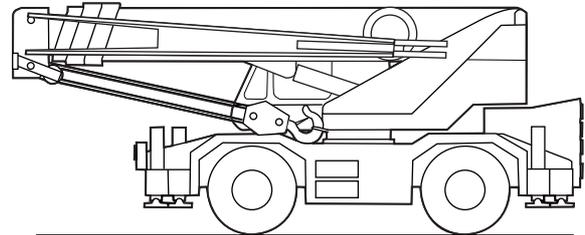
The boom head protrudes from the machine body. When you stop the vehicle while traveling on a road, make sure that the boom head does not go beyond the stop line to avoid accidents.



K-01215-00

- **Park Vehicle on Flat and Safe Place**

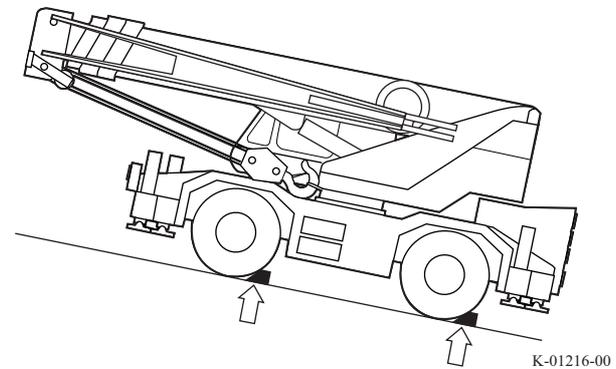
Avoid parking the vehicle on a slope. When you park the vehicle, stop it on a level ground and apply the parking brake.



K-01204-00

- **Place Chocks on All Tires If Parking on Slope Is Unavoidable**

When it is unavoidable to park the machine on a slope, park it parallel to the direction of the inclination. Apply the parking brake, and place wheel chocks on the tires so that the machine does not move away.



K-01216-00

- **Mind the Safety of Surroundings When You Park a Disabled Vehicle on a Road**

When parking a disabled vehicle on a road, set up flags, fencings, flashing lamps, and triangle reflectors so that your vehicle is easily noticeable from other vehicles even at night.

Make sure that the parked machine does not hinder the traffic of other vehicles and pedestrians.

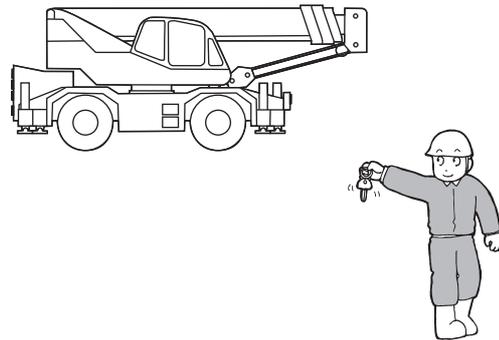


K-01217-00

- **When Leaving the Machine**

If you leave the machine with the engine running or the starter switch key inserted, unauthorized persons can operate the machine. When you leave the machine, use the precautions below:

- Park the vehicle on a level ground and apply the parking brake.
- Engage all the brakes and locks, and set the levers in neutral positions.
- Stop the engine, and pull out the key from the starter switch.
- Lock all the doors and covers.



K-01218-00

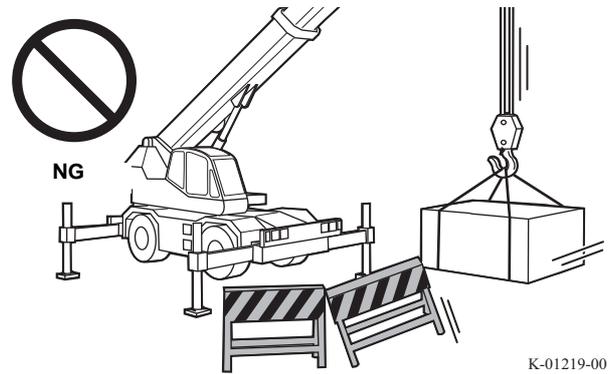
Precautions during Operation

• Check the Conditions of Work Site

If you operate the machine without paying attention to the surrounding conditions, an unexpected accident can occur.

Before you start the work, check by yourself the location the machine operates, the passageways, presence of obstacles, and how other machines are set up, etc.

Operate the machine while also paying attention to any changes in the surroundings during the work.



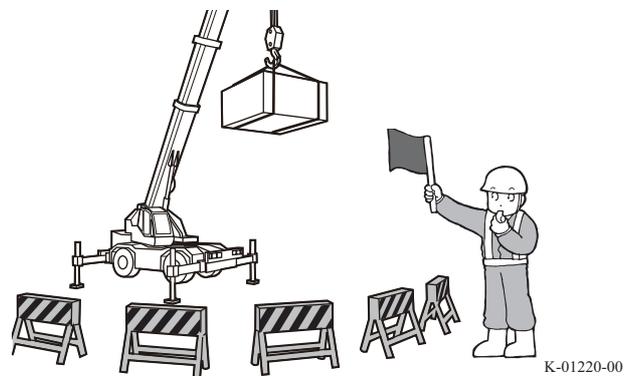
K-01219-00

• Prohibit Unauthorized Access to Work Site

If unauthorized persons or vehicles enter the work site, accidents such as collisions, injuries or deaths can occur.

Before starting work, check that there are no unauthorized persons or obstacles in the work site. Designate the work site as an "OFF LIMITS" zone. Also take measures to prevent unauthorized persons from gaining access, such as fencing and assignment of watchpersons.

Assign a guide person to prevent accidents while working in a site with heavy traffic.



K-01220-00

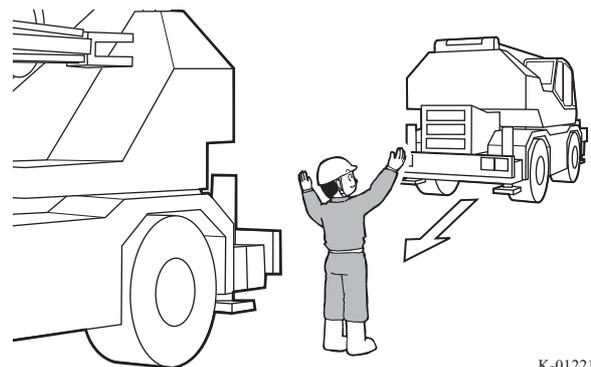
• Assign Signal Person

Assign a signal person and make sure that the instructions from the signal person are obeyed.

It is particularly important in the following cases:

- When working near electricity lines
- When the operator cannot see a lifted load
- When moving the machine into a narrow passage or in a direction where the view is not clear
- While working jointly with two or more machines

Use portable radio equipment whenever possible for communications between the signal person and operator.

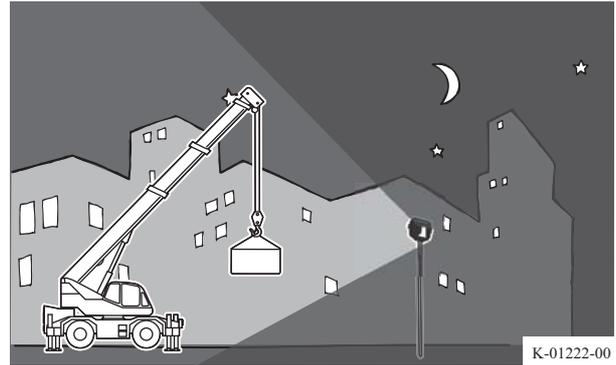


K-01221-00

- **Use Sufficient Illumination at Night**

When you are in a dark area, you cannot find persons and obstacles around easily. This increases the risk of the accidents.

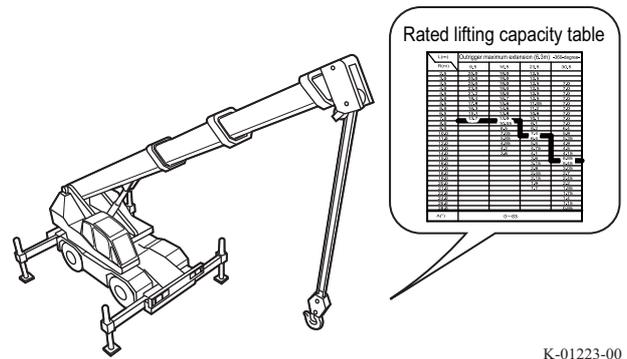
During work at night, use work lights so that you can see the movements of the machine and lifted load clearly. And install some other illumination equipment to illuminate around the machine.



- **Observe Conditions for the Work**

If the width of extended outriggers, boom length, load radius, etc. are out of the specifications shown in the rated lifting capacity table, the machine can overturn, even when a load is not lifted.

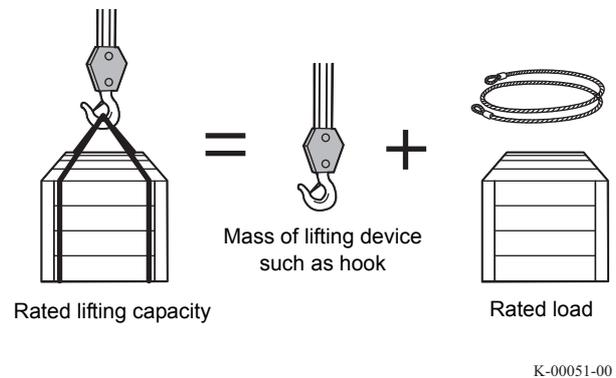
Strictly observe the conditions for the work specified in the rated lifting capacity table.



- **Do Not Operate the Crane with a Load Exceeding Rated Lifting Capacity**

If a load with a mass that exceeds the rated lifting capacity is lifted, the machine is overloaded and a damage to the machine or an overturning accident can occur.

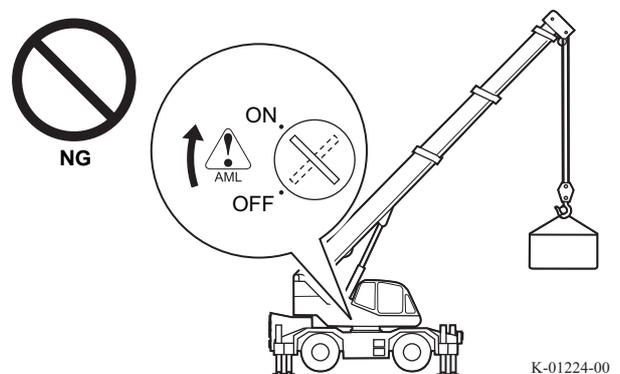
Check the rated lifting capacity before lifting a load. The rated lifting capacity differs depending on the boom length, load radius, and other factors. Never lift a load exceeding the values specified in the rated lifting capacity chart at any time.



- **Use Safety Devices Correctly**

Correctly use the safety devices such as the load moment indicator according to the instructions described in this manual.

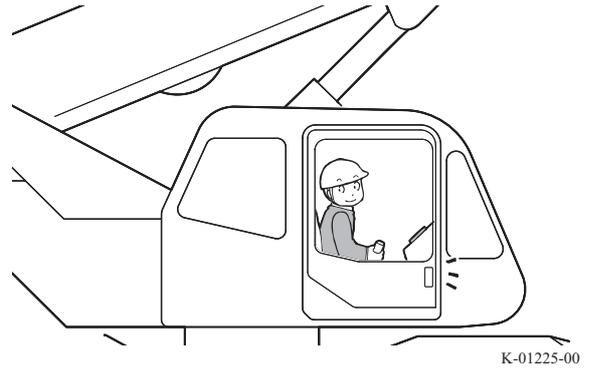
If the safety devices are used incorrectly or their functions are obstructed, a damage to the machine or an overturning accident can occur.



- **Take Measures against Noise**

To protect yourself from injury caused by noise, close the doors and windows of the operator's cab during crane operation.

If you work outside the cab, wear hearing protectors such as earplugs as necessary.



K-01225-00

- **Inspection after Starting the Engine**

If you neglect the inspections after starting the engine, it delays detection of machine abnormalities. This can cause a damage to the machine, or an injury or death.

Carry out inspections in a sufficiently large space without persons and obstacles around the machine.

After starting the engine, check the devices and indications on the instruments. Make sure that no obstacles or persons are around the machine. And then, under a no-load condition, check the operation of the control systems, lifting systems, and safety systems.

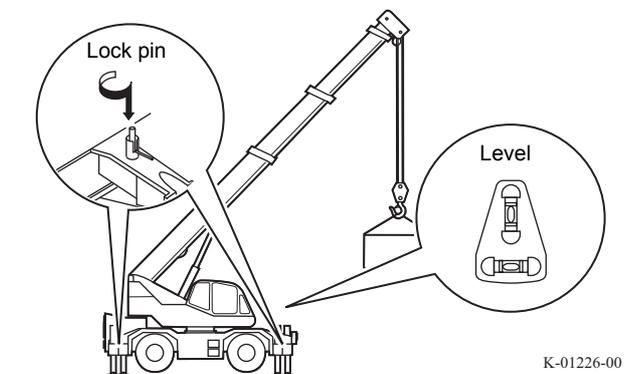


K-00054-00

- **Check the Outrigger Set-up Condition**

An improper outrigger set-up can cause an overturning accident. Check the following points.

- The machine is set up horizontally.
- The outrigger floats are in contact with the ground or the steel plates.
- All the tires are off the ground.
- The outrigger beams are fixed with lock pins.

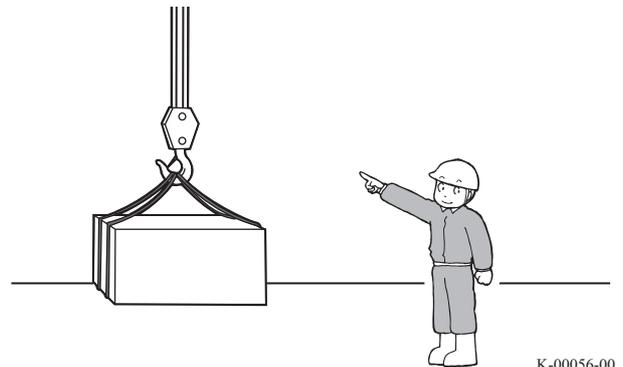


K-01226-00

- **Check before Lifting a Load**

Check the points below before lifting a load.

- The mass of the lifting load does not exceed the rated lifting capacity.
- The number of parts of line for the wire rope is set according to the standard number of parts of line specified in the rated lifting capacity chart.
- Proper lifting devices are used, and the load is rigged securely.
- The hook block is directly over the gravity center of the load.



K-00056-00

- The load lines are vertical so that the load is lifted vertically.
- The safety latch of the hook block functions properly.
- The wire ropes are free of intertwining or disorderly winding.

• Rig Load Securely

If incorrect rigging method is employed, the lifted load can fall and cause an accident. Observe the precautions below to ensure secure rigging.

- Understand the mass and gravity center of the load, and use the lifting devices best suited for the mass and shape of the load.
- The lifting devices such as wire ropes and chains must have sufficient strength and be free from damage and wear.
- Rig a load directly over its gravity center so that the lifted load does not overturn or slip out of the lifting devices when lifted off the ground.

Also, rig a load properly so that the lifting devices do not cross over each other, or are not intertwined.

- Do not rig a load with a single rope. The lifted load can turn and create hazard. Also, the turn of the load untwists the rope and reduces its strength.
- If a load has sharp corners, apply pads to the corners so that the rigging wire ropes and loads are not damaged.

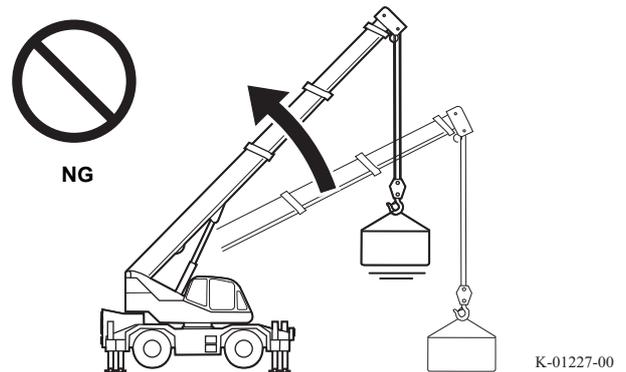
• Carefully Lift a Load off the Ground by Hoisting-up Operation

When you lift up a load, be sure to hoist up the load just clear of the ground carefully first by winch operation.

Do not lift a load just clear of the ground by raising or extending the boom. Such operations can damage the machine and cause an overturning accident.

When you lift a load just clear of the ground, stop hoisting for a moment when the rigging ropes are tensioned. Check that the load is hung above its gravity center, the load does not stick to the ground or does not touch other loads or structures.

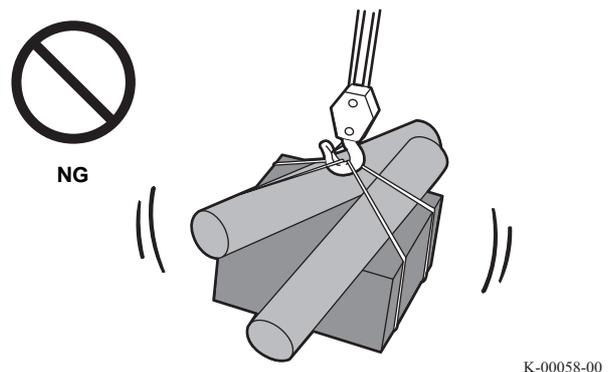
Lift up a load vertically, and stop lifting again when the load is raised by several centimeters above the ground and stop the sway of the load. Check that the state of rigging is fine, the load is securely held at the position, and the machine is not overloaded. And then, lift up the load again.



• Lift a Single Load Only

Never lift two or more loads at once. Even if the total load mass is within the rated lifting capacity, the loads can lose balance and create hazard. Also, the operator cannot concentrate on all loads.

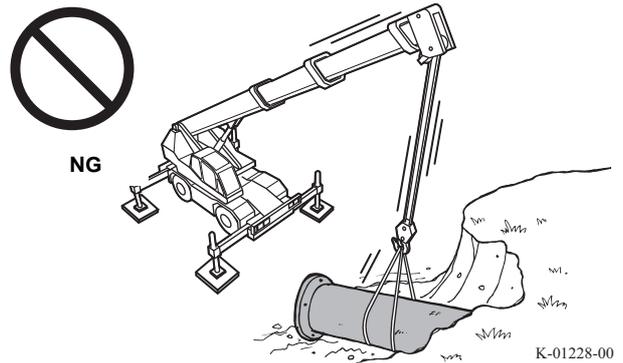
Be sure to lift a single load only.



• Never Lift Buried Load

If you pull up buried objects, garden trees, or objects driven into the ground, an unexpected load can be applied to the machine. This can damage the machine and cause an overturning accident.

Do not lift objects driven into the ground such as poles or piles, and garden trees, and objects buried in mud or sand.



K-01228-00

• Avoid Overloading (Exceeded Capacity)

If a load close to the rated lifting capacity is lifted, an overloading can occur when the load sways. Operate the machine with extreme care.

When an overload occurs, bring down the load to the ground by winch hoist-down operation.

When extending or lowering the boom, also be careful of overloading because the load radius increases.

Rated lifting capacity table

L(m) R(m)	Outrigger fully extended (6.5 m) -360 degrees-			
	9.35	16.4	23.45	30.5
2.5	25.0	15.0	12.0	
3.0	25.0	15.0	12.0	8.0
4.0	23.5	15.0	12.0	8.0
4.5	21.5	15.0	12.0	8.0
5.0	19.5	15.0	12.0	8.0
5.5	17.5	15.0	12.0	8.0
6.0	15.5	15.0	11.5	8.0
7.0	13.5	15.0	10.5	8.0
8.0	11.5	14.5	9.5	8.0
9.0	9.5	13.5	8.5	8.0
10.0	7.5	12.5	7.5	8.0
11.0	5.5	11.5	6.5	8.0
12.0	3.5	10.5	5.5	8.0
13.0	1.5	9.5	4.5	8.0
14.0		8.5	3.5	8.0
15.0		7.5	2.5	8.0
16.0		6.5	1.5	8.0
17.0		5.5	0.5	8.0
18.0		4.5		8.0
19.0		3.5		8.0
20.0		2.5		8.0
21.0		1.5		8.0
22.0		0.5		8.0
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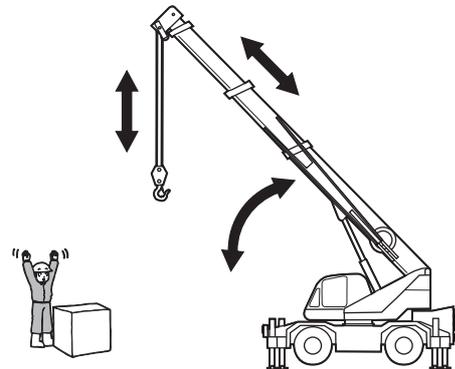


K-00060-00

• Be Careful of Simultaneous Operation

During simultaneous operation, the machine movement tends to be slower than those of individual operations. Conversely, when the simultaneous operation is switched to individual operation, the movement can become faster. When you carry out simultaneous operation, pay attention so that a sudden speed change does not occur.

Before you are sufficiently accustomed to the machine, an operation error can occur during simultaneous operations. Do not carry out a simultaneous operation until you are familiar enough with the operation.

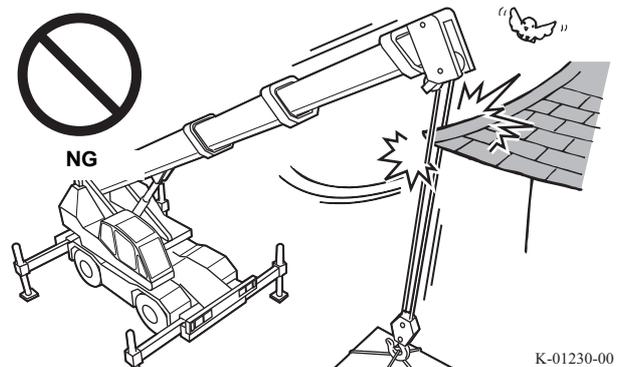


K-01229-00

• Be Careful to Avoid Collisions with Structures Nearby

When moving a lifted load, be careful not to allow the machine or the lifted load to collide with a building, etc. around the machine.

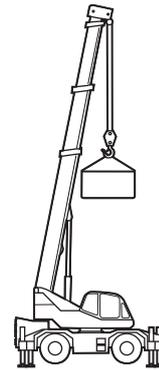
In a site with many such obstacles, post a signal person and follow the instructions from the signal person to prevent a collision.



K-01230-00

- **Carefully Operate While the Boom is Raised High**

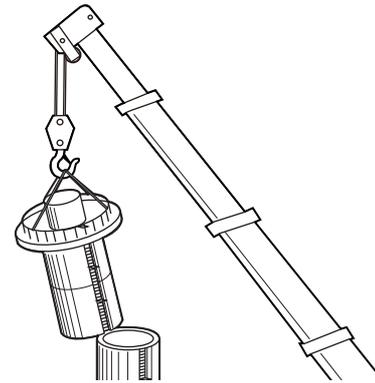
When the boom is raised close to its upper limit angle, the horizontal clearance between a lifted load and the boom becomes small. If the lifted load sways in this condition, the load can collide with the boom or jib. This can damage the boom or jib, or the load itself. Carry out operation carefully when the boom is raised close to its upper limit angle, so that the load will not collide with the boom or jib.



K-01231-00

- **Carry Out Demolition Work Carefully**

It is dangerous to lift a structure during demolition work when its mass and gravity center are not known. Check the mass and gravity center of the load before operation, and decide the lifting method accordingly.

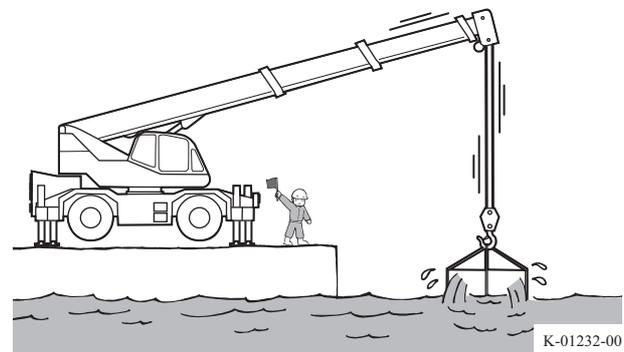


K-00064-00

- **Lift Submerged Load Carefully**

When you lift a load submerged under water, be aware that the load contains water and can be several times heavier than the expected mass. Do not lift a load from water in one quick operation. Drain water while slowly lifting the load.

Also, even if water is completely drained, a load raised out of water is much heavier than when it is subjected to buoyancy in water. Be extremely careful not to allow overloading to occur.



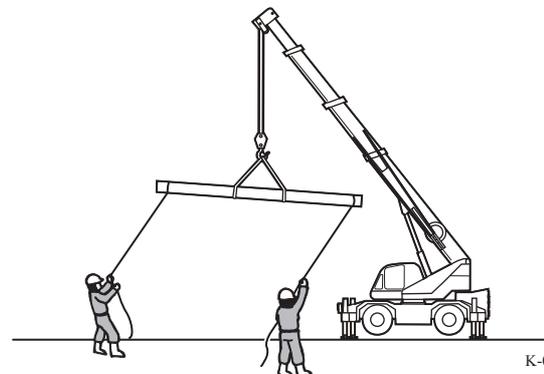
K-01232-00

- **Pay Attention to Long Load**

Be careful when lifting a long load.

A lifted load can turn and collide with the rigging workers, crane itself, and structures around the machine.

Attach guide ropes to one end or both ends of the load and keep the position of the load, and prevent the load from turning or swaying.

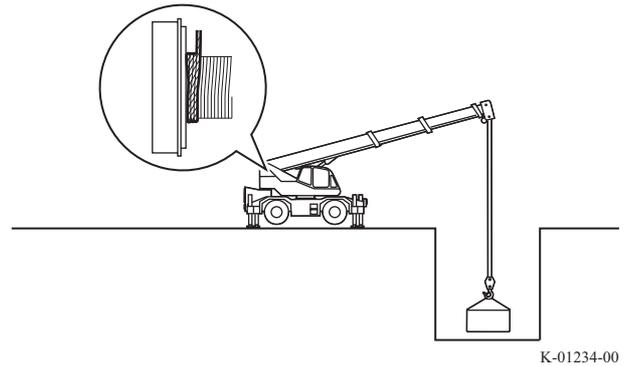


K-01233-00

- **Pay Attention to Dead Turns of Wire Ropes**

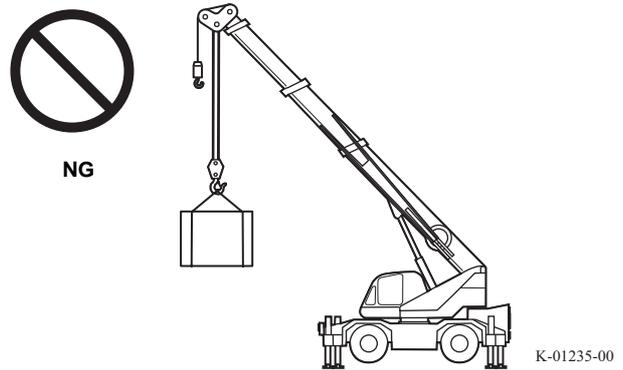
If a wire rope is completely reeled out from the winch drum, the load is directly applied to the rope end due to loss of friction. This can damage or break the wire rope.

Make sure that three or more extra turns always remain on the winch drum. In particular, be careful when the load is lowered below the ground level.



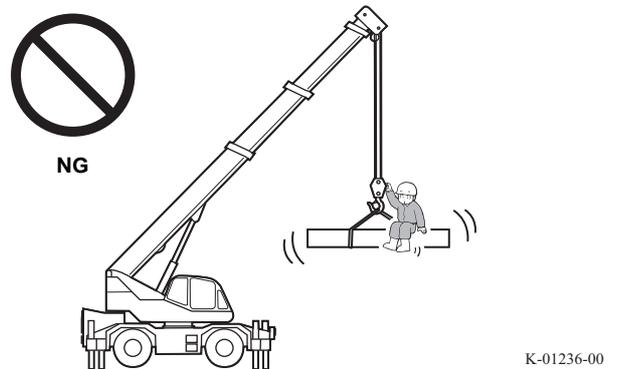
- **Do Not Suspend Loads for a Long Time**

Avoid keeping a load lifted for a long time. Arrange the work procedure to minimize the load-lifting time.



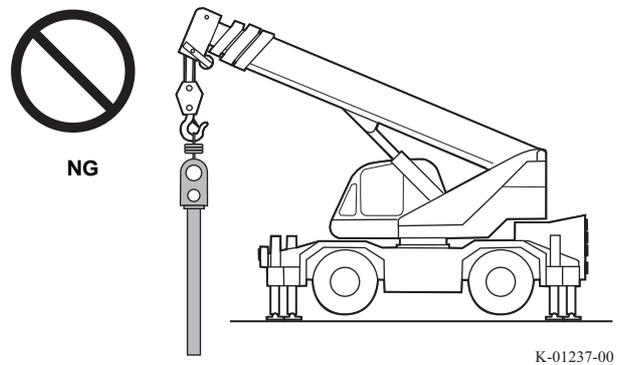
- **Use Crane for Specified Purposes Only**

A crane is made to lift objects. Do not use it for operations other than the specified applications, such as lifting a person or pushing an object with the boom.



- **Do Not Use Special Attachments**

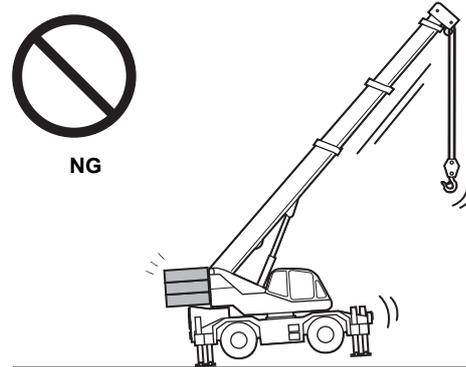
Operation with special attachments such as an earth auger or vibro-hammer is prohibited. Such operation can cause an overturning accident, and shorten the machine life. Note that any accident or failure caused by operations with an attachment mounted will not be covered by our warranty.



- **Do Not Add Counterweight**

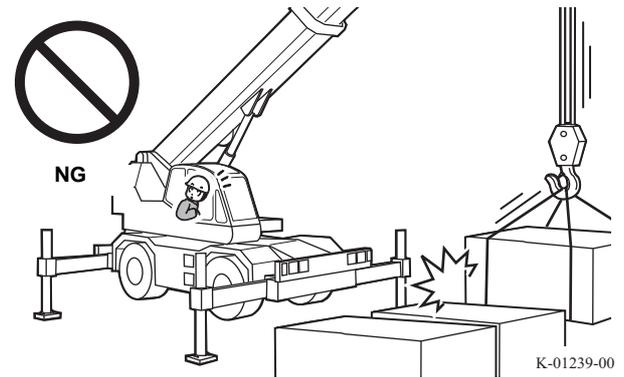
Addition of counterweights other than the specified ones can damage the machine. This also can affect the backward stability and cause the machine to overturn to the rear.

Do not install or place counterweights other than specified ones, or objects functioning as counterweights onto the machine.



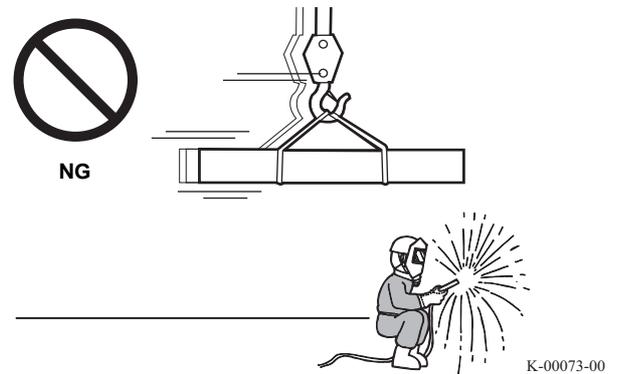
- **Do Not Distract Your Attention**

Inattentive crane operation is very dangerous. Do not look away from the signal person and lifted load, and be sure to concentrate on the operation.



- **Do Not Pass Load Over Person**

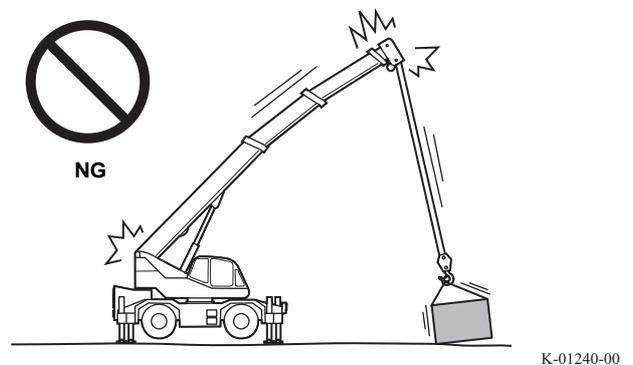
Avoid dangerous operations such as passing a hook block or a lifted load over a person. Also, do not allow anyone to enter the area under the boom or lifted load.



- **Avoid Sideways Pulling, Diagonal Lifting, and Pulling-in of Load**

It is very dangerous to pull a load sideways, to lift it diagonally, or to pull-in a load. Such operations damage the boom, jib, and slewing mechanism, and they may also overturn the machine.

Do not forcibly pull-in a load that lies out of the load radius. Move the machine close to the load, and lift it vertically.



• **Before Leaving Cab**

Before leaving the operator's cab, take the following measures.

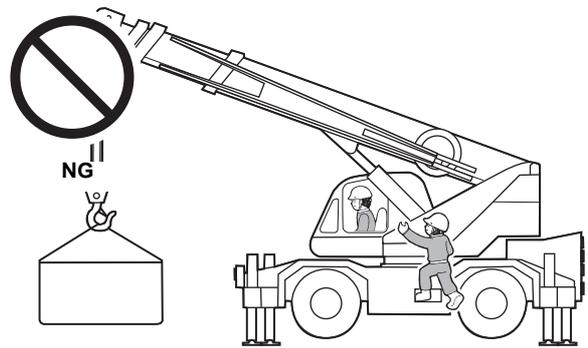
- Lower the load onto the ground.
- Fully retract the boom and stow it.
- Apply all the brakes and drum locks (if equipped).
- Return the control levers to the neutral position.
- Stop the engine, and pull out the key from the starter switch.
- Lock all the doors and covers.



K-01241-00

• **Do Not Let Persons Other than Operator Get on Machine**

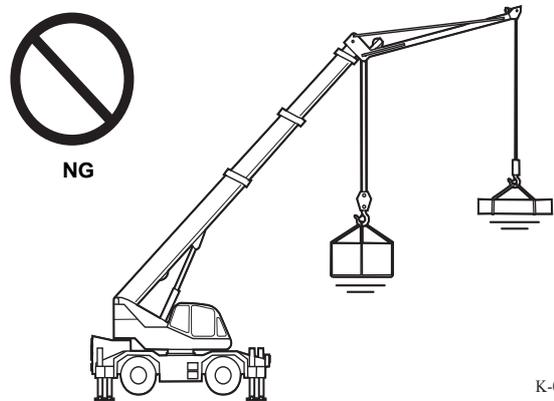
If any person other than the operator ride the machine, the person can be caught by or fall off the machine. Presence of other persons also hinders the operation. Do not allow any person other than the operator to get on the machine.



K-01242-00

• **Precautions When Jib is Mounted (1)**

Do not lift multiple loads using the boom and jib at the same time. The boom and jib can be damaged, and the machine can overturn.



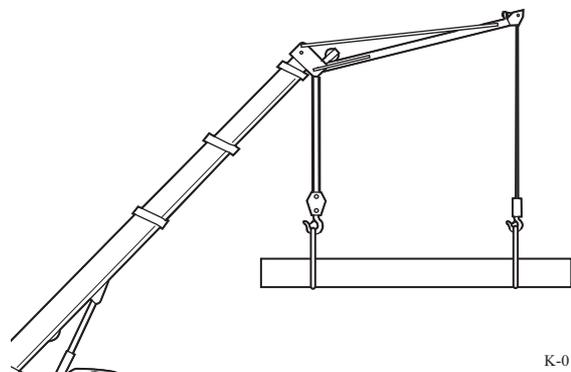
K-01243-00

• **Precautions When Jib is Mounted (2)**

When you lift up a single load using both main and auxiliary winches, observe the following points in accordance with the rated lifting capacity table.

- Register the lift status as jib lift.
- Make sure that the mass of the load including the lifting devices is within the rated lifting capacity for jib lift.

If the main winch wire rope is wind out while a load is lifted, the gravity center of the load can move and cause an overload. Operate carefully so as not to cause overloading.

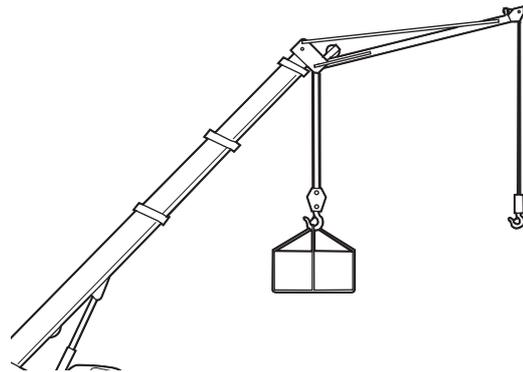


K-01244-00

• **Precautions When Jib is Mounted (3)**

Pay attention to the following points during boom lift operations with the jib mounted.

- Observe the values in the rated lifting capacity chart according to the actual boom and jib status.
- During boom lift operations with the jib mounted, the crane stops before the moment load ratio reaches 100%.

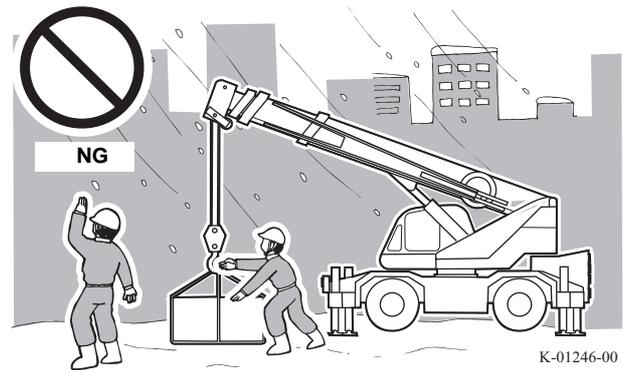


K-01245-00

• **Stop Operation when Visibility Is Poor**

When visibility becomes poor due to bad weather such as rain, snow, or fog, stop operation and stow the machine.

Wait until the visibility recovers good enough for an operation.



K-01246-00

• **Stop Operation When Strong Wind Blows**

A strong wind sways the lifted load. This is dangerous to workers and surrounding structures, and can damage the boom and overturn the machine.

Note that the longer the boom is, and the bigger the size of the load is, the more the wind affects the machine operation.

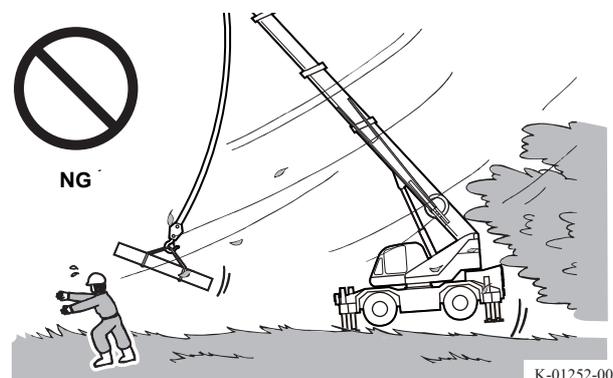
Stop crane operation if the load becomes out of control by strong wind.

If the wind speed exceeds 9 m/s, reduce the load according to the wind speed. When strong winds with maximum instantaneous wind speed of 14 m/s or more blow, stop operation and stow the boom.

Pay special attention when the boom is long or a lifted load has a large area. Stop operation as the situation requires even if the wind speed is slower than 9 m/s.

The table below shows a rough indication of wind speeds. The wind speeds shown below are at a height of 10 m from an open flat ground.

Wind speed	Influence on land
5-8 m/s	Dust and loose paper raised. Small tree branches begin to move.
8-11 m/s	Low trees with leaves start to sway. Water surfaces in ponds or marshes start to make waves.
11-14 m/s	Large branches move. Whistling heard in overhead wires. Umbrella use becomes difficult.
14-17 m/s	Whole tree sways. Effort needed to walk against the wind.

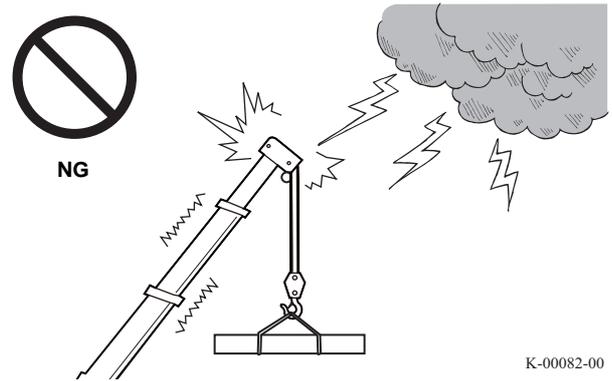


K-01252-00

- **Stop Operation When There Is Risk of Lightning Strike**

If the machine is struck by lightning, the machine can be damaged, and the operator and workers around it can be injured. When there is a risk of lightning strike, stop the operation and stow the boom, and then leave the machine.

If the machine is struck by lightning, stay in the cab to avoid another lightning strike.



K-00082-00

- **Precautions in Cold Season**

- Remove any snow and ice on the machine. Particularly, remove the snow and ice on the boom completely. They can fall during operation.

- Do not touch the metal surfaces of the machine in extremely cold season.

Your skin can stick to the frozen metal surface.

- Warm up the machine sufficiently. After warming up, check that the machine operates normally.

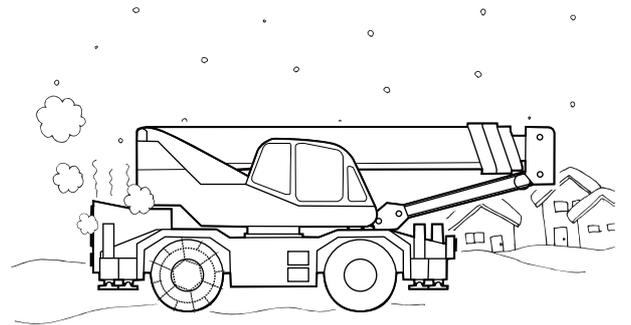
Properly unfreeze and dry the components as needed.

- At the beginning, operate the machine slowly until the lubrication by oil and grease become effective.

- Check that a load is not frozen and stuck to the ground. It is dangerous to lift a load when it is stuck to the ground.

- At the end of an operation, clean the mud around the outriggers and tires to prevent accidents caused by freezing.

- Pay extra care to battery maintenance. Use oils, greases, and fuels suitable for cold climates.



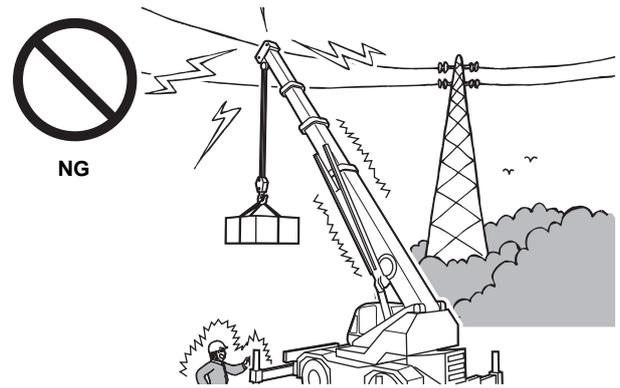
K-01247-00

- **Avoid Electric Shock**

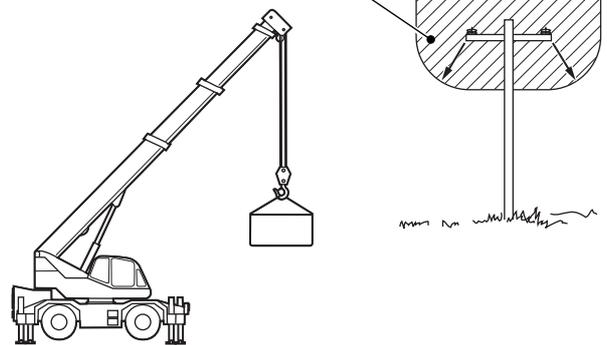
You can have an electric shock just by approaching electric lines, depending on the voltage. If it is unavoidable to carry out an operation near power cables or main lines, take the preventive measures below.

(Reference: Safety clearance recommended by power companies in Japan)

Voltage		Safety clearance
Low voltage	100 V, 200 V	2 m
High voltage	6,600 V	
Extra high voltage	22,000 V	3 m
	66,000 V	4 m
	154,000 V	5 m
	187,000 V	7 m
	275,000 V	10 m
	500,000 V	11 m



Safety clearance



K-01586-00

- Have a detailed consultation with the power company in advance, and take necessary measures to ensure safety.
- Make sure that related workers such as riggers wear rubber or leather shoes.
- Always keep a specified or larger clearance between a power line and a lifted load or a machine during operation.
- Assign a dedicated watchperson to prevent a machine and a lifted load from approaching an electric line, and unauthorized persons from entering the work area.
- Do not allow workers to touch the machine or a lifted load. If it is necessary to control a lifted load, attach a dry fiber rope to a load as a guide rope to prevent a load from turning and swaying.
- Do not place loads below electric lines or near power sources.
- Operate a machine slowly and cautiously, with extreme care.

If you get an electric shock, do not panic and take the measures below.

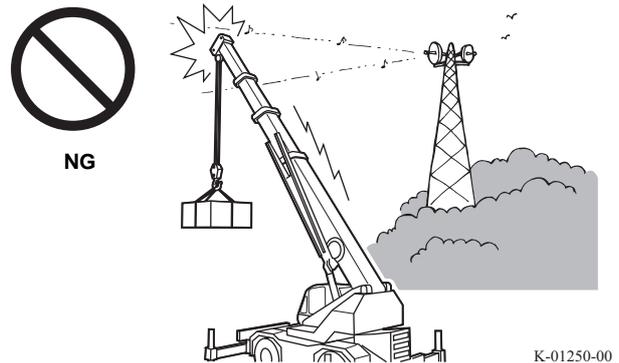
- The operator should keep calm and slowly move the machine and a lifted load away from the power line as far as the specified clearance or more, and then escape from the cab.
- If the machine is damaged and cannot be operated, it is the safest for the operator to stay on the operator's seat until the power line is deenergized. If this is not possible, jump off as far as possible from the machine body. It is dangerous to climb down the machine body. It may result in getting electric shock.
- Make all workers away from the site to prevent secondary accidents. Moreover, keep anyone away from the electrified machine and lifted load.
- Contact the power company to have the power transmission stopped, and receive emergency instructions.
- Afterwards, inform Tadano Escorts India Private Ltd. or a dealer of the accident, and seek advice on follow-up measures, inspection, and repair.

• **Pay Attention to High-Power Radio Waves**

Induction current is generated in the structural part of the machine near high power radio wave generating sources such as television and radio transmission towers. It may cause an electric shock by electrification, or burns by the heated-up machine parts, such as the hook block. Also, electronic equipment can be destroyed.

When carrying out an operation near high-power radio wave generating sources, contact the broadcasting company in advance and seek advice about safety.

When operating, take preventive measures such as wearing rubber gloves to avoid electric shocks and burns.

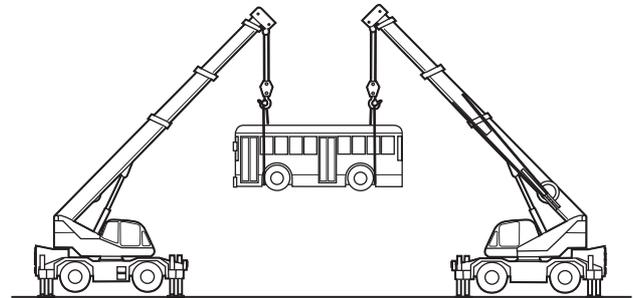


• **Be More Careful for Multi-crane (Tandem-lift)**

Operation

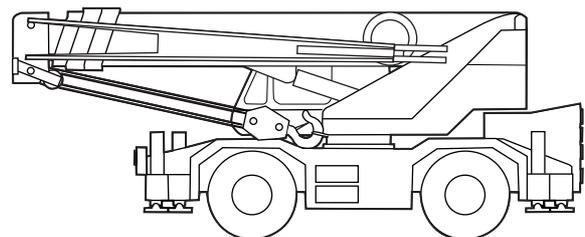
It is dangerous to use 2 or more cranes to lift a load. Avoid such an operation as far as possible. Multi-crane (tandem lift) operation has high risks because of the deviation of gravity center, causing overturning of the crane, fall of the lifted load and damage to the boom. If a multi-crane operation is unavoidable, observe the following points with the closest attention.

- Make detailed arrangements with the related workers about the operating methods in advance.
- Assign a supervisor and follow the supervisor's instructions. If necessary, make all the related workers carry communication equipment.
- Set up the machine horizontally on a solid ground with outriggers fully extended.
- Use machines of the same type and the same performance with sufficient capacity for the loads. Set all the boom length, boom angle, and number of parts of line to be equal.
- Lift the load in the way that the load lines of each machine are always vertical.
- Rig the load so that each machine evenly bears the load.
- Move the load by hoisting operation and boom elevating operation, and avoid slewing operation wherever possible. Do not do simultaneous operations of hoisting, boom elevating, slewing, etc.
- Operate each crane simultaneously so that the load is borne evenly by both machines.



• **Stow the Machine after Operation is Completed**

It is dangerous to leave the machine in the operating configuration. Stow the machine after the operation is completed.



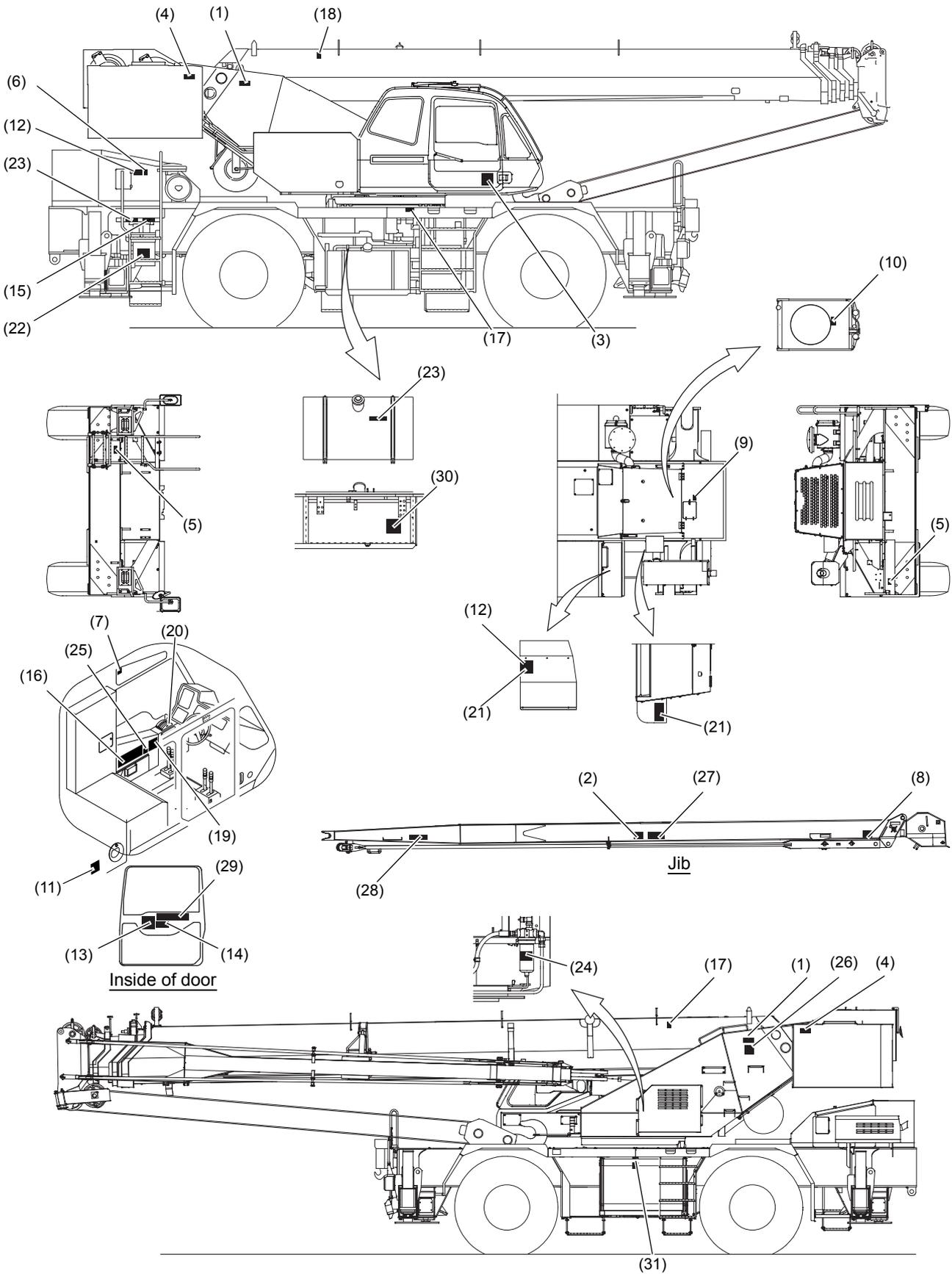
Warning Labels

The warning labels attached on the machine describe important warning items concerning safety. This section describes locations and contents of the warning labels. Fully understand the notices described on the warning labels, which are very important to prevent accidents.

Check that these warning labels are not soiled. If the warnings are unreadable or the pictures are not clear, clean them.

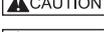
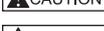
When the warning labels are damaged or missing, replace them with new ones. Order new warning labels from Tadano Escorts India Private Ltd. or a dealer.

Label Location and Content of Warnings



CTI-500XL-1_OM1-11E

K-04866-00

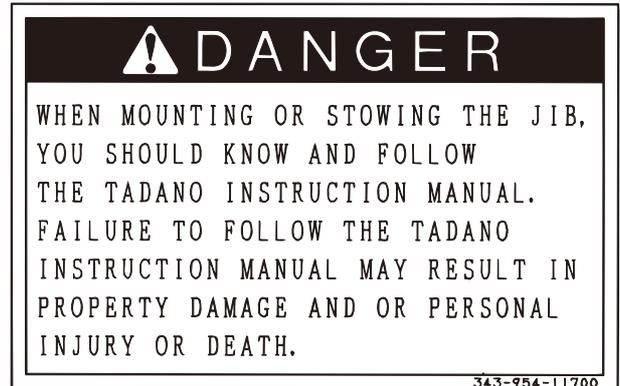
- | | |
|---|--|
| <p>(1)  Being crushed by boom (2 points)</p> <p>(2)  Caution for jib mounting and stowing</p> <p>(3)  Power line hazard</p> <p>(4)  Slewing superstructure hazard (2 points)</p> <p>(5)  Finger injury hazard (2 points)</p> <p>(6)  Falling hazard</p> <p>(7)  Jib status selection</p> <p>(8)  Jib extension</p> <p>(9)  Hot water</p> <p>(10)  Radiator fan</p> <p>(11)  Caution for override key switch</p> <p>(12)  Watch your head (2 points)</p> <p>(13)  Stow control levers</p> <p>(14)  Slewing lock</p> <p>(15)  Caution after stopping engine</p> <p>(16)  Cautions</p> | <p>(17)  Use of genuine brake fluid</p> <p>(18)  Falling hazard (2 points)</p> <p>(19)  Safety Precaution</p> <p>(20)  Prohibition of traveling with shift lever in neutral</p> <p>(21)  Burn hazard (2 points)</p> <p>(22)  Prohibition of jump start</p> <p>(23)  No fire (2 points)</p> <p>(24)  Replacing filter element and hydraulic oil</p> <p>(25)  Rated lifting capacity</p> <p>(26)  Caution for auxiliary winch rope stowing</p> <p>(27)  Caution for jib mounting</p> <p>(28)  Caution for jib stowing</p> <p>(29)  Cautions for traveling</p> <p>(30)  Emergency transmission operation</p> <p>(31)  Bleeding air from the hydraulic pump</p> |
|---|--|

(1) Being crushed by boom



343-912-01430
343-912-01430-0

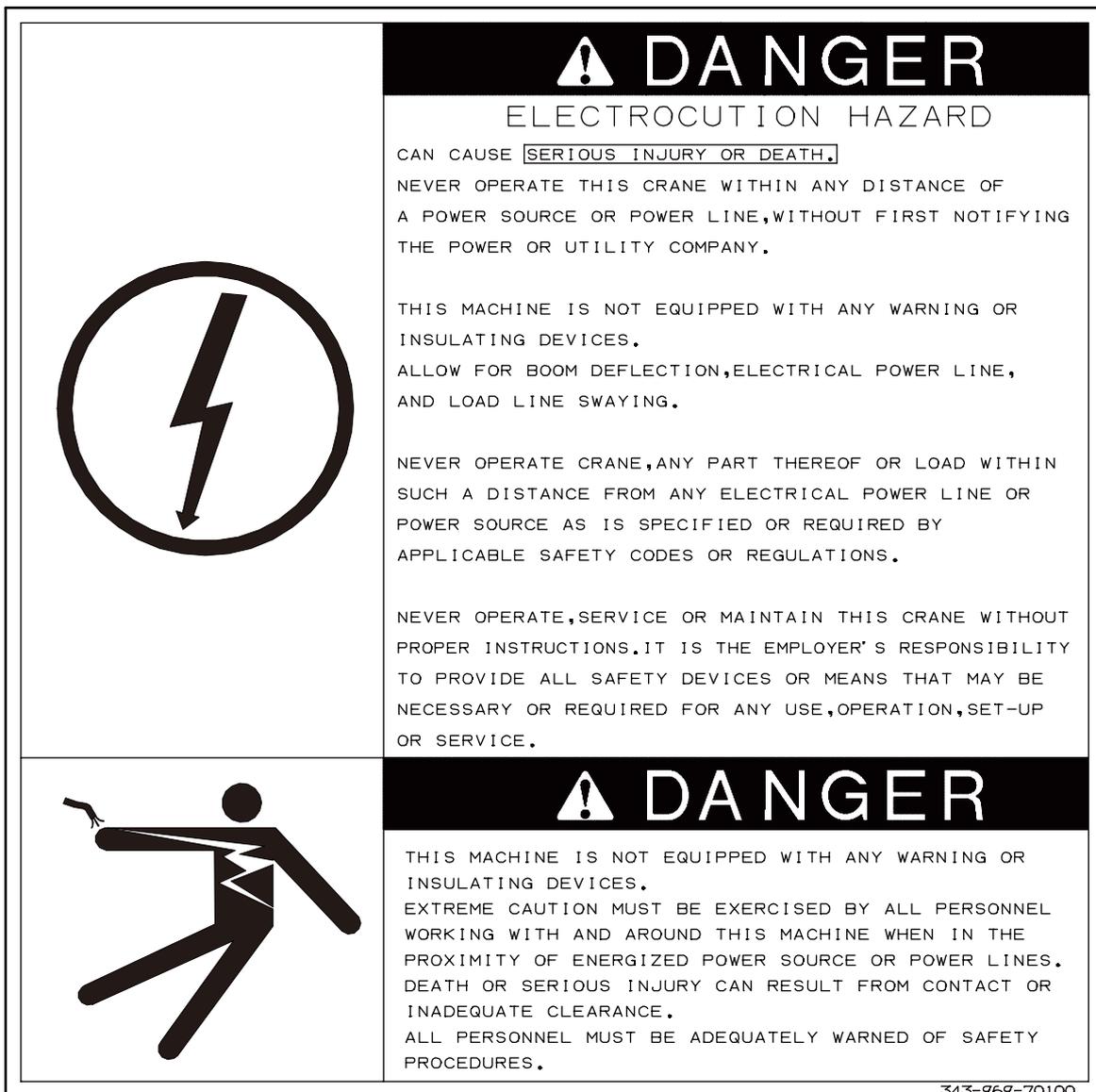
(2) Caution for jib mounting and stowing



343-954-11700

343-954-11700-0

(3) Power line hazard



343-969-70100

343-969-70100-0

CTI-500XL-1_OM1-11E

(4) Being crushed by superstructure



343-984-45120-0

(5) Finger injury hazard



349-401-70040-0

(6) Falling hazard



323-913-32030

323-913-32030-0

(7) Jib status selection



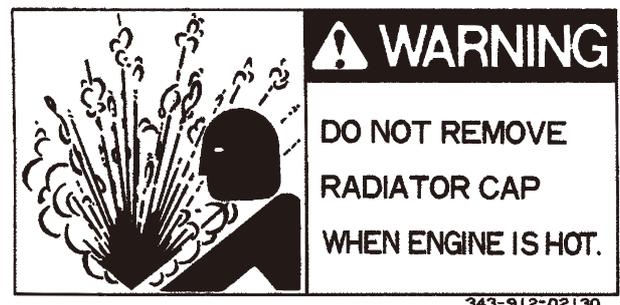
342-520-30260-1

(8) Jib extension



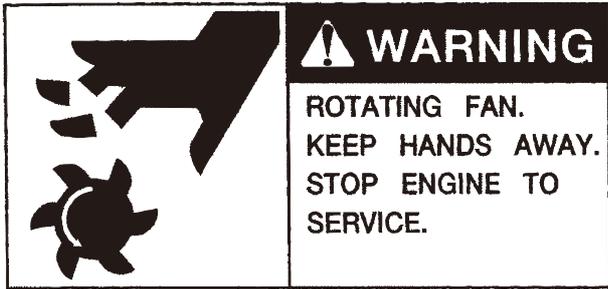
343-912-01440
343-912-01440-0

(9) Hot water



343-912-02130
343-912-02130-1

(10) Radiator fans



343-912-02201
343-912-02201-1

(11) Caution for override key switch



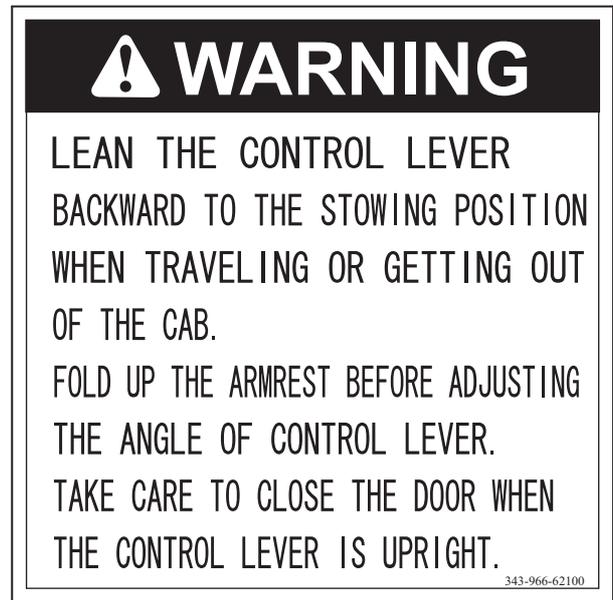
343-946-81030
343-946-81030-1

(12) Watch your head



343-957-55100
343-957-55100-0

(13) Stow control levers



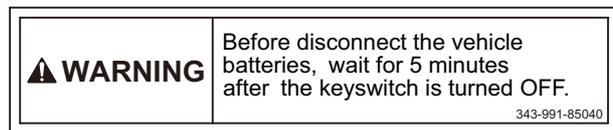
343-966-62100
343-966-62100-0

(14) Slewing lock



343-984-41220
343-984-41220-1

(15) Caution after stopping engine



343-991-85040
343-991-85040-0

(16) Cautions

<p>⚠ WARNING</p> <p>When the override key switch located outside the crane cab is activated, and the P.T.O switch located in the right side of the AUTOMATIC MOMENT LIMITER (AML-C) is in override, the symbol  lights up. All safety stop functions will be disabled with this light ON. Continuous safe operation is controlled only by the operator.</p>	<p>⚠ WARNING</p> <p>Make sure jib set status is selected on AUTOMATIC MOMENT LIMITER (AML-C) before erecting and stowing jib or changing jib offset angle. Don't extend the boom, or base jib could be damaged.</p>	<p>⚠ WARNING</p> <p>When starting the engine in an enclosed space, provide a means of positive ventilation. Connect a hose from the exhaust to vent the fumes outdoors. Open doors and windows to allow fresh air circulation. Install ventilator as required. Otherwise you can be injured in toxic poisoning.</p>	<p>⚠ WARNING</p> <p>After replacement or rotation of the tires, or after delivery of a new machine, be sure to retighten the wheel nuts to a specified torque after initial traveling. The initial settling of the wheel nuts can reduce the torque and loosen the nuts, causing the wheels to fall off or the wheel bolts to break. This is extremely dangerous. For details, read the instruction manuals.</p>
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345-216-77100

345-216-77100-0

(17) Use of genuine brake fluid

(18) Falling hazard

⚠ WARNING

NEVER USE SILICON-CONTAINING OR MINERAL-OIL-BASED BRAKE FLUID. NEVER MIX WITH OTHER BRAKE FLUID. USE TADANO GENUINE BRAKE FLUID. (DOT5.1)

370-022-11751

370-022-11751-1

⚠ WARNING

TO PREVENT BODILY INJURY DO NOT CLIMB.



370-022-13400-0

(19) Safety precaution

(20) Prohibition of traveling with shift lever in neutral

⚠ WARNING

- Before operating or performing maintenance on this machine, read and fully understand the operation manual and warning labels.
- Erroneous operation or maintenance may lead to serious injuries or fatal accidents.
- Always keep the operation manual near the driver's seat.
- Do not modify the machine; it may lead to a serious accident.

370-022-19270

370-022-19270-0

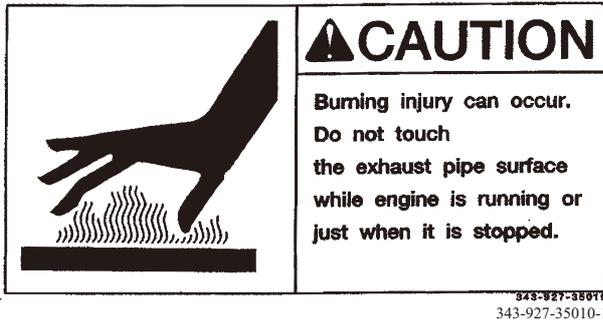
⚠ CAUTION

Do not keep shift lever in "N" position while traveling. Seizure of transmission or overspeeding etc. can lead to a serious accident.

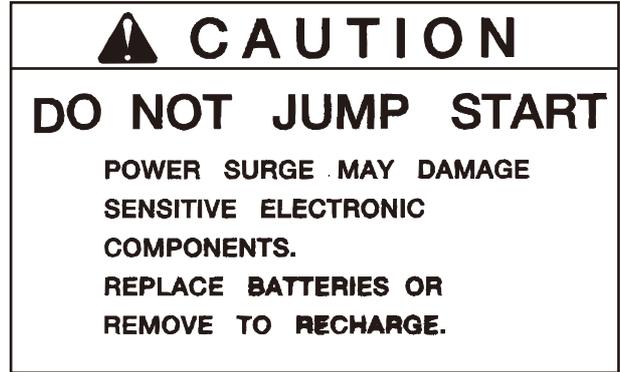
190-470-17000
190-470-17000-1

CTI-500XL-1_OM1-11E

(21) Burn hazard



(22) Prohibition of jump start



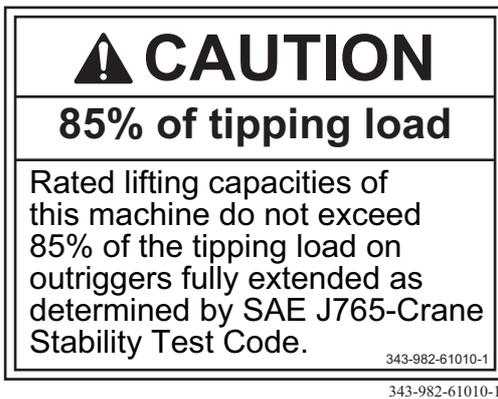
(23) No fire



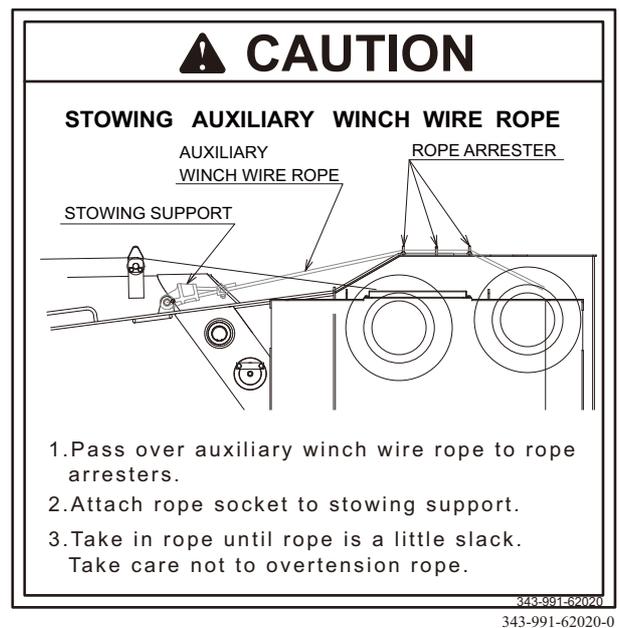
(24) Replacing filter element and hydraulic oil



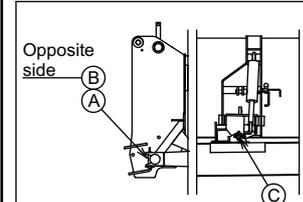
(25) Rated lifting capacity



(26) Caution for auxiliary winch rope stowing



(27) Caution for jib mounting

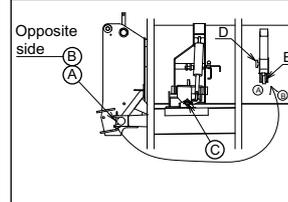


Caution for jib mounting

- ◆ Check that the jib set pins (A) and (B) are set, and then remove the jib connecting pin (C). Insert the jib set pins (A) and (B) from the lower side.

343-991-62030
343-991-62030-0

(28) Caution for jib stowing



Caution for jib stowing

- ◆ Check that the jib connecting pin (C) is set, and then remove the jib set pin (A) and (B). Set the pin (B) to the part E after siding up the jib, and set the pin (A) to the part D.

343-991-62040
343-991-62040-1

(29) Cautions for traveling

PRECAUTIONS FOR TRAVELING

- Before starting to travel, do the followings:
 - Position rear wheels straight, and check **STEER** lamp for **extinction**.
 - Return **BEAM/JACK** select switch and **EXT./RET.** switch on outrigger control panel to **N**.
 - Insert **slewing lock pin**.
- When starting engine, set gear shift lever to **N**.
- Max. speed in km/h:
 - Hi range: 1st...14(11mph) 2nd...21(16mph) 3rd...31(23mph) 4th...48(31mph) Reverse...21(15mph)
 - Lo range: 1st...6(4mph) 2nd...9(7mph) 3rd...14(11mph) Reverse...6(4mph)
- Never turn the **PARKING BRAKE** switch to **PARK** during traveling.
- Stop vehicle completely before changing steering mode and driving wheels.
- Stop vehicle completely before moving shift lever from forward to reverse, or vice versa.
- Do not stop engine during traveling. If engine stops during traveling, stop the vehicle immediately in safe location. If you continue traveling with engine stopped, following dangerous conditions occur.
 - Lack of air supply causes loss of braking force.
 - Power steering stops working, making steering extremely heavy.
- Restart engine after vehicle is stopped. If engine does not start after several attempts, repair is required.
- Do not leave shift lever in neutral during traveling.
- Tire should be inflated to correct air pressure.

Tires	Air pressure
505/95R25	800kPa (116psi)

343-991-67010
343-991-67010-1

(30) Emergency transmission operation

CAUTION

-THE MANUAL LOCK DEVICE OF SOLENOID VALVE IS FOR MOVING THE VEHICLE AT THE EMERGENCY. DO NOT TOUCH IT EXCEPT THE EMERGENCY.
-PRIOR TO USE THIS DEVICE, PLEASE CARRY OUT THE FOLLOWING ACTIONS TO SECURE THE SAFETY.
-TO STOP THE ENGINE
-TO FIX THE TIRES WITH THE RATCHET
-TO TURN ON THE HAZARD LAMP. OR TO PREVENT THE REAR-END COLLISION FROM THE FOLLOWING VEHICLES WITH THE USE OF EMERGENCY SIGNAL IMPLEMENTS
-THERE IS THE CASE THAT THE TRANSMISSION GETS VERY HOT. PLEASE BE CAREFUL NOT TO GET BURNED AT THE TIME OF OPERATION.
-IN CASE THAT THE SOLENOID VALVE IS MANUALLY LOCKED, IT STARTS TO MOVE SIMULTANEOUSLY WHEN THE ENGINE STARTS. THEREFORE, PLEASE PULL THE PARKING BRAKE AT FIRST WITHOUT FAIL AND THEN START THE ENGINE AFTER STEPPING ON THE BRAKE PEDAL. PLEASE STOP PROMPTLY THE ENGINE AFTER THE MOVE AND RETURN THE LOCK BOLT ON THE SOLENOID VALVE TO THE ORIGINAL POSITION.

警告

△ソレノイドバルブの手動ロック装置は、緊急時に車両を移動させるための装置です。緊急以外は触れないでください。
△本操作をする前に次の安全対策をしてください。
・エンジン停止する
・タイヤに車止めをする
・ハザードランプを点灯させる。または非常信号器具等を使用して後進車の追突防止をする
△トランスミッションは非常に熱くなっている場合があります。操作時はやけどに注意してください。
△ソレノイドバルブを手動でロックした場合は、エンジンが始動すると同時に動きだそうとします。必ずパーキングブレーキをかり、ブレーキペダルを踏み込んでからエンジンを始動してください。移動後は速やかにエンジンを停止し、ソレノイドバルブのロックボルトを元の位置に戻してください。

操作方法

- シフトレバーをNにして、パーキングブレーキをかけて、エンジンを停止してください。
- トランスミッションのソレノイドバルブ先端にはピンがあります。使用する側のソレノイドのピンを外してください。
- ソレノイド種の手動ロック装置のロックナットを緩め、六角ボルトを右に止まるまで回して下さい。ソレノイドバルブは油電状態と同じになり、クッチが入ります。ソレノイドバルブの組合せにより、前進又は後進します。
- フットブレーキペダルを踏み込んでからエンジンを始動してください。
- ゆっくりと発進してください。

363-507-20040
363-507-20040-0

(31) Bleeding hydraulic pump

CAUTION

- After replacing oil or hydraulic pump, do not fail to air-bleed the hydraulic pump. Otherwise the pump may get seized, causing a serious trouble.
- Confirm oil volume while the machine is in traveling style.

TADANO HYDRAULIC OIL LL

370-022-19500
370-022-19500-0

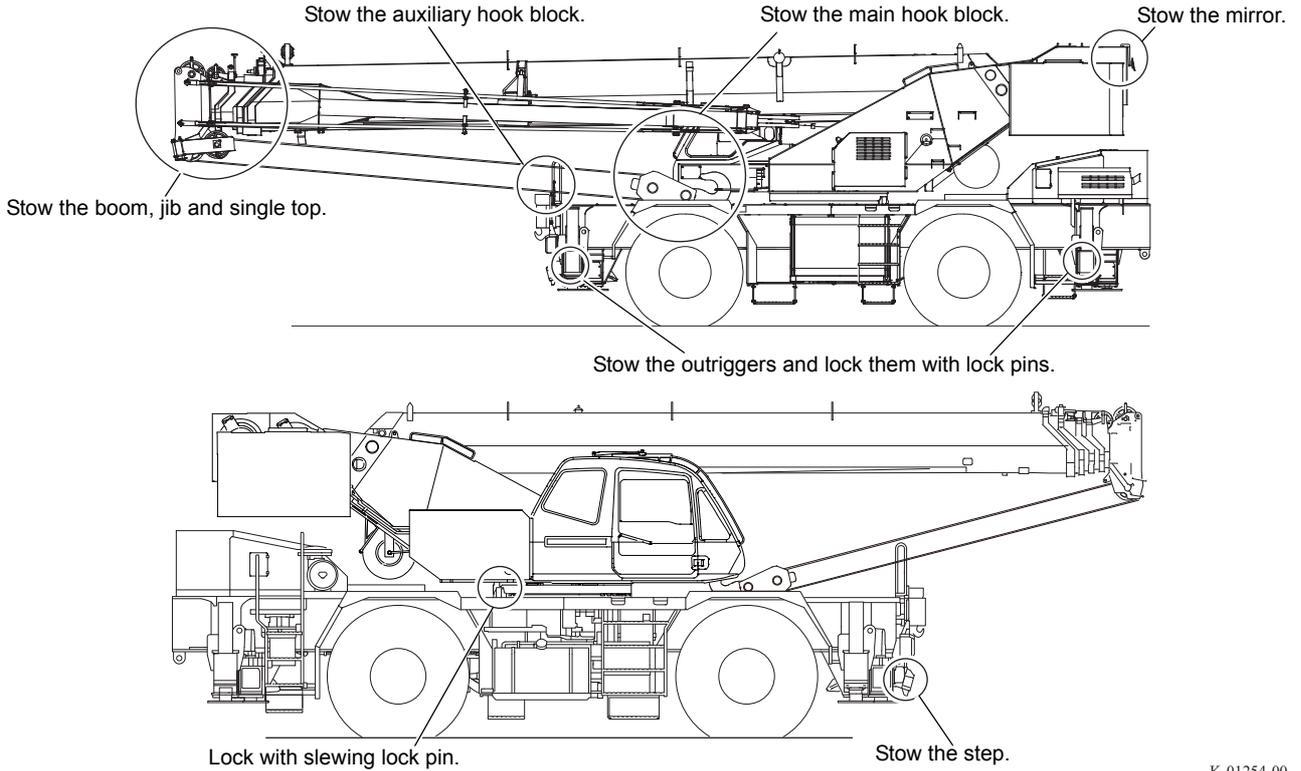
TRAVELING

Before Traveling

Check of Traveling Configuration

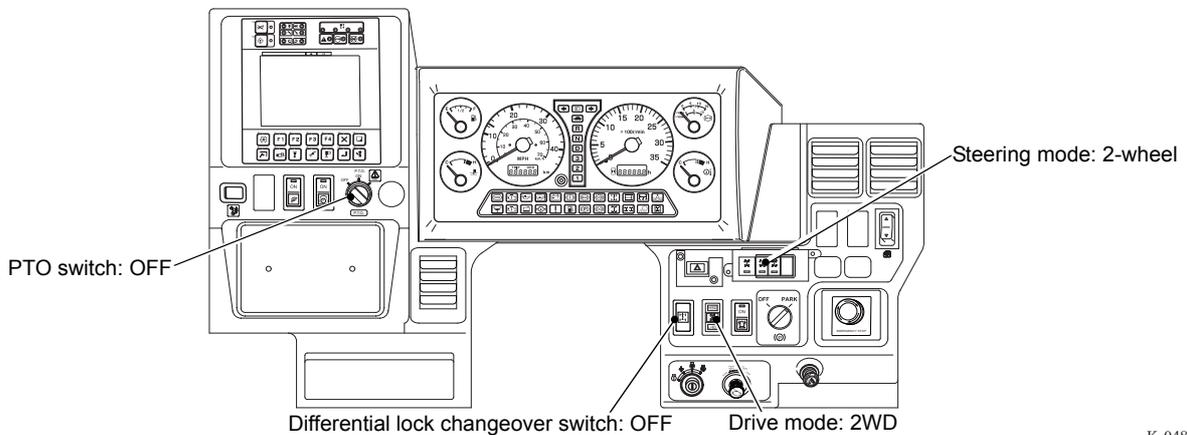
⚠ DANGER
Never travel in configurations other than the traveling configuration. Otherwise swaying hook blocks and booms or extended outrigger beams can cause a serious accident. Be sure to set the machine into the traveling configuration before traveling.

Before traveling on roads, set the machine into the correct traveling configuration.



K-01254-00

Status of Traveling Controls



K-04843-00

CTI-500XL-1_OM1-11E

Inspection before Traveling

Refer to "Inspection before Traveling" (page 363) and inspect the machine.

Entering Cab

The following points are described.

- Opening/Closing Door
- Opening/Closing Window
- Adjustment of Seat
- Adjustment of Steering Wheel
- Adjustment of Mirrors
- Stowing Control Levers
- Sunshade
- Fastening/Unfastening Seat Belt (Option)

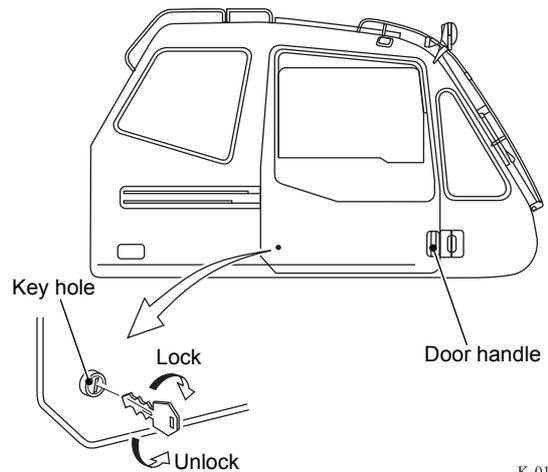
Opening/Closing Door

NOTICE

**A door that is not closed properly can open unexpectedly during traveling.
Close the door securely before traveling.**

Locking and Unlocking from Outside of Vehicle

Insert the key, and turn it clockwise to lock and counterclockwise to unlock the door.



K-01258-00

Opening/Closing the Door from Outside of Vehicle

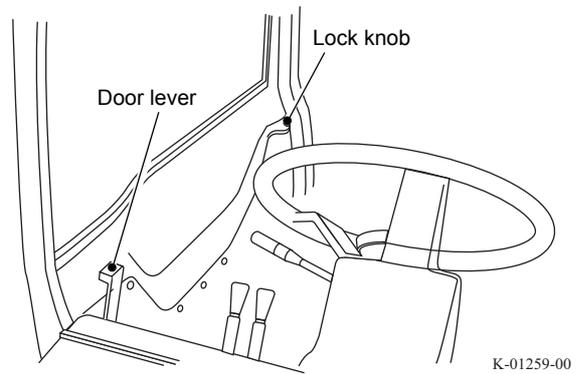
CAUTION

Do not hold the rear end of the door when closing it. Your fingers may be pinched. Hold the door handle to close the door.

Pull the door handle in the sliding direction of the door to open/close the door.

Opening/Closing the Door from Inside of Vehicle

1. Pull the door lever in the sliding direction of the door to open/close the door.
2. To lock the door, press in the lock knob.
To unlock the door, pull out the lock knob.



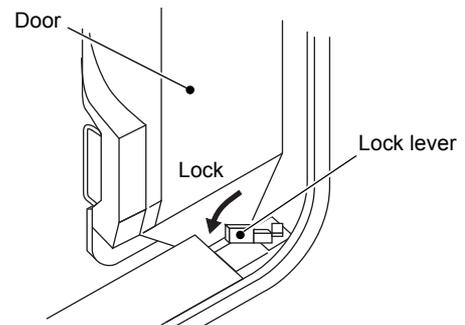
Locking Door When It Is Opened

⚠WARNING

Do not operate the crane with the door opened and unlocked. Otherwise, the door can close during slewing operation and your body can get caught.

Use this lock when you operate the crane with the door opened.

Fully open the door and tilt the lock lever forward to lock the door, and tilt the lever rearward to unlock the door.

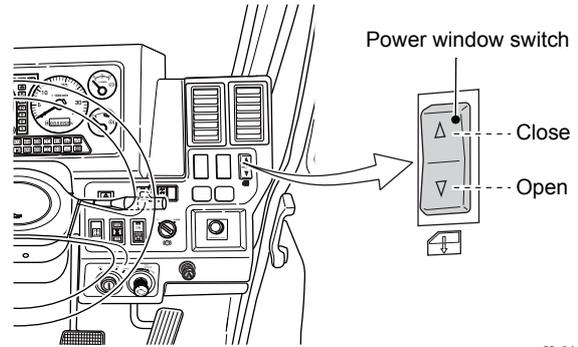


Opening/Closing Window

Opening/Closing Door Window

⚠WARNING
Do not close the window with your hand or head out of it. Otherwise, your hand or head can get caught, resulting in a serious injury.

NOTICE
When you leave the cab, be sure to close the windows.
If the control devices in the cab get wet, a failure can occur.

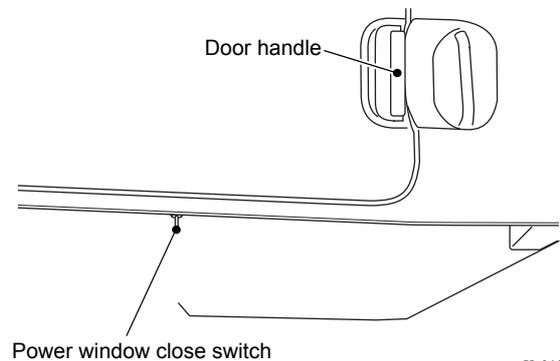


K-01261-00

Open/close the window with the power window switch.
While the starter switch is "ON" and the door is closed, you can open or close the window.

Power Window Close Switch

You can close the window from the outside when the door is closed.



K-01262-00

Adjustment of Seat

⚠WARNING

- Do not adjust the seat during traveling or crane operation. Doing so can interfere with driving and cause an accident.
- If the seat is not secured, the seat can move and cause an accident. After adjusting the seat position, move the seat back and forth slightly to make sure that the seat is secured.

Adjust the seat to a position where you can press down the pedals sufficiently and operate all the devices easily when you sit on the seat.

- **Tilt/Height Adjustment**

Pull the tilt/height adjustment lever and adjust the inclination and height of the seat.

- **Slide Adjustment**

Move the seat back and forth to adjust it while pulling the slide adjustment lever.

- **Reclining Adjustment**

Move the backrest back and forth to adjust it while pulling the reclining adjustment lever.

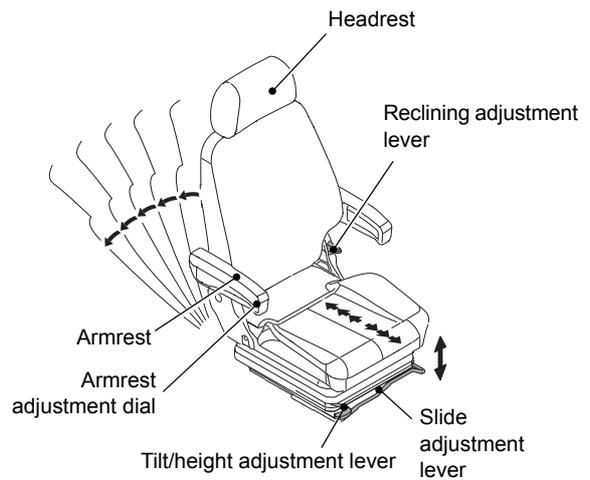
- **Armrest Adjustment**

Turn the armrest adjustment dial and adjust the angle of the armrest.

- **Headrest Height Adjustment**

Pull out the headrest and adjust its height.

Adjust the height so that the center of the headrest is at the height of your ears.

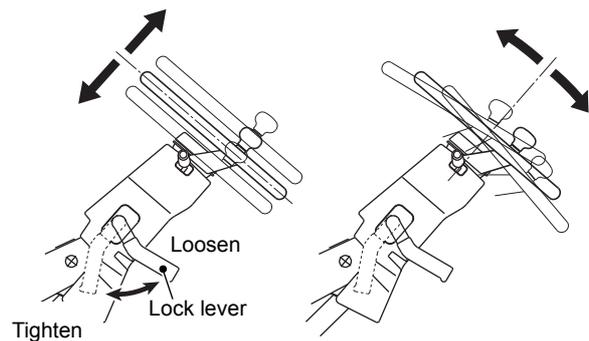


K-02599-00

Adjustment of Steering Wheel

⚠WARNING

- Do not adjust the steering wheel while traveling. Doing so can interfere with driving and cause an accident.
- If the steering wheel is not secured firmly, its position can change suddenly during traveling and cause an accident. Make sure that the steering wheel is secured firmly.



K-01263-00

You can adjust the height and angle of the steering wheel.

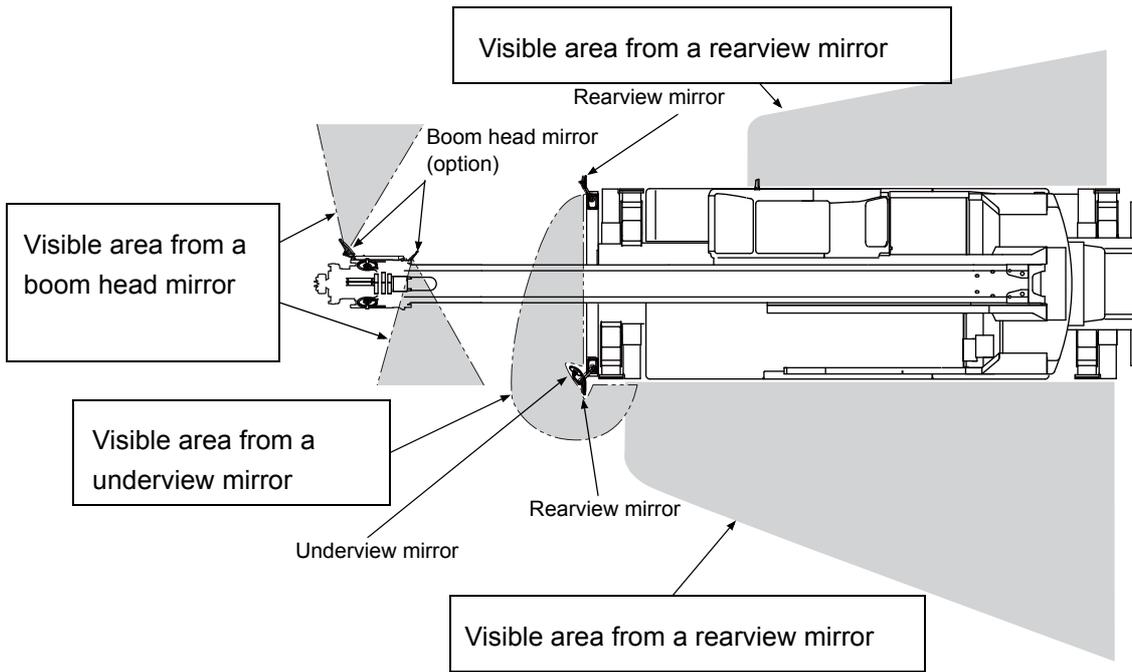
Raise the lock lever and adjust the steering wheel to the optimum position, and lower the lock lever to fix the steering wheel.

Adjustment of Mirrors

⚠WARNING

Adjust the mirrors so that you can have good views of the sides, rear, and front of the machine. If mirrors are not adjusted correctly, an accident can occur.

Adjust the mirrors so that you can have good views of the sides, rear, and front of the machine.



K-01256-00

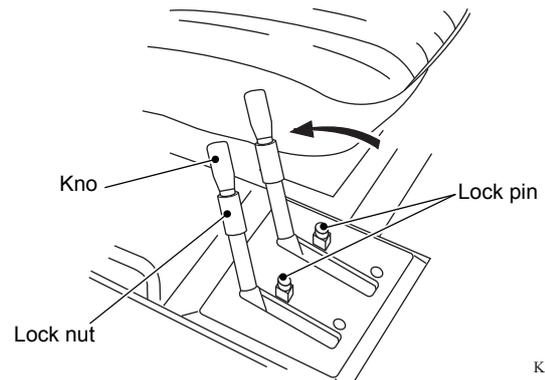
Stowing Control Levers

⚠ WARNING

If you touch the control lever when you enter or exit the cab, the crane can move, and it can cause an accident. After completing crane operation, lock all of the control levers and tilt them backward.

Stow all of the control levers before getting in and out the cab and traveling.

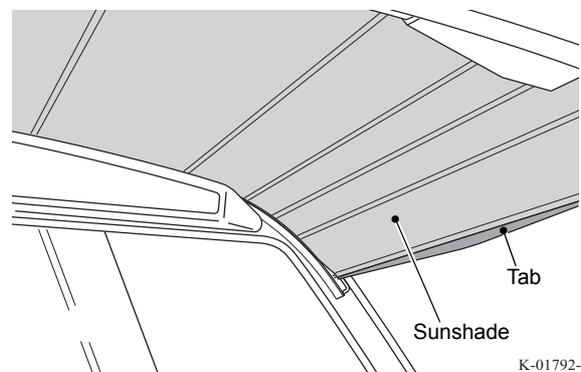
1. Insert each lock pin.
2. Turn each lock nut anticlockwise to loosen.
3. Push each knob and set each control lever to the minimum height.
4. Push down each lever and tilt them backward.



K-01587-00

Sunshade

Use the sunshade when the sun is glaring.
To use it, hold the tab at the end of the sunshade, and pull it forward. Then hook the ends to the catches.



K-01792-00

Fastening/Unfastening Seat Belt (Option)

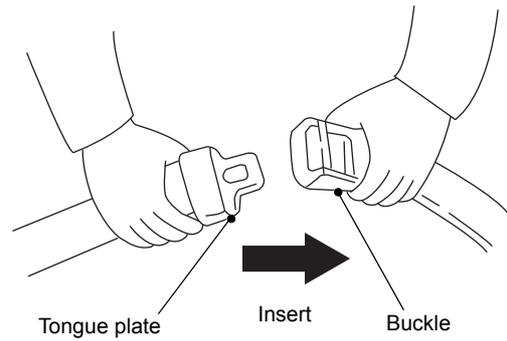
Before start of traveling, wear the seat belt for safety.

Fastening Seat Belt

⚠ WARNING

Wear the seat belt across your hipbones. If it is off position, strong pressure can be inflicted on your abdomen in a collision.

1. Make sure that the belt is not twisted, and then put the tongue plate into the buckle until a "click" sound is heard.

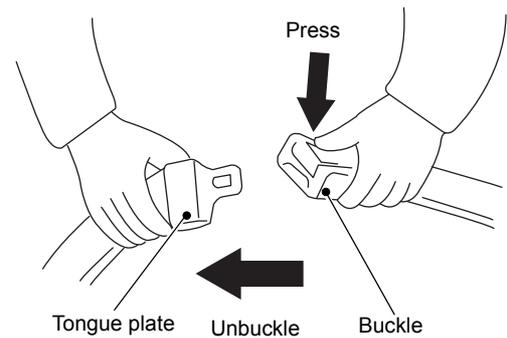


K-00101-00

2. Adjust the belt so that there is no slack.

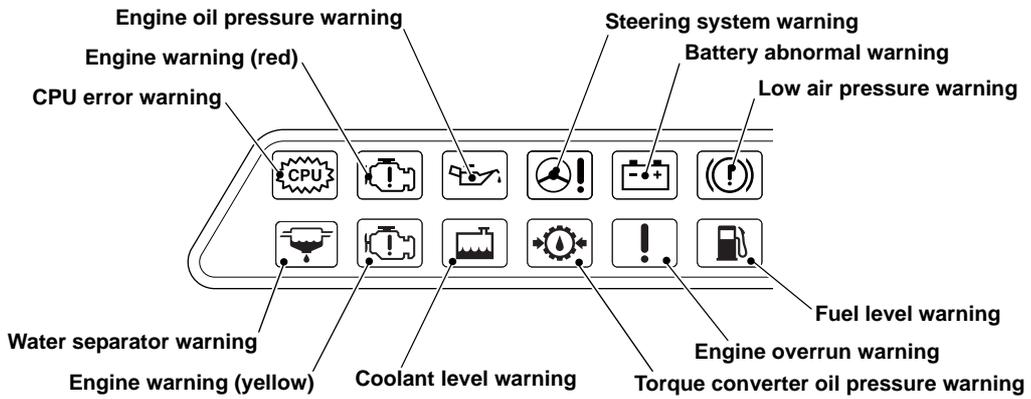
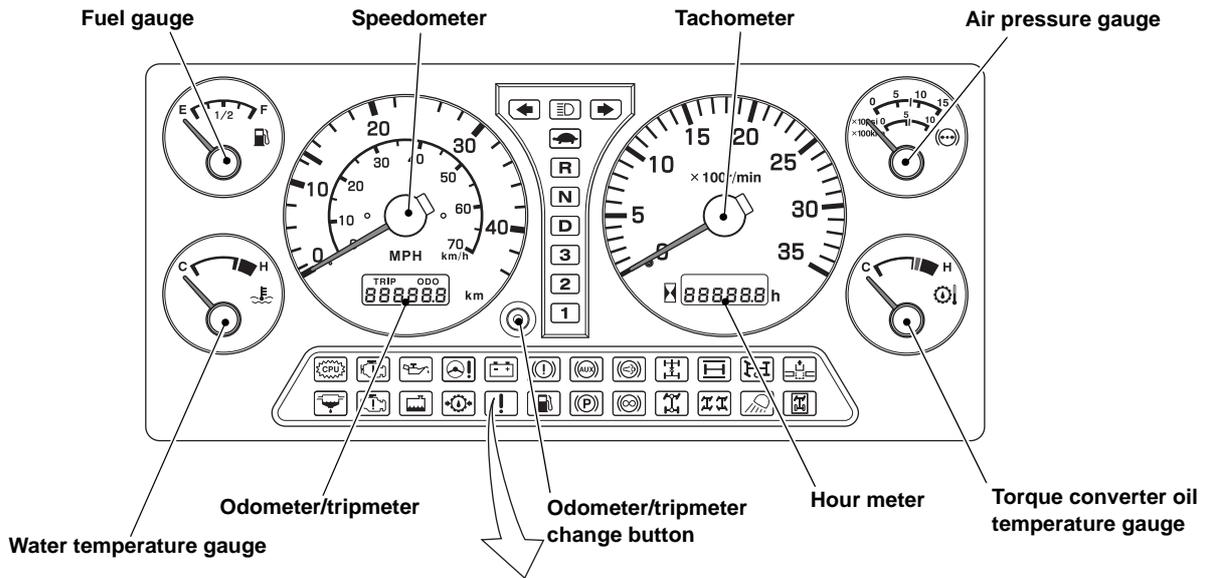
Unfastening Seat Belt

1. To unfasten the seat belt, press the button on the buckle.



K-00102-00

Reading Instrument Panel

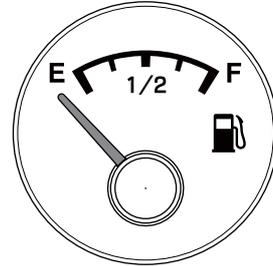


K-00103-00

Meters and gauges

- **Fuel Gauge**

Shows the remaining fuel amount.

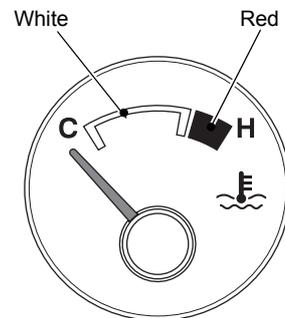


K-00104-00

- **Water Temperature Gauge**

NOTICE

When the pointer is in the red zone, the engine is overheated. Stop the crane at a safe area, and idle the engine to lower the coolant temperature. Refer to "When Overheating Occurs" (page 474) for details.



K-00105-00

Shows the temperature of engine coolant.

While the pointer is in the white zone, the coolant temperature is normal.

- **Speedometer**

Shows the traveling speed of the vehicle in km/h and mph.

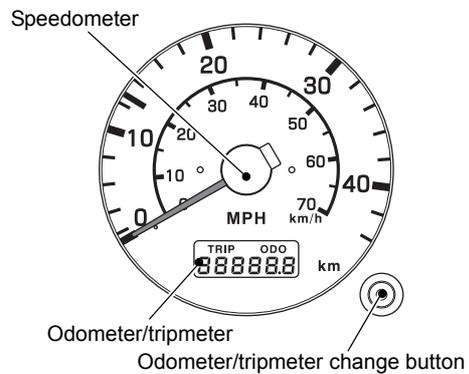
☞ When the vehicle speed is excessively high, the alarm buzzer sounds.

- **Odometer/Tripmeter (Total/sectional distance meter)**

Shows a total travel distance or sectional distance in km. When a sectional distance is shown, the right end digit reads 100 m.

- **Odometer/Tripmeter Change Button**

Changes the meter display between the odometer and tripmeter. In order to reset the tripmeter, push the button and hold it for one second or longer while the tripmeter display is selected.



K-00106-00

- **Tachometer**

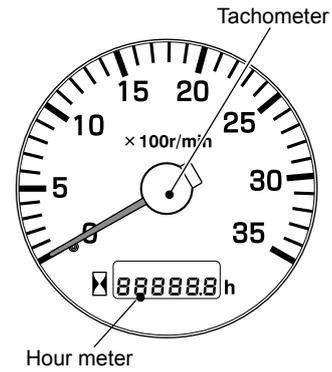
Shows engine speed per minute.

- **Hour Meter**

Shows engine operating hours.

If the machine malfunctions or an improper operation is performed, an "Error code" (page 71) is displayed.

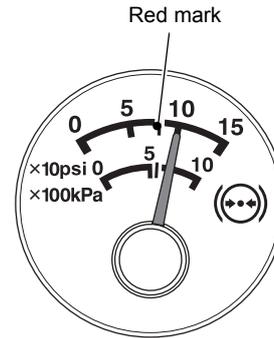
 The hour meter shows the total time of engine operation when the engine speed exceeds 500 min⁻¹.



K-00107-00

- **Air Pressure Gauge**

⚠ WARNING
<ul style="list-style-type: none"> • If the pointer of the air pressure gauge is at or below the red mark (lower limit of the specified pressure) during traveling, there is a risk of a serious accident. Park the vehicle in a safe place immediately. Do not travel in this state. • Do not travel if the air pressure gauge reading is below the red mark (lower specified limit). Otherwise, reduced braking force for the foot brake or parking brake drag can cause an accident. Start traveling only after the air pressure has reached the specified pressure.

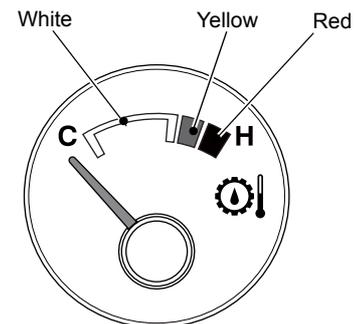


K-00108-00

Shows the air pressure in the air tank.

- **Torque Converter Oil Temperature Gauge**

NOTICE
<p>If the pointer is in the red zone, this means that the oil temperature is abnormally high. Stop at a safe area, and idle the engine to cool down the oil.</p>



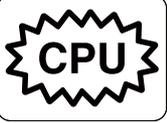
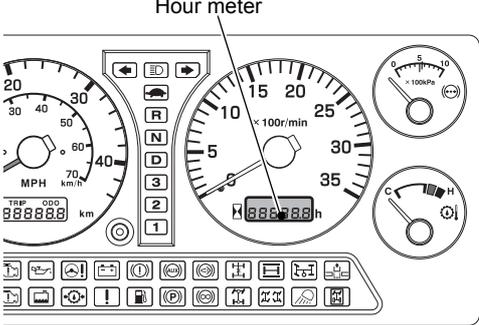
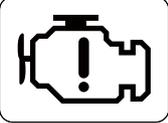
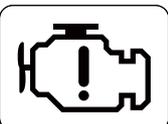
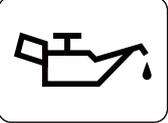
K-00109-00

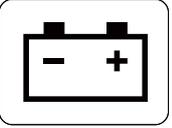
Indicates the temperature of the torque converter oil. While the pointer is in the white zone, the oil temperature is normal.

Warning lamp

When any warning lamp lights up, immediately follow remedy procedures.

After the procedures are implemented, the warning lamp will go out.

Warning lamp	Meaning of indications	Remedy
 <p>K-00111-00</p>	<p>A failure has occurred in the computer system. (At the same time, an error code appears on the hour meter.) For details of the error codes, refer to "Error Codes Shown on Hour Meter" (page 70).</p>  <p>K-00110-00</p>	<p>Stop the vehicle in a safe place, or stop crane operation and stow the crane. Turn the starter switch to "OFF" and wait for 30 seconds or more, and then restart the engine. If the indication does not go out, make a note of the error code, and contact Tadano Escorts India Private Ltd. or a dealer.</p>
<p>Engine warning (yellow)</p>  <p>K-00112-00</p>	<p>A failure has occurred in the engine control system. (At the same time, an error code appears on the hour meter.) For details of the error codes, refer to "Error Codes Shown on Hour Meter" (page 70).</p>	<p>Stop the vehicle at a safe place, or stop crane operation and stow the crane. Set the starter switch to "OFF" for 30 seconds or more, and then restart the engine, and let it idle for approx. 10 seconds. Set the starter switch to "OFF" for 30 seconds or more again, and restart the engine. If the indication does not go out, make a note of the error code, and contact Tadano Escorts India Private Ltd. or a dealer.</p>
<p>Engine warning (red)</p>  <p>K-00112-00</p>	<p>A critical failure has occurred in the engine control system. (At the same time, an error code appears on the hour meter.) For details of the error codes, refer to "Error Codes Shown on Hour Meter" (page 70).</p>	<p>Stop the vehicle in a safe place, or stop crane operation and stow the crane. Set the starter switch to "OFF" for 30 seconds or more, and then restart the engine. If the indication does not go out, make a note of the error code, and contact Tadano Escorts India Private Ltd. or a dealer.</p>
<p>Engine oil pressure warning</p>  <p>K-00113-00</p>	<p>Engine oil pressure is low. (Normally, this appears when the starter switch is turned to "ON", and disappears when the engine is started.)</p>	<p>Park the vehicle in a safe place, and stop the engine. Check the engine oil level. If this warning remains lit when the oil level is appropriate or after the oil is added to the specified level, contact Tadano Escorts India Private Ltd. or a dealer.</p>

Warning lamp	Meaning of indications	Remedy
Steering System warning  K-00114-00	The steering filter is clogged.	Replace the steering filter.
Battery abnormal warning  K-00115-00	A failure has occurred in the battery charging system. (Normally, this appears when the starter switch is turned to "ON", and disappears when the engine is started.)	Park the vehicle in a safe place, and stop the engine. Contact Tadano Escorts India Private Ltd. or a dealer.
Low air pressure warning  K-00116-00	Air pressure is low. (At the same time, the alarm buzzer sounds. When the parking brake switch is turned to "PARK", the buzzer stops.) (Keep running the engine while the vehicle is stopped. When the warning goes out, air pressure has returned to normal.)	Park the vehicle in a safe place. If this warning does not go out, contact Tadano Escorts India Private Ltd. or a dealer.
Coolant level warning  K-00117-00	The coolant level is low.	Top up the coolant in the coolant reservoir
Water separator warning  K-00118-00	The water in the engine fuel filter exceeds specified amount.	Drain water from the engine fuel filter and the water separator.
Torque converter oil pressure warning  K-00119-00	Oil pressure in torque converter is low. (At the same time, the alarm buzzer sounds. When the parking brake switch is turned to "PARK", the buzzer stops.) (Normally, this appears when the starter switch is turned to "ON", and disappears when the engine is started.)	Park the vehicle in a safe place, and stop the engine. Check the torque converter oil level. If this warning remains lit when the oil level is appropriate or after the oil is added to the specified level, contact Tadano Escorts India Private Ltd. or a dealer.

Warning lamp	Meaning of indications	Remedy
<p>Engine overrun warning</p>  <p>K-00120-00</p>	<p>Engine speed is beyond the permitted limit. (At the same time, the alarm buzzer sounds.)</p> <p>☞ Also lights up while the engine is being preheated during engine startup. (Engine preheating is automatically started depending on the engine temperature when the starter switch is turned to "ON".)</p>	<p>Decrease the vehicle speed to lower the engine speed</p>
<p>Fuel level warning</p>  <p>K-00121-00</p>	<p>Remaining fuel is approx. 50 L or less.</p>	<p>Refuel the machine.</p>

Error Codes Shown on Hour Meter

NOTICE

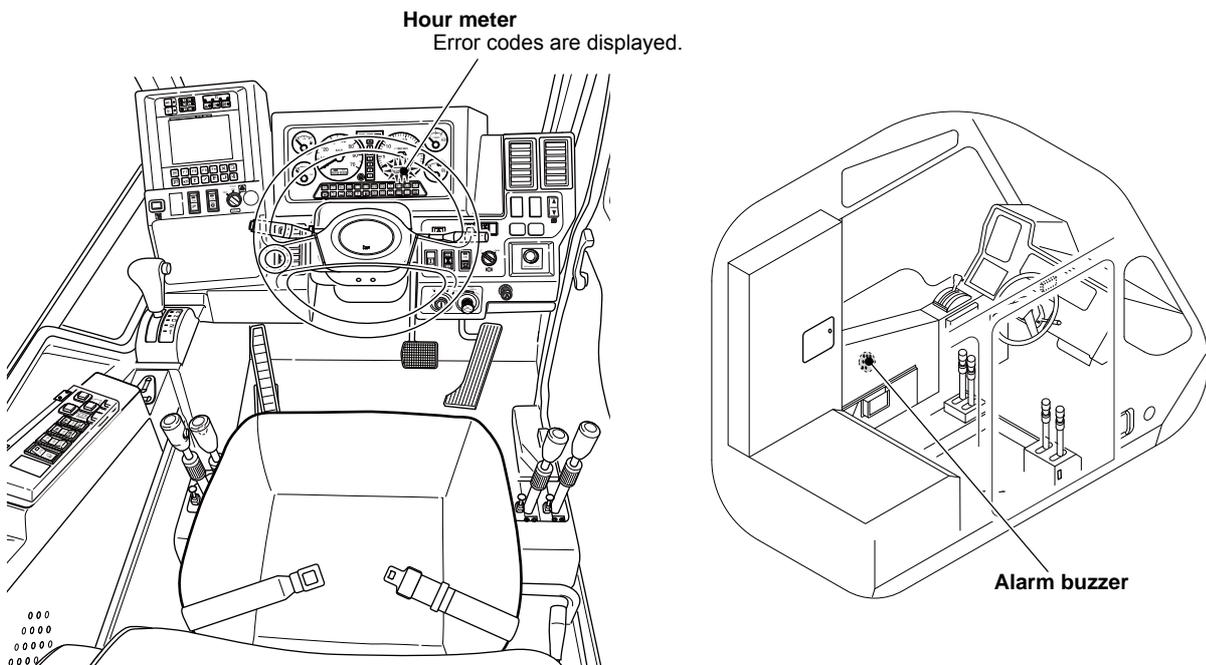
If an error code does not disappear even after you have registered the status that corresponds to the error code or performed recovery operation, or if you cannot start the engine, repair is necessary. Contact Tadano Escorts India Private Ltd. or a dealer.

When a failure occurs or an improper operation is performed during traveling, the buzzer sounds and an error code is shown to ensure safety and to prevent damage to the machine. Check the error code and perform recovery operation.

Error Codes and Types of Buzzer

The error codes appear on the hour meter.

There is 1 type of buzzer, and it sounds differently according to the cause of the alarm.



K-04844-00

Error code

 The following table contains some error codes that are not applicable to this model.

Error code	Lamp/buzzer	Meaning of indication	Remedy
F121	The retarder lamp flashes at high frequencies.	Input irregularity of the retarder ON/OFF switch	Contact Tadano Escorts India Private Ltd. or a dealer.
F201	The low air pressure warning lights up.	When air pressure is low	While the low air pressure warning is lit, traveling is prohibited. Keep running the engine while the vehicle is stopped. When the warning goes out, air pressure has returned to normal. Do not start traveling until air pressure has returned to the specified level and the low air pressure warning has gone out.
F202	The steering system warning lights up.	The steering filter is clogged.	Replace the steering filter.
F203	The engine overrun warning lights up. Alarm buzzer: intermittent (high tone)	When engine speed is beyond the permitted limit.	Decrease the vehicle speed to lower the engine speed.
F204	The engine oil pressure warning lights up.	When engine oil pressure is low.	Park the vehicle in a safe place, and stop the engine. Check the engine oil level. If this warning remains lit when the oil level is appropriate or after the oil is added to the specified level, contact Tadano Escorts India Private Ltd. or a dealer.
F205	The torque converter oil pressure warning lights up. Alarm buzzer: continuous (high tone)	Oil pressure in torque converter is low.	Park the vehicle in a safe place, and stop the engine. When the parking brake switch is turned to "PARK", the buzzer stops. Check the torque converter oil level. If this warning remains lit when the oil level is appropriate or after the oil is added to the specified level, contact Tadano Escorts India Private Ltd. or a dealer.
F206	The coolant level warning lights up.	The coolant level is low.	Replenish the coolant in the radiator and coolant reservoir.

Error code	Lamp/buzzer	Meaning of indication	Remedy
F207	The water separator warning lights up.	The water in the engine fuel filter exceeds specified amount.	Drain water from the engine fuel filter and the water separator.
F208	The water separator warning lights up.	The engine fuel filter is clogged.	Replace the engine fuel filter.
F209	The battery abnormal warning lights up.	A failure has occurred in the battery charging system.	Park the vehicle in a safe place, and stop the engine. Contact Tadano Escorts India Private Ltd. or a dealer.
F210	None	The engine oil filter is clogged.	Replace the engine oil filter.
F211	The oil upper level warning lights up.	Fuel has mixed into engine oil and the engine oil level has exceeded the specified level.	Check oil level using a dipstick. If the oil level exceeds the specified level, replace the engine oil.
F212	The steering system warning lights up.	The return filter is clogged.	Replace the return filter.
F300	Alarm buzzer: continuous (high tone)	The steering mode selector switch is turned to a mode other than "2-wheel" while the rear steering lock pin is engaged.	To use 2-wheel steering, select 2-wheel by the steering mode selector switch. When using special steering, remove the lock pin beforehand.
F213	Alarm buzzer: intermittent (high tone)	The front left outrigger beam extends while no outrigger operation is attempted.	Park the vehicle in a safe place, stow the outrigger again, and insert the lock pin. Before crane operation, extend the outriggers again and insert the lock pins.
F214		The front left outrigger beam retracted despite outriggers not being operated.	
F215		The front right outrigger beam extended despite outriggers not being operated.	
F216		The front right outrigger beam retracted despite outriggers not being operated.	
F217		The rear left outrigger beam extended despite outriggers not being operated.	
F218		The rear left outrigger beam retracted despite outriggers not being operated.	
F219		The rear right outrigger beam extended despite outriggers not being operated.	
F220		The rear right outrigger beam retracted despite outriggers not being operated.	

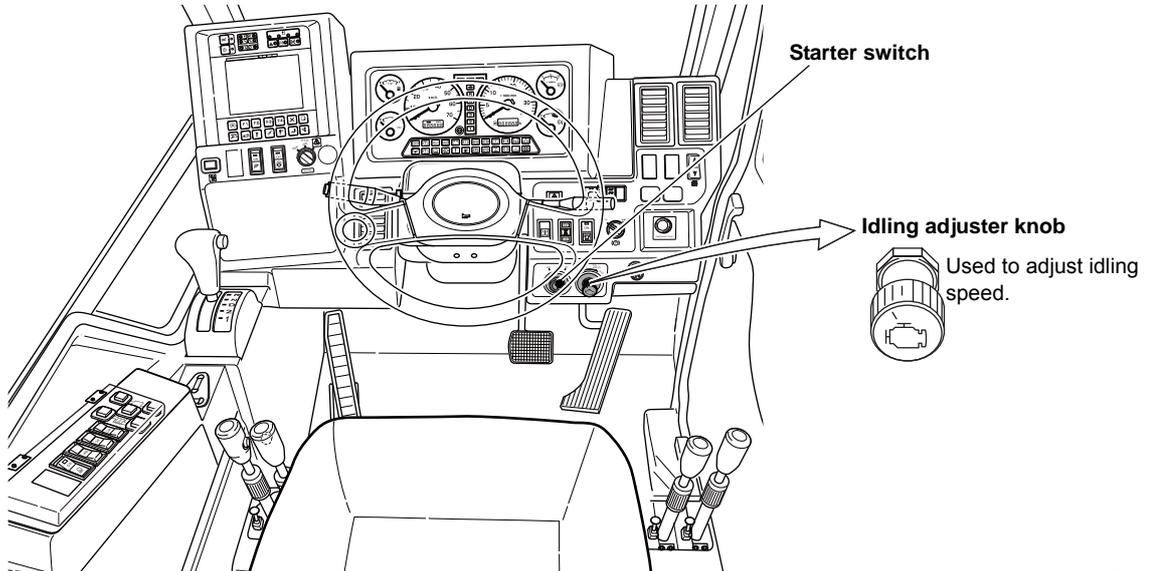
Error code	Lamp/buzzer	Meaning of indication	Remedy
F221	The steering system warning lights up.	The pressure of the steering pump is low.	Park the vehicle in a safe place, and stop the engine. Contact Tadano Escorts India Private Ltd. or a dealer.
F222	None	The wiring of the radiator water level sensor is broken.	Contact Tadano Escorts India Private Ltd. or a dealer.
F301	The outrigger switch out-of neutral icon appears on the AML. Alarm buzzer: intermittent (high tone)	Jack/beam selector and extend/retract selector in cab are set to positions other than neutral, and outriggers are not being operated.	<ul style="list-style-type: none"> Set the jack/beam selector switch and the extend/retract selector switch in the cab to the neutral positions. Turn "OFF" the power for the outrigger control boxes outside the cab.
F302	Alarm buzzer: intermittent (high tone)	The shift lever is set to a position other than "N" with the parking brake applied.	Move the shift lever to "N", or release the parking brake.
	The low air pressure warning lights up. Alarm buzzer: continuous (high tone)	Air pressure is low with the parking brake released.	Park the vehicle in a safe place. When the parking brake switch is turned to "PARK", the buzzer stops. At the same time, the error code "F201" can appear on the hour meter. Keep running the engine with the vehicle stopped. Start traveling only after the air pressure has risen to the specified value and the low air pressure warning has gone out.
	Alarm buzzer: intermittent (high tone)	<ul style="list-style-type: none"> Parking brake switch is set to "PARK" or "AUX" but the parking brake is not applied. The parking brake is not released when the parking brake switch is in the "OFF" position. 	Contact Tadano Escorts India Private Ltd. or a dealer.
F303	The auxiliary brake device warning flashes. Alarm buzzer: continuous (high tone)	1 hour has elapsed with the parking brake switch in the "AUX" position.	Set the parking brake switch to a position other than "AUX".
F304	Alarm buzzer: continuous (high tone)	The starter switch is turned to "OFF" with the parking brake switch in the "OFF" position.	Set the parking brake switch to "PARK".
F305	Alarm buzzer: continuous (high tone)	Traveling has started while the switching of the drive mode is not completed.	Park the machine in a safe place and complete the switching of the drive mode.

Error code	Lamp/buzzer	Meaning of indication	Remedy
F306	Alarm buzzer: intermittent (high tone)	The temperature of the torque converter oil is high.	Park the vehicle in a safe place and keep the engine speed at idling. Start the vehicle after the oil temperature has settled.
F307	Alarm buzzer: intermittent (high tone)	The traveling speed exceeds the maximum speed specified for the configuration with the counterweight removed.	Reduce the traveling speed.
F309	The off-straight-ahead wheel indicator lights up. Alarm buzzer: continuous (high tone)	With the 2-wheel steering mode selected, the rear wheels are out of the straight-ahead position.	Park the vehicle in a safe place, and adjust the rear wheels into the straight-ahead position.

Starting and Stopping Engine

NOTICE

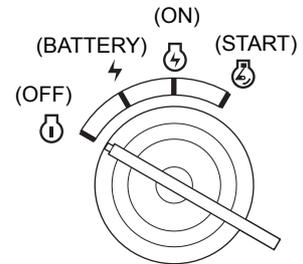
If accessories are used for a long time while the engine is stopped and the starter switch is left at "ON" or "BATTERY", the battery will be drained.



K-04845-00

Starter switch

Key position	Function/features
OFF	To stop the engine, turn the key to this position. The key can be inserted and removed in this position.
BATTERY	Position where accessories can be used without starting the engine.
ON	While the engine runs, the key is in this position.
START	To start the engine, turn the key to this position. When the engine is started, release the key. The key returns to "ON" automatically.



K-02543-00

Idling Adjuster Knob

"AUTO": The knob is pushed in.

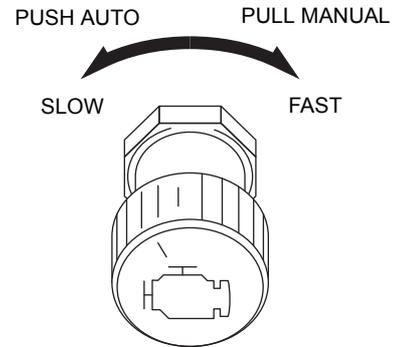
Normally, leave the knob at this position.

The idling speed slightly increases immediately after starting the engine, and once the engine is warmed up, the speed automatically decreases to an appropriate speed.

"MANUAL": The knob is pulled-out.

You can manually adjust the idling speed.

- Turn in "FAST" direction
Idling speed increases.
- Turn in "SLOW" direction
Idling speed decreases.



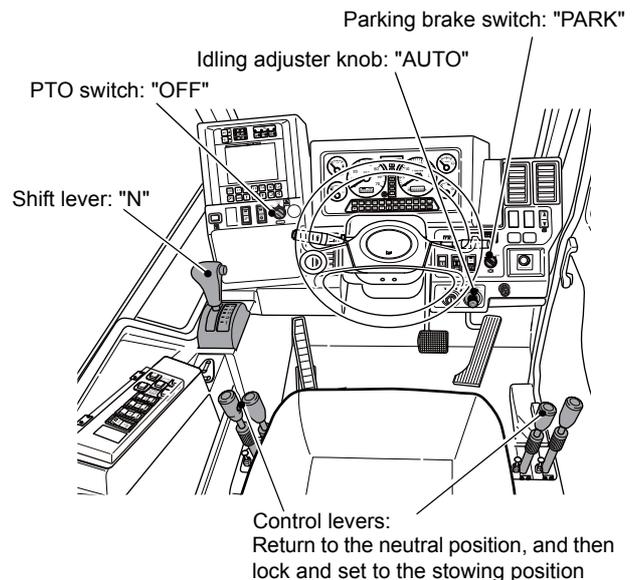
K-00125-00

How to Start Engine

⚠ WARNING

- Do not start the engine from outside the vehicle (through the window, etc.). This can cause an accident. Sit in the seat in the cab to start the engine.
- Do not leave the engine running for an extended time in an area with poor airflow. The unventilated exhaust gas can lead to carbon monoxide poisoning.

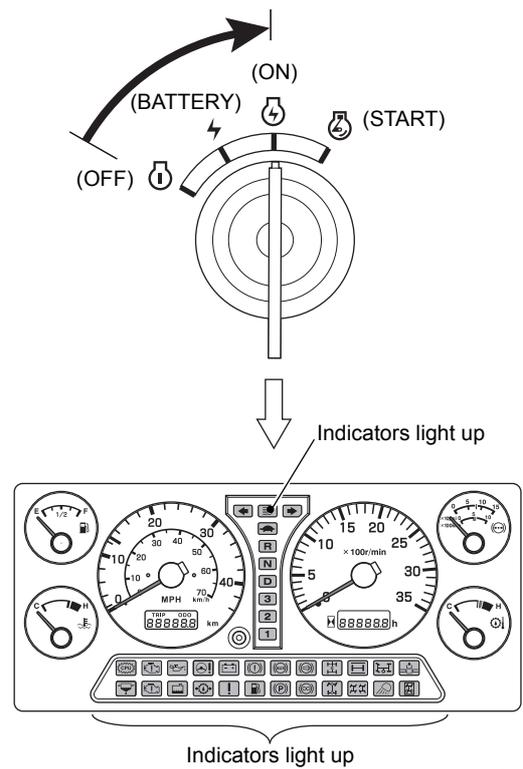
1. Before starting the engine, set the levers and switches in the positions as shown below.



K-04846-00

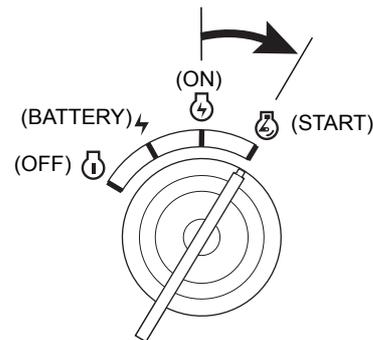
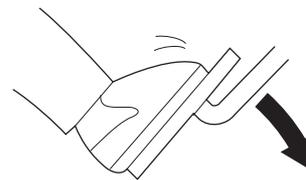
- Turn the starter switch to "ON", and make sure that the indicators on the instrument panel light up for 1 to 2 seconds.

☞ When the engine temperature is low, engine preheating is automatically started and the engine overrun warning stays lit. When the preheating is completed, it will go out.



K-01268-00

- Press and hold the brake pedal.
- Turn the starter switch to "START".
When the engine is started, immediately release the key.

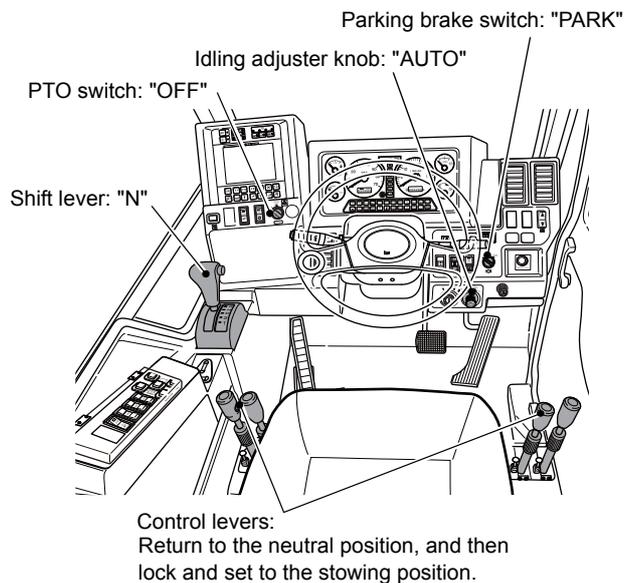


K-01269-00

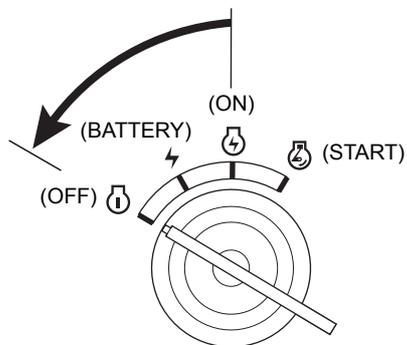
NOTICE
<ul style="list-style-type: none"> • Do not keep running the starter motor for 15 seconds or more. Otherwise, the motor may burn out. If the engine does not start, return the starter switch to "OFF" and wait for 30 seconds or more, and then restart the engine. • Make sure that there are no irregularities with exhaust gas color, sounds or vibrations after the engine is started. If there is any irregularity, contact Tadano Escorts India Private Ltd. or a dealer.

How to Stop Engine

1. Set the levers and switches in the positions shown in the illustration.

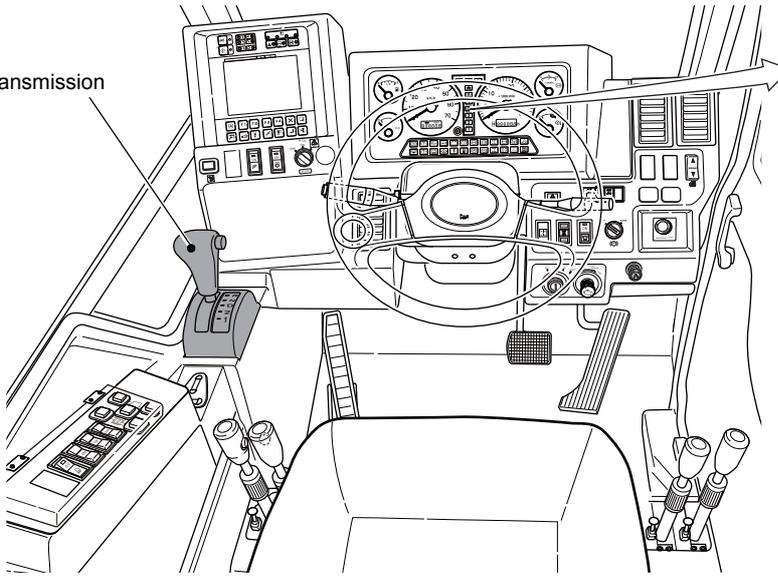


2. Run the engine at idle for approximately 3 minutes to cool the engine.
3. Turn the starter switch to "OFF".
4. After the engine stops, pull out the key from the starter switch.



Transmission Operation

Shift lever
Changes the transmission gear positions.



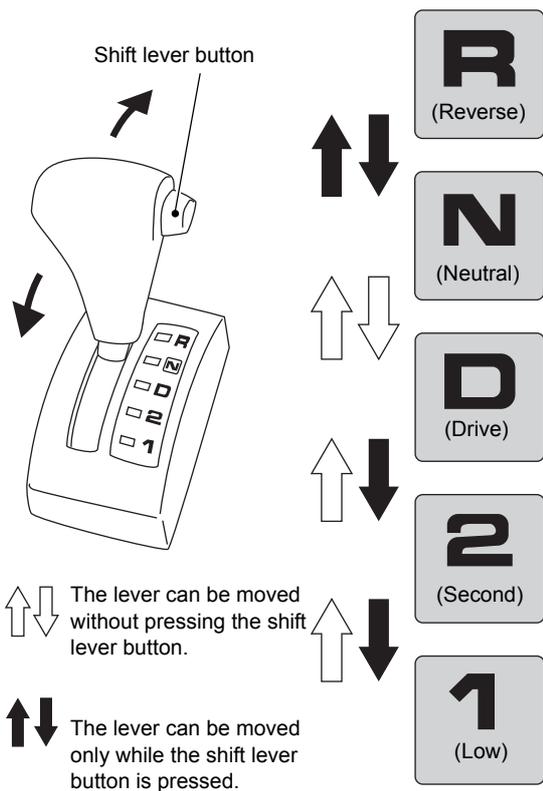
- R** Gear position indicator
- N**
- D** Indicates the position of the transmission gear.
- 3**
- 2**
- 1**

K-04847-00

Positions and Functions of Shift Lever

⚠WARNING

↑↓ means "perform the operation without pushing the shift lever button". If the shift lever button is always pushed when operating the lever, the lever can be accidentally changed to "R", resulting in an accident.



Reverse

The gear is fixed to reverse.

The engine drive power is not transmitted.

This is a position for engine start, parking, and crane operation.

Normal traveling

The gear is automatically changed from the first through fourth gear depending on the vehicle speed.

The gear is fixed to the third gear in the driving mode of L/4D (4WD low speed traveling).

2nd gear traveling

The gear is fixed to 2nd gear.

Use this when ascending a long slope, or using engine braking to descend a slope, etc.

1st gear traveling

The gear is fixed to 1st gear.

Use this when ascending a steep slope, or requiring a strong engine brake force, etc.

K-01272-00

Shift Lever Operation

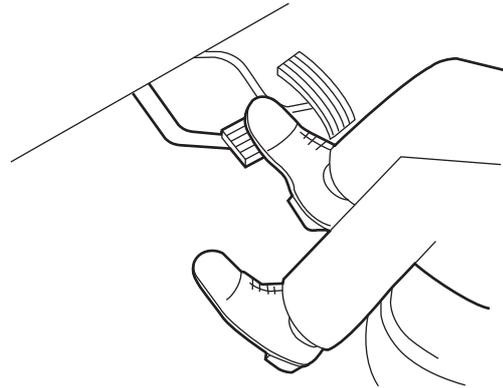
Shift Lever Operation at Starting

⚠ WARNING

- Do not operate the shift lever while depressing the accelerator pedal. The vehicle can start suddenly and cause an accident.
- When the shift lever is shifted to "D", "1", "2", or "R", the vehicle can start moving due to creeping, and it can cause an accident. Before you operate the shift lever, press the brake pedal so that the vehicle does not move.

☞ If you do not release the parking brake before operating the shift lever, the parking brake alarm buzzer will sound and error code "F302" will be displayed on the hour meter.

1. Press and hold the brake pedal.



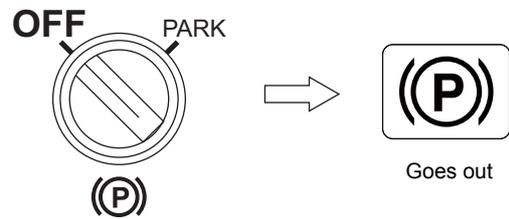
K-00132-00

2. Set the parking brake switch to "OFF".

- The brake warning goes out.

3. Operate the shift lever.

4. After checking safety around the vehicle, release the brake pedal and slowly press the accelerator pedal to start.



K-00133-00

Gear Shift Position Indicator

While the gear shift position is "D" (automatic drive), the gear shift position "D" and the current gear shift position are shown by the illumination of the lamps.

Gear position	First gear	Second gear	Third gear	Fourth gear
Lighting state of indicator	□	□	□	□
	R	R	R	R
	N	N	N	N
	D	D	D	D
	3	3	3	3
	2	2	2	2
	1	1	1	1
	K-00134-00	K-00135-00	K-00136-00	K-00137-00

Shift Lever Operation during Traveling (Manual Operation)

▲WARNING

Do not drive the machine while the shift lever is in "N".

Otherwise, a serious accident can result due to seizure of the transmission, over-speed, etc.

NOTICE

- If the vehicle speed exceeds the specified speed range of the currently selected gear shift position, the engine can overrun, resulting in engine damage. When the speed is likely to exceed the speed range of the current gear shift position on a steep downhill, pump the foot brake intermittently to decrease the vehicle speed.
- If the shift lever is moved from forward ranges to reverse or vice versa while the vehicle is moving, the transmission can be damaged. Operate the shift lever after the vehicle is completely stopped.

When traveling on a slope, use the gear shift positions "1", "2", and "D" appropriately depending on the gradient. Before upshifting, release the accelerator pedal.

Before downshifting, decrease the vehicle speed to the speed range of the lower gear shift position.

☞ If the shift lever is moved to "2", or "1" while the vehicle speed is not reduced, the gear will not be shifted down until the speed reaches the specified speed range of the gear shift position.

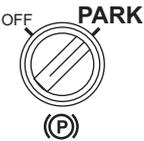
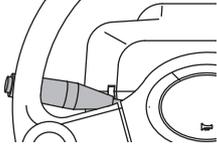
Gear shift position	2WD, H/4D		L/4D	
	Gear shift position	Vehicle speed range	Gear shift position	Vehicle speed range
"1"	Fixed to 1st	0 to 14 km/h	Fixed to 1st	0 to 6 km/h
"2"	Fixed to 2nd	0 to 21 km/h	Fixed to 2nd	0 to 9 km/h
D	1 to 4th	0 to 48 km/h	Fixed to 3rd	0 to 14 km/h
R	Fixed to 2nd	0 to 21 km/h	Fixed to 1st	0 to 6 km/h

(2WD, H/4D and L/4D indicate drive mode.)

Brake Operation

There are 3 types of brakes as shown below.

Use an appropriate drive mode according to the driving applications.

Type of brake		Operating device	State of indicator	Application
Main brake	Foot brake	 K-00138-00	---	Used to decelerate or stop the vehicle.
Parking brake	Parking brake	 K-00139-00	 Lights up K-00140-00	Used to stop or park the vehicle.
Auxiliary brake	Exhaust brake	 K-00141-00	 Lights up K-00142-00	Use this brake as an auxiliary brake to decelerate the vehicle. This increases the effect of engine brake when traveling on a downward slope, etc.

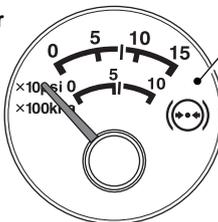
(1) Low air pressure warning



(2) Exhaust brake indicator



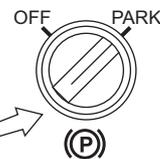
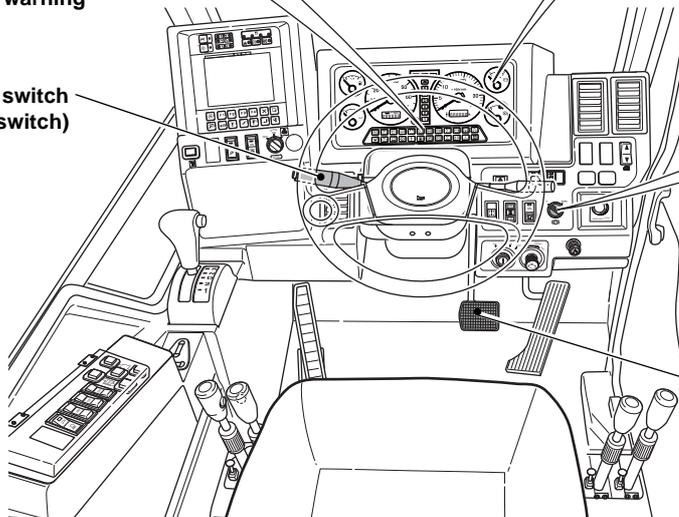
(4) Air pressure gauge



(3) Brake warning



(6) Exhaust brake switch (Combination switch)



(5) Parking brake switch

Brake pedal

K-04848-00

(1) Low Air Pressure Warning

Lights up when air pressure is low. Goes out when air pressure has risen.

(2) Exhaust brake indicator

Lights up when the exhaust brake is activated.
Goes out when the exhaust brake is canceled.

(3) Brake Warning

Lights up when the parking brake is applied.
This also lights up when the brake fluid level is low.

(4) Air Pressure Gauge

Shows the air pressure in the air tank.

(5) Parking Brake Switch

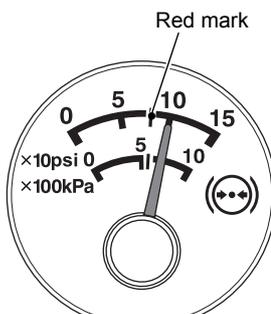
When the switch is set to "PARK", the parking brake is applied.
When this switch is set to "OFF", the parking brake is released.

(6) Exhaust brake switch (combination switch)

When the lever is operated downward, the exhaust brake is activated.

⚠ WARNING

- **Do not travel if the air pressure gauge reading is below the red mark (lower specified limit) or the low air pressure warning is lit. Otherwise, reduced braking force for the foot brake or parking brake drag can cause an accident.**
Do not start traveling until air pressure has returned to the specified level and the low air pressure warning has gone out.
- **Do not travel with the parking brake applied. Otherwise, a fire or failure can be caused by the overheated parking brake.**
- **Excessive use of the foot brake can overheat the brake system and degrades braking performance, resulting in an accident.**
When traveling on a long downward slope, downshift and use the engine brake together with the exhaust brake.
- **When the brake warning or the low air pressure warning lights up, or the alarm buzzer sounds during traveling, stop the vehicle at a safe area immediately. Do not travel in this state.**



K-00144-00

NOTICE

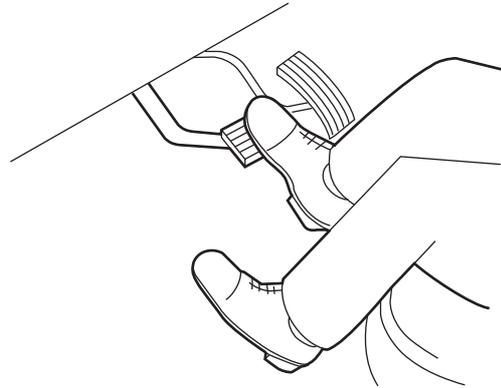
When you temporarily stop for a traffic signal after traveling on a long downward slope, etc., apply the parking brake and release the brake pedal. This procedure prevents vapor lock and decreases overheating of the brake device.
Remember to release the foot brake as often as possible to dissipate heat.

☞ If you turn the parking brake switch to "OFF" while the air pressure is below the specified pressure, the low air pressure alarm sounds. When the switch is turned to "PARK", the buzzer stops.

Foot Brake Operation

1. Press the brake pedal with your right foot.

 Press the foot brake intermittently to decrease the vehicle speed efficiently in a short time.



K-00145-00

Parking Brake Operation

⚠ WARNING

The parking brake needs approx. one second after operating until it engages. Do not release the brake pedal until the parking brake engages. The vehicle can move and cause an accident.

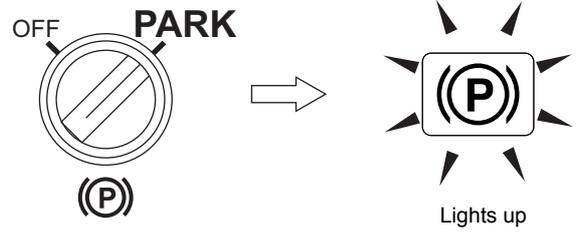
NOTICE

- Do not apply the parking brake unless the vehicle is completely stopped. Otherwise, the parking brake can be damaged.
- When you must park on a slope, apply the parking brake and place wheel chocks on the tires.

-  If the parking brake switch is turned to "PARK" while the shift lever is out of the "N" position, an alarm buzzer sounds to warn you not to leave the parking brake applied. When the switch is turned to "OFF", the buzzer stops.
-  If the starter switch is turned to OFF with the parking brake switch in the "OFF" position, the alarm buzzer will sound to remind you to apply the parking brake, and the error code "F304" is indicated on the hour meter display.

1. Stop the vehicle.
2. Move the shift lever to "N".

3. Set the parking brake switch to "PARK".
 - The parking brake engages and the brake warning lights up.
4. Slowly release the brake pedal while checking the engaging conditions of the parking brake.

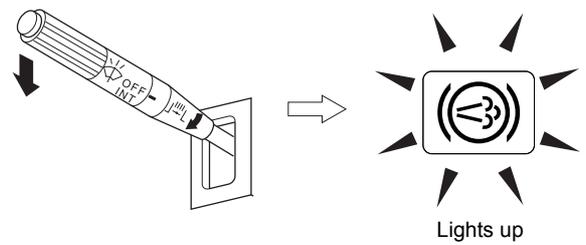


K-00146-00

Operating Exhaust Brake

1. Move the lever of the exhaust brake switch downward.
 - The exhaust brake indicator lights up.

 The exhaust brake does not activate when the shift lever is in "N", or while the vehicle is stopped.



K-00147-00

2. Release the accelerator pedal.
 - The exhaust brake will activate.

Steering Operation

⚠ WARNING

The vehicle moves in an unusual manner in special steering. Do not travel on roads in special steering mode.

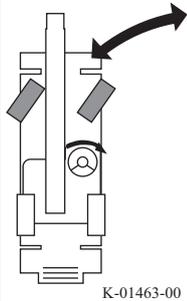
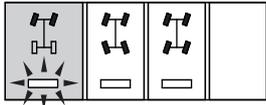
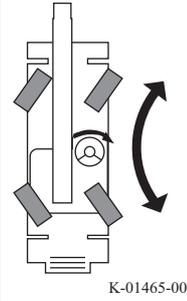
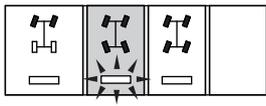
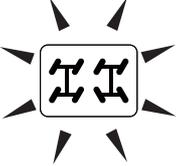
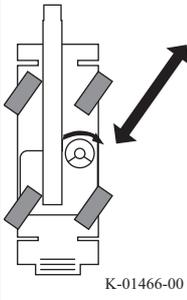
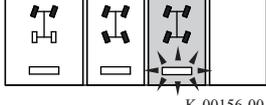
Travel in the 2-wheel steering mode while on roads.

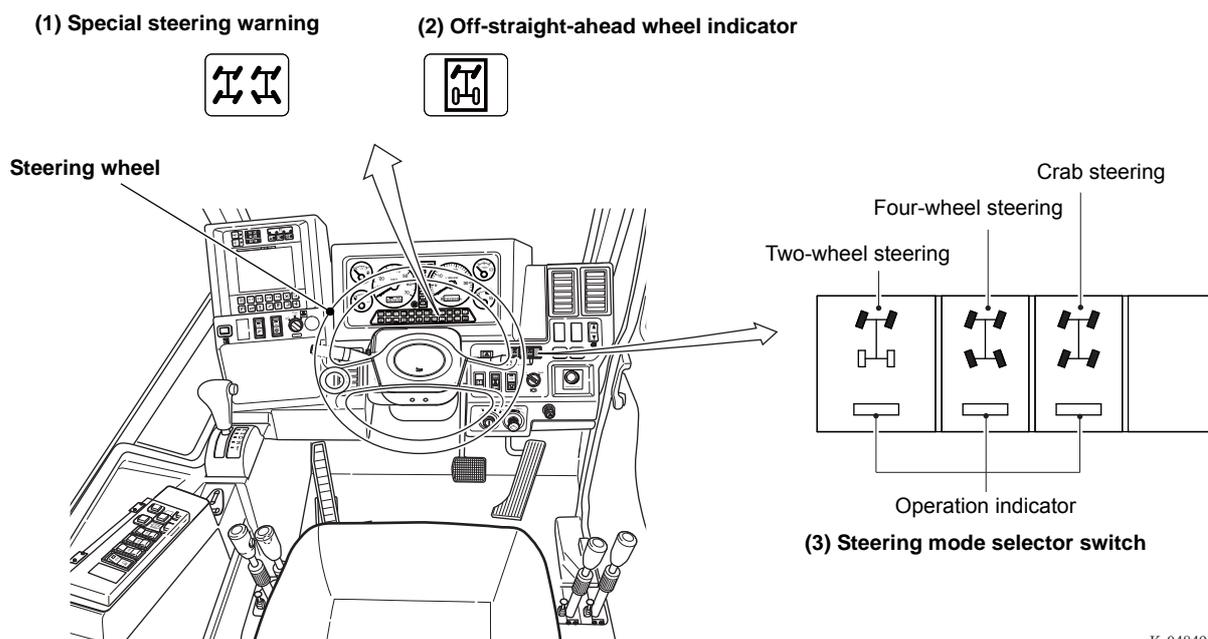
Use a special steering only for driving in a work site, and travel at a speed of 15 km/h or less.

Use the 2-wheel steering mode while traveling on roads.

Special steering (4-wheel, crab) is useful when moving in small work sites.

Use an appropriate drive mode according to the driving applications.

Application	Steering mode	Orientation of steered wheels	Steering mode selector switch to be selected	Status of lamp and switch	Features
Traveling on roads Driving in work site	2-wheel	 K-01463-00	2-wheel  K-00149-00	Off-straight-ahead Wheel Indicator  K-00150-00 Not lit	Only front wheels are steered. This steering method is the same as that of general vehicles.
				Special steering warning  K-00151-00 Not lit	
Driving in work site	Special	4-wheel  K-01465-00	4-wheel  K-00153-00	Special steering warning  K-00154-00 Lit	Front and rear wheels are steered in opposite directions. The turning radius is decreased. Useful for movement in a small area.
		Crab  K-01466-00	Crab  K-00156-00		Front and rear wheels are steered in the same direction. The vehicle can move diagonally. Useful for pulling over.



K-04849-00

(1) Special Steering Warning

Lights up when a special steering mode is selected, and goes out when 2-wheel steering mode is selected.

(2) Off-Straight-Ahead Wheel Indicator

Goes out when the rear wheels are in the straight-ahead position, and lights up when they are out of the straight-ahead position.

(3) Steering Mode Selector

Selects the 2-wheel steering mode or one of the special steering modes. The operation indicator for the selected steering mode lights up.

☞ When the rear wheels are out of the straight-ahead position while the 2-wheel steering is selected, the off-straight-ahead wheel indicator lights up and the alarm buzzer sounds.

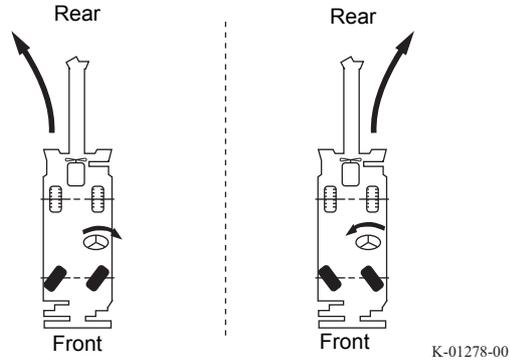
Selecting Steering Mode

⚠ DANGER

Do not travel on roads while the upper slewing structure is directed toward over-rear.
Before traveling, return the orientation of the upper slewing structure toward over-front.

⚠ WARNING

- The vehicle moves in an unusual manner in special steering. Do not travel on roads in special steering mode.
Travel in the 2-wheel steering mode while on roads.
Use a special steering only for driving in a work site, and travel at a speed of 15 km/h or less.
- While the upper slewing structure is directed toward the rear of the carrier, the vehicle turns in the opposite directions of the steering wheel operation.
Remember that this movement is contrary to the movement when the upper slewing structure is directed to over-front.
Be careful when you drive the machine.



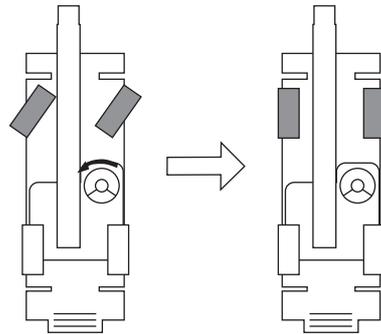
Changing from 2-wheel Steering Mode to Special Steering Mode

The example here explains the steps for changing the 2-wheel steering mode to 4-wheel steering mode.

1. Set the front wheels straight, and stop the vehicle.

⚠ CAUTION

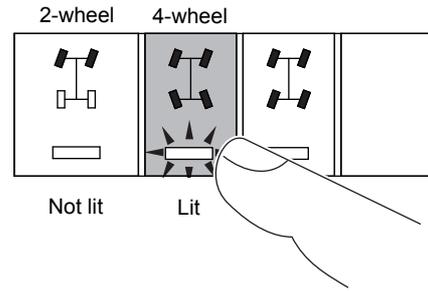
Do not change the steering modes while the front wheels are turned to the left or right. Otherwise, the steering angle of the front wheels does not match that of the rear wheels after the mode is changed, making normal steering not possible.



2. Move the shift lever to "N", and apply the parking brake.

3. Select a steering mode with the steering mode selector.

- The "4-wheel" operation indicator lights up.
- The "2-wheel" operation indicator goes out.



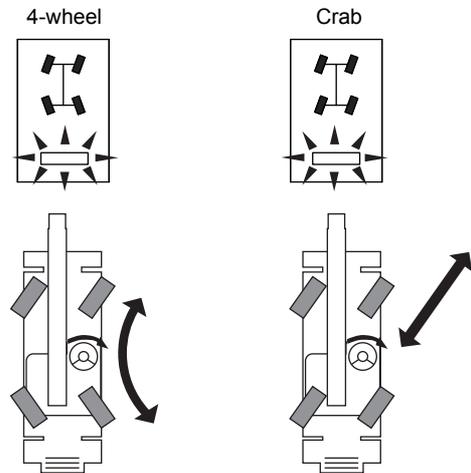
K-00160-00

NOTICE

If the "2-wheel" operation indicator flashes, push the steering mode selector again. The selected mode is not effective while the "2-wheel" operation indicator flashes.

4. Make sure that the wheels are steered according to the selected mode.

- ☞ If the rear wheels are not straight when a special steering mode is selected, the off-straight-ahead wheel indicator lights up.



K-01276-00

NOTICE

After changing the steering mode, check the movement of the wheels before starting traveling.

Changing between Special Steering Modes

While the off-straight-ahead wheel indicator is not lit, you can change the modes of special steering (4-wheel and crab).

CAUTION

Do not change the steering modes while the rear wheels are turned to the left or right. Otherwise, the steering angle of the front wheels does not match that of the rear wheels after the mode is changed, making normal steering not possible. Make sure that the off-straight-ahead wheel indicator is not lit when you change the steering modes.



Not lit

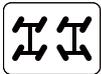
K-00162-00

Changing from Special Steering Mode to 2-wheel Steering Mode

⚠ DANGER

Do not travel on roads in special steering mode. The vehicle moves in an unusual manner, and a serious accident can occur.

Before traveling in 2-wheel steering, make sure that the lamps and switches are in the conditions shown below.

<p>Off-straight-ahead wheel indicator</p>  <p>Not lit</p>	<p>Special steering warning</p>  <p>Not lit</p>	<p>Steering mode selector switch</p> <table style="margin: auto;"> <tr> <td style="text-align: center;">2-wheel</td> <td style="text-align: center;">4-wheel</td> <td style="text-align: center;">Crab</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;">Lit</td> <td style="text-align: center;">Not lit</td> <td></td> </tr> </table>	2-wheel	4-wheel	Crab				Lit	Not lit	
2-wheel	4-wheel	Crab									
											
Lit	Not lit										

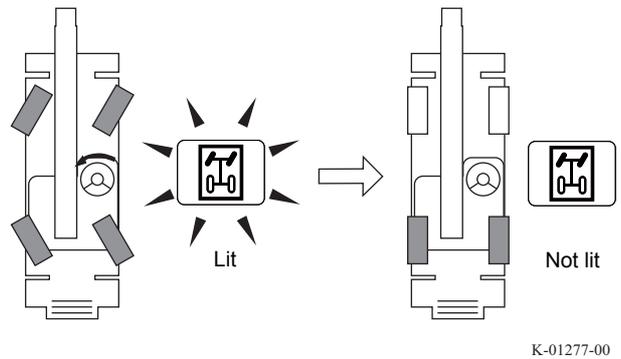
K-00163-00

The example here explains the steps for changing the 4-wheel steering mode to 2-wheel steering mode.

1. Set the rear wheels straight, and stop the vehicle.
 - The off-straight-ahead wheel indicator goes out.

⚠ CAUTION

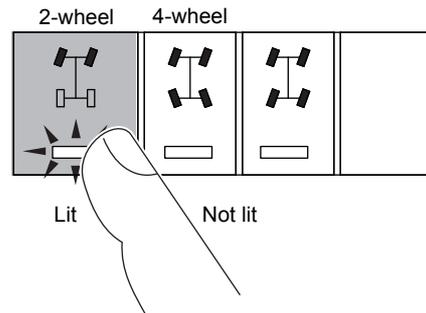
Do not change the steering modes while the rear wheels are turned to the left or right. Otherwise, the steering angle of the front wheels does not match that of the rear wheels after the mode is changed, making normal steering not possible. Make sure that the off-straight-ahead wheel indicator is not lit.



2. Move the shift lever to "N", and apply the parking brake.

3. Press the "2-wheel" of the steering mode selector.

- The "2-wheel" operation indicator lights up.
- The "4-wheel" operation indicator goes out.



K-00165-00

⚠WARNING

Do not travel on roads in a special steering mode. The vehicle moves in an unusual manner, and a serious accident can occur. Before traveling, make sure that a special steering operation indicator is not lit, and the 2-wheel operation indicator is lit.

NOTICE

If the special steering warning and the off-straight-ahead wheel indicator lamp do not go out, inspection is necessary. Contact Tadano Escorts India Private Ltd. or a dealer.

4. Make sure that the wheels are steered according to the selected mode.

⚠WARNING

If the rear wheels go out of the straight-ahead position during traveling in 2-wheel steering, the alarm buzzer sounds. Stop traveling and adjust the rear wheels into the straight-ahead position. If traveling is continued while the rear wheels are out of the straight-ahead position, a serious accident can occur.

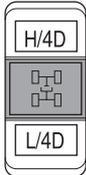
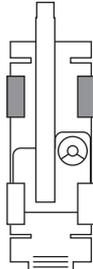
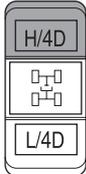
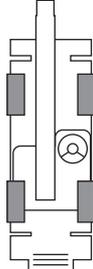
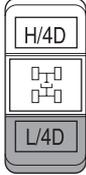
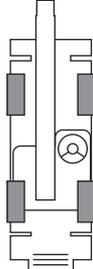
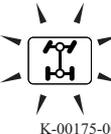
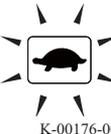
⚠CAUTION

After the steering mode is changed to the 2-wheel steering mode, make sure that only the front wheels are steered before starting traveling.

Drive Mode Selection

There are the 3 types of drive modes as shown below.

Use an appropriate drive mode according to the driving applications.

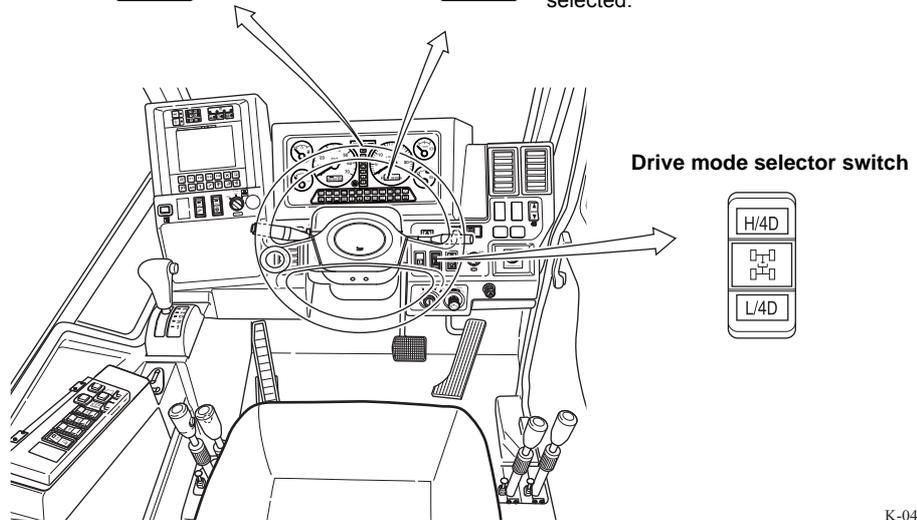
Application	Drive mode	Position of drive mode selector switch	Driving wheel	State of indicator	Feature
Normal traveling	2WD	 K-00166-00	 K-01467-00	4WD indicator  Not lit K-00168-00	Use this mode when traveling on a general road.
				Low travel speed indicator  Not lit K-00169-00	
4WD traveling	H/4D	 K-00170-00	 K-01468-00	4WD indicator  Lit K-00172-00	Use this mode when traveling on a slippery road such as a rough road and snow-covered road.
				Low travel speed indicator  Not lit K-00169-00	
4WD low speed traveling	L/4D	 K-00174-00	 K-01468-00	4WD indicator  Lit K-00175-00	Use this mode when traveling on a steep slope or during on-rubber operation.
				Low travel speed indicator  Lit K-00176-00	

CTI-500XL-1_OM1-11E

Low travel speed indicator
Lights up when L/4D is selected.



4WD indicator
Lights up when H/4D or L/4D is selected.



K-04850-00

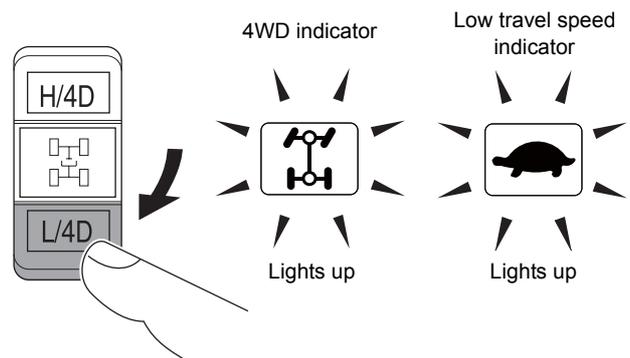
Drive Mode Selection

NOTICE

- If the drive mode selector is operated while traveling, the driving system can be damaged. Stop the vehicle first, then operate the selector.
- 4WD driving applies a larger load to the driving system compared to 2WD driving. Use 4WD only when traveling on a slippery road such as a rough road and snow-covered road.

1. Stop the vehicle on a flat area.
2. Change the drive mode with the drive mode selector switch.
(The illustration shows a case when the L/4D [4WD low speed traveling] is selected.)

- The 4WD indicator lights up.
 - The Low travel speed indicator lights up.
- The mode is not changed to the selected mode while the 4WD indicator flashes. If the drive mode does not change, move the vehicle slightly and stop, and then operate the selector again.
- If you start the vehicle while the 4WD indicator flashes, the alarm sounds.



K-00178-00

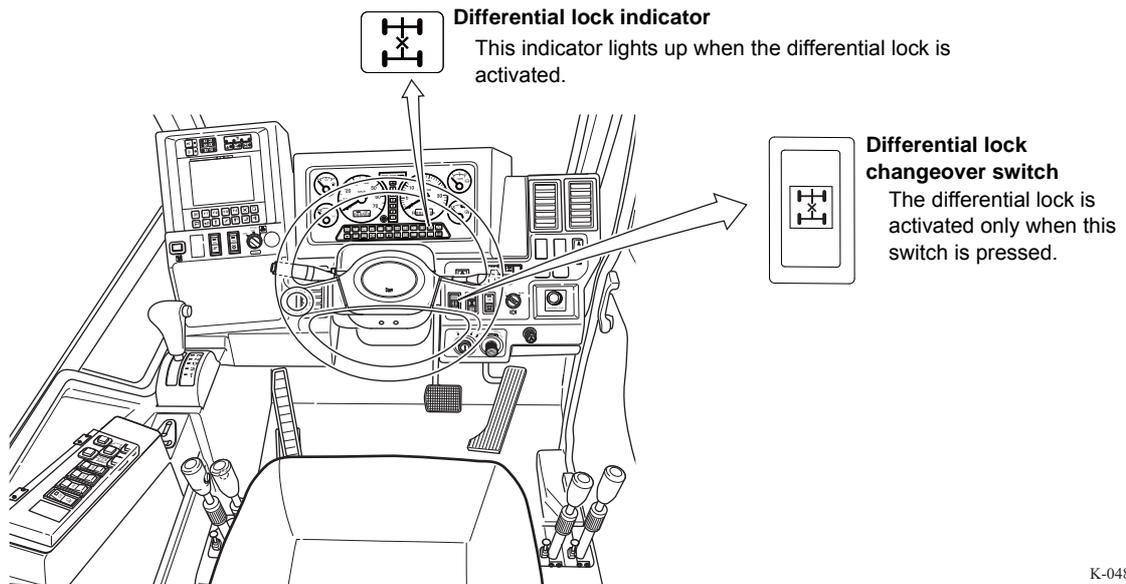
3. Make sure that the applicable indicator is lit.

Differential Lock Operation

NOTICE

- When you travel on a paved road with differential locked, steering operation is not allowed. Otherwise, it will cause premature wear of the tires and damage to the drive system. Travel straight ahead at a slow speed (less than 5 km/h). When the vehicle speed exceeds 5 km/h, the alarm buzzer sounds.
- Before performing the differential lock operation, stop the vehicle completely. Otherwise, the drive system is damaged.

This operation assists traveling on a slippery area and getting out of a rough ground such as a muddy area.



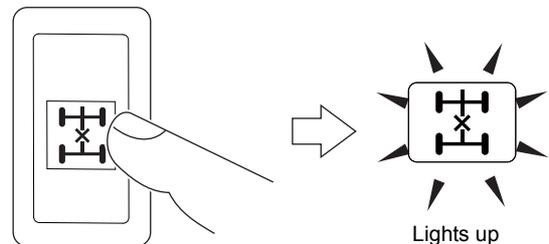
Activate/deactivate Differential Lock

1. Stop the vehicle with the tires directed straight ahead.
2. Press the differential lock changeover switch.

- The inter-axle differential gear is locked and the differential lock indicator lights up.

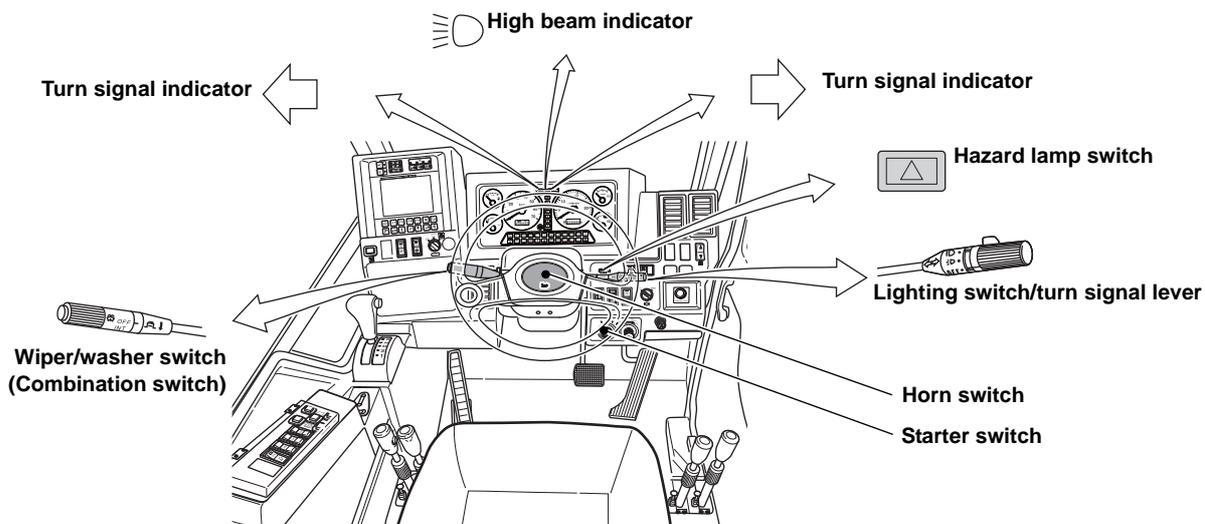
☞ If the differential lock indicator does not light up, move the vehicle slightly and stop, and then push the switch again.

☞ The differential is locked only when the switch is pressed.



3. Check that the differential lock indicator is lit.

Lighting Switch and Other Switches



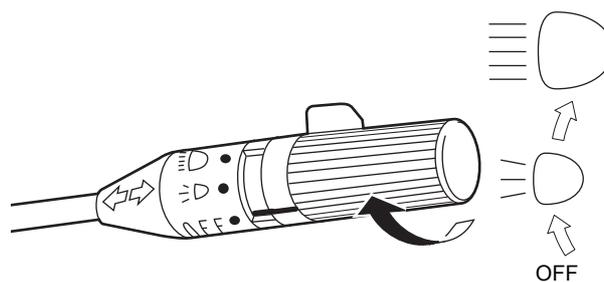
K-04852-00

Lighting Switch

You can use this while the starter switch is "ON".

When the light switch knob is turned to the position  or , the lamps with the  mark in the list below light up.

Position of knob		
Head lamp	-----	
Clearance lamp, Tail light		
License plate lamp		
Switch illumination		

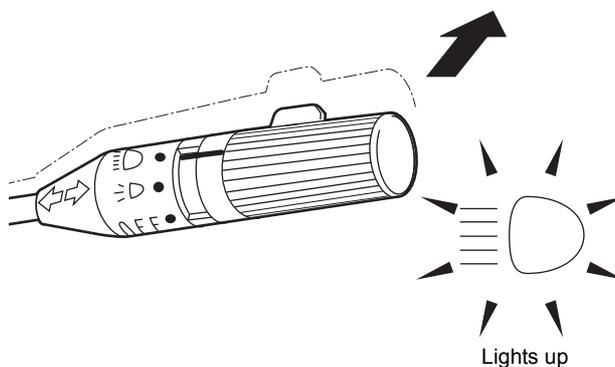


K-00182-00

Turning the Head Lamps to High Beam

1. Push the lever to the front when the light switch is at the position .

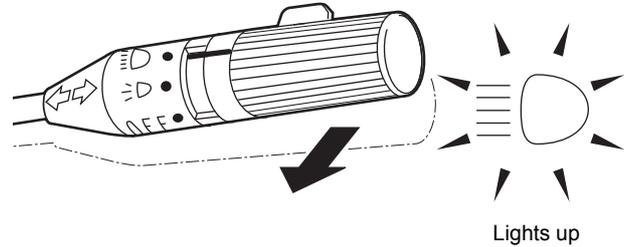
- The high beam indicator on the instrument panel lights up.



K-00183-00

Flashing the Head Lamps

1. Pull the lever backward.
 - The high beam indicator on the instrument panel lights up.

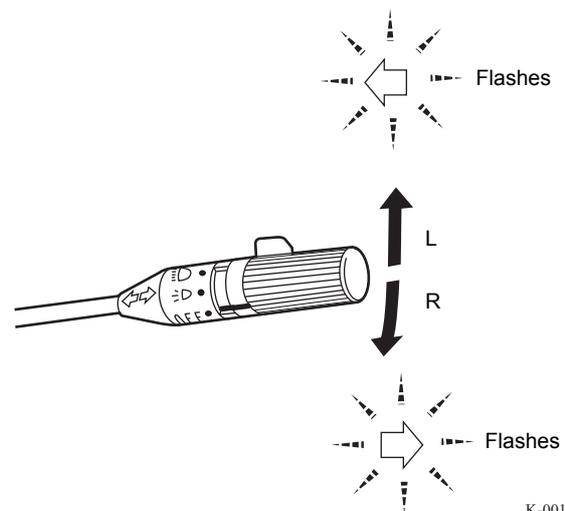


K-00184-00

Turn Signal Lever

You can use this regardless of the starter switch position.

1. Operate the turn signal lever upward or downward.
 - The turn signal lamps of the vehicle and the turn signal indicators on the instrument panel flash.
 - ☞ The lever moves back to the initial position automatically when you turn back the steering wheel. If the lever does not move back, move it by hand.
 - ☞ When changing lanes, you can operate the turn signal lamps by pushing up/down the lever lightly. The turn signal lamps flash while you are pushing the lever.
 - ☞ When a bulb of the turn signal lamp is burned out or a bulb with incorrect capacity (wattage) is used, flashing frequency is changed.



K-00185-00

Hazard Lamp Switch

You can use this regardless of the starter switch position.

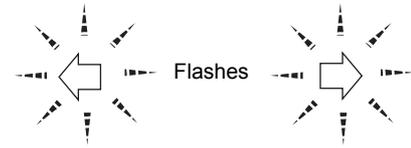
When you must park the machine on the road due to failure, etc., use this switch to alert other vehicles.

1. Push the hazard lamp switch.

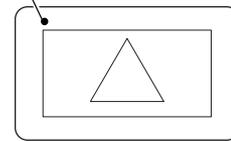
- All the turn signal lamps of the vehicle and the turn signal indicators on the instrument panel flash.

 Do not use the hazard lamps for an extended time while the engine is stopped. This can drain the battery.

2. When you push the switch again, the lamps go out.



Hazard lamp switch

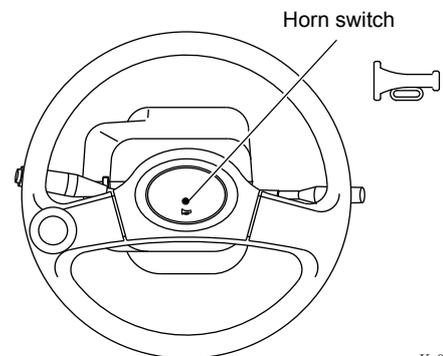


K-00186-00

Horn Switch

You can use this while the starter switch is "ON".

1. When you push the horn switch, the horn sounds.



K-00187-00

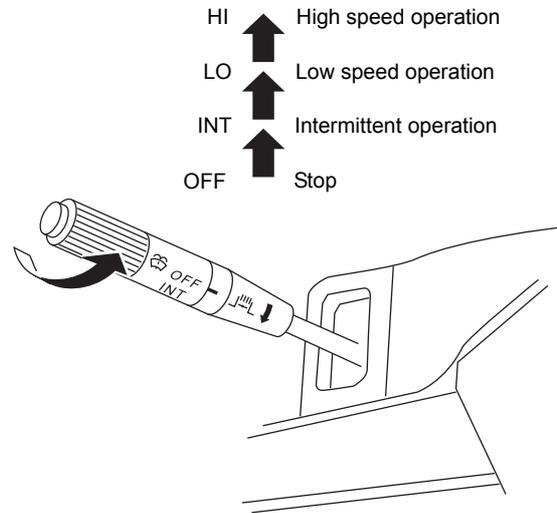
Wiper

You can use this while the starter switch is "ON".

Wiper operation

1. Turn the wiper/washer switch knob.
 - During intermittent operation, the wiper operates at approximately every other 5 seconds.

- ☞ If the wiper is operated while the glass is dry, the glass is scratched. Spray washer liquid before operating the wiper.
- ☞ When the glass is frozen or the wipers are not used for a long time, make sure that the wiper blades do not stick to the glass. If you operate a wiper while its blade is stuck to the glass, the wiper blade will be damaged.



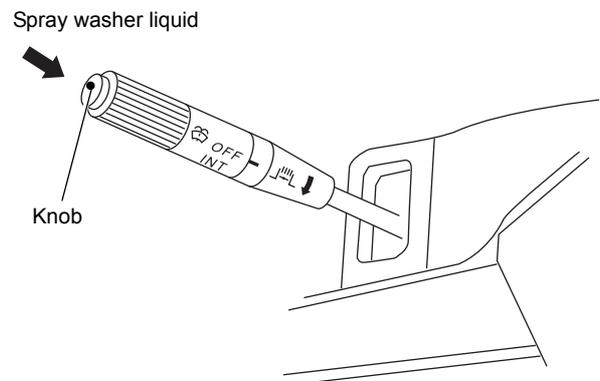
K-00188-00

Spraying Washer Liquid

1. Push the knob at the top end of the wiper/washer switch.
 - Washer liquid is sprayed on the windshield.

NOTICE
Do not use washer liquid in cold seasons until the glass surface has become warm. Otherwise, the washer liquid can freeze on the windshield glass and impair visibility.

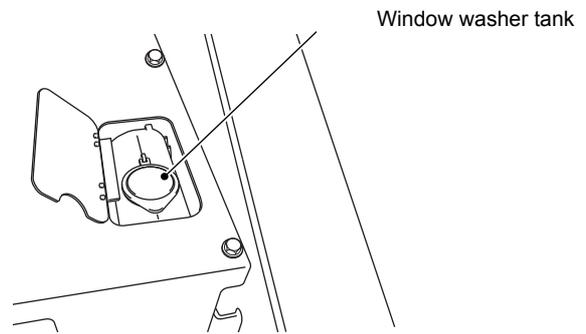
- ☞ If the washer liquid does not come out, do not press and hold the knob at the top end of the washer switch. This will damage the washer fluid pump. Check the washer liquid level and for clogging of the washer nozzles.



K-00189-00

Refilling Washer Liquid

1. Open the washer liquid tank cover on the left side of the cab.
2. Add washer liquid into the window washer tank.

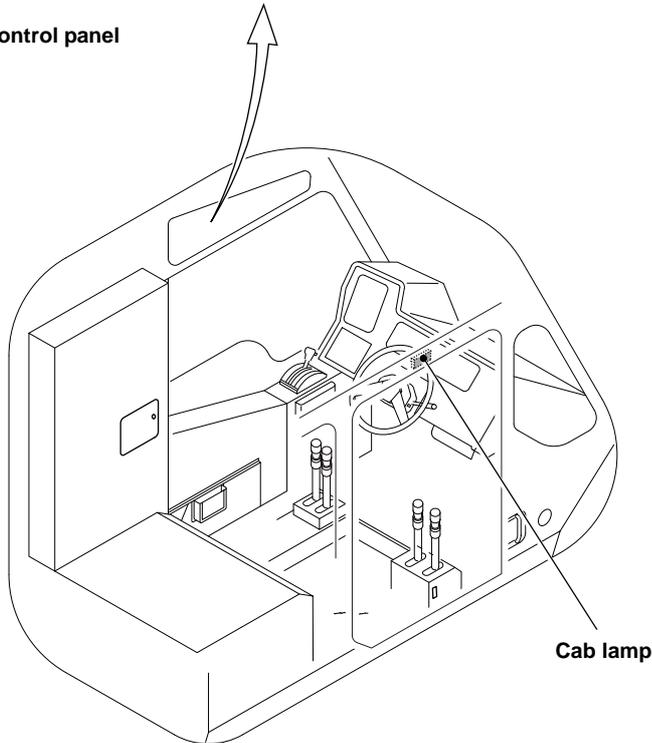
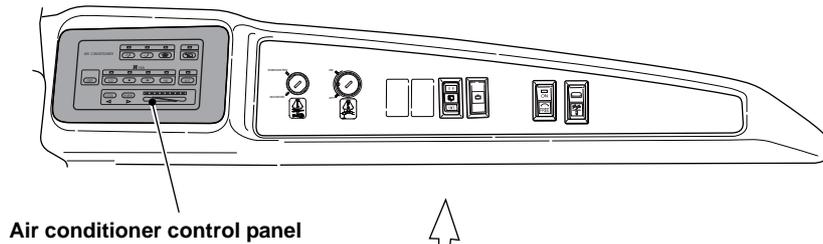
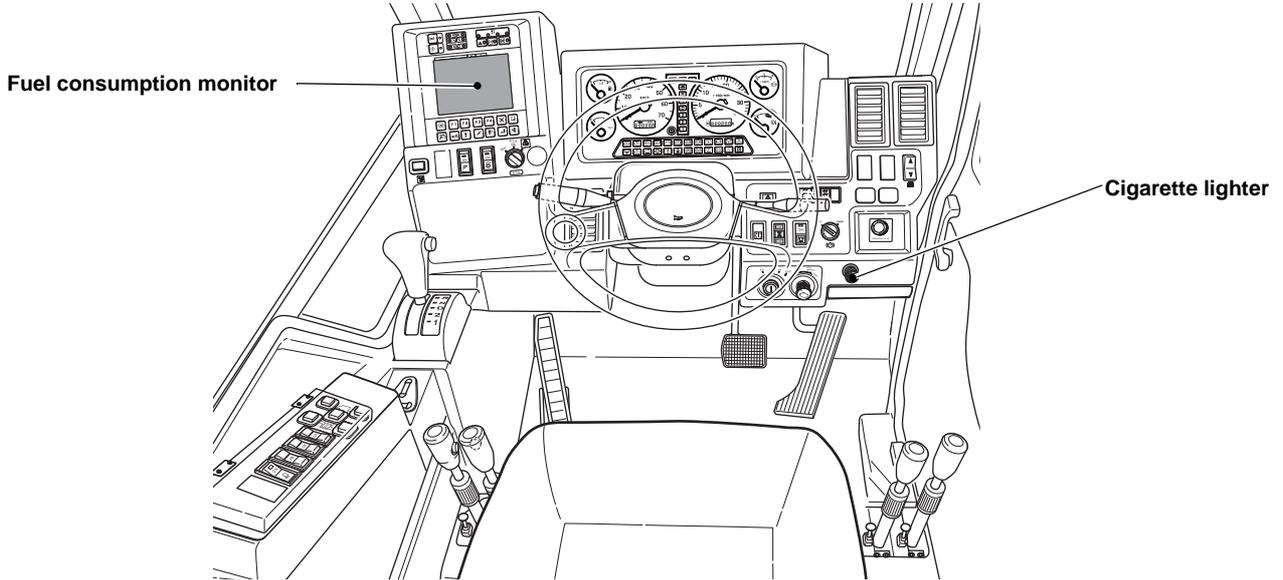


K-01879-00

Accessories in Cab

⚠ CAUTION

When you operate an accessory in the cab during traveling, be careful not to hinder safe driving.



K-04853-00

CTI-500XL-1_OM1-11E

Fuel Consumption Monitor

⚠ CAUTION

Do not operate the fuel consumption monitor while traveling.

Doing so can cause an accident.

When you check the fuel consumption monitor during traveling, be careful not to hinder safe driving.

The fuel consumption rate during traveling is indicated.

Checking the items on the fuel consumption monitor helps you to operate a crane in an environmentally friendly way.

The following items are shown.

- Current fuel consumption
The current fuel consumption during traveling is shown as a bar graph.
- Average fuel consumption
The average fuel consumption during traveling is shown km/L (km/liter).
It is reset when the display changes to "standby", or PTO is set to "ON".
- Fuel consumption during standby
The fuel consumption during standby is displayed in liter.
- Standby period
The standby period is displayed in minute.

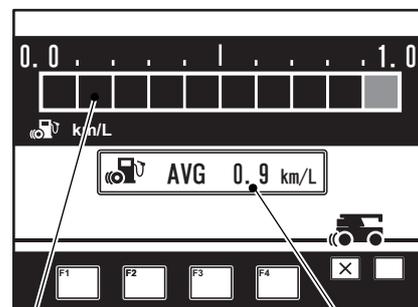
☞ The standby period is the period while the vehicle is stopped and the shift lever is in "N" position.

☞ The fuel consumption during standby and the standby period are displayed after a specific amount of time elapses with the crane in standby mode.

☞ The fuel consumption monitor is always on. However, you cannot read the monitor during nighttime, because the back light of the monitor is turned off in order not to hinder safe driving.

☞ The displayed data may be different from the actual value depending on traveling conditions. Check the fuel gauge to see the remaining fuel amount.

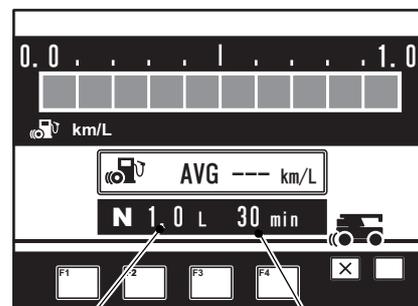
At traveling



Current fuel consumption

Average fuel consumption

At standby



Fuel consumption during standby

Standby period

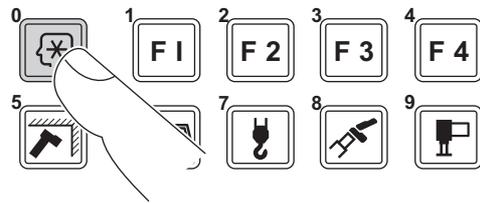
K-00192-00

Fuel Consumption History Display

1. Stop the vehicle and set the shift lever to "N".

2. Press the preset menu key.

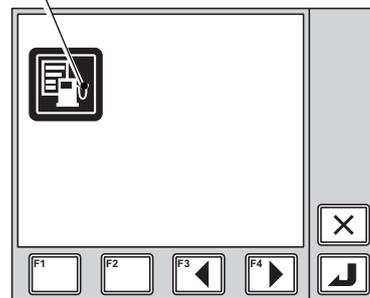
- The pop-up window for preset menu selection appears on the display panel.



K-00193-00

3. Press the F3 (Backward) key or F4 (Forward) key to select the fuel consumption history icon.

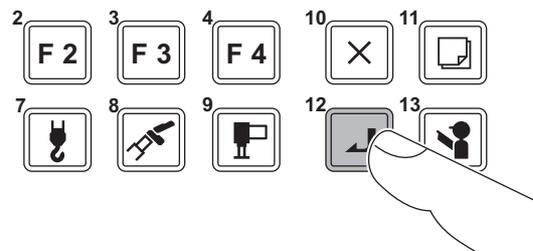
Fuel consumption history icon



K-04837-00

4. Press the set key.

- The screen for fuel consumption history appears.



K-00269-00

5. The display changes when the display change key is pressed.

- The history of fuel consumption and average fuel consumption is shown in either bar graph or numerical format.
- The items shown on the numeric display screen are as follows.

- L(N)

Fuel consumption during standby

- L(D)

Fuel consumption during traveling

- km/L

Average fuel consumption during standby and traveling (km/liter)

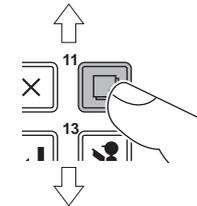
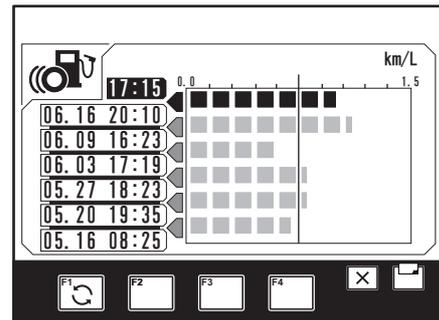
☞ The measurement restarts when F1 (reset) key is pressed.

The previous records are moved down every time the F1 (reset) key is pressed. 6 previous records (Max.) including the current rate are displayed.

You can reset the histories both for traveling and crane operation at the same time by pressing and holding the F1 (reset) key.

☞ Press the cancel key to exit the history display. The pop-up window closes and the screen returns to the original crane traveling mode.

Bargraph display



Numeric display

Time	L(N)	L(D)	km/L
06.16 20:10	4.2	28.7	1.0
06.09 16:23	20.4	118.0	1.1
06.03 17:19	19.5	199.0	0.6
05.27 18:23	39.1	196.0	0.8
05.20 19:35	14.6	141.0	0.8
05.16 08:25	22.5	139.0	0.7

K-00196-00

Air Conditioner

⚠ WARNING

Do not touch the rotating parts, such as a fan or belt while the air conditioner is operating. It can cause an injury.

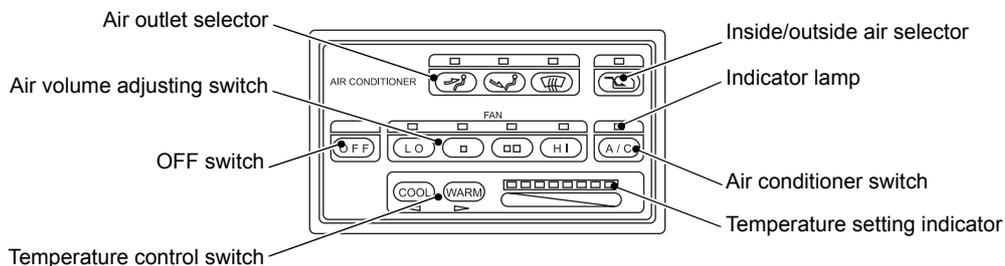
NOTICE

Obey the precautions below to prevent a failure of the air conditioner.

- Use the air conditioner after the engine is started. Before stopping the engine, turn off the power switch of the air conditioner.
- Do not put objects that disturb the air flow in front of the air vent louver.
- Do not use additives such as radiator water leak preventive, etc.
- In cold climate areas, use the antifreeze with concentration appropriate for the ambient temperature.
- Perform daily and periodic inspections.

☞ Air conditioner lowers temperature and humidity. The temperature is said to be suitable when it is lower than the ambient temperature by 5 to 8°C. Do not turn the temperature level down excessively, and do not expose yourself to cool air for a long time. Set the temperature to a suitable level.

☞ Dehumidifying operation makes inside of the cab dry.



K-01881-00

Air outlet selector

Air outlets, VENT, FOOT, and DEF, can be selected.

Switch	Function
 K-01882-00	Changes air outlet to VENT.
 K-01883-00	Changes air outlet to FOOT.
 K-01884-00	Changes air outlet to DEF.

Inside/outside air selector

You can select outside cab air introduction or inside cab air circulation.

Switch	Function
 K-01885-00	Lamp on: Outside air introduction Lamp off: Inside air circulation

Indicator lamp

Shows the status of each switch.

Air conditioner switch

Turns on the air-conditioning and dehumidifying functions.

Switch	Function
 K-01886-00	Compressor starts.

Temperature setting indicator

Indicates the temperature set with the temperature control switch.

○: Red lamp lights up. ●: Green lamp lights up.	Indicator lamps							
	<input type="checkbox"/>							
Shifts at each press of "COOL" switch Maximum cooling	○	○	○	○	○	○	○	Maximum heating Shifts at each press of "WARM" switch
	○	○	○	○	○	○	●	
	○	○	○	○	○	●	●	
	○	○	○	○	●	●	●	
	○	○	○	●	●	●	●	
	○	○	●	●	●	●	●	
	○	●	●	●	●	●	●	

Temperature control switch

Adjusts temperature inside the cab.

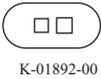
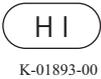
The set temperature is indicated by the temperature setting indicator.

Switch	Function
 K-01888-00	Lowers temperature.

CTI-500XL-1_OM1-11E

Switch	Function
	Raises temperature.

Air volume adjusting switch

Switch	Function
	Changes blower fan to Lo.
	Changes blower fan to M1.
	Changes blower fan to M2.
	Changes blower fan to Hi.

OFF switch

Stops air conditioner operation.

Switch	Function
	All operations of air conditioner stop.

For Normal Use

1. Start the engine.
2. Choose the air outlet louver with the corresponding air outlet selector.
3. Adjust wind temperature with the temperature control switch.

4. Adjust air flow volume with the air volume adjusting switch.
5. Press the air conditioner switch.
 - The air-conditioning and dehumidification starts.
6. Press the inside/outside air selector and select "Outside air introduction".
 - The indicator lamp lights up.
7. To stop the air conditioner operation, press the OFF switch.

 Select "Inside air circulation" in a tunnel or when outside air is not clean.

 Cold air may come out when the engine is not warm.

For Quick Air Conditioning

1. Start the engine.
2. Choose "VENT" air outlet with the air outlet selector.
3. Press the inside/outside air selector and select "Inside air circulation".
 - The indicator lamp goes out.
4. Press the air conditioner ("A/C") switch and turn it ON.
 - The indicator lamp lights up.
5. Press the "HI" air volume adjusting switch.

6. Press the "COOL" temperature control switch until all the temperature setting indicator lamps turn green.

 When all temperature setting indicator lamps are green, the air conditioner is fixed at maximum cooling. After the temperature inside the cab has lowered, follow the instructions of the "For Normal Use" section.

For Quick Heating

1. Start the engine.
2. Choose "FOOT" air outlet with the air outlet selector.
3. Press the inside/outside air selector and select "Inside air circulation".
 - The indicator lamp goes out.
4. Press the "HI" air volume adjusting switch.
5. Press the air conditioner ("A/C") switch and turn it OFF.
 - The indicator lamp goes out.
6. Press the "WARM" temperature control switch until all the temperature setting indicator lamps turn red.

 When all temperature setting indicator lamps are red, the air conditioner is fixed at maximum heating. After the temperature inside the cab has risen, follow the instructions of "For Normal Use" section.

For Defogging Windshield

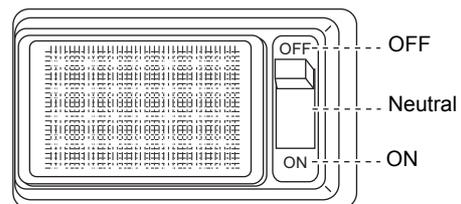
1. Start the engine.
2. Press the air volume adjusting switch and set desired air volume.
3. Choose "DEF" air outlet with the air outlet selector.
4. Press the inside/outside air selector and select "Outside air introduction".
 - The indicator lamp lights up.
5. Press the air conditioner ("A/C") switch and turn it ON.
 - The indicator lamp lights up.
6. Adjust the wind temperature with the temperature setting switch.

 When the outside air temperature drops to nearly 0°C, dehumidification does not function even when the air conditioner switch is turned ON.

Cab Lamp

Right Side in Cab, Door Side

- "OFF"
Does not light up regardless of opening/closing of the door.
- Neutral Position
Lights up when the door is opened, and goes out when closed.
- "ON"
Stays lit regardless of opening/closing of the door.



K-00207-00

Cigarette Lighter

Once the cigarette lighter is pushed in, it moves back to the initial position after several seconds.

⚠CAUTION
Do not touch the metal parts of the cigarette lighter. You may suffer burns.

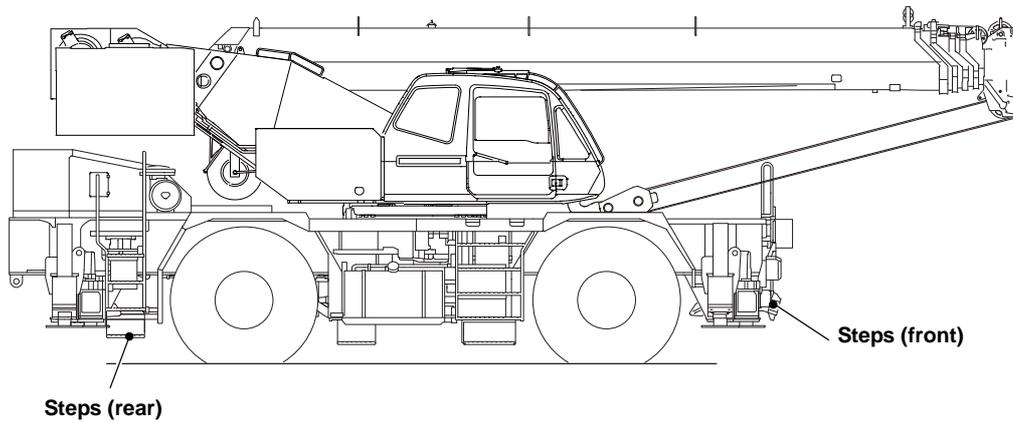


☞ Obey the precautions below to prevent faults in the electrical system.

- Do not push and hold the cigarette lighter.
- If the cigarette lighter does not move back to its initial position in 15 to 20 seconds, pull it out by hand.
- When you use the cigarette lighter as a power outlet, its rated capacity is 24-V DC-15A. Do not take out power that exceeds the capacity.

K-00208-00

Outside Cab Accessories



K-01298-00

Steps

⚠WARNING

- Before traveling, fold the step at the bottom of the steps into the stowing position and secure it with the stowing pin. If the bottom step is not fixed in the stowing position, the step can sway during traveling and cause an accident.
- When you use the steps, hold the handrails and be careful not to fall.

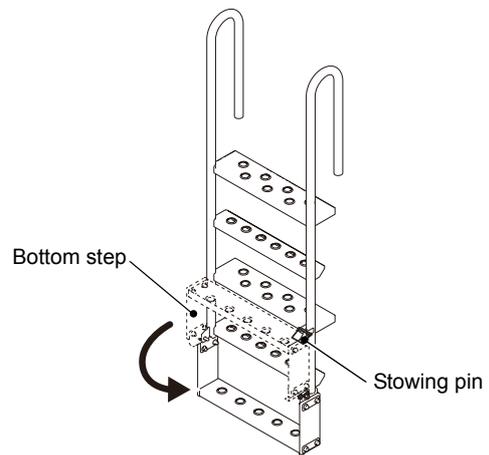
Steps (stowing type)

Before using the steps, remove the stowing pin and unfold the bottom step slowly.

When the steps are not in use, fold the bottom step into the stowing position and fix it with the stowing pin.

⚠CAUTION

During crane operation, leave the steps extended.
If you use the steps in the stowed status, this can cause a falling accident or damage to the steps.



K-00210-00

Handling Tires

Tire Air Pressure

⚠ WARNING

Check that the air pressure of the tires is at the specified level (refer to "Service Data" (page 501). If the air pressure of the tires is out of the specified level, traveling can damage the tires or cause an accident.

Adjust tire air pressure before traveling while the tires are cold.

Check that tire air pressure is at the specified level.

 For the method to check tire air pressure, refer to "Inspection before Traveling" (page 363).

Long-time Parking

If you need to park the machine for a long time, extend the outriggers and lift the tires off the ground to prevent deformation of the tires.

Operation in Cold Season

Winterization

When you change the engine oil, fuel, or coolant according to the air temperature, refer to "INSPECTION AND MAINTENANCE" (page 335).

Engine Oil and Gear Oil

Use an oil with viscosity suitable to the ambient temperature.

Fuel

Diesel fuel, No. 2-D (ASTM D975) freezes at the ambient temperature of -12°C or below, and this prevents engine startup. Use winter blend fuels, No. 1-D (ASTM D975) or equivalent.

Coolant

Mix the coolant with a ratio according to the ambient temperature to prevent freezing.

Washer liquid

Use the washer liquid suitable for winter season.

Battery

When the ambient temperature drops, performance of the battery degrades and the engine may not be started. Check the level and specific gravity of the battery electrolyte, and add the battery fluid or charge the battery as necessary.

Tire Chain

⚠WARNING

Failure to observe the following precautions can damage the brake piping and other vehicle structures, resulting in an accident.

- **When attaching tire chains, examine the inside of fenders to make sure that the chains do not touch adjacent components such as brake hoses in the fender.**
- **Do not travel in special steering modes while tire chains are being used.**
- **If there is an unusual sound during traveling, immediately stop the vehicle and inspect it. If the tire chains are cut or come off, they can hit persons near the vehicle and cause injury.**

When attaching tire chains, obey the precautions below.

- (1) Attach tire chains to the rear wheels only.
- (2) Set the steering mode to "2-wheel", and set the drive mode to "L/4D" or "H/4D".

MEMO

OPERATION

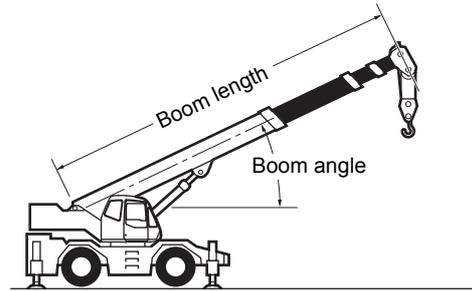
Terminology

Boom length

The distance between the boom foot pivot (foot pin) and the boom top sheave center (point pin).

Boom Angle

The angle between the boom center line and the horizontal line.



K-01299-00

Jib length

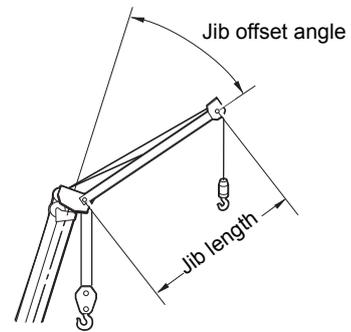
The distance between the jib foot pivot (foot pin) and the jib top sheave center (point pin).

Jib Offset Angle

The angle between the boom center line and the jib center line when the jib is installed.

Jib Tilt

To change jib offset angle.



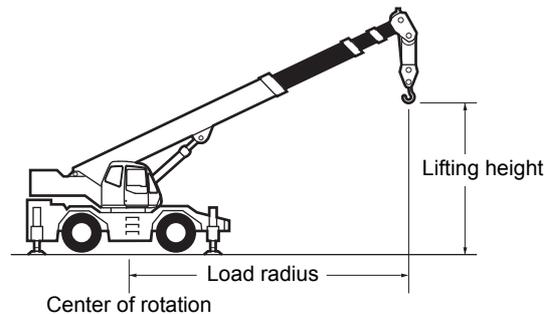
K-00212-00

Load Radius

The horizontal distance between the center of rotation and center of the hook block.

Lifting Height

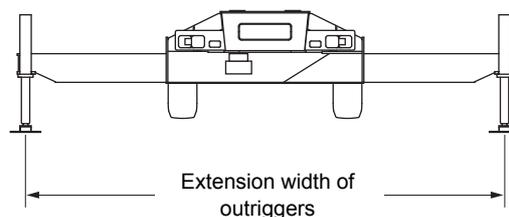
The distance between the ground and lower end of the hook block when the hook block is at its upper limit position in each load radius.



K-01300-00

Extension Width of Outriggers

H-type outrigger specification



K-00214-00

Unequal Extension of Outriggers

The condition that the individual extension widths of outrigger are different from each other.

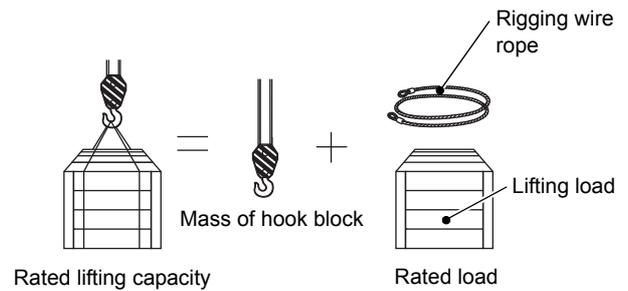
Maximum Extension Capacity, Middle Extension Capacity, Minimum Extension Capacity

The lifting capacities when the outriggers are extended to respective widths.

Rated Lifting Capacity

The maximum load that can be lifted with the specified boom length and load radius.

The rated lifting capacity is the total mass of a lifted load and lifting devices such as rigging wire ropes and the hook block.



K-00215-00

Rated Load

The load that can be actually lifted. You can calculate the value by subtracting the mass of lifting devices such as the hook block from the rated lifting capacity.

No Load

The condition that no load is lifted.

On-rubber Stationary Operation

To carry out crane operation without using outriggers.

On-rubber Creep Operation

To pick and carry a load (travel at low speed with a load lifted and without using outriggers jacks).

Clearing Ground

To lift a load off from the ground by hoist-up operation.

Anchor Points for Safety Belt

This machine has anchor points for attaching safety belt hooks.

Wear a safety belt while you work at an elevated area (height of 2 m or more), and attach the hook of safety belt to the specified anchor points.

⚠ WARNING

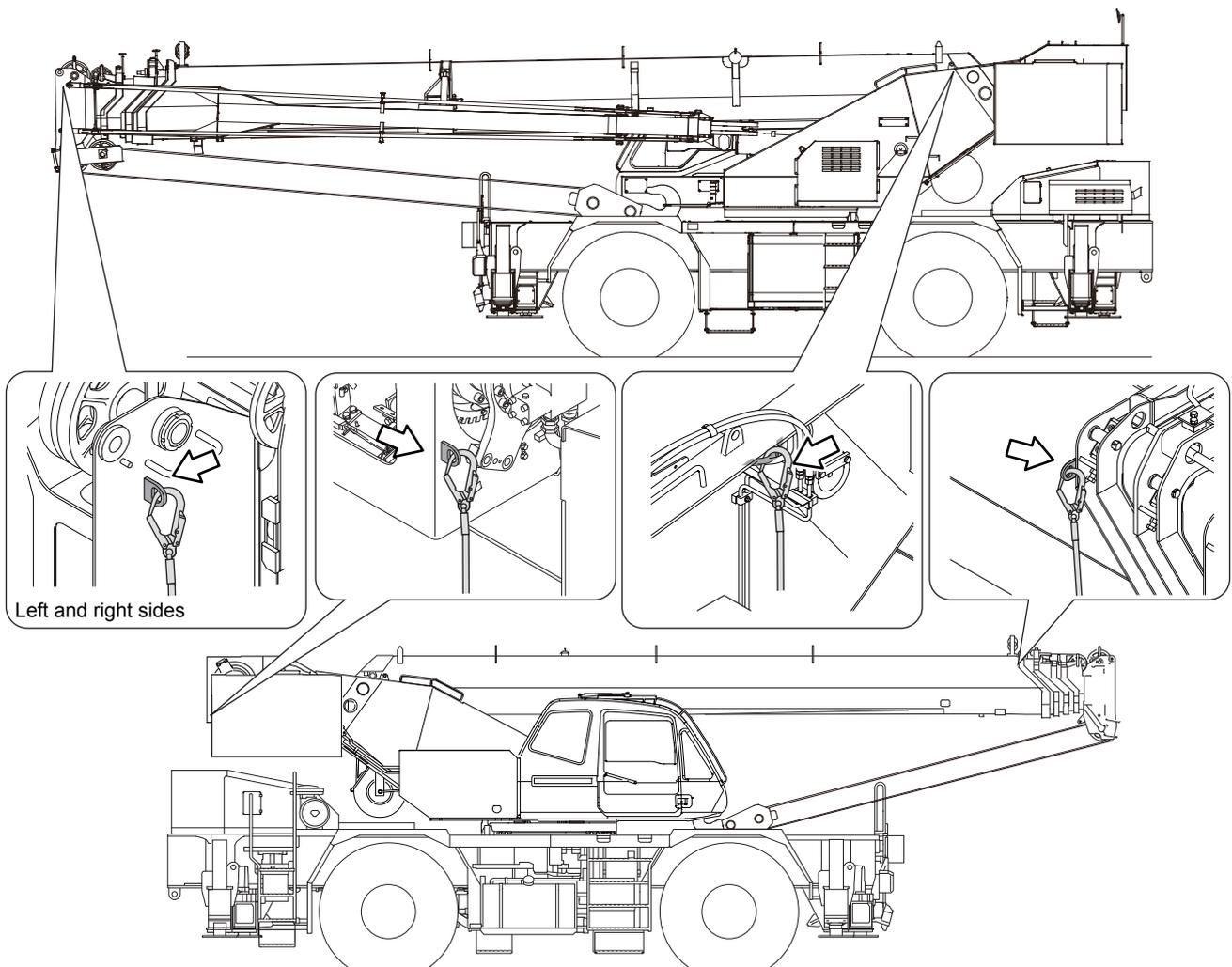
Observe the following points when you work at an elevated height.

- Attach the hook of the safety belt to the anchor points.
If you attach the hook of the safety belt to anywhere other than the anchor points, a falling accident can occur, resulting in a serious injury or death.
- Make sure that the specifications of the safety belts and anchor points conform to the laws, standards and other rules of the region where the machine is used.

NOTICE

Attaching heavy objects or applying strong force to the anchor points can damage the machine. Attach only safety belt hooks to the anchor points.

Location of Anchor Points



Before Crane Operation

Pre-operational Inspection

⚠ WARNING

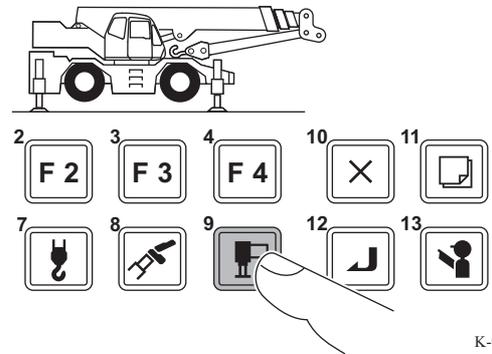
Neglecting pre-operational inspection can delay the discovery of faults and result in an accident. Inspect the machine before operation to make sure that there are no irregularities.

When you inspect the crane, refer to "Inspection before Traveling" (page 363) and "Pre-operational Inspection" (page 382).

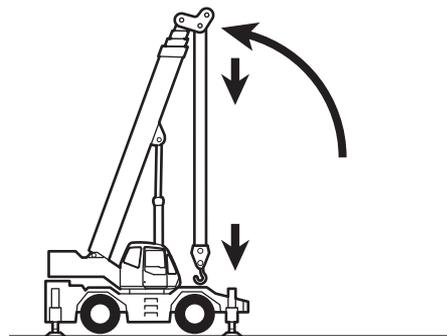
Preparing for Crane Operation

Set the machine from the traveling configuration to the crane operation configuration.

1. Set up the outriggers, and register the outrigger status to the AML.
For setup and status registration of the outriggers, refer to "Outriggers" (page 194) and "Automatic Moment Limiter (AML)" (page 136).

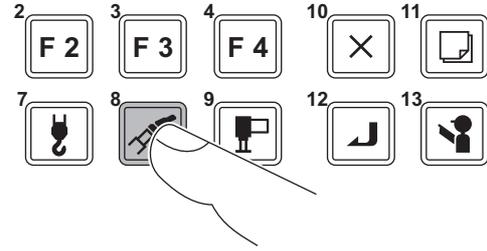


2. Take out the main hook block from the stowing position.
For taking out of the hook block, refer to "Taking Out and Stowing Hook Block" (page 230).



3. Register the lift status to the AML.

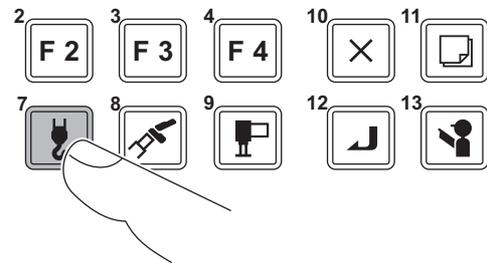
For registration of the lift status, refer to "Automatic Moment Limiter (AML)" (page 136).



K-00219-00

4. Register the number of parts of line to the AML.

For registration of the number of parts of line, refer to "Automatic Moment Limiter (AML)" (page 136).



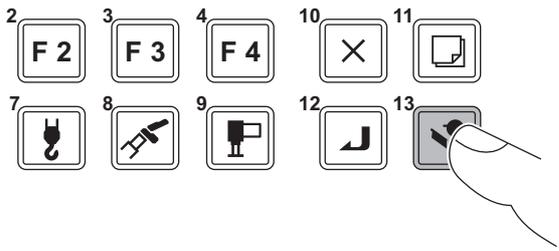
K-00220-00

5. Check the function of the AML.

To check the function of the AML, refer to "Automatic Moment Limiter (AML)" (page 136).

⚠WARNING

If you operate the crane while an abnormality is present in the AML, the machine will not stop automatically even if an overload occurs. This can cause the crane to overturn or be damaged, resulting in a serious accident. Check the functions of the AML and make sure that there are no irregularities.



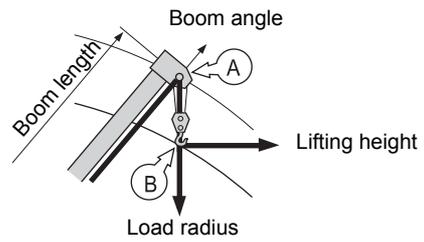
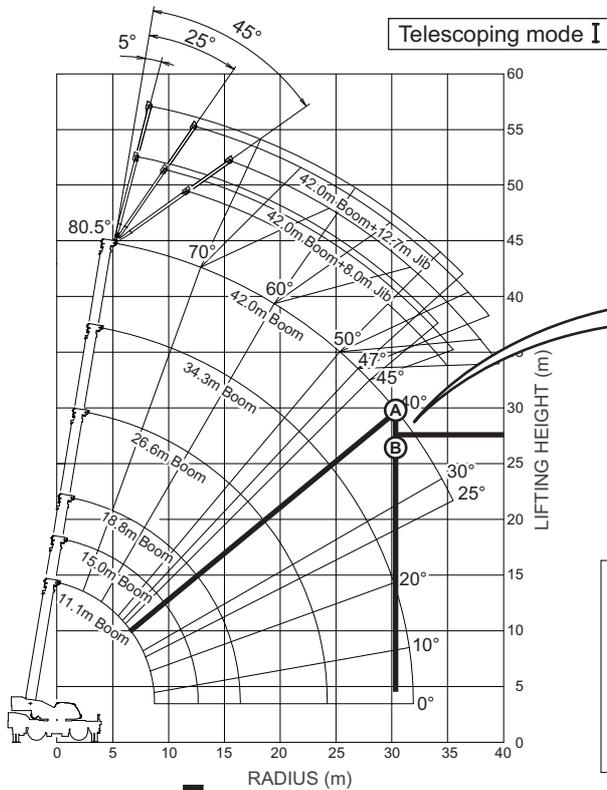
K-00221-00

6. Start the crane operation.

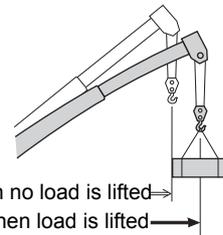
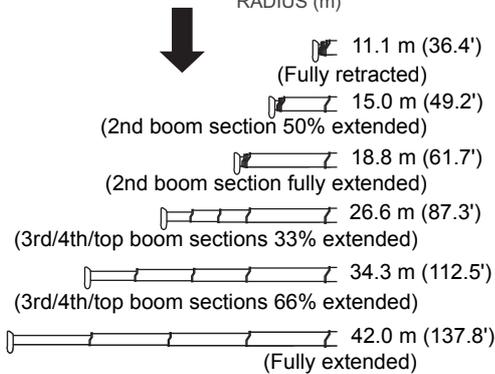
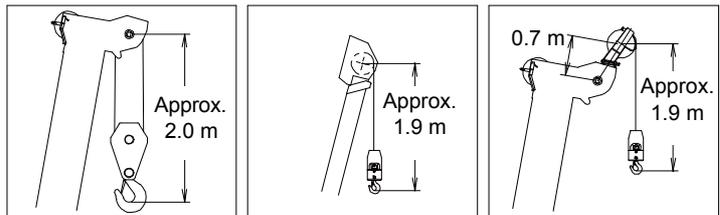
How to Read Performance Data Plates

Working Range Chart

The working range chart shows the relations between the boom length, boom angle, load radius, and lifting height.



Point A has the same load radius as point B, however, point A represents a boom angle and point B represents a lifting height.



The working range chart does not include deflection of boom. Note that, when the load is lifted, radius is extended due to deflection of the boom depending on loads.

K-00222-00

The above illustrations show examples of working range charts. There are 2 boom telescoping modes, "Telescoping mode I" (2nd boom section extends first) and "Telescoping mode II" (3rd/4th/top boom sections extend first). For actual values, see the working range charts provided in your cab.

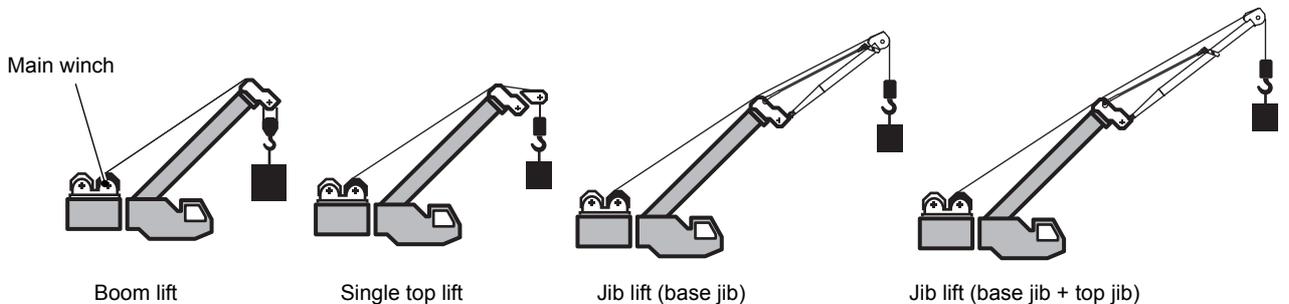
Rated Lifting Capacity Table

⚠ WARNING

Do not operate the crane with a load exceeding the rated lifting capacity. The machine can overturn or be damaged, resulting in a serious accident.

The rated lifting capacity tables specify the capacity for each condition according to the lift status and extension width of outriggers. Find the correct rated lifting capacity before operation.

- Boom lift
- Single top lift
- 8.0 m jib lift
- 12.7 m jib lift
- On-rubber boom lift
- On-rubber single top lift



K-00223-00

☞ To use the auxiliary winch, refer to "Selection of the winch to be used" (page 176) and change the winch you use accordingly.

☞ If boom lift is performed with the single top or jib mounted on the boom head, refer to "Reduction of Rated Lifting Capacity" (page 134) and operate accordingly.

The rated lifting capacity is the total mass of a lifted load and lifting devices such as rigging wire ropes and the hook block.

Values above the thick line in the table are based on the structural strength of the crane, and values below the thick line are based on the crane stability factor.

The values for load radius include deflection of boom and outriggers (tires) caused by lifting loads.

For actual operation, refer to the load radius that includes the deflections.

When you operate the crane with the boom length which is not shown in the rated lifting capacity table, read the rated lifting capacity display on the AML.

If the boom length exceeds the value displayed on the rated lifting capacity table, compare the rated lifting capacity for the displayed length and that for the boom length which is next longer, and use the smaller rated lifting capacity as a guide.

ON OUTRIGGERS FULLY EXTENDED 7.0m (22' 11 5/8") (Unit: ton)
360° ROTATION (Unit: x 1,000kg)

Load Radius (m)	Boom Length								
	11.1m (36.4')		15.0m (49.2')			18.8m (61.7')			
	Δ°		Δ°		Δ°		Δ°		
2.5	67	51.0							
3.0	64	50.0	71	30.0	76	20.0	75	13.0	
3.5	61	45.0	69	30.0	74	20.0	74	13.0	
4.0	58	41.6	67	30.0	72	20.0	72	13.0	
4.5	55	37.7	65	30.0	71	20.0	71	13.0	
5.0	52	33.5	63	29.5	69	20.0	69	13.0	
5.5	48	30.9	61	27.4	68	20.0	67	13.0	
6.0	44	27.5	59	25.6	66	20.0	66	13.0	
6.5	40	24.8	56	24.0	64	19.7	64	13.0	
7.0	36	22.5	54	22.1	63	18.4	62	13.0	
7.5	31	20.5	51	20.1	61	17.3	61	13.0	
8.0	24	18.8	49	18.4	59	16.4	59	13.0	
9.0			43	15.7	55	14.6	55	13.0	
10.0			37	13.5	51	13.2	51	13.0	
11.0			29	11.5	47	11.3	47	12.8	
12.0			19	9.6	43	9.5	43	11.8	
13.0					38	8.2	38	10.4	
14.0					32	7.0	32	9.0	
16.0					15	5.1	15	7.1	
18.0									
20.0									
22.0									
24.0									
26.0									
28.0									
30.0									
32.0									
34.0									
A	0°								

Minimum boom angle

Δ° :Loaded boom angle (°)
A :Minimum boom angle (°) for indicated length (no load)

K-01556-00

The above diagram shows an example of rated lifting capacity tables. For actual values, see the rated lifting capacity tables provided in your cab.

NOTES FOR LIFTING CAPACITIES

General

1. RATED LIFTING CAPACITIES apply only to the machine as originally manufactured and normally equipped by TADANO ESCORTS. Modifications to the machine or use of optional equipment other than that specified can result in a reduction of capacity.
2. Hydraulic cranes can be hazardous if improperly operated or maintained. Operation and maintenance of this machine must be in compliance with information, in the Operation and Maintenance Manual supplied with the crane. If this manual is missing, order a replacement through the distributor.

CTI-500XL-1_OM1-11E

SET UP

1. Rated lifting capacities on the chart are the maximum allowable crane capacities and are based on the machine standing level on firm supporting surface under ideal job conditions. Depending on the nature of the supporting surface, it may be necessary to have structural supports under the outrigger floats or tires to spread the loads to a larger bearing surface.
2. For outrigger operation, outriggers shall be properly extended with tires free of supporting surface before operating crane.

OPERATION

1. Rated lifting capacities have been tested to and meet minimum requirements of SAE J1063-Cantilevered Boom Crane Structures Method of Test.
2. Rated lifting capacities do not exceed 85% of the tipping load on outriggers fully extended as determined by SAE J765-Crane Stability Test Code. Rated lifting capacities for partially extended outriggers are determined from the formula,
Rated Lifting Capacities = (Tipping Load - 0.1 x Tip Reaction)/1.25.
3. Rated lifting capacities above thick lines in the chart are based on crane strength and those below, on its stability. They are based on actual load radius increased by boom deflection.
4. The weight of handling device such as hook blocks (460 kg for 51 t capacity, 280 kg for 25 t capacity, 100 kg for 4.5 t capacity), slings, etc., must be considered as part of the load and must be deducted from the lifting capacities.
5. Rated lifting capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, inflation of tires, operating speeds, side loads, etc. Side pull on the boom or jib is extremely dangerous. Such action can damage the boom, jib or swing mechanism, and lead to overturning of the crane.
6. Rated lifting capacities do not account for wind on lifted load or boom. We recommend against working under the condition that the load is out of control due to a strong wind. During boom lift, consider that the rated lifting capacity is reduced by 50% when the wind speed is 9 m/s (20 mph) to 12 m/s (27 mph); reduced by 70% when the wind speed is 12 m/s (27 mph) to 14 m/s (31 mph). If the wind speed is 14 m/s (31 mph) or over, stop operation. During jib lift, stop operation if the wind speed is 9 m/s (20 mph) or over.
7. Rated lifting capacities at load radius shall not be exceeded. Do not tip the crane to determine allowable loads.
8. Do not operate at boom lengths, radii, or boom angle, where no capacities are shown. Crane may overturn without any load on the hook.
9. When boom length is between values listed, refer to the rated lifting capacities of the next longer and next shorter booms for the same radius. The lesser of the two rated lifting capacities shall be used.
10. When making lifts at a load radius not shown, use the next longer radius to determine allowable capacity.
11. Load per line should not exceed 4,500 kg (9,920 lbs) for main winch and auxiliary winch.
12. Check the actual number of parts of line with the AUTOMATIC MOMENT LIMITER (AML-C) before operation. Maximum lifting capacity is restricted by the number of parts of line of the AUTOMATIC MOMENT LIMITER (AML-C). Limited capacity is as determined from the formula, Single line pull for main winch 4,500 kg (9,920 lbs) x number of parts of line.
13. The boom angle before loading should be greater to account for deflection. For rated lifting capacities, the loaded boom angle and the load radius is for reference only.
14. The 11.1 m (36.4 ft.) boom length capacities are based on boom fully retracted. If not fully retracted (less than 15.0 m (49.2 ft.) boom length), use the rated lifting capacities for the 15.0 m (49.2 ft.) boom length.

15. Extension or retraction of the boom with loads may be attempted within the limits of the rated lifting capacities. The ability to telescope loads is limited by hydraulic pressure, boom angle, boom length, crane maintenance, etc.
16. For lifting capacity of single top, deduct the weight of the load handling equipment from the rated lifting capacity of the boom. For the lifting capacity of single top, the net capacity shall not exceed 4,500 kg (9,920 lbs.) including the main boom hook mass attached to the boom.
17. When the base jib or top jib are removed, set the jib state switch to the removed position.
18. When erecting and stowing jib, be sure to retain it by hand or by other means to prevent its free movement.
19. Use "ANTI-TWO-BLOCK DEVICE" disable switch when erecting and stowing jib and when stowing hook block. While the switch is pushed, the hoist does not stop, even when overwind condition occurs.
20. (telescoping MODE I)
For boom length 42.0 m (137.8 ft.) or less and 34.3 m (112.5 ft.) or longer with jib, rated lifting capacities are determined by loaded boom angle only in the column headed "42.0 m (137.8 ft.) boom + jib".
For boom length 34.3 m (112.5 ft.) or less with jib, rated lifting capacities are determined by loaded boom angle only in the column headed "34.3 m (112.5 ft.) boom + jib".
For angles not shown, use the next lower loaded boom angle to determine allowable capacity.
- (telescoping MODE II)
For boom length 42.0 m (137.8 ft.) or less and 38.1 m (125 ft.) or longer with jib, rated lifting capacities are determined by loaded boom angle only in the column headed "42.0 m (137.8 ft.) boom + jib".
For boom length 38.1 m (125 ft.) or less with jib, rated lifting capacities are determined by loaded boom angle only in the column headed "42.0 m (137.8 ft.) boom + jib".
For angles not shown, use the next lower loaded boom angle to determine allowable capacity.
21. When lifting a load by using jib (aux. winch) and boom (main winch) simultaneously, do the following:
 - Enter the operation status as jib operation, not as boom operation.
 - Before starting operation, make sure that mass of load is within rated lifting capacity for jib.
22. Before telescoping the boom, set the telescoping mode selector switch to MODE I or MODE II with the boom fully retracted.
A change of the telescoping mode is not permissible when the boom has been partially or fully extended.
23. Traveling on road in a special steering mode (four-wheel steering, four-wheel sideways steering, etc.) is very dangerous, and must be strictly avoided. Drive the machine in two-wheel steering mode only. Special steering modes should only be used for low speed travel within work sites.

DEFINITIONS

1. Load Radius: Horizontal distance from a projection of the axis of rotation to supporting surface before loading to the center of the vertical hoist line or tackle with load applied.
2. Loaded Boom Angle: The angle between the boom base section and the horizontal, after lifting the rated lifting capacity at the load radius.
3. Working Area: Area measured in a circular arc about the centerline of rotation.
4. Freely Suspended Load: Load hanging free with no direct external force applied except by the hoist line.
5. Side Load: Horizontal side force applied to the lifted load either on the ground or in the air.

NOTES FOR ON-RUBBER LIFTING CAPACITIES

1. Rated lifting capacities on rubber are in pounds and do not exceed 75% of tipping loads as determined by SAE J765-Crane Stability Test Code.

- 2. Rated lifting capacities shown in the chart are based on condition that crane is set on firm level surfaces. Those above thick lines are based on tire capacity and those below, on crane stability. They are based on actual load radius increased by tire deformation and boom deflection.
- 3. Rated lifting capacities are based on proper tire inflation, capacity and condition. Damaged tires are hazardous to safe operation of crane.
- 4. Tires shall be inflated to correct air pressure.

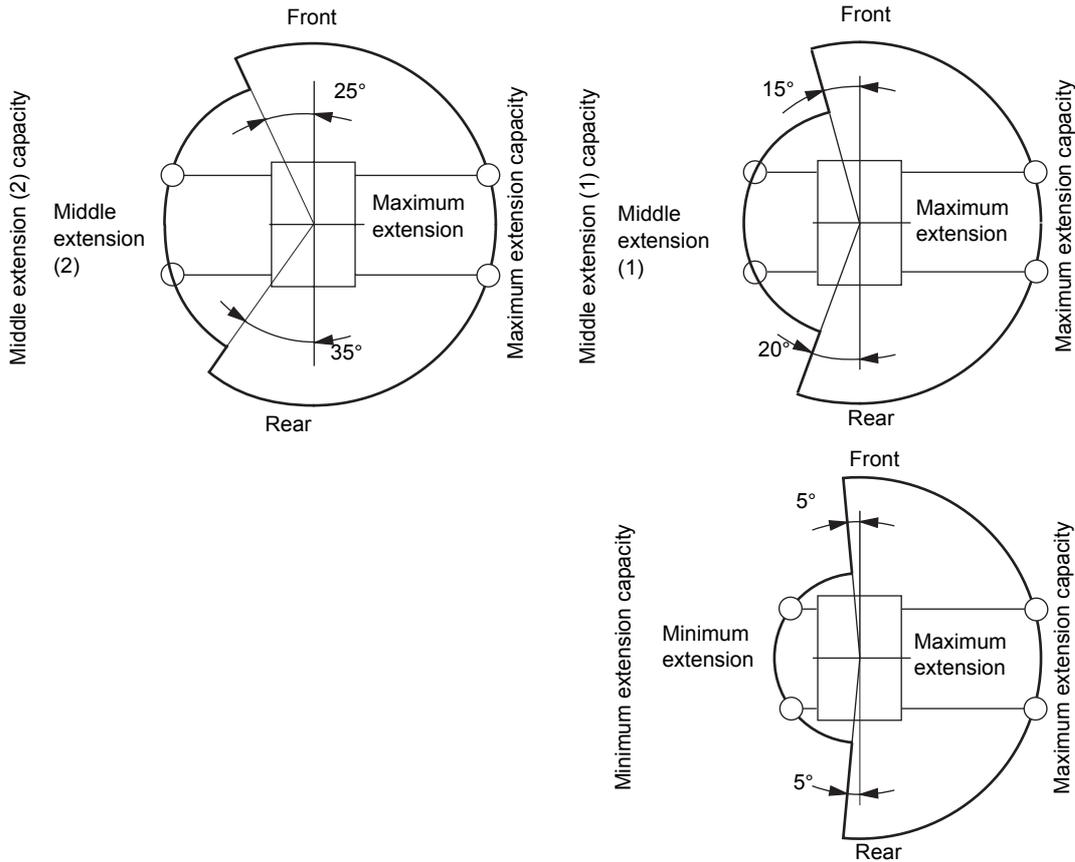
Tires	Air pressure
505/95R25	800 kPa (116 psi)

- 5. Over front operation shall be performed within 2 degrees in front of chassis. When boom is out of 2 degrees in front of chassis, 360° capacities are effective.
- 6. On rubber lifting with "jib" is not permitted. Maximum permissible boom length is 26.6 m (87.3 ft.).
- 7. When making lift on rubber stationary, set parking brake.
- 8. For creep operation, boom must be centered over front of machine, slewing lock engaged, and load restrained from slewing. Travel slowly and keep the lifted load as close to the ground as possible, and especially avoid any abrupt steering, accelerating or braking.
- 9. Do not operate the crane while carrying the load.
- 10. Creep is motion for crane not to travel more than 60 m (200 ft.) in any 30 minute period and to travel at the speed of less than 1.6 km/h (1 mph).
- 11. For creep operation, choose the drive mode and proper gear according to the road or working condition.

Outrigger Extending Status and Lifting Performance

When all the outriggers are extended to maximum, the crane's capacity is the same throughout 360 degrees. The rated lifting capacity on the sides changes depending on the extension width of the outriggers. When a load is lifted on a side with more extended outriggers and swung to a side with less extended outriggers, the rated lifting capacity decreases. Be careful to avoid overloading.

Rated lifting capacities in front and rear areas are the same as the outrigger maximum extension capacity. Depending on the extension width of outriggers, the range of front and rear areas is restricted as shown in the diagrams below.



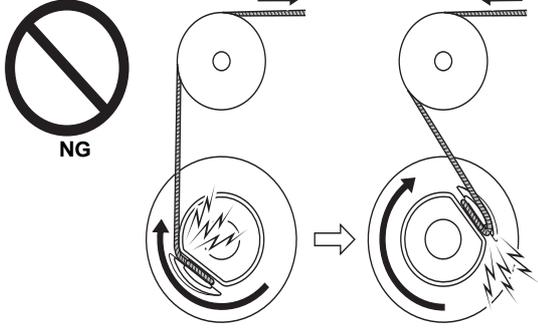
K-00225-00

For the details of the working area, refer to "Service Data" (page 501).

Standard Number of Parts of Line

⚠ WARNING

- If the crane is operated with a greater number of parts of line than standard, the length of the wire rope can become insufficient. If all the wire rope on the winch drum is wound out, the load will be applied to the end of the wire rope. This can break the wire rope and cause an accident. The wire rope can also be wound in the opposite direction, causing the hook block to be hoisted up during winch hoist-down operation and resulting in an accident. Select the number of parts of line so that 3 or more dead turns of wire rope always remain on the winch drum.
- If the number of parts of line used is less than the standard, the load cannot be lifted as specified in the rated lifting capacity table. If a load heavier than the allowable load is lifted up, the wire rope can break and cause an accident. Make sure that the allowable load per one wire rope (4,500 kg or less for both main and auxiliary wire ropes) is not exceeded.



K-00226-00

The standard number of parts of line in relation to the boom length is as shown below.

On-outrigger

Lift state	Boom length						Jib lift	Single top lift
	11.1 m	11.1 m to 15.0 m		15.0 m to 18.8 m		18.8 m to 42.0 m		
Telescoping mode	I, II	I	II	I	II	I, II	I, II	
Standard number of parts of line	13 ^(*1) /12	8	4	6	4	4	1	

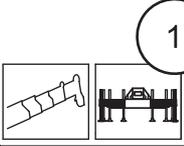
(*1): When the attachment sheave (option) is used.

On-rubber

Lift state			Boom length		Jib lift	Single top lift
			11.1 m to 18.8 m	18.8 m to 26.6 m		
Telescoping mode			I, II	II	I, II	I, II
Standard number of parts of line	Capacity for over-front area	Stationary	4	4	None	1
		Creeping	4	4	None	1
	Capacity for 360-degree area	Stationary	4	None	None	1
		Creeping	4	None	None	1

Boom Lift/Single Top Lift

1. Select a rated lifting capacity table according to the extension width of outriggers to be used.
2. Find the heading for boom length, according to the telescoping mode.
3. Find the row for the load radius.
4. The value at the intersection of the boom length L (m) and load radius R (m) shows the rated lifting capacity for that condition.
Calculate a rated lifting capacity for single top lift by subtracting the suspended main hook block from the rated lifting capacity for boom lift.
The maximum rated lifting capacity for single top lift is 4.5 t.



ON OUTRIGGERS FULLY EXTENDED
7.0 m (22' 11 5/8")

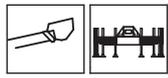
Load radius (m)	Boom Length	
	15.0 m (49.2')	
5.5		27.4

K-04867-00

The rated lifting capacities for boom lift assume that the jib is stowed.

Jib lift

1. Select a rated lifting capacity table according to the extension width of outriggers to be used.
2. Find the heading for applicable combination of the jib and boom lengths.
3. Find the heading for jib offset angle.
4. Find the row for the boom angle.
5. The value at the intersection of the jib offset angle and boom angle shows the load radius and the rated lifting capacity for that condition.



ON OUTRIGGERS FULLY EXTENDED
7.0 m (22' 11 5/8")

Boom angle in Degree	Boom Length		25° Tilt	
	42.0 m (137.8') Boom + 12.7 m (41.7')		R	W
70°			23.8	1.40

K-04868-00

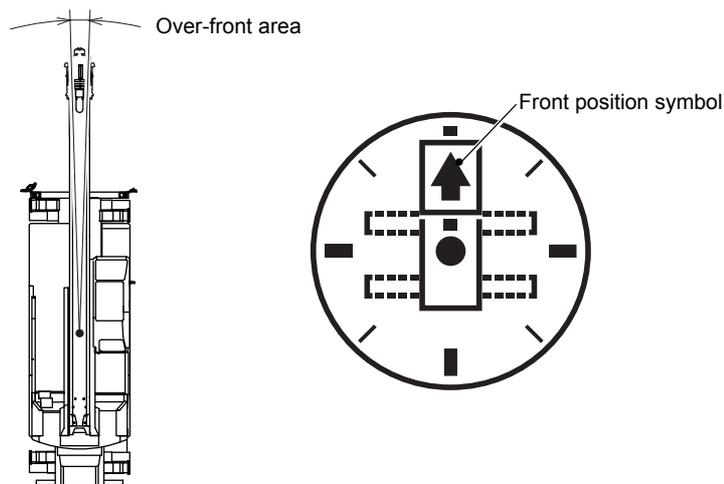
On-rubber Boom Lift (Boom Lift/Single Top Lift)

1. Select Stationary or Creep.
2. Find the heading for over-front area or 360-degree area.
3. Find the heading for the boom length.
4. Find the row for the load radius.
5. The value at the intersection of the boom length L (m) and load radius R (m) shows the rated lifting capacity for that condition.
 Calculate a rated lifting capacity for on-rubber single top lift by subtracting the suspended main hook block from the rated lifting capacity for boom lift.
 The maximum rated lifting capacity for single top lift is 4.5 t.

1 ON RUBBER CREEP		2 Boom Length	
Load radius (m)	3 Over Front		4
	5.9	18.8 m (61.7')	
7.0	5.9		

K-04869-00

The rated lifting capacities assume that tires have the specified air pressure and the crane is used on a firm and level ground with its suspension down (locked).
 Carefully consider the ground and operating conditions.
 The over-front area in the rated lifting capacity table is specified as within approximately 2° in front of the machine. And when the boom direction is in this area, the "front position symbol" is shown on the AML.



K-01264-00

Reduction of Rated Lifting Capacity

Boom Lift

The rated lifting capacities for boom lift assume that the jib is stowed in the specified position and the main winch is used. When the jib is attached to the boom head during boom lift, subtract the value in the table below from the rated lifting capacity.

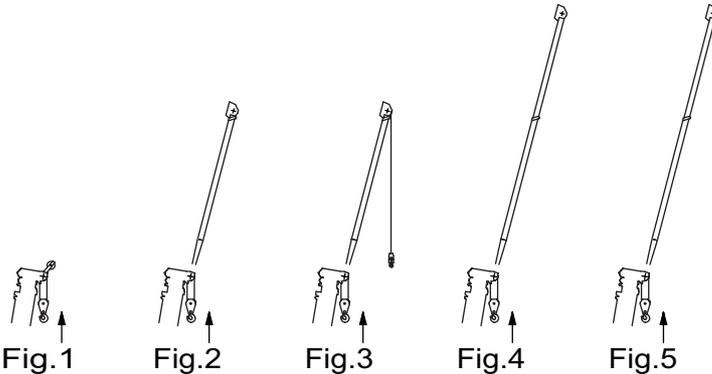
Single Top Lift and Jib Lift

The rated lifting capacities for single top lift or jib lift assume that the main winch is used. If you perform single top lift or jib lift using the auxiliary winch, subtract the mass of the main hook block from the rated lifting capacity values.

WEIGHT REDUCTIONS FOR AUXILIARY LOAD HANDLING EQUIPMENT

Load Handling Equipment	
51ton,6Sheave Hook Block(See Hook Block for actual weight)	460 (kg)
25ton,3Sheave Hook Block(See Hook Block for actual weight)	280 (kg)
Aux.Hook(See Hook for actual weight)	100 (kg)

Lifting from Main Boom with	
#1 Base and Top Jib stowed on base boom	0 (kg)
Single Top stowed on top boom	0 (kg)
Single Top erected but not used	0 (kg)
8.0m (26.2') Base Jib erected but not used	(kg)
Boom Length	11.1m 15.0m 18.8m 26.6m 34.3m 38.1m 42.0m
Telescoping Mode	I, II I I II I II I II I, II
	6,500 4,400 3,500 2,700 2,800 2,600 2,700 2,100 2,100 2,100
8.0m (26.2') Base Jib erected but not used + Aux.Hook on Base Jib	(kg)
Boom Length	11.1m 15.0m 18.8m 26.6m 34.3m 38.1m 42.0m
Telescoping Mode	I, II I I II I II I II I, II
	6,700 4,700 3,800 2,900 3,000 2,900 2,900 2,300 2,300 2,300
12.7m (41.7') Base and Top Jib erected but not used	(kg)
Boom Length	11.1m 15.0m 18.8m 26.6m 34.3m 38.1m 42.0m
Telescoping Mode	I, II I I II I II I II I, II
	6,700 4,600 3,700 2,900 2,900 2,800 2,800 2,200 2,200 2,200
12.7m (41.7') Base and Top Jib erected but not used + Aux.Hook on Top Jib	(kg)
Boom Length	11.1m 15.0m 18.8m 26.6m 34.3m 38.1m 42.0m
Telescoping Mode	I, II I I II I II I II I, II
	7,000 5,000 4,000 3,200 3,200 3,100 3,100 2,500 2,400 2,400



- Note
- * Capacity deductions are for TADANO ESCORTS supplied equipment only.
 - * When lifting from Jib, deduct total weight of all load handling devices reeved on Main Boom nose directly from Jib capacity. (#2)
 - #1. Correct state of Jib, mounted or removed, should be inputted into the AUTOMATIC MOMENT LIMITER (AML-C) by Jib state key switch.
 - #2. The winch which is lifting load should be defined in the AUTOMATIC MOMENT LIMITER (AML-C) by main winch/auxiliary winch selector switch.

34521674660-0

K-04854-00

Automatic Moment Limiter (AML)

⚠ WARNING

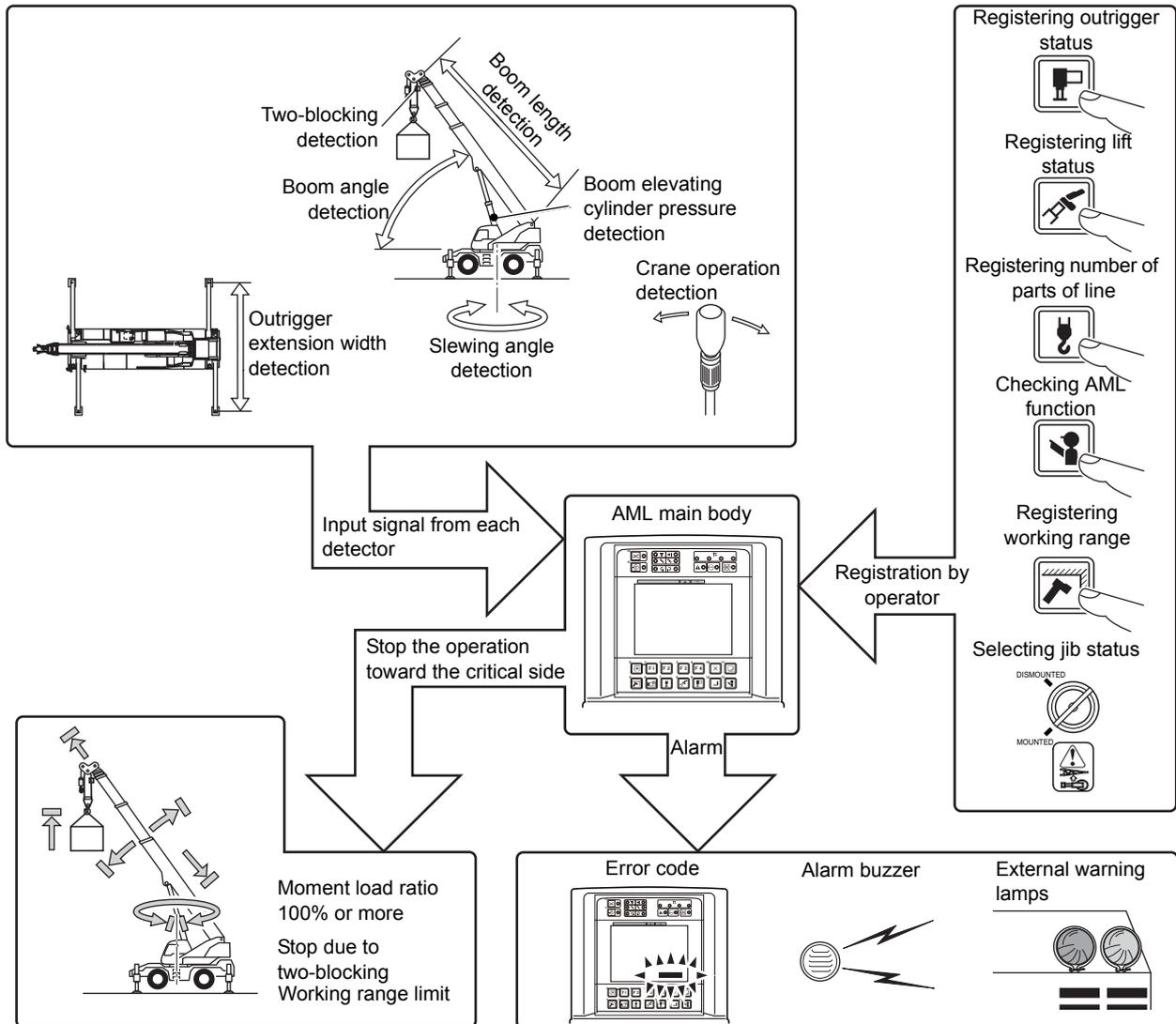
Never operate the crane with the automatic stop function of the AML canceled. If you use the AML incorrectly, the machine can overturn or suffer damage, resulting in a serious accident.

NOTICE

Set the override key switch to "OFF" and remove the key, and entrust it to the responsible manager of the machine or of the work.

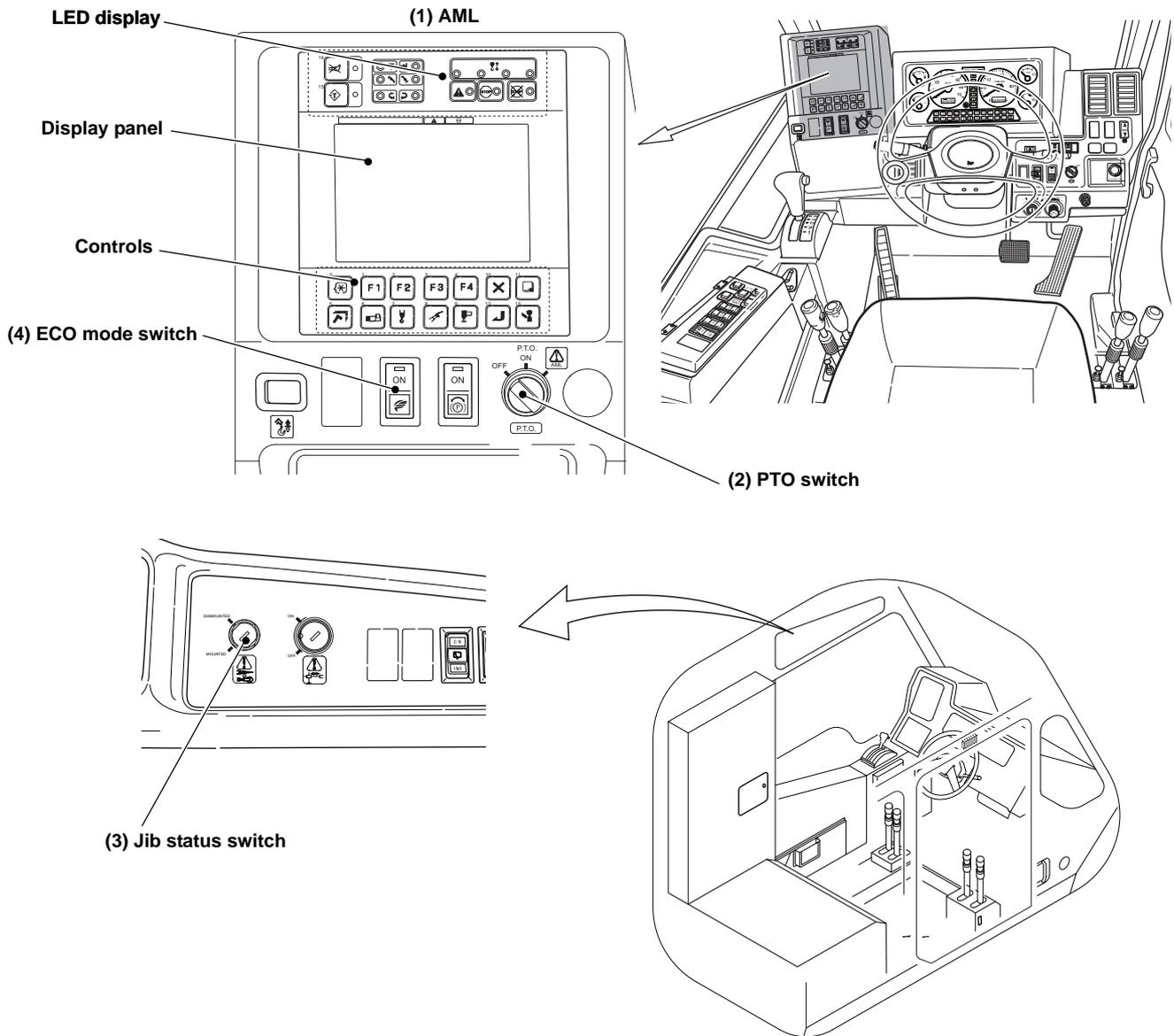
The AML calculates the working moment and rated moment based on the operation status registered by the operator and input signal from each detector, and displays them as moment load ratio. When the moment load ratio reaches or exceeds 100%, the AML stops the crane operations toward the critical sides and warns with error codes and buzzer.

The AML is a safety device to prevent accidents such as machine overturning and damage caused by overload, and is not a load meter. The shown lifting loads are reference values, and their precision is not guaranteed.



K-01305-00

CTI-500XL-1_OM1-11E



K-04855-00

(1) AML

The AML consists of the LED display, display panel, and controls.

The LED display shows the setting of work range limits, turning conditions of the winch drums, and controlling conditions of the AML.

The display panel shows the moment load ratio, crane status, outrigger status, slewing position, and error codes.

(2) PTO switch

When this switch is set to "ON", the AML is turned on.

(3) Jib Status Switch

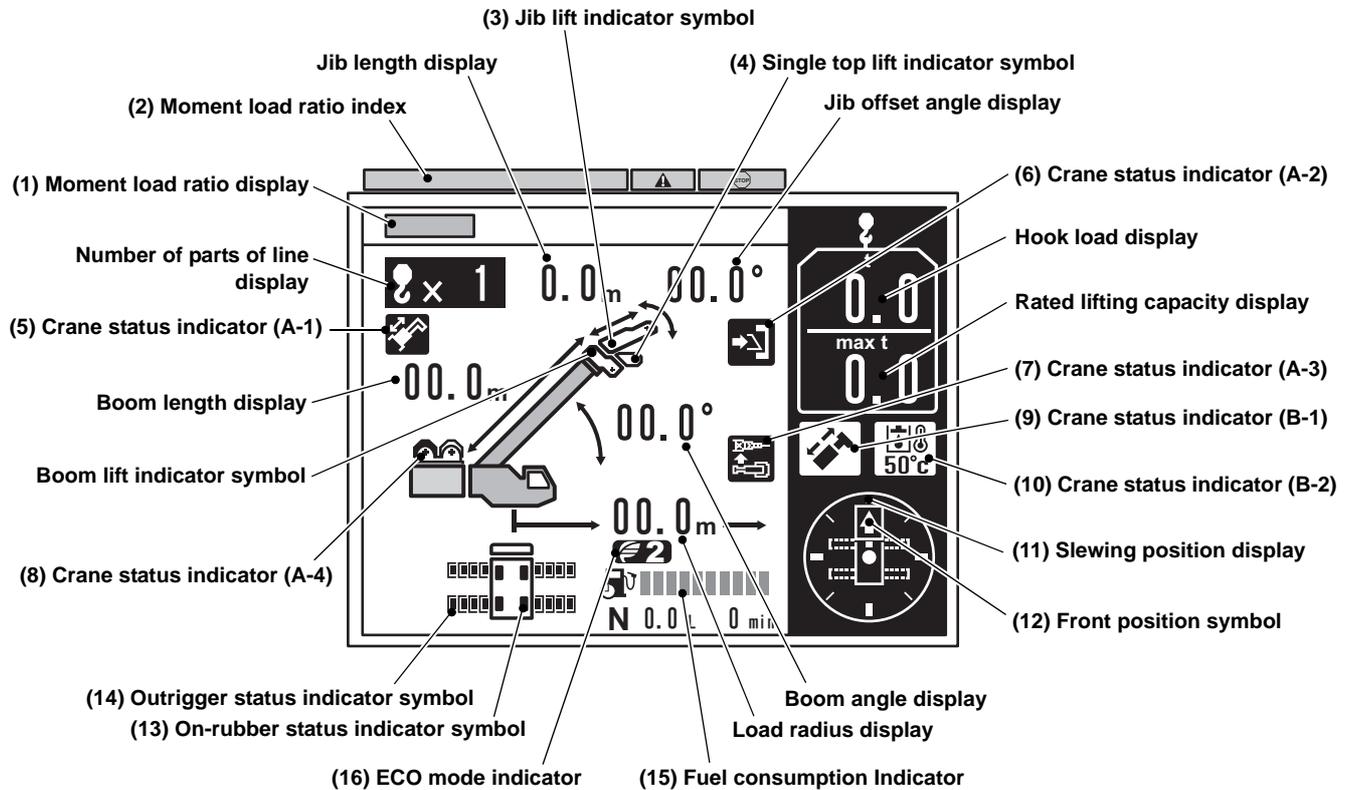
Register the jib state (mount or dismount) using the jib status switch.

(4) ECO Mode Switch

While the ECO mode switch is "ON", the maximum engine speed of the crane operation is restricted, and the fuel consumption and noise of the crane operation is controlled.

How to Read Indication

Display Panel



K-00234-00

NOTICE

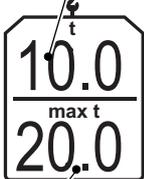
- **Moment load ratio is not a ratio of the hook load to the rated lifting capacity. Determine the correct lifting capacity by reading the rated lifting capacity table.**
- **The AML is not a hook load indicator. The hook load indication is a reference value, and not necessarily a correct mass of the lifted load.**

Moment load ratio

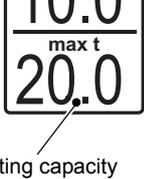


≠

Hook load



Rated lifting capacity



K-00235-00

(1) Moment load ratio display

Shows the moment load ratio with a bar graph.

(2) Moment load ratio index

Shows the status of moment load ratio by color: safe (green), warning (yellow), or critical (red).

(3) Jib lift indicator symbol

Appears when the jib lift is registered. Flashes when the jib set status is registered to the AML.

(4) Single top lift indicator symbol

Appears when the single top lift is registered.

- (5) Crane status indicator (A-1)
- (6) Crane status indicator (A-2)
- (7) Crane status indicator (A-3)
- (8) Crane status indicator (A-4)
- (9) Crane status indicator (B-1)
- (10) Crane status indicator (B-2)

The indicator (icon) shows a crane state. Refer to "Crane Status Indicator" (page 142) for the meaning of the icons.

(11) Slewing position display

Shows the current slewing position. The display is graduated in 45°.

(12) Front position symbol

Appears when the boom is directed to the front of the vehicle.

(13) On-rubber status indicator symbol

Flashes during on-rubber creep operation, and turns on during on-rubber stationary operation.

(14) Outrigger status indicator symbol

Indicates the extension width of outriggers. The outer frames of the symbol represent the maximum available steps of the outrigger extension, and the inner frames (black-filled segments) represent the current step of outrigger extension.

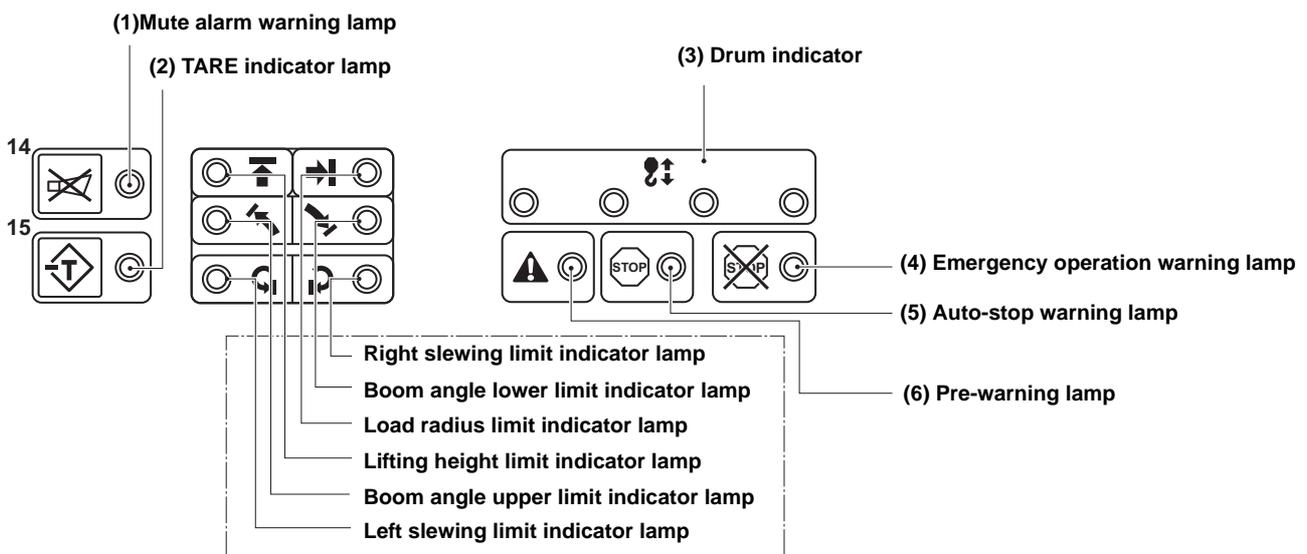
(15) Fuel consumption indicator

Show the fuel consumption during crane operation.

(16) ECO mode indicator

Lights up when ECO mode switch is on and displays current mode such as ECO mode 1 or ECO mode 2.

LED display



Lights up when each working range limit function is registered. When the limit range is reached, the crane operation stops automatically. At this time, the indicator state changes from "being lit" to "flashing."

(1) Mute alarm warning lamp

Lights up when the alarm buzzer is turned off.

(2) TARE indicator lamp

Lights up when the TARE function is selected.

(3) Drum indicator

The four indicators flash in sequence to indicate that the winch drum is rotating.

Displays the main winch when the boom lift is registered to the AML, and displays the auxiliary winch when the single top or jib lift is registered to the AML.

(4) Emergency operation warning lamp

Lights up when either (or both) of the following cases:

- PTO switch is kept to "AML" (override) position.
- Anti-two-block disable switch is kept depressed.

(5) Auto-stop warning lamp

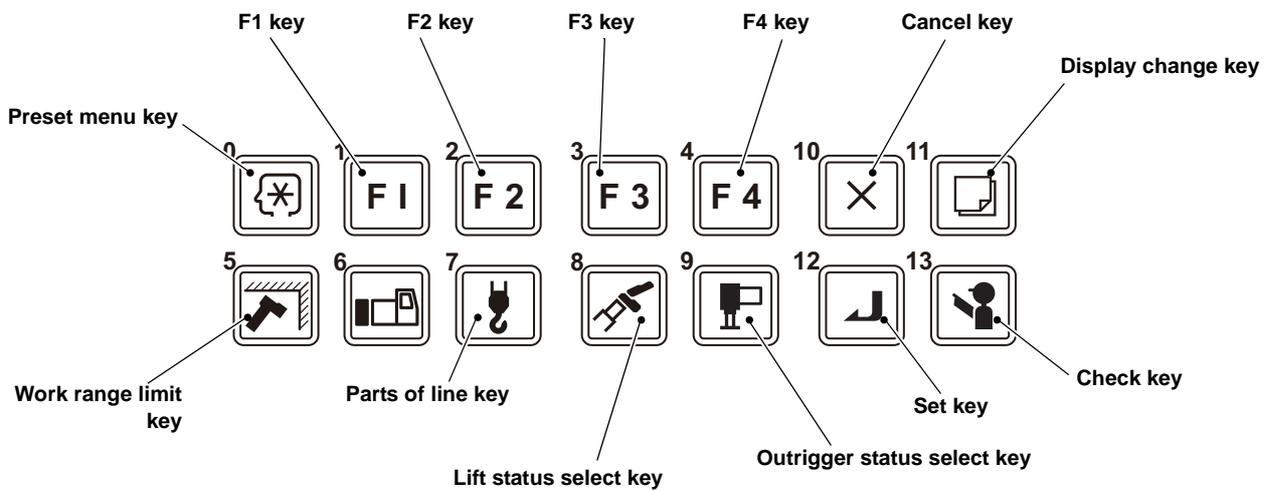
Lights up in the following cases:

- The moment load ratio reaches 100%, and the machine stops automatically, or
The automatic stop function is canceled.

(6) Pre-warning lamp

Lights up when the moment load ratio is 90% or more and below 100%.

Controls

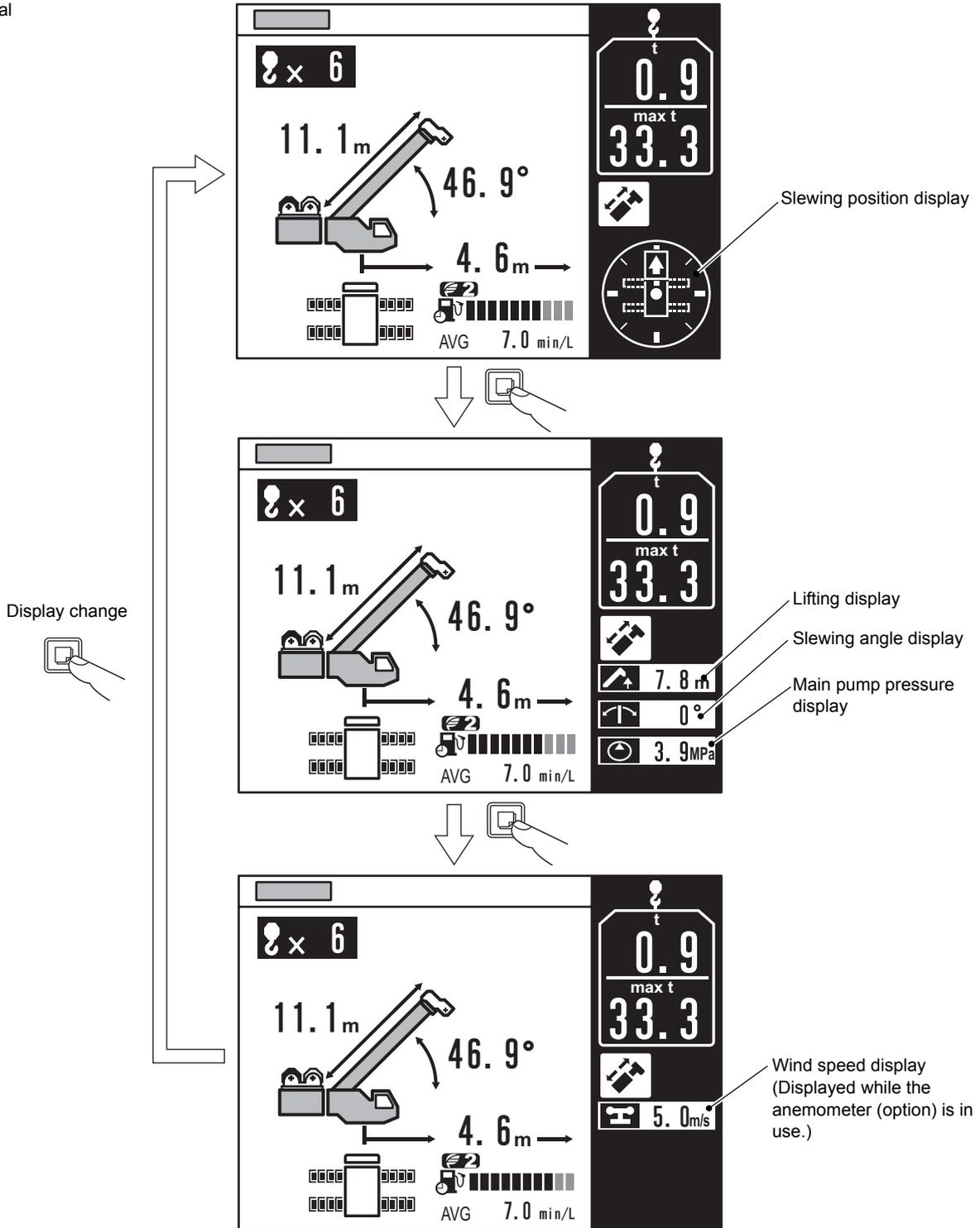


K-00237-00

Selecting Display

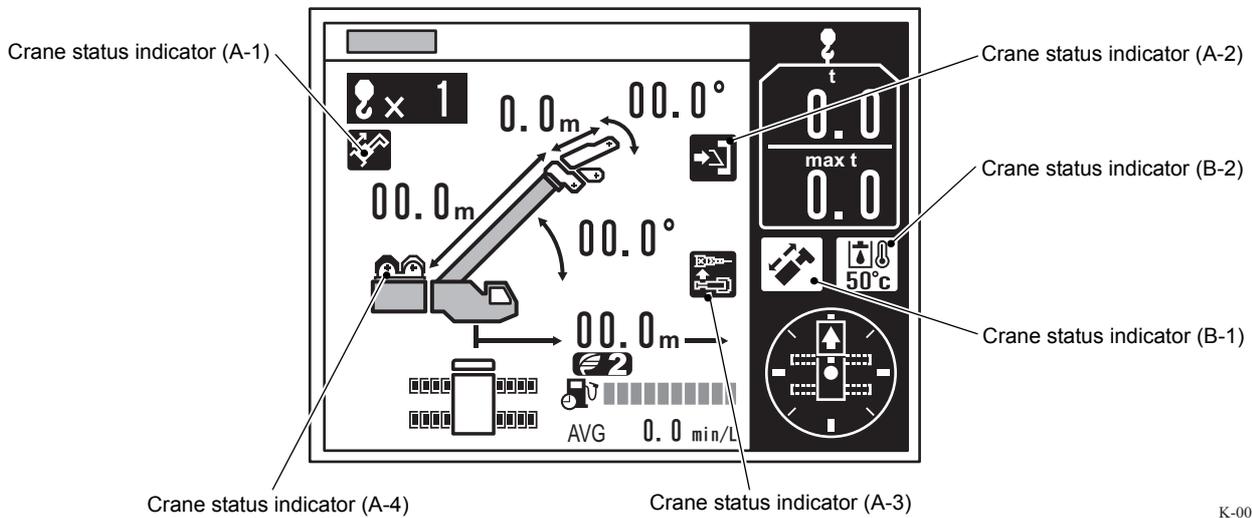
When the display change key is pressed, the content in the display panel changes as shown in the illustration.

Normal



Crane Status Indicator

The crane state is displayed by the indicators (icons). The positions and contents of the indicators are as follows.



K-00239-00

Icon	Designation	Position	Display condition
 K-00240-00	Telescoping mode I	A-1	The boom telescoping mode I is selected.
 K-00241-00	Telescoping mode II	A-1	The boom telescoping mode II is selected.
 K-00242-00	Jib lock	A-2	The automatic pin of the jib lock device is inserted in the jib set state.
 K-00243-00	Jib dismount	A-3	The jib is dismantled from the boom, and the jib status switch is set to "DISMOUNTED".
 K-00244-00	Winch selection (Main winch)	A-4	The main winch is selected.
 K-00245-00	Winch selection (Auxiliary winch)	A-4	The auxiliary winch is selected during single top lift or jib lift.
 K-00246-00	Boom Telescoping Operation	B-1	The boom telescoping/auxiliary winch control selector switch is set to "Boom telescoping".

CTI-500XL-1_OM1-11E

Icon	Designation	Position	Display condition
 K-00247-00	Auxiliary Winch Control	B-1	The boom telescoping/auxiliary winch control selector switch is set to "Auxiliary winch".
 K-00248-00	Hydraulic oil temperature 50°C	B-2	Flashes when the hydraulic oil temperature is between 50°C and 85°C. (If more than one icon are to appear in this area, they appear alternately every 3 seconds.)
 K-00249-00	Hydraulic oil temperature 85°C	B-2	Flashes when the hydraulic oil temperature exceeds 85°C. (If more than one icon are to appear in this area, they appear alternately every 3 seconds.)
 K-00250-00	Outrigger switch out of neutral	B-2	Flashes when the extend/retract selector switch or jack/beam selector switch is set to the positions other than neutral position. (If more than one icon are to appear in this area, they appear alternately every 3 seconds.)
 K-00251-00	Outrigger state emergency registration	B-2	Flashes when the emergency outrigger control switch is set to "ON". (If more than one icon are to appear in this area, they appear alternately every 3 seconds.)

Registration of Operating Status and AML Function Check

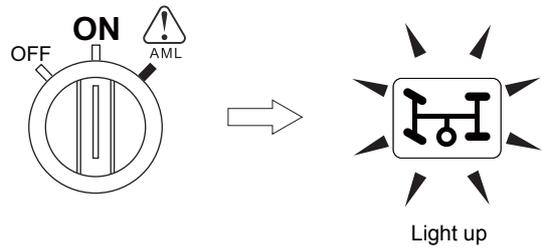
⚠ WARNING

Before starting crane operation, make sure that correct operation state is registered and the AML system functions normally. If registration of operation state is incorrect or the AML system does not operate normally, the machine can overturn or be damaged, resulting in a serious accident.

Before the crane operation, observe the steps below to register the operation state and be sure to do the AML function check.

1. Set the PTO switch to "ON".

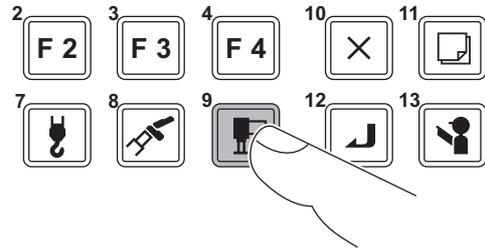
- The PTO indicator lights up, and the power is supplied to the AML.



K-01527-00

2. Set up the outriggers.

3. Press the outrigger status select key.



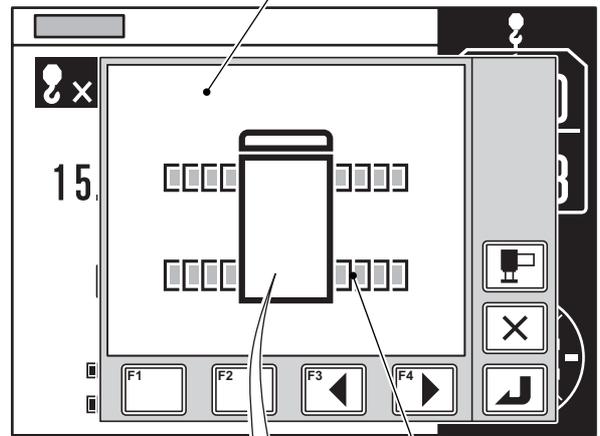
K-00253-00

- The pop-up window for the outrigger status registration appears on the display panel. Each time the outrigger status select key is pressed, the display changes as shown below.

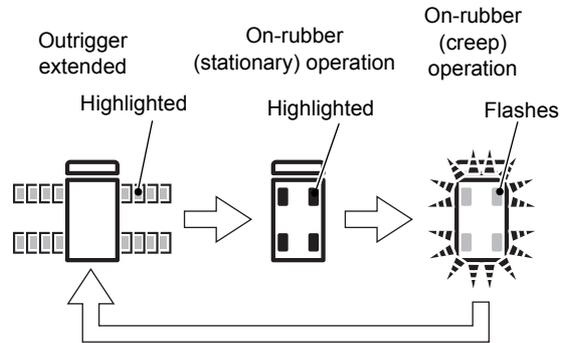
☞ When the power for the AML is turned on, the "On-rubber (stationary) operation" state is automatically set.

☞ Instead of the outrigger status select key, you can use the F3 (Backward) key or F4 (Forward) key to change the display of the outrigger state.

Pop-up window for outrigger status registration is displayed.



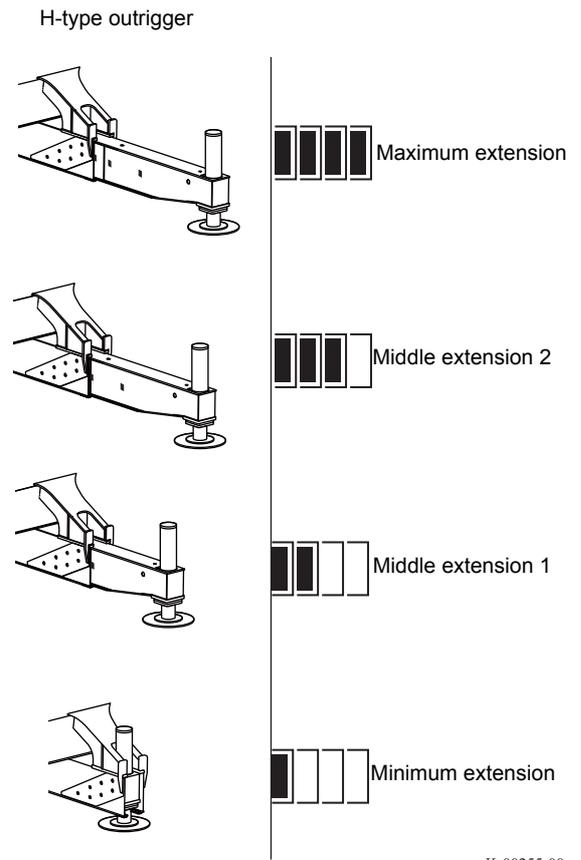
Detected status is displayed.



K-02544-00

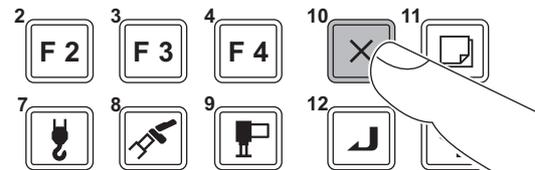
4. Make sure that the display matches the actual outrigger state.

- The meaning of each indication of the outrigger state symbol is as shown in the illustration on the right.



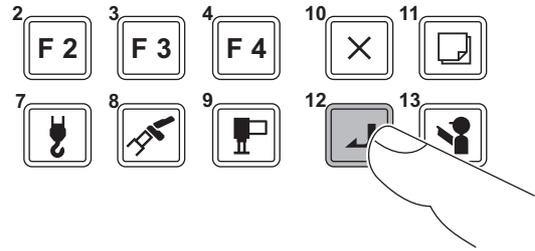
K-00255-00

To cancel registration, press the cancel key. The pop-up window closes and the AML returns to the status before the start of the registration.



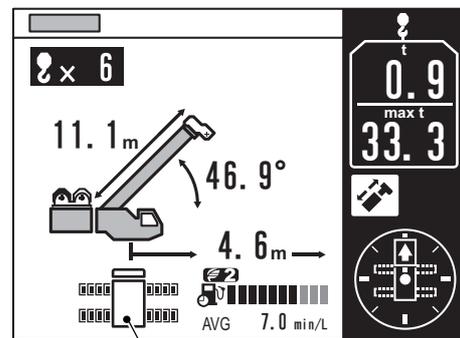
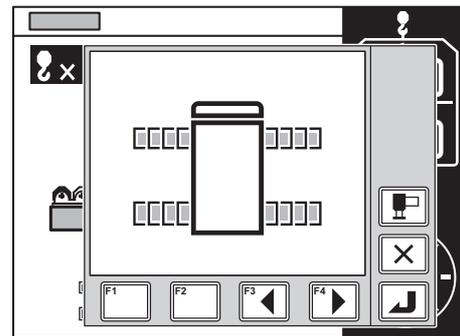
K-00256-00

- After confirming, press the set key to register the status.



K-00257-00

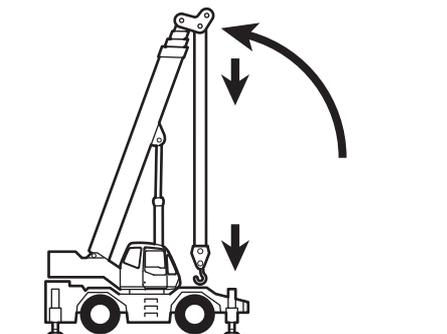
- After the registration is completed, the pop-up window closes, and the AML returns to the crane operation state.



Outrigger status indicator symbol represents the registered status.

K-00258-00

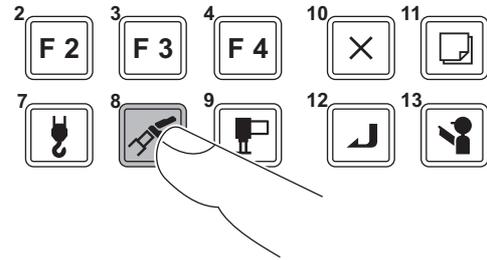
- Take out the main hook block from the stowing positions.



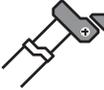
K-01303-00

7. Press the lift status select key to register the lift status (single top/jib/boom).

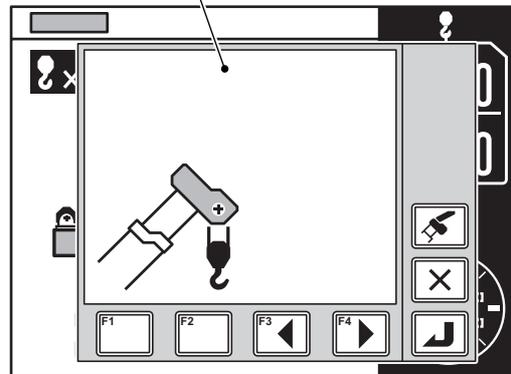
- The pop-up window for the lift status registration appears on the display panel. Every time the lift status select key is pressed, the display changes in the order of (1) to (9) as shown below. On pressing the lift status select key in (9), the AML returns to (1).



K-00260-00

Pop-up window	Lift status
 K-00262-00	(1) Boom lift
 K-00263-00	(2) Single top lift
 K-00264-00	(3) Jib set
 8.0 m 5° /25° /45° K-00265-00	8.0 m jib lift (4) 5° offset (5) 25° offset (6) 45° offset
 12.7 m 5° /25° /45° K-00266-00	12.7 m jib lift (7) 5° offset (8) 25° offset (9) 45° offset

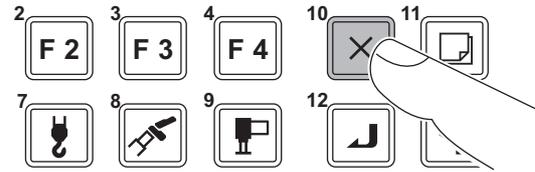
Pop-up window for lift status registration is displayed.



K-00261-00

- ☞ When the power of the AML is turned on, the boom lift status is automatically set.
- ☞ Instead of the lift status select key, you can use the F3 (Backward) key or F4 (Forward) key to change the display of the lift status.

☞ To cancel registration, press the cancel key.
The pop-up window closes and the AML returns to the status before the start of the registration.

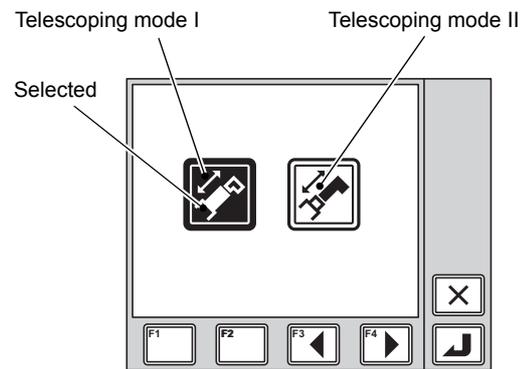


K-00267-00

8. Press the set key.

- When the boom is fully retracted, the pop-up window for boom telescoping mode selection appears on the display panel.

☞ When the boom is extended, the boom telescoping modes cannot be selected.



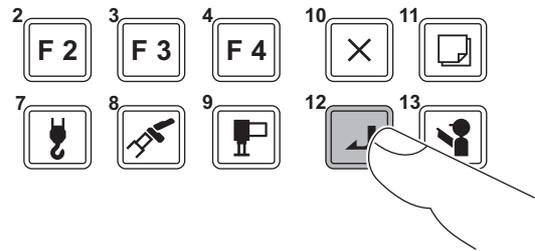
K-00268-00

9. Press the F3 (Backward) or F4 (Forward) key to select one of the telescoping mode icons.

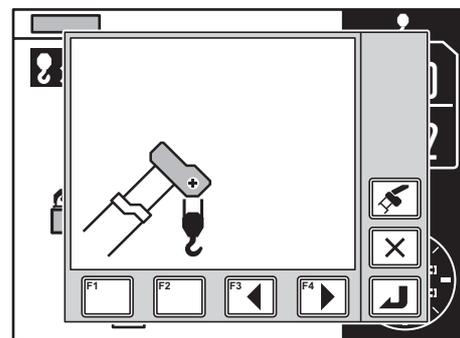
- The selected icon is highlighted.

10. Press the set key to register the setting.

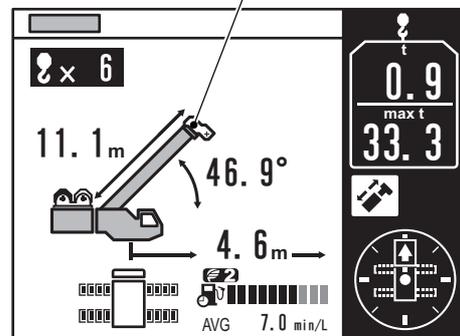
- After the registration is completed, the pop-up window closes, and the AML returns to the crane operation state.



K-00269-00



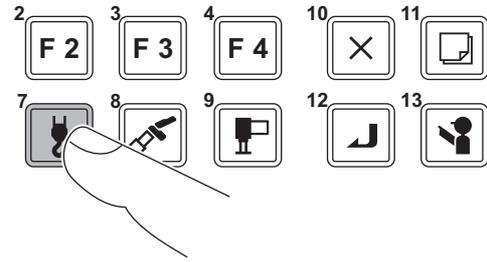
Lift status indication symbol represents the registered status.



K-00270-00

11. Press the parts of line key to register the number of parts of line to be used.

- The pop-up window for registration of the number of parts of line appears on the display panel. Each time you press the parts of line key, the number of parts of line changes.

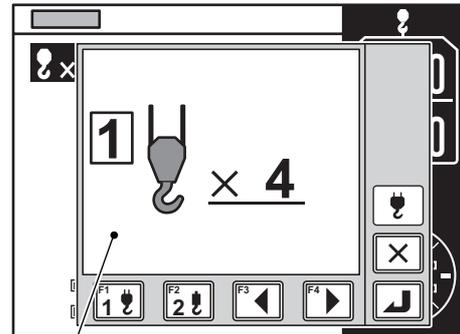


K-00271-00

The hook block is automatically selected and shown according to the registered lift state. If the displayed hook block symbol is not the one you want to register, press the F1 (main hook block) key or F2 (auxiliary hook block) key to change the lift.

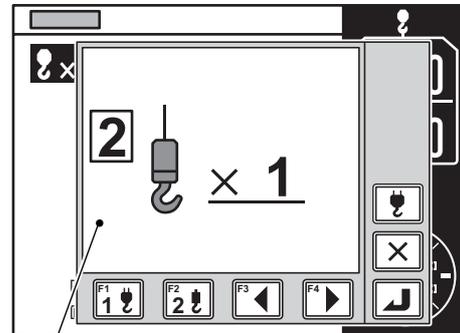
- ☞ You can register only the number of parts of line specified for each model.
- ☞ Instead of the parts of line key, you can use the F3 (Backward) key or F4 (Forward) key to change the display of the number of parts of line.

When boom lift is registered



Pop-up window for main hook block registration is displayed.

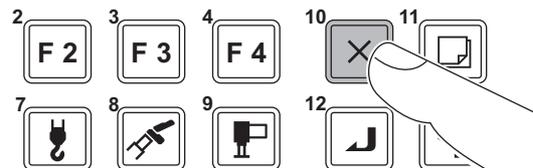
When single top/jib lift is registered



Pop-up window for auxiliary hook block registration is displayed.

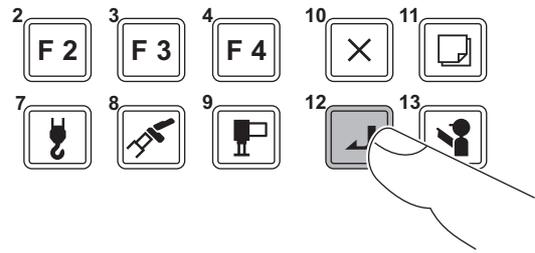
K-00272-00

- ☞ To cancel registration, press the cancel key. The pop-up window closes and the AML returns to the status before the start of the registration.



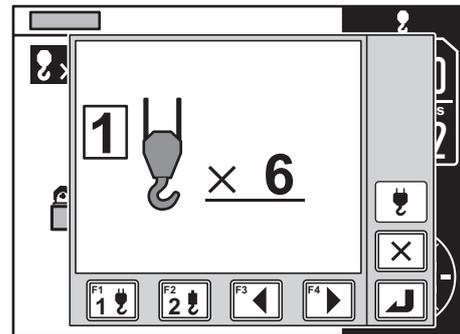
K-00273-00

12. Press the set key to register the setting.

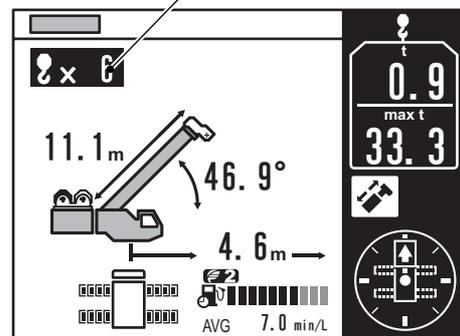


K-00274-00

- After the registration is completed, the pop-up window closes, and the AML returns to the crane operation state.



Registered number of parts of line



K-00275-00

13. Set the jib status switch to register the jib state.

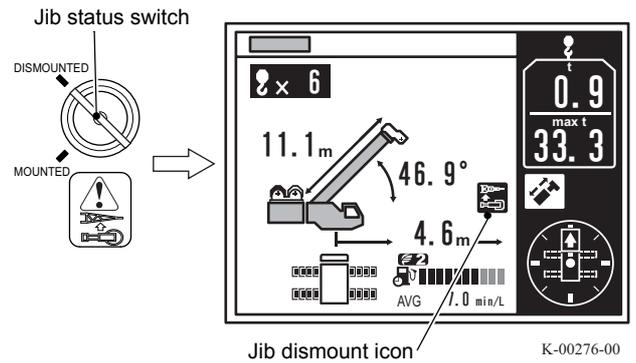
- DISMOUNTED:

Jib dismantled

- MOUNTED:

Jib mounted

- When the switch is set to "DISMOUNTED", the jib dismant icon appears on the display panel of the AML.



⚠WARNING

Make sure that the switch position corresponds to the actual jib mounting status. Otherwise, the calculation base of the AML is inaccurate, and the machine can overturn or be damaged.

☞ When the jib is dismantled, the reduction of the mass affects the measurement of the AML.

☞ You can insert/remove the switch key either in the "DISMOUNTED" or "MOUNTED" position.

14. Press the check key and make sure that the AML is in the conditions below.

- LED display:

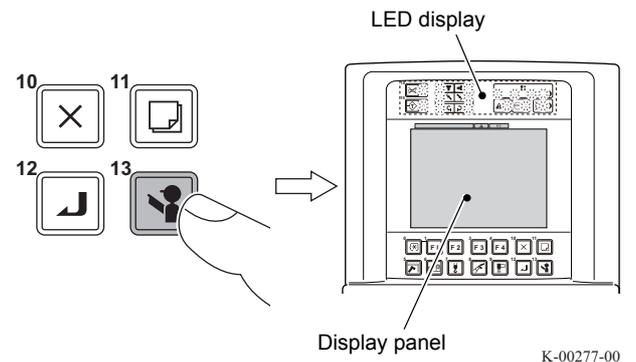
All lit

- Display panel:

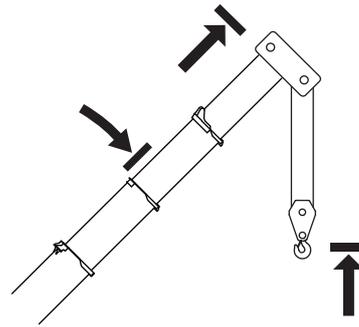
All lit

- Alarm buzzer:

Sounds continuously

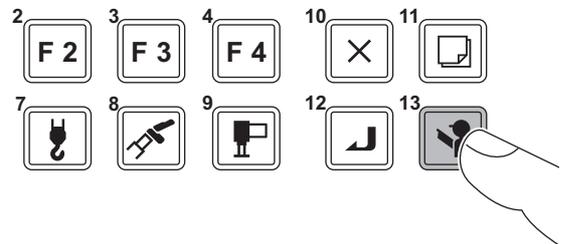


15. Attempt hoist-up, boom extension, and boom lowering operations to make sure that the crane does not operate.



K-00278-00

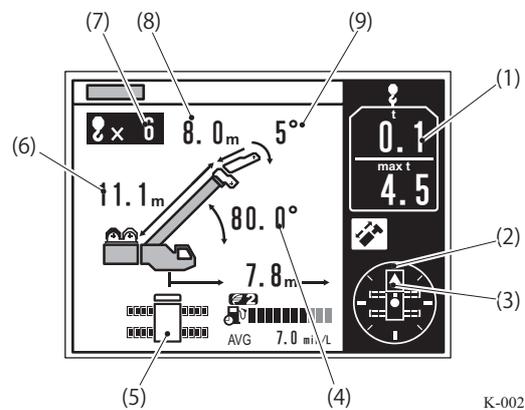
16. Press the check key again to return the AML to the crane operation state.



K-00279-00

17. Make sure that the items on the display panel listed below match the actual status.

- (1) Hook load
Make sure that approximate hook mass is shown under a no-load condition.
- (2) Slewing position display
- (3) Front position symbol
(only when the boom is directed toward the front of the vehicle)
- (4) Boom angle
- (5) Outrigger status indicator symbol
- (6) Boom length
- (7) Number of parts of line
- (8) Jib length (when jib lift is registered)
- (9) Jib offset angle (when jib lift is registered)



K-00280-00

The hook block mass shown varies depending on the crane configuration, etc.

Now, operation state registration and AML function check are completed.

You can start crane operation.

- ☞ Even after you turn off the AML, the registered information is retained for approximately 2 hours. When the AML is turned on, the operation starts with the retained information. The registered information is erased approx. 2 hours after the AML is turned off. In this case, it is necessary to register the operation state from the beginning.

Alarm and Recovery Operation

NOTICE

Repair is necessary if any of the events below occurs:

- An error code that is not described in this manual is shown.
- The error code does not disappear even after registering the status or performing the recovery operation that corresponds to the error code.
- The crane stops and cannot be operated.

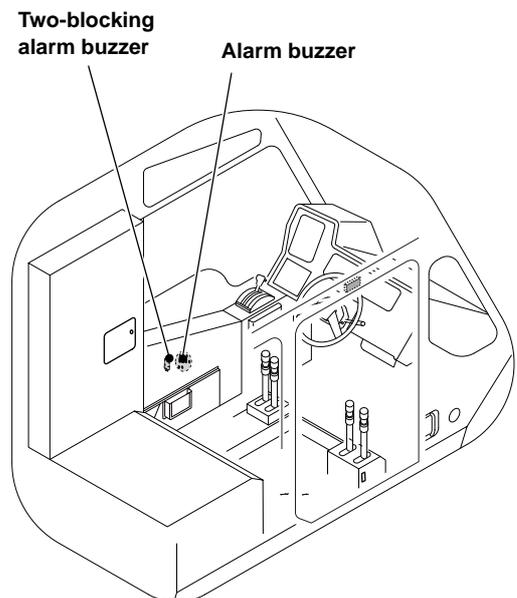
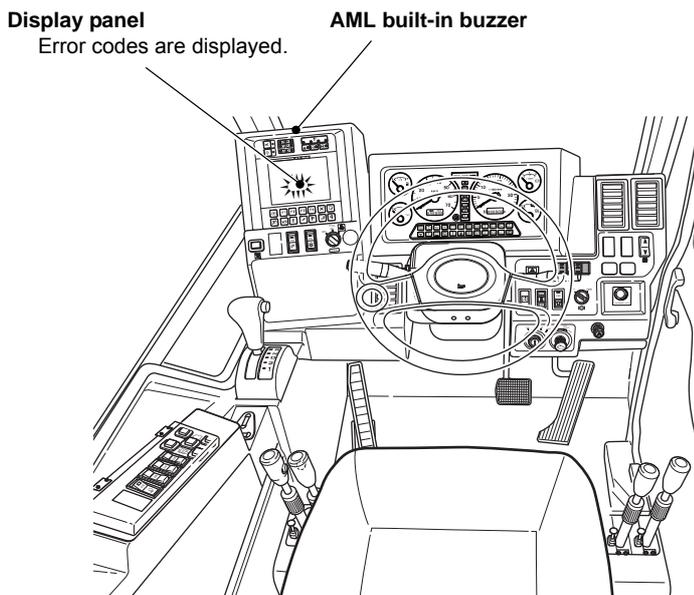
Contact Tadano Escorts India Private Ltd. or a dealer.

When failure occurs or improper operation is performed during crane operation, the buzzer sounds and an error code is shown to ensure safety and to prevent damage to the machine. Check the error code and perform recovery operation.

Error Codes and Types of Buzzer

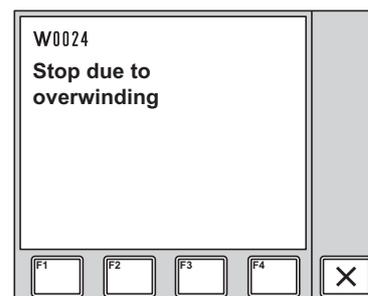
The error codes appear on the display panel.

There are 3 types of buzzers, and each buzzer sounds differently according to the cause of the alarm.



K-04856-00

If the F1 key is pressed while an error code is shown, a pop-up window appears and shows a message.



K-00282-00

Stop Alarm

 The following table contains some error codes that are not applicable to this model.

[Error code] "Message"	Buzzer	Cause	Remedy
Ordinary bar graph display (no error code)  K-00283-00	Alarm buzzer: Continuous sound	Moment load ratio is 100% or more.	Unwind the winch, retract or raise the boom, or slew to the non-critical side.
[W0023] "Stopped at 100% of crane performance"		Crane is operated toward a critical side while the moment load ratio is 100% or more.	
[W0024] "Stop due to overwinding"	Overwind (two-blocking) alarm buzzer: Tremolo sound	Crane is operated toward a critical side while the hook block is overwound.	Unwind the winch or retract the boom to lower the hook block.
[W0007] "Stop at swing angle limit"	AML built-in buzzer: beep-beep-beep (Every 1 second for 5 seconds.)	Overload occurs during the slewing operation.	Slew in the opposite direction, or retract or raise the boom.
[W0025] "Stopped due to backward stability"		Backward stability decreases and the crane can overturn.	Lower or extend the boom.
[W0034] "Stopped by main winch overunwinding prevention device"		Remaining wire rope on the main winch drum is short.	Wind up the winch.
[W0035] "Stopped by aux. winch overunwinding prevention device"		Remaining wire rope on the auxiliary winch drum is short.	
[W0044] "Jib stowed condition"		The jib is operated with the jib lock pin inserted.	Extend the jib.

[Error code] "Message"	Buzzer	Cause	Remedy
[W0054] "Stopped by elevating cylinder stroke end"	AML built-in buzzer: beep-beep-beep (Every 1 second for 5 seconds.)	Boom is lowered at elevation lower limit stroke end.	Raise the boom.
[W0055] "Stopped by elevating cylinder stroke end"		Boom is raised at elevation upper limit stroke end.	Lower the boom.
[W0121] "Stopped by elevating cylinder stroke end"		Boom is raised at elevation upper limit stroke end when the elevation slow stop is activated.	
[W0124] "Stopped at limit range of boom with jib"		Overloading occurs during boom lift with the jib extended.	<ul style="list-style-type: none"> • Unwind the winch, or retract or raise the boom. • Stow the jib.
[W0190] "Auto. stopped at critical range"		The motion stops once, and then stops again.	Operate the crane toward non-critical direction from the point of the 1st stop.
[W0261] "Stopped due to pivot pin and connecting pin are inserted"		Jib set status is registered to the AML, and the boom is extended with the jib stowed.	Retract the boom fully.
[W0272] "Boom extend prohibited"		Jib set status is registered to the AML, and the boom is extended.	Retract the boom fully.

Warning Alarm

 The following table contains some error codes that are not applicable to this model.

[Error code] "Message"	Buzzer	Cause	Remedy
Ordinary bar graph display (no error code)  K-00284-00	Alarm buzzer: Intermittent sound (Every 1.6 seconds)	Moment load ratio is 90% or more and less than 100%.	Carefully monitor the moment load ratio while operating.
[W0015] "Overwinding condition"	Overwind (two-blocking) alarm buzzer: Tremolo sound	The stop function is canceled with the anti-two-block disable switch while the hook block is overwound.	Unwind the winch or retract the boom to lower the hook block.
[W0012] "Backward stability auto. Stop range"	AML built-in buzzer: beep-beep-beep (Every 1 second for 5 seconds)	The crane has taken a posture with no backward stability capacity during crane operation.	Extend or lower the boom.
[W0013] "Over-front detection switch is defective"		The status of the front position detector switch and the actual swing angle do not match.	Contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.
[W0016] "State 1 is not applied"		<ul style="list-style-type: none"> Crane operation state goes out of the states that are registered to the AML. An operation state with no capacity rated is registered to the AML. 	<ul style="list-style-type: none"> Register the operation status again. For on-rubber operation, retract the boom to the capacity range.
[W0017] "State 2 is not applied"			
[W0018] "Boom full retraction switch 1 faulty"		The status of the boom full retraction detector switch and actual boom length do not match.	Contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.
[W0019] "Boom full retraction switch 2 faulty"			
[W0040] "AML override SW "ON" condition"		The AML is in the override status and the override key switch outside the cab is turned to "ON".	The emergency operation is carried out. Operate with care.

[Error code] "Message"	Buzzer	Cause	Remedy
[W0041] "Counterweight mismatch"	AML built-in buzzer: beep-beep-beep (Every 1 second for 5 seconds)	The status of the counterweight mounted on the crane does not match the status registered to the AML.	<ul style="list-style-type: none"> Register the state of counterweight on the AML. Do not operate the crane while the counterweight is dismounted.
[W0056] "Swing operation is dangerous"		During on-rubber operation or operation on outriggers extended to minimum, the boom angle exceeds the upper limit angle for slewing from the over-front area to an over-side area.	Before slewing, lower the boom angle sufficiently.
[W0057] "Right front outrigger state change"		An outrigger beam retracts during crane operation, and the performance (lifting capacity) changes to the one with smaller extension width of outriggers.	Extend the outrigger again, and insert the pin. Then, register the outrigger status again.
[W0058] "Right rear outrigger state change"			
[W0059] "Left front outrigger state change"			
[W0060] "Left rear outrigger state change"			
[W0097] "Wind speed upper limit"		Wind speed at the boom head or jib head exceeds the wind speed limit for crane operation.	Stow the boom and jib, and stop operation until wind speed becomes below the limit.
[W0191] "AML override SW is in override position"		The AML is in the override status when it is turned on.	Turn "OFF" the override key switch.
[W0197] "Boom interference condition"		The boom (or jib) may touch the engine cover or the mirror.	Be careful when lowering or slewing the boom.
[W0286] "Operation detector is not in neutral position"		A control lever is not in neutral position when power is turned on.	Set all the control levers in neutral positions. If the AML built-in buzzer does not stop, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.
[W0999] "Back-up battery running down"	When the power is turned on, the battery for the AML built-in clock is low.	Contact Tadano Escorts India Private Ltd. or a dealer for battery replacement.	

[Error code] "Message"	Buzzer	Cause	Remedy
[W0106] "Elevating speed is reducing"	AML built-in buzzer: beep-beep-beep (Every 2 seconds)	The elevation slow stop function is activated and boom elevating speed is decelerating.	The crane is approaching the stop position. Operate with care.
[W0107] "Telescoping speed is reducing"		The telescoping slow stop function is activated and boom telescoping operation is decelerating.	
[W0108] "Swing speed is reducing"		The slewing stop function is activated and slewing operation is decelerating.	
[W0282] "Jack reaction force lower limit"		The min. value of the outrigger jack supporting pressure is below the lower limit warning value.	Check the outrigger status symbol on the AML, and change the crane operation status so that each jack supporting pressure value becomes the middle of the maximum and minimum values.
[W0283] "Jack reaction force upper limit"		The max. value of the outrigger jack supporting pressure is over the upper limit warning value.	
[W0287] "Out of level"		The inclination angle of the slewing table exceeds the set limit.	Stop the crane operation and check the installation ground.
[W0271] "Boom not fully retract"	AML built-in buzzer: beep-beep-beep (Every 1 second for 5 seconds) Alarm buzzer: Intermittent sound (Every 0.4 seconds)	All conditions below have occurred at the same time. <ul style="list-style-type: none"> • Jib set status or jib lift status is registered to the AML. • Boom is not fully retracted. • The boom angle is close to horizontal. 	Before mounting/stowing the jib, fully retract the boom.

Other Functions

There are following other functions.

- (1) Work range limit function
- (2) Smart Chart
- (3) TARE function
- (4) Fuel consumption display function
- (5) Mute alarm function
- (6) Preset menu
(ECO mode selection, winch drum rotation buzzer selection, fuel consumption history display, selection of winch to be used, setting of anemometer alarm threshold value, adjustment of display panel contrast)
- (7) Back light On (Off) function

Each function works as follows:

(1) Working Range Limit Function

NOTICE

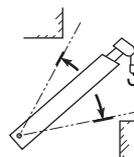
- If the working range limit is registered too close to an obstacle, the machine can hit the obstacle depending on the crane configuration and operation methods. Consider a sufficient allowance when you register the limit.
- The crane does not stop automatically during on-rubber operation even if the right slewing limit and left slewing limit are registered.
When the slewing angle reaches the limit value, an error code is displayed on the AML. Operate paying attention to obstacles.

The working range limit function restricts the operation of the crane to the pre-registered boom angle (upper limit, lower limit), lifting height, load radius, and slewing angle (left, right). Use this function when operating the machine in a place where there are obstacles around the machine or when requiring the working range limit for the boom.

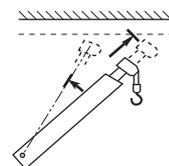
When the crane reaches the registered working range, the limit function works as follows:

Working range limit function	Cause
Boom angle upper limit	<ul style="list-style-type: none"> • Crane stops automatically. • AML built-in buzzer beep-beep-beep (Every 1 second for 5 seconds.)
Boom angle lower limit	
Lifting height limit	
Load radius limit	
Left slewing limit	
Right slewing limit	

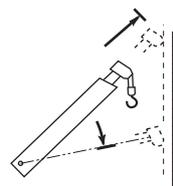
Boom angle upper limit
Boom angle lower limit



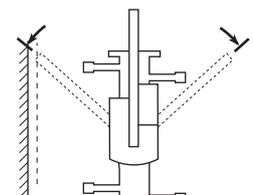
Lifting height limit



Load radius limit



Slewing limit



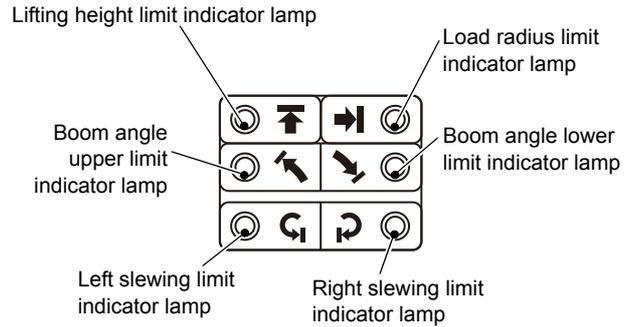
K-00285-00

Display of Limit Function Status

You can monitor the registered status of the work range limit using the limit indicator lamps on the LED display.

The limit indicator lamp(s) representing the currently activated work range limit lights up.

When the crane reaches the limit and stops automatically, the condition of the limit indicator lamp changes from "staying lit" to "flashing".

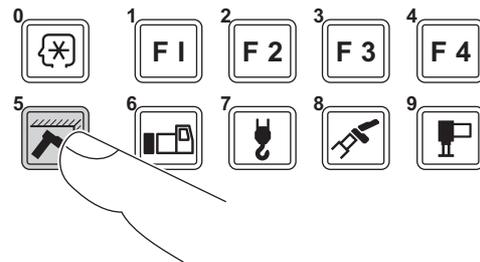


K-00286-00

Registering Boom Angle, Lifting Height, and Load Radius Limit

1. Press the work range limit key to select the item to be registered.

- The pop-up window for work range limit registration appears on the display panel.
- Every time you press the work range limit key, the item to be selected changes in the following sequence.



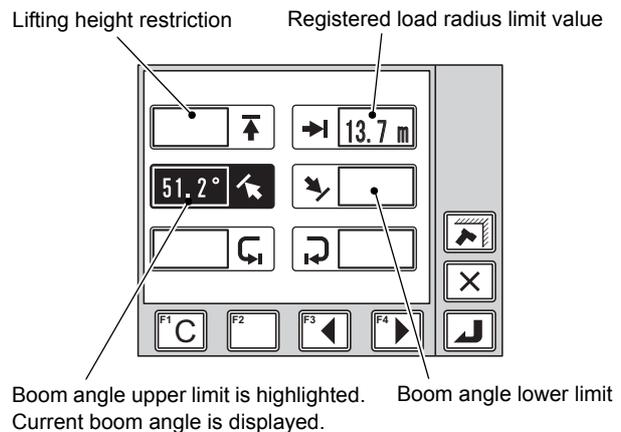
K-00287-00

1. Lifting height limit
2. Load radius limit
3. Boom angle upper limit
4. Boom angle lower limit
5. Left slewing limit
6. Right slewing limit

The illustration on the right shows an example of display where "load radius limit" is registered and "boom angle upper limit" is selected.

- ☞ Instead of the work range limit key, you can use the F3 (Backward) key or F4 (Forward) key to change the display of the item to be selected.

- ☞ To cancel registration, press the cancel key. The pop-up window closes and the display returns to the status before the start of the registration.

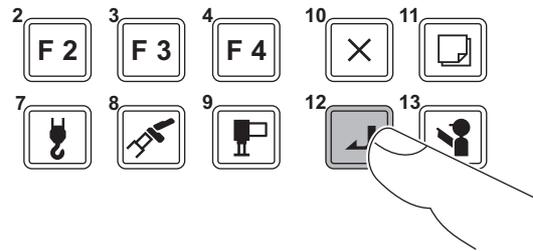


K-00288-00

2. After operating the boom (jib) to the desired boom angle, height, and load radius, press the set key.

- The corresponding limit indicator lamp flashes in the LED display, and the work range limit is registered.
- After the registration is completed, the pop-up window closes, and the AML returns to the crane operation state.

 If you select the item with the limit value already registered, remember that pressing the set key cancels the registration of the work range limit.



K-00289-00

3. Return the boom (jib) to within the limit range.

- The indicator lamp turns to steadily lit.
- When the state of the crane reaches the registered limit, the indicator lamp flashes. The corresponding operation of the boom (jib) automatically stops, and the error code is shown on the display panel. The AML built-in buzzer repeats every 1 second for 5 seconds.

4. To cancel the limit function, press the work range limit key to select the item to be canceled.

- The pop-up window for work range limit registration appears on the display panel.

5. Press the set key.

- The corresponding limit indicator lamp goes out.
- The pop-up window closes and the display returns to the crane operation state.

 When you press the F1 (Clear) key, all the work range limits are canceled.

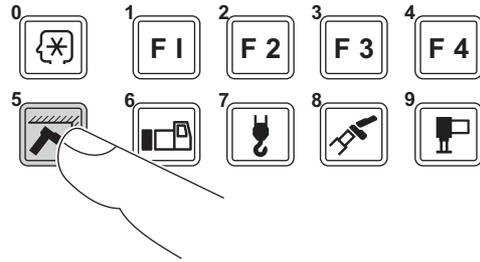
Registration of Slewing Range Limit Function

NOTICE

The crane does not stop automatically during on-rubber operation even if the right slewing limit or left slewing limit is registered.
 When the slewing angle reaches the limit value, an error code is displayed on the AML. Operate paying attention to obstacles.

1. Press the work range limit key repeatedly and select the item (left slewing limit or right slewing limit) to be registered.

- The symbol for the selected item flashes.
- Every time you press the work range limit key, the item to be selected changes in the following sequence.



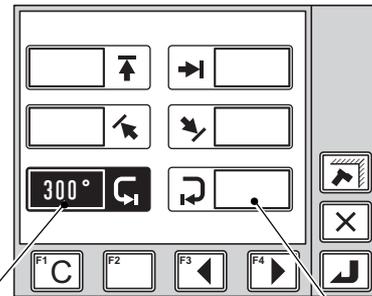
1. Lifting height limit
2. Load radius limit
3. Boom angle upper limit
4. Boom angle lower limit
5. Left slewing limit
6. Right slewing limit

K-00290-00

The illustration on the right shows an example where "left slewing limit" is selected.

☞ Instead of the work range limit key, you can use the F3 (Backward) key or F4 (Forward) key to change the display of the item to be selected.

☞ To cancel registration, press the cancel key. The pop-up window closes and the AML returns to the status before the start of the registration.



Left slewing limit is highlighted. Current slewing angle is displayed.

Right slewing limit

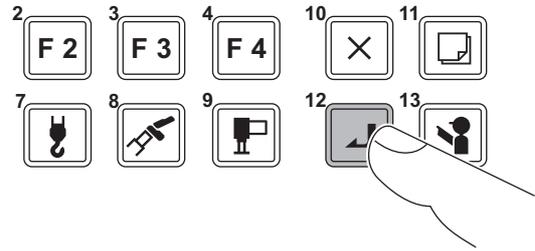
K-00291-00

2. After slewing the boom to the desired position where the limit is to be set, press the set key.

- The corresponding limit indicator lamp flashes, and the slewing limit is registered.
- After the registration is completed, the pop-up window closes, and the AML returns to the crane operation state.

 If you select the item with the limit value already registered, remember that pressing the set key cancels the registration of the work range limit.

The illustration on the right shows an example of display, in which "slewing limit" is registered.

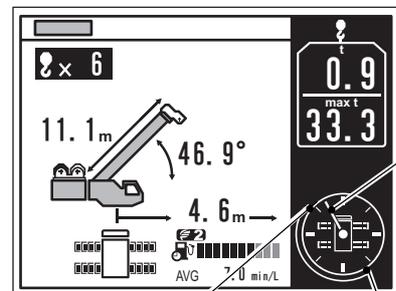


K-00292-00

NOTICE

The registration of slewing range limit is a function that allows you set the allowable slewing range. Register the limit for both the left swing and right swing. If only one side (right or left) is registered, the crane does not operate properly.

K-00294-00



Registration position of left slewing limit

Registration position of right slewing limit

Current slewing position

K-00293-00

3. Return the boom (jib) to within the limit range.

- The indicator lamp turns to steadily lit.
- When the boom reaches a registered slewing limit, the indicator lamp flashes. The slewing operation automatically stops, and error code appears on the display panel. The AML built-in buzzer repeats every 1 second for 5 seconds.

4. To cancel the limit function, press the work range limit key to select the item to be canceled.

- The pop-up window for work range limit registration appears on the display panel.

5. Press the set key.

- The corresponding limit indicator lamp goes out.
- The pop-up window closes and the AML returns to the crane operation state.

 When you press the F1 (Clear) key, all work range limits are canceled.

 Even after you turn off the AML, the registered information is retained for approximately 2 hours.

When the AML is turned on, the operation starts with the retained information. The registered information is erased approximately 2 hours after the AML is turned off. In this case, it is necessary to register the operation state from the beginning.

Alarm for Work Range Limit and Recovery Operation

When the crane operation reaches the registered limit value, the AML buzzer sounds, and the error code appears on the display panel. Examine the meaning of the error code, and perform recovery operation.

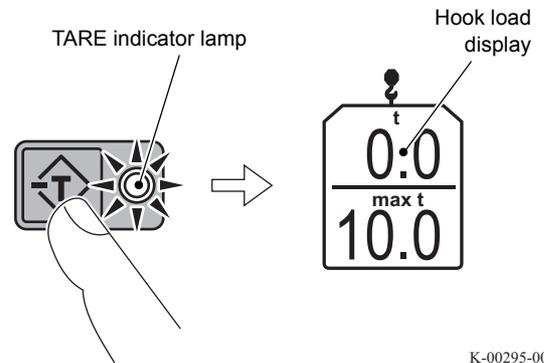
[Error code] "Message"	Buzzer	Cause	Remedy
[W0026] "Stopped at upper boom angle limit restriction"	AML built-in buzzer: beep-beep-beep (Every 1 second for 5 seconds)	The boom angle has reached the upper limit.	Lower the boom.
[W0027] "Stopped at lower boom angle limit restriction"		The boom angle has reached the lower limit.	Raise the boom.
[W0028] "Stopped at lifting height limit restriction"		The boom head or jib head has reached the lifting height limit.	Retract or lower the boom.
[W0029] "Stopped at load radius limit restriction"		The load radius has reached the limit.	Retract or raise the boom.
[W0042] "Right swing restriction limit"		The boom is slewed to the slewing limit.	Slew the boom in the opposite direction.
[W0043] "Left swing restriction limit"			

(2) TARE Function

Setting of TARE function

The mass of the load only is shown on the hook load display.

1. Before you lift a load, press the TARE key.
 - The indication of the hook load display turns to "0", and the TARE indicator lamp lights up.



2. Perform hoist-up operation to lift up the load.
 - The mass of the load is shown on the hook load display.
3. To cancel the TARE function, press the TARE key again.
 - The hook load display returns to the normal hook load display, and the TARE indicator lamp goes out.

(3) Fuel Consumption Indication Function

⚠CAUTION

When checking the fuel consumption indicator, be careful so that crane operation is not hindered.

Inattentive operation can lead to a serious accident.

This function shows the fuel consumption during a crane operation or standby.
 Checking the indication enables you to operate a crane in an environmentally friendly way.

The fuel consumption is displayed when the PTO switch is "ON".

☞ The fuel consumption includes during on-rubber (creep) operation.

The following items are shown.

- Current fuel consumption
 The current fuel consumption (minute/liter) during crane operation is shown as a bargraph.
 The max. value in a bargraph is 10.0 minute/liter.
- Average fuel consumption
 The average fuel consumption (minute/liter) during crane operation is shown.
 The average fuel consumption is reset during standby or when PTO switch is turned to "OFF".
- Fuel consumption during standby
 The fuel consumption (liter) during standby is shown.
- Standby period
 The crane standby period (min) is shown.

☞ The crane standby period is the period when each control lever and pedal is in neutral position.

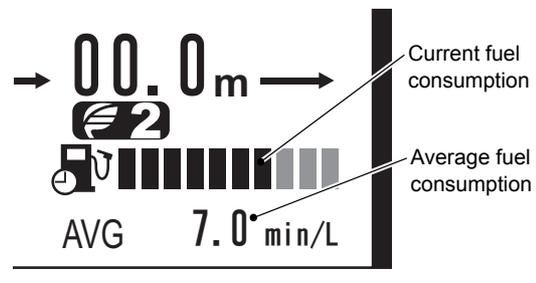
☞ The fuel consumption during standby and the standby period are displayed when a crane has been in standby mode for a specified period.

☞ Displayed values may be different from actual values depending on work conditions.
 Check the fuel gauge to see the remaining fuel amount.

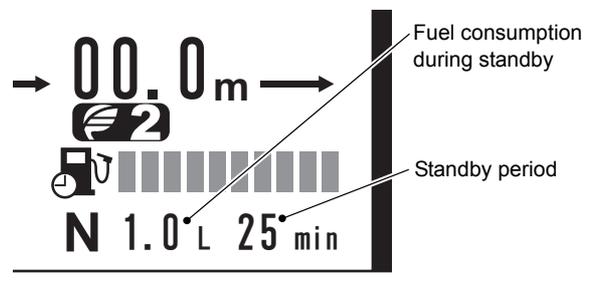
☞ You can check the fuel consumption history during a crane operation and standby.
 Refer to "(5) Preset Menu" (page 172).

☞ Refer to "Accessories in Cab" (page 102) to see the fuel consumption ratio at traveling.

During crane operation



During standby



K-00296-00

(4) Mute Alarm Function

NOTICE

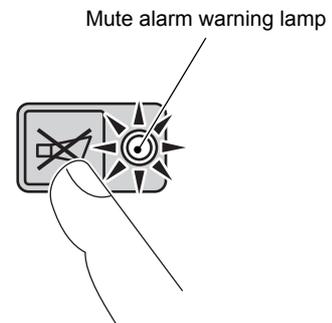
If the mute alarm function is activated, only the error code(s) and warning lamp indicate an error, and the buzzer does not sound. For safety, alarms should generally be left unmuted.

The following alarm buzzers can be muted.

- Alarm buzzer that sounds when the moment load ratio reaches or exceeds 90% (intermittent sound)
- Alarm buzzer that sounds when the moment load ratio reaches or exceeds 100% (continuous sound)

Muting of alarm buzzer

- 1.** To activate the function, press the mute alarm key while the alarm buzzer is sounding.
 - The mute alarm warning lamp lights up, and the buzzer stops sounding.
- 2.** To deactivate the function, press the mute alarm key again.
 - The mute alarm warning lamp goes out, and the alarm buzzer sounds.



K-00297-00

-  In the cases below, the mute alarm function is automatically deactivated.
- The AML is turned off.
 - The alarm buzzer is necessary for other causes.
 - The causes to sound the buzzer no longer exist.

(5) Preset Menu

⚠ CAUTION

**Do not operate the preset menu during crane operation.
Inattentive operation can lead to a serious accident.**

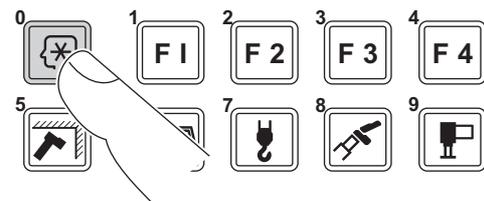
The following functions are available in the preset menu.

- Selection of ECO Mode
- Winch drum rotation buzzer function
- Fuel Consumption History Display
- Selection of the winch to be used
- Setting of Anemometer Alarm Threshold Value (Option)
- Adjustment of display panel contrast

Preset Menu

1. Press the preset menu key.

- The pop-up window for preset menu selection appears on the display panel.

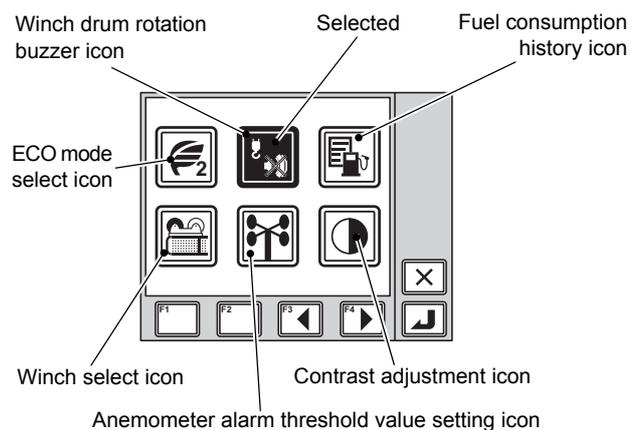


K-00298-00

2. Press the F3 (Backward) key or F4 (Forward) key to select the preset icon.

- The selected preset icon is highlighted.

 Press the cancel key to exit the preset menu. The pop-up window closes, and the crane operation state before the adjustment is restored.



K-04835-00

3. Press the set key.

- The selected preset screen appears.

Selection of ECO Mode

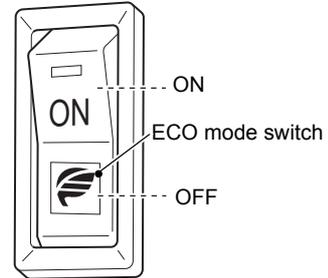
Select the crane operation status for when the ECO mode switch is set to "ON".

- ECO mode 1

In this mode, the crane restricts the maximum engine speed, consumes less fuel and makes less noise compared with when the ECO mode is "OFF".

- ECO mode 2

In this mode, the crane consumes further less fuel and makes even less noise compared with when ECO mode 1 is selected.



 The crane operation speed becomes slower with restricted maximum engine speed.

Select a suitable ECO mode according to the crane operation to be performed.

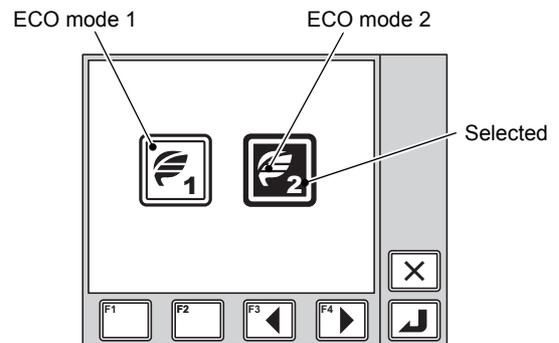
K-00300-00

1. Select the ECO mode select icon, and then press the set key.

- The pop-up window for ECO mode selection appears on the display panel.

2. Press the F3 (Backward) or F4 (Forward) key to select one of the ECO mode icons.

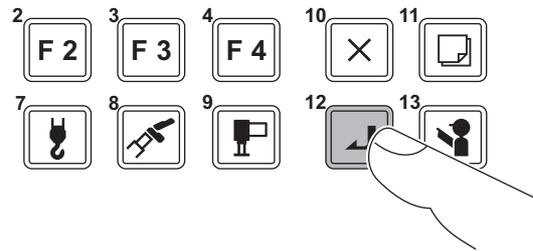
- The selected icon is highlighted.



K-00301-00

3. Press the set key.

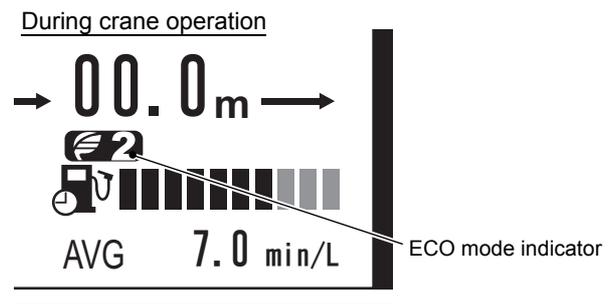
- After the registration is completed, the pop-up window closes, and the display returns to the crane operation state.



K-00302-00

- When the ECO mode switch is turned "ON", the ECO mode indicator (ECO mode 1 or ECO mode 2) is displayed.

- ☞ To cancel the selection, press the cancel key. The pop-up window closes and the display returns to the crane operation state without changing registration.



K-00303-00

- ☞ Even after the AML is turned off, the registered information is retained. When the AML is turned on, the operation starts with the retained information.

Winch drum rotation buzzer function

With this function the buzzer sounds according to the rotation speed of the winch drum. You can select whether or not to sound the buzzer.

- ☞ The buzzer sounds only while the winch drum turns at a low speed. When the winch drum rotation speed increases, the buzzer stops sounding.

1. Select the winch drum rotation buzzer selection menu icon, and press the set key.

- The pop-up window for winch drum rotation buzzer selection appears on the display panel.

2. Press the F3 (Backward) or F4 (Forward) key to select one of the rotation buzzer icons.

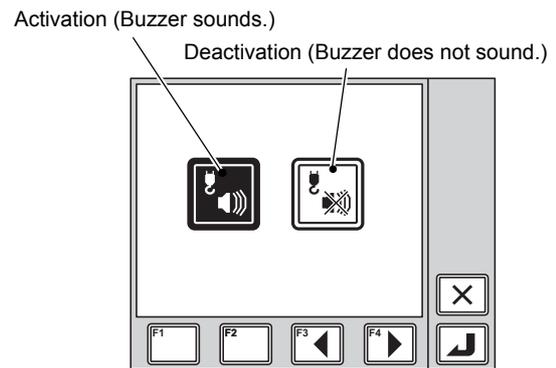
- The selected icon is highlighted.

3. Press the set key.

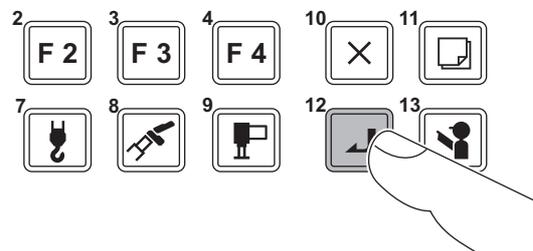
- After the registration is completed, the pop-up window closes, and the display returns to the crane operation state.

 To cancel registration, press the cancel key. The pop-up window closes and the display returns to the crane operation state without changing registration.

 Even after the AML is turned off, the registered information is retained. When the AML is turned on, the operation starts with the registered information.



K-00304-00



K-00305-00

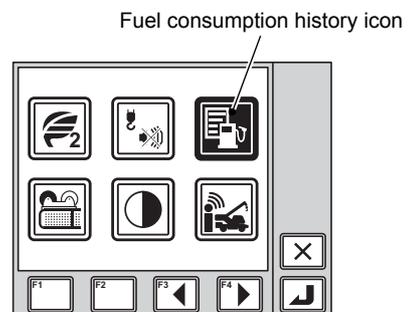
Fuel Consumption History Display

Fuel consumption history display is displayed.

1. Hoist down a load to the ground and set each control lever and pedal to the neutral position.

2. Select the fuel consumption history icon, and then press the set key.

- The screen for fuel consumption history appears.



K-00306-00

3. The display changes when the display change key is pressed.

- The fuel consumption history is shown in either a bar graph or number.
- The items shown on the numeric display screen are as follows.

- L(N):

Fuel consumption during standby (liter)

- L(D):

Fuel consumption during crane operation (liter)

- min/L:

Fuel consumption rate during crane operation (minute/liter)

You can change the unit of fuel consumption rate in min/L (minute/liter) or L/h (liter/hour) by pressing F2 (unit change) key.

☞ The measurement restarts when F1 (reset) key is pressed.

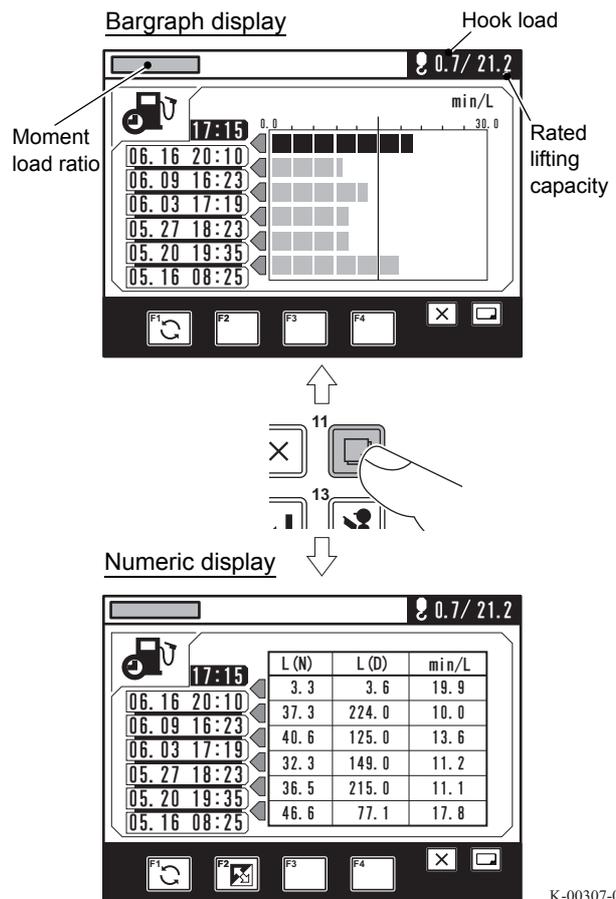
The previous records are moved down every time the F1 (reset) key is pressed. 6 previous records (Max.) including the current rate are displayed.

You can reset the histories both for traveling and crane operation at the same time by pressing and holding the F1 (reset) key.

☞ Press the cancel key to exit the history display.

The pop-up window closes and the display returns to the crane operation state.

☞ L(N) and L(D) include the fuel consumption during on-rubber creep operation.



Selection of the winch to be used

⚠ WARNING

If the selection of the winch to be used does not match the actual state of the crane, the AML does not indicate the correct value of the load. If you operate the crane in this state, the machine may overturn or be damaged, resulting in an accident.

Make sure that the status of actual crane operation and the selection of the winch match before starting operation.

NOTICE

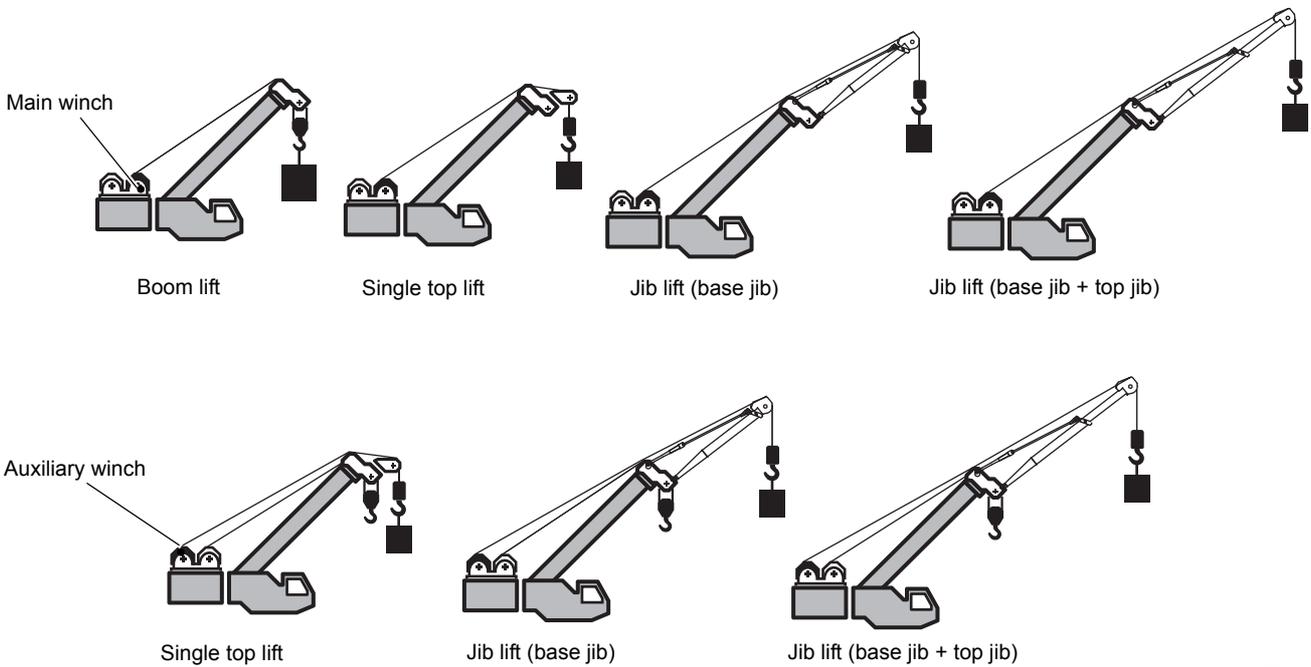
The crane operations other than those shown in the illustrations below are prohibited. Use the specified combinations only.

Select the winch (main winch/auxiliary winch) to be used.

Although the main winch is used in the standard procedure, the auxiliary winch can be selected for single top lift or jib lift. The load lifting capacity differs in accordance with the state of crane operation.

☞ When boom lift is registered, only the main winch can be selected.

☞ For the rated capacity when the auxiliary winch is selected, follow the description in "Reduction of Rated Lifting Capacity" (page 134).



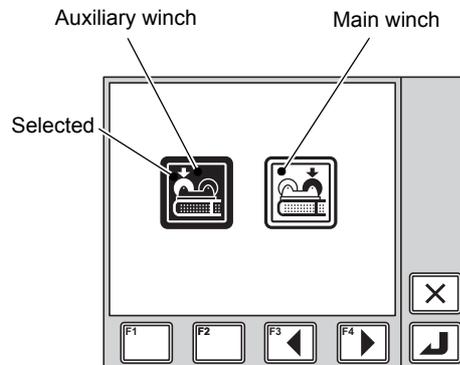
K-00308-00

1. Select the winch select icon, and then press the set key.

- The pop-up window for winch selection appears on the display panel.

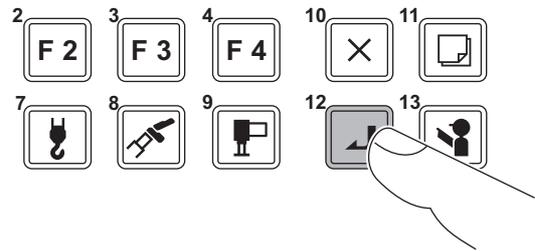
2. Press the F3 (Backward) or F4 (Forward) key to select one of the winch icons.

- The selected icon is highlighted.



K-00309-00

3. Press the set key.

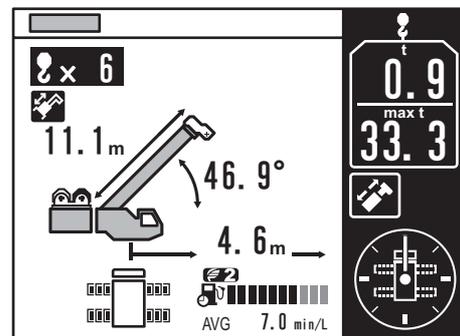
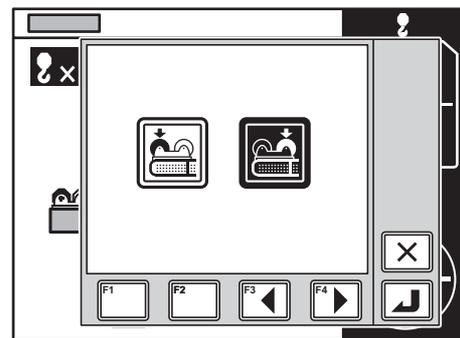


K-00310-00

- After the registration is completed, the pop-up window closes, and the AML returns to the crane operation state.

☞ To cancel registration, press the cancel key. The pop-up window closes and the AML returns to the crane operation state without changing registration.

☞ When the AML is turned off, the registered information is not retained. When the AML is turned on, the operation starts with "main winch".



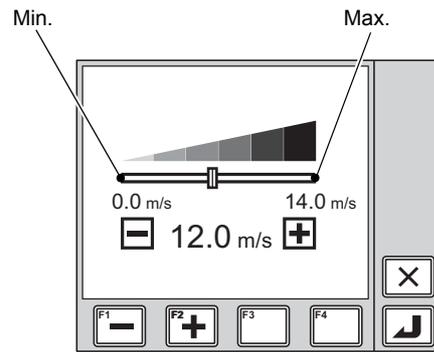
K-00311-0

Setting of Anemometer Alarm Threshold Value (Option)

While the anemometer is used, if the detected wind speed exceeds the threshold value, an alarm sounds. Follow the procedure below to register the threshold value.

☞ When the wind speed measured by the anemometer exceeds the registered threshold value, an alarm sounds, and the error code "W0097" is shown on the AML.

1. Select the anemometer alarm threshold value setting menu icon, and press the set key.
 - The pop-up window for wind speed alarm threshold value setting is shown on the display panel.
2. Press the F1 (-) key or F2 (+) key to adjust the threshold value.
 - Press the F2 (+) key to increase the threshold value and the F1 (-) key to decrease it.

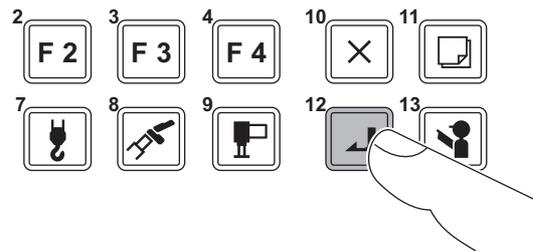


K-00312-00

You can set the threshold value between 0.0 m/s and 14.0 m/s.

3. Press the set key.
 - After the registration is completed, the pop-up window closes, and the display returns to the crane operation state.

To cancel registration, press the cancel key. The pop-up window closes and the display returns to the crane operation state without changing registration.

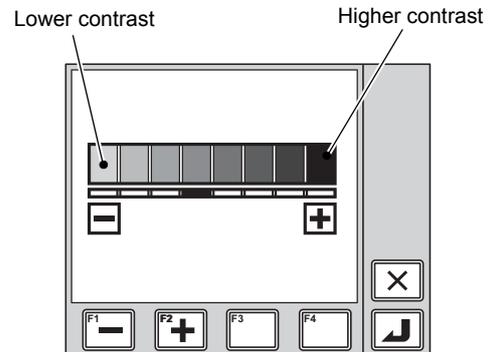


K-00313-00

Even after the AML is turned off, the registered information is retained. When the AML is turned on, the operation starts with the registered information.

Adjustment of display panel contrast

1. Select the contrast adjustment icon, and press the set key.
 - The pop-up window for contrast adjustment appears on the display panel.



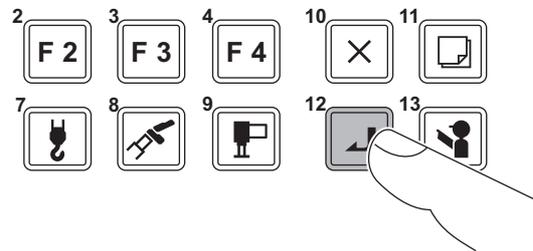
K-00314-00

2. Press the F1 (-) key or F2 (+) key to adjust the contrast.
 - Press the F2 (+) key to increase contrast and the F1 (-) key to decrease contrast.
3. Press the set key.
 - After the registration is completed, the pop-up window closes, and the display returns to the crane operation state.

To cancel registration, press the cancel key. The pop-up window closes and the display returns to the crane operation state without changing registration.

If you press the cancel key for 3 seconds or more, the contrast returns to the initial setting.

Even after the AML is turned off, the registered information is retained. When the AML is turned on, the operation starts with the registered information.



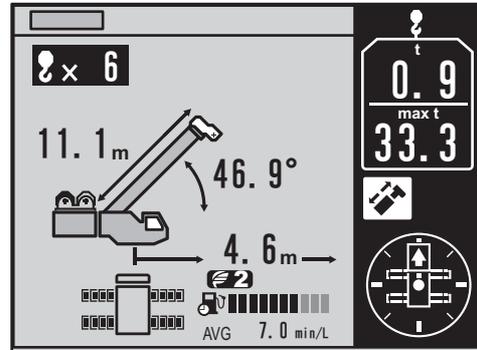
K-00315-00

(6) Back light On (Off) Function

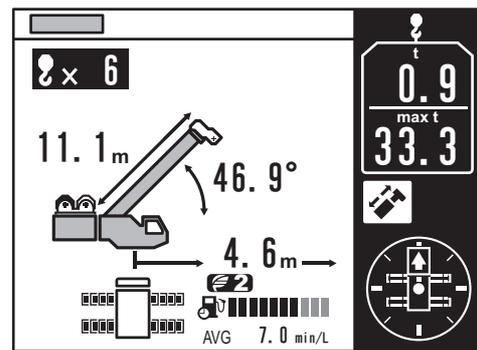
You can turn on (or off) the back light for the AML while the lighting switch is "OFF".

1. Press and hold the F2 key to turn on the AML back light.
Press and hold the F2 key again to turn off the AML back light.

Backlight off status



Backlight on status



K-00319-00

Action against AML System Errors

If the cases listed below occur, an error in the AML system is the likely cause.

- Even after performing a recovery operation corresponding to the error code, the error code remains.
- An error code that is not included in the error code list is displayed.
- The crane stops and cannot be operated.

In these cases, refer to "If Error Occurs in AML System" (page 478) and stow the crane.

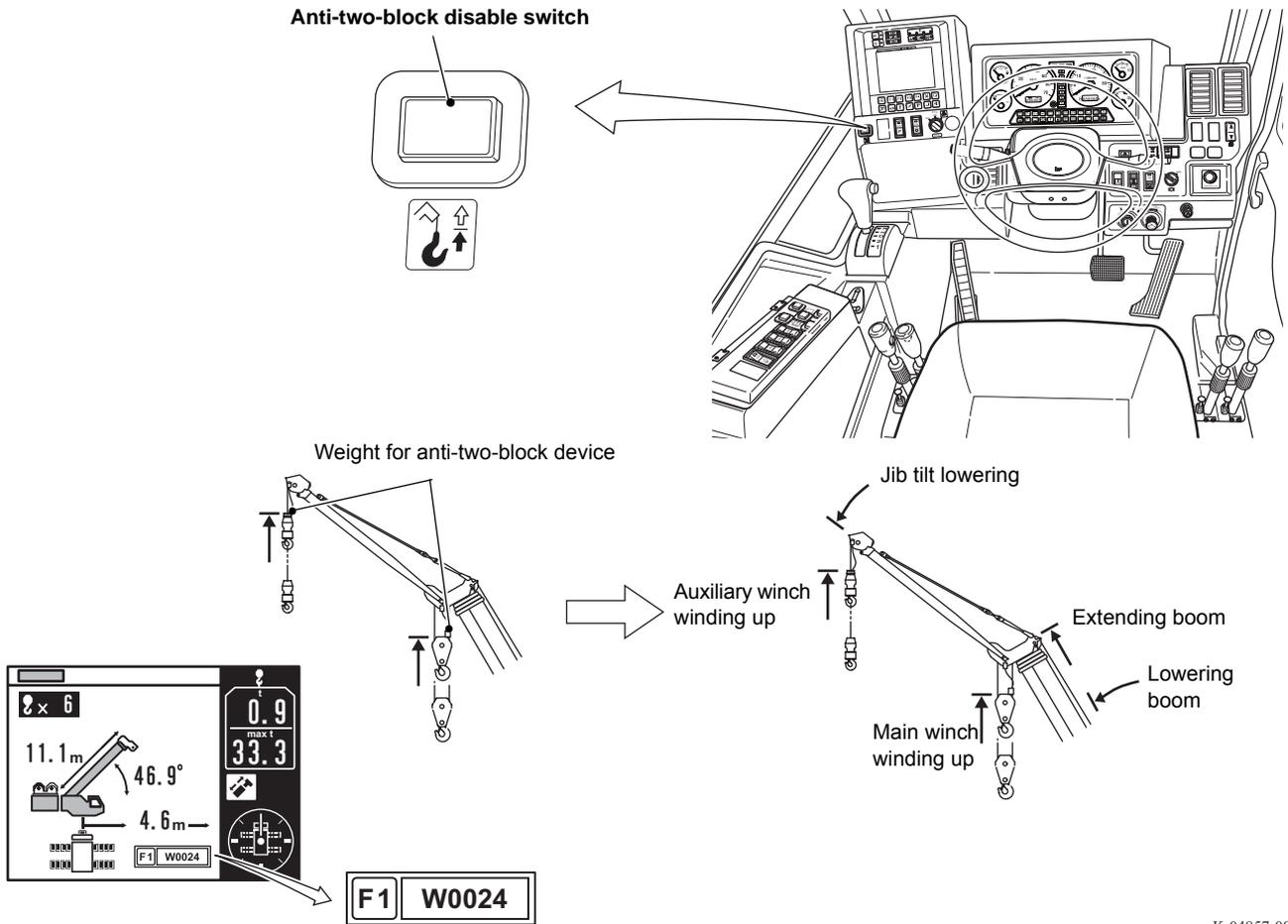
Other Safety Devices

Anti-two-block Device

This device prevents the hook block from colliding with the boom, jib, or single top as a result of winch overwinding.

If the hook block touches the weight for anti-two-block device (an overwind status), operations toward the critical side stop.

An alarm (in tremolo) sounds as soon as the crane movement stops. The error code "W0024" is shown on the AML.



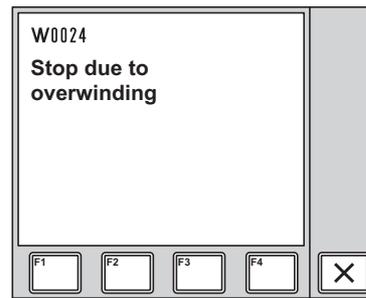
K-04857-00

When the crane reaches the two-blocking status, unwind the winch or retract the boom to move the hook block away from the weight for anti-two-block device.

When the hook block is moved away from the weight for anti-two-block device, you can resume the crane operation.

The alarm sound (in tremolo) stops and the error code on the AML disappears.

If the F1 key is pressed while an error code is shown, a pop-up window appears and shows a message.



K-00321-00

Canceling Anti-two-block Function

⚠ WARNING

Never operate the crane with the anti-two-block function canceled. Otherwise, the hook block can collide with the boom, jib, or single top and cause a lifted load to fall, resulting in a serious accident.

If the anti-two-block function obstructs operations such as stowing of the hook block, push the anti-two-block disable switch.

While this switch is pressed, the anti-two-block function is canceled.

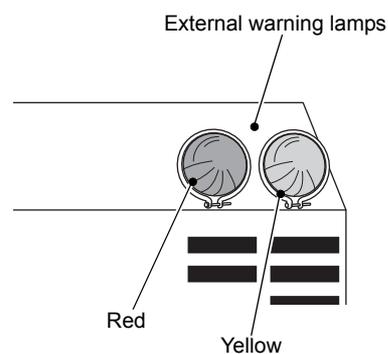
The anti-two-block function is canceled while a jib set status is registered on the AML.

AML External Warning Lamps (2 colors)

These lamps inform the work director and persons around the crane of the present status of the crane.

The red or yellow lamp lights up or goes out according to the status of the crane.

The lighting status of the lamp is linked with the moment load ratio displayed on the AML.



K-00322-00

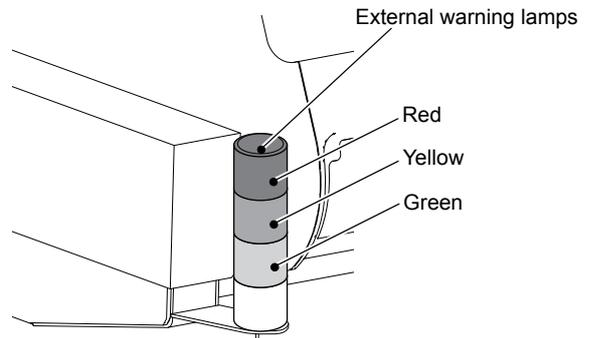
Lamp status	Cause
Red	Dangerous status (operations toward the critical side automatically stop) <ul style="list-style-type: none"> • Moment load ratio is 100% or more. • The anti-two-block disable switch is pressed and the anti-two-block function is disabled. • The override key switch is turned to "ON" and the PTO switch is turned to "AML" (override).
Yellow	A status that is not dangerous, but attention is required. <ul style="list-style-type: none"> • Moment load ratio is 90% or more, and less than 100%.
Not lit	Safe status <ul style="list-style-type: none"> • Moment load ratio is less than 90%.

AML External Warning Lamps (3 colors)

These lamps inform the work director and persons around the crane of the present status of the crane.

The red, yellow, or green lamp lights up according to the status of the crane.

The lighting status of the lamp is linked with the moment load ratio displayed on the AML.



K-00323-00

Lamp status	Cause
Red	<p>Dangerous status (operations toward the critical side automatically stop)</p> <ul style="list-style-type: none"> • Moment load ratio is 100% or more. • The anti-two-block disable switch is pressed and the anti-two-block function is disabled. • The override key switch is turned to "ON" and the PTO switch is turned to "AML" (override).
Yellow	<p>A status that is not dangerous, but attention is required.</p> <ul style="list-style-type: none"> • Moment load ratio is 90% or more, and less than 100%.
Green	<p>Safe status</p> <ul style="list-style-type: none"> • Moment load ratio is less than 90%.

Emergency Stop Switch

⚠ WARNING

If operations through a control lever or switch become unavailable during crane operation, push the emergency stop switch to stop the crane movement.

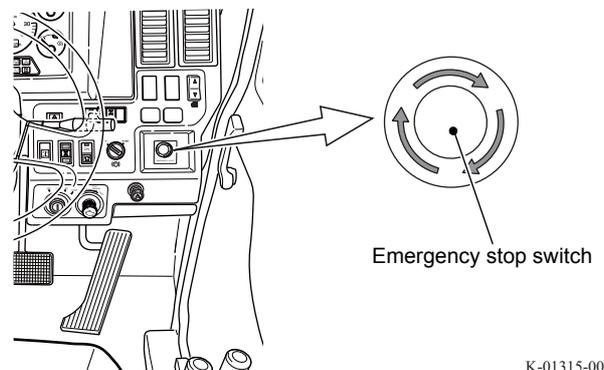
And then contact Tadano Escorts India Private Ltd. or a dealer.

Use this switch in the cases listed below:

- Danger occurs due to mis-operation of the machine or change of surrounding conditions.
- Operations through control levers and switches become unavailable.

The emergency stop switch is effective while the conditions below are satisfied.

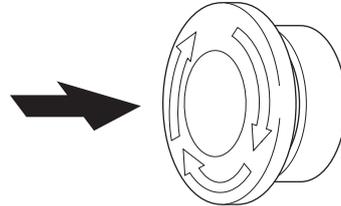
- The shift lever is in the "N" position.
- The PTO switch is turned to "ON".



K-01315-00

Activating Emergency Stop

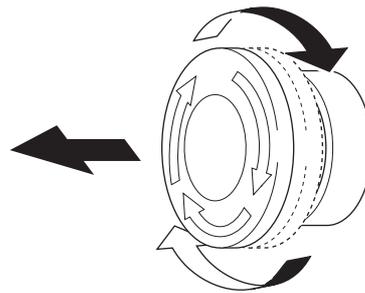
1. Push the emergency stop switch.
 - The engine stops and the movement of the machine is halted.



K-00325-00

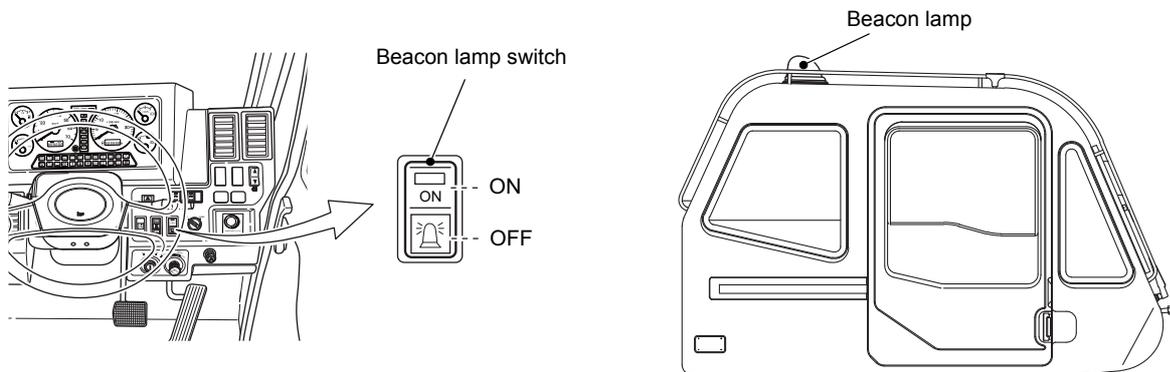
Canceling Emergency Stop

1. Turn the emergency stop switch in the direction shown by the arrows.
 - The emergency stop switch returns to the initial position and you can start the engine.



K-00326-00

Beacon Lamp (Option)



The beacon lamp informs the work directors and workers nearby that a crane is in use.

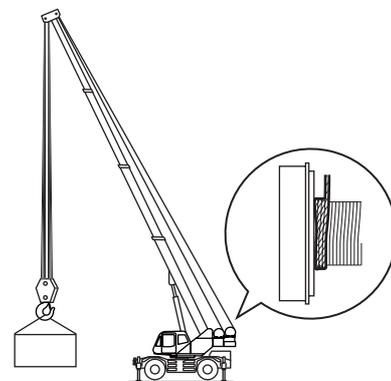
Use the beacon lamp switch to turn on/off the beacon lamp.

- "ON" side
Beacon lamp lights up
- "OFF" side
Beacon lamp goes out.

Over-unwinding Cutout Function (Option)

When the remaining wire rope on the winch drum becomes 3 turns or less, this function automatically stops winch unwind operation to prevent damage to the wire rope and disorderly winding. The error message "W0034" or "W0035" is shown on the AML.

- ☞ When the number of parts of line is large, the wire rope can become insufficient in length when the boom is extended.



Anemometer (Option)

⚠ WARNING

A strong wind sways the lifted load. This is dangerous to workers and surrounding structures, and can damage the boom and overturn the machine. Note that the longer the boom is, and the larger the area of the load is, the more the wind affects the operation.

The rated lifting capacity does not include the effect of the wind on the load, boom, or jib.

If you find it difficult to control a load because of the wind, stop crane operation.

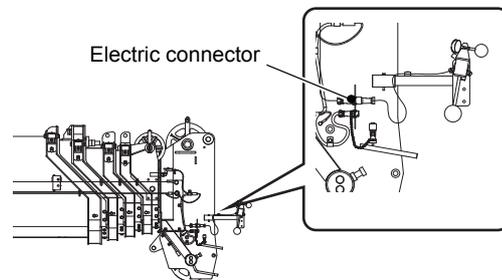
During boom lift, when the wind speed is between 9 m/s and 12 m/s, reduce the rated lifting capacity by 50%, and when the wind speed is between 12 m/s and 14 m/s, reduce it by 70%.

Stop operation when the wind speed exceeds 14 m/s.

During jib lift, stop operation when the wind speed is 9 m/s or more.

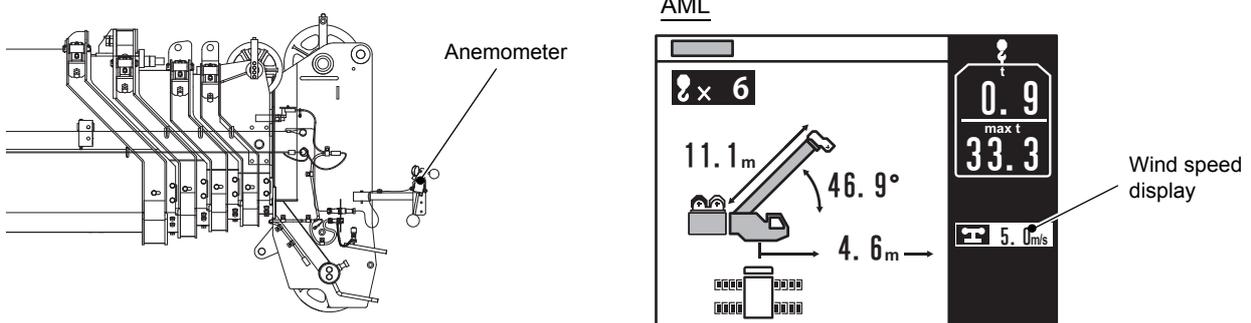
NOTICE

If the display of the wind speed on the AML is not correct, check the connections of the electric cables.



K-01316-00

The anemometer measures the wind speed at the boom or jib head in order to prevent damages to the crane or an overturning accident caused by a strong wind.



K-01311-00

- ☞ To display the wind speed, press the display change key on the AML. Refer to "Selecting Display" (page 141).
- ☞ The anemometer alarm threshold value can be set according to the situation. Refer to "Setting of Anemometer Alarm Threshold Value (Option)" (page 178).
- ☞ When the wind speed measured by the anemometer exceeds the registered threshold value, an alarm sounds, and the error code "W0097" is shown on the AML.

Installing Anemometer

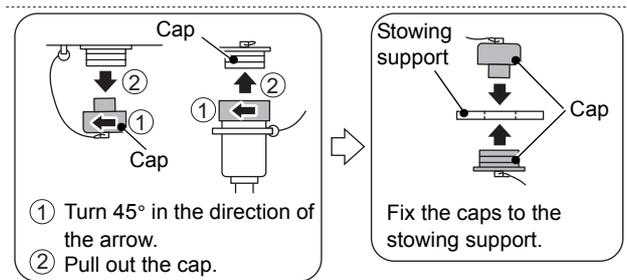
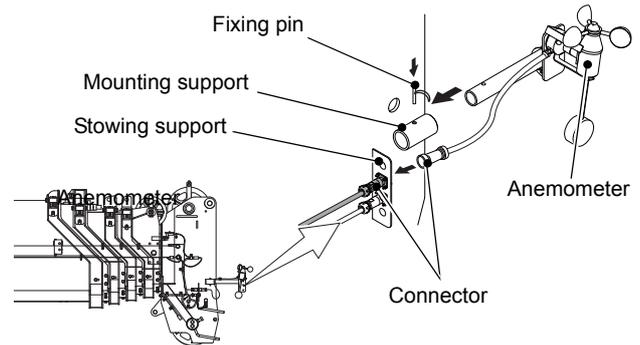
Mounting on boom

1. Turn the starter switch to "OFF".
2. Install the anemometer to the mounting support on the boom head and fix it with the fixing pin.

⚠ WARNING
To prevent the anemometer from falling, be sure to attach the fixing pin securely.

3. Connect the electric cable.

⚠ WARNING
After the connectors are connected, fix the removed caps of the connectors to the stowing support.
If the caps are not fixed to the support securely, they can fall, resulting in an accident.



K-01312-00

Mounting on jib

1. Turn the starter switch to "OFF".

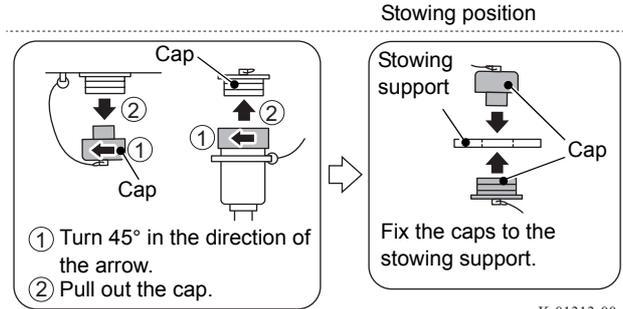
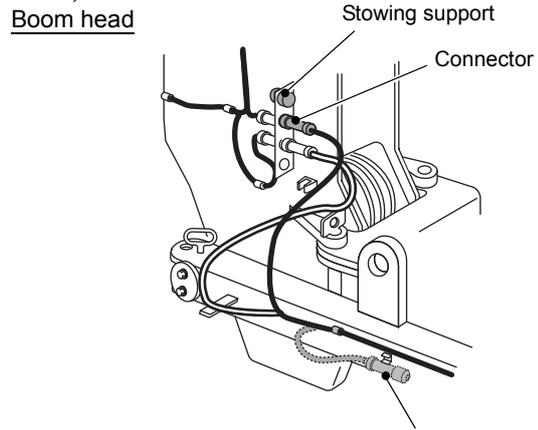
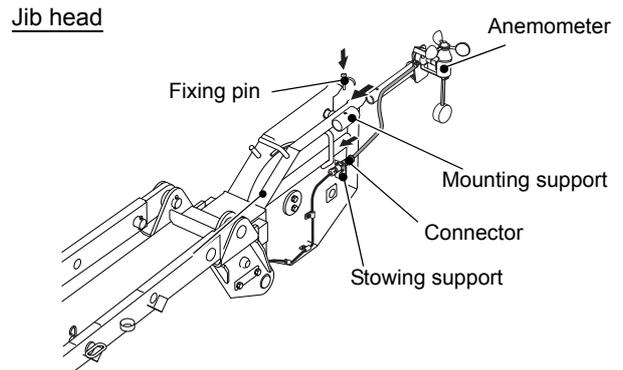
2. Install the anemometer to the mounting support on the jib head and fix it with the fixing pin.

⚠ WARNING
To prevent the anemometer from falling, be sure to attach the fixing pin securely.

3. Connect the electric cables at the jib head and boom head.

⚠ WARNING
After the connectors are connected, fix the removed caps of the connectors to the stowing support.
If the caps are not fixed to the support securely, they can fall, resulting in an accident.

☞ The anemometer works while the wiring for the anti-two-block device on the jib is connected.



K-01313-00

Removing Anemometer

NOTICE
Do not travel with the anemometer mounted. The anemometer can be broken.
Remove the anemometer before traveling or transporting the machine.

1. Remove the anemometer following the installing procedure in reverse.
2. After the anemometer is removed, attach caps on the disconnected electric connectors.

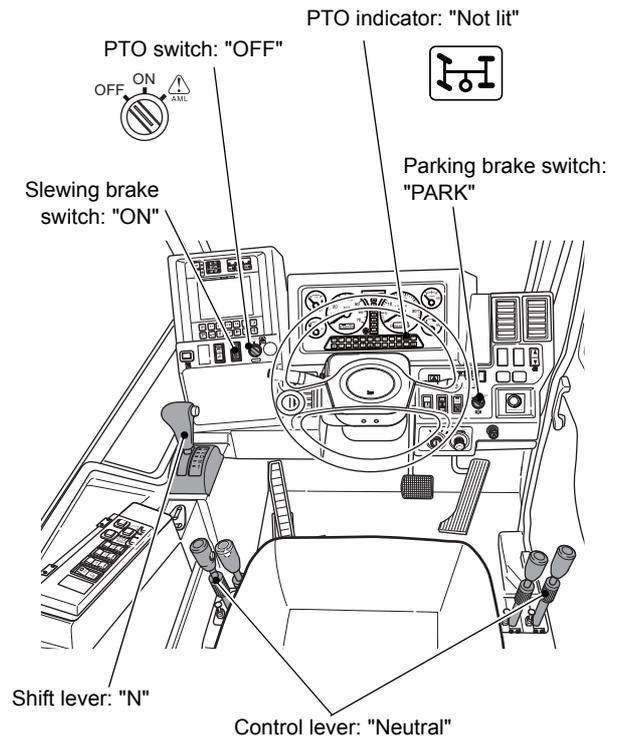
3. Attach caps to the connectors that were connected to the boom, and stow the connectors into the stowing position.

PTO

When you operate the outriggers and crane, turn the PTO switch to "ON".
When you drive on a road, turn the PTO switch to "OFF".

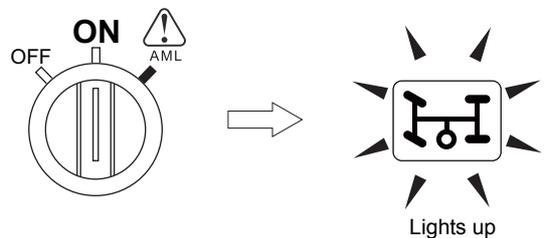
PTO "ON" Operation

1. Run the engine at idle.
2. Make sure that the control devices are in the conditions as shown in the illustration.



K-04858-00

3. Set the PTO switch to "ON".
 - The PTO indicator lights up.
 - The hydraulic pump starts.
 - Power of the AML is turned on.



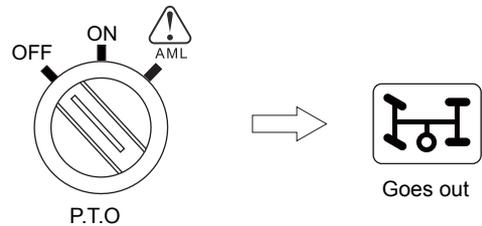
K-01527-00

NOTICE
To prevent failure of the PTO, run the engine at idle before you turn the PTO switch to "ON".

 In cold season, warm up the machine according to the ambient temperature.

PTO "OFF" Operation

1. Run the engine at idle.
2. Turn the PTO switch to "OFF".
 - The PTO indicator goes out.
 - The hydraulic pump stops.
 - Power of the AML is turned off.



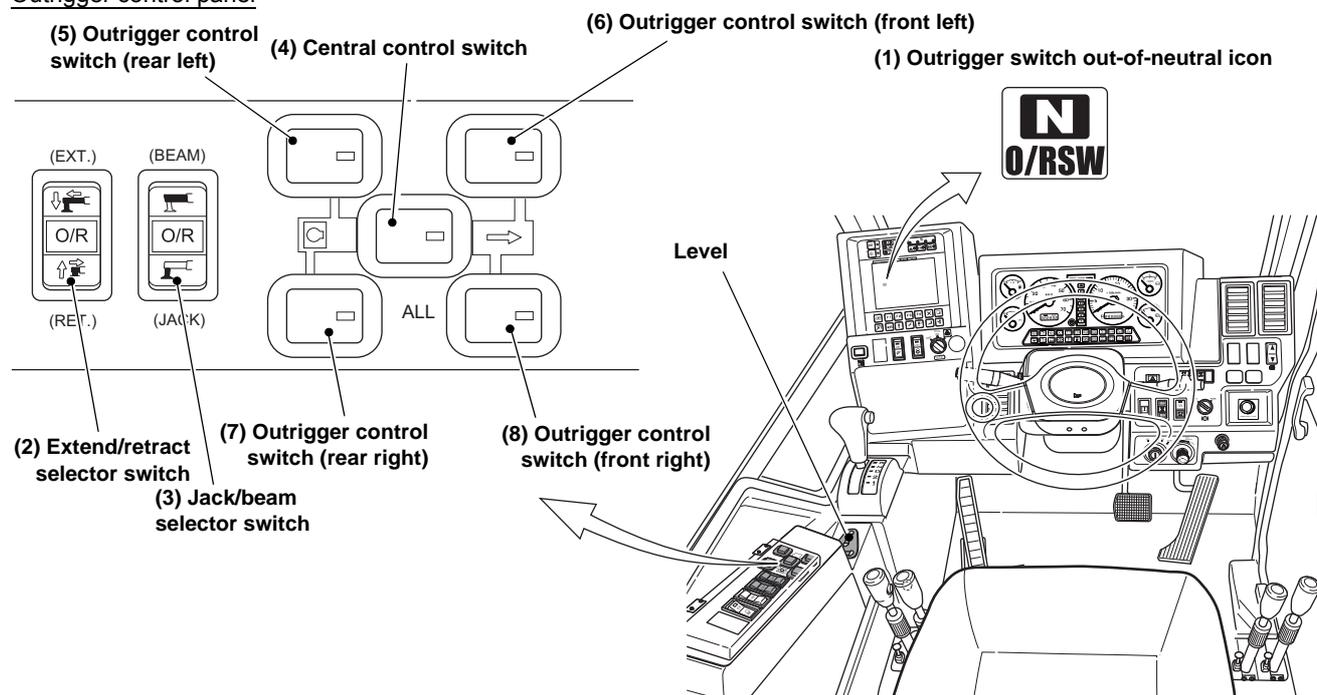
<i>NOTICE</i>
To prevent failure of the PTO, run the engine at idle before you turn the PTO switch to "OFF".

K-01542-00

Outriggers

Inside Cab

Outrigger control panel



K-04859-00

(1) Outrigger Switch Out-of-neutral Icon

Flashes when an extend/retract selector switch or jack/beam selector switch is out of the neutral position.

It reminds you to return the switches.

(2) Extend/Retract Selector Switch

Select "EXT." to perform an extending operation, and select "RET." to perform a retracting operation.

(3) Jack/Beam Selector Switch

Select "JACK" to operate the jack(s), and select "BEAM" to operate the beam(s).

(4) Central Control Switch

Push this switch to operate all beams or jacks simultaneously.

(5) Outrigger Control Switch (Rear Left)

Push this switch to operate the rear left beam or jack.

(6) Outrigger Control Switch (Front Left)

Push this switch to operate the front left beam or jack.

(7) Outrigger Control Switch (Rear Right)

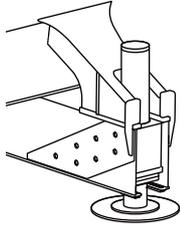
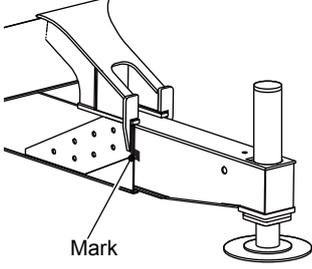
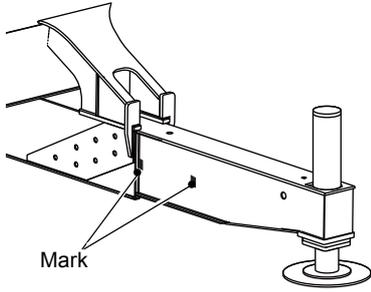
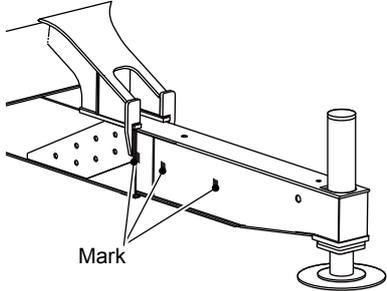
Push this switch to operate the rear right beam or jack.

(8) Outrigger Control Switch (Front Right)

Push this switch to operate the front right beam or jack.

- ☞ If no outriggers are operated for approx. 10 seconds or more while the extend/retract selector switch or jack/beam selector switch is not in neutral (the "outrigger switch out of neutral icon" flashes on the AML), the alarm buzzer in the cab sounds and the error code "F301" appears on the hour meter display.

Extension Width of Outriggers and Appearance of Marks on Side of Outrigger Beam

Extension width of outriggers	Marks on outrigger
Minimum extension	 <p>K-00337-00</p>
Middle extension 1	 <p>Mark</p> <p>K-00338-00</p>
Middle extension 2	 <p>Mark</p> <p>K-00339-00</p>
Maximum extension	 <p>Mark</p> <p>K-00340-00</p>

CTI-500XL-1_OM1-11E

Outrigger Set-up

⚠ WARNING

- If the outrigger is set up on unsuitable ground, the ground can collapse and cause the machine to overturn. Set up the machine on firm and level ground.
- On inclined ground, check that wheel chocks are placed on the tires before operating the outriggers. If the machine moves, it can result in an accident.
- If the machine is not set up horizontally, the load radius increases when the boom is slewed to the lower inclined side, which can cause the machine to overturn. When setting up the outriggers, use the level to ensure that the machine is set up horizontally.
- If any tire is in contact with the ground when the outriggers are set up, the stability of the machine is reduced due to the reaction force of the tires, which can cause the machine to overturn. If any tires remain in contact with the ground, use pads to set up outriggers so that all tires are off the ground.
- When the outrigger extension width is small, the stability of the machine decreases, which can cause the machine to overturn. As a rule, extend the outrigger beams to the maximum.

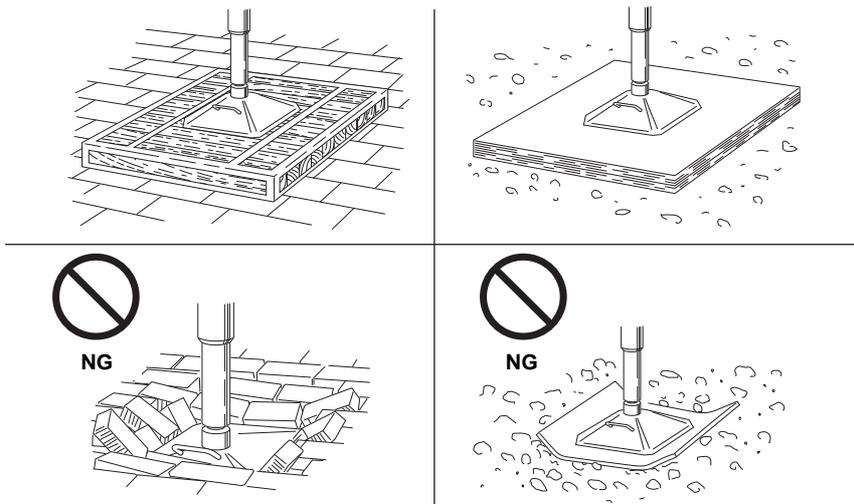
For safe operation, set up the outriggers on firm and level ground that can support the weight of the lifted load and machine body.

On soft, inclined, or rough ground, make sure that the ground is treated with the following procedures and has sufficient strength before setting up the outriggers.

- The ground is leveled so that the machine can be set up horizontally.
- The pads (standard equipment) with sufficient coverage and strength that suit ground conditions are set under the outrigger floats.

In some cases, ground that seems to be rigid enough cannot actually support the machine due to internal conditions of the ground. Be careful when you set up the machine on the following types of ground.

- Road surfaces paved with low-cost pavement.
- Stone-paved road surfaces such as a sidewalk
- Backfilled sites after excavating work
- Reclaimed land
- Shoulders of roads or peripheries of excavated holes



K-00341-00

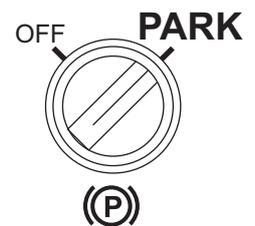
Extending Outriggers

▲WARNING

Before operation, check that no one is around the outriggers or under the machine. Otherwise, a person can be hit by the outrigger or crushed by the machine.

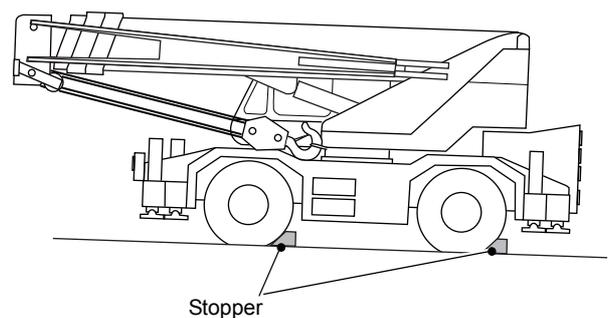
Adjust the operating speed with the accelerator pedal.

1. Make sure that the shift lever is set to "N", and the parking brake switch is set to "PARK".



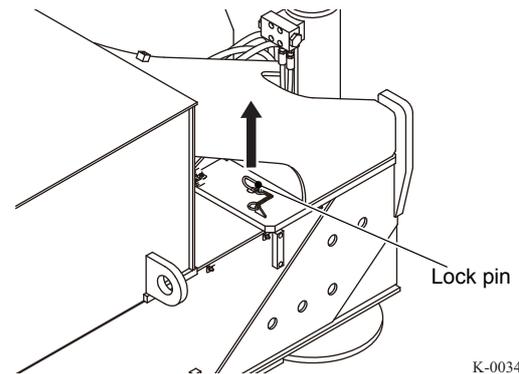
K-01319-00

2. If the machine is parked on an inclined ground, place wheel chocks on the downward side of each wheel before operating the outriggers from outside of the cab. Place the wheel chocks firmly on each wheel.

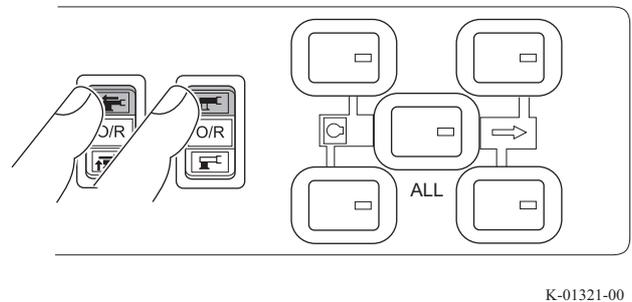


K-01320-00

3. Pull out all four lock pins.

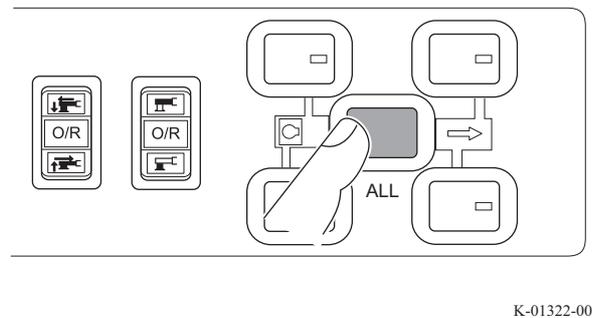


4. Set the jack/beam selector switch to "BEAM", and set the extend/retract selector switch to "EXT".



5. Extend the outriggers according to the following extension widths.

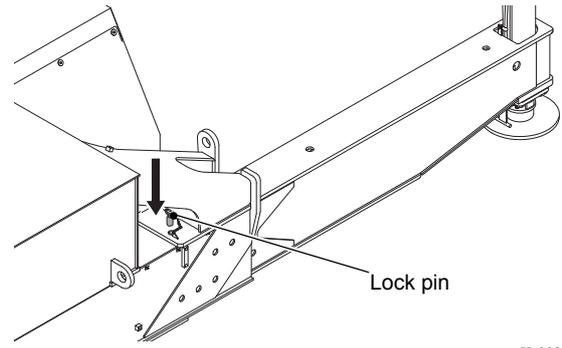
- When extending the outriggers to maximum extension:
Push the central control switch to extend all outrigger beams completely.
- When extending the outriggers to middle or minimum extension:
Push the central control switch or the individual outrigger control switch to extend the outrigger beams.
Refer to "Extension Width of Outriggers and Appearance of Marks on Side of Outrigger Beam" (page 195).



 For minimum extension, extend the jacks only, without extending the outrigger beams.

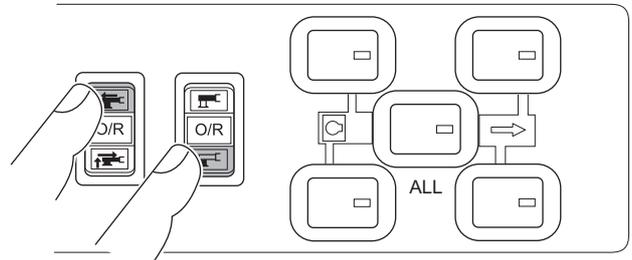
- Insert all four lock pins into the pin-holes to lock the outrigger beams.

⚠ WARNING
Make sure that all the lock pins are inserted before operating the crane. Otherwise, the outrigger beams can retract during operation, causing an overturning accident. After extending the outrigger beams, be sure to insert the lock pins.



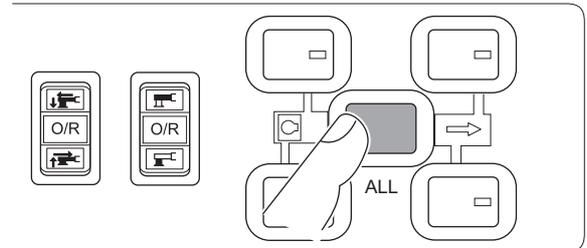
K-00347-00

- Set the jack/beam selector switch to "JACK", and set the extend/retract selector switch to "EXT".



K-01323-00

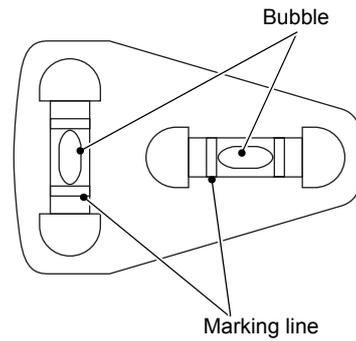
- Push the central control switch until all the jack cylinders are extended completely.



K-01322-00

9. Check that the machine is set up horizontally using the level.
If it is not set up horizontally, refer to "Horizontal Set-up" (page 201) to set the machine up horizontally.

- When the bubble in the level is between the marking lines, the machine is horizontal.



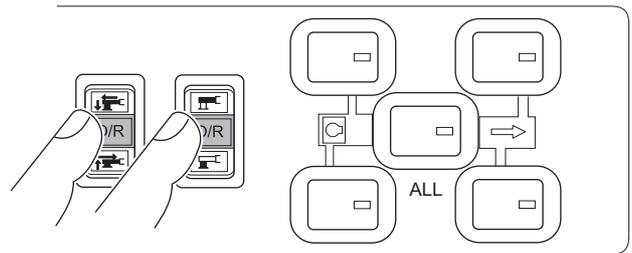
K-00350-00

⚠WARNING

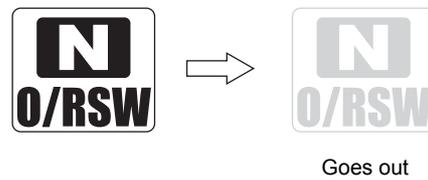
The machine can sometimes be supported horizontally only by 3 jack cylinders. Operation in this state can cause overturning. Examine the outrigger floats. If any of the float is not in proper contact with the ground, adjust it.

10. Return the jack/beam selector switch and the extend/retract selector switch to the neutral positions.

- Check that the outrigger switch out-of-neutral icon on the AML is not highlighted.



K-01325-00



K-00352-00

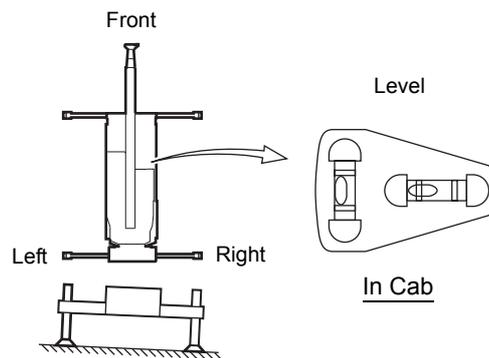
Horizontal Set-up

How to Read Level

The horizontal set-up is attained when the machine is set up with the bubbles in the levels coming in between the marking lines.

Check the horizontal set-up of the machine while the boom is directed toward the front.

Example: Left side of the vehicle is higher
The bubble in the level moves to the left.

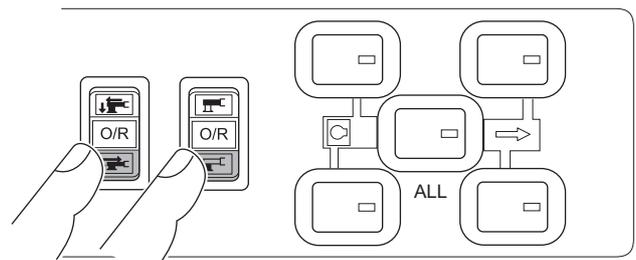


K-00353-00

Operation

Retract the jacks on the higher side to set the machine horizontally. The following describes an example in which the left side of the machine is higher.

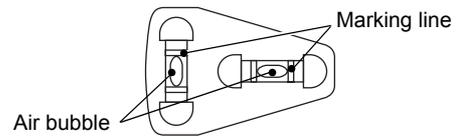
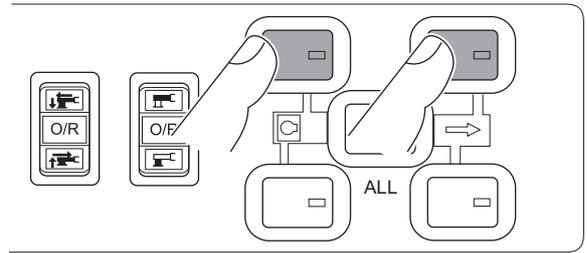
1. Set the jack/beam selector switch to "JACK" and set the extend/retract selector switch to "RET".



K-01326-00

2. While checking the position of the bubbles in the level, press the "LEFT FRONT" and "LEFT REAR" outrigger control switches repeatedly to retract the left jack cylinders and set the machine horizontally.

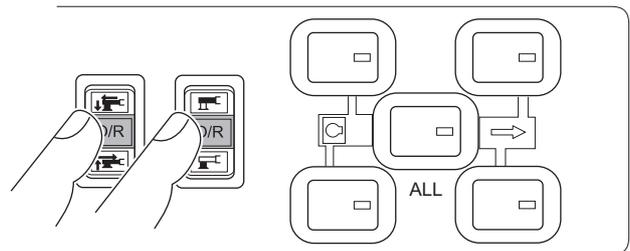
- When the bubble in the level is between the marking lines, the machine is horizontal.



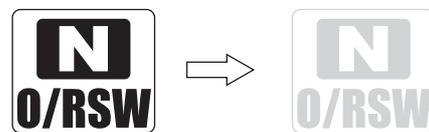
K-01327-00

3. Return the jack/beam selector switch and the extend/retract selector switch to the neutral positions.

- Check that the outrigger switch out-of-neutral icon on the AML is not highlighted.



K-01325-00



K-00357-00

Stowing Outriggers

⚠ DANGER

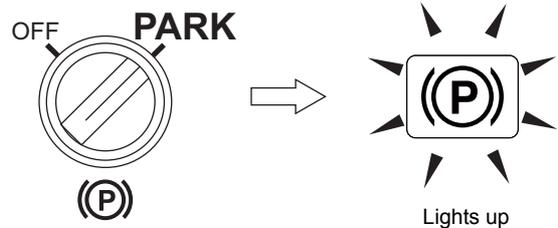
If the outriggers are stowed while the boom is extended or raised, the machine can overturn. Before stowing the outriggers, retract the boom fully, and set the machine into traveling configuration.

⚠ WARNING

Before operation, check that no one is around the outriggers or under the machine. Otherwise, a person can be hit by the outrigger or crushed by the machine.

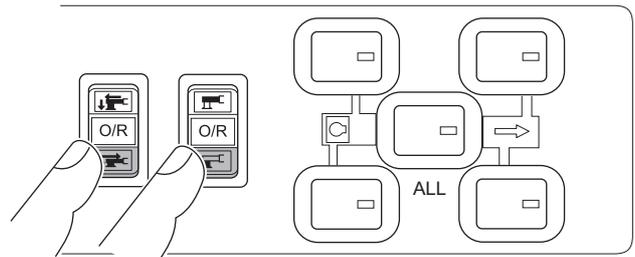
Adjust the operating speed with the accelerator pedal.

1. Set the machine into the traveling configuration, and check that the parking brake switch is set to "PARK".



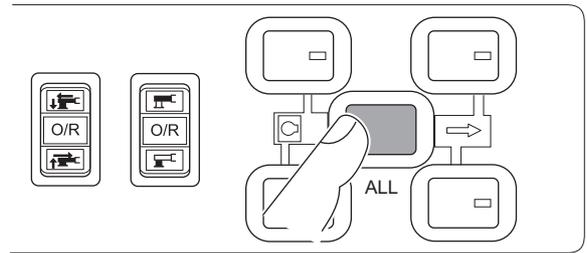
K-00358-00

2. Set the jack/beam selector switch to "JACK" and set the extend/retract selector switch to "RET".



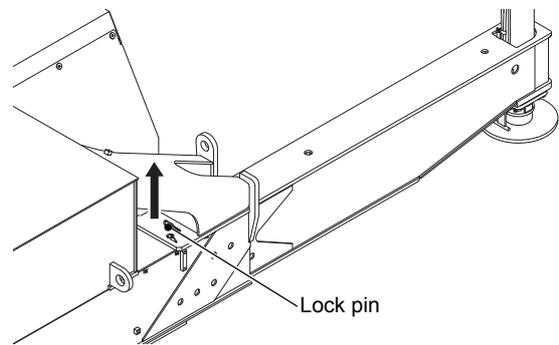
K-01326-00

3. Press and hold the central control switch until all the jack cylinders are stowed fully.



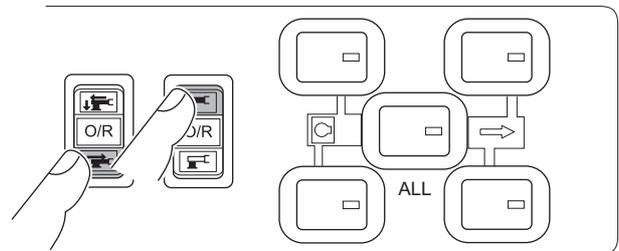
K-01322-00

4. Pull out all four lock pins.



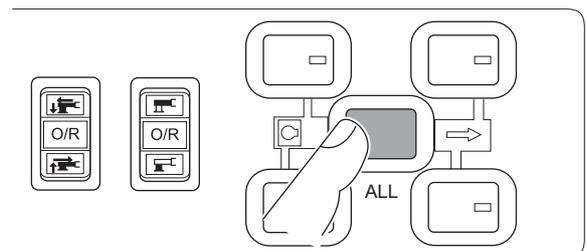
K-00361-00

5. Set the jack/beam selector switch to "BEAM" and set the extend/retract selector switch to "RET".



K-01331-00

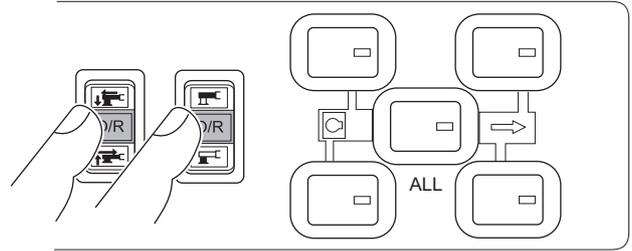
6. Press and hold the central control switch until all the outrigger beams are stowed fully.



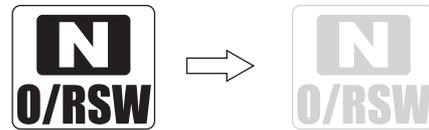
K-01322-00

7. Return the jack/beam selector switch and the extend/retract selector switch to the neutral positions.

- Check that the outrigger switch out-of-neutral icon on the AML is not highlighted.



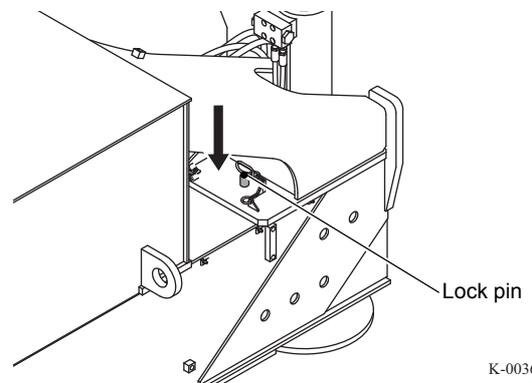
K-01325-00



K-00365-00

8. Insert all four lock pins into the pin-holes to lock the outrigger beams.

⚠ WARNING
Do not travel without the lock pins inserted. Otherwise, the outrigger beam can extend and hit passersby or passing vehicles during traveling. After stowing the outrigger beams, always insert the lock pins.



K-00366-00

- ☞ If an outrigger beam extends/retracts while no such outrigger operation is performed, the outrigger incorrect extension alarm buzzer sounds and an error code between "F213" and "F220" is indicated on the hour meter display.

Control Lever Adjustment

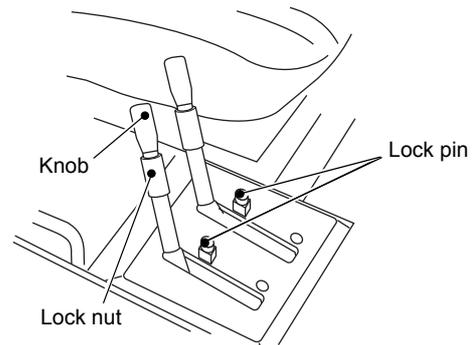
⚠WARNING

Never adjust the levers during crane operation. The crane may unexpectedly operate, causing an accident. Before adjustment, insert the lock pins of the control levers.

Control Lever Adjustment

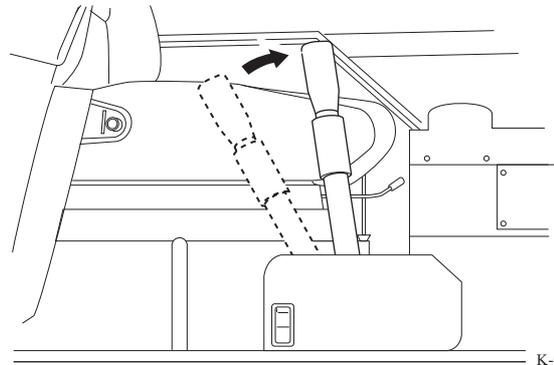
Each lever can be adjusted at three stages in the neutral position and to any length. Adjust the levers to facilitate operations according to your posture.

1. While pushing a lever down, move it to the stowing position, and set the lock pin.



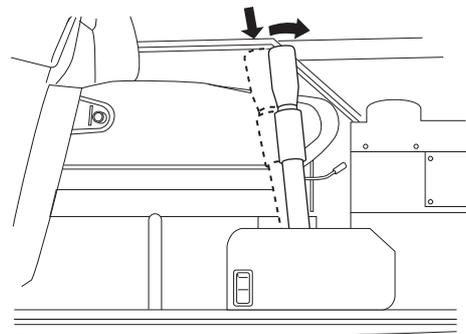
K-01334-00

2. Raise the control lever from the stowing position.
 - A "Click" is heard, and the control lever is stopped. Then, the neutral position is secured.



K-02022-00

3. If the lever position does not fit your posture, keep pushing the control lever down, and move it forward slightly. Then, reduce the force for pushing the lever, and press it forward.
 - A "Click" is heard again, the control lever is stopped, and the position is set as the neutral position.

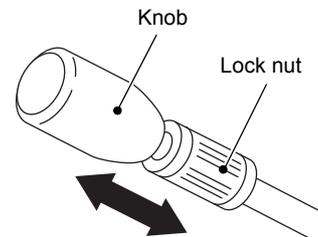


K-02023-00

4. Loosen the lock nut and adjust the length of the lever.

 A long lever facilitates fine operations.

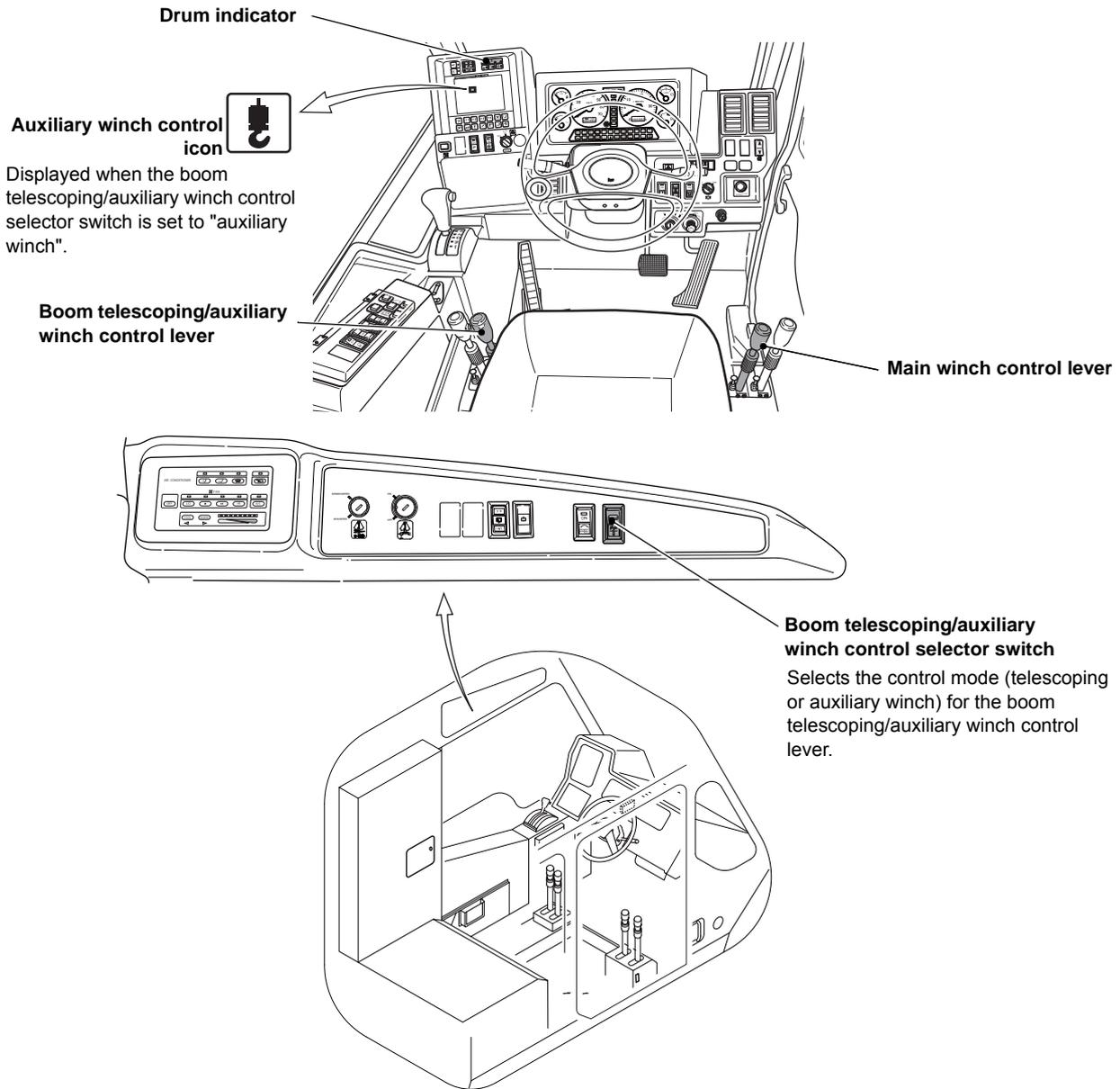
5. Tighten the lock nut to fix the lever.



K-02024-00

6. Pull out the lock pin.

Hoisting



K-04860-00

Hoisting Up/Down

⚠ WARNING

Never drag a load sideways, or pull-in the load using winch operation. Otherwise, the machine can be damaged or an overturning accident can occur.

NOTICE

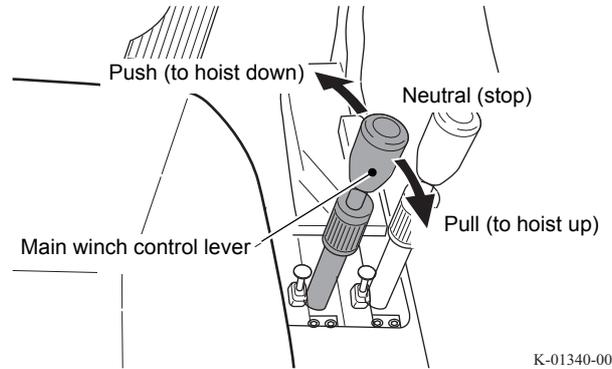
When the load is lifted just clear of ground, the load radius can increase due to the deflection of the boom, resulting in an overload. In this case, decrease the load, or move the machine to a position where the load radius can be decreased.

CTI-500XL-1_OM1-11E

Hoisting up/down operation is performed by operating the winch lever.
 Winch speed is adjusted by operating amount of the winch lever and accelerator operation.

Main Winch Control

1. Operate the main winch control lever to hoist up/down.
 - Hoisting down
Push the lever forward.
 - Stop
Return the lever to the neutral position.
 - Hoisting up
Pull the lever backward.



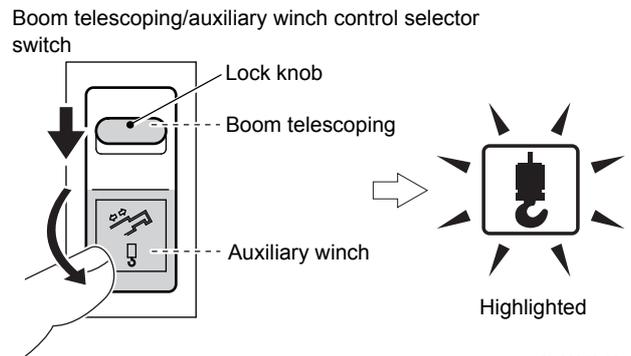
K-01340-00

⚠ WARNING
 Abrupt lever operation can cause the load to bounce or sway, resulting in an accident causing injury or death, or machine damage. Operate the lever slowly.

Auxiliary Winch Control

⚠ WARNING
 Before operating the auxiliary winch, make sure that the auxiliary hoist control mode is selected.
 If you attempt to operate while the boom telescoping control mode is selected, an accident can occur.

1. Push the "auxiliary winch" side of the boom telescoping/auxiliary winch control selector switch.
 - The auxiliary winch control icon is highlighted.
- Press the switch while pushing down and holding the lock knob.



K-00369-00

2. Operate the boom telescoping/auxiliary winch control lever to hoist up/down.

- Hoisting down

Push the lever forward.

- Stop

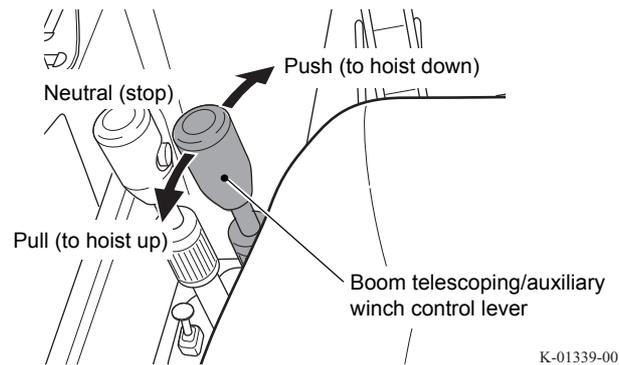
Return the lever to the neutral position.

- Hoisting up

Pull the lever backward.

⚠WARNING

Abrupt lever operation can cause the load to bounce or sway, resulting in an accident causing injury or death, or machine damage. Operate the lever slowly.



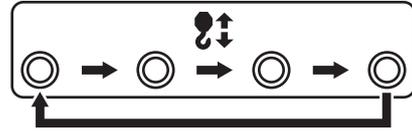
K-01339-00

Drum indicator

When the winch drum rotates, the four drum indicators flash sequentially to show that the drum is rotating.

The moving distance of the hook block per one flash of the indicator is approximately 20 to 30 mm.

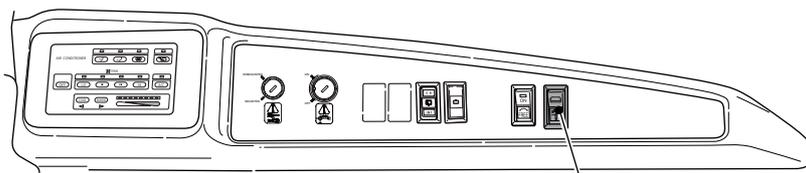
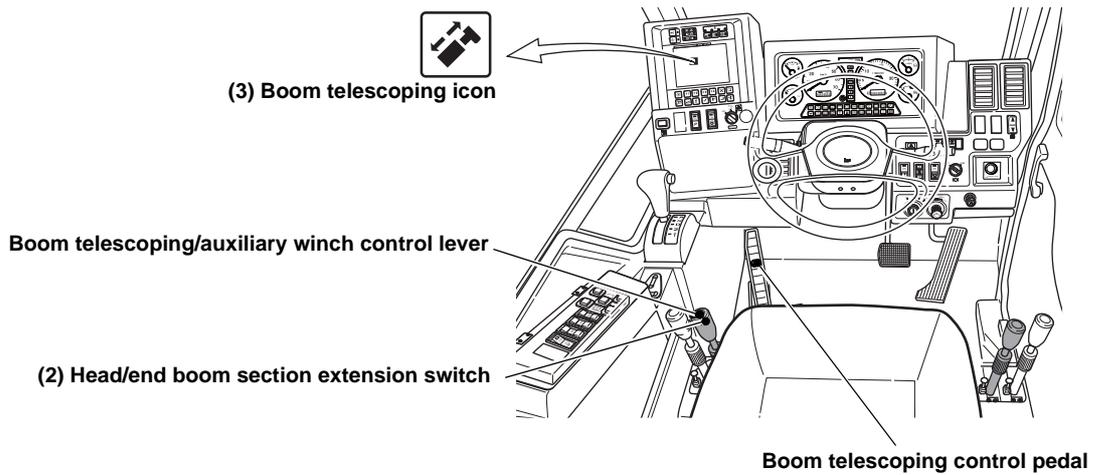
The winch to be indicated is as shown below, according to the winch selection on the AML winch selection menu, or the lift status registered to the AML.



K-00371-00

- When main winch is selected
Main winch
- When auxiliary winch is selected
 - Boom lift is registered
Main winch
 - Single top/jib lift is registered
Auxiliary winch

Boom Telescoping Operation



K-04861-00

(1) Boom telescoping/auxiliary winch control selector switch

Selects the control mode (telescoping or auxiliary winch) for the boom telescoping/auxiliary winch control lever.

(2) Head/end boom section extension switch

In the boom telescoping mode I, the switch is used to extend the 3rd/4th/top boom sections by pressing it after the 2nd boom section is fully extended.

In the boom telescoping mode II, the switch is used to extend the 2nd boom section by pressing it after the 3rd/4th/top boom sections are fully extended.

(3) Boom telescoping icon

Displayed when the boom telescoping/auxiliary winch control selector switch is set to "boom telescoping".

Boom Telescoping Operation

⚠ WARNING

- **Abrupt lever operation can make the load bounce or sway, resulting in an accident causing injury or death, or machine damage.**
Operate the levers and pedals slowly.
- **Do not push or pull in a load by telescoping operation. The machine can be damaged, resulting in an accident.**

- ☞ Boom telescoping may not be possible depending on the weight of the load, boom angle, and lubrication between the boom sections.
- ☞ If the boom is left extended for a certain period of time, the boom telescoping cylinder may retract gradually due to the temperature change of the hydraulic oil. This is due to the reduced volume of the hydraulic oil, and not a malfunction. The retracting length varies depending on the conditions such as boom telescoping, boom angle, and lubrication between the boom sections.

The boom is a 5-section telescoping type. To extend and retract the boom, operate the boom telescoping/auxiliary winch control lever, boom telescoping control pedal, and head/end boom extension switch.

You can adjust the telescoping speed by the operating amount of the boom telescoping/auxiliary winch control lever and boom telescoping pedal, and the accelerator pedal.

Boom Telescoping Mode

There are 2 boom telescoping modes: "Telescoping mode I" (2nd boom section extends first) and "Telescoping mode II" (3rd/4th/top boom sections extend first). Register one of these telescoping modes to the AML in the lift state registration process.

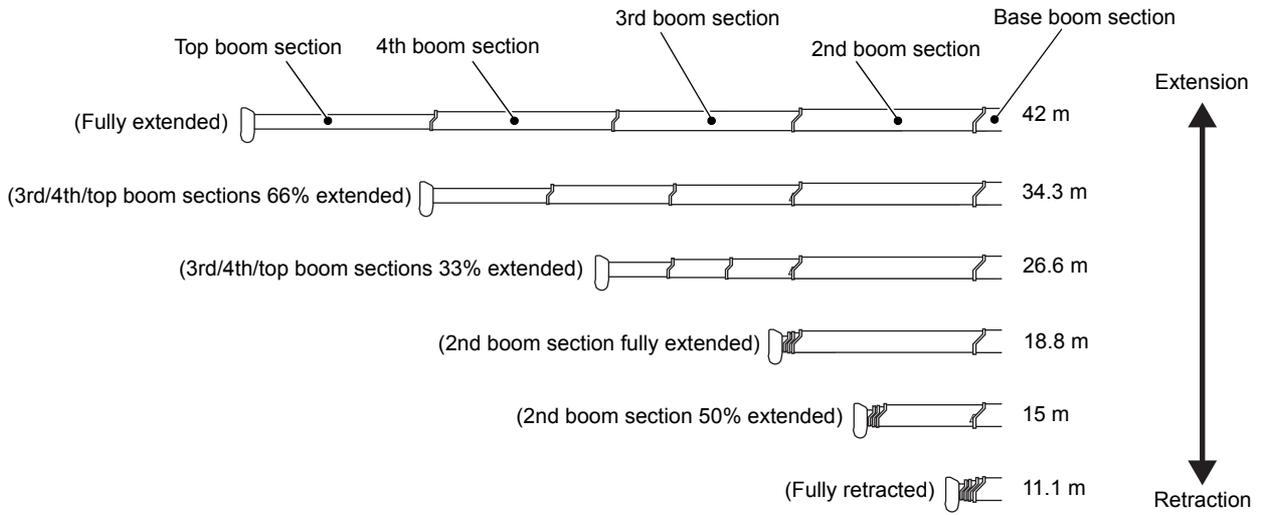
- ☞ Before registering the boom telescoping mode, fully retract the boom.
- ☞ For the boom registration, refer to "Registration of Operating Status and AML Function Check" (page 144).

Boom Telescoping Mode I (2nd Boom Section Extends First.)

Compared to the boom telescoping mode II, the capacity increases in the strength capacity zone, but it decreases in the stability zone.

- **Extend**
After the 2nd boom section is fully extended, the 3rd, 4th, and top boom sections are fully extended to a required length simultaneously.
- **Retract**
After the 3rd, 4th, and top boom sections are fully retracted, the 2nd boom section is retracted to a required length.

Telescoping mode I (2nd boom section extends first.)



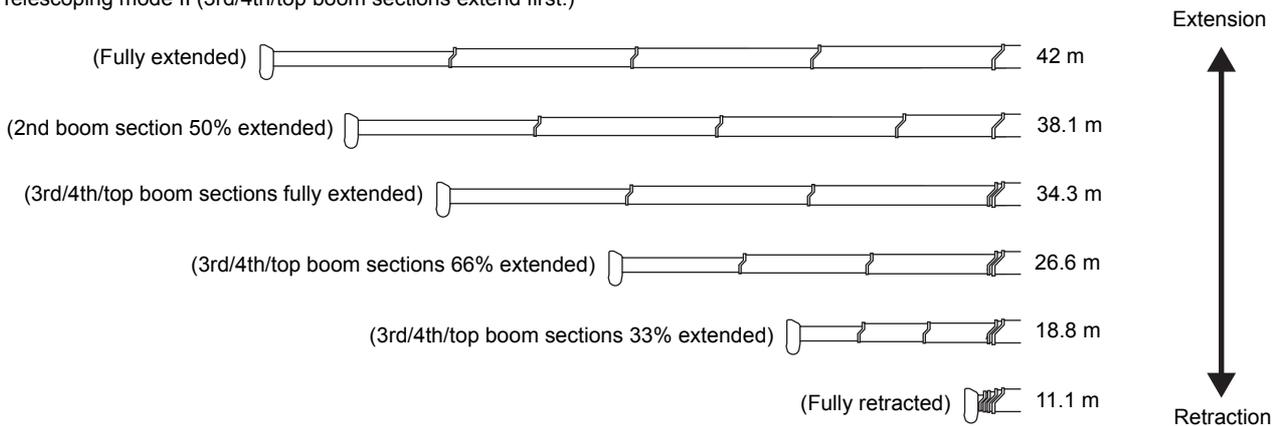
K-00373-00

Boom Telescoping Mode II (3rd/4th/Top Boom Sections Extend First.)

Compared to the boom telescoping mode I, the capacity increases in the stability zone, but it decreases in the strength capacity zone.

- Extend
After the 3rd, 4th, and top boom sections are fully extended simultaneously, the 2nd boom section is extended to a required length.
- Retract
After the 2nd boom section is fully retracted, the 3rd, 4th, and top boom sections are retracted to a required length.

Telescoping mode II (3rd/4th/top boom sections extend first.)



K-00374-00

Extending Boom

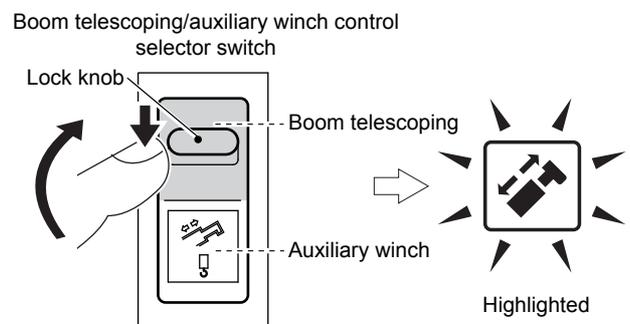
⚠ WARNING

Before operating the boom, make sure that the boom telescoping operation mode is selected. If you attempt to operate while the auxiliary hoist control mode is selected, an accident can occur.

Boom Telescoping Mode I (2nd Boom Section Extends First.)

1. Push the "boom telescoping" side of the boom telescoping/auxiliary winch control selector switch.

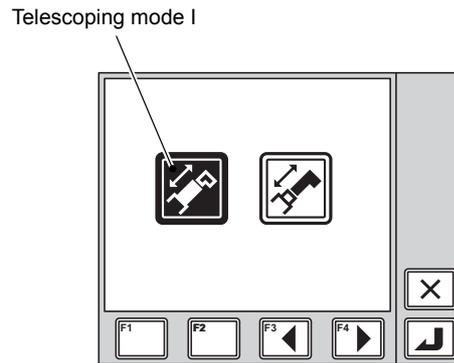
- The boom telescoping control icon is highlighted.
- Press the switch while pushing down and holding the lock knob.



K-00375-00

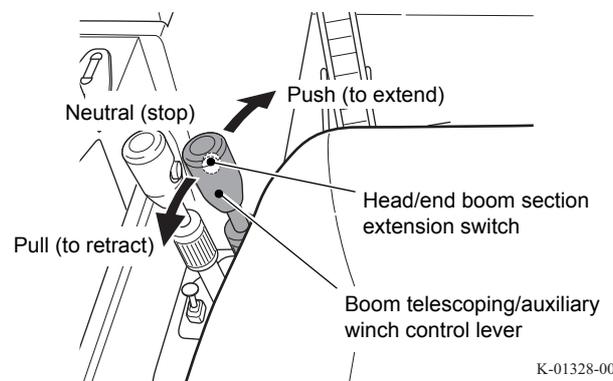
CTI-500XL-1_OM1-11E

- In the pop-up window for operation state registration on the AML, select "Telescoping mode I".
For the boom telescoping mode registration, refer to "Registration of Operating Status and AML Function Check" (page 144).



K-00376-00

- Push the boom telescoping/auxiliary winch control lever forward, and fully extend the 2nd boom section.
- While pushing the lever forward, press the head/end boom extension switch.
 - The 3rd, 4th, and top boom sections extend simultaneously.



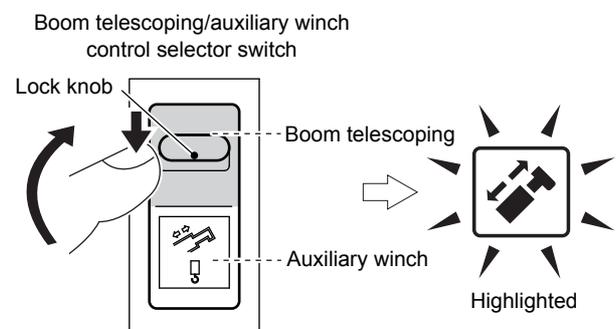
K-01328-00

☞ Once the 3rd/4th/top boom sections start extending, the extension continues after the head/end boom extension switch is released.

- When the boom has extended to a necessary length, pull back the lever to the neutral position.

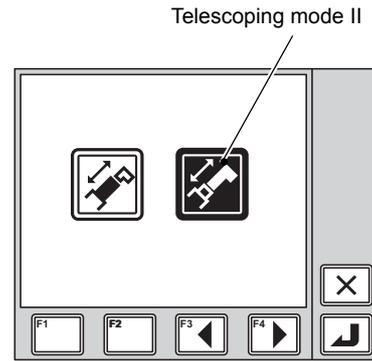
Boom Telescoping Mode II (3rd/4th/Top Boom Sections Extend First.)

- Push the "boom telescoping" side of the boom telescoping/auxiliary winch control selector switch.
 - The boom telescoping control icon is highlighted.
- ☞ Press the switch while pushing down and holding the lock knob.



K-00378-00

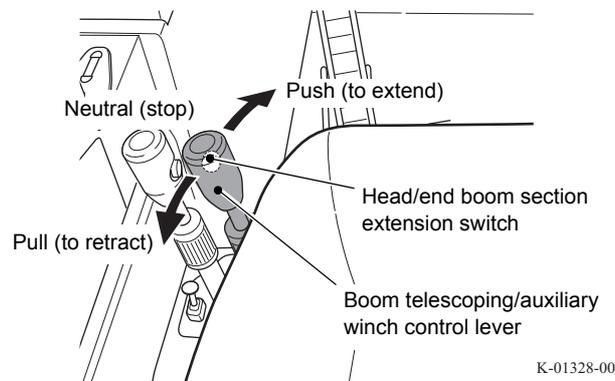
- In the pop-up window for AML operation state registration, select "Telescoping mode II". For the boom telescoping mode registration, refer to "Registration of Operating Status and AML Function Check" (page 144).



K-00379-00

- Push the boom telescoping/auxiliary winch control lever forward, and fully extend the 3rd, 4th and top boom sections.
- While pushing the lever forward, press the head/end boom extension switch.
 - The 2nd boom section extends.

☞ Once the 2nd boom section starts extending, the extension continues even if the head/end boom extension switch is released.
- When the boom has extended to a necessary length, pull back the lever to the neutral position.

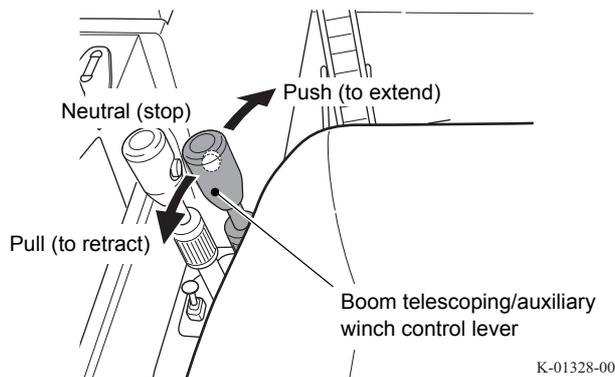


K-01328-00

Retracting Boom

Boom Telescoping Mode I (2nd Boom Section Extends First.)

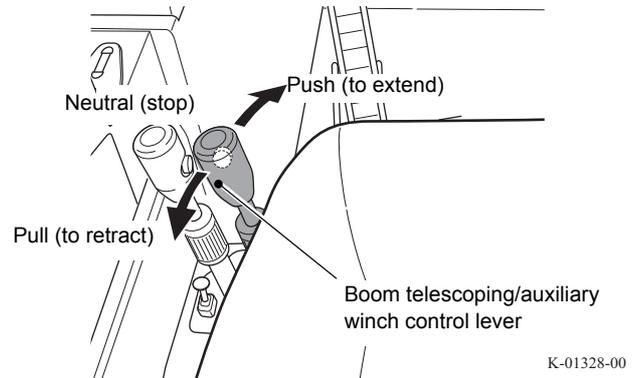
- Pull the boom telescoping/auxiliary winch control lever backward, and fully retract the 3rd, 4th and top boom sections.
 - After the 3rd, 4th, and top boom sections are fully retracted, the 2nd boom section is retracted.
- When the boom has retracted to a necessary length, return the lever to the neutral position.



K-01328-00

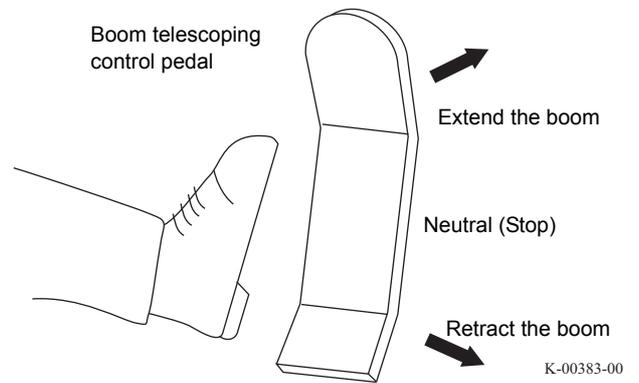
Boom Telescoping Mode II (3rd/4th/Top Boom Sections Extend First.)

1. Pull the boom telescoping/auxiliary winch control lever backward, and fully retract the 2nd boom section.
 - After the 2nd boom section is fully retracted, the 3rd, 4th, and top boom sections are retracted.
2. When the boom has retracted to a necessary length, return the lever to the neutral position.

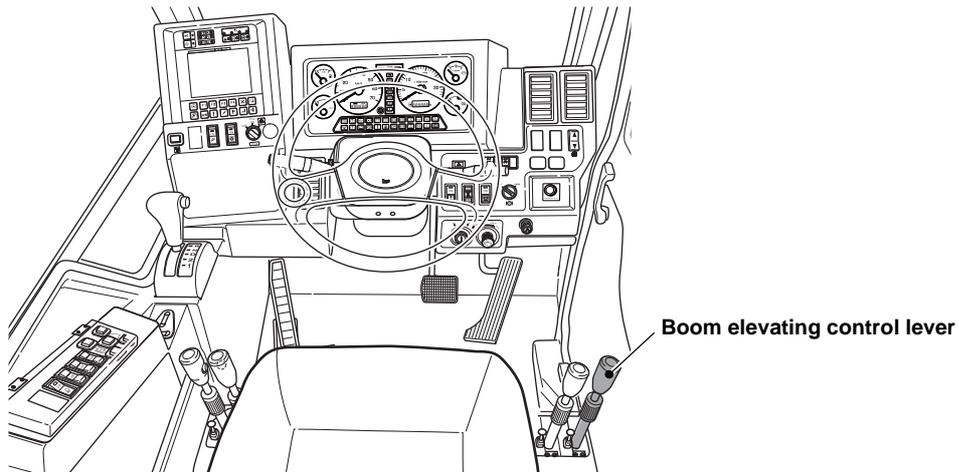


Boom Telescoping Control Pedal

This pedal is used to extend and retract the boom.



Elevating Boom



K-04862-00

Elevating Boom

⚠ DANGER

Do not put your arm or head out of the window during crane operation. You can be caught between the boom and the cab, resulting in a fatal or serious accident.

⚠ WARNING

- **Abrupt lever operation can make the load bounce or sway, resulting in an accident causing injury or death, or machine damage.
Operate the lever slowly.**
- **Never lift a load off the ground or pull in a load by boom raising operation.
The machine can overturn or be damaged.
Lift a load off the ground by hoisting up operation.**

The boom elevating is controlled by operating the boom elevating control lever.

1. The boom elevating speed is adjusted by the operating amount of the boom elevating control lever and the accelerator operation.

- Boom lowering

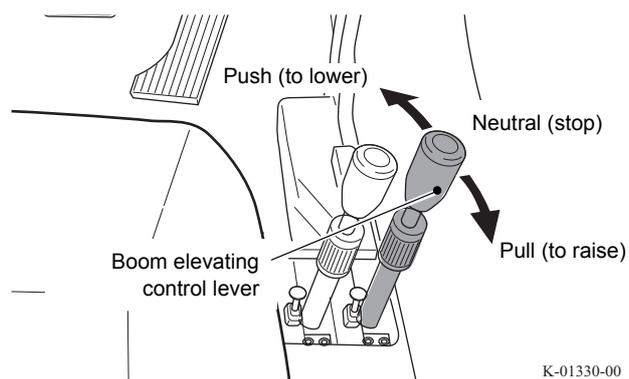
Push the lever forward.

- Stop

Return the lever to the neutral position.

- Boom raising:

Pull the lever backward.



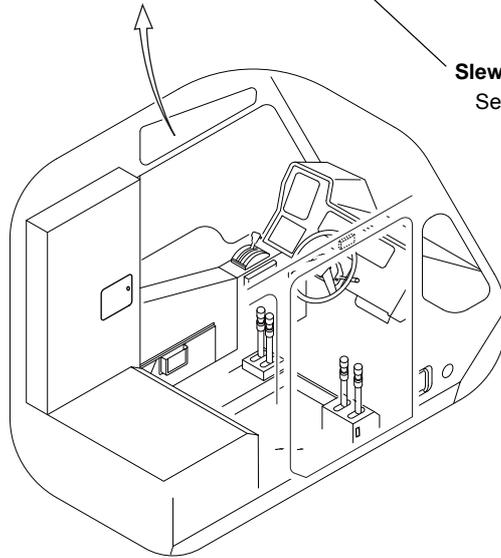
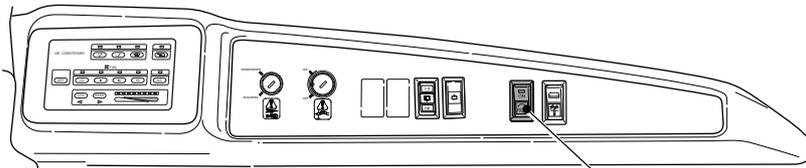
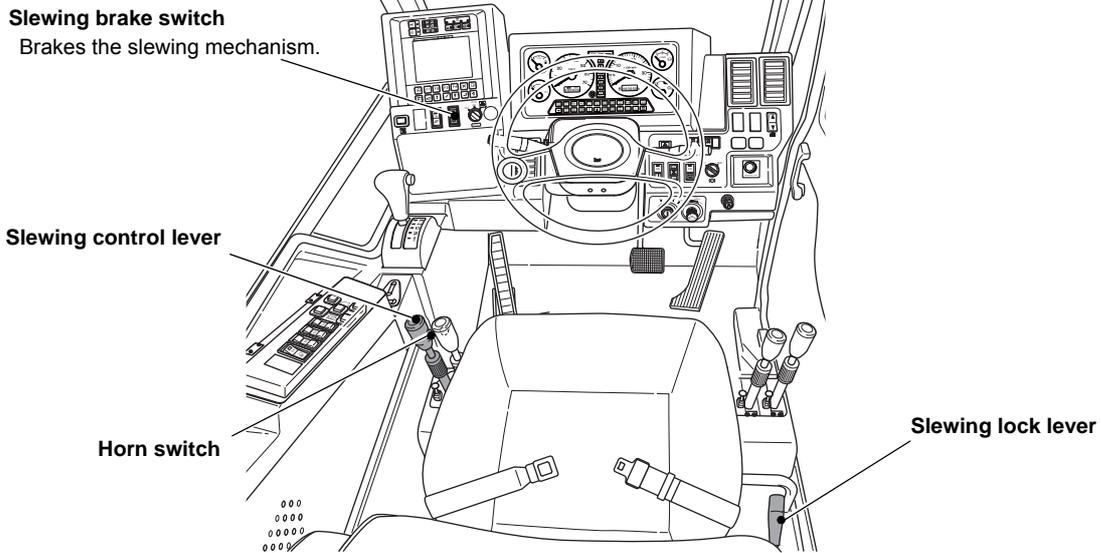
K-01330-00

NOTICE

Note that when the boom is raised to a high angle, abrupt boom elevation can cause the hook block or the lifted load to hit the boom elevating cylinder, boom, or jib, result in machine damage.

Operate slowly especially when the cylinder is close to its stroke end.

Slewing Boom



K-04863-00

Slewing Boom

⚠ WARNING

- Never drag a load sideways by slewing operation. The machine can be damaged, resulting in an accident.
- Before slewing the boom, press the horn switch to alert workers around the machine.
- When the boom is 11.1 m in length and outrigger extension width is minimum, if you slew the boom from the over-front area toward the over-side area, set the boom angle to 68° or lower beforehand. The boom of 15.0 m to 18.8 m in length can be slewed when the boom angle is 73° or lower. The boom of 26.6 m can be slewed when the boom angle is 78° or lower.

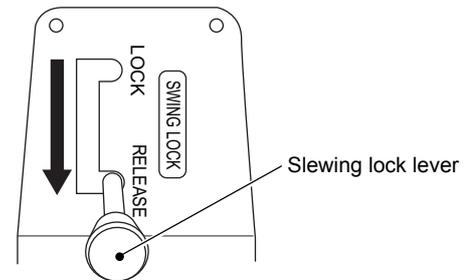
The slewing operation is performed by operating the slewing control lever.

The slewing speed is adjusted by the operating amount of the slewing lever and the accelerator.

1. Set the slewing lock lever to "RELEASE."

- The slewing lock pin is released.

 If the slewing lock pin is stiff and does not come out, slew the boom slightly, and then operate the slewing lock lever again.

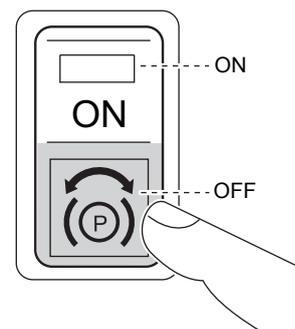


K-01333-00

2. Push the "OFF" side of the slewing brake switch to release the slewing brake.

- The built-in lamp in the switch goes out.

Slewing brake switch



K-00388-00

3. Before you operate the slewing control lever, push the horn switch to sound the horn to alert the people around the machine.

4. Operate the slewing control lever to slew the boom.

- Left slewing

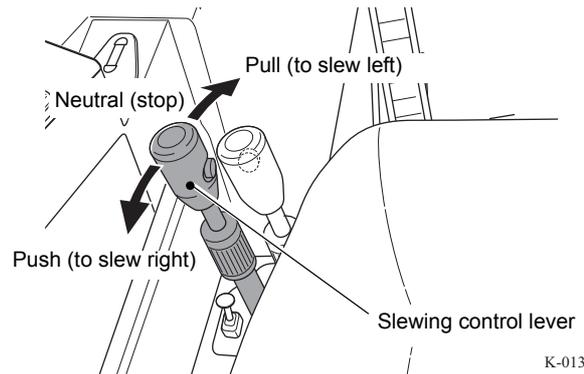
Push the lever forward.

- Stop

Return the lever to the neutral position.

- Right slewing:

Pull the lever backward.



⚠ WARNING

Abrupt operation can cause the load to bounce or sway, resulting in an accident causing injury or death, or machine damage.

Operate the lever slowly.

NOTICE

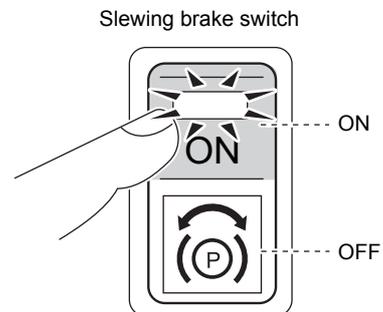
Do not set the slewing lock lever to "LOCK" during slewing operation.

The machine can be damaged.

5. After the slewing operation, push the "ON" side of the slewing brake switch.

- The built-in lamp in the switch lights up.

☞ After the completion of crane operation, set the slewing lock lever to "LOCK" to fix the machine with the slewing lock pin.



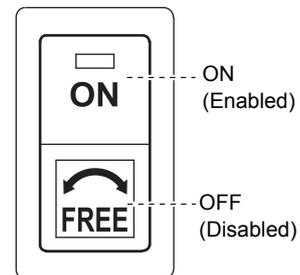
Slewing Free/Lock Selector Switch

NOTICE

- **Do not operate the slewing free/lock selector switch while the machine is slewing. The machine can be damaged.**
- **Be careful about the slewing speed while the slewing free function is enabled. The slewing does not stop immediately because of the inertia force even if the slewing control lever is returned to the neutral position.**

This switch is used to activate the slewing free function.

- "ON" side
The slewing free function is enabled.
- "OFF" side
The slewing free function is disabled.



K-00391-00

You can perform the operations below while the slewing free function is enabled.

- When a load is hoisted up, the superstructure turns in the direction of the load and becomes aligned with the load.
- When the boom is slewed with a load lifted and the control lever is returned to the neutral position, the boom continues slewing by the inertia force.

Automatic Slewing Stop Function

⚠ WARNING

The automatic slewing stop function does not work during on-rubber operation even if overload occurs during slewing.

If overload occurs during slewing, the machine can overturn or be damaged.

During on-rubber operation, be careful not to cause overload when you slew the machine.

This function stops slewing movement to prevent overturning of the machine.

This function works in the cases below:

- The extension width of the outriggers is unequal and a slewing operation causes overloading.
- The slewing range limit for the work range limit function is registered on the AML.

 When this function works, only slewing operation slows down to a stop and other movements continue.

On-rubber Operation

⚠ WARNING

Observe the following in order to prevent the machine from overturning or being damaged.

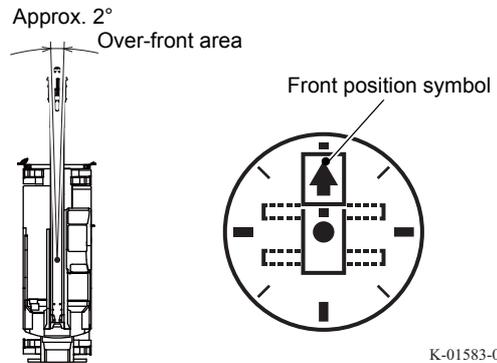
- Check that air pressure in the tires is at the specified value (refer to "Service Data" (page 501)).

If the air pressure in the tires is not within the specified level, the tires can burst.

- The slewing automatic stop function does not work. If an overload occurs during slewing, the machine can overturn.

When lifting a load in the over-front area and slewing it to the side or rear, check that an overload does not occur.

The over-front area in the rated lifting capacity table is specified as within approx. 2° in front of the machine. And when the boom is in this area, the front position symbol appears on the AML.



When the boom is slewed from the over-front area to the over-side area, the rated lifting capacity decreases. When slewing the boom with a load lifted, make sure that the load is limited to within the rated lifting capacity for 360-degree area.

- Before slewing the 11.1 m boom from the over-front area toward the over-side area, set the boom angle to 53° or lower. The 18.8 m boom can be slewed when the boom angle is 67° or lower.
- The rated lifting capacity for on-rubber operation assumes that the machine is set up on a level and rigid ground. Never perform crane operation on an inclined or soft ground.

NOTICE

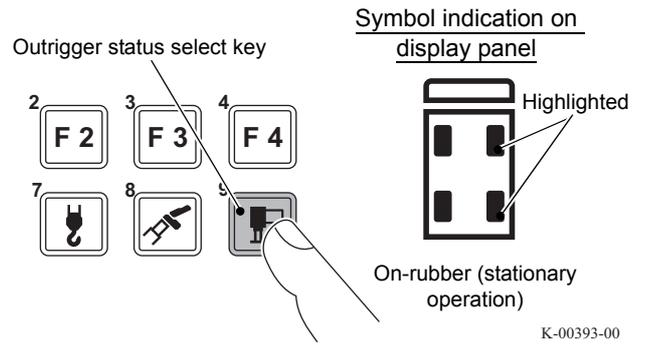
The machine is supported by the tires in on-rubber operation. The load can easily sway due to deflection of the tires.

Operate the crane slowly and safely.

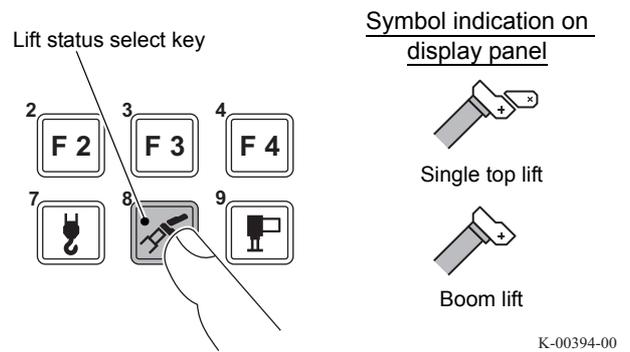
On-rubber Stationary Operation

1. Direct the boom to the over-front.

2. Register the on-rubber stationary operation status to the AML.



3. Register the lift status (single top/boom) to the AML.



Now the machine is ready for on-rubber stationary operation.

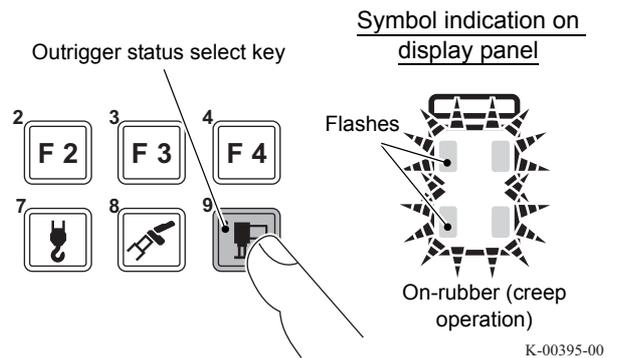
On-rubber Creep Operation

⚠ WARNING

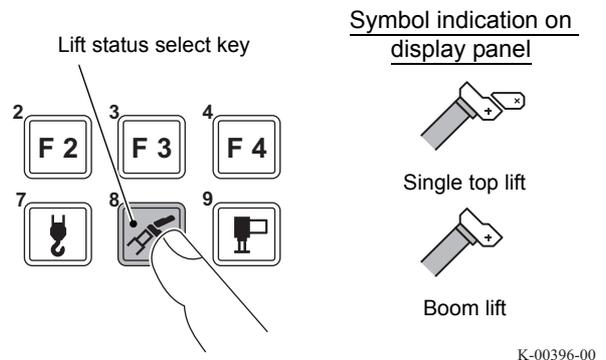
Observe the following in order to prevent the machine from overturning or being damaged.

- For safety, keep the lifted load close to the ground, and support it with a guide rope, etc. to restrain load sway during traveling.
- Keep the PTO switch set to "ON" so that the crane can be immediately operated during traveling in order to prevent danger.
- Never operate the crane during on-rubber creep operation. Stop traveling before operating the crane.
- Travel at a speed of 1.6 km/h or less (very slow speed), and restrict the moving distance to 60 m or less per 30 minutes.
- Avoid rough operations such as sudden start/stop, abrupt steering, etc. Such actions cause the load to sway.

1. Direct the boom to the over-front.
2. Register the on-rubber creep operation to the AML.



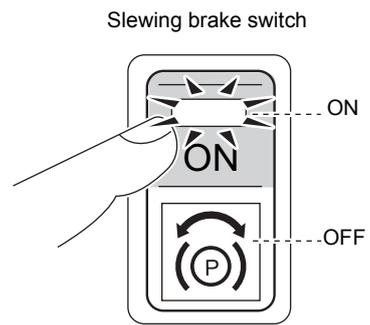
3. Register the lift status (single top/boom) to the AML.



4. Lift a load.

5. Set the slewing brake switch to "ON".

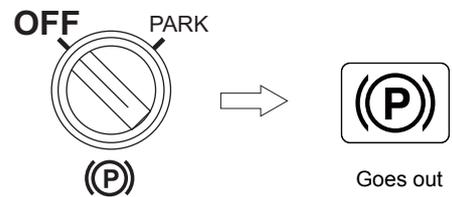
- The slewing brake is applied.



K-00397-00

6. Set the parking brake switch to "OFF".

- The brake warning goes out.



K-00398-00

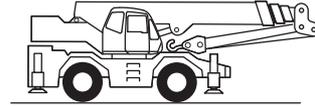
Now the machine is ready for on-rubber creep operation.

Taking Out and Stowing Hook Block

Taking Out the Main Hook Block

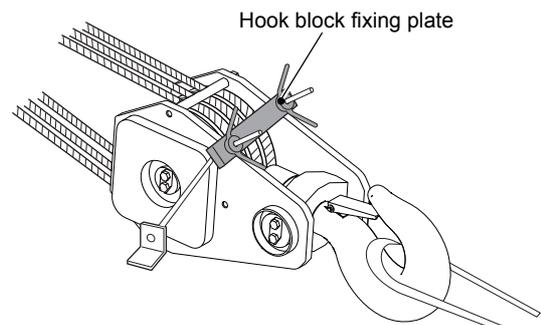
From Top of Carrier

1. Extend the outriggers, and set up the crane horizontally.



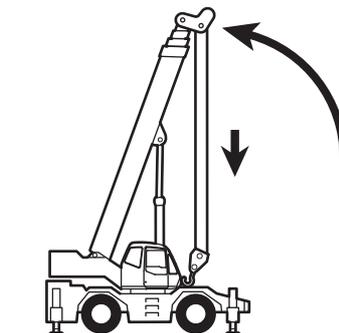
K-01343-00

2. Remove the hook block fixing plate.



K-01344-00

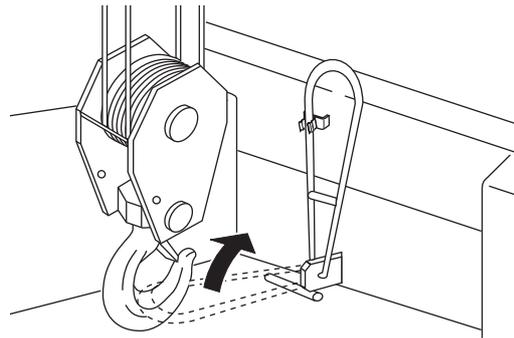
3. Raise the boom and unwind the main winch simultaneously until the boom comes to the position where the hook block retainer fittings can be detached.



K-01345-00

4. Detach the hook block retainer fitting from the main hook block and stow it to the front of the swing structure.

NOTICE
If the hook block retainer fittings are not stowed to the front of the swing structure, they can hit the vehicle body during swing operation and may be damaged.

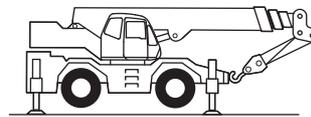


K-01346-00

5. Make sure that the wire rope is not wound disorderly on the drum.

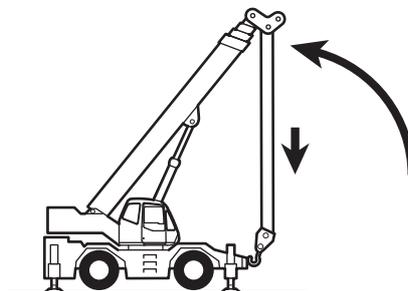
From Front of Carrier (Option)

1. Extend the outriggers, and set up the crane horizontally.



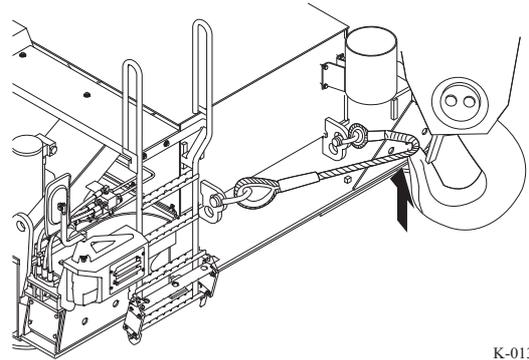
K-01347-00

2. Raise the boom and unwind the main winch simultaneously until the boom head comes right above the main hook block.



K-01348-00

3. Detach the hook retaining rope from the main hook block.



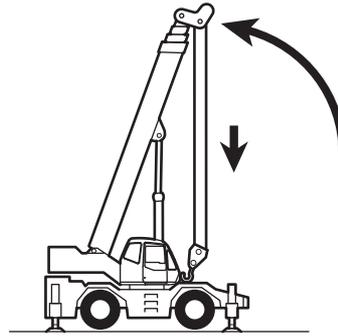
K-01349-00

4. Make sure that the wire rope is not wound disorderly on the drum.

Stowing Main Hook Block

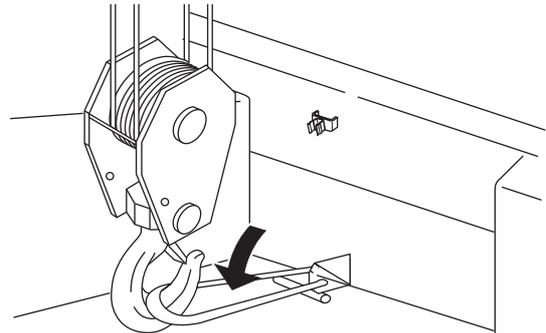
On Top of Carrier

1. Fully retract the boom.
2. Raise the boom and unwind the main winch simultaneously until the main hook block comes to the stowing position.



K-01345-00

3. Set the hook block retainer fitting to the main hook block.



K-01350-00

4. While lowering the boom and winding up the main winch simultaneously, set the boom into the traveling configuration.

 If you cannot stow the hook block because of the activation of anti-two-block device, press and hold the anti-two-block disable switch to stop the function, and stow the hook block.

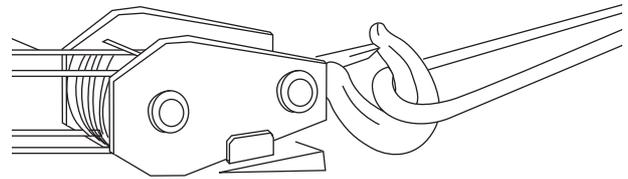


K-01343-00

5. Place the main hook block on the frame.

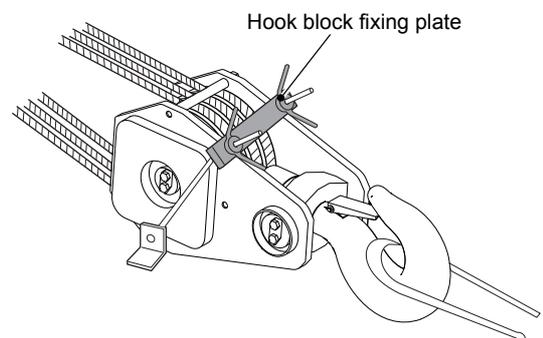
6. After placing the main hook block, wind in the wire rope until it is slightly tensioned.

NOTICE
If the winch is wound up more than necessary, the hook block retainer fitting can be damaged.



K-01351-00

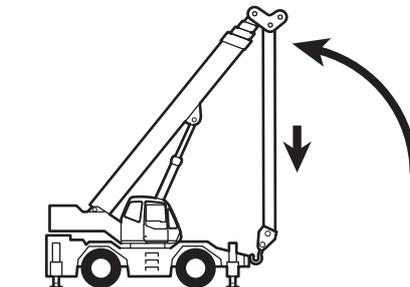
7. Secure the main hook block with the hook block fixing plate.



K-01344-00

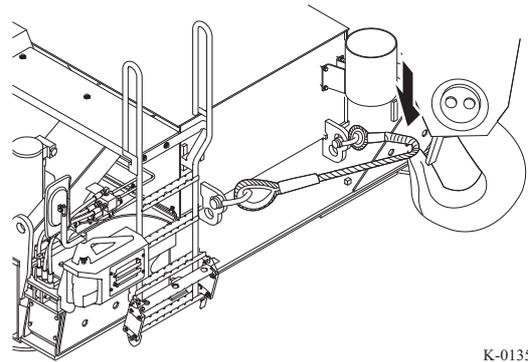
On Front of Carrier (Option)

1. Retract the boom fully.
2. Raise the boom and unwind the main winch simultaneously until the main hook block comes to the stowing position.



K-01348-00

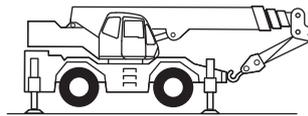
3. Attach the hook retaining rope on the main hook block.



K-01352-00

4. While lowering the boom and winding up the main winch simultaneously, set the boom into the traveling configuration.

 If you cannot stow the hook block because of the activation of anti-two-block device, press and hold the anti-two-block disable switch to stop the function, and stow the hook block.



K-01347-00

5. Wind the main wire rope until it is tensioned slightly.

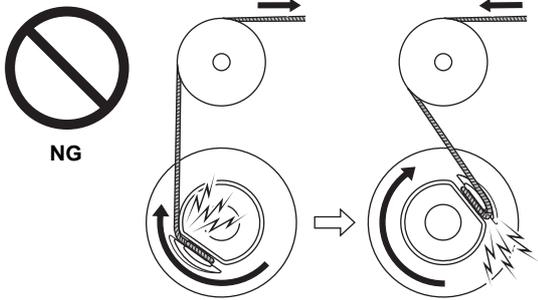
NOTICE
It you wind the wire rope excessively, the wire rope and the hook retainer rope can be damaged.

Reeving Wire Rope

Standard number of parts of line

⚠ WARNING

- If the crane is operated with a greater number of parts of line than standard, the length of the wire rope can become insufficient. If all the wire rope on the winch drum is wound out, the load will be applied to the end of the wire rope. This can break the wire rope and cause an accident. The wire rope can also be wound in the opposite direction, causing the hook block to be hoisted up during winch hoist-down operation and resulting in an accident. Select the number of parts of line so that 3 or more dead turns of wire rope always remain on the winch drum.
- If the number of parts of line used is less than the standard, the load cannot be lifted as specified in the rated lifting capacity table. If a load heavier than the allowable load is lifted up, the wire rope can break and cause an accident. Make sure that the allowable load per one wire rope (4,500 kg or less for both main and auxiliary wire ropes) is not exceeded.

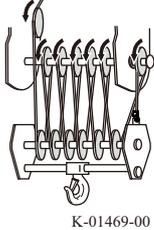
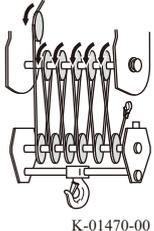
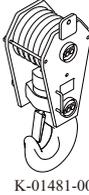
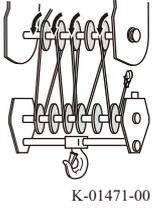


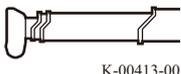
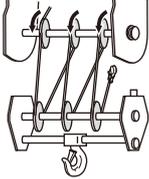
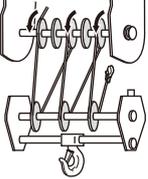
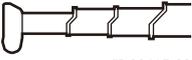
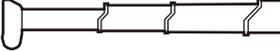
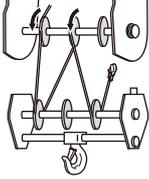
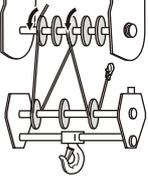
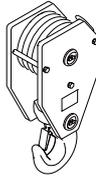
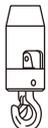
K-00405-00

☞ If the over-unwinding cutout function (option) is provided, the winch winding down operation is stopped automatically when the remaining number of dead turns of wire rope reaches approx. 3.

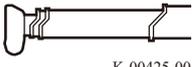
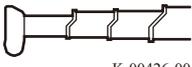
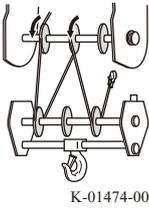
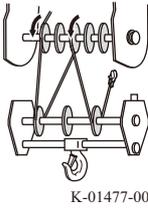
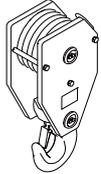
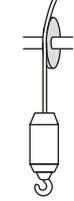
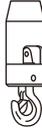
Select a suitable number of parts of line according to the boom length, lifting capacity, and hoisting speed.

On-outrigger Operation

Boom length and standard number of parts of line	Reeving pattern	Hook block to be used, hook mass	Allowable load of rope
<p>11.1 m: 13 parts of line</p>  <p>K-00406-00</p>	<p>13 parts of line Mount the single top. 5 sheaves and attachment sheave.</p>  <p>K-01469-00</p>		
<p>11.1 m: 12 parts of line</p>  <p>K-00409-00</p>	<p>12 parts of line Mount the single top. 5 sheaves.</p>  <p>K-01470-00</p>	<p>Main hook block 51 t: 6 sheaves 460 kg</p>  <p>K-01481-00</p>	<p>4500 kg/ part of line</p>
<p>11.1 to 15.0 m: 8 parts of line Telescoping mode I</p>  <p>K-00411-00</p>	<p>8 parts of line 5 sheaves.</p>  <p>K-01471-00</p>		

Boom length and standard number of parts of line	Reeving pattern	Hook block to be used, hook mass	Allowable load of rope
15.0 to 18.8 m: 6 parts of line Telescoping mode I  K-00413-00	6 parts of line 5 sheaves.  K-01472-00 or  K-01473-00	Main hook block 25 t: 3 sheaves 280 kg	
18.8 to 42.0 m: 4 parts of line Telescoping mode I  K-00417-00 11.1 to 42.0 m: 4 parts of line Telescoping mode II  K-00418-00	4 parts of line 5 sheaves.  K-01474-00 or  K-01477-00	 K-01482-00	4500 kg/ part of line
Single top lift: 1 part of line  K-00421-00 Jib lift: 1 part of line  K-00422-00	 K-01480-00	Auxiliary hook block 4.5 t 100 kg  K-00424-00	4500 kg/ part of line

On-rubber Operation

Boom length and standard number of parts of line	Reeving pattern	Hook block to be used, hook mass	Allowable load of rope
<p>11.1 to 26.6 m: 4 parts of line</p> <p>Telescoping mode I</p>  <p>K-00425-00</p> <p>Telescoping mode II</p>  <p>K-00426-00</p>	<p>4 parts of line 5 sheaves.</p>  <p>K-01474-00</p> <p>or</p>  <p>K-01477-00</p>	<p>Main hook block 25 t: 3 sheaves 280 kg</p>  <p>K-00429-00</p>	<p>4500 kg/ part of line</p>
<p>Single top lift: 1 part of line</p>  <p>K-00430-00</p>	 <p>K-01480-00</p>	<p>Auxiliary hook block 4.5 t 100 kg</p>  <p>K-00432-00</p>	

Reeving Procedure

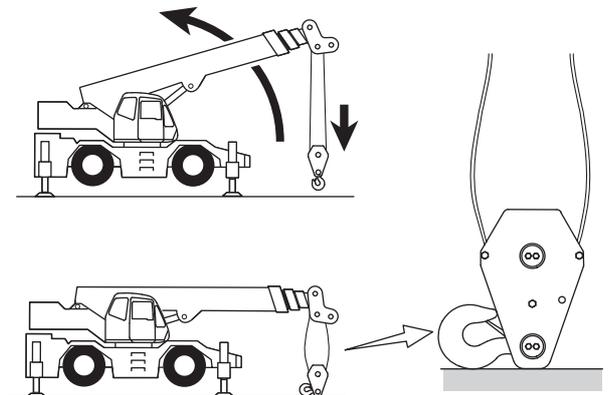
CAUTION

- Do not stand where the hook block may tumble down. A tumbling hook block can cause an injury. Work in areas where the hook block does not tumble down.
- When reeving the wire rope, wear thick leather gloves. Otherwise, you can suffer injury.

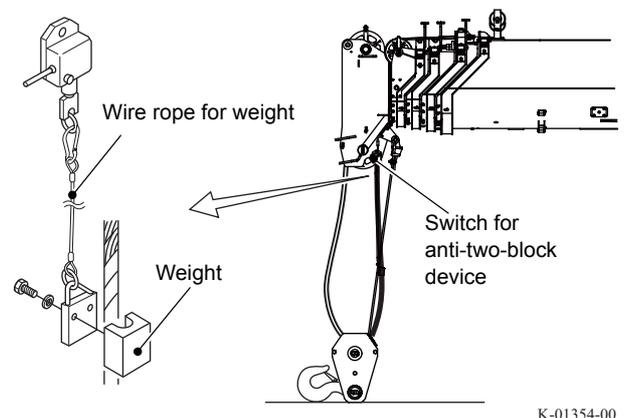


K-00446-00

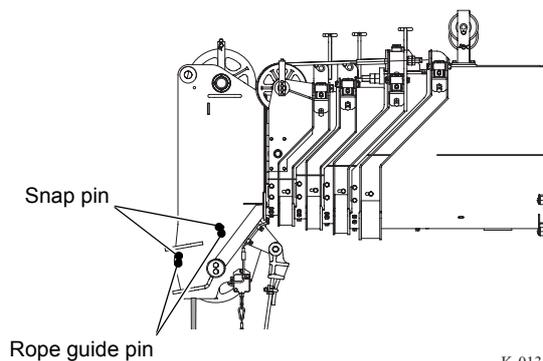
1. Set up the outriggers, and slew the boom in a direction where operation can be easily performed.
2. Raise the boom, and wind out the wire rope by winch wind-down operation.
3. Set the boom horizontally, and stand the hook block on the ground as shown in the illustration.



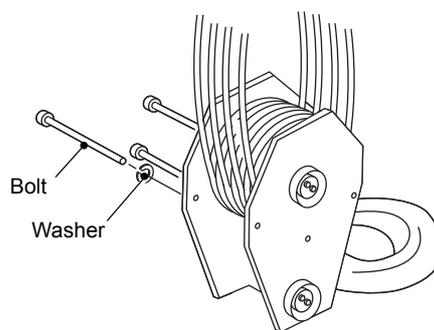
4. Remove the weight for anti-two-block device from the wire rope.



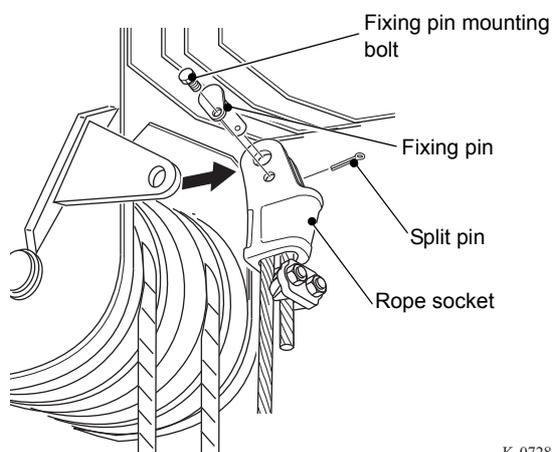
- Remove the snap pins, and pull out the two rope guide pins.



- Remove the bolts from the main hook block.



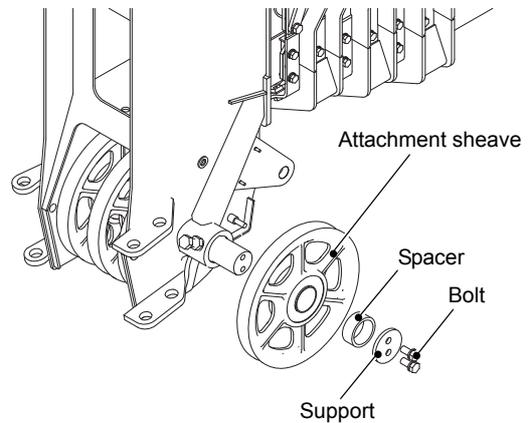
- Remove the rope socket from the boom.



8. Refer to "Standard number of parts of line" (page 236), and reeve the wire rope.

When the attachment sheave is used

- (1) Remove bolts (2 pieces) and remove the support.



K-01579-00

- (2) Install the attachment sheave.
- (3) Install the spacer provided with the attachment sheave.
- (4) Install the support and tighten the bolts (2 pieces).

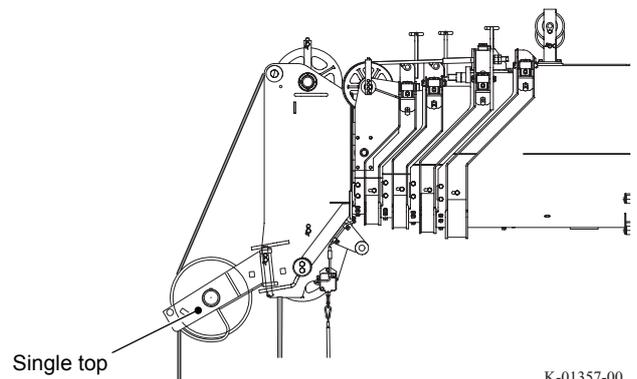
⚠ WARNING

Tighten the bolts securely using a wrench. Improper installation can cause the attachment sheave to fall, resulting in an injury.

☞ When the following options are used, refer to "Single top" (page 257) and mount the single top.

- 13 parts of line, using 51 t hook block, 5 sheaves and attachment sheave
- 12 parts of line, using 51 t hook block and 5 sheaves

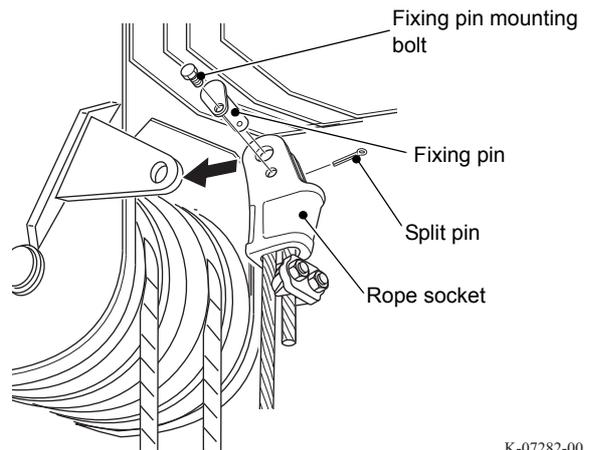
Reeve the wire rope through the single top. And then install the anti-two-block device for single top lift and connect the connectors.



K-01357-00

9. Mount the rope socket in the orientation as shown in the illustration.

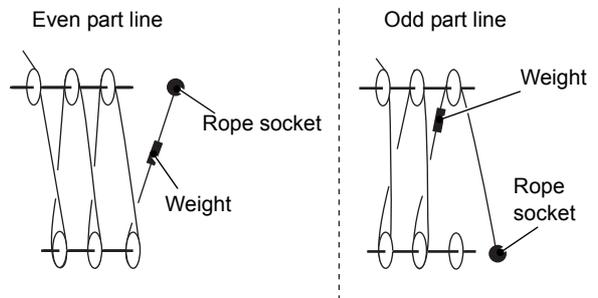
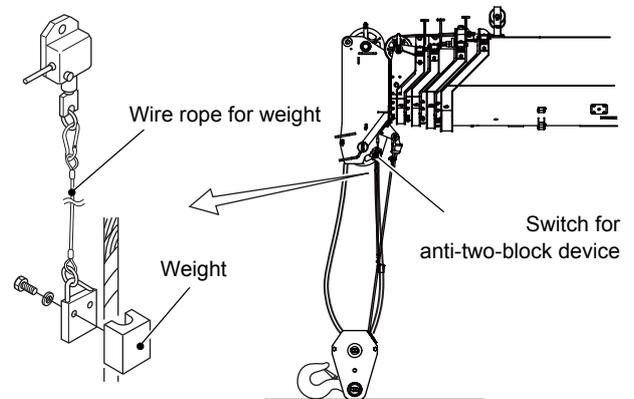
⚠WARNING
 Securely tighten the fixing pin mounting bolt for the rope socket using a wrench. After attaching the fixing pin, secure it using a split pin so that the fixing pin does not come out. Improper installation can cause the rope socket to come off and the lifted load to fall, resulting in an accident.



K-07282-00

10. Install the weight for anti-two-block device to the wire rope.

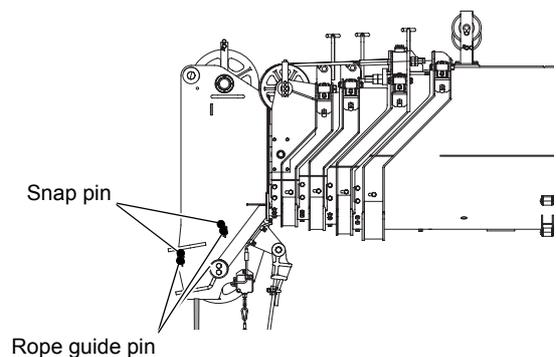
⚠WARNING
 Tighten the bolts securely using a wrench. Improper installation can cause the weight to fall, resulting in an injury.



K-01359-00

11. Install the rope guide pins (2 points) to the boom head, and secure them with snap pins.

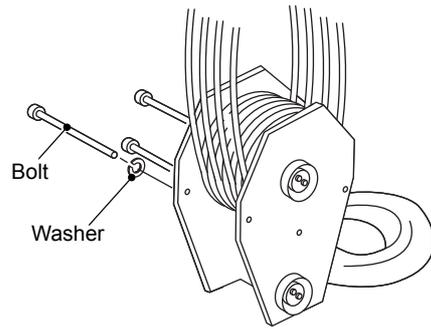
☞ When you use the attachment sheave, use the rope guide pins (2 pieces) provided with the attachment sheave.



K-01355-00

12. Install the bolts on the main hook block.

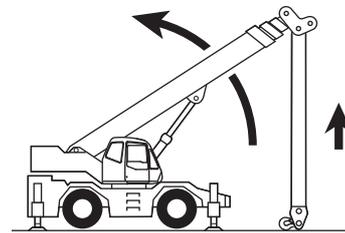
⚠ WARNING
Tighten the bolts securely using a wrench. Improper installation can cause the wire rope to come off, resulting in an accident.



K-00443-00

13. Raise the boom until the load lines become tense, and wind the wire rope on the winch drum by the hoist-up operation.

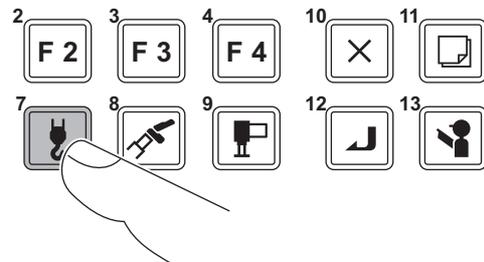
NOTICE
Disorderly winding can damage the wire rope. When the wire rope is wound up disorderly, rewind it.



K-01360-00

14. Register the number of parts of line to the AML.

☞ For registration of the number of parts of line, refer to "Automatic Moment Limiter (AML)" (page 136).



K-01580-00

15. Check that the crane automatically stops when the main hook block is overhoisted.

☞ If the crane does not stop automatically, refer to the Step 10 and check that the weight for the anti-two-block device is installed correctly.

Now, the reeving of the wire ropes is completed.

Pulling Out and Stowing Auxiliary Wire Rope

⚠WARNING

When you work at an elevated place, use a platform to prevent a falling accident. Also, wear a safety belt, and attach its hook to the anchor point for the safety belt. For the location of the anchor points, refer to "Location of Anchor Points" (page 121). Falling from an elevated place can result in a serious injury.

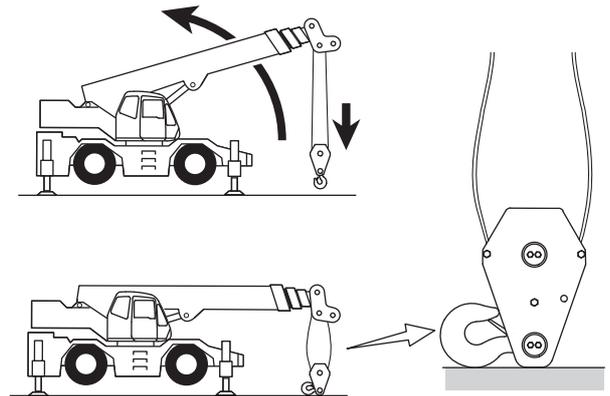
⚠CAUTION

- Do not stand where the hook block may tumble down. A tumbling hook block can cause an injury. Work in areas where the hook block does not tumble down.
- When taking out or stowing the wire rope, wear thick leather gloves. Otherwise, you can suffer an injury.



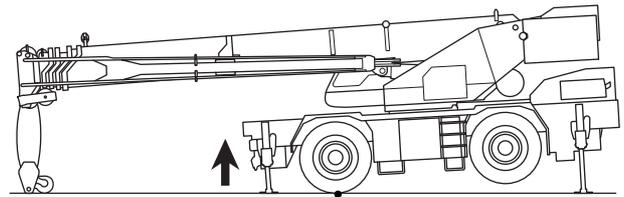
Pulling Out Auxiliary Wire Rope

1. Extend the outriggers, and set up the crane horizontally.
2. Raise the boom, and wind out the wire rope by winch wind-down operation.
3. Set the boom horizontally, and stand the hook block on the ground as shown in the illustration.



- Retract the jacks until the front wheels touch the ground lightly, and re-register the status of the outriggers to the AML.

 You can work safely when the crane is set up with the front wheels touching the ground lightly.



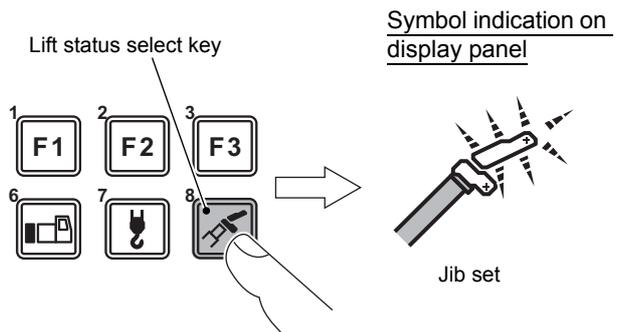
Slight contact with ground

K-01361-00

- Register the jib set status to the AML.

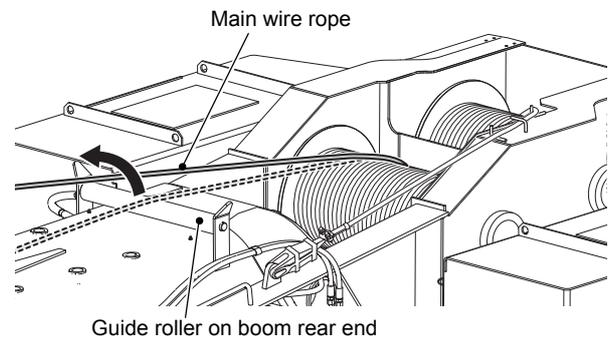
- The jib lift indicator symbol flashes.

NOTICE
<p>When the jib set status is registered to the AML, the machine does not automatically stop even if the hook block is in two-blocking status.</p>



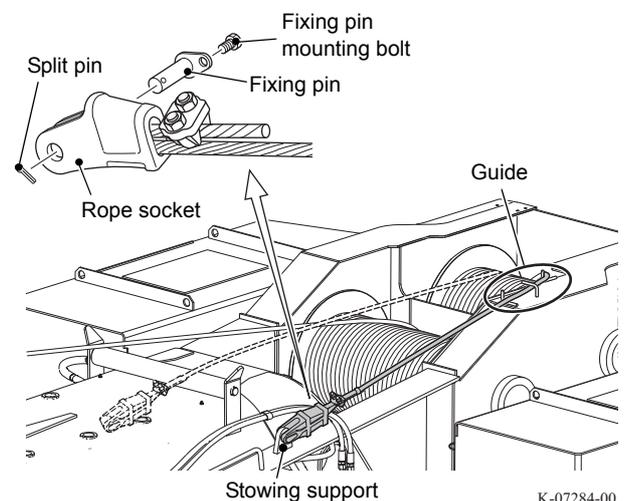
K-00449-00

- Put the main wire rope at the edge of the guide roller on the boom rear end.



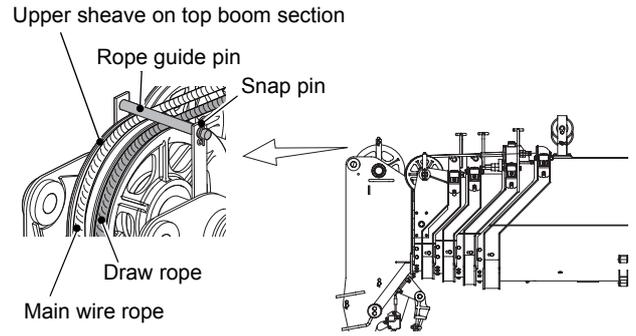
K-01362-00

- Remove the rope socket from the stowing support and the guide, and put the rope socket on the boom.



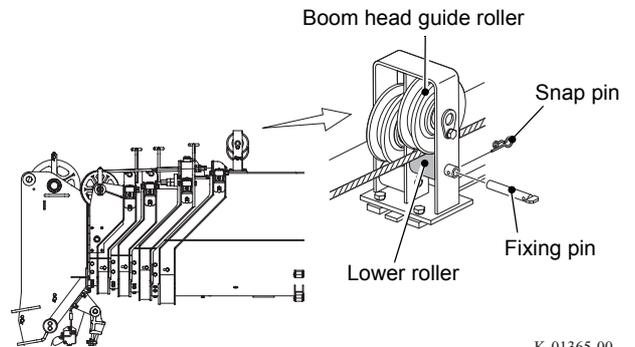
K-07284-00

- 8.** Remove the rope guide pin for the upper sheave on the top boom section, and pass the provided draw rope.



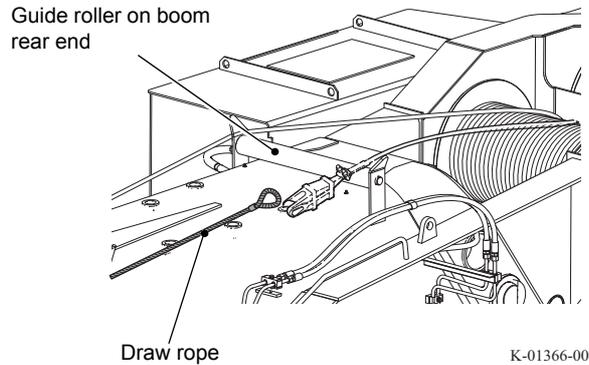
K-01364-00

- 9.** Remove the lower roller of the boom head guide roller, and pass the draw rope.



K-01365-00

- 10.** Route the draw rope until its end comes close to the guide roller on the boom rear end.



K-01366-00

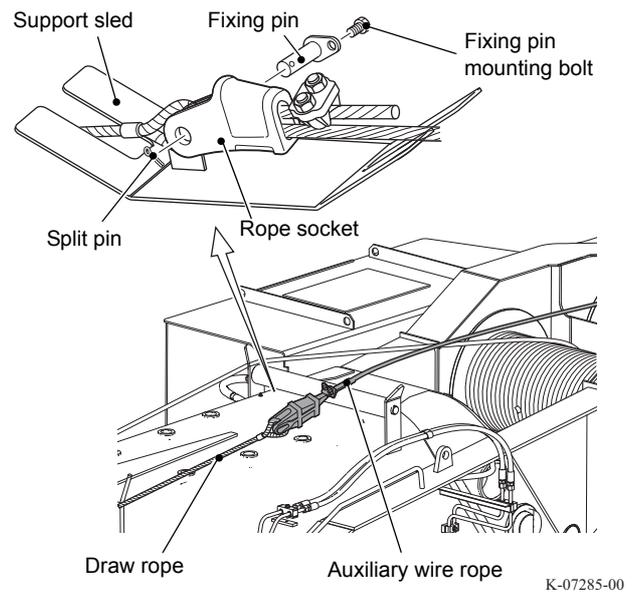
- 11.** Wind out the auxiliary wire rope to the front of the boom.

- (1) Wind out the auxiliary wire rope while pulling it until its end comes to the end of the draw rope.

- (2) Attach the draw rope and support sled to the rope socket of the auxiliary wire rope.

NOTICE

Before attaching the support sled, make sure that the auxiliary wire rope is not twisted.

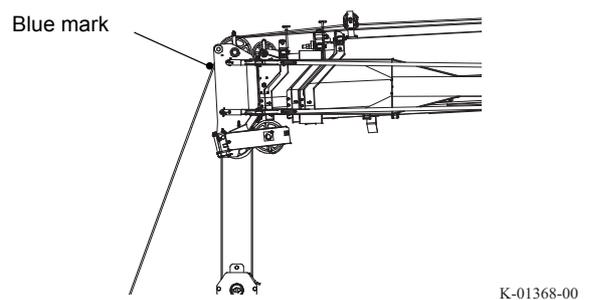


- (3) Wind out the auxiliary wire rope while pulling the draw rope from the front of the boom.

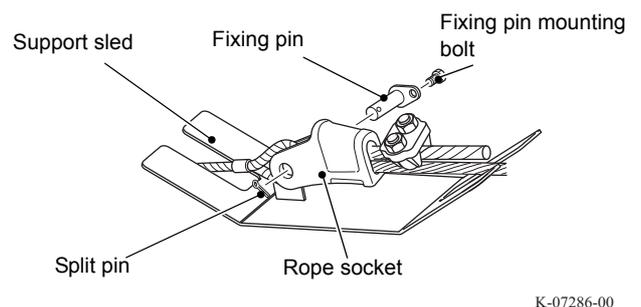
NOTICE

- To prevent disorderly rope winding, pull the draw rope connected to the auxiliary wire rope by hand while unwinding the auxiliary winch.
- During operation, pay attention to the position of the support sled.

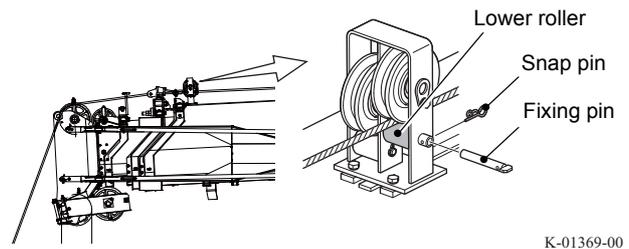
- (4) When the blue mark on the draw rope becomes visible over the upper sheave on the top boom section, stop unwinding.



- (5) Remove the draw rope and support sled from the auxiliary wire rope.

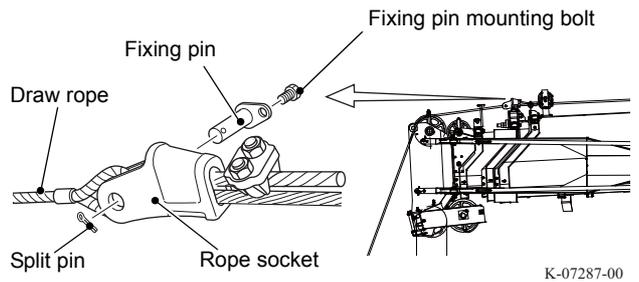


- (6) Pull out the auxiliary wire rope further, and pass it through the boom head guide roller, and then install the lower roller.



K-01369-00

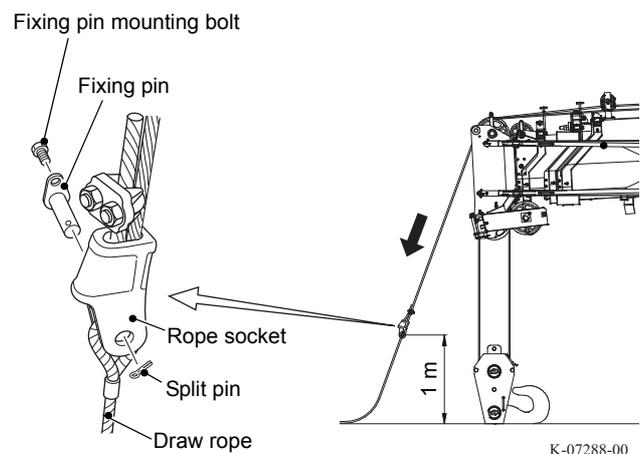
- (7) Attach the draw rope to the rope socket.



K-07287-00

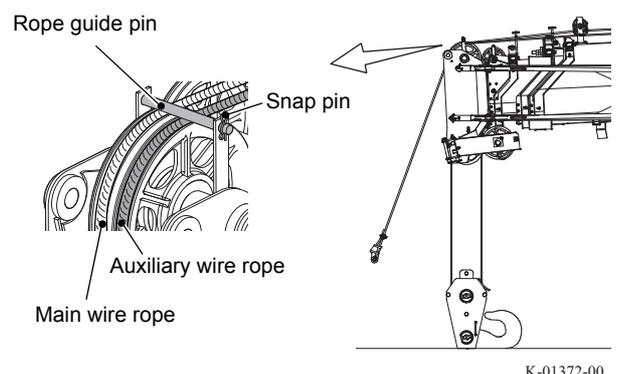
- (8) Wind out the auxiliary wire rope while pulling the draw rope from the front of the boom.

- (9) When the rope socket comes to approx. 1 m above the ground, stop unwinding. Remove the draw rope from the rope socket.



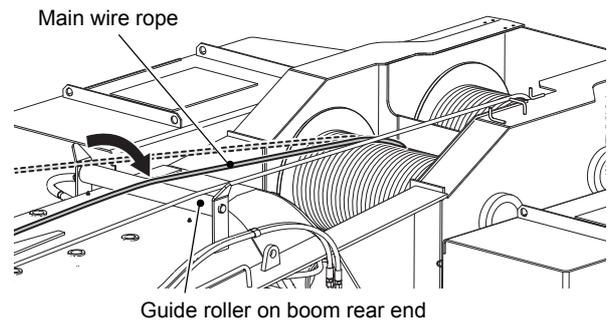
K-07288-00

- (10) Attach the rope guide pin for the upper sheave of the top boom section.



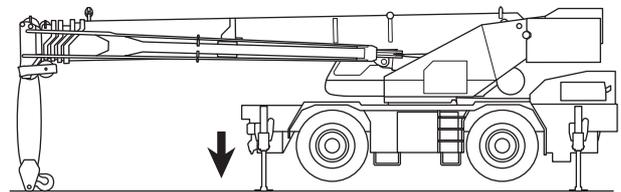
K-01372-00

- 12.** Return the main wire rope to the center of the guide roller on the boom rear end.



K-01373-00

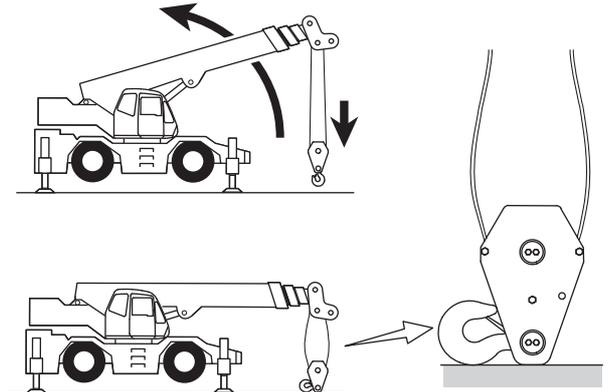
- 13.** Extend the jacks of the front outriggers and set up the crane horizontally.



K-01374-00

Stowing Auxiliary Wire Rope

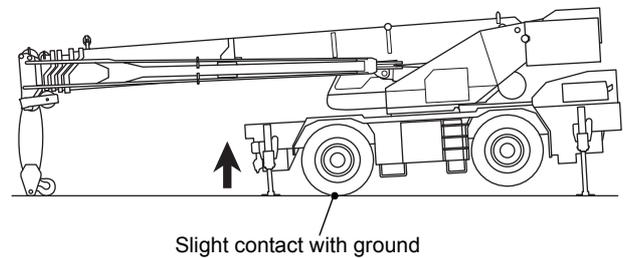
1. Extend the outriggers, and set up the crane horizontally.
 - ☞ Remove the auxiliary hook block beforehand.
2. Raise the boom, and wind out the wire rope by winch wind-down operation.
3. Set the boom horizontally, and stand the hook block on the ground as shown in the illustration.



K-01353-00

4. Retract the jacks until the front wheels touch the ground lightly, and re-register the status of the outriggers to the AML.

☞ You can work safely when the crane is set up with the front wheels touching the ground lightly.

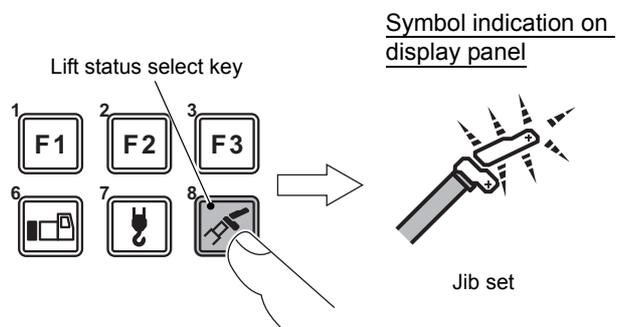


K-01361-00

5. Register the jib set status to the AML.

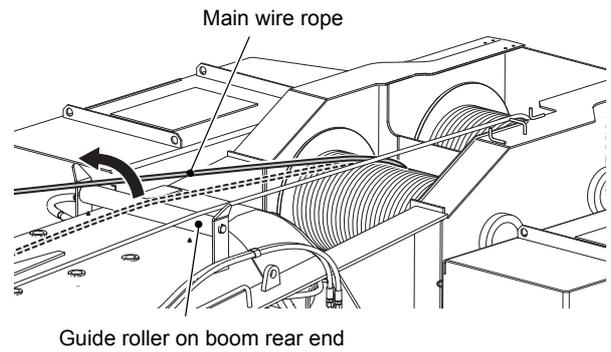
- The jib lift indicator symbol flashes.

NOTICE
When the jib set status is registered to the AML, the machine does not automatically stop even if the hook block is in two-blocking status.



K-00449-00

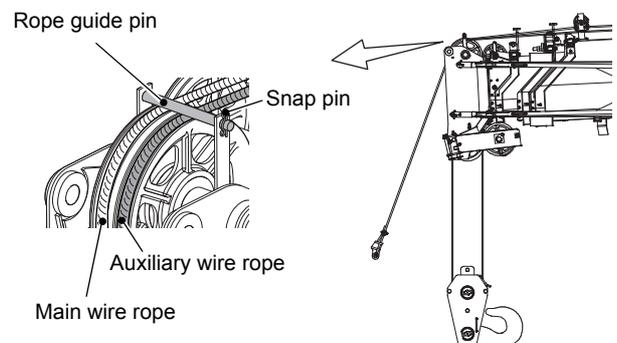
6. Put the main wire rope at the edge of the guide roller on the boom rear end.



K-01375-00

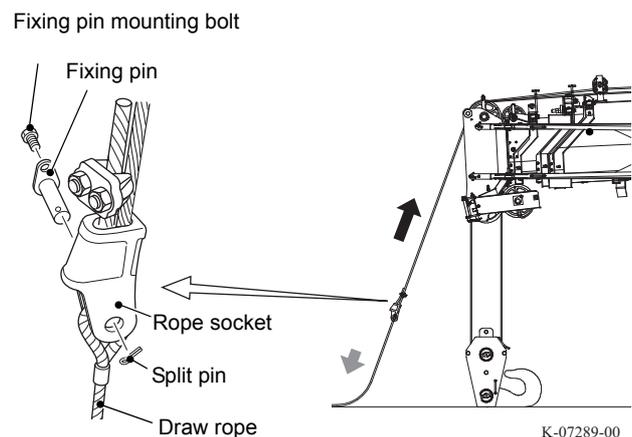
7. Wind up the auxiliary wire rope.

- (1) Remove the rope guide pin for the upper sheave of the top boom section.



K-01372-00

- (2) Attach the draw rope to the rope socket. Then wind up the auxiliary wire rope while pulling the draw rope.

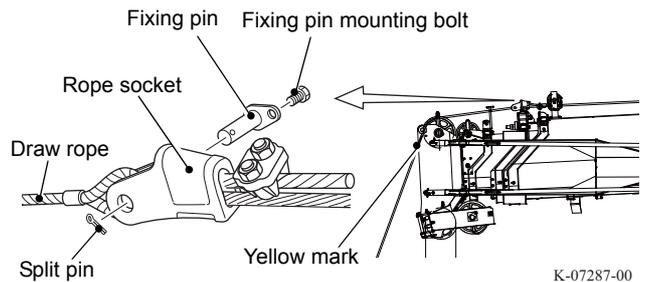


K-07289-00

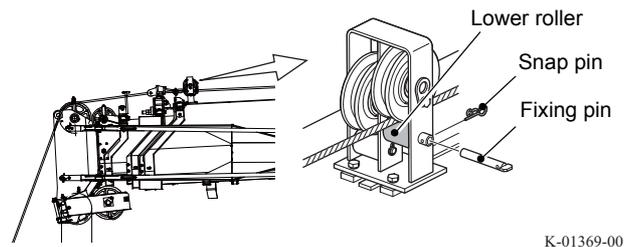
NOTICE

- To prevent disorderly rope winding, pull the draw rope connected to the auxiliary wire rope by hand while winding up the auxiliary winch.
- When winding the auxiliary winch, make sure that the rope socket passes on the upper sheave on the top boom section. If the rope socket goes in the wrong way, it can be jammed and damage the machine.

- (3) Stop winding just before the yellow mark on the draw rope becomes not visible over the upper sheave on the top boom section. Then remove the draw rope from the rope socket.

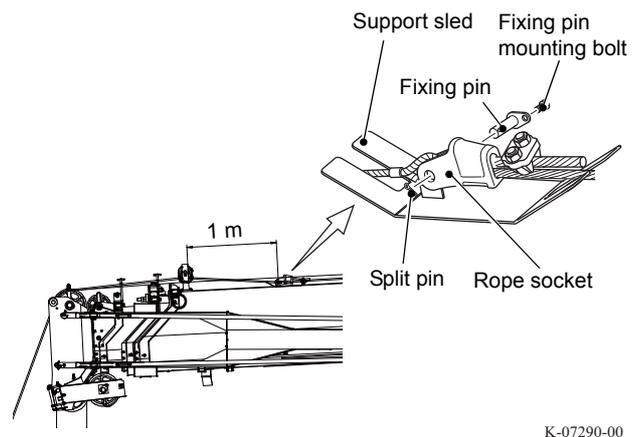


- (4) Remove the lower roller under the boom head guide roller, and pass the draw rope and auxiliary wire rope and then attach the lower roller.



- (5) Attach the draw rope and support sled to the rope socket.

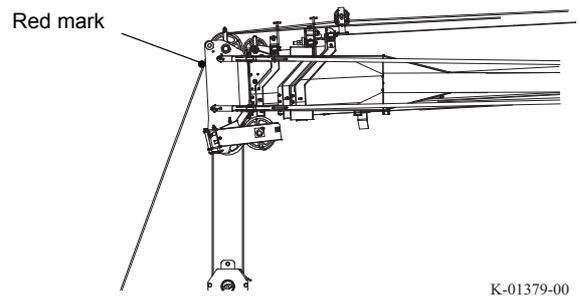
NOTICE
Put the support sled on the reinforcing plate, approx. 1 m away from the boom head guide roller.



- (6) Wind up the auxiliary wire rope while pulling the draw rope.

NOTICE
To prevent disorderly rope winding, pull the draw rope connected to the auxiliary wire rope by hand while winding up the auxiliary winch.

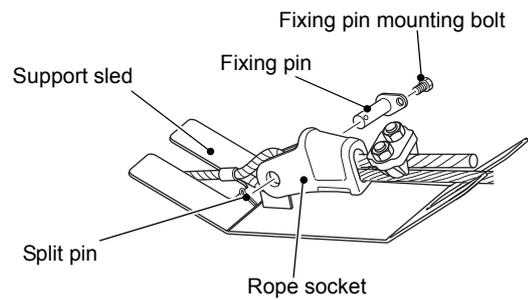
- (7) Stop winding just before the red mark on the draw rope becomes not visible over the upper sheave on the top boom section.



K-01379-00

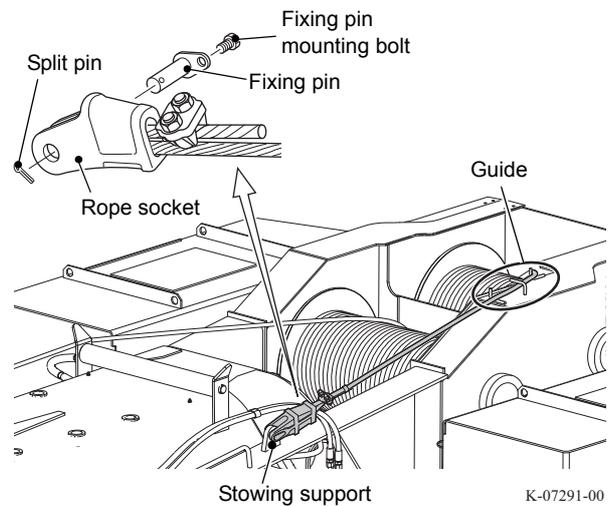
- (8) Remove the draw rope and support sled from the rope socket of auxiliary wire rope.

NOTICE
<p>When stowing the draw rope, pull it from the boom rear end. If it is pulled from the front end of the boom, it can jam at the boom head guide roller and damage it.</p>



K-07286-00

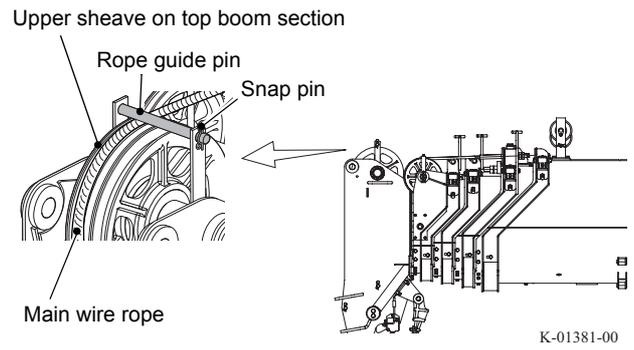
8. Pass the auxiliary wire rope through the guides, and stow the rope socket on the stowing support.



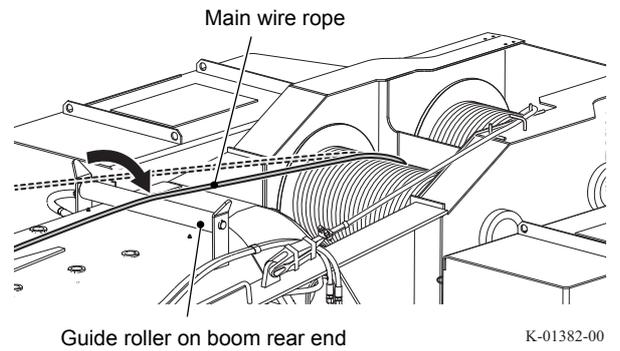
K-07291-00

9. Wind up the auxiliary winch until the auxiliary wire rope is tensioned slightly.

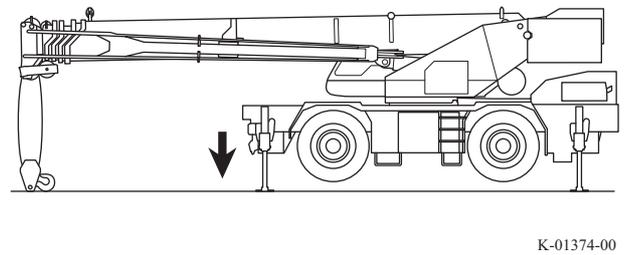
- 10.** Attach the rope guide pin for the upper sheave of the top boom section.



- 11.** Return the main wire rope to the center of the guide roller on the boom rear end.



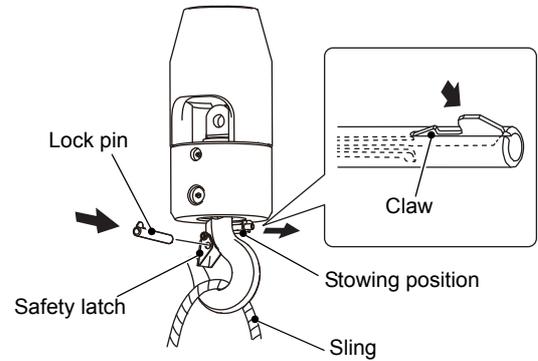
- 12.** Extend the jacks of the front outriggers and set up the crane horizontally.



Auxiliary hook block with safety latch lock function (Option)

1. Pull out the lock pin from the stowing position at the side of the hook.
2. Put a sling on the hook, and insert the lock pin into the hole of the safety latch to fix it.

- ☞ Push in the lock pin until its claw is hitched to the hole of the safety latch.
- ☞ While the hook is in contact with the ground, the lock pin may not be inserted/pulled out.
Insert/pull out the lock pin while the hook is off the ground.

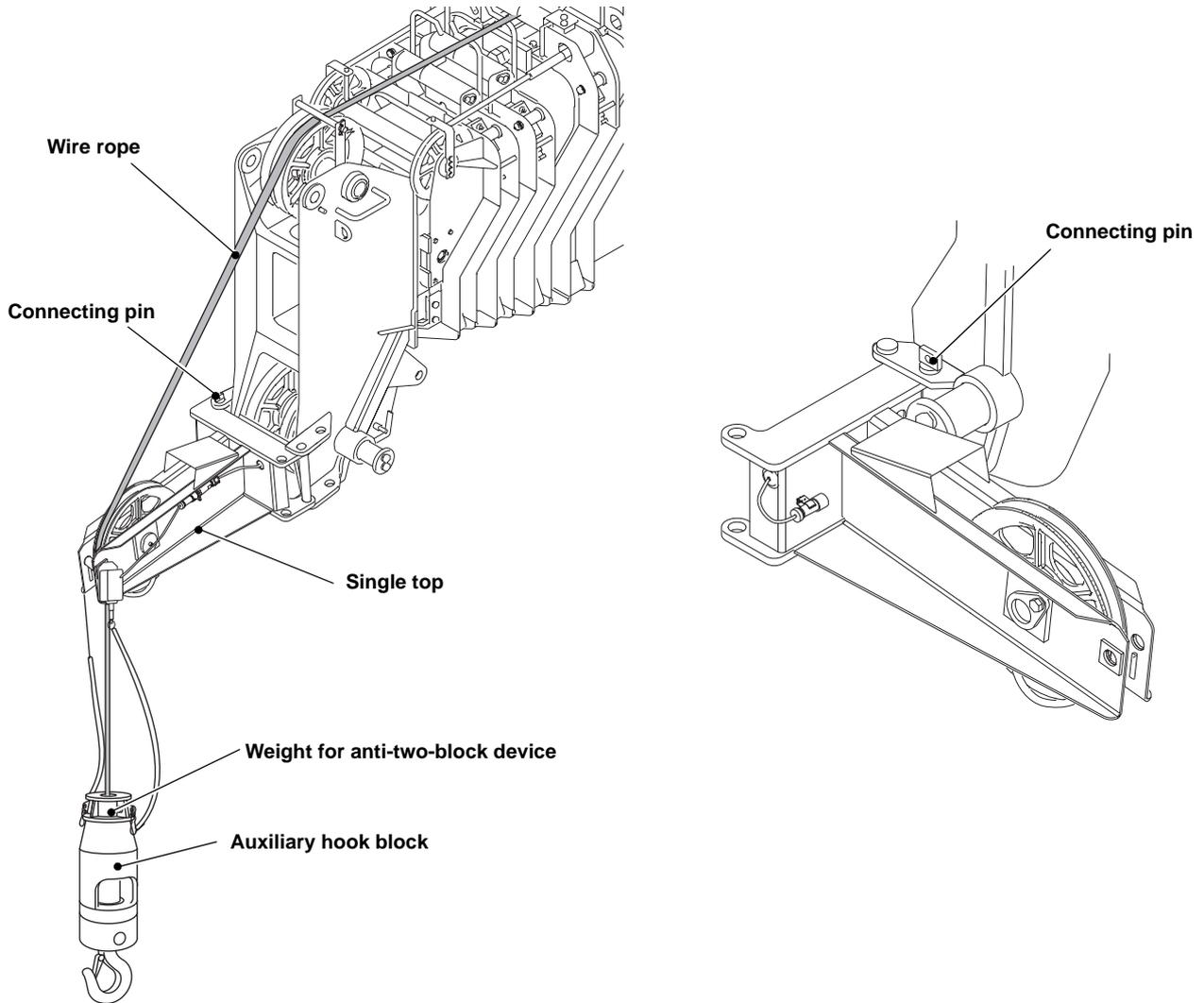


K-07283-00

Single top

The single top is mounted on the boom head. The single top allows quicker hoisting up and down operations, because it works with 1 part of line.

Normally, the single top is operated with the main winch. However, the auxiliary winch can also be used.



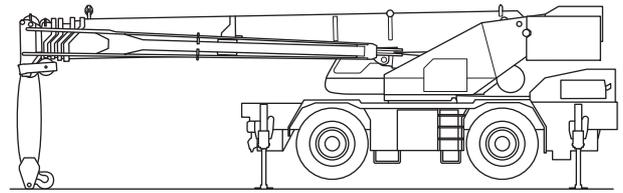
K-01383-00

Mounting Single Top

⚠ WARNING

When you work at an elevated place, use a platform to prevent a falling accident. Also, wear a safety belt, and attach its hook to the anchor point for the safety belt. For the location of the anchor points, refer to "Location of Anchor Points" (page 121). Falling from an elevated place can result in a serious injury.

1. Extend the outriggers, and set up the crane horizontally.



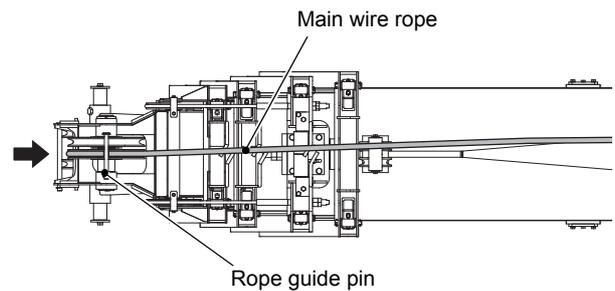
K-01384-00

2. Set the boom angle to 0°.

- ☞ For single top lift using the auxiliary winch, refer to "Pulling Out and Stowing Auxiliary Wire Rope" (page 245) and pull out the auxiliary wire rope. Skip the following steps 3. and 4.

3. Remove the main wire rope from the main hook block, and reeve the wire rope through the sheave for single top/jib lift on the upper side of the top boom section.

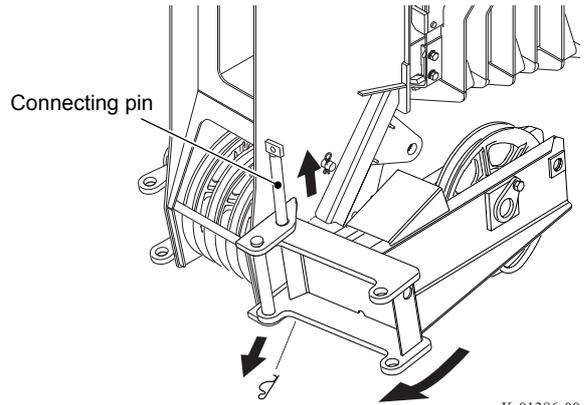
- ☞ For removal of the wire rope, refer to "Reeving Wire Rope" (page 236).



K-01385-00

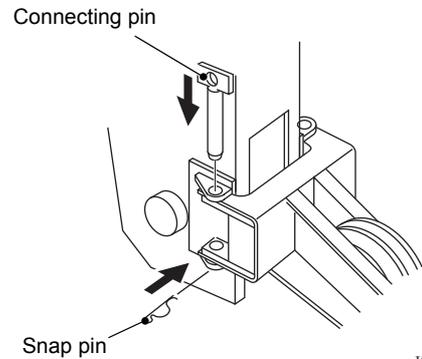
4. Pull out the connecting pin, and rotate the single top toward the front of the boom.

CAUTION
Do not stand in the direction to which the single top rotates. The single top can swing suddenly by its own weight. This can cause an injury.



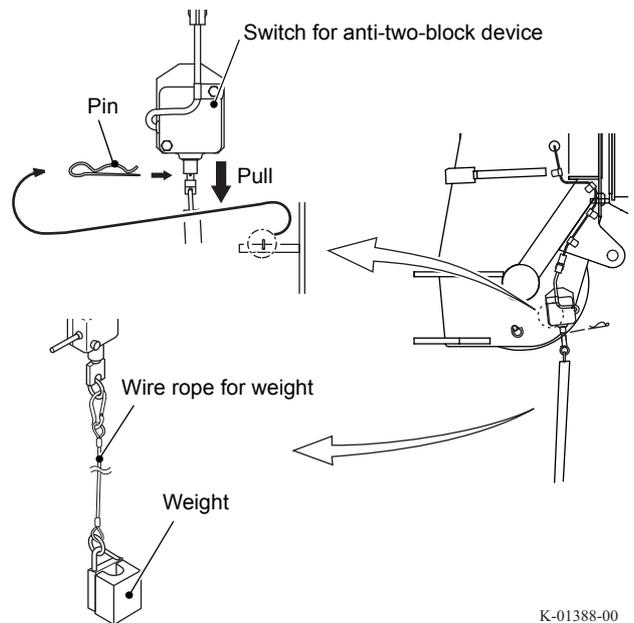
K-01386-00

5. Insert the connecting pin to fix the single top to the boom, and insert the snap pin.



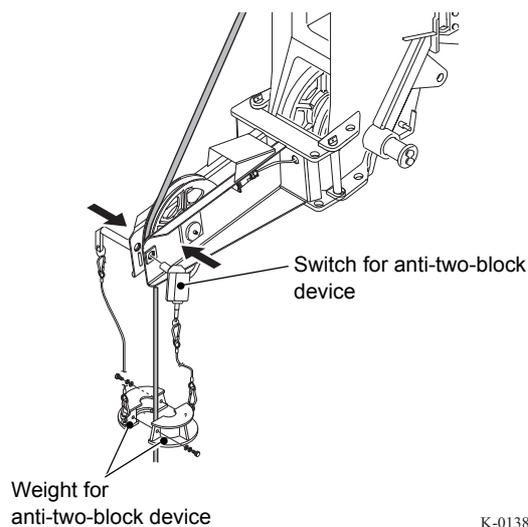
K-01387-00

6. Insert the pin through the rod of the switch for anti-two-block device, and remove the weight for the anti-two-block device and the wire rope for the weight, so that the anti-two-block device for boom lift does not activate.



K-01388-00

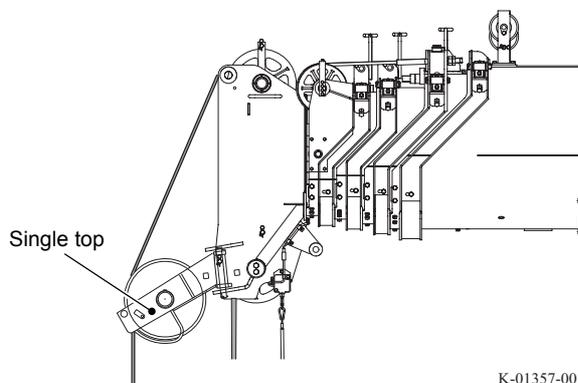
7. Reeve the wire rope through the sheave of the single top. Then install the anti-two-block device and the weight for anti-two-block device to the single top.



K-01389-00

- ☞ When the following options are used, also use the anti-two-block device for boom lift.
- 13 parts of line, using 51 t hook block, 5 sheaves and attachment sheave
 - 12 parts of line, using 51 t hook block and 5 sheaves

Refer to "Reeving Wire Rope" (page 236) and attach the anti-two-block device on the wire rope.



K-01357-00

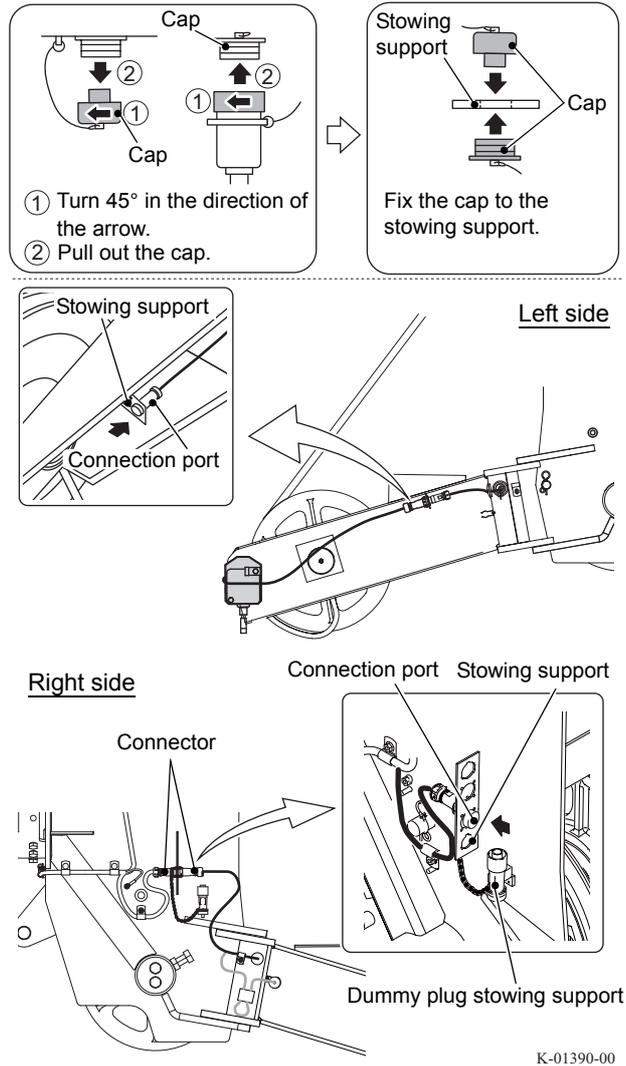
- ☞ To use the attachment sheave, refer to "Reeving Wire Rope" (page 236) and mount the attachment sheave.

- 8.** Connect the connectors (2 points) for the anti-two-block device.
 Attach caps to the removed dummy plugs and stow them into the stowing position.
 Stow the removed connector caps for the anti-two-block device to the stowing support.

NOTICE

To disconnect the connector, pull the connector itself. Never pull on the cord. The cord can be broken.

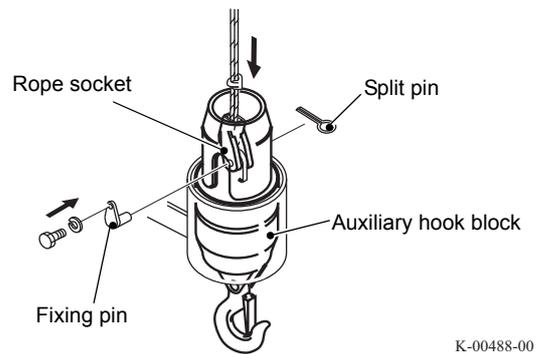
- ☞ Connect the connectors securely. Otherwise the machine movement stops and an error code is displayed on the AML.



- 9.** Insert the fixing pin and secure the rope socket to the auxiliary hook block.

WARNING

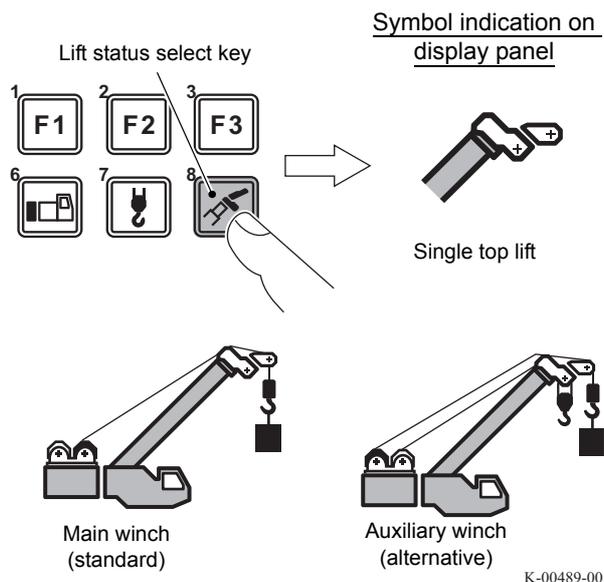
Securely tighten the fixing pin mounting bolt for the rope socket using a wrench. Secure the fixing pin by using a split pin so that it does not come out. Improper installation can cause the rope socket to come off and the lifted load to fall, resulting in an accident.



- 10.** Hoist up the auxiliary hook block and take it out from the stowing position.

11. Register the single top lift status to the AML.

 To use the auxiliary winch, refer to "Selection of the winch to be used" (page 176), and change the AML setting accordingly.



12. Check that the crane automatically stops when the hook block is overhoisted.

 If the crane does not stop automatically, refer to the Step 8 and check that the wiring is connected correctly.

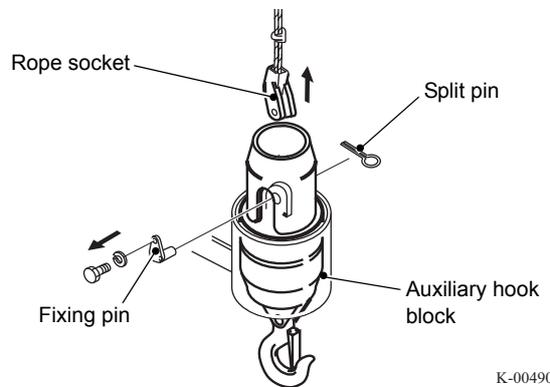
Now, the mounting of the single top is completed.

Stowing Single Top

⚠ WARNING

When you work at an elevated place, use a platform to prevent a falling accident. Also, wear a safety belt, and attach its hook to the anchor point for the safety belt. For the location of the anchor points, refer to "Location of Anchor Points" (page 121). Falling from an elevated place can result in a serious injury.

1. Stow the auxiliary hook block into the stowing position.
2. Remove the fixing pin. And then remove the rope socket from the auxiliary hook block.



3. Set the boom angle to 0°.

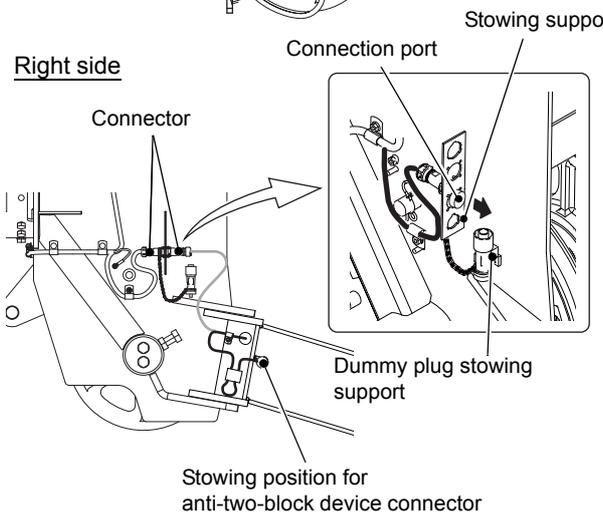
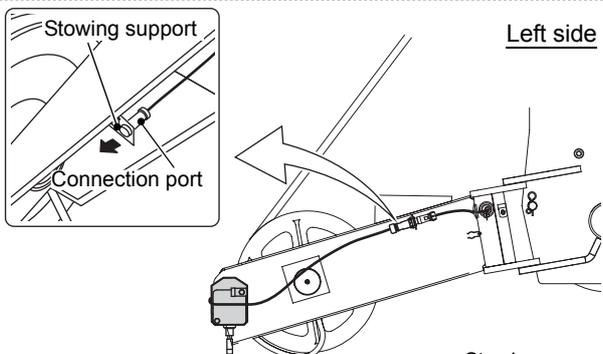
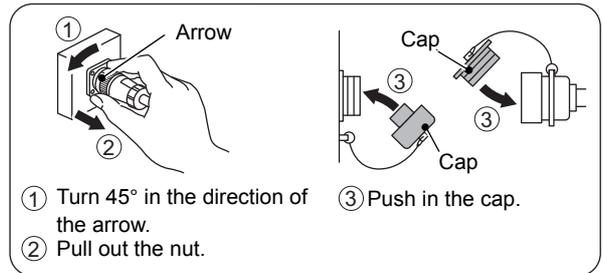
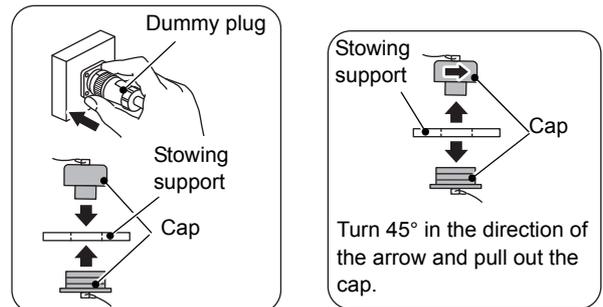
4. Connect and disconnect the wiring for the anti-two-block device as shown in the illustration. Attach the cap to the removed connector for the anti-two-block device and stow it into the stowing position.

Attach the dummy plug to the connector where the connector for anti-two-block device has been connected.

NOTICE

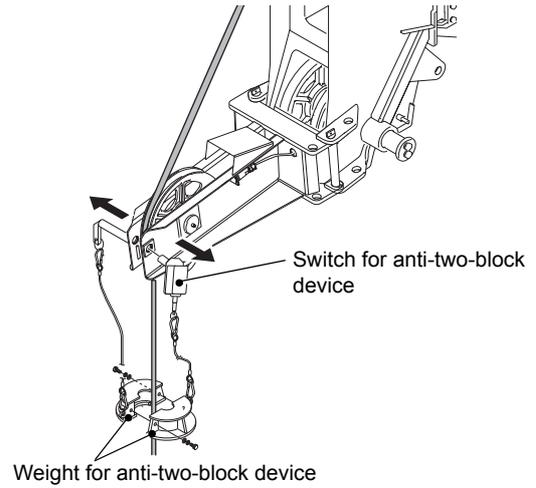
To disconnect the connector, pull the connector itself. Never pull on the cord. The cord can be broken.

- ☞ Connect the connectors securely. Otherwise the machine movement stops and an error code is displayed on the AML.



K-01391-00

- Remove the anti-two-block device and the weight for the anti-two-block device.

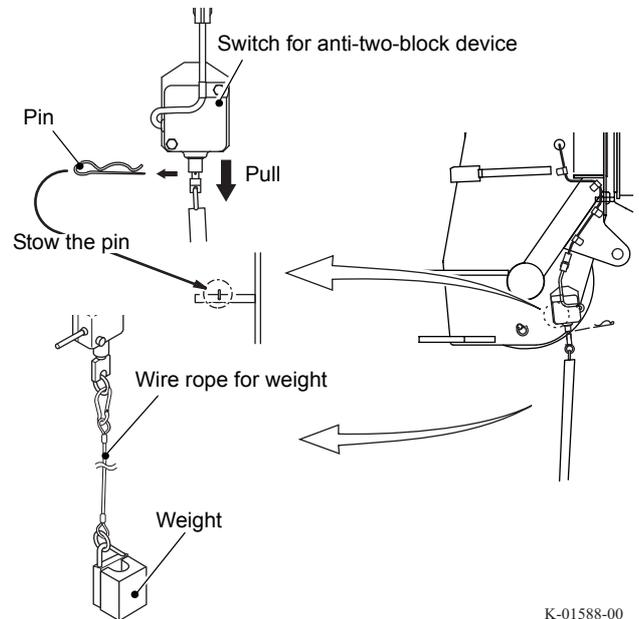


K-01392-00

- Remove the wire rope from the sheave of the single top.

☞ After single top lift using the auxiliary winch, refer to "Pulling Out and Stowing Auxiliary Wire Rope" (page 245) and stow the auxiliary wire rope.

- Remove the pin from the rod of the switch for the anti-two-block device, and mount the weight for the anti-two-block device and the wire rope for the weight, so that the anti-two-block device for boom lift can be activated. Stow the removed pin on the support.



K-01588-00

⚠ WARNING

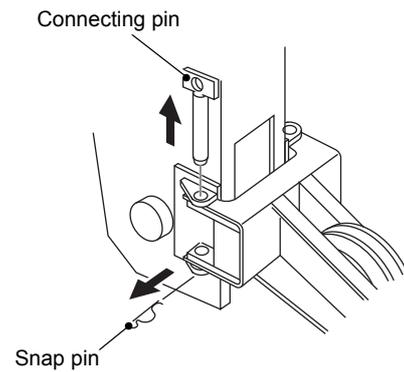
If the pin inserted in the rod of the switch for anti-two-block device is not removed, the anti-two-block device for the main winch does not function during boom lift. The hook block can collide with the boom and cause the lifted load to fall, resulting in a serious accident.

Before performing boom lift, make sure that the anti-two-block device functions correctly.

8. Pull out the connecting pin, and rotate the single top and stow it.

⚠CAUTION

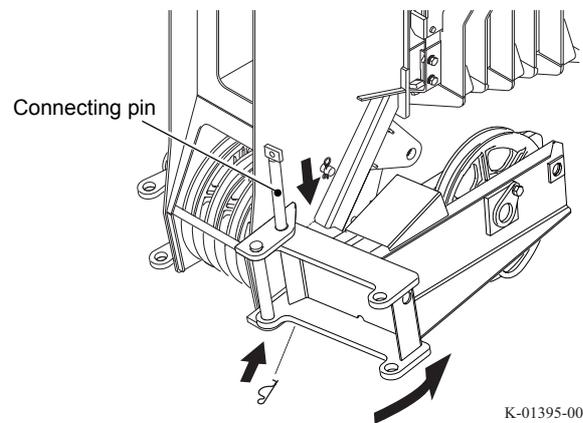
Do not stand in the direction to which the single top rotates. The single top can swing suddenly by its own weight. This can cause an injury.



K-01394-00

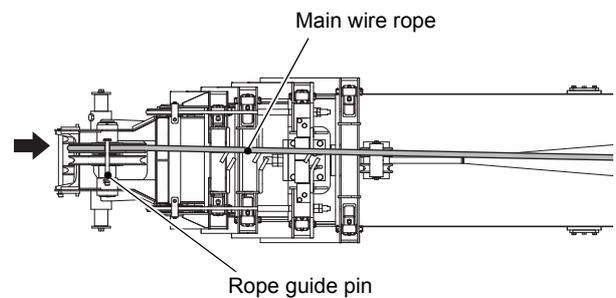
9. Insert the connecting pin to secure the single top.

☞ If the auxiliary wire rope is stowed after single top lift using the auxiliary winch, skip the following steps 10 and 11.



K-01395-00

10. Reeve the main wire rope through the sheave for boom lift on the upper surface of the top boom section.

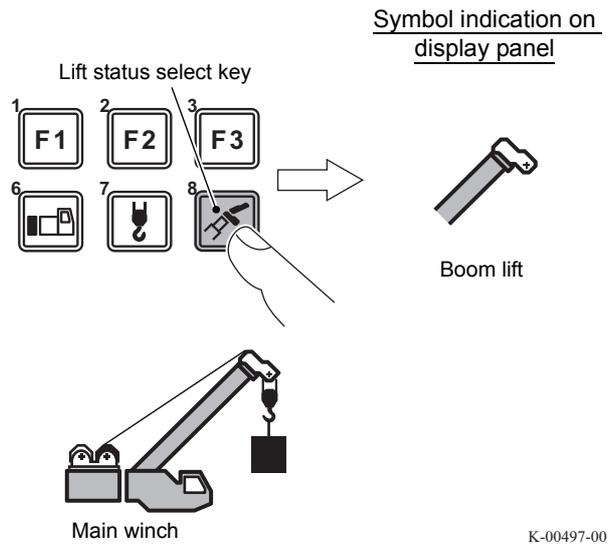


K-01396-00

11. Install the main wire rope to the main hook block.

☞ For installation of the wire rope, refer to "Reeving Wire Rope" (page 236).

12. Register the boom lift status to the AML.



13. Check that the crane automatically stops when the main hook block is overhoisted.

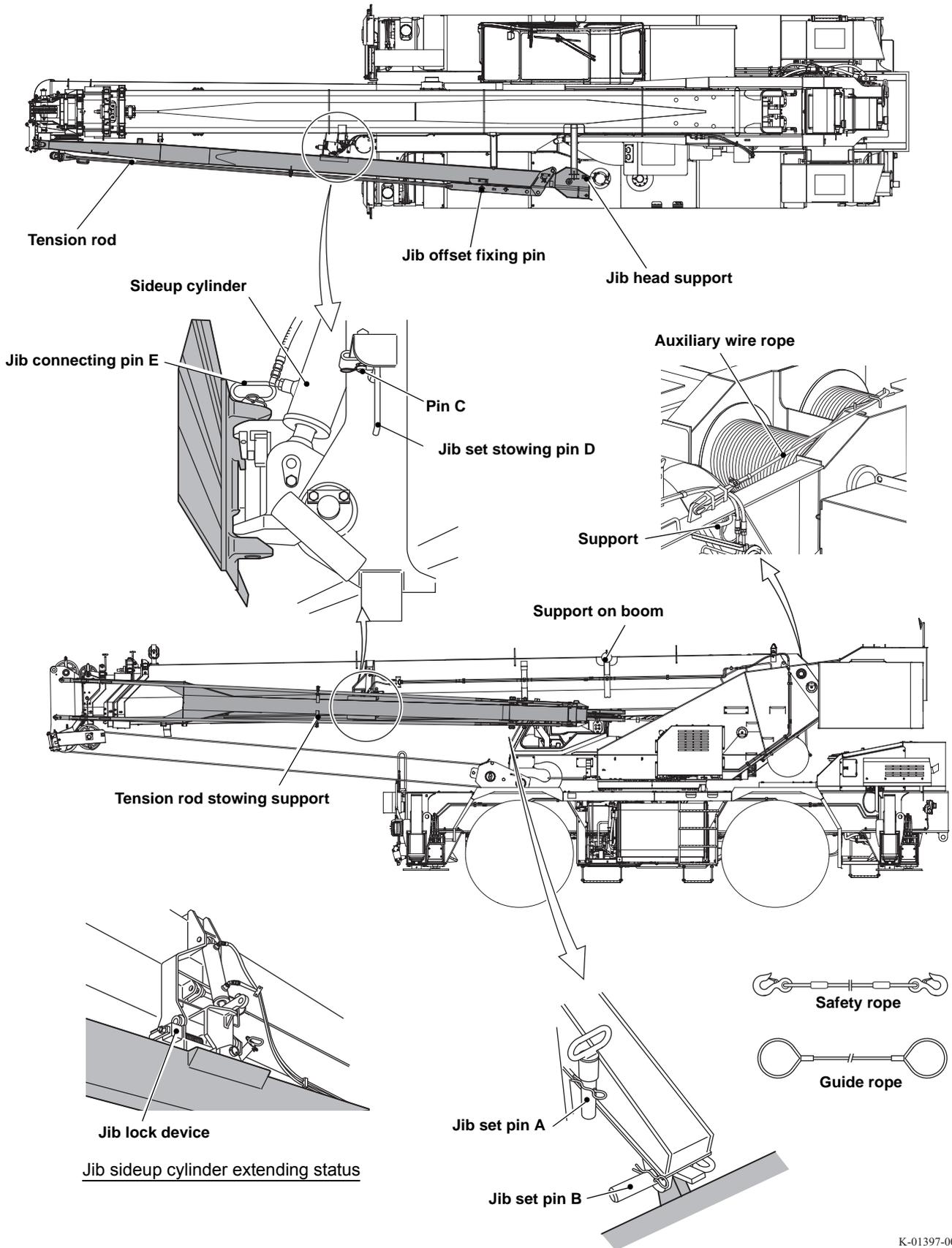
- ☞ If the crane does not stop automatically, refer to the Step 4 and check that the wiring is connected correctly.

Now, the stowing of the single top is completed.

Jib

You can install the jib to the boom head to use it for an operation at a high place where the boom cannot reach.
During traveling or for operations not requiring the jib, stow it on the side of the boom.
While the jib is not used, the jib can be dismantled.

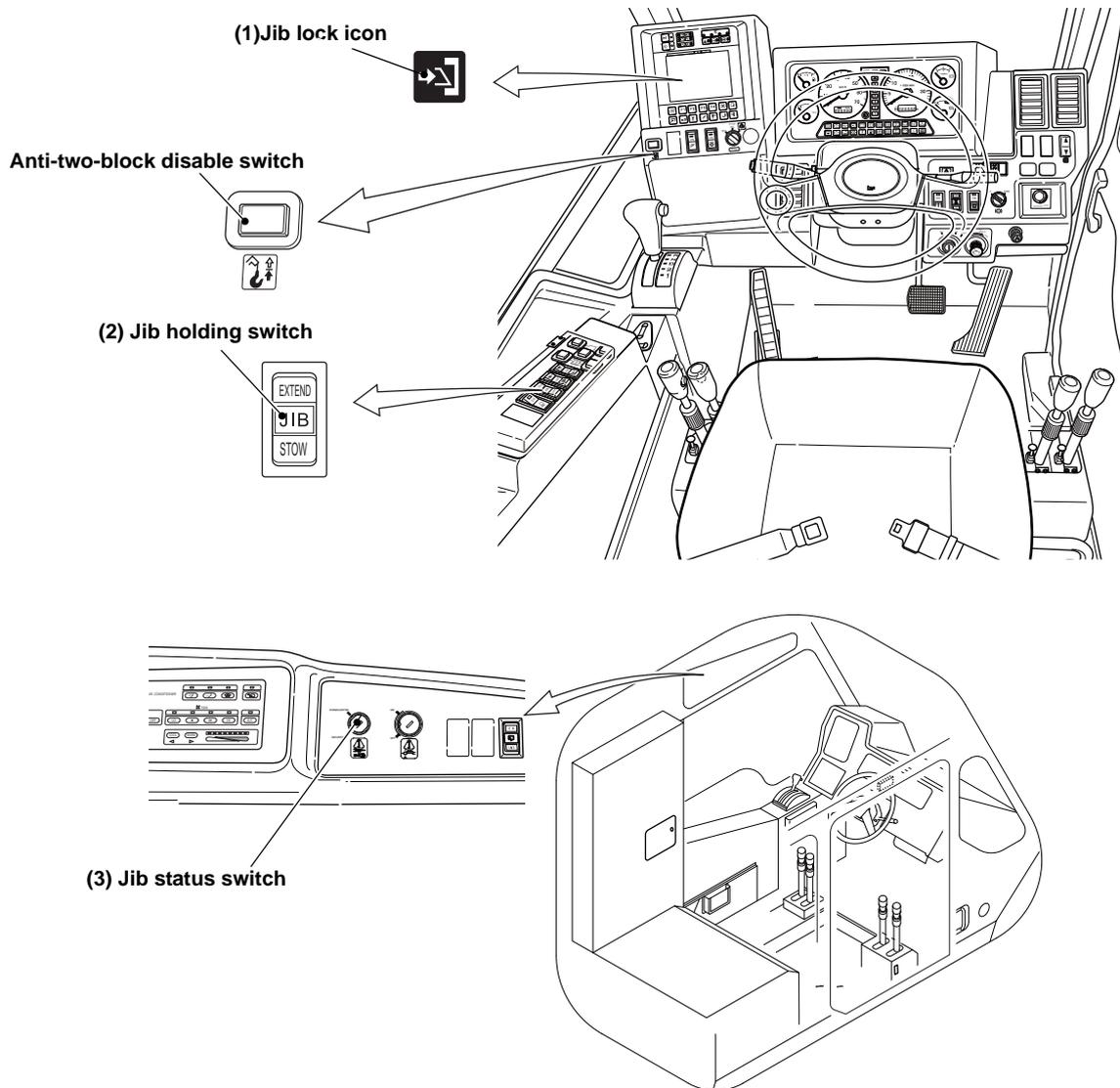
Outside the Cab



CTI-500XL-1_OM1-11E

K-01397-00

Inside Cab



K-04864-00

(1) Jib lock icon

During registration of jib set status to the AML, this icon lights up when the jib mounting/stowing cylinder is extended and the jib is released from the boom. It goes out when the cylinder is fully retracted and the jib is folded to the boom.

(2) Jib holding switch

When the "EXTEND" on this switch is pushed, the jib is moved to the bottom side of the boom. When the "STOW" side on this switch is pushed, the jib is drawn to the side area of the boom.

(3) Jib status switch

This switch is used to register the status of the jib (mounted or dismantled) on the AML.

Registering Jib Mounting/dismounting Status

⚠ WARNING

Make sure that the switch position corresponds to the actual jib mounting status. Otherwise, the calculation base of the AML is inaccurate, and the machine can overturn or be damaged.

When the jib is not required for a job, it can be dismantled from the crane.

When the jib is dismantled, the reduction of the mass affects the measurement of the AML.

1. After the jib mounting/dismounting, set the jib status switch to register the jib state.

- DISMOUNTED:

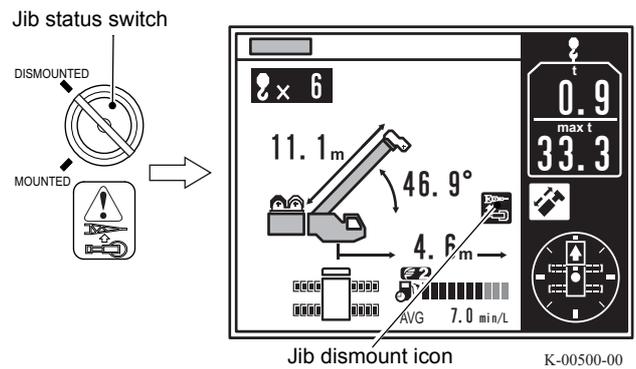
Jib dismantled

- MOUNTED:

Jib mounted

- When the switch is set to "DISMOUNTED", the jib dismantled icon appears on the display panel of the AML.

 You can insert/remove the switch key either in the "DISMOUNTED" or "MOUNTED" position.



Jib Lift

⚠ WARNING

Abrupt lever operation can cause the load to bounce or sway, resulting in an accident causing injury or death, or machine damage. Operate the lever slowly.

As a standard, you can hoist up/down a load with the jib by the main winch operation, using the main wire rope and auxiliary hook block. The operation using the auxiliary winch is also possible.

The operation speed is adjusted by the operating amount of the winch control lever and accelerator operation.

 The boom telescoping pedal is useful for boom telescoping during the jib lift.

The boom can be telescoped regardless of the position of the boom telescoping/auxiliary winch control selector switch.

- Jib length

The jib is a 2-section telescoping type. The available jib lengths are 8.0 m and 12.7 m.

- Jib Offset Angle

You can use the jib with three offset angles (5°, 25°, and 45°).

- Moving in Work Site with Jib Mounted

Avoid moving in a work site with the jib mounted as much as possible. If moving in a work site in this state is necessary, set the boom and jib to the state described below, and refer to "On-rubber Creep Operation" (page 228).

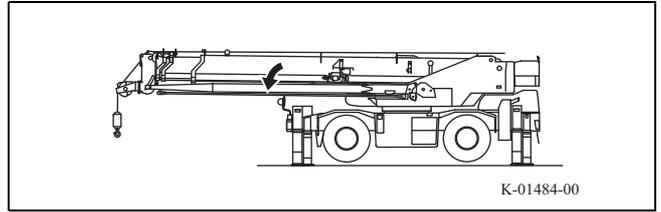
- Boom length: 11.1 m (fully retracted)
- Boom angle: 0° to 30°
- Slewing angle: Front (The front position symbol in the AML appears.)
- Jib length: 8.0 m or 12.7 m
- Jib offset angle: 5°

Do not travel in a work site if the crane settings is other than the above.

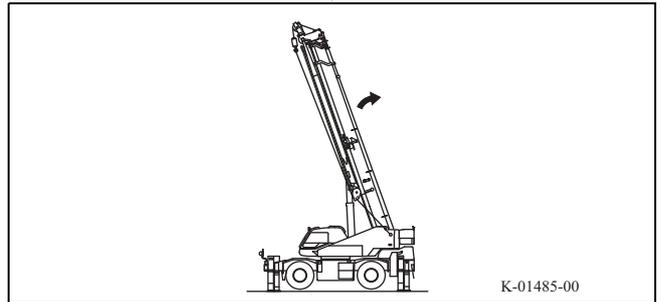
Outline of Jib Mounting

Outline of jib mounting operation is as follows.

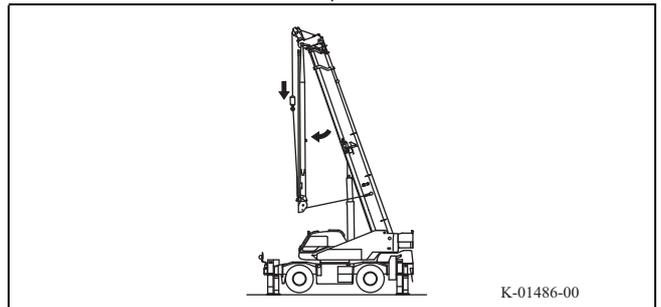
1. Move the jib from the stowing position on the boom to the lower face of the boom, and connect the jib with the top end of the boom.
(Steps 1 through 14)



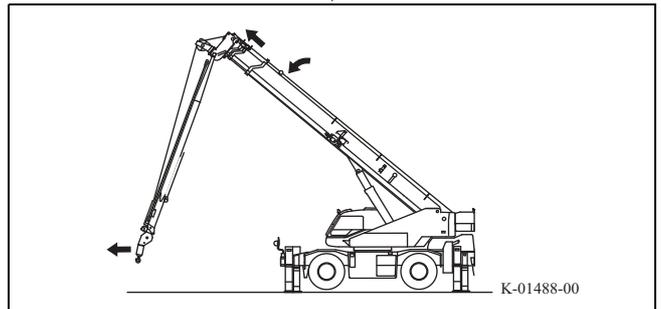
2. Install an auxiliary rope and prepare to swing the jib from the boom.
(Steps 15 through 24)



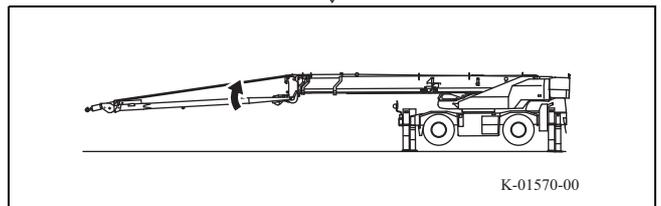
3. Swing the jib from the boom.
(Steps 25 through 28)



4. Extend the boom while lowering the boom, and swing the jib forward.
(Steps 29 through 32)



5. Connect a tension rod for the jib to the boom.
(Steps 33 through 45)



Mounting jib is completed.

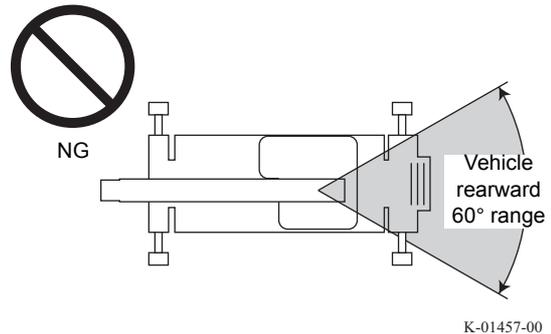
Mounting of Jib

⚠ WARNING

- Do not enter the area under and in front of the jib during jib mounting. The jib can move unexpectedly and cause a serious injury.
- When you work at an elevated place, use a platform to prevent a falling accident. Also, wear a safety belt, and attach its hook to the anchor point for the safety belt. For the location of the anchor points, refer to "Location of Anchor Points" (page 121). Falling from an elevated place can result in a serious injury.
- Securely mount the jib. If the jib is not securely mounted, the jib can fall, resulting in an accident.
- If the guide rope or safety rope breaks during jib mounting, the jib can fall and cause an accident. Before mounting the jib, make sure that the guide rope and safety rope are free from damage. If any damage is found, contact Tadano Escorts India Private Ltd. or a dealer.

NOTICE

- When mounting the jib while the auxiliary winch is employed, make sure before jib mounting that the 25 t hook block is used as the main hook block. While the 51 t hook block is used, the jib cannot be mounted.
- Do not perform the following operations while mounting jib to avoid damaging the jib-related parts and vehicle.
 - Mounting the jib with the single top stowed
 - Jib sideup stowing operation with the boom angle raised.
 - Jib sideup extending operation while the upper slewing structure is within the 60° range in the rear of the vehicle (Such operation can cause interference with the engine hood.)
 - Crane operation while the jib is under the boom.
- If the anemometer (option) is attached to the boom head, remove it. If the jib is mounted without removing it, the machine can be damaged.



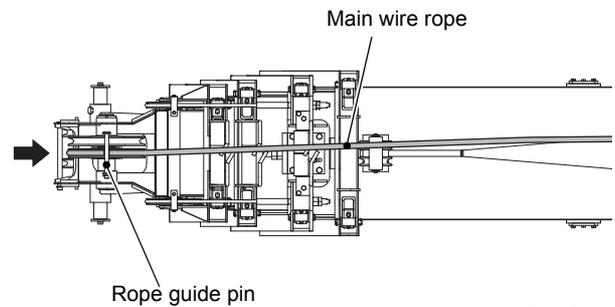
1. Extend the outriggers and set up the crane horizontally in a place where sufficient space is available for jib mounting.

☞ When outrigger extension width is less than 5.0 m, the jib cannot be mounted while the upper slewing structure is directed toward the sides.

☞ For jib lift using the auxiliary winch, refer to "Pulling Out and Stowing Auxiliary Wire Rope" (page 245) and pull out the auxiliary wire rope. Skip the following step 2.

2. Remove the main wire rope from the main hook block, and reeve the wire rope through the sheave for single top/jib lift on the upper side of the top boom section.

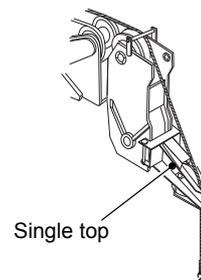
☞ For removal of the wire rope, refer to "Reeving Wire Rope" (page 236).



K-01385-00

3. Mount the single top.

NOTICE
Do not install the switch for anti-two-block device to the single top. Otherwise it can be damaged due to interference during jib mounting, etc.

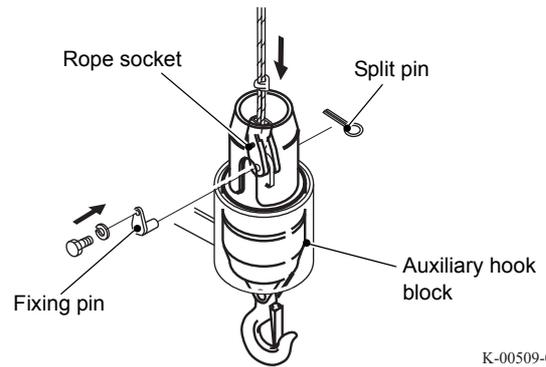


☞ For mounting of the single top, refer to "Single top" (page 257).

K-00508-00

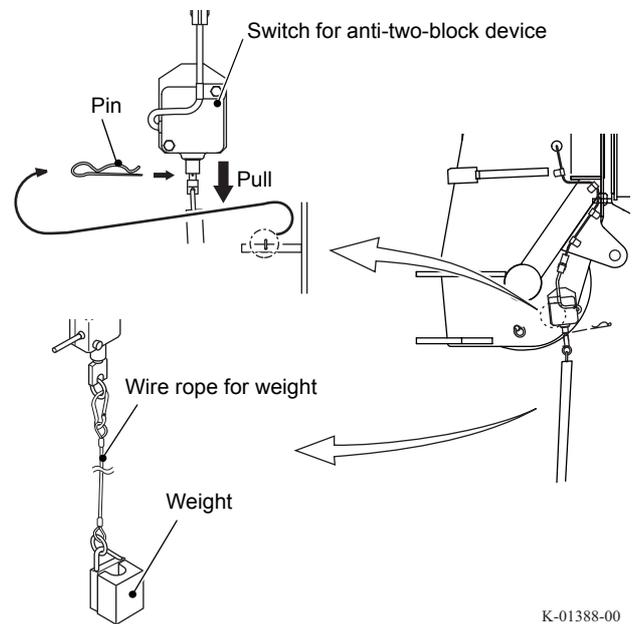
4. Insert the fixing pin and secure the rope socket to the auxiliary hook block.

⚠ WARNING
 Securely tighten the fixing pin mounting bolt for the rope socket using a wrench. Secure the fixing pin by using a split pin so that it does not come out. Improper installation can cause the rope socket to come off and the lifted load to fall, resulting in an accident.



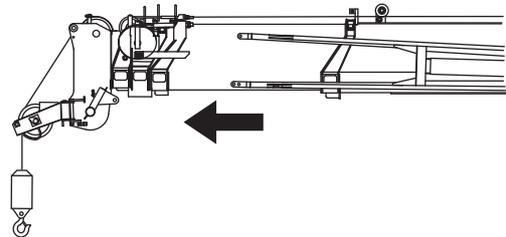
K-00509-00

5. Insert the pin through the rod of the switch for anti-two-block device, and remove the weight for the anti-two-block device and the wire rope for the weight, so that the anti-two-block device for boom lift does not activate.



K-01388-00

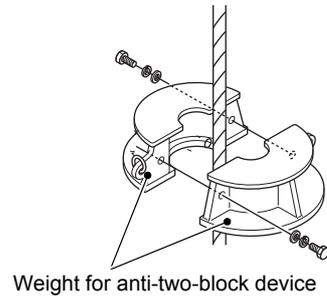
6. Set the boom angle horizontally and extend the boom by approx. 1 m.



K-01400-00

7. Install the weight for anti-two-block device to the wire rope.

- ☞ Remove the switch for anti- two-block device and the wire rope for the weight from the weight for anti-two-block device.



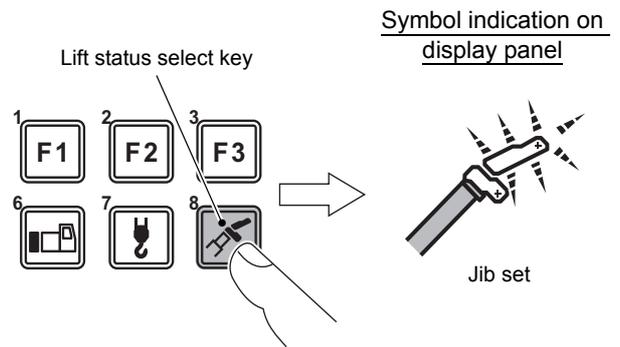
K-00512-00

8. Register the jib set status to the AML.

- The jib lift indicator symbol flashes.

NOTICE

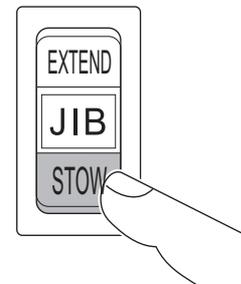
When the jib set status is registered to the AML, the machine does not automatically stop even if the hook block is in two-blocking status.



K-00513-00

9. Press and hold "STOW" on the jib holding switch until the sideup cylinder is fully retracted.

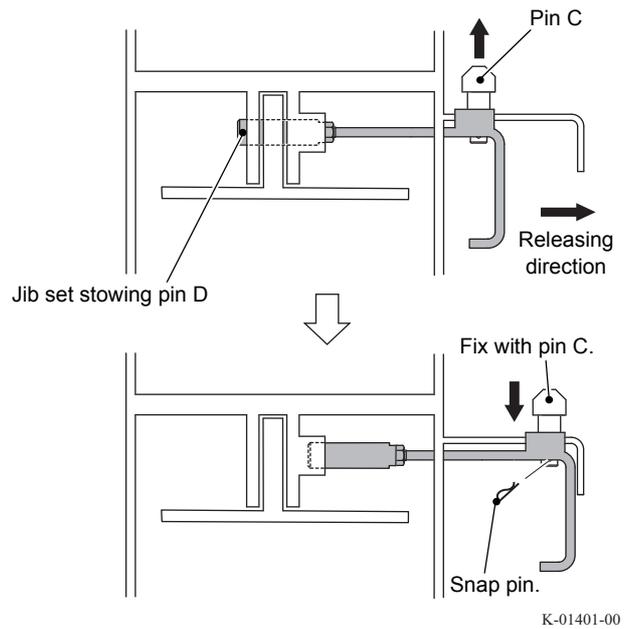
- ☞ This makes pulling out the jib set stowing pin D easier.



K-00514-00

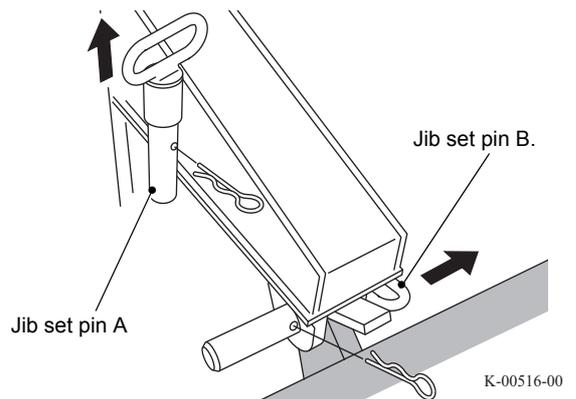
10. Pull out the pin C, and pull the jib set stowing pin D in the releasing direction.

- Fix the jib set stowing pin D to the releasing position with the pin C and insert the snap pin.



11. Pull the jib set pins A and B.

- ☞ The jib set pins A and B are used for the step 14.
- The jib set pins A and B have the same shape.

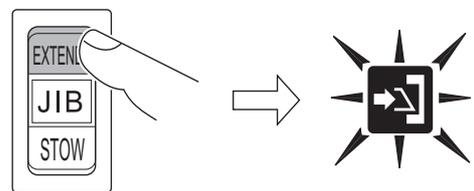


12. Press and hold "EXTEND" of the jib holding switch until the jib moves under the boom.

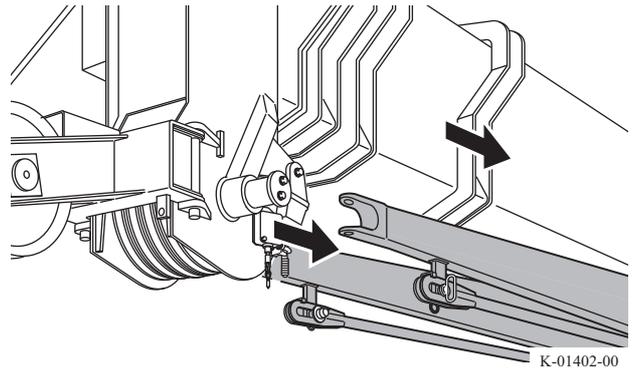
- When the jib is moved under the boom, the jib lock indicator appears.

NOTICE

Check that the boom extends by approx. 1 m before performing this operation. If the jib is extended in a state that the boom does not extend, the jib will be damaged.



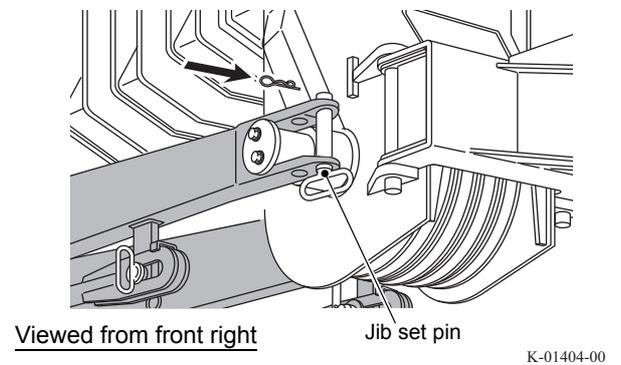
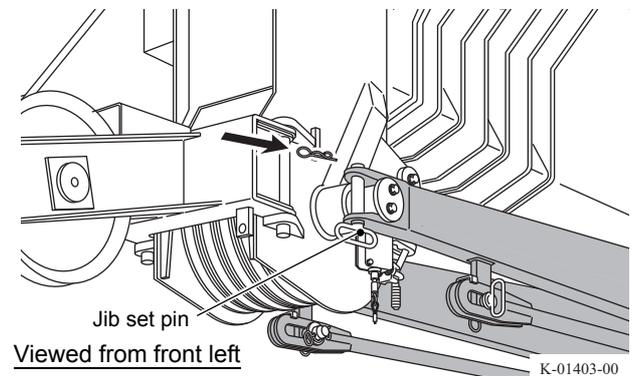
13. Fully retract the boom slowly.



14. Direct the right and left jib set pins from the bottom to the top to insert, and fix them with the snap pins.

NOTICE

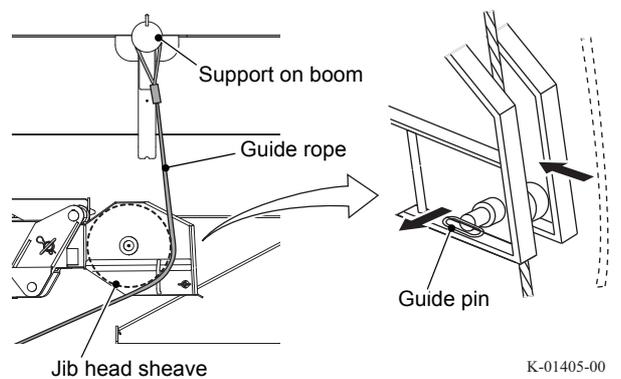
Direct the jib set pins from the bottom to the top to insert. If they are directed from the top to the bottom to be inserted, the jib set pins may fall out during jib lift.



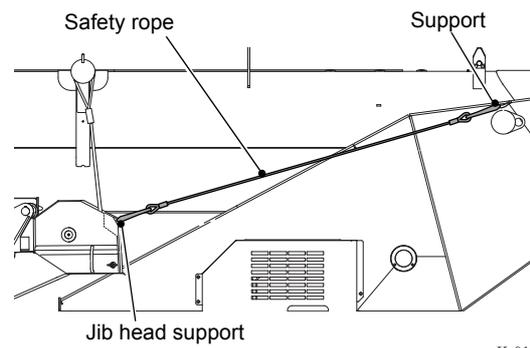
15. Pass the provided guide rope between the sheave on the jib head and the guide pin, and attach its end to the support on the boom.

NOTICE

Make sure that the guide rope is not removed from the jib. If it is off the jib, the jib will considerably sway forward when the jib swings.



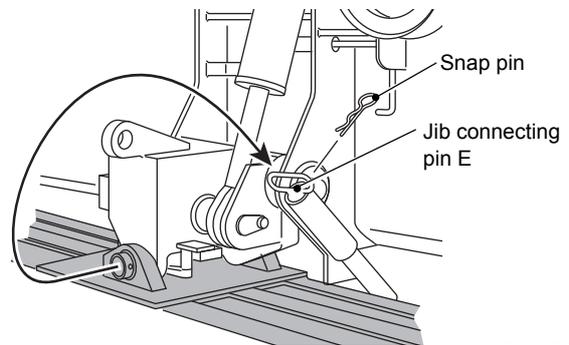
16. Attach the safety rope to the supports on the slewing table and on the jib head.



K-01406-00

17. Pull out the jib connecting pin E and stow it into the specified position, and fix it using a snap pin.

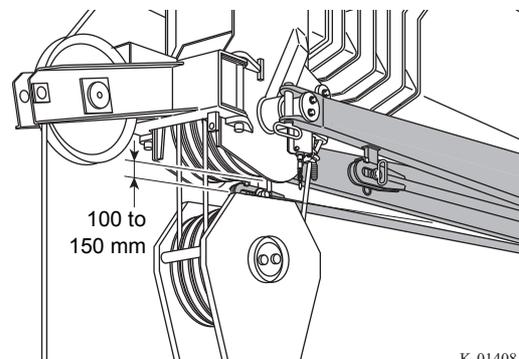
⚠WARNING
Never extend the boom with this pin removed. Otherwise, the jib will fall, leading to a serious accident.



K-01407-00

18. When the auxiliary winch is used, wind up the main wire rope until the clearance between the main hook block and the boom head is 100 to 150 mm.

☞ This operation makes the passing of the main hook block through the jib easier.



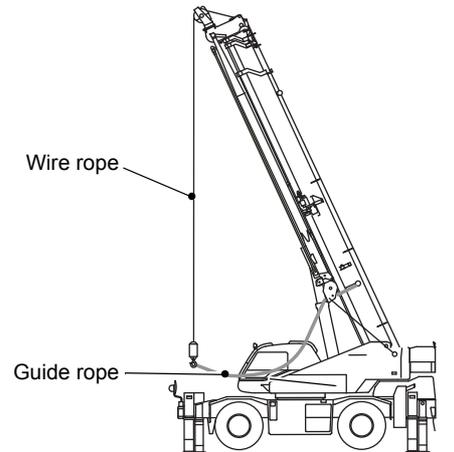
K-01408-00

19. Raise the boom until the boom angle becomes 65° to 70°.

- 20.** Unwind the wire rope until the hook block comes close to the top of the carrier. Attach the other end of the guide rope to the hook block.

NOTICE

Make sure that the guide rope is not removed from the hook. If it is off the hook, the jib will considerably sway forward when the jib swings.



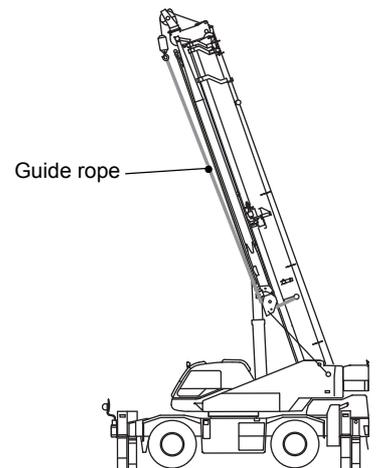
K-01409-00

- 21.** Raise the boom until the boom angle becomes 75° to 80°.

- 22.** Wind up the wire rope to the extent that the guide rope is not tensioned too much.

NOTICE

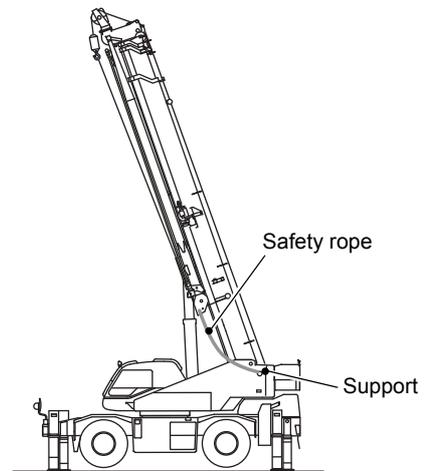
- Check that the wire rope has not come off the sheave for the single top. If the wire rope has come off, the head of the boom is damaged when the wire rope is wound in.
- Be careful so that the guide rope will not catch the objects nearby such as the exterior of the crane and damage them and itself.
- Do not tension the auxiliary rope excessively. Otherwise, the auxiliary rope may be cut when the boom is extended in the step 24 .



K-01410-00

- 23.** Remove the safety rope from the support on the slewing table.

NOTICE
<p>When a strong wind blows, the safety rope can sway widely and hit the cab, etc. Attach the provided draw rope for the auxiliary wire rope to the free end of the safety rope, and keep the draw rope pulled until the safety rope is removed from the jib.</p>

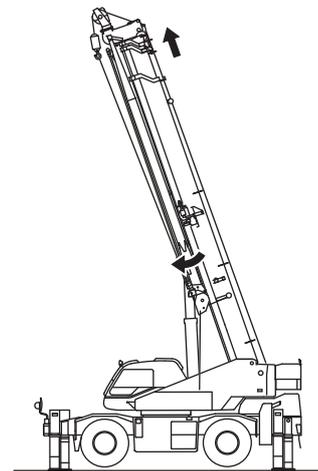


K-01411-00

- 24.** Slowly extend the boom approx. 30 mm. Stop boom extension when the jib lock icon has disappeared.

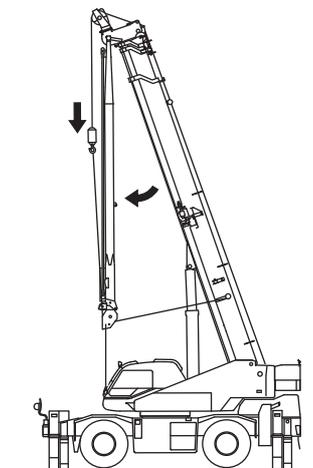
NOTICE
<p>Do not extend the boom excessively. The auxiliary rope can be stretched too much and broken.</p>

 When the automatic pin of the jib lock device comes off and the jib is swung forward, the jib lock icon disappears.



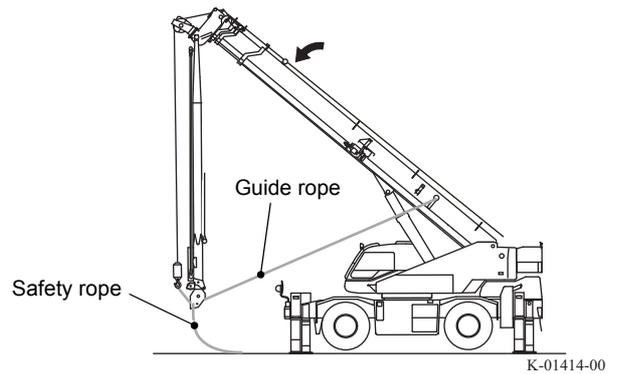
K-01412-00

- 25.** Wind down the wire rope until the jib becomes vertical to the ground.

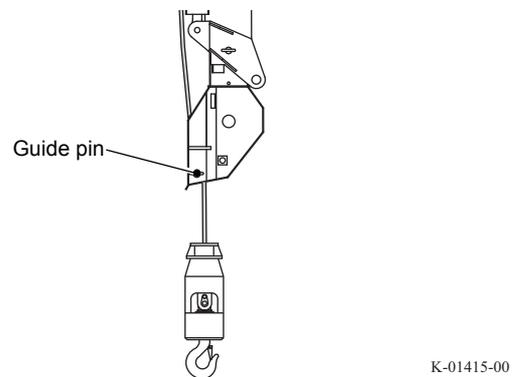


K-01413-00

- 26.** While unwinding the wire rope, lower the boom angle to approx. 37°. Remove the guide rope from the auxiliary hook block, and remove the safety rope from the jib.

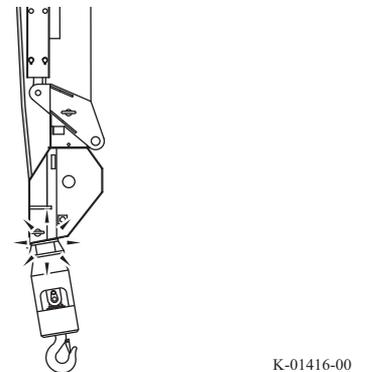


- 27.** Pass the wire rope between the sheave on the jib head and the guide pin.



- 28.** Slowly hoist up the wire rope, and make the auxiliary hook block slightly contact with the head of the jib.

NOTICE
<p>Check that the hook block is firmly seated on the seating surface on the jib head. If not firmly seated, the hook block may move when the jib is extended up, and come off the jib.</p>

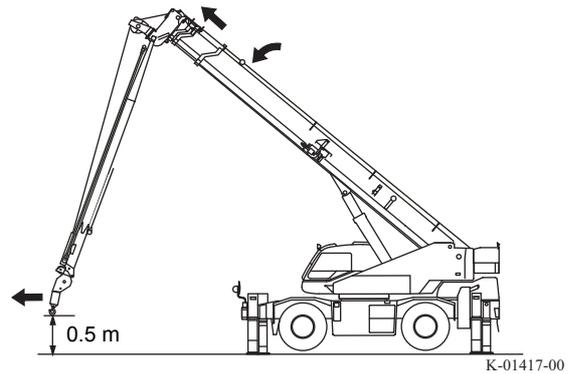


29. Extend the boom while lowering the boom, and swing the jib up to the front.

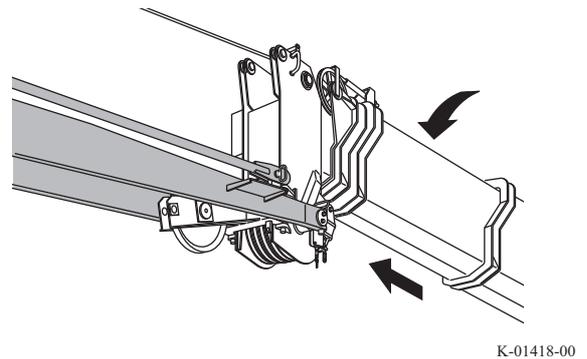
☞ For safety, swing out the jib so that the top end of the jib moves horizontally approx. 0.5 m above the ground.

NOTICE

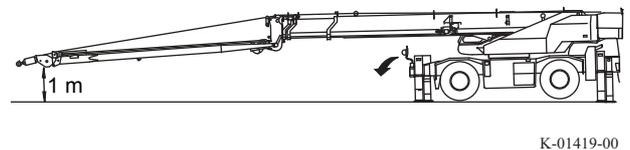
- Check that there is no obstacle in the jib swinging direction. The jib will be damaged if it touches an obstacle.
- Only when the auxiliary winch is used, adjust the position of the main hook block so that the main hook block does not touch the boom head. After the jib passes beyond the main hook block, unwind the main wire rope.



30. Set the boom horizontal, and extend it until the jib becomes almost horizontal.

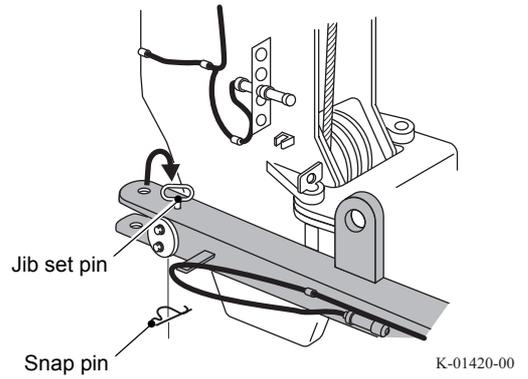


31. Retract the outrigger jacks so that the jib head is approx. 1 m in height from the ground. Re-register the outrigger status on the AML.

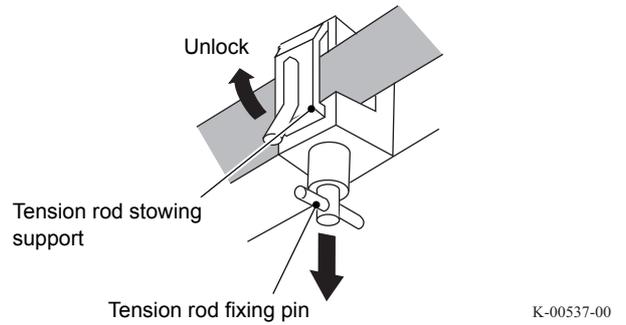


- 32.** Re-insert the jib set pin on the right side of the boom into a hole closer to the jib head, and fix it with the snap pin.

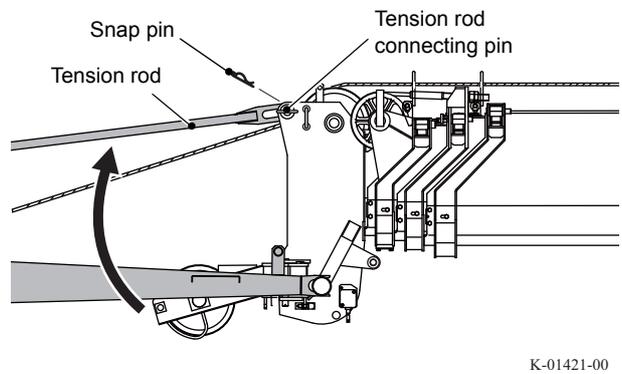
NOTICE
If jib lift is performed without re-inserting the pin into the head of the jib, the jib may be damaged when the jib is swayed to right or left.



- 33.** Pull out the fixing pin for the tension rod, and unlock the tension rod stowing support.



- 34.** Connect the tension rod to the boom head, and secure the tension rod connecting pin with a snap pin.
After mounting the tension rod, return the lock for the tension rod stowing support to the original position.

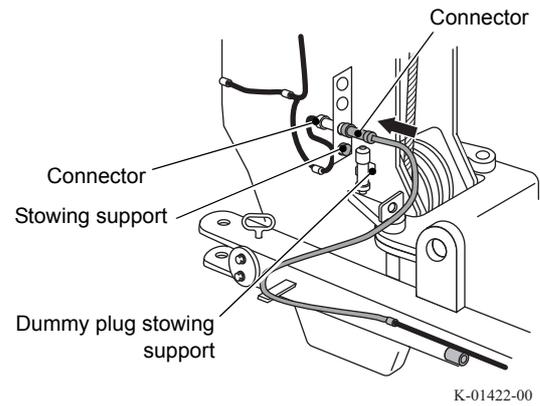
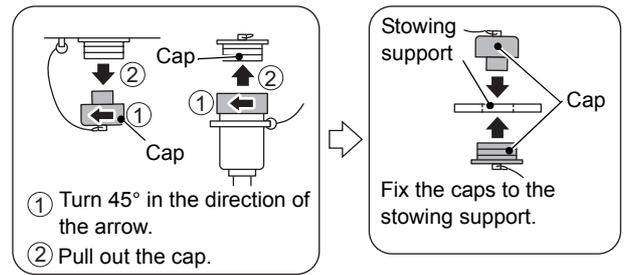


- 35.** Connect the connectors for the anti-two-block device on the boom head.
 Attach caps to the removed dummy plugs and stow them into the stowing position.
 Stow the removed connector caps for the anti-two-block device to the stowing support.

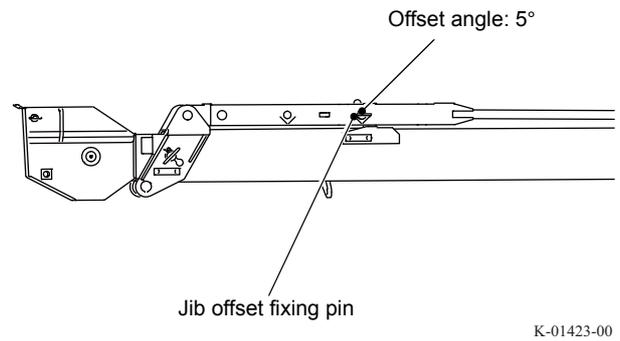
NOTICE

To disconnect the connector, pull the connector itself. Never pull on the cord. The cord can be broken.

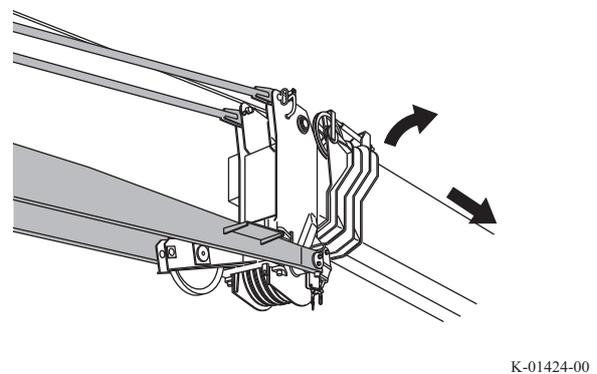
- ☞ Connect the connectors securely. Otherwise, the machine movement stops and an error code is displayed on the AML.



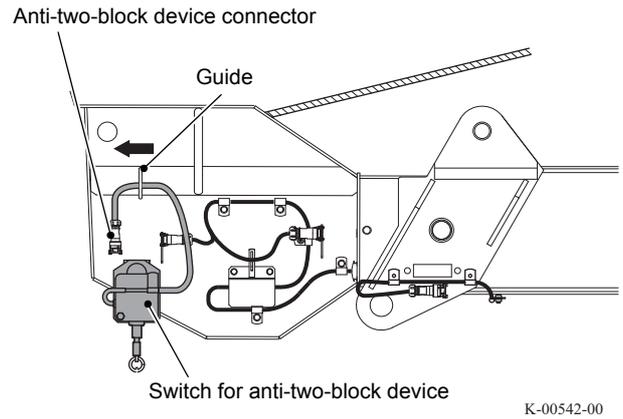
- 36.** Make sure that the jib offset fixing pin is inserted in the position for offset angle of 5°.



- 37.** Raise the boom slightly so that the jib head does not contact the ground, and then retract the boom to tension the tension rod.



38. Attach the switch for anti-two-block device at the jib head, and pass the wiring for the anti-two-block device through the guide.

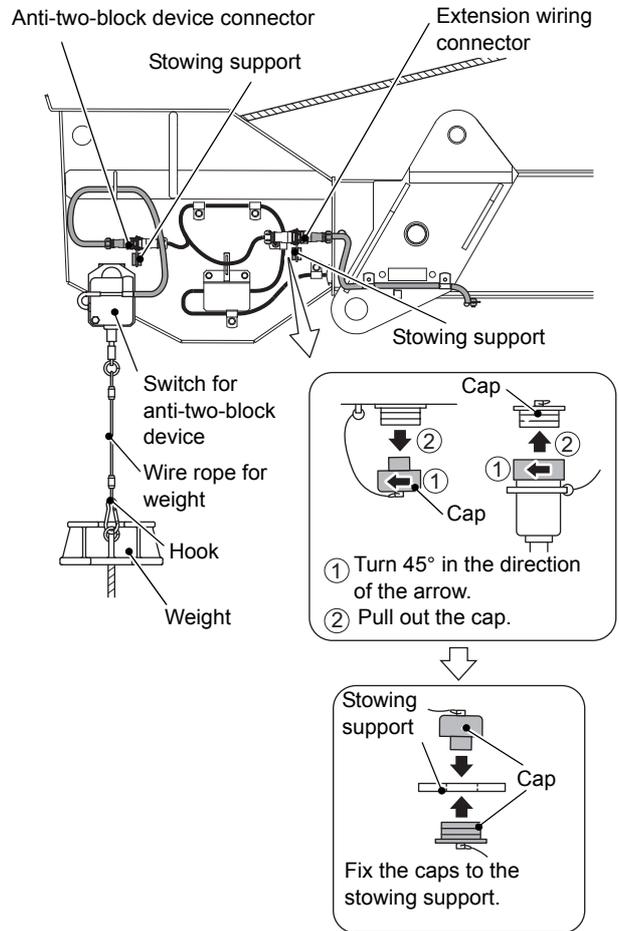


39. Connect the wiring of the switch for the anti-two-block device and extension wiring to connectors on the top jib. Stow the removed connector caps for the anti-two-block device to the stowing support.

NOTICE

To disconnect the connector, pull the connector itself. Never pull on the cord. The cord can be broken.

☞ Connect the connectors securely. Otherwise, the machine movement stops and an error code is displayed on the AML.

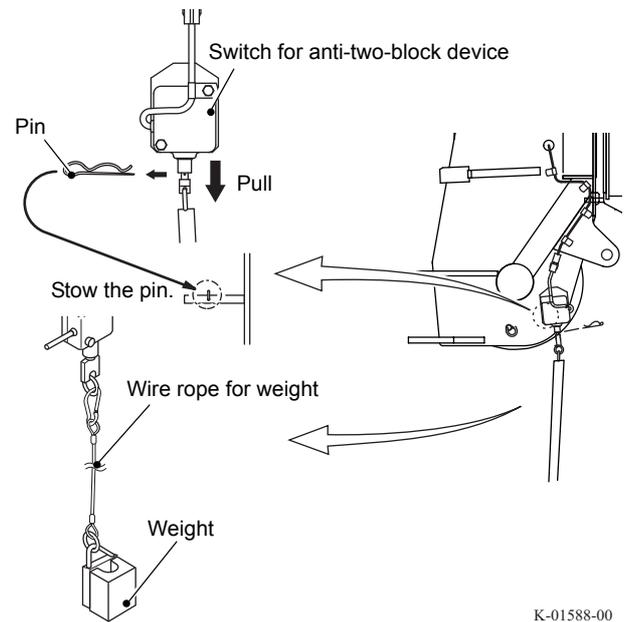


40. Connect the weight for the anti-two-block device and the wire rope for the weight.

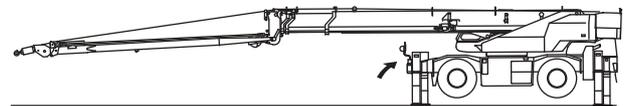
☞ For jib lift using the auxiliary winch, remove the pin from the rod of the switch for the anti-two-block device, and attach the weight for the anti-two-block device and the wire rope for the weight, so that the anti-two-block device for the main wire rope can be activated. Stow the removed pin on the support.

⚠WARNING

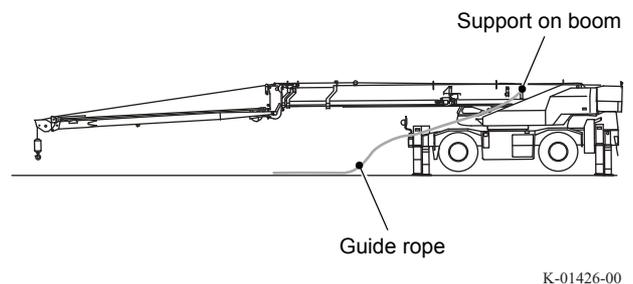
If the pin inserted in the rod of the switch for anti-two-block device is not removed, the anti-two-block device for the main winch does not function during boom lift. The hook block can collide with the boom and cause the lifted load to fall, resulting in a serious accident. Before jib lift, make sure that the anti-two-block device functions normally.



41. Extend the jacks and set up the crane horizontally, and register the outrigger status to the AML again.

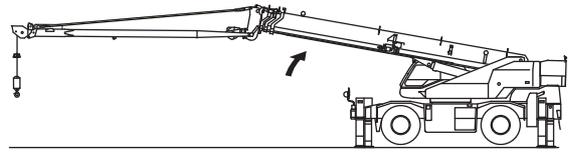


42. Remove the guide rope from the support on the boom.



43. Refer to the rated lifting capacity table for jib lift, and raise the boom until it reaches the boom angle for jib lift.

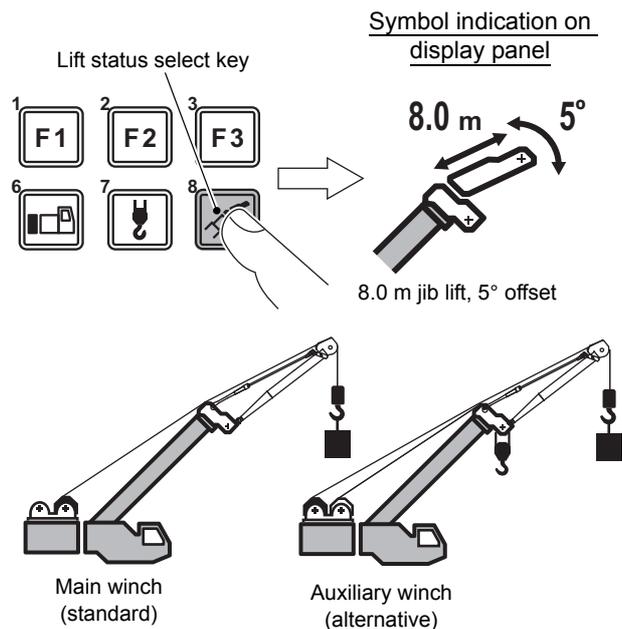
☞ If the boom angle does not fall within the performance range of jib lift, the jib lift cannot be registered to the AML.



K-01427-00

44. Register the lift status to the AML.

☞ To use the auxiliary winch, refer to "Selection of the winch to be used" (page 176), and change the AML setting.



K-00548-00

45. Check that the crane stops automatically when the auxiliary hook block is overhoisted.

☞ If the crane does not stop automatically, refer to the Step 35 and 39, and check that the wiring is connected correctly.

Now, the mounting of the jib is completed.

Changing Jib Offset Angle

⚠ WARNING

When you work at an elevated place, use a platform to prevent a falling accident. Also, wear a safety belt, and attach its hook to the anchor point for the safety belt. For the location of the anchor points, refer to "Location of Anchor Points" (page 121). Falling from an elevated place can result in a serious injury.

NOTICE

- Before changing the jib offset angle, be sure to retract the jib fully. If the jib offset angle is changed with the top jib extended, the jib can be damaged.
- When the jib offset angle is increased, the load radius increases as well. When you increase the offset angle, pay attention so that an overload does not occur.

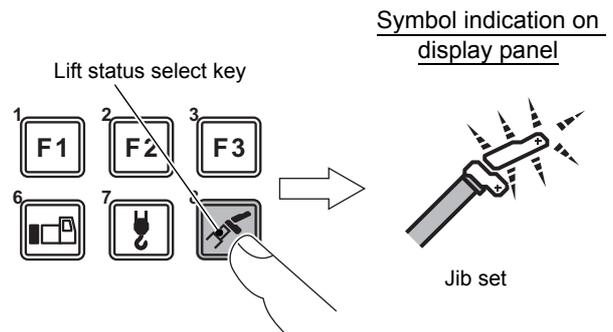
To change the jib offset angle, change the position of the offset pins. You can use the jib with 3 different offset angles (5°, 25°, and 45°).

1. Check that the top jib is fully retracted.
2. Register the jib set status to the AML.

- The jib lift indicator symbol flashes.

NOTICE

When the jib set status is registered to the AML, the machine does not automatically stop even if the hook block is in two-blocking status.

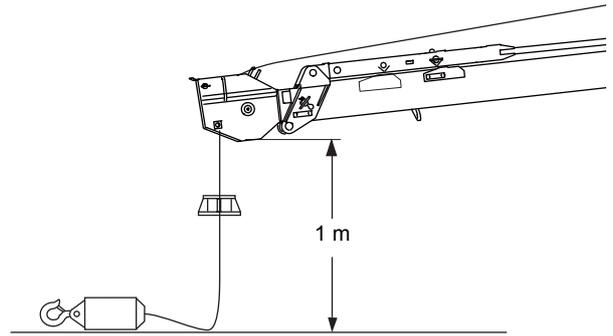


K-00549-00

3. Set the boom angle horizontal, and extend the boom by approx. 1 m from full retraction.

 This step is required for increasing the jib offset angle (5° → 25° → 45°).

- Lower the boom until the jib head is approx. 1 m above the ground.

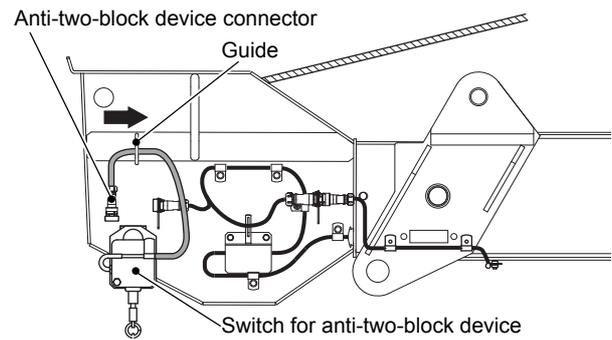
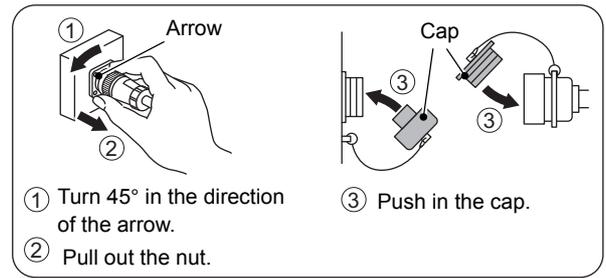
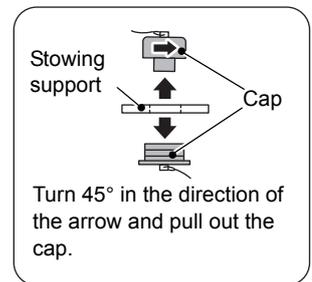


K-01428-00

- Disconnect the connector for anti-two-block device on the jib head, attach the cap to it, and remove the wiring from the guide.

NOTICE

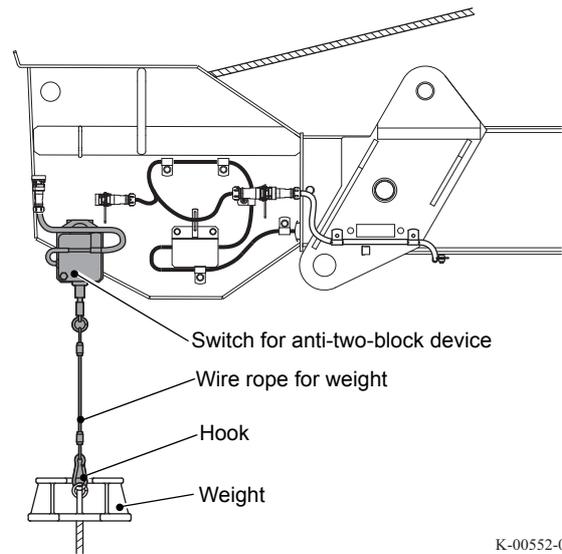
To disconnect the wiring, pull the connector itself, and never pull on the cord. The cord can be broken.



K-00551-00

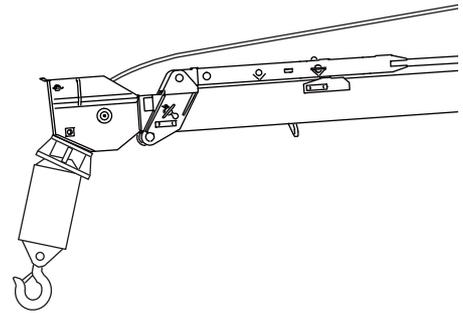
- Detach the wire rope for the weight from the weight for anti-two-block device, and remove the switch for anti-two-block device and the wire rope for the weight.

☞ Do not remove the weight, and keep it attached to the wire rope.



K-00552-00

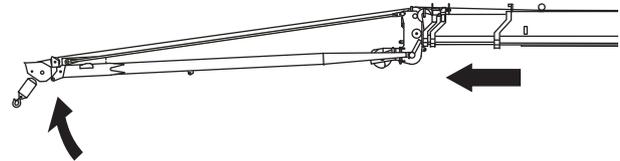
- Hoist up the auxiliary wire rope, and make the auxiliary hook block slightly contact with the head of the jib.



K-01429-00

- Extend the boom to slightly loosen the tension rod.

☞ This makes pulling out the jib offset fixing pin easier.



K-01430-00

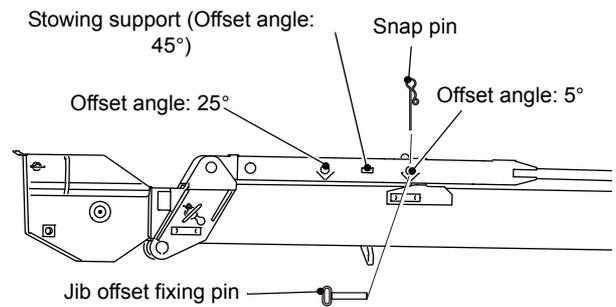
- Pull out the jib offset fixing pin.

10. Extend the boom, and fully retract the tension rod.

☞ If the tension rod is not retracted fully, the jib offset pins cannot be inserted when decreasing the jib offset angle.

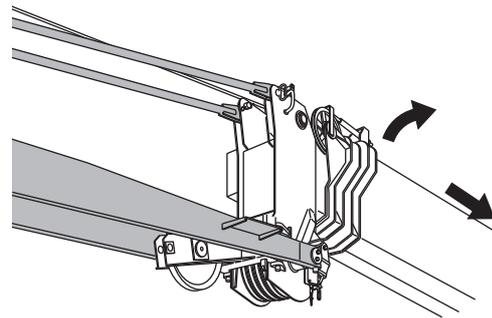
11. Insert the offset pins to the holes for the desired angle, and secure it with snap pins.

☞ Stow the fixing pin in the stowage support to set the jib offset angle to 45°.



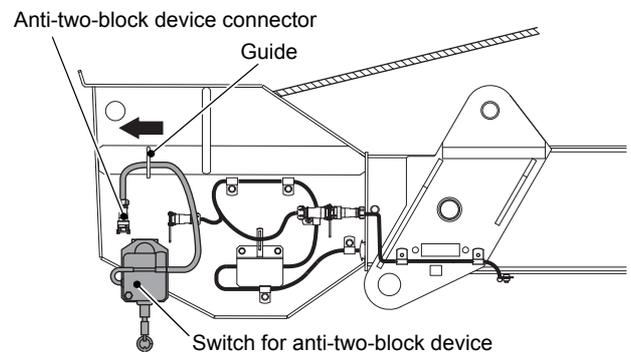
K-01431-00

12. Raise the boom slightly so that the jib head does not contact the ground, and then retract the boom to tension the tension rod.



K-01432-00

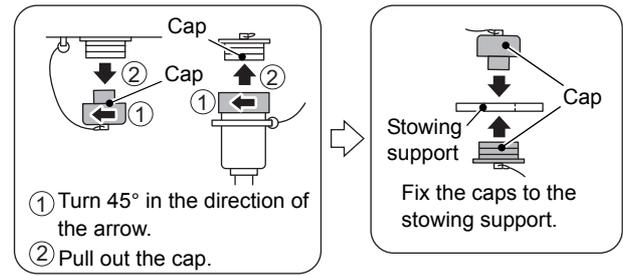
13. Attach the switch for anti-two-block device at the jib head, and pass the wiring for the anti-two-block device through the guide.



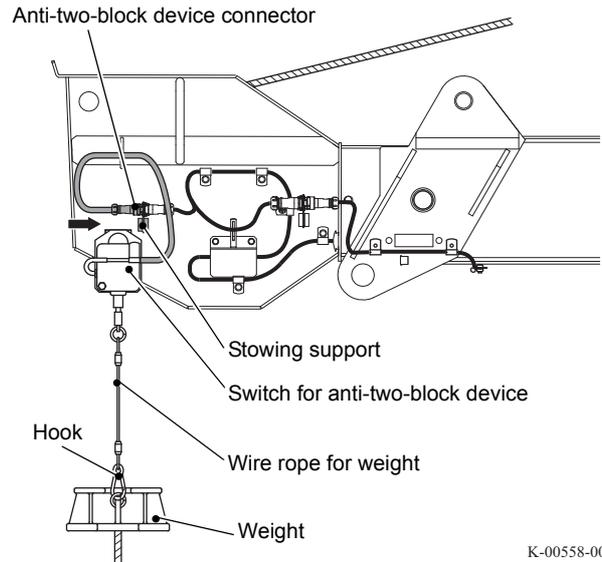
K-00557-00

14. Connect the connectors for the anti-two-block device. Stow the removed connector caps for the anti-two-block device to the stowing support.

- ☞ Connect the connectors securely. Otherwise, the machine movement stops and an error code is displayed on the AML.



15. Attach the wire rope for the weight to the weight for anti-two-block device.

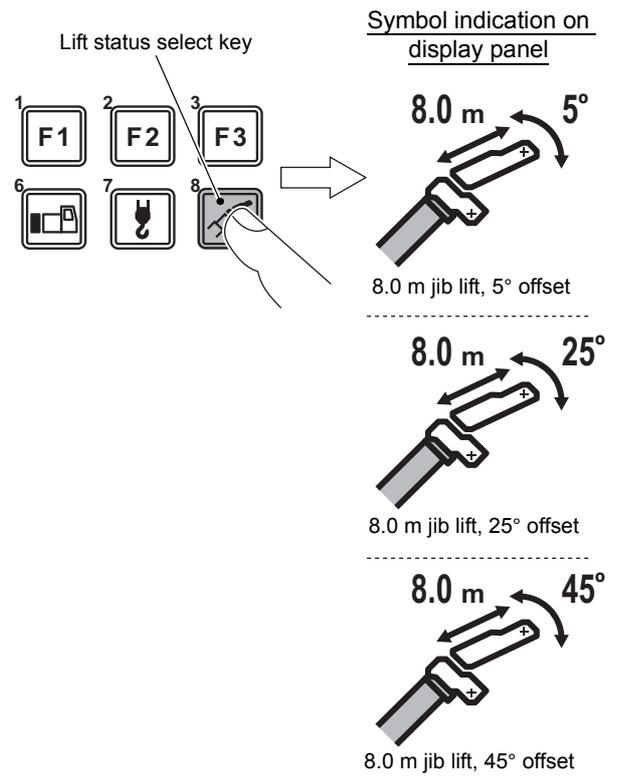


K-00558-00

16. Refer to the rated lifting capacity table for jib lift, and raise the boom until it reaches the boom angle for jib lift.

- ☞ If the boom angle does not fall within the performance range of jib lift, the jib lift cannot be registered to the AML.

17. Register the lift status to the AML.



K-00559-00

18. Check that the crane stops automatically when the auxiliary hook block is overhoisted.

- ☞ If the crane does not stop automatically, refer to the Step 14 and check that the wiring is connected correctly.

Now, changing the jib offset angle is completed.

Changing Jib Length

⚠ WARNING

- Do not stand in front of the jib during jib extension. Unexpected movement of the jib can cause a serious injury.
- When you work at an elevated place, use a platform to prevent a falling accident. Also, wear a safety belt, and attach its hook to the anchor point for the safety belt. For the location of the anchor points, refer to "Location of Anchor Points" (page 121). Falling from an elevated place can result in a serious injury.

NOTICE

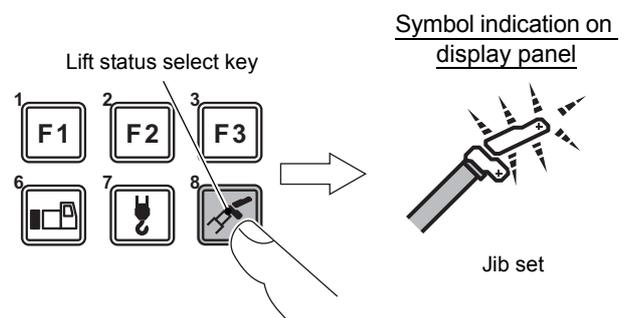
After changing the jib offset angle, change the jib length. If the jib offset angle is changed with the top jib extended, the jib will be damaged.

Extending Top Jib

1. Check that the jib offset angle is set for the desired operation.
2. Register the jib set status to the AML.
 - The jib lift indicator symbol flashes.

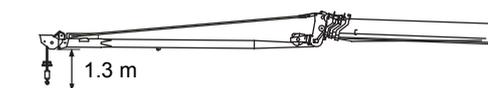
NOTICE

When the jib set status is registered to the AML, the machine does not automatically stop even if the hook block is in two-blocking status.



K-00560-00

3. Lower the boom until the head of the jib is approx. 1.3 m above the ground.



K11433-000

- Disconnect the connectors for the anti-two-block device on the jib head. Attach the cap to the removed connector for the anti-two-block device, and remove the wiring from the guide.

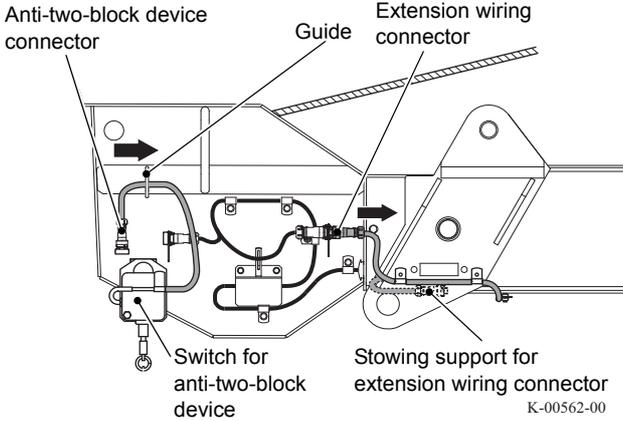
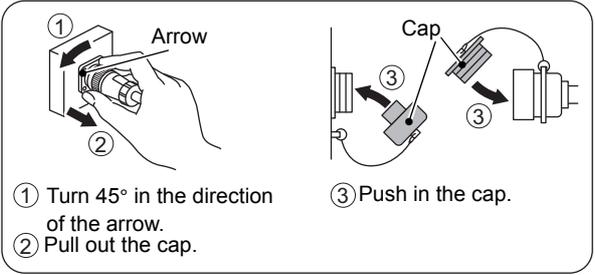
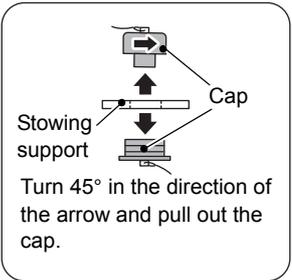
NOTICE

To disconnect the wiring, pull the connector itself, and never pull on the cord. The cord can be broken.

- Disconnect the connectors for extension wiring. Attach the caps to the removed connectors for the extension wiring, and stow them into the stowing position.

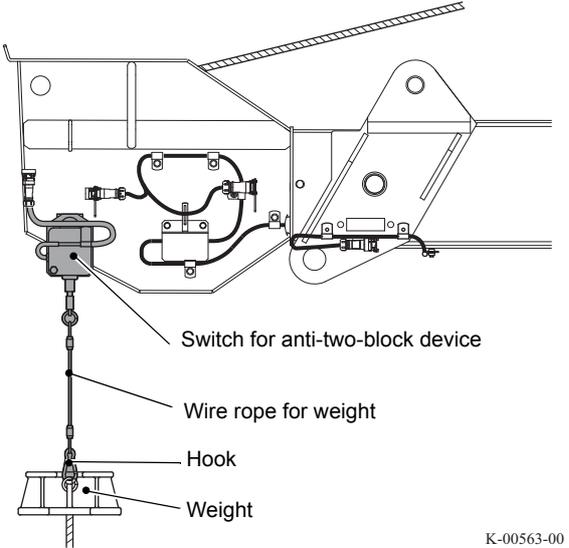
NOTICE

To disconnect the wiring, pull the connector itself, and never pull on the cord. The cord can be broken.

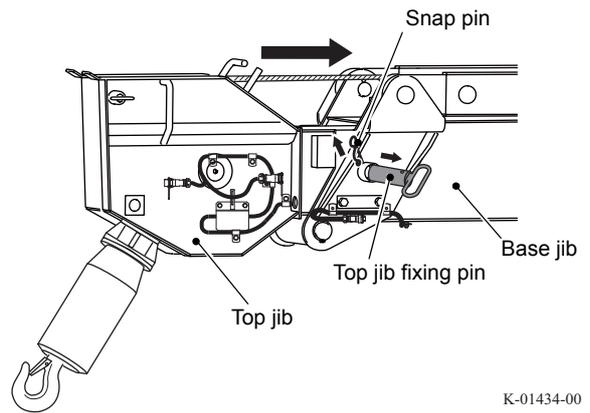


- Detach the wire rope for the weight from the weight for anti-two-block device, and remove the switch for anti-two-block device and the wire rope for the weight.

☞ Do not remove the weight, and keep it attached to the wire rope.

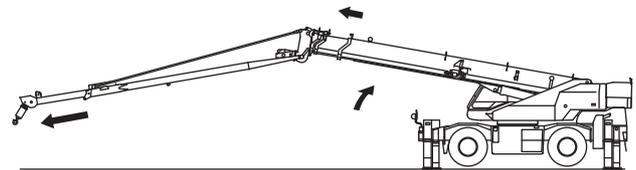


7. Wind up the wire rope until the auxiliary hook block touches the jib head lightly. Then remove the top jib fixing pin.



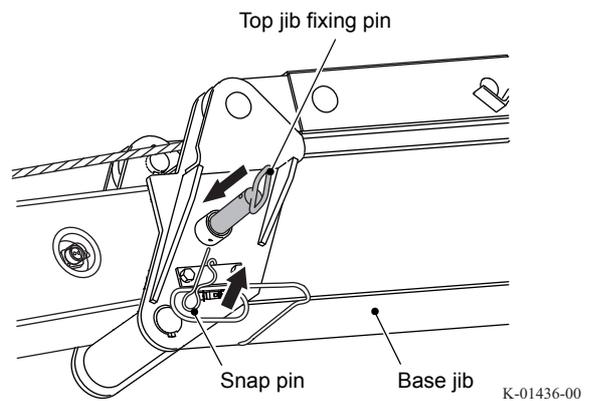
8. Slowly unwind the auxiliary wire rope to extend the top jib.

NOTICE
Wind down the wire rope while raising the boom so that the jib head does not touch the ground.



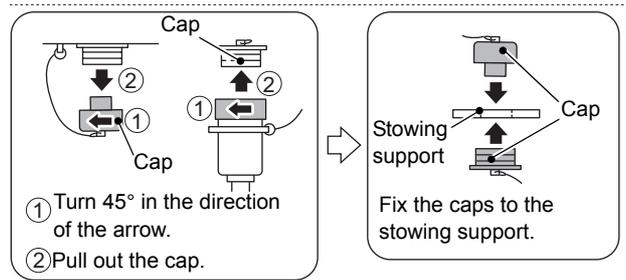
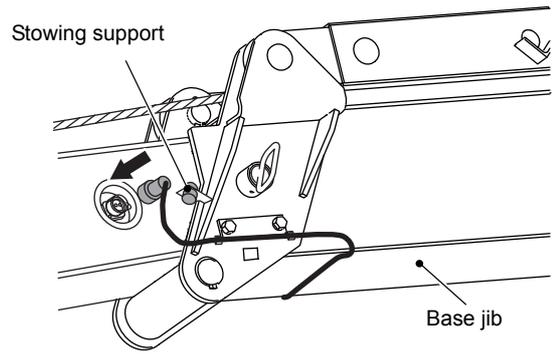
☞ The top jib will extend by its own weight.

9. After the jib is fully extended, insert the top jib fixing pin to fix the top jib, and insert the snap pin.



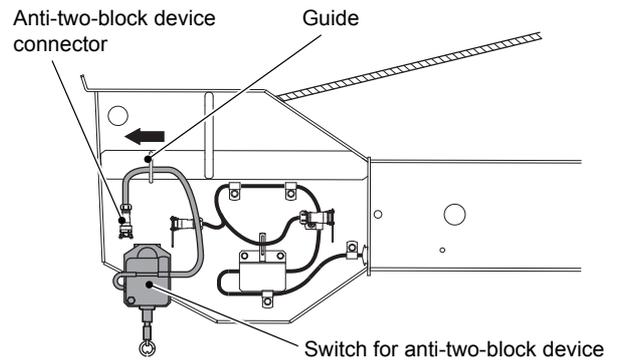
10. Connect the wiring for the anti-two-block device between the top jib and base jib.
Stow the removed connector caps for the anti-two-block device to the stowing support.

- ☞ Connect the connectors securely.
Otherwise, the machine movement stops and an error code is displayed on the AML.



K-01437-00

11. Attach the switch for anti-two-block device at the jib head, and pass the wiring for the anti-two-block device through the guide.

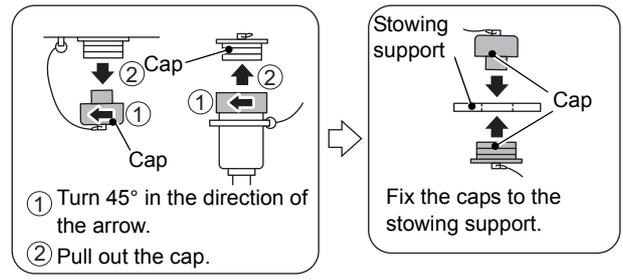


K-00568-00

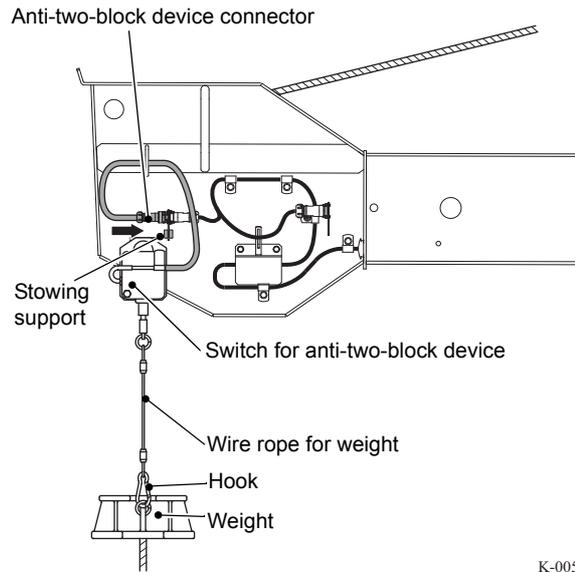
12. Connect the connectors for the anti-two-block device.

Stow the removed connector caps for the anti-two-block device to the stowing support.

- ☞ Connect the connectors securely. Otherwise, the machine movement stops and an error code is displayed on the AML.



13. Attach the wire rope for the weight to the weight for anti-two-block device.

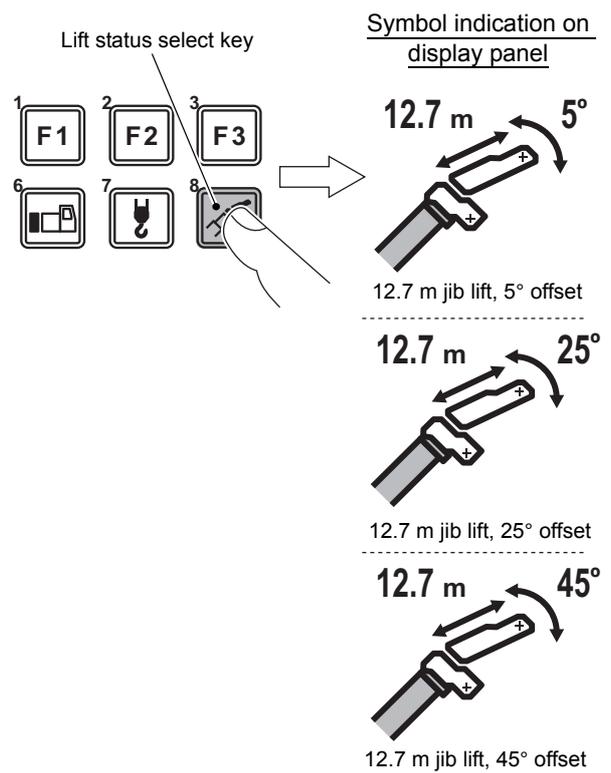


K-00569-00

14. Refer to the rated lifting capacity table for jib lift, and raise the boom until it reaches the boom angle for jib lift.

- ☞ If the boom angle does not fall within the performance range of jib lift, the jib lift cannot be registered to the AML.

15. Register the lift status to the AML.



K-00570-00

16. Check that the crane stops automatically when the auxiliary hook block is overhoisted.

- ☞ If the crane does not stop automatically, refer to the Step 10 and 12, and check that the wiring is connected correctly.

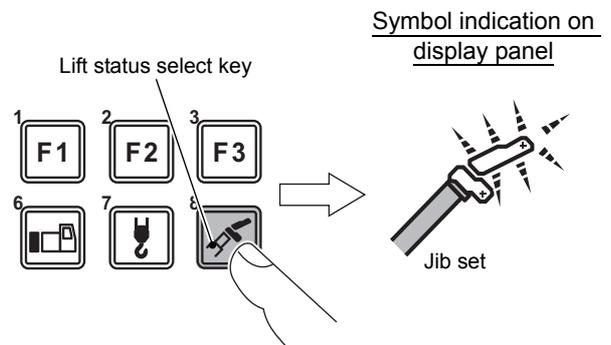
Now the preparation work for the 12.7 m jib lift is completed.

Retracting Top Jib

1. Register the jib set status to the AML.

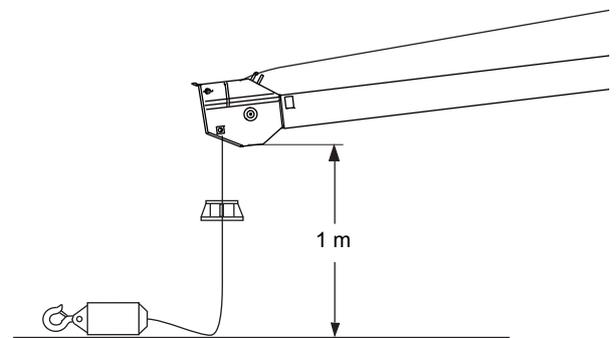
- The jib lift indicator symbol flashes.

NOTICE
When the jib set status is registered to the AML, the machine does not automatically stop even if the hook block is in two-blocking status.



K-00571-00

2. Lower the boom until the head of the jib is approx. 1 m above the ground.

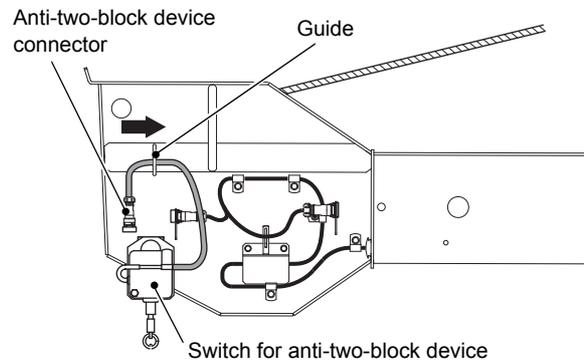
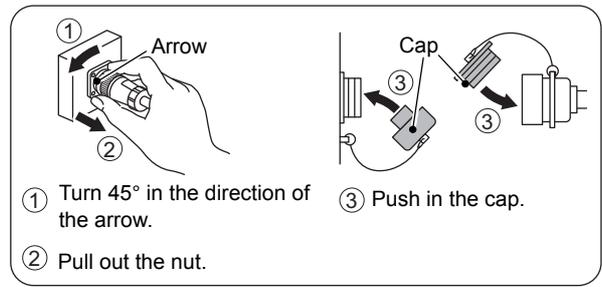
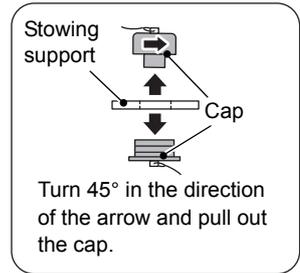


K-01438-00

3. Disconnect the connectors for the anti-two-block device on the jib head. Attach the cap to the removed connector for the anti-two-block device, and remove the wiring from the guide.

NOTICE

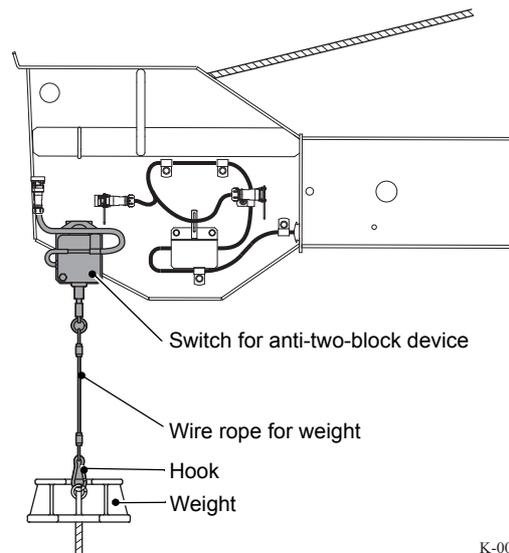
To disconnect the wiring, pull the connector itself, and never pull on the cord. The cord can be broken.



K-00573-00

4. Detach the wire rope for the weight from the weight for anti-two-block device, and remove the switch for anti-two-block device and the wire rope for the weight.

 Do not remove the weight, and keep it attached to the wire rope.

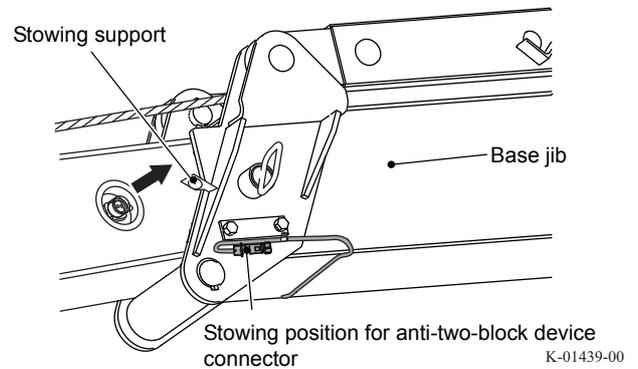
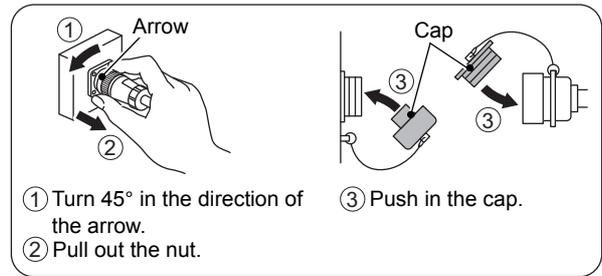
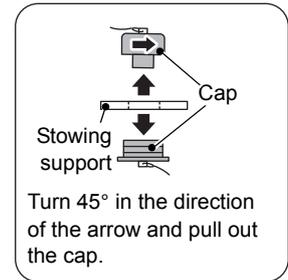


K-00574-00

5. Disconnect the wiring for the anti-two-block device between the top jib and base jib. Attach the cap to the removed connector for the extension wiring and stow it into the stowing position.

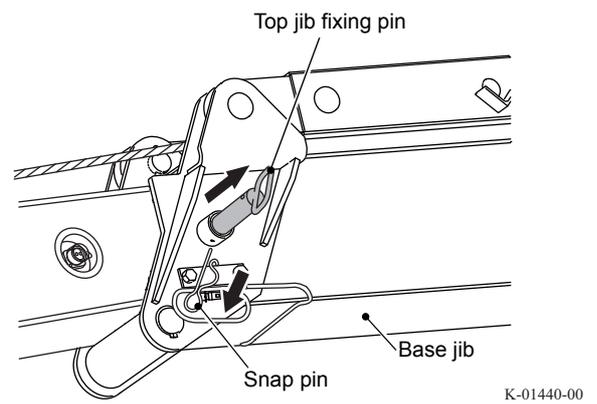
NOTICE

To disconnect the wiring, pull the connector itself, and never pull on the cord. The cord can be broken.

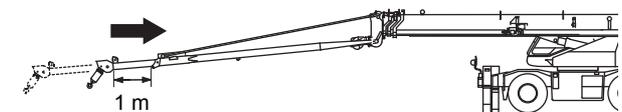


6. Pull out the top jib fixing pin.

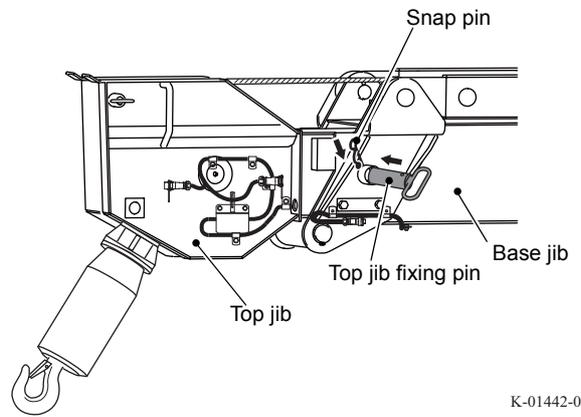
☞ When the fixing pin is not pulled, hoist up the wire rope and make the auxiliary hook block touch the head of the jib.



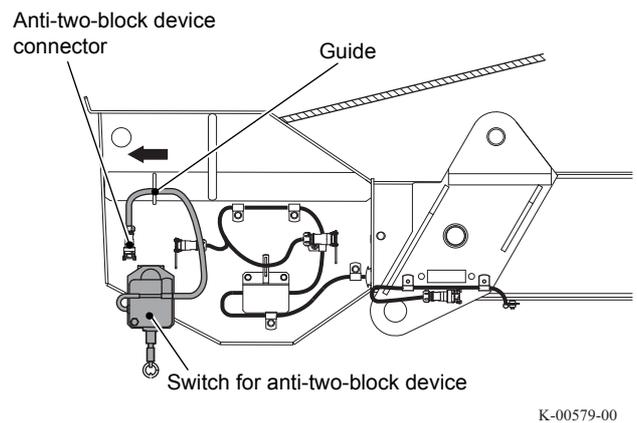
7. Slowly wind up the auxiliary wire rope, and retract the jib until approx. 1 m is left to full retraction.



8. Lower the boom until the head of the jib comes approx. 1 m above the ground. Wind up the auxiliary wire rope, and fully retract the top jib.
9. Insert the top jib fixing pin, and secure it with a snap pin.



10. Attach the switch for anti-two-block device at the jib head, and pass the wiring for the anti-two-block device through the guide.



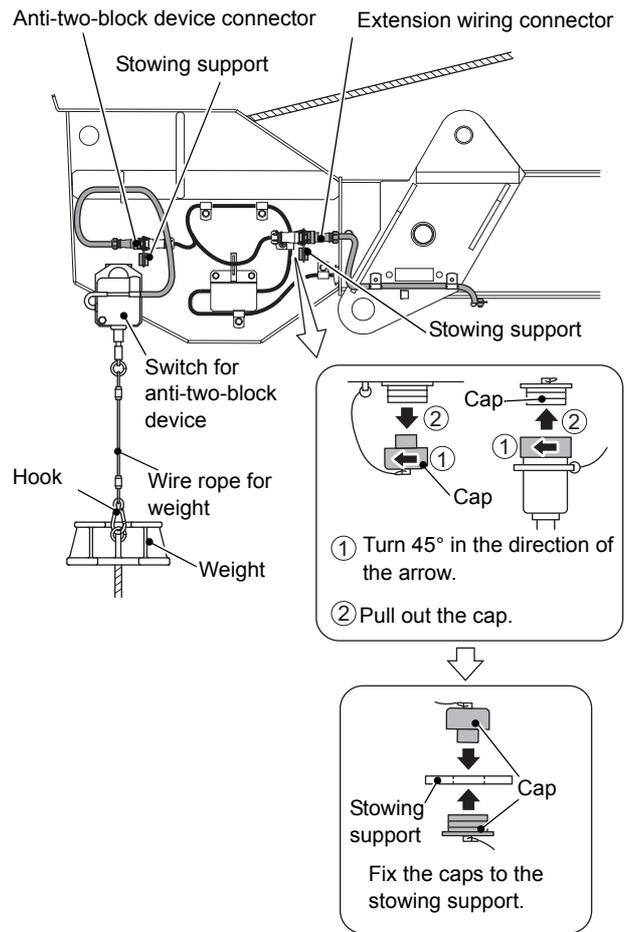
- 11.** Connect the wiring of the switch for the anti-two-block device and extension wiring to connectors on the top jib.
Stow the removed connector caps for the anti-two-block device to the stowing support.

NOTICE

To disconnect the wiring, pull the connector itself, and never pull on the cord. The cord can be broken.

☞ Connect the connectors securely. Otherwise, the machine movement stops and an error code is displayed on the AML.

- 12.** Connect the weight for the anti-two-block device and the wire rope for the weight.

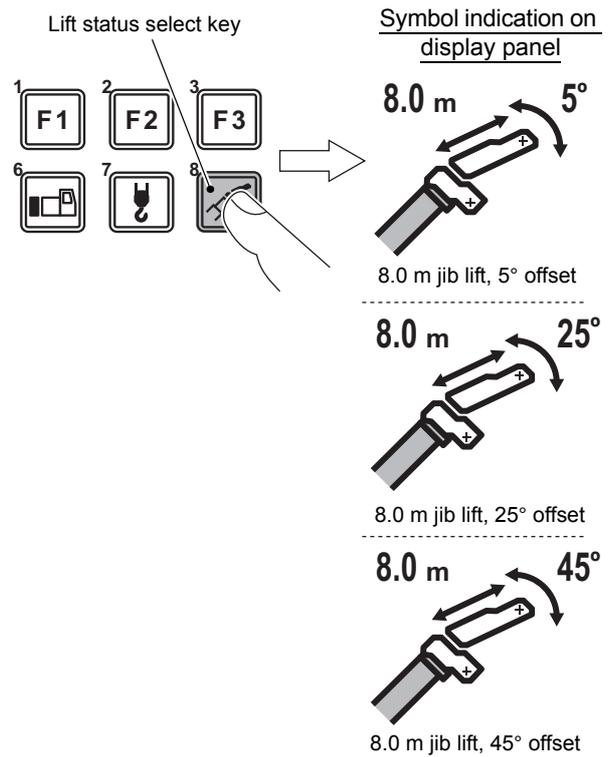


K-00580-00

- 13.** Refer to the rated lifting capacity table for jib lift, and raise the boom until it reaches the boom angle for jib lift.

☞ If the boom angle does not fall within the performance range of jib lift, the jib lift cannot be registered to the AML.

14. Register the lift status to the AML.



K-00581-00

15. Check that the crane stops automatically when the auxiliary hook block is overhoisted.

- ☞ If the crane does not stop automatically, refer to the Step 11 and check that the wiring is connected correctly.

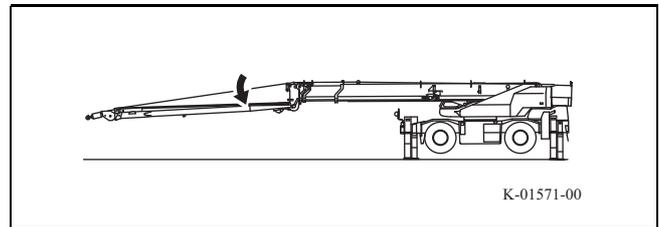
Now the preparation work for the 8.0 m jib lift is completed.

Outline of Jib Stowing

Outline of jib stowing operation is as follows.

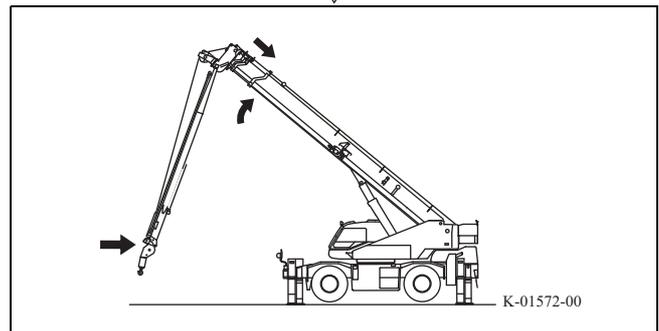
1. Remove the tension rod for the jib from the boom and stow it.

(Steps 1 through 11)



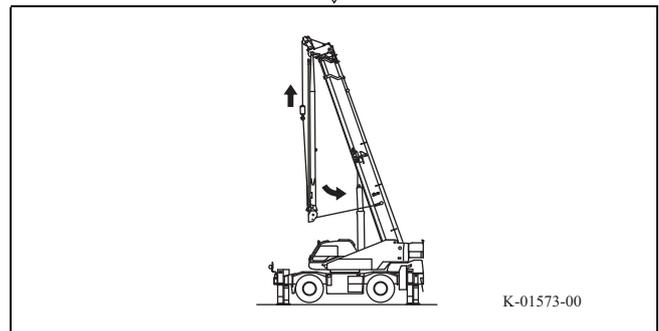
2. Retract the boom while raising the boom, and suspend the jib vertically.

(Steps 12 through 16)



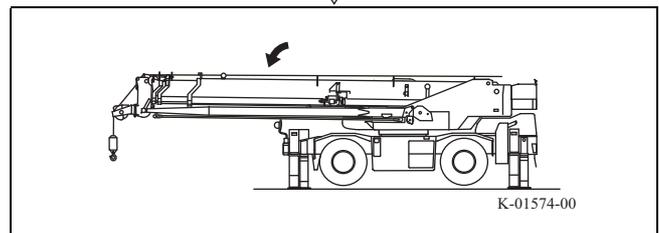
3. Install an auxiliary rope, pull in the jib to the lower face of the boom and fix it to the boom.

(Steps 17 through 23)



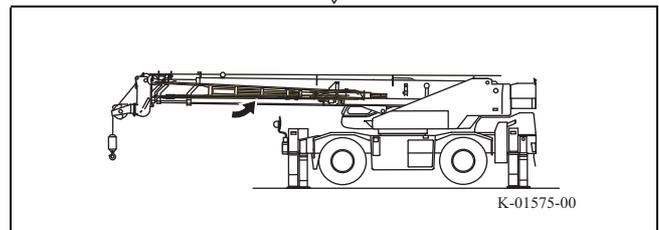
4. Lower the boom angle, and disconnect the jib from the top end of the boom.

(Steps 24 through 29)



5. Draw the jib from the lower face of the boom to the side face of the boom, and stow it onto the boom.

(Steps 30 through 39)



↓
Stowing jib is completed.

Stowing Jib

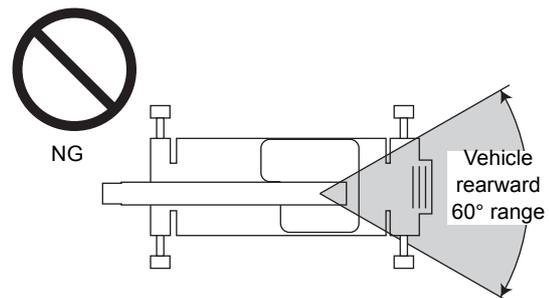
⚠ WARNING

- Do not enter the area under and in front of the jib during jib stowing. The jib can move unexpectedly and cause a serious injury.
- When you work at an elevated place, use a platform to prevent a falling accident. Also, wear a safety belt, and attach its hook to the anchor point for the safety belt. For the location of the anchor points, refer to "Location of Anchor Points" (page 121). Falling from an elevated place can result in a serious injury.
- Stow the jib securely. If the jib is not securely stowed, it can fall and cause an accident.
- If the guide rope or safety rope breaks during jib stowing, the jib can fall and cause an accident. Before stowing the jib, make sure that the guide rope and safety rope are free from damage. If any damage is found, contact Tadano Escorts India Private Ltd. or a dealer.

NOTICE

- Do not perform the following operations while stowing the jib to avoid damaging the jib related parts.

- Jib sideup stowing operation with the boom angle raised.
- Jib sideup stowing operation while the upper slewing structure is within the 60° range in the rear of the vehicle (Such operation can cause interference with the engine hood.)
- Crane operation while the jib is pulled in under the boom.



K-01457-00

- If the anemometer (option) is attached to the jib head, remove it. If jib stowing operation is performed with the anemometer mounted, it can damage the machine.

1. Set the machine into the following state.

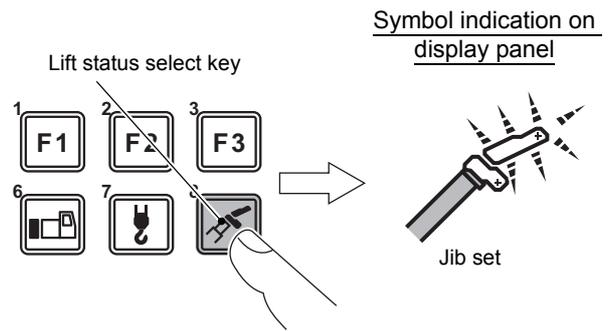
- Boom length: fully retracted
- Boom angle: horizontal
- Jib offset angle: 5°

☞ When outrigger extension width is less than 5.0 m, the jib cannot be stowed while the upper slewing structure is directed toward the sides.

2. Register the jib set status to the AML.

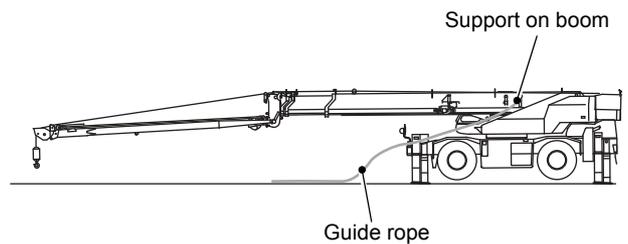
- The jib lift indicator symbol flashes.

NOTICE
When the jib set status is registered to the AML, the machine does not automatically stop even if the hook block is in two-blocking status.



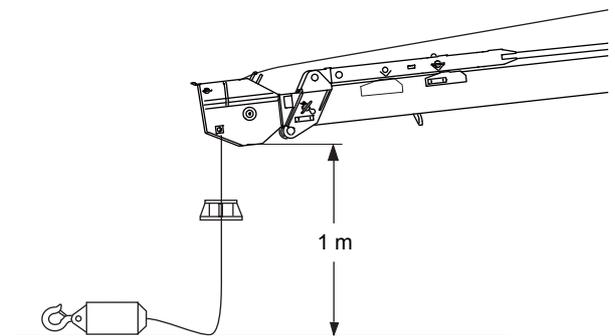
K-00588-00

3. Extend the boom to the length approx. 2 m longer than full retraction, and attach the guide rope to the support on the boom.



K-01426-00

4. Retract the outrigger jacks so that the top end of the jib is approx. 1 m in height from the ground. Register the jib set status to the AML.



K-01428-00

- Disconnect the connectors for the anti-two-block device on the jib head. Attach the cap to the removed connector for the anti-two-block device, and remove the wiring from the guide.

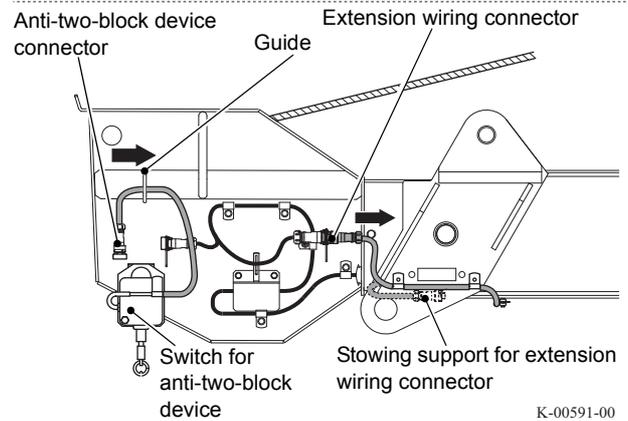
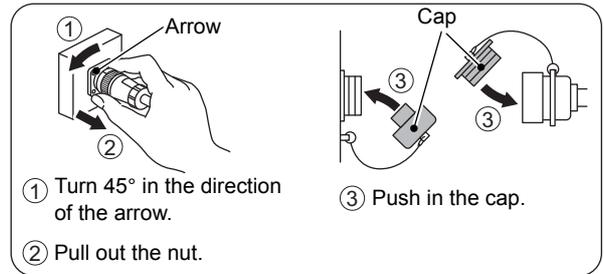
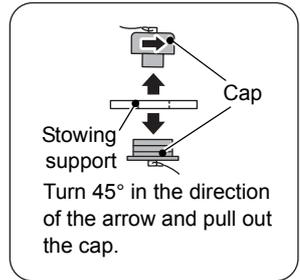
NOTICE

To disconnect the wiring, pull the connector itself, and never pull on the cord. The cord can be broken.

- Disconnect the connectors for extension wiring. Attach the caps to the removed connectors for the extension wiring, and stow them into the stowing position.

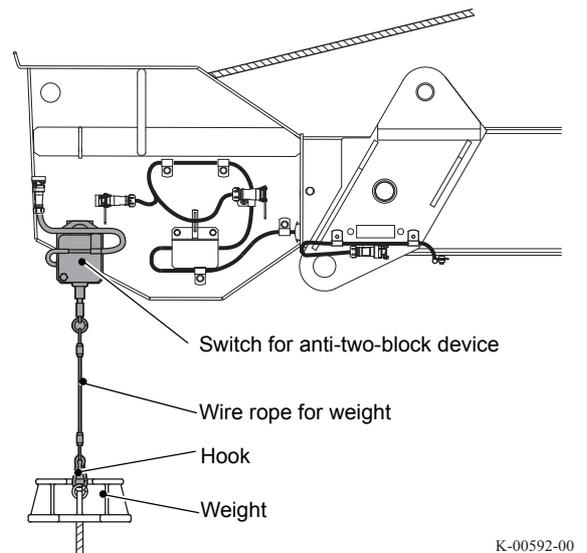
NOTICE

To disconnect the wiring, pull the connector itself, and never pull on the cord. The cord can be broken.

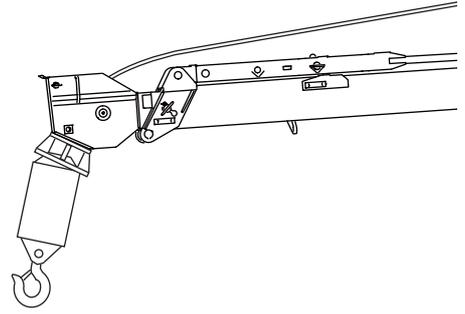


- Detach the wire rope for the weight from the weight for anti-two-block device, and remove the switch for anti-two-block device and the wire rope for the weight.

 Do not remove the weight, and keep it attached to the wire rope.



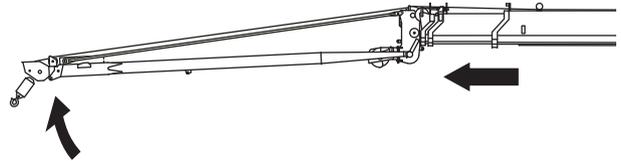
8. Hoist up the auxiliary wire rope, and make the auxiliary hook block slightly contact with the head of the jib.



K-01429-00

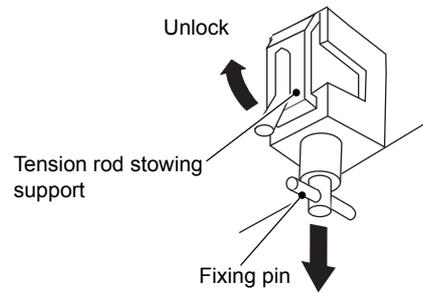
9. Extend the boom until the jib becomes parallel to the boom and the tension rod is loosened.

 This makes pulling out the jib offset fixing pin easier.



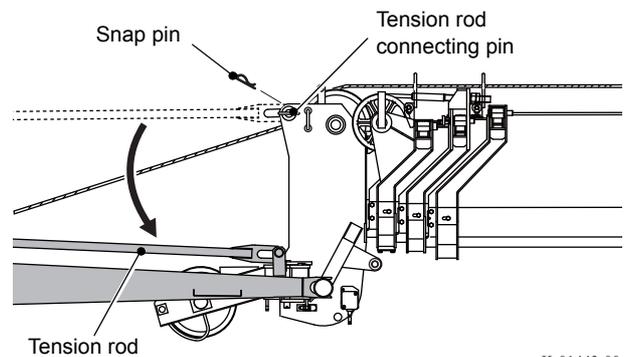
K-01430-00

10. Pull out the fixing pin for the stowing support of the tension rod, and unlock the tension rod stowing support.



K-00595-00

11. Pull out the tension rod fixing pin, and stow the tension rod in the specified position. When stowing the tension rod, insert the fixing pin with its handle facing outside. After stowing the tension rod, lock it with the tension rod stowing support.



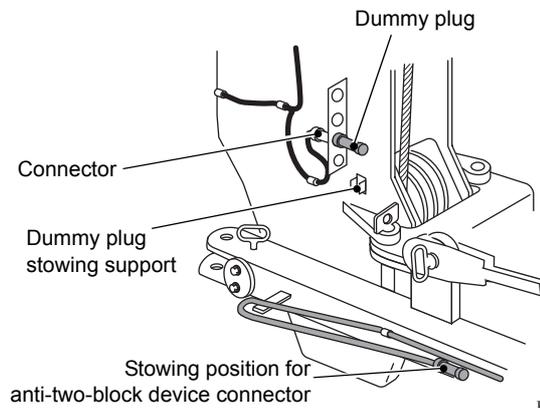
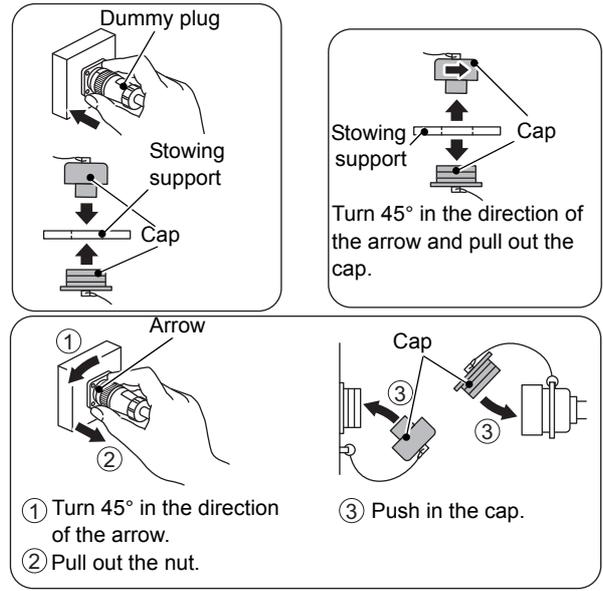
K-01443-00

- 12.** Disconnect the connectors for the anti-two-block device on the boom head, attach the caps on them, and stow them into the stowing position. Attach the dummy plug to the connector where the connector for anti-two-block device was connected.

NOTICE

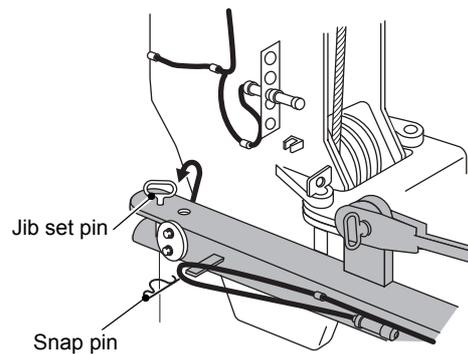
To disconnect the wiring, pull the connector itself, and never pull on the cord. The cord can be broken.

- ☞ Attach the dummy plug securely. Otherwise the machine movement stops and an error code is displayed on the AML.



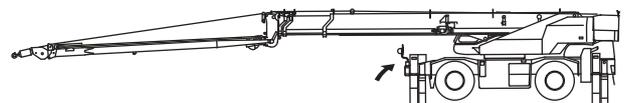
K-01444-00

- 13.** Re-insert the jib set pin on the boom right side into a hole closer to the jib bottom, and fix it with the snap pin.



K-01445-00

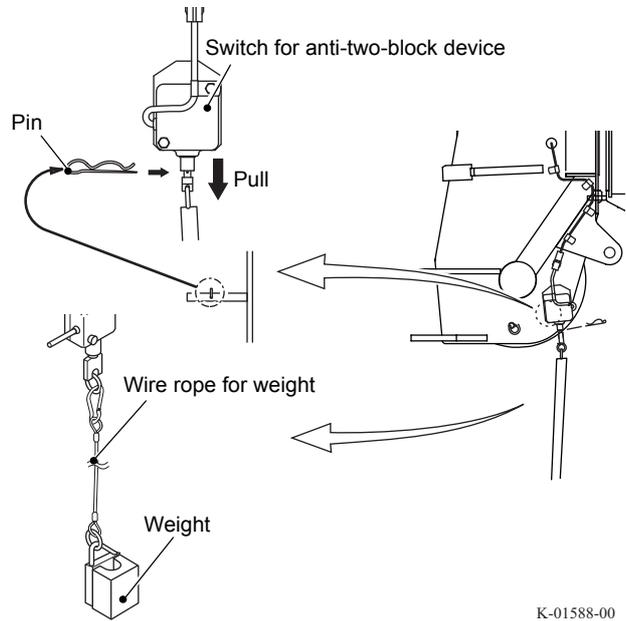
- 14.** Extend the jacks and set up the crane horizontally, and register the outrigger status to the AML again.



K-01425-00

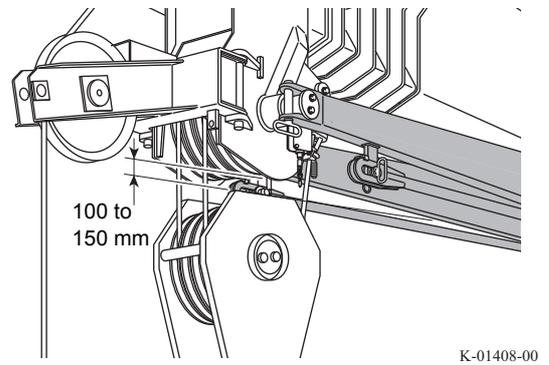
15. When the auxiliary winch is used, perform the following:

- (1) Insert the pin through the rod of the switch for anti-two-block device, and remove the weight for the anti-two-block device and the wire rope for the weight.



- (2) Wind up the main wire rope until the distance between the main hook block and the head of the boom becomes 100 to 150 mm.

☞ This operation makes the passing of the main hook block through the jib easier.

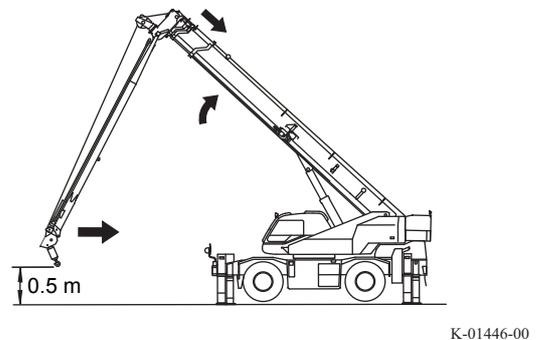


16. Retract the boom while raising the boom, and suspend the jib vertically.

☞ For safety, operate the jib so that the top end of the jib moves horizontally approx. 0.5 m above the ground.

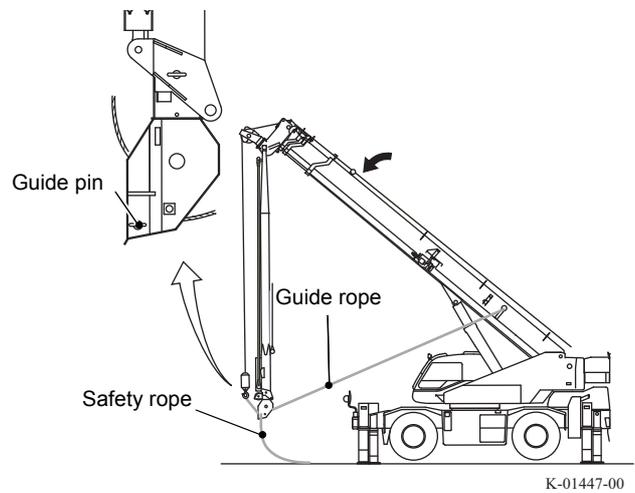
NOTICE

When the main hook block is mounted, adjust the position of the main hook block so that the main hook block does not touch the jib. After the jib passes beyond the main hook block, unwind the main wire rope.



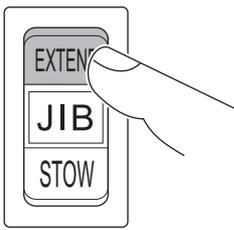
17. Fully retract the boom, and set the boom angle to approx. 37°.
18. Remove the auxiliary wire rope from the sheave at the jib head.
19. Wind up the wire rope until the auxiliary hook block comes slightly higher than the sheave at the jib head.
20. Pass the provided guide rope between the sheave and the guide pin, and attach it to the auxiliary hook block.
Attach the safety rope to the jib.

NOTICE
<ul style="list-style-type: none"> • Make sure that the guide rope is not removed from the jib. If it is off the jib, the jib will considerably sway forward when the jib is stowed. • When a strong wind blows, the safety rope can sway widely and hit the cab, etc. Attach the provided draw rope for the auxiliary wire rope to the end of the safety rope removed from the support. And then pull the draw rope until the safety rope is attached to the support on the slewing table.



21. Raise the boom until the boom angle becomes 75° to 80°.
22. Press and hold "EXTEND" on the jib holding switch until the sideup cylinder is fully extended.

This helps the automatic pin for the jib lock device to function correctly.



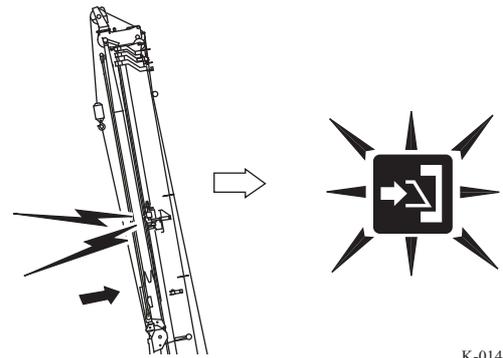
K-00604-00

CTI-500XL-1_OM1-11E

- 23.** Wind up the auxiliary wire rope, and pull in the jib to the lower face of the boom.
When the jib lock icon has appeared, stop winding up the auxiliary winch.

NOTICE
<ul style="list-style-type: none">• Be careful so that the guide rope will not catch the objects nearby such as the exterior of the crane and damage them and itself.• If the jib lock icon does not appear after this step, the jib is not locked. Refer to "When Jib Lock Icon Does Not Appear" (page 321) and lock the jib.

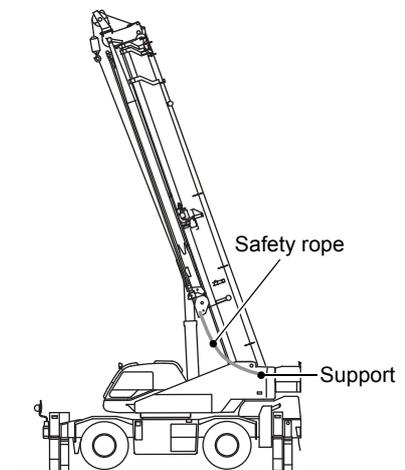
 When the jib is pulled in under the boom and the automatic pin of the jib lock device has operated, a clicking sound is heard and the jib lock icon appears.



K-01448-00

- 24.** Attach the safety rope to the support on the boom.

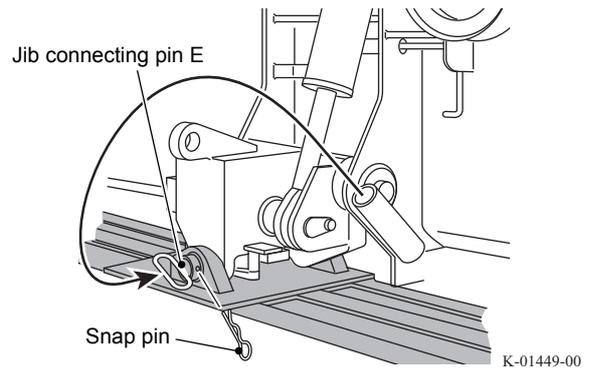
WARNING
<p>If the work is done without attaching the safety rope, the jib can come off the boom when the automatic pin for the jib lock device comes off due to an operation error or machine failure, resulting in an accident.</p>



K-01411-00

- 25.** Wind down the auxiliary winch wire rope, and remove the guide rope.

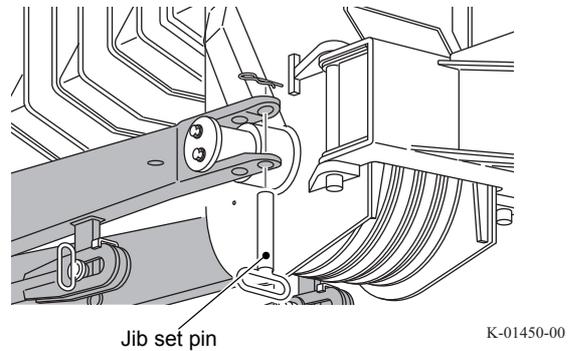
- 26.** Set the boom angle horizontally to insert the jib connecting pin E, and fix it with the snap pin.



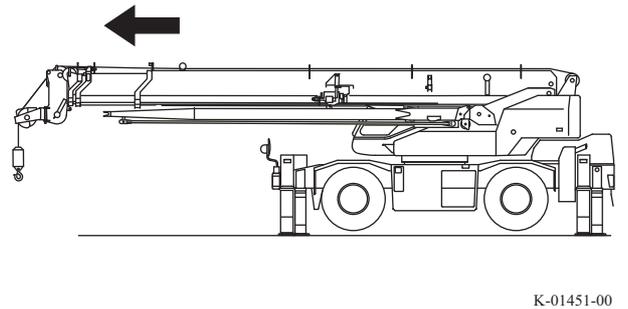
- 27.** Remove the safety rope.

- 28.** Remove the right and left jib set pins.

☞ The jib set pins (two pieces) are used for Step 32.

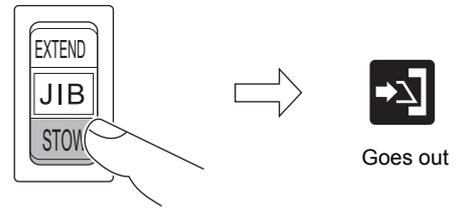


- 29.** Slowly extend the boom approx. 1 m.



30. Press and hold "STOW" on the jib holding switch until the jib is drawn to the side of the boom.

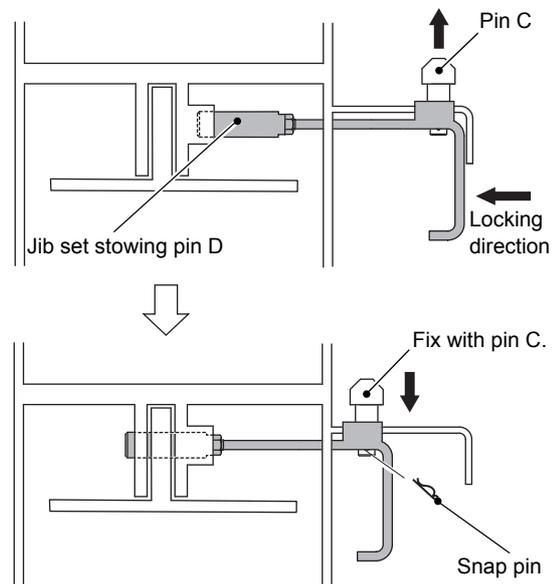
- When the jib is drawn to the side of the boom, the jib lock icon goes out.



K-00610-00

31. Pull out the pin C, push in the jib set stowing pin D, and lock it.

- Fix the jib set stowing pin D to the lock position with the pin C, and insert the snap pin.



K-01452-00

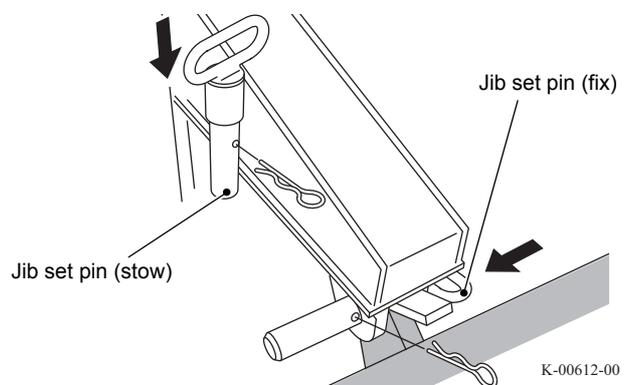
32. Direct the jib set pin to the boom head and insert it, and fix the jib to the boom.

Insert the other jib set pin into the stowing position from top to bottom.

After inserting the jib set pins, fix them with the snap pins.

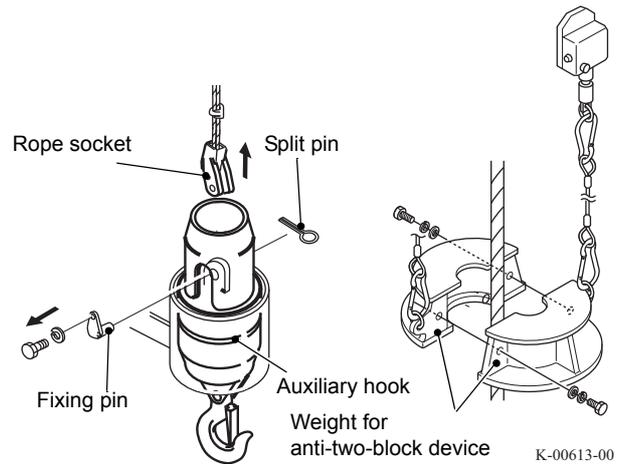
NOTICE

Do not retract the boom until the jib is secured to the boom with the jib set pin. Otherwise, the base of the jib collide with the head of the boom, causing a machine damage.

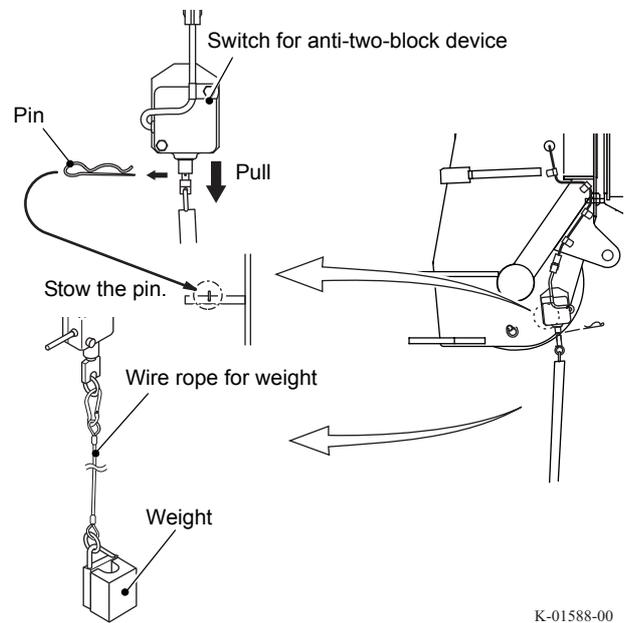


K-00612-00

33. Remove the auxiliary hook block and the weight for the anti-two-block device from the wire rope.



34. Remove the pin from the rod of the switch for the anti-two-block device, and mount the weight for the anti-two-block device and the wire rope for the weight, so that the anti-two-block device for boom lift can be activated. Stow the removed pin on the support.

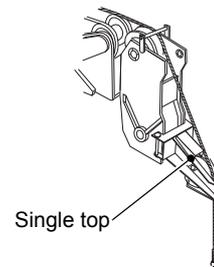


⚠ WARNING

If the pin inserted in the rod of the switch for the anti-two-block device is not removed, the anti-two-block device for the main winch does not function during boom lift. If the hook block collides with the boom, a lifted load can fall down, resulting in a serious accident. Before performing boom lift, make sure that the anti-two-block device functions correctly.

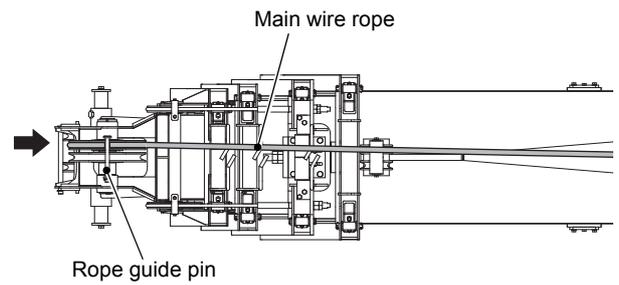
35. Stow the single top.

- ☞ For stowing of the single top, refer to "Single top" (page 257).
- ☞ After jib lift using the auxiliary winch, refer to "Pulling Out and Stowing Auxiliary Wire Rope" (page 245) and stow the auxiliary wire rope. Skip the following step 36.



36. Reeve the wire rope through the sheave for boom lift on the upper side of the top boom section, and attach the main wire rope to the hook block.

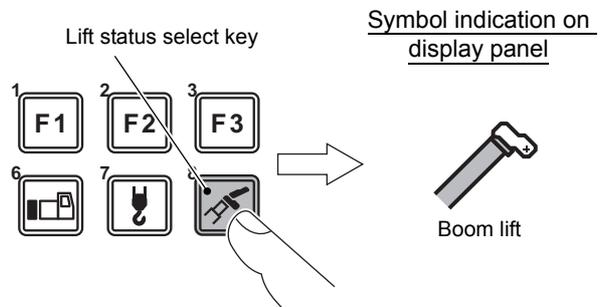
 For installation of the wire rope, refer to "Reeving Wire Rope" (page 236).



K-01396-00

37. Retract the boom fully.

38. Register the boom lift status to the AML.



K-00617-00

39. Check that the crane automatically stops when the main hook block is overhoisted.

 If the crane does not stop automatically, refer to the Step 12 and check that the wiring is connected correctly.

Now, stowing the jib is completed.

When Jib Lock Icon Does Not Appear

If the jib lock icon does not appear at Step 23, follow the following procedure to lock the jib.

1. Wind down the auxiliary wire rope to the extent that the auxiliary rope becomes slightly slack.
2. Extend the boom slowly. Stop boom extension when the jib lock icon has disappeared.

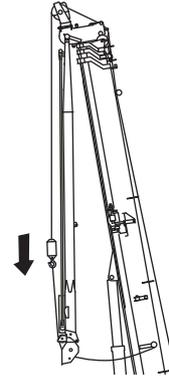
NOTICE

Do not extend the boom excessively. The auxiliary rope can be stretched too much and broken.

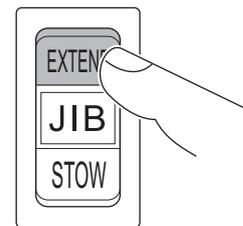
☞ When the automatic pin of the jib lock device comes off and the jib is swung forward, the jib lock icon disappears.

3. Wind down the auxiliary wire rope until the jib becomes vertical to the ground.
4. Retract the boom fully.
5. Press and hold "EXTEND" on the jib holding switch until the sideup cylinder is fully extended.

☞ This helps the automatic pin for the jib lock device to function correctly.



K-01453-00



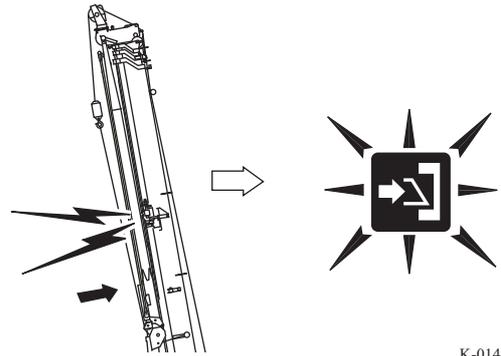
K-00619-00

- 6.** Wind up the auxiliary wire rope, and pull in the jib to the lower area of the boom.
When the jib lock icon has appeared, stop winding up the auxiliary winch.

NOTICE
If the jib lock icon does not appear after this procedure, contact Tadano Escorts India Private Ltd. or a dealer.

-  When the jib is pulled in under the boom and the automatic pin of the jib lock device has operated, a clicking sound is heard and the jib lock icon appears.

- 7.** Stow the jib following the Steps 24. onwards for stowing jib.



K-01448-00

Dismounting Jib

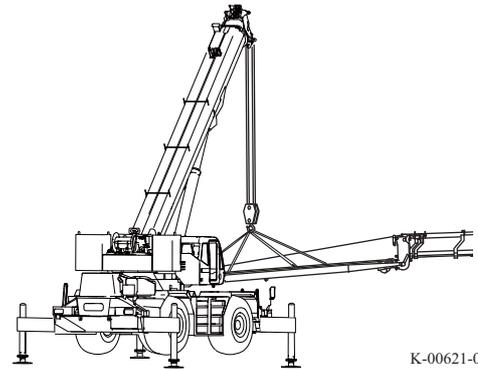
⚠ WARNING

For basic precautions, refer to the previous section "Mounting of Jib."
Observe the precautions in the section "Mounting of Jib" during operation.

NOTICE

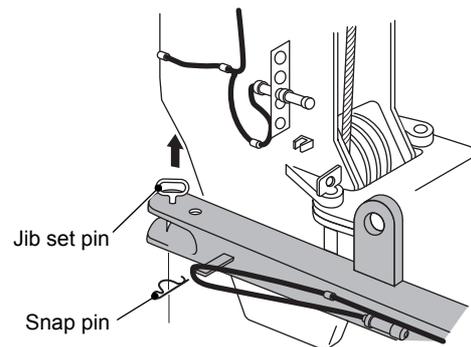
Choose a suitable second crane for dismounting the jib from the boom according to the lifting method and crane operation conditions.

1. Complete the procedure up to step 30 in the chapter "Mounting of Jib" and make the jib swung out forward.
2. Support the jib with another crane.



K-00621-01

3. Remove the right and left jib set pins.



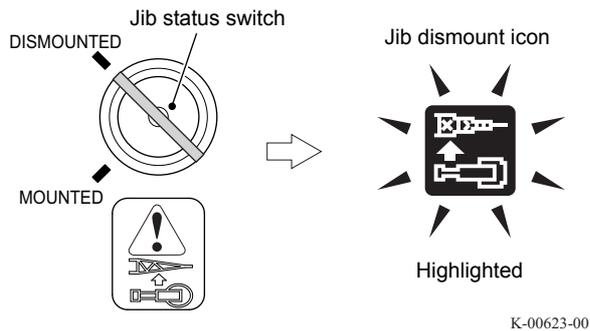
K-01454-00

4. Dismount the jib from the crane body.

5. Set the jib status switch to "DISMOUNTED".

- The jib dismount icon highlights on the AML.

⚠WARNING
Make sure that the switch position corresponds to the actual jib mounting status. Otherwise, the calculation base of the AML is inaccurate, and the machine can overturn or be damaged.



Mounting Removed Jib

⚠ WARNING

For the basic precautions, refer to the previous section "Stowing Jib".
Observe the precautions in the section "Stowing Jib" during operation.

NOTICE

Choose a suitable second crane for mounting the jib to the boom according to the lifting method and crane operation conditions.

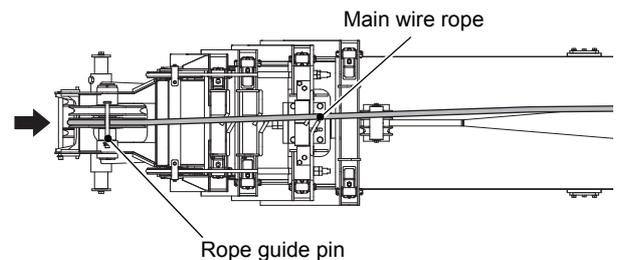
1. Extend the outriggers and set up the crane horizontally in a place where sufficient space is available for jib mounting.

☞ When outrigger extension width is less than 5.0 m, the jib cannot be mounted while the upper slewing structure is directed toward the sides.

☞ For jib lift using the auxiliary winch, refer to "Pulling Out and Stowing Auxiliary Wire Rope" (page 245) and pull out the auxiliary wire rope. Skip the following step 2.

2. Remove the main wire rope from the main hook block, and reeve the wire rope through the sheave for single top/jib lift on the upper side of the top boom section.

☞ For removal of the wire rope, refer to "Reeving Wire Rope" (page 236).

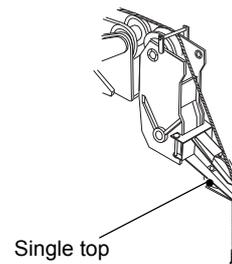


K-01385-00

3. Refer to "Single top" (page 257) to mount the single top.

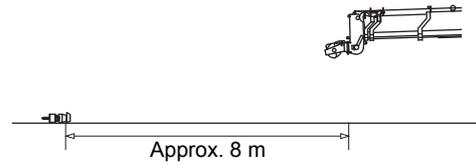
NOTICE

Do not install the switch for anti-two-block device to the single top. It can be damaged due to interference during jib stowing, etc.



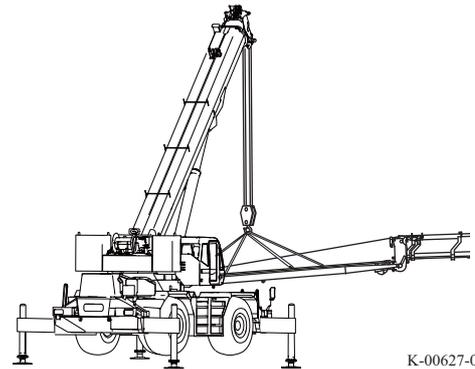
K-00625-00

- Take out the auxiliary hook block and the weight for the anti-two-block device from the stowing position, and place them approx. 8 m away from the boom head.



K-00626-00

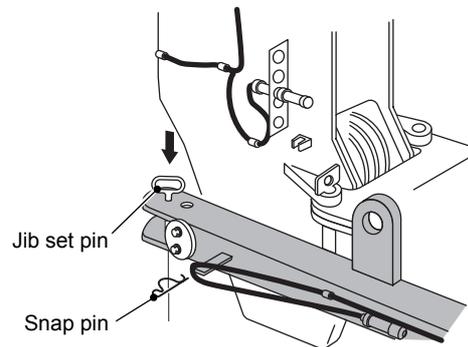
- Lift up the jib horizontally with another crane, and move the jib to the position where the jib and boom can be connected.



K-00627-01

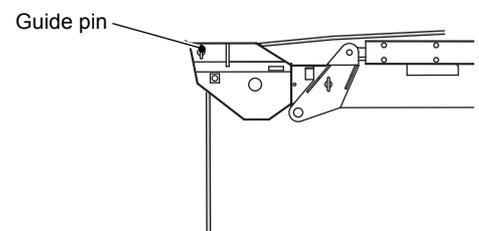
- Install the jib to the jib support on the boom head, and fix it with the jib set pin. Insert the jib set pin on the right of the boom into the hole closer to the jib base.

NOTICE
Do not insert the jib set pin into the hole closer to the jib head. Otherwise, the jib can be damaged when stowed.



K-01455-00

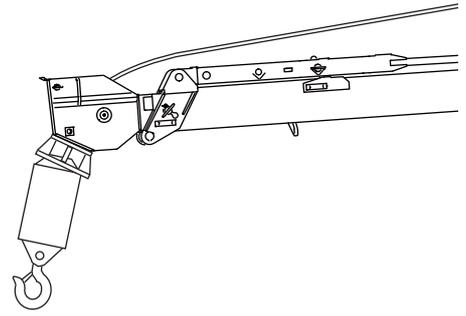
- Pass the wire rope between the sheave on the jib head and the guide pin.



K-01456-00

- Pull out the wire rope, and install the weight for anti-two-block device and the auxiliary hook block.

9. Hoist up the auxiliary wire rope, and make the auxiliary hook block slightly contact with the head of the jib.



K-01429-00

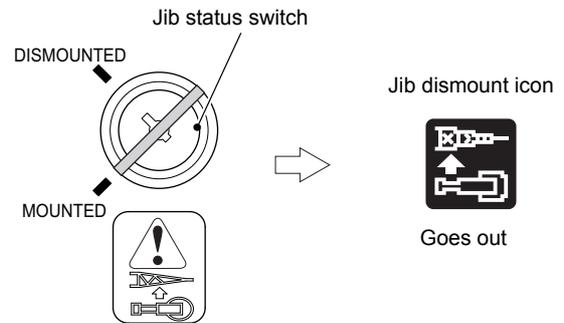
10. Perform the step 15 and afterward in "Stowing Jib" and stow the jib.

11. Set the jib status switch to "MOUNTED".

- The jib dismount icon on the AML.

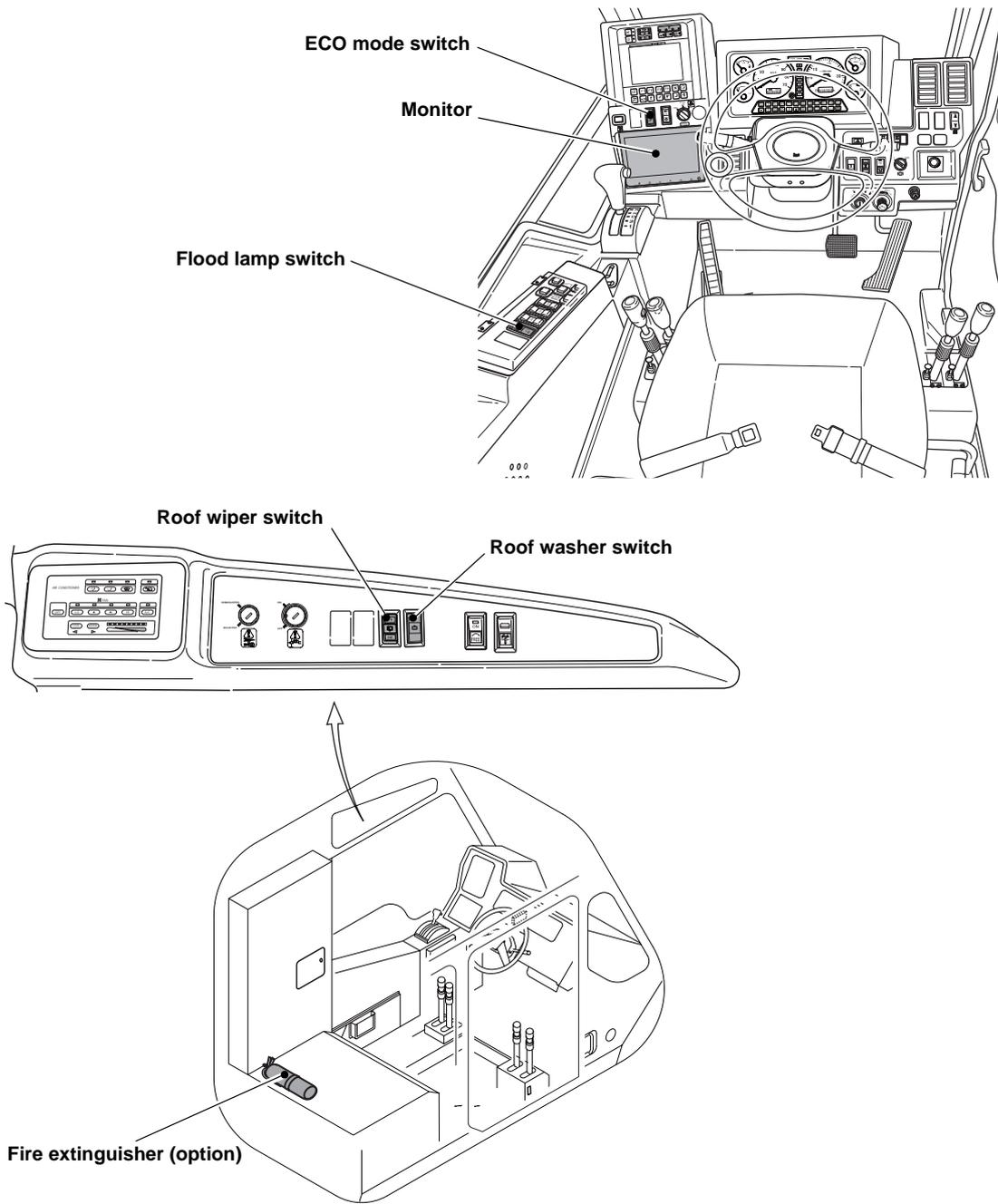
⚠ WARNING

Make sure that the switch position corresponds to the actual jib mounting status. Otherwise, the calculation base of the AML is inaccurate, and the machine can overturn or be damaged.



K-00631-00

Accessories in Cab



K-04865-00

Flood Lamp Switch

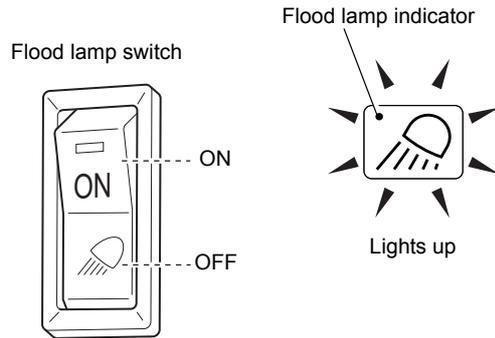
Use this switch during night operation.

When this switch is turned "ON", the flood lamp (the lamp on the top front of the cab) lights up.

- The flood lamp indicator lights up while the flood lamp is lit.

NOTICE

Turn off the flood lamp while traveling on a road.



K-00633-00

Roof Washer Switch

While this switch is pressed, the washer liquid is sprayed to the roof glass.

Release the switch to stop spraying.

- ☞ If the washer liquid does not come out, do not keep pressing the roof washer switch. The washer fluid pump will be damaged. Check the washer liquid level and clogging of the washer nozzle.

Roof Washer Switch



K-00634-00

Roof Wiper Switch

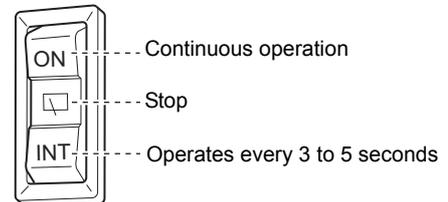
When this switch is set to "ON" or "INT", the roof wiper is operated.

- "ON"
Continuous operation
- "INT"
Operates every 3 to 5 seconds.

- ☞ If the wiper is operated while the glass is dry, the glass is scratched. Spray washer liquid before operating the wiper.

- ☞ When the glass is frozen or the wipers are not used for a long time, make sure that the wiper blades do not stick to the glass.
If you operate a wiper while its blade is stuck to the glass, the wiper blade will be damaged.

Roof Wiper Switch



K-00635-00

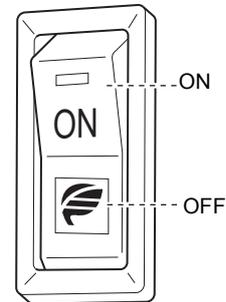
ECO Mode Switch

In this mode, you can control the machine fuel consumption and the noise from the crane operation. While the ECO mode switch is "ON", the maximum engine speed of the crane operation is restricted, and the fuel consumption and noise of the crane operation is controlled.

 The crane operation speed becomes slower with restricted maximum engine speed. Select a suitable ECO mode according to the crane operation to be performed.

 You can choose an ECO crane operation mode from 2 ECO modes, when the ECO mode switch is on. Refer to "Automatic Moment Limiter (AML)" (page 136).

ECO mode switch

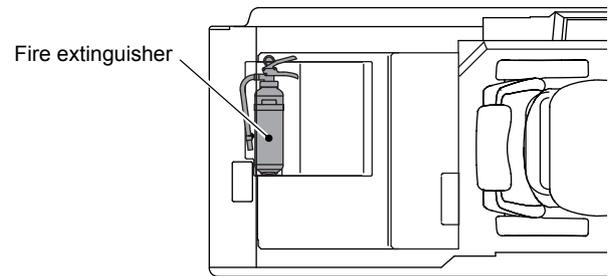


K-00636-00

Fire Extinguisher (Option)

The fire extinguisher is located at the back of the cab.

- 1.** Pick the fire extinguisher and pull out the safety pin.
- 2.** Take the hose and aim it at the base of the fire.
- 3.** Squeeze the lever firmly and discharge the fire extinguishing agent.



K-01459-00

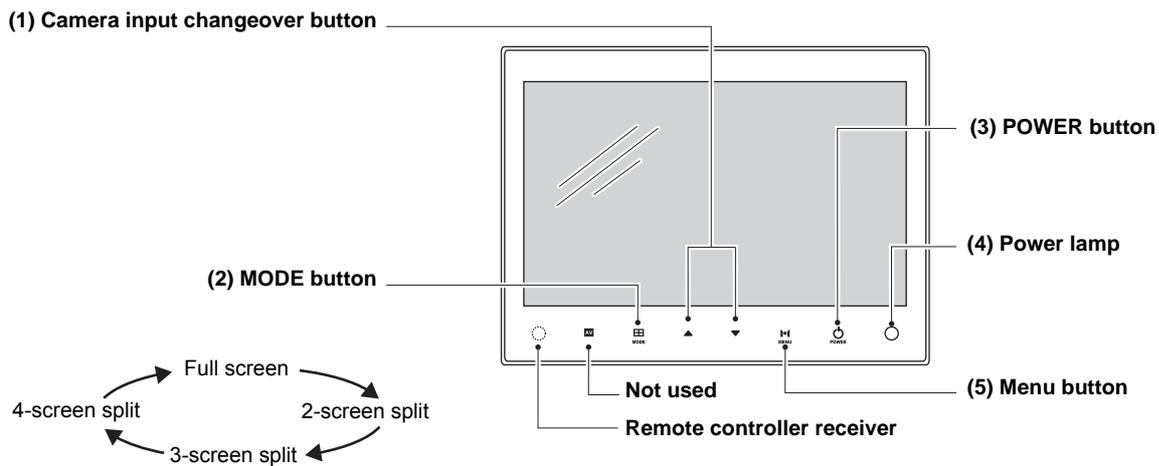
Monitor (Option)

⚠ WARNING

Do not operate the monitor while traveling. Monitor operation can distract crane operation and cause a serious accident.

The monitor is provided as a visual aid for crane operation.

☞ For the menu screen in the monitor setting, refer to the separate monitor operation manual.



K-01576-00

(1) Camera input changeover button

Changes the camera input.

- "1": Image from winch drum monitoring camera
- "2": Not used
- "3": Not used
- "4": Not used
- "External input": Not used

(2) MODE button

Changes the display mode on the monitor.

The mode is changed by pressing the button.

(3) POWER button

Turns on/off the monitor power.

(4) Power lamp

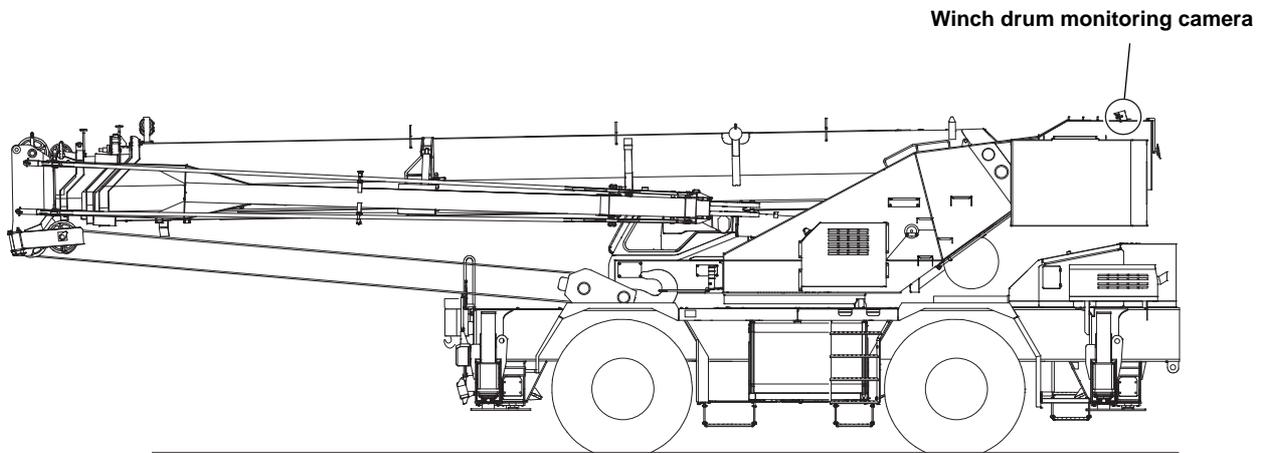
- Lights up while power is off (no image or standby).
- Goes out while power is on (image is displayed).

(5) Menu button

Opens the monitor setting menu screen.

Application	Class	Purpose	Function
During crane operation	Winch drum monitoring	Displays the image from the camera on the winch drum in order to check the winch drum status.	When the PTO switch is turned to ON, the image from the winch drum monitoring camera is displayed.

Camera Position



K-01578-00

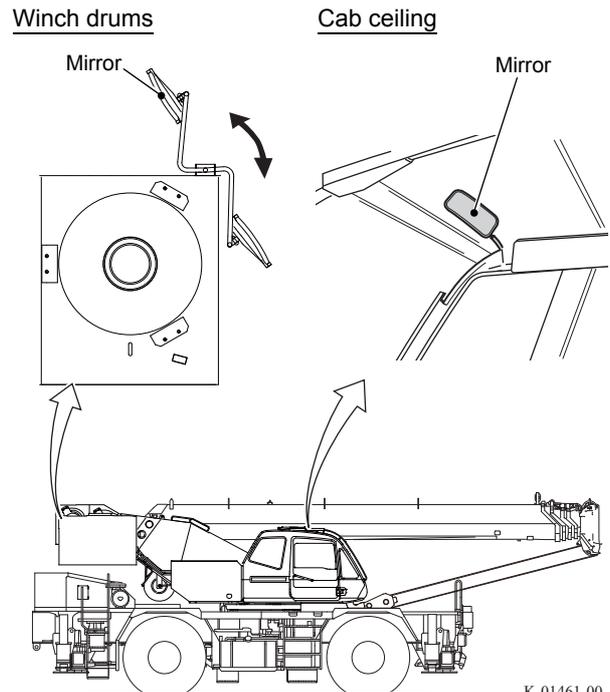
Outside Cab Accessories

Winch Drum Monitoring Mirror

NOTICE

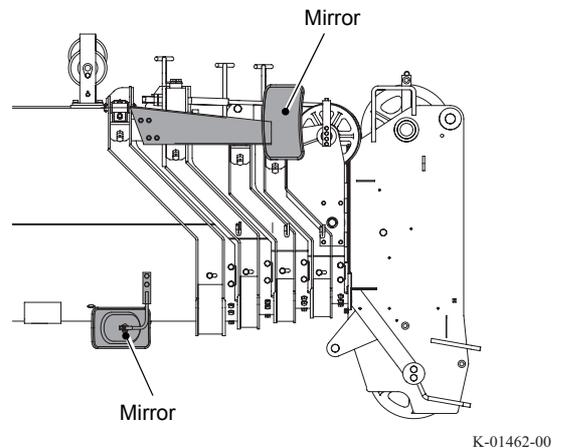
- If a load is hoisted up with the wire rope wound disorderly on the winch drum, the wire rope can be damaged, shortening the life of the wire rope. Do not hoist up the load when the wire rope is wound disorderly.
- Stow the mirrors before traveling on a road.

You can monitor the winch drums with these mirrors.
Adjust the mirror on the ceiling of the cab and the mirror on the winch so that the winch drums can be monitored.



Boom Head Mirror (Option)

You can monitor the sides of the boom with these mirrors.
Use these mirrors when checking the sides of the boom during traveling and boom slewing.



Boom Top Flood Lamp (Option)

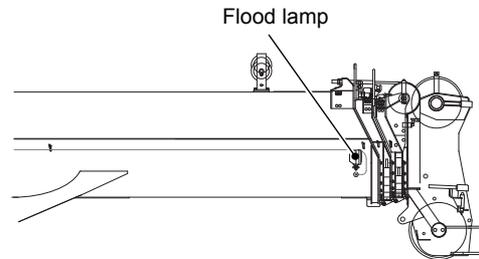
NOTICE

Turn off the flood lamp while traveling on a road.

Use this switch during night operation.

Turn the flood lamp switch to "ON" to turn on the boom top flood lamp, which works with the flood lamp (on the front top of the cab).

 For the flood lamp switch, refer to "Accessories in Cab" (page 328).



K-01460-00

INSPECTION AND MAINTENANCE

Precautions for Inspection and Maintenance

⚠️ WARNING

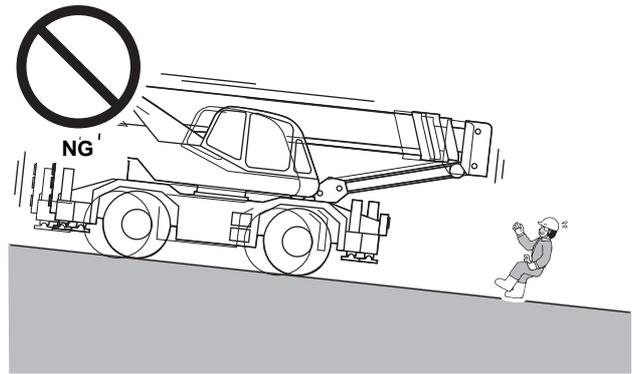
This section describes the precautions to prevent an accident during inspection and maintenance of the machine. For specific precautions, refer to the corresponding paragraphs in the main text of this manual (white pages).

Illustrations supplement the precautions and show you where the important points are. Note that the shapes, etc. in the illustration can be different from the actual machines.

Precautions for Inspection and Maintenance

- **Perform Inspection and Maintenance on Level Ground**

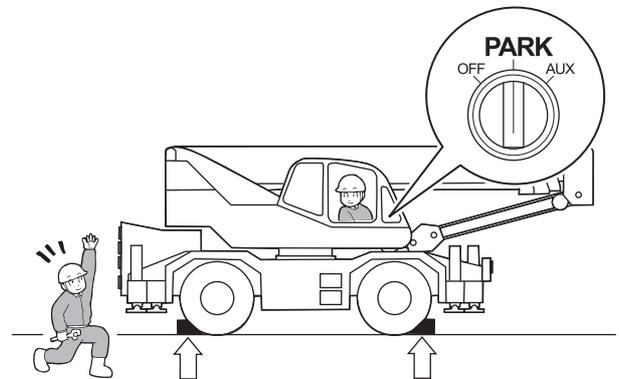
If the machine is parked on a slope, the machine cannot be inspected correctly. Also, the machine can move by its own weight and cause a caught-in accident. When you carry out inspection and maintenance of the machine, park the machine on a level and firm ground, and place wheel chocks on the tires.



K-02276-00

- **Set Wheel Chocks on Tires**

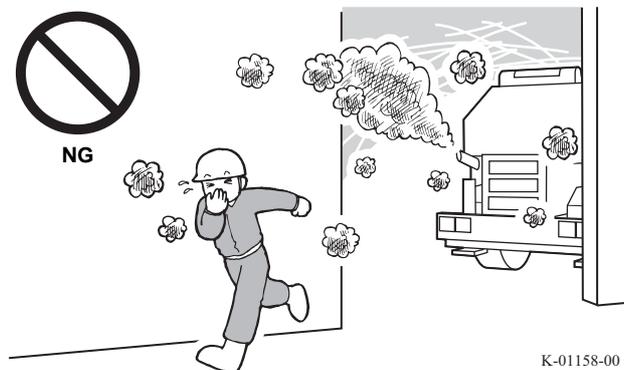
If the parking brake is not securely applied, or wheel chocks are not placed on the tires, the vehicle can start moving, causing an unexpected accident. Securely apply the parking brake, set the shift lever to "N", and set wheel chocks to the tires.



K-02238-00

- **Pay Attention to Ventilation**

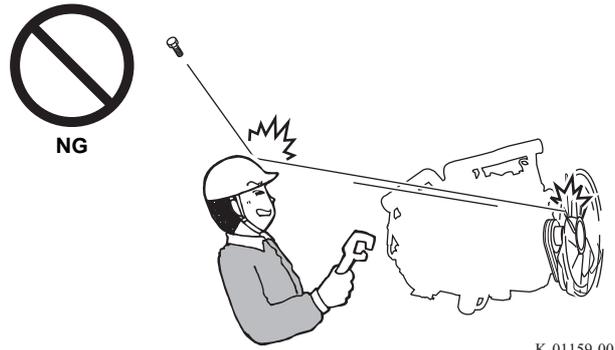
If an operation is performed indoors or in a poorly ventilated place, a gas poisoning can occur. Exercise extreme caution when handling fuel, washing oils, and paints. Particularly, proper ventilation is required when the engine is started indoors. Extend the exhaust pipe outdoors, and open doors and windows of the place to allow the sufficient fresh air to enter. Install a ventilator as necessary.



K-01158-00

- **Stop the Engine during Inspection and Maintenance**

If you touch or approach a rotating part while the engine is running, your hands or clothing can be caught, resulting in an injury. Before inspecting the machine, stop the engine.



K-01159-00

- **Keep Away from Moving Parts**

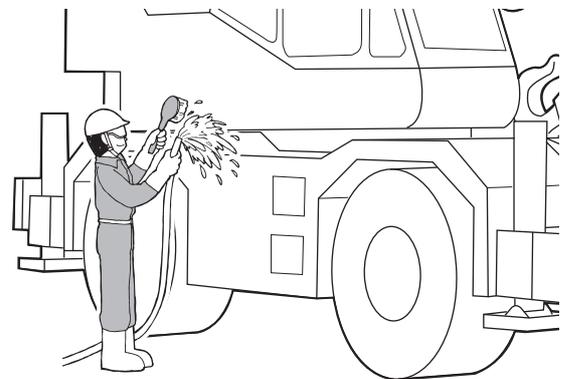
If someone operates the machine accidentally, or if you touch a moving part, you can be caught by the machine. It is extremely dangerous. If inspection and maintenance must be performed with the machine operated, keep away from the movable parts such as the boom, boom elevating cylinder, winch, fan, fan belt, propeller shaft, etc. In addition, allow no one to gain access to these parts. When you have to work near movable parts, exercise extreme caution so that your hands or clothing do not touch the movable parts.



K-01160-00

- **Wash the Machine before Inspection and Maintenance**

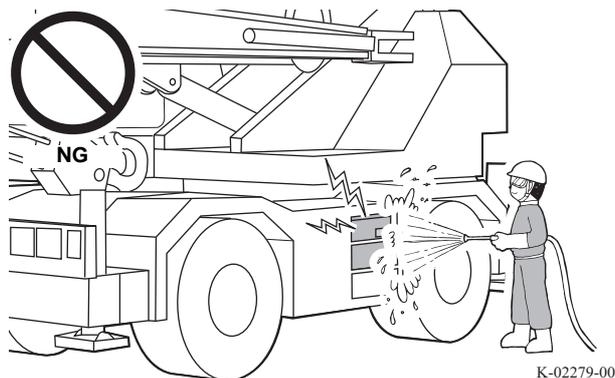
If the machine is soiled, it is difficult to find a faulty part, and the dirt easily enters the machine during inspection and maintenance. In addition, dust or mud can get into your eyes, or your feet can slip, resulting in an injury. Before inspection and maintenance, wash the machine.



K-02278-00

- **Precautions for Washing the Machine**

If water is sprayed on the area where high pressure washing is prohibited, it can cause a short circuit and a failure. Do not spray water on the area where high-pressure washing is prohibited.



K-02279-00

- **Keep the Work Site Tidy and Clean**

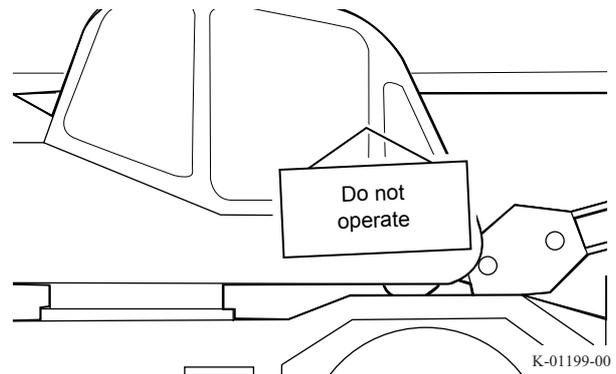
Inspection and maintenance in a disorderly work site poses a risk of injury and a falling accident. Put away objects which can hinder work.



K-02280-00

- **Indication of Being under Inspection and Maintenance**

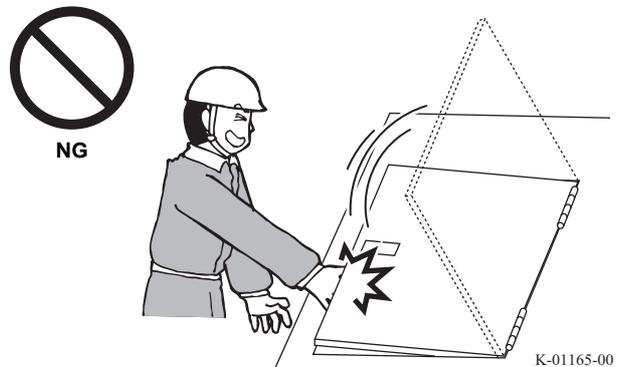
If an unauthorized person carelessly starts the engine during inspection and maintenance, it can cause damage to the machine, a physical injury, or death. Hang a warning tag on the door or on the control levers in the driver seat to notify the others that the machine is being inspected and maintained. Also, place tags around the machine to keep the unauthorized people away from the inspection and maintenance site.



K-01199-00

- **Lock Inspection Cover**

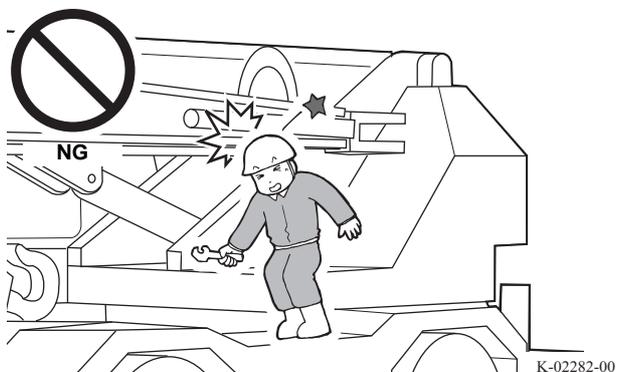
If covers or doors such as the inspection cover are left open, they can close suddenly by gusts of wind, and you can be pinched and injured. After opening the inspection cover, doors, and cab doors, lock them.



K-01165-00

- **Watch Your Head and Step**

If your attention is distracted, or if you walk on a surface with poor footing, you can hit your head against the overhead objects such as the hook block, boom, and jib, or your feet can slip, resulting in a falling accident.

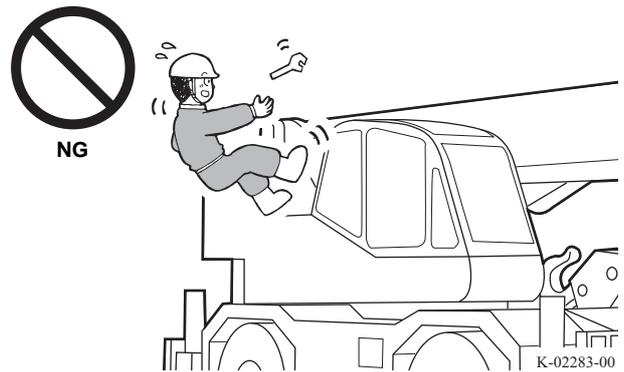


K-02282-00

- **Precautions for Inspection and Maintenance at High Place**

Inspection and maintenance operation at an elevated place poses a risk of a falling accident.

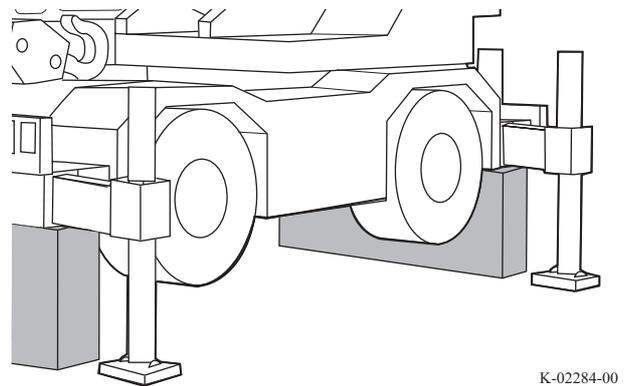
When you work at an elevated place, use a safety belt to prevent a falling accident. Falling from an elevated place can result in a serious injury.



- **Precautions for Inspection and Maintenance Under the Machine**

If it is necessary to work under the machine with the jack cylinders extended, put props or wood blocks under the outriggers to support the machine securely and to prevent the machine from lowering even if the jack cylinders retract.

If the machine body is not held securely, do not perform any operation under the machine. If the machine lowers, a caught-in accident can occur.



- **Start Operation after Temperature Drops**

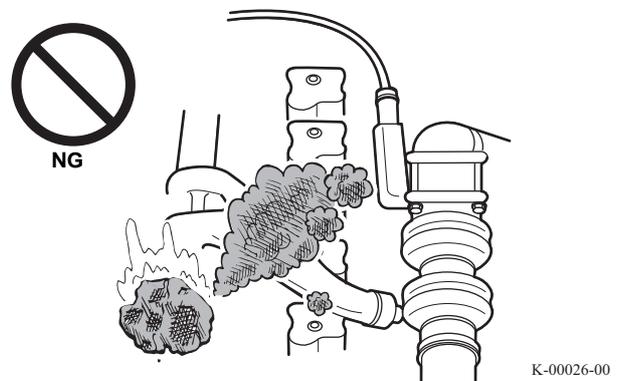
Do not touch hot components such as exhaust pipes and radiator immediately after the engine is stopped. You may suffer burns.

Start operation after each component has sufficiently cooled down.



- **Keep Surroundings of Engine Clean**

Check that rags, gloves, and tools are not left in the engine room. Flammable objects such as pieces of cloth can catch fire. In addition, tools can bounce due to vibration and damage the components.



• **Do Not Drop Tools and Parts**

When you work with the inspection cover opened, be careful not to drop objects into it. If you drop objects inadvertently, it can cause machine damage or malfunctions. After inspection and maintenance, always check that nothing is dropped in the machine.



K-01171-00

• **Watch Out for High-Pressure Oil**

If you directly touch the high-pressure fuel or hydraulic oil, it can cause a serious injury. Pay attention to the precautions below.

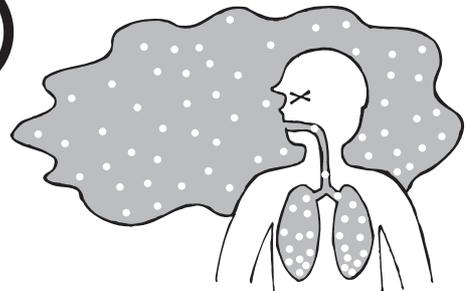
- Release the internal pressure before disconnecting the piping.
- To check leakage, wear protective glasses and protective gloves, and use pieces of cardboard or wood. It is dangerous to perform inspection with bare hands.
- If oil gets into your eyes or mouth accidentally, immediately seek medical attention.



K-01172-00

• **Watch Out for Dust**

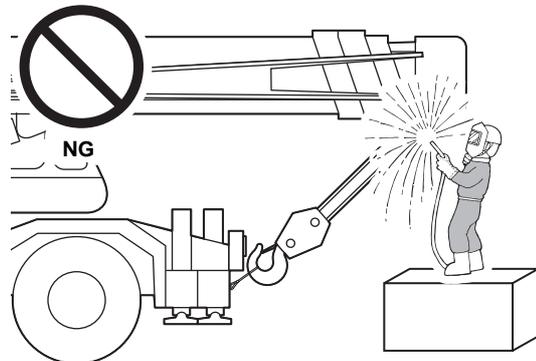
Do not inhale the dust raised during operation. Wear a dust mask during operation. Before carrying out inspection and maintenance of the brakes and lining, remove the dust with a vacuum cleaner. Do not use compressed air, which disperses dust into the air.



K-01173-00

• **Do Not Perform Welding on Machine Body**

Welding work (electric welding) on the machine body can damage the electrical and electronic equipment. Never perform welding on the machine body. When a welding work (electric welding) must be performed, contact Tadano Escorts India Private Ltd. or a dealer to have the work done.



K-01174-00

• **Prevention of Fire**

You handle flammable and hazardous objects such as fuel and batteries during inspection and maintenance. Observe precautions below to prevent a fire.

- Use nonflammable cleaning liquid to clean parts.
- Keep away oils and greases from fire while being stored.
- Extinguish flames (such as a lit cigarette) that can cause a fire.
- Keep firefighting equipment such as fire extinguishers at the ready.
- Use explosion-proof illuminating equipment when you inspect fuel, oil, and battery electrolyte.
- Particularly during grinder and welding work, keep hazardous objects away and watch out for fire.



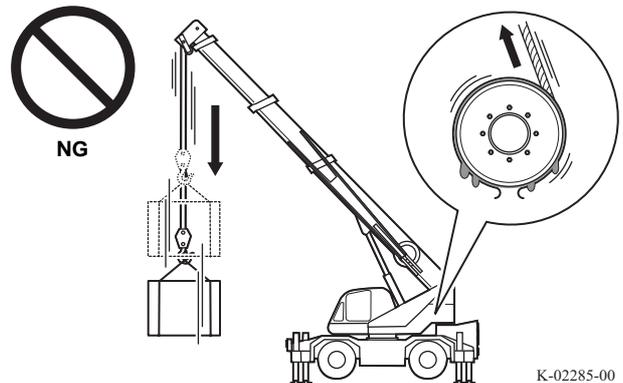
• **Illumination**

If you work under insufficient illumination, an injury can occur. Provide sufficient illumination for operation. Do not use a match, cigarette lighter, or other open flame for illumination. They can cause a fire, or the gas from the battery can be ignited and explode. Use explosion-proof illuminating equipment when you inspect fuel or battery electrolyte.



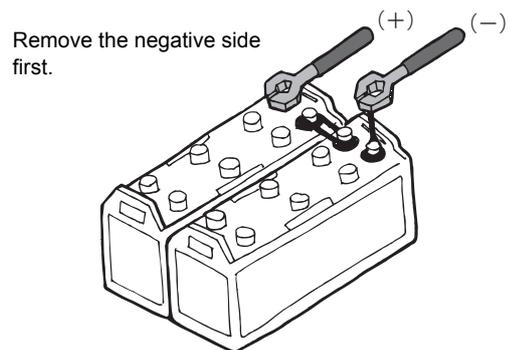
• **Avoid Adherence of Oil and Grease**

If oil or grease adheres to the lining or disc of the clutch or brake, the braking force will be reduced and creates hazardous situations. Be careful not to allow oil or grease to adhere to these surfaces.



• **Remove the Battery Cable during Inspection and Maintenance of the Electrical System**

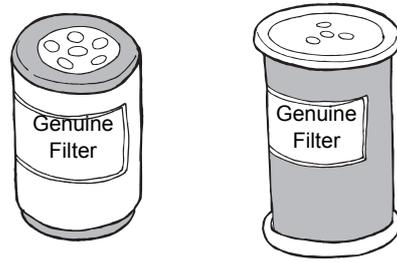
If inspection and maintenance of the electrical system is carried out without disconnecting the battery cables, the wiring can short-circuit and damage the electrical and electronic equipment. Before performing inspection and maintenance of the electrical systems, disconnect the battery cable on the negative terminal side (ground side).



- **Use Genuine Parts**

Use of non-genuine parts can pose a risk regarding safety and function.

When you replace parts such as a filter, use designated genuine parts.

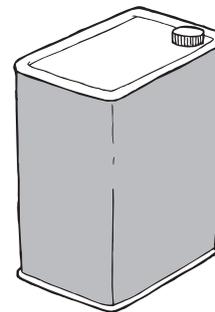


K-02593-00

- **Use Designated Oils and Greases Only**

Equipment can be adversely affected if oils or greases of brand and grade other than designated are used, or oils and greases of different brands are mixed.

When you replenish or replace oils or greases, use the designated oils and greases only. If you replace oils or greases with a different brand, replace entire amount of them.



Genuine OIL

K-02594-00

- **Replace Periodic Replacement Parts**

If you do not replace the periodic replacement parts as specified, an accident can occur.

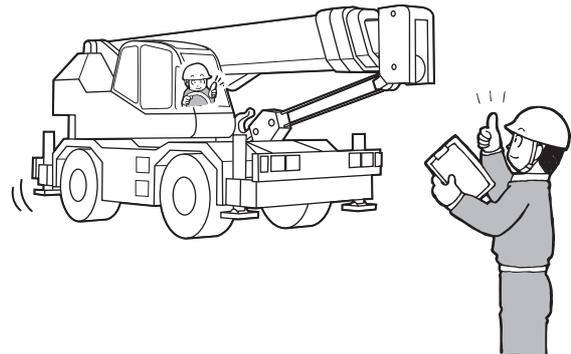
Observe the replacement intervals, and replace them periodically.

- **Check after Maintenance**

If you neglect the operational checks after maintenance, it can delay the discovery of oil leakage or malfunction. This can cause an accident.

After a maintenance work, check that the operation of the components where maintenance has been performed is normal, there is no oil leakage, and no bolts are left untightened.

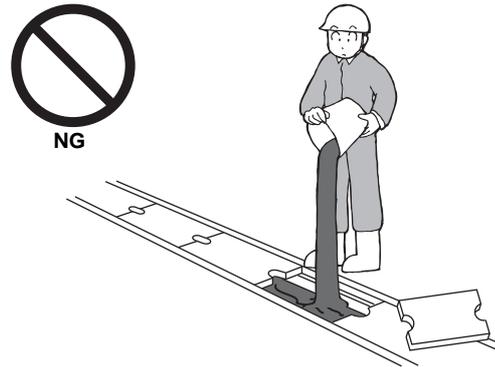
Note that the maintenance is not completed until you confirm that the machine operates properly.



K-02288-00

- **Disposing of Waste**

Improper disposal of waste, such as waste oil from the machine and used filter, pollutes the environment. When you drain waste oil from the machine, collect it in a container. Do not pour the waste oil on the ground, or do not discharge it into a river or pond. When you dispose of the waste oil, fuel, coolant, brake fluid, solvent, filters, batteries or other toxic substances, request an industrial waste disposal contractor for their disposal.

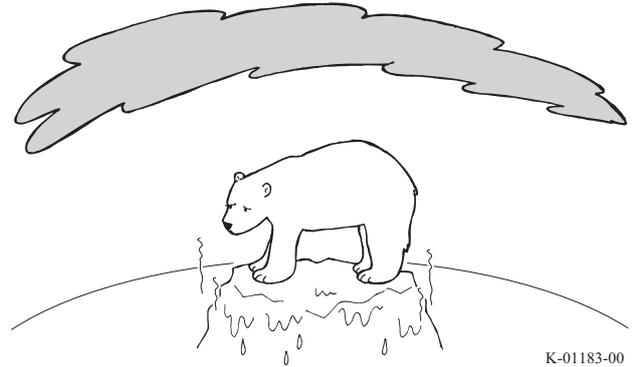


K-01182-00

- **Never Release Fluorocarbons into Atmosphere**

In order to protect the global environment, observe the precautions below.

- (1) Do not emit the refrigerants (fluorocarbons) enclosed in these products.
- (2) Collect the refrigerants (fluorocarbons) enclosed in these products when disposing of these products.



K-01183-00

Inspection and Maintenance

About Inspection and Maintenance

NOTICE

- **The indicated inspection and maintenance frequency assumes normal operating conditions. For severe use (severe conditions), shorten intervals between inspection and maintenance.**
- **If you cannot perform inspection and maintenance yourself, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.**

Proper inspection and maintenance ensures safe operation, and extends the service life of the machine. In order to get full performance from the machine, carry out inspection and maintenance at the specified intervals to prevent failure and detect any potential failures as early as possible.

1. Replacement of important periodic replacement parts (refer to "Periodic Replacement Part" (page 348))
Periodic replacement of these parts is mandatory to ensure safety of crane operations.
2. Ordinary periodic replacement parts (refer to "Periodic Replacement Part" (page 348))
The replacement of those parts at regular intervals is recommended.
For some of the ordinary periodic replacement parts, different replacement intervals are applicable if conditions of severe use apply (refer to "Under Severe Use (Severe Condition)" (page 346)).
3. Inspection and maintenance items for carrier "Inspection and Maintenance Interval (Carrier)" (page 351)
Those inspection and maintenance items for the carrier are required to ensure the safety of crane operations. The following inspections are included.
 - Daily inspection (before traveling)
 - Monthly inspection
 - Quarterly inspection
 - Yearly inspection
 - Others such as overhauling that are needed depending on the parts.Different inspection and maintenance items are applicable if conditions of severe use section apply (refer to "Under Severe Use (Severe Condition)" (page 346)).
4. Inspection and maintenance items for crane "Inspection and Maintenance Interval (Crane)" (page 357)
Those inspection and maintenance items for the crane are required to ensure the safety of crane operations. The following inspections are included.
 - Daily inspection (Pre-operational inspection)
 - Monthly (or shorter period) inspection
 - Yearly (or shorter period) inspection
 - Others such as overhauling that are needed depending on the parts.Different inspection and maintenance items are applicable if conditions of severe use section apply (refer to "Under Severe Use (Severe Condition)" (page 346)).

Perform inspection and maintenance based on the time displayed on the hour meter or the specified interval, whichever comes first.

Standard schedule for inspection and maintenance assumes that 100 working hours correspond to 1 month. Intervals described in this manual assume that the machine is used under normal operating conditions. Correctly perform inspection and maintenance at every specified interval.

Under Severe Use (Severe Condition)

If the machine is used under severe conditions which are remarkably different from standard use, components may deteriorate much sooner. In this case, it is necessary to carry out inspection and maintenance earlier than the standard periods.

To keep machines that are routinely used under severe conditions always in good condition, apart from regular periodic inspections, carry out additional inspection and maintenance as recommended by Tadano Escorts.

Conditions of Severe Use

If any one of the following conditions is present, "severe use" is applicable.

Carrier

- A: Traveling distance on rough roads (uneven road, gravel road, unpaved road, etc.) or snow-covered roads, or in dusty zones, is 15% or more of total traveling distance.
- B: Traveling distance is long (Criterion: 1,000 km per month or over).
- C: Traveling distance on mountainous roads, uphill and downhill, is 15% or more of total traveling distance.
- D: Starts and stops are frequently repeated, or low-speed traveling distance is 15% or more of total traveling distance.
- E: Traveling on non-public roads with a weight that exceeds the road traveling vehicle condition is 15% or more of total traveling distance, or traveling at a speed exceeding the recommended speed for that weight.

Crane

- A: Loads of full lifting capacity are lifted often, and usually the loads are heavier than half of the lifting capacity.
(Usually, lifting loads of 50% to 80% of the lifting capacity)
- B: Usually lifting the lifting capacity.
(Usually, lifting loads of 80% or more of the lifting capacity)
- C: Using a crane equipped with a bucket, grapple, and magnet, or using for general stevedoring such as carrying containers and tetra pods.

Periodic Replacement Part

⚠ WARNING

If periodic part replacement is neglected, a machine failure or a serious accident can occur. Replace periodic replacement parts in accordance with the specified inspection criteria and at the specified intervals.

Some component parts of your machine deteriorate over time.

Even without any visible wear, such parts must be replaced periodically to ensure safety.

The following tables give recommended/required replacement intervals for the two types of such parts:

- Important periodic replacement parts

The parts for which periodic replacement is required to ensure the safety of crane operations.

- Ordinary periodic replacement parts

The parts for which periodic replacement is recommended.

The replacement intervals are either based on the hour meter reading or months/years.

Replace the parts according to the intervals whichever comes first.

If local laws and regulations specify shorter replacement intervals, observe them.

Contact Tadano Escorts India Private Ltd. or a dealer to have these parts replaced at the periodic intervals.

Important periodic replacement parts

Replace the parts in the tables below according to the specified replacement intervals.
The indicated replacement intervals are requirements.

Important periodic replacement parts		Replacement interval (required)
Electrical parts	Control release switches	4 years or 4,800 hours
	Detect switches (for safety devices)	
	Operation detect switches	
	Position sensors	8 years or 9,600 hours
	Load sensors	
Steering system	Hoses for steering	2 years
	Packings, O-rings for steering cylinders	
	Packings, O-rings for steering circuit	
Brake system	Brake hoses	2 years
	Seals, O-rings, cups for brake valves	1 year
	Seals, O-rings, cups for air boosters	
	Piston seals, dust seals for brake calipers	
	Rubbers, packings for brake air system	
Engine	Fuel hoses	2 years
	Hoses for engine coolant	4 years
Air pressure system	Desiccating agent, filters, packings for air drier	1 year or 1,200 hours
Others	Hoses for air compressor	2 years
	Hydraulic hoses for driving	4 years
	Stop lamp switch	2 years
	Safety valves	
	Solenoid valves	4 years
	Parking detect switch	2 years

Important periodic replacement parts (Oil, filter)		Replacement interval (required)	First replacement
Steering system	Steering filter	1 year or 1,200 hours	
Brake system	Brake fluid	1 year or 1,200 hours	
Powertrain system	Transmission oil	1 year or 1,200 hours	1 month (100 hours)
	Transmission filter		
	Differential oil	2 years or 2,400 hours	
	Axle wheel hub planetary gear oil		
Engine	Engine Oil	250 hours	
	Oil filter	500 hours	
	Air cleaner element	1 year or 1,200 hours	
	Fuel filter	500 hours	
	Long life coolant	2 years or 2,400 hours	
Slewing system	Gear oil for reducer	1 year or 1,200 hours	
Hydraulic Oil Tank	Hydraulic oil	4 years or 4,800 hours	
	Oil filter	1 year or 1,200 hours	
	Air breather cap	6 months or 600 hours	
	Line filter	2 years or 2,400 hours	

Ordinary periodic replacement parts

Replace the parts in the table below as required according to the check results.

The indicated replacement intervals are guidelines.

Ordinary periodic replacement parts			Replacement interval (guideline)	
Hydraulic equipment	Seals for safety valves, control valves, proportion valves, solenoid valves		4 years or 4,800 hours	
	Packings for center joint		4 years or 4,800 hours	
			Severe condition	2 years or 2,400 hours
	Seals for hydraulic motors, pumps, reducers		5 years or 6,000 hours	
	Hydraulic cylinder	Packings		5 years or 6,000 hours
			Severe condition	2 years or 2,400 hours
	Hydraulic hose	General		5 years or 6,000 hours
		Hoses in outriggers		4 years or 4,800 hours
		Hoses for hose reel, packings		
		In the boom, for winch		4 years or 4,800 hours
Severe condition	2 years or 2,400 hours			
Boom (jib) parts	Sheaves for hoisting		4 years or 4,800 hours	
	Sheaves for telescoping		4 years or 4,800 hours	
		Severe condition	2 years or 2,400 hours	
	Slide plates for boom		4 years or 4,800 hours	
		Severe condition	2 years or 2,400 hours	
	Electric cable		5 years or 6,000 hours	
Wire rope for telescoping ^(*1)		10 years		
Winch parts	Winch wire rope		Depending on the wire rope replacement criteria	
	Safety latch bolts and collars for hook		3 years or 3,600 hours	
Electrical parts	Cord for anti-two-block cord reel		2 years or 2,400 hours	
		Severe condition	1 year or 1,200 hours	
	Control switches		4 years or 4,800 hours	
	Detection switches			
	Switch for anti-two-block device		3 years or 3,600 hours	
	Center joint brushes		4 years or 4,800 hours	
Other parts	WARNING, CAUTION, and DANGER name plates		Depending on check result	

(*1): If proper rope tension cannot be maintained by adjustment any more, or any damage or wear is found, replace the rope.

Inspection and Maintenance Interval (Carrier)

The following table describes the daily (before traveling), monthly, quarterly and annual inspection and maintenance items.

This manual describes the procedures for daily inspection (before traveling) to be conducted by users. Perform the inspection before operating the machine. For the inspection procedures, refer to "Inspection before Traveling" (page 363).

○ : Tadano Escorts designated inspection period

◇ : Tadano Escorts designated severe condition

Inspection and maintenance item			Inspection and maintenance interval				Remarks
			Daily inspection	Monthly	Quarterly	Yearly	
Components	Inspection item						
Steering system	Steering wheel	Operating condition			○		
		Play, looseness			○		
		Inspection of operation force			○		
	Gear box (Orbitrol)	Oil leakage			○		
		Looseness of mounting			○		
		Looseness of bearing				○	
	Rods and arms	Looseness, vibration and damage			○		
		Crack and damage of dust boots for ball joint				○	
		Bend of tie rod			○		
	Knuckle	Looseness in connecting part (Knuckle and king pin)		◇	○		
		Looseness in connecting part (Knuckle and vertical directions of axle)		◇	○		
		Crack				○	
	Steered wheel	Wheel alignment				○	
		Right and left turning angle				○	
	Power steering system	Oil leakage and amount of oil (Piping, hose, joint, pump, valve, cylinder)			○		
		Looseness of mounting (Pump, valve)			○		
		Looseness in steering cylinder connecting part				○	
		Crack and damage on steering cylinder dust boots				○	
		Damage and wear on steering cylinder rod and internal surface of the cylinder			Every 2 years		Overhaul before inspection
		Function of steering solenoid valve			○		
Steering pump, volume control valve function check				Every 2 years			
Steering lock	Function of rear wheel steering lock			○			

Inspection and maintenance item			Inspection and maintenance interval				Remarks
			Daily inspection	Monthly	Quarterly	Yearly	
Components	Inspection item						
Brake system	Brake pedal	Depressing stroke	○				
		Play and clearance to floor when pedal is depressed		◇	○		
		Braking condition	○		○		
	Parking brake mechanism	Operation condition of parking brake and switch (operation sound of air)	○		○		
		Braking condition			○		
	Hose and pipe	Leakage, damage and mounting status			○		
	Reservoir tank	Fluid level	○		○		
	Master cylinder, wheel cylinder, disc caliper	Liquid leakage from caliper				○	
		Function, wear, damage				○	
		Disassembly, inspection, and maintenance of caliper				○	
	Air pressure gauge	Air pressure rising condition	○		○		
	Brake valve, quick release valve, relay valve	Function			○		
		Exhaust sound from brake valve	○				
		Air leakage from brake valve			○		
		Function of check valve and relay valve				○	
	Air booster	Function				○	
		Clogging of air breather (cleaner)				○	
		Oil tightness and air tightness of air booster				○	
		Brake valve, disassembly, inspection, and maintenance of air booster				○	
	Brake disc and pads	Clearance between brake disc and pads			○		
Pad wear				○			
Brake disc wear and damage					○		
Brake system	Center brake disc and pads	Looseness in mounting of disc				○	
		Clearance between brake disc and pads				○	
		Pad wear				○	
		Brake disc wear and damage				○	
		Wear of cam roller guide				○	
		Looseness and vibration in chamber mounting area			○		
		Air leakage from chamber				○	
		Disassembly, inspection, and maintenance of chamber				○	
Exhaust brake	Function			○			

Inspection and maintenance item			Inspection and maintenance interval				Remarks
			Daily inspection	Monthly	Quarterly	Yearly	
Components	Inspection item						
Traveling system	Tires	Air pressure in tires	○				
		Crack and damage	○				
		Unusual wear	○				
		Depth of groove	○				
	Wheel	Mounting conditions of and damage to tires and wheels	○		○		
		Tire conditions			○		
		Looseness of wheel nut and wheel bolt			○		
		Damage to wheel nut and wheel bolt				○	
		Looseness in front wheel bearing			○		
		Damage to rim, side ring and wheel				○	
Looseness in rear wheel bearing					○		
Tire rotation		Every 5,000 km					
Axle housing	Crack, damage, and deformation of axle				○		
Suspension system	Leaf spring type suspension	Damage of spring		◇	○		
		Looseness and damage of spring mounting and connecting parts			○		
Powertrain system	Transmission and torque converter	Oil leakage and oil level	○		○		
		Mounting state, bolt elongation, oil contamination		◇	○		
		Operation of transmission mechanism			○		
		Inspection and cleaning of strainer				○	
		Crack and damage of hose				○	
		Clutch oil pressure				○	
	Propeller shaft and Axle shaft	Looseness in connecting part		◇	○		
		Crack and damage of universal coupling dust boots				○	
		Looseness in coupling				○	
		Looseness in propeller shaft center bearing				○	
		Propeller shaft runout				○	
		Greasing			○		
	Axle, differential	Oil leakage and oil level	○		○		
		Mounting, damage, deformation of front and rear axle housing			○		
Lubrication of movable parts and greasing					○		
Axle, hub	Greasing on hub bearing and axle shaft spline		Every 2 years or 24,000 km				
	Oil leakage and oil level			○			

Inspection and maintenance item		Inspection and maintenance interval				Remarks	
		Daily inspection	Monthly	Quarterly	Yearly		
Components	Inspection item						
Electrical system	Battery	Fluid level	<input type="radio"/>		<input type="radio"/>		
		Terminal connection conditions			<input type="radio"/>		
		Specific gravity of electrolyte				<input type="radio"/>	
	Electric wiring	Looseness and damage of connecting parts			<input type="radio"/>		
	Starting unit	Engagement of pinions				<input type="radio"/>	
	Charging unit	Charging function			<input type="radio"/>		

Inspection and maintenance item		Inspection and maintenance interval				Remarks	
		Daily inspection	Monthly	Quarterly	Yearly		
Components	Inspection item						
Engine	Main unit	Start-up, abnormal noise	○				
		Air cleaner element conditions	○	◇	○		Perform daily inspection by the dust indicator.
		Conditions in low speed and acceleration	○		○		
		Exhaust condition			○		
		Tightening status of each part of cylinder head and manifold				○	
		Compression pressure		Perform inspection when irregularity exists in start-up, low speed, acceleration, or exhaust condition.			
		Valve clearance					
	Lubrication unit	Oil level	○		○		
		Soiling			○		
		Oil leakage		◇	○		
	Fuel unit	Fuel Leakage	○		○		
		Injection pressure and injection condition of injection nozzle		Perform inspection when irregularity exists in start-up, low speed, acceleration, or exhaust condition.			
		Injection timing and injection amount					
		Function of feed pump					
		Inspection and cleaning of strainer					
		Cleaning of fuel tank		Refer to "Fuel System" (page 425).			
		Amount of water in water separator and fuel filter	○				
	Cooling unit	Coolant level	○				
		Looseness, tension, and damage of fan belt	○	◇	○		
		Water leakage				○	
		Looseness of hose band			○		
		Damage and mounting condition of coolant hose			○		
		Mounting condition and function of radiator cap			○		
		Clogging and cleaning of radiator fins			○		Clean every 500 hours
	Others	Mounting condition of engine mount				○	
	Lighting device and turn signal	Lighting and flashing condition, soiling and damage	○		○		
	Reflector, license plate	Soiling, damage, and mounting condition	○				

Inspection and maintenance item		Inspection and maintenance interval				Remarks
		Daily inspection	Monthly	Quarterly	Yearly	
Components	Inspection item					
Horn, wiper, windshield washer pump, defroster	Washer liquid level and spraying condition	○			○	
	Wiping condition	○			○	
	Operation				○	
Rear-view mirror and reflector	Reflecting condition, operation, mounting condition	○				
Exhaust pipe and muffler	Looseness and damage of mounting part			○		
	Function				○	
Air compressor	Water condensation in air tank	○		○		
	State of drain cock on air tank			○		
	Function of compressor, pressure regulator, and unloader valve				○	
	Function of air dryer			○		
Meters and gauges	Operation				○	
Chassis frame and body	Looseness and damage			○		
Seat	Seat belt condition				○	
Others	Irregularity found in previous driving	○				
	Lubrication condition of each part of chassis		◇	○		
Sound insulation plate and acoustic material	Mounting condition and damage of the sound insulation plate, etc.				○	

Inspection and Maintenance Interval (Crane)

The following table describes the maintenance items for the daily (pre-operational) inspection and periodic in-house inspection (every month or earlier; every year or earlier).

Carry out the inspection before traveling. For the inspection procedure, refer to "Pre-operational Inspection" (page 382).

○ : Tadano Escorts designated inspection

◇ : Tadano Escorts designated severe condition

(*1): Apply proper tension at periodic inspection.

Inspection and maintenance item		Inspection and maintenance interval			Remarks	
		Daily inspection	Every month or earlier	Every year or earlier		
Components	Inspection item					
Hydraulic pressure generating system	PTO system	Operation, oil leakage	○	○	○	
		Mounting, damage, heat generation, abnormal noise		○	○	
	Piping, hose	Oil leakage, deterioration	○	○	○	
		Mounting status, abnormal vibration, heat generation, abnormal noise		○	○	
	Hydraulic Oil Tank	Oil level	○	○	○	
		Mounting, crack, contamination, oil leakage		○	○	
		Clogging and contamination of air breather		○	○	
	Filter, case	Clogging, oil leakage, damage		○	○	
	Hydraulic pump	Operation, oil leakage, abnormal noise	○	○	○	
		Mounting, looseness, crack, damage		○	○	
	Control valve	Oil leakage	○	○	○	
		Mounting, operation, looseness		○	○	
Oil cooler	Mounting, motor operation, looseness, oil leakage, damage, abnormal noise		○	○		
Outrigger system	Outrigger Inner/outer case	Mounting, damage	○	○	○	
		Operation, bend, crack, dent		○	○	
		Damage, wear, breakage, deformation of outrigger structure, abnormal noise		◇		
		Welded structural parts		◇		
		Important structure mounting parts (pin, bolt, etc.)		◇		

Inspection and maintenance item			Inspection and maintenance interval			Remarks
			Daily inspection	Every month or earlier	Every year or earlier	
Components	Inspection item					
Outrigger system	Jack cylinder (including holding valve)	Operation, oil leakage, spontaneous lowering	○	○	○	
		Mounting, looseness, damage, spontaneous retraction		○	○	
	Slider (including lock pin)	Operation, oil leakage	○	○	○	
		Mounting, damage, slack		○	○	
	Extension width detector	Mounting, operation (reel, switch), accuracy, reel winding condition, damage		○	○	
	Control valve	Mounting, operation, oil leakage		○	○	
	Control box	Mounting, operation, damage, stained or peeled nameplate		○	○	
	Level	State of bubble	○	○	○	
		Mounting, soiling, damage		○	○	
	Outrigger status indicator symbol	Indication state	○	○	○	
Float	Mounting, crack, deformation, soiling, lubrication		○	○		
Piping, hose	Mounting, looseness, crack, oil leakage, damage, deterioration		○	○		
Slewing system	Slewing frame	Crack, deformation, damage		○	○	
		Damage, wear, breakage, deformation, abnormal noise of slewing frame structure		◇		
		Welded structural parts		◇		
		Important structure mounting parts (pin, bolt, etc.)		◇		
	Slewing bearing	Operation, lubrication		○	○	
		Abnormalities of mounting bolts (inner ring, outer ring)/looseness, elongation, rust, breakage, detachment		○	○	
	Slewing speed reducer, slewing motor	Operation, oil leakage	○	○	○	
		Mounting, looseness, crack, soiling, damage, oil level		○	○	
	Slewing brake	Braking performance, oil leakage	○	○	○	
	Slewing lock system	Mounting, operation, crack, damage		○	○	
Center joint	Mounting, looseness, leakage (oil, water, air), abnormal noise, lubrication		○	○		
Piping, hose	Mounting, looseness, crack, oil leakage, damage, deterioration		○	○		

Inspection and maintenance item		Inspection and maintenance interval			Remarks	
		Daily inspection	Every month or earlier	Every year or earlier		
Components	Inspection item					
Boom telescoping/elevating system	Boom	Mounting, crack, deformation, damage	○	○	○	
		Wear on pad, lubrication, wear on pivot		○	○	
		Damage, wear, breakage, deformation, abnormal noise of boom structure		◇		
		Welded structural parts		◇		
		Important structure mounting parts (pin, bolt, etc.)		◇		
	Single top (including boom head)	Mounting, crack, deformation, damage	○	○	○	
		Wear, lubrication		○	○	
	Telescoping cylinder (including holding valve)	Mounting, operation, looseness, oil leakage, spontaneous retraction	○	○	○	
	Boom elevating cylinder (including holding valve)	Mounting, operation, looseness, oil leakage, spontaneous retraction	○	○	○	
		Wear on pivot pin, lubrication		○	○	
Telescoping wire rope	Telescoping, synchronization, wear, damage, corrosion, cut wire		○	○	(*1)	
Sheave	Mounting, operation, deformation, damage, wear		○	○		
Telescoping hose in boom	Mounting, elongation, crack, damage, deterioration		○	○	(*1)	
Jib system	Jib	Mounting, crack, deformation, damage	○	○	○	
		Installing and stowing status, lubrication, wear on pivot		○	○	
		Damage, wear, breakage, deformation, abnormal noise on jib structural parts		◇		
		Welded structural parts		◇		
		Important structure mounting parts (pin, bolt, etc.)		◇		
	Sheave	Mounting, operation, deformation, damage, wear		○	○	

Inspection and maintenance item			Inspection and maintenance interval			Remarks
			Daily inspection	Every month or earlier	Every year or earlier	
Components	Inspection item					
Winch	Winch drive unit, winch drum	Mounting, operation, crack, oil leakage, damage, abnormal noise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Looseness, soiling, oil level, wire rope winding status, wire rope mounting, looseness in drum bearing		<input type="radio"/>	<input type="radio"/>	
	Winch brake	Oil leakage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Operation, brake performance		<input type="radio"/>	<input type="radio"/>	
	Wire Rope	Mounting status of rope socket, disorderly winding, wear, damage, condition of places where wire ropes pass through	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Corrosion, deformation, cut wire, entangling, lubrication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Piping, hose	Mounting, looseness, crack, oil leakage, damage, deterioration		<input type="radio"/>	<input type="radio"/>	
	Hook block	Main hook block (including attachments)	Mounting, damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Operation, crack, deformation, wear, lubrication				<input type="radio"/>	<input type="radio"/>	
Auxiliary hook block		Mounting, damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Operation, crack, deformation, wear, lubrication		<input type="radio"/>	<input type="radio"/>	

Inspection and maintenance item			Inspection and maintenance interval			Remarks
			Daily inspection	Every month or earlier	Every year or earlier	
Components	Inspection item					
Safety Devices	AML	Operation, pre-operational inspection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Mounting, indication, soiling, damage, indication status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Boom angle detector	Mounting, accuracy, oil leakage, damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Boom length detector	Mounting, accuracy, damage, cable winding status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Moment detector	Accuracy, damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Slewing angle (position) detector	Mounting, accuracy, damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Anti-two-block device (weight, weight rope)	Operation (stop, alarm, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Mounting, damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	External warning lamp	Mounting, operation, damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Cable follower	Mounting, operation, deformation, damage, wear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Piping, hose	Mounting, looseness, crack, oil leakage, damage, deterioration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Other Safety Devices	Mounting, operation, damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Anemometer	Operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Mounting, damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Flood lamp	Operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Steps and rails	Mounting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Over-unwinding cutout device	Operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	Mounting, accuracy, deformation, damage, wear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Control system	Cab	Mounting, deformation, corrosion, rain leakage, looseness, door opening/closing lock/key operation, glass fitness and damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Levers, switches	Mounting, damage, lubrication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
		Operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Heater, air conditioner	Operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Drum indicator, monitor	Mounting, operation, deformation, damage, looseness of connectors, damage on cables, image, soiling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Meters and gauges	Mounting, operation, indication, soiling, damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Lighting, horn	Mounting, operation, lens breakage, soaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Nameplates	Soiling, damage, color deterioration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Piping, hose	Mounting, looseness, crack, oil leakage, damage, deterioration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Mobile/satellite communication terminal	Communications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		

Inspection and maintenance item			Inspection and maintenance interval			Remarks
			Daily inspection	Every month or earlier	Every year or earlier	
Components	Inspection item					
Frame	Chassis frame	Crack, deformation, damage		○	○	
		Wear, breakage, abnormal noise on chassis frame structure		◇		
		Welded structural parts		◇		
		Important structure mounting parts (pin, bolt, etc.)		◇		
Test	Load test	Test load t, Load radius m			○	
		Test load t, Load radius m			○	
	Comprehensive test	Operating speed, abnormal noise, abnormal vibration, abnormal heat generation		○	○	

Inspection before Traveling

⚠WARNING

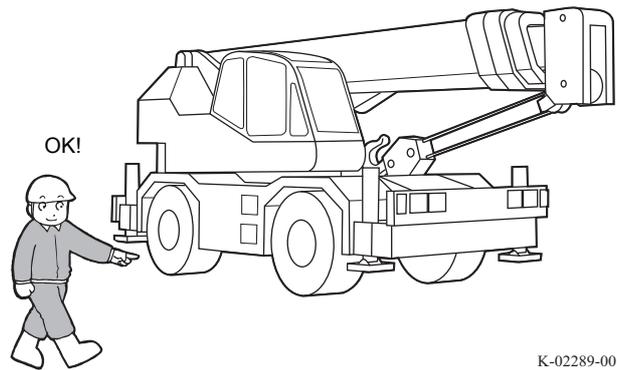
If the inspection before traveling is neglected, early detection of problems will be impossible, which could result in accidents.

Conduct the inspection before traveling, and take corrective actions immediately if any irregularity is found.

Check the items below in the inspection before traveling.

If you find any irregularity, take corrective actions by yourself, or have the machine serviced at Tadano Escorts India Private Ltd. or a dealer before using the machine.

- Irregularities detected on the previous day or operation
- Inspection around carrier
 - Water condensation in air tank
 - Soiling and Damage of Lamps and License Plates
 - Fuel Leakage
 - Water Level in Water Separator, Water Drainage
 - Oil Leaks from Transmission, Oil Level
 - Battery Electrolyte Level
 - Brake Fluid Level
 - Tire conditions
- Inspection of the Engine Room
 - Engine oil level, contamination
 - Coolant Level in Radiator
 - Looseness, Tension, and Damage of Fan Belt
 - Air cleaner check
- Inspection at Driver's Seat
 - Engine Start-up, Abnormal Noise
 - Condition in Engine Low Speed and Acceleration
 - View from Mirror
 - Check of Lamp Operation
 - Washer liquid level, spraying conditions
 - Operation of wipers
 - Foot Brake Performance
 - Parking Brake Performance

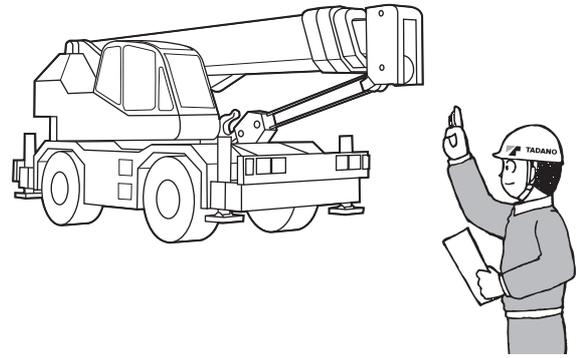


K-02289-00

Irregularities detected on the previous day or operation

1. Check for irregularities found on the previous day or previous traveling.
2. Take corrective actions for places where irregularity is found.

☞ If you cannot perform necessary maintenance work by yourself, immediately contact Tadano Escorts India Private Ltd. or a dealer for maintenance.



K-02290-00

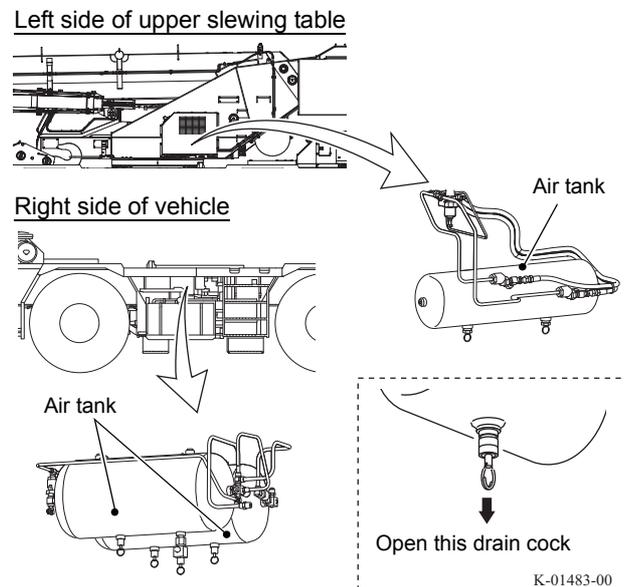
Inspection around carrier

Water condensation in air tank

1. Pull the drain cock lever of the air tank to drain water in the tank.
2. If a large amount of water is drained, deterioration of the air dryer function is suspected. This needs to be repaired.

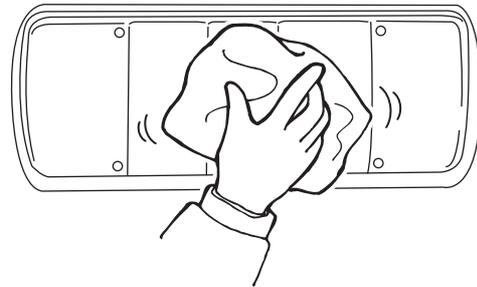
☞ For maintenance of the air dryer, refer to "Air dryer" (page 435).

☞ The drain cocks for the air tank are located at 2 places on the right side of the upper slewing table, and 4 places on the right side of the carrier.



Soiling and Damage of Lamps and License Plates

1. Inspect the lamps and license plates for soiling and damage.
2. Check the lenses and reflectors of the lamps for any soiling, discoloration, or damage.
3. Clean if soiled. Replace the part if damaged.



K-01002-00

Fuel Leakage

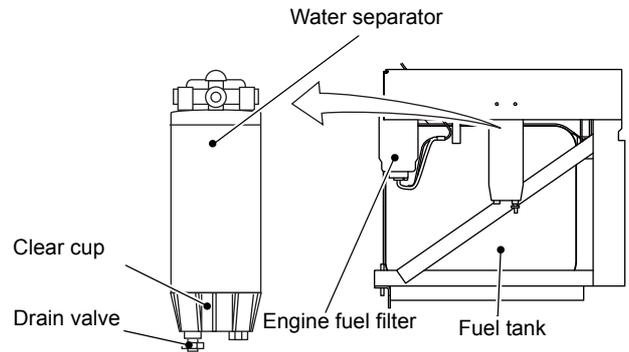
⚠ WARNING

If there is any fuel leakage, never start the engine. It can cause a fire.

1. Check for a fuel leakage.
2. If there is fuel leakage, contact Tadano Escorts India Private Ltd. or a dealer for inspection.

Water Level in Water Separator, Water Drainage

1. Check the water level in the water separator.
2. If there is any water in the clear cup at the bottom of a water separator, loosen the drain valve to drain the water.
3. After the water has drained, tighten the drain valve.
4. Make sure that there is no fuel leakage.



K-01003-00

Oil Leaks from Transmission, Oil Level

Oil Leaks from Transmission

1. Check for any oil leaks from the transmission.
2. If there is oil leakage, contact Tadano Escorts India Private Ltd. or a dealer for inspection.

Oil Level in Transmission

CAUTION

The torque converter and transmission are very hot immediately after operation, and you can suffer burns if you attempt to work on them. Before starting work, let the area cool down until it is safe to touch with bare hands.

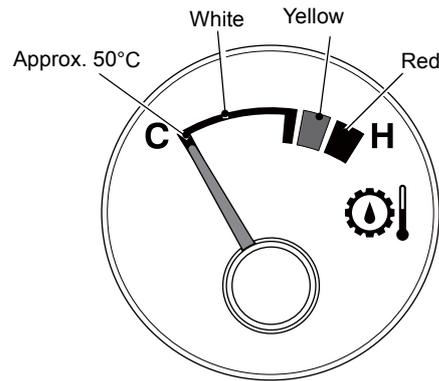
NOTICE

An excessively low or high oil level can cause the clutch to fail or overheat. Make sure that the oil level is in the specified range.

1. Extend the outriggers, and set up the machine horizontally.
2. Set the PTO switch to "OFF", the air conditioner to "OFF", and the shift lever to "N", and then start the engine.

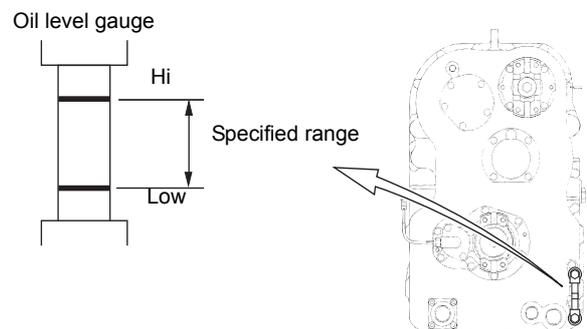
3. Operate the engine at an idling speed for several minutes, and raise the oil temperature to approx. 50°C.

☞ For the oil temperature, refer to the pointer shown in the right illustration.



K-01004-00

4. Check that the oil level is stable. Then, check the oil level with the oil level gauge located on the transmission. The specified oil level is between the "Hi" and "Low".



K-01005-00

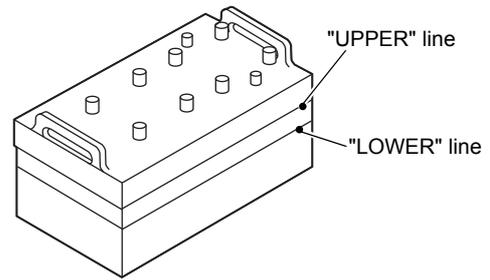
Battery Electrolyte Level

⚠ WARNING

- Gas released from the battery is explosive. Do not use matches, cigarette lighters, or other open flames for illumination. The gas can catch fire and explode. Use explosion-proof illuminating equipment when you check the battery electrolyte level.
- If battery electrolyte enters your eyes, it can cause blindness. If this occurs, immediately flush your eyes with a large amount of water, and seek medical attention.
- Before removing the battery, turn the starter switch to the OFF position. Then, disconnect the cable from the ground (negative) terminal of the battery first, then the positive terminal. When re-connecting the cable, connect it to the positive terminal of the battery first, then to the ground terminal. Always be careful with the terminal connection.
- If you use or charge the battery when its electrolyte level is below the "LOWER" line indicated on its side, it can cause an explosion of the battery. Always take a proper care of the battery electrolyte level.

1. Remove the battery cover.
2. Inspect that the battery electrolyte level is within the specified range.

 The electrolyte level should be between the "UPPER" and "LOWER" lines indicated on the side of the case.



3. If the electrolyte level is below the "LOWER" line, refill replenishment fluid or distilled water.

K-01006-00

Brake Fluid Level

⚠ WARNING

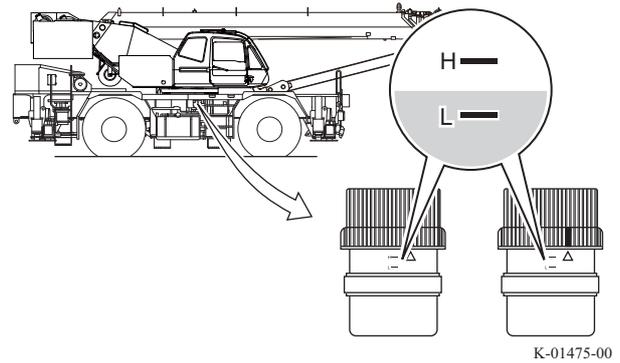
- If the brake fluid decreases, the brakes can fail, resulting in an accident. If the fluid level is low, check the brake system for fluid leakage. If there is fluid leakage, contact Tadano Escorts India Private Ltd. or a dealer for repair. If there is no leaks but the fluid level is low, the disc brake pads can be worn. Inspect the pads for excessive wear.
- "TADANO Genuine Brake Fluid" is a glycol-based fluid. If silicon- or mineral-based brake fluid is used, it permeates the packing, causing the brakes to become ineffective. Always use "TADANO Genuine Brake Fluid".

NOTICE

- Do not mix different brands of brake fluid together. If mixed, the properties of the fluid can change and have an adverse effect on the brake system. For brake fluid, use "TADANO Genuine Brake Fluid".
- Before removing the cap, clean the area around the cap.
- If any foreign matter is deposited in the brake fluid reservoir, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.
- If spilled brake fluid adheres to the coated surfaces, the coating can peel off. Wipe off any spills immediately.
- The brake fluid has significant moisture absorbing properties. Only use new, unopened brake fluid for replenishment and replacement.

1. Check that the fluid level in the brake fluid reservoir is within the specified range.

☞ If the fluid level is between the "H" and "L" lines, the fluid amount is adequate.



2. If the brake fluid level is low, check for any fluid leakage in the piping system. Remove the cap on the brake fluid reservoir, and add brake fluid to "H" line.

NOTICE

Note that a fluid level exceeding the "H" line may cause fluid leakage.

3. After adding, tighten the cap until the mark on the cap aligns with the mark on the tank.

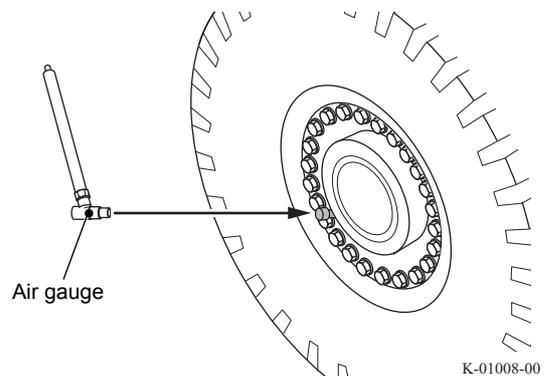
Tire conditions

⚠ WARNING

Adjust tire air pressure before traveling while the tires are cold.
If the pressure is too high or too low, the tires can be damaged and an accident can occur

Tire Air Pressure

1. Check tire air pressure with an air gauge.
2. If the air pressure is not correct, adjust it to the standard air pressure.
3. After measuring air pressure and inflating the tire, attach the valve cap.

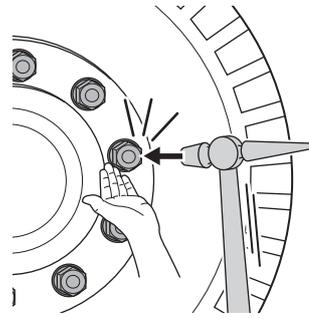


Looseness of Wheel Nut, Crack on Wheel

⚠WARNING

If there is any irregularity, do not travel. A serious accident can occur.

1. While putting your fingers on the lower side of the wheel nut, knock the upper side of the wheel nut lightly in the direction where the wheel nut is tightened.
2. Check for any difference in the vibration transmitted to your fingers with each nut, or for any abnormal noise.
3. If any irregularity is found, do not travel. Contact Tadano Escorts India Private Ltd. or a dealer.



Tap lightly in a direction which the wheel nut is tightened.

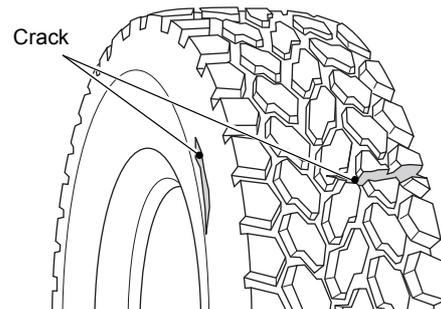
K-01009-00

Crack, Damage on Tires

⚠WARNING

Using tires that have significant cracks or damage, or whose treads are worn out, can cause the tires to skid or blow out, resulting in an accident. If a check reveals that a tire is unfit for use, replace it with a new tire immediately.

1. Check the entire tread and side walls for significant cracks or damages.
2. Check the circumference of the tire for any nails, stones or other foreign matter stuck or caught.
3. If there are cracks or damages on a tire, replace it with a new one.

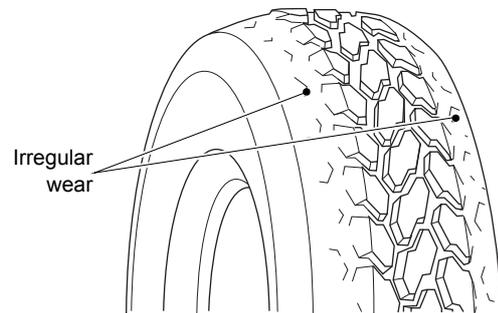


K-01010-00

☞ For replacement of the tire, refer to "Tire, Wheel" (page 439).

Irregular Wear of Tire

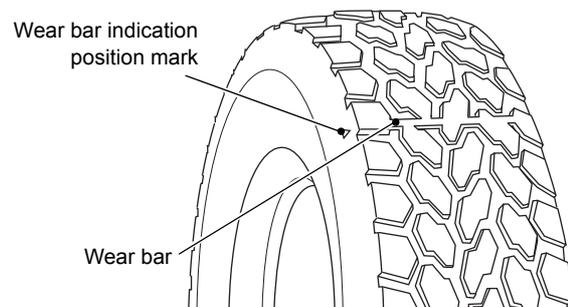
1. Check the tread for irregular wear.
2. If there is any irregular wear, replace the tire with a new one, and eliminate the cause of the wear.



K-01011-00

Tire Tread Depth

1. Check that sufficient tread remains.
 - ☞ When the tread is worn down beyond the limit, the wear limit indicator (wear bar) appears at the wear bar indication position.
2. When wear indicators appear, replace the tire with a new one.



K-01012-00

Inspection of the Engine Room

Engine oil level, contamination

⚠ WARNING

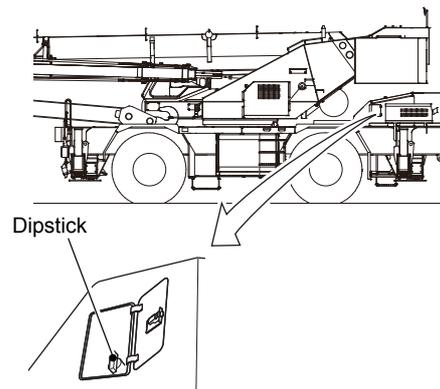
- Do not spill engine oil when replenishing.
If engine oil adheres to the exhaust pipes, it could cause a fire.
Completely wipe off any spilled oil.
- When inspecting the oil level just after operation, the engine and piping are hot. Be careful not to suffer burns.

NOTICE

Do not add engine oil beyond the specified level on the dipstick. Otherwise, an engine failure can occur.

☞ Inspect the machine on level ground before starting the engine. The engine oil level cannot be measured correctly if the machine is inclined or the engine is running.

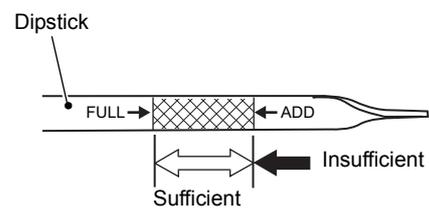
1. Pull out the dipstick, and wipe off the oil on it using a cloth.



K-01476-00

2. Insert the dipstick to the original position, and then slowly pull it out.

☞ If the oil level mark is between "ADD" and "FULL" on the dipstick, the engine oil level is normal.



K-01014-00

3. If the oil level is low, add oil through the oil filler. If the oil is excessively dirty, replace the engine oil.

☞ Refer to the separate engine manual for how to add or replace the engine oil.

4. After inspection, insert the dipstick to the original position.

Coolant Level in Radiator

⚠ WARNING

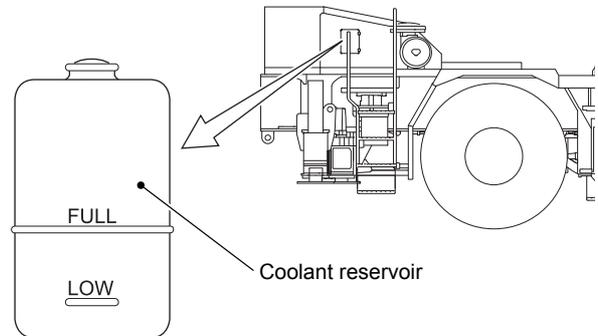
When the engine is warmed up to normal operating temperature, the engine coolant is hot and under high pressure. In this state, do not remove the radiator cap. If the cap is opened carelessly, hot water and steam can spout out causing burns. Before starting work, let the radiator cap cool down until it is safe to touch with bare hands.



1. Check the coolant level in the coolant reservoir.

☞ If the coolant level is between the "FULL" and "LOW" lines, the coolant amount is normal.

2. If the coolant level is lower than the "LOW" line, check for any coolant leak from each part of the cooling system. If no water leakage is found, remove the cap for the coolant reservoir, and add coolant to "FULL".



3. If the coolant level goes down quickly after refill, contact Tadano Escorts India Private Ltd. or a dealer for inspection.

☞ There can be a leakage from the cooling system.

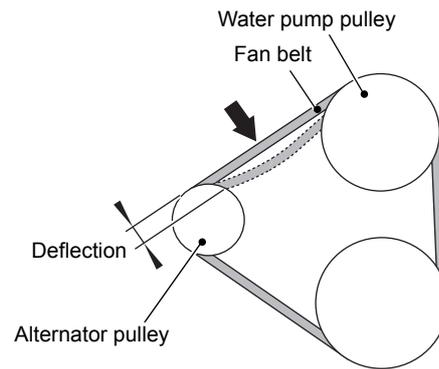
Looseness, Tension, and Damage of Fan Belt

⚠ WARNING

Stop the engine before inspecting the fan belt. If you touch or come near to the rotating parts while the engine is running, your hands or clothing can get caught, resulting in an injury.

1. Check that the deflection of the fan belt is within the specified value.
2. Check the fan belt for damage. If it is damaged, replace it with a new one.

 To check the deflection of the fan belt and to replace the fan belt, refer to the separate engine manual.



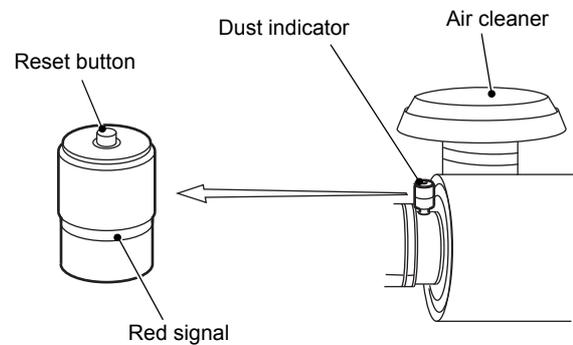
K-01017-00

Air Cleaner Check

1. Check the air cleaner by the dust indicator.
2. If the red signal is visible in the window, clean the element, and push the reset button.

- The red signal is reset.

 To clean an element, refer to the separate engine manual.

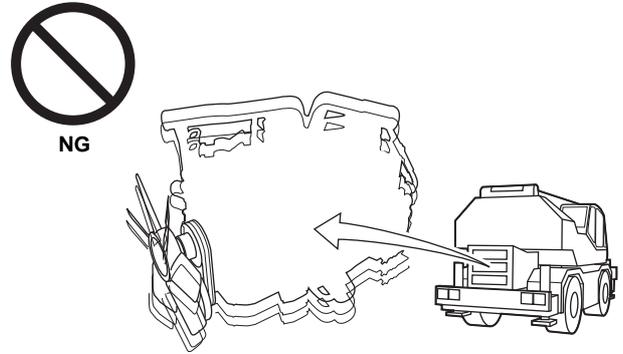


K-01018-00

Inspection at Driver's Seat

Engine Start-up, Abnormal Noise

1. Inspect that the engine starts up smoothly, and there is no irregularity and abnormal sound in starting up.
2. Check for any abnormal noise during idling.
3. If the engine does not start up normally or there is abnormal noise, contact Tadano Escorts India Private Ltd. or a dealer for maintenance.

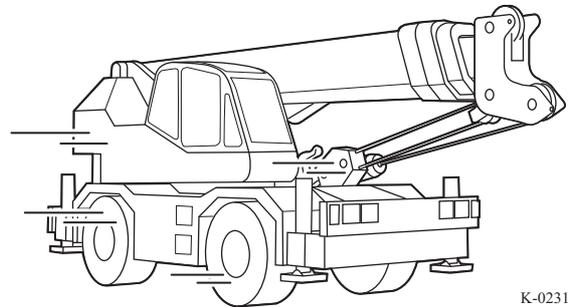


K-02305-00

Condition in Engine Low Speed and Acceleration

CAUTION
Perform inspection in a safe place, paying attention to the traffic around the vehicle.

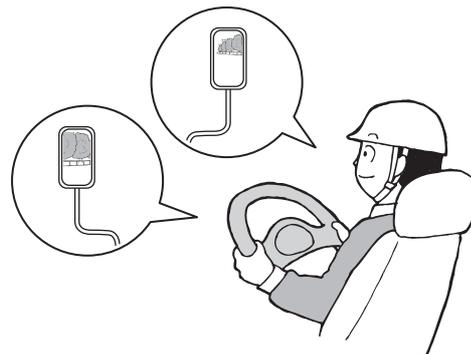
1. Slowly travel in a safe place, and check the engine condition at a slow speed.
2. Accelerate the vehicle gradually, and check that the engine speed increases smoothly.
3. If the engine stops at a low speed, or does not accelerate smoothly, contact Tadano Escorts India Private Ltd. or a dealer for maintenance.



K-02315-00

View from Mirror

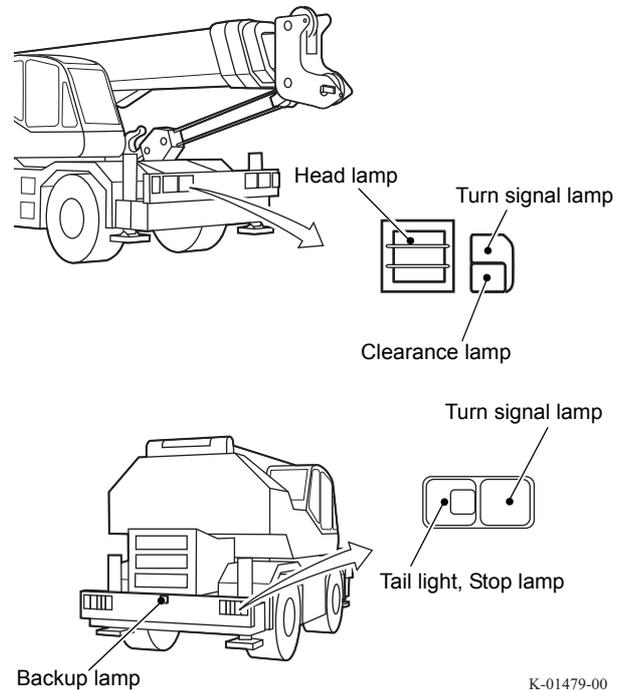
1. Check for flaws on the mirror and reflection (visibility).
2. Adjust the mirror to a position where you can obtain good visibility.



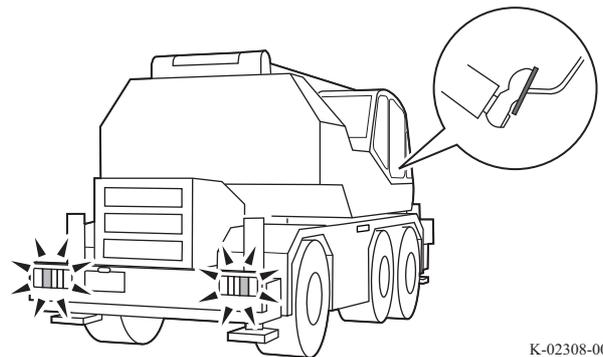
K-01021-00

Check of Lamp Operation

1. Check that each lamp lights up or flashes when the corresponding switch is turned "ON".

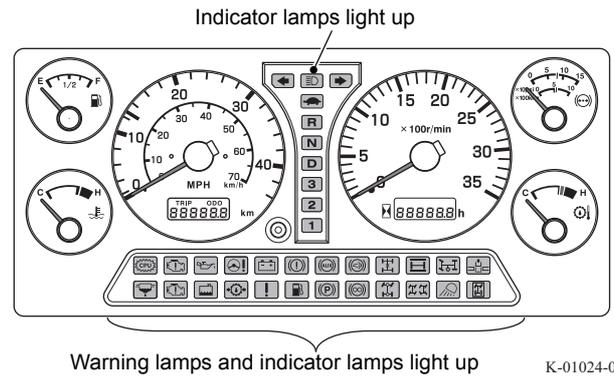


2. Check that the beam direction and brightness are normal.
3. Check that the stop lamps light up when the brake pedal is depressed.



4. Check that the backup lamps light up when the shift lever is set to "R".

5. Inspect that each warning lamp and indicator lamp operates correctly. It is normal when each warning lamp is not lit after the engine is started.
6. If a lamp does not light up or flash, or if a turn signal lamp flashing becomes quicker, the bulb or the fuse can be burned out. Check and replace the defective parts.

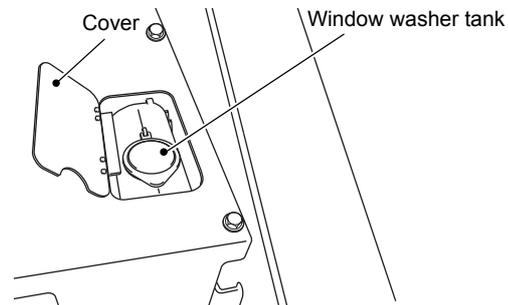


K-01024-00

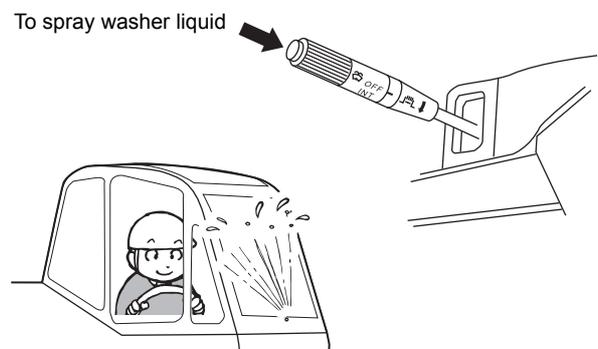
Washer Liquid Level, Spraying Conditions

1. Raise the boom until the cover of the window washer tank can be opened.
2. Check that the washer liquid level is sufficient.
3. If the level is low, open the cover and cap, and add the washer liquid into the window washer tank.
When the adding is finished, tighten the cap and close the cover.
4. Spray the washer liquid and inspect that the spraying direction and height are proper.
5. If there is washer liquid in the tank but the nozzle does not spray, clean the nozzle with a needle to remove clogging.
6. If the liquid is not sprayed after cleaning, contact Tadano Escorts India Private Ltd. or a dealer for maintenance.

 The pump can be failed



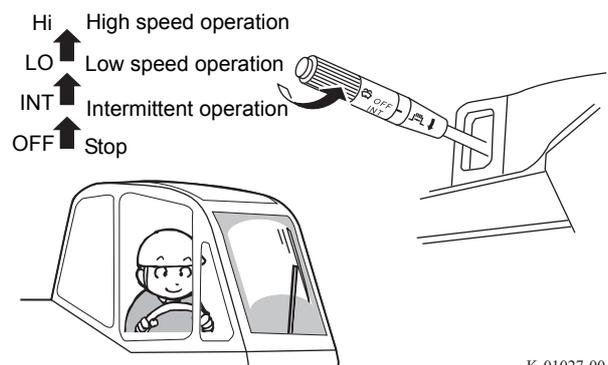
K-02310-00



K-01026-00

Operation of wipers

1. Spray the windshield washer liquid before inspecting the operation of the wipers.
2. Set the wiper operation speed to "INT", "LO" and "HI" respectively, and check that each operates properly.
3. If the wiping is uneven or the blade chatters, inspect the wiper blade. If it is deteriorated, replace it with a new one.
4. If the wipers do not work properly, contact Tadano Escorts India Private Ltd. or a dealer for maintenance.



K-01027-00

Foot Brake Performance

Air Pressure, Rising Condition

⚠ WARNING

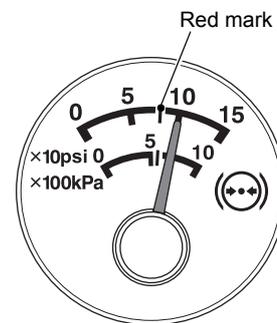
Do not travel if the air pressure gauge reading is below the red mark (lower specified limit) or the low air pressure warning is lit.

Otherwise, reduced braking force for the foot brake or parking brake drag can cause an accident.

Do not start traveling until air pressure has returned to the specified level and the low air pressure warning has gone out.

1. Check that the pointer of the air pressure gauge exceeds the specified value (red mark).
2. If the air pressure does not rise, or it takes a long time for the pressure to rise, contact Tadano Escorts India Private Ltd. or a dealer for maintenance.

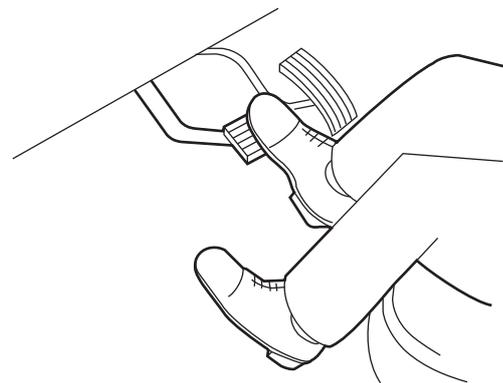
☞ Discharge the air in the air tank completely while the engine is stopped, then start the engine. It is normal when the pointer on the air pressure gauge goes to the specified value (red mark) at idling within 6 minutes.



K-01028-00

Brake Pedal Response

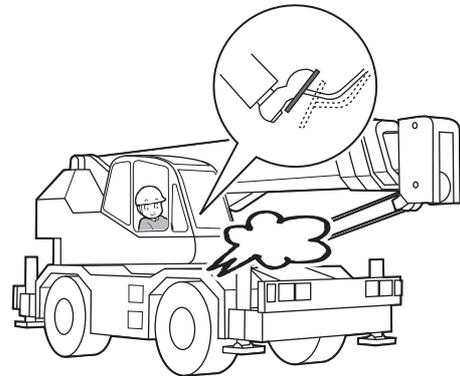
1. Depress the brake pedal fully while the engine is running, and check that response is normal.
2. Release the pedal, and check that the pedal completely returns without sticking.
3. If any irregularity is found, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



K-01029-00

Exhaust Sound of Air Brake Valve

1. Depress the brake pedal, and release it. It is normal when there are some exhaust sounds (air evacuating sound) of the brake valve operation at this time.
2. If any irregularity is found, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



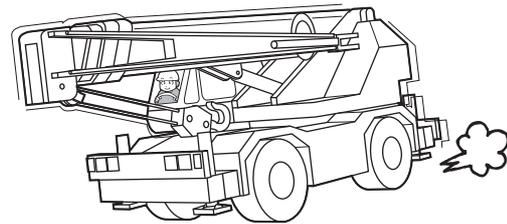
K-02312-00

Braking condition

⚠CAUTION
Perform inspection in a safe place, paying attention to the traffic around the vehicle.

1. Slowly travel in a safe place, apply the brakes, and inspect the braking condition.
2. If the brakes function poorly or unevenly, inspect the brakes.

☞ Refer to "Disc brake pad" (page 433).



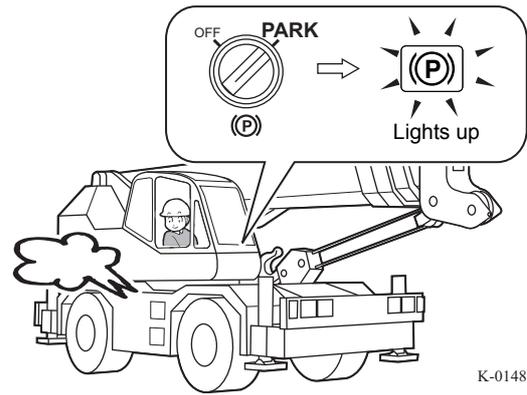
K-02313-00

3. If any irregularity is found, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Parking Brake Performance

⚠CAUTION
Inspect the parking brake on level ground with the brake pedal depressed.

1. Start the engine, and perform an inspection when the air is at the specified pressure.
2. Inspect that the exhaust sounds (air evacuating sound) can be heard for the parking brake operation when the parking brake switch is set to "PARK".
 - The brake warning lights up.
3. If any irregularity is found, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



K-01487-00

Pre-operational Inspection

⚠️ WARNING

If the pre-operational inspection is neglected, early detection of problems will be impossible, which can result in accidents. Perform pre-operational inspections, and take corrective actions immediately if any irregularity is found.

Inspect the following items in the pre-operational inspections.

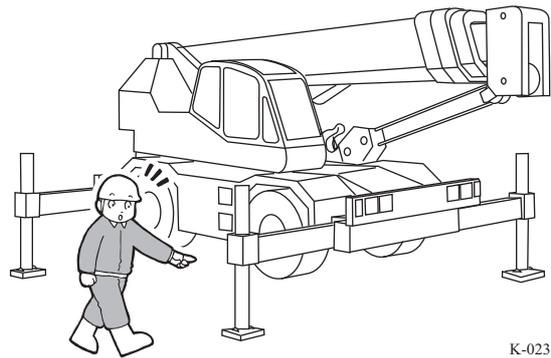
If you find any irregularity, take corrective actions by yourself, or have the machine serviced at Tadano Escorts India Private Ltd. or a dealer before using the machine.

- Hydraulic system

- PTO System Operating Conditions, Oil Leakage
- Oil Level Check in the Hydraulic Oil Tank
- Oil leakage from the piping and hose

- Control system

- Operating Condition of Control Levers and Control Switches
- Oil leakage from the control valves



K-02316-00

- Outrigger system

- Bubble conditions in level
- Damage to outriggers
- Outrigger mounting state
- Operating conditions of and oil leak in the beam cylinders and jack cylinders
- Spontaneous Lowering of Carrier

- Slewing system

- Operating Conditions and Oil Leakage of Slewing Speed Reducer, Slewing Motor, and Rotary Joint
- Slewing brake effectiveness, oil leakage

- Boom, Jib System

- Damage to the Boom, Jib, and Single Top
- Boom, Jib Mounting State
- Operating conditions of and oil leakage of the boom elevating cylinder and boom telescoping cylinder
- Spontaneous lowering of boom

- Lifting device

- Damage to the winch
- Winch operating conditions, oil leaks
- Checking wire ropes, sheaves, and guides
- Hook Block Mounting Conditions, Damage

- Safety Devices

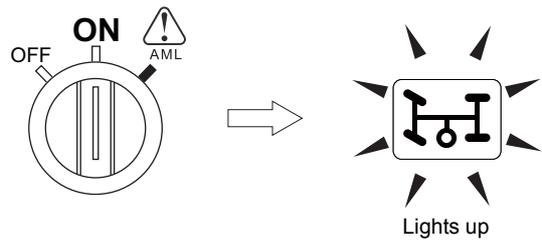
- Operating Conditions of Anti-Two-Block Device
- Registration of Operating Status and AML Function Check

- Flood lamp Operating Conditions
- Mounting state of steps and rails
- Operating conditions of other safety devices (options)

Hydraulic system

PTO System Operating Conditions, Oil Leakage

1. Set the PTO switch to "ON" to check that the PTO indicator on the instrument panel lights up, and the display appears on the AML.

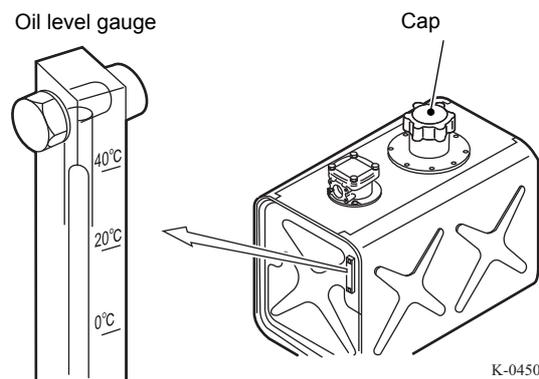


K-01527-00

2. Check for any abnormal noise or oil leaks from the hydraulic pump.
3. If there is any abnormal noise or oil leakage, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Oil Level Check in the Hydraulic Oil Tank

1. Set the machine into the traveling configuration, and set it up on level ground.
2. Inspect the oil level with the oil level gauge on the hydraulic oil tank. If the oil level is between the position corresponding to the current ambient temperature and 0°C, the oil amount is normal.
3. If it is insufficient, remove the cap of the hydraulic oil tank, and add oil.



K-04509-00

Oil leakage from the piping and hose

- 1.** Check for any oil leakage from the piping and hose, and damage to the hose.
- 2.** If there is any oil leakage or damage, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Control system

Operating Condition of Control Levers and Control Switches

- 1.** Operate each control lever and each control switch while the engine is stopped.
- 2.** Check that each control lever and control switch moves smoothly, and is not caught during stroke.
- 3.** If it does not move smoothly or there is a tight spot, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Oil Leakage from Control Valves

- 1.** Check for any oil leaks from the control valves after operating each control lever and each control switch.
- 2.** If there is oil leakage, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

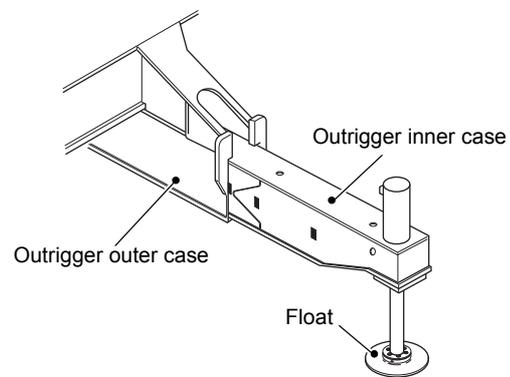
Outrigger system

Bubble conditions in level

1. Check for damage to the level, and the bubbles in the level.
2. If any damage is found, replace the level.

Damage to outriggers

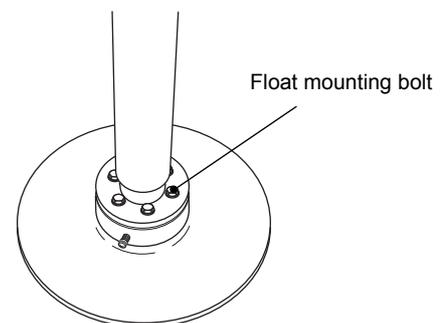
1. Check the outer cases, inner cases, and floats for any crack and deformation.
2. If there is any crack or deformation, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



K-01035-00

Outrigger mounting state

1. Check the mounting conditions of the slide cylinders and jack cylinders.
2. Check the mounting conditions of the float mounting bolts.
3. If any irregularity is found in the mounting conditions, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



K-01036-00

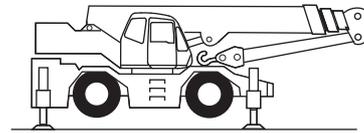
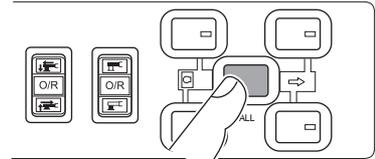
Operating conditions of and oil leak in the slide cylinders and jack cylinders

1. Operate the slide cylinders and jack cylinders, and check operating conditions.
2. Check for any oil leakage from each cylinder.

3. If any irregularity is found in the operating conditions or there is oil leakage, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Spontaneous Lowering of Carrier

1. Extend the outriggers, and set up the machine horizontally. Then, stop the engine.
2. Turn the starter switch to "ON" without starting the engine, and attempt to extend/retract the jack cylinders.
3. Check that the carrier does not spontaneously lower (the jack cylinders do not retract).
4. If the carrier spontaneously lowers, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



K-01489-00

Slewing system

Operating Conditions and Oil Leakage of Slewing Speed Reducer, Slewing Motor, and Rotary Joint

- 1.** Perform slewing operation, and check the operating conditions.
- 2.** After slewing operation, check for any leakage from the slewing speed reducer, slewing motor, or rotary joint.
- 3.** If any irregularity is found in the operating conditions or there is oil leakage, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Slewing brake effectiveness, oil leakage

- 1.** Set the slewing brake switch to "ON".
- 2.** Attempt slewing operation in idling, and check that slewing operation is not possible.
- 3.** If the slewing brake does not work or there is oil leakage, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Boom, Jib System

Damage to the Boom, Jib, and Single Top

- 1.** Check for any crack, deformation, or damage.
- 2.** If there is any crack or deformation, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Boom, Jib Mounting State

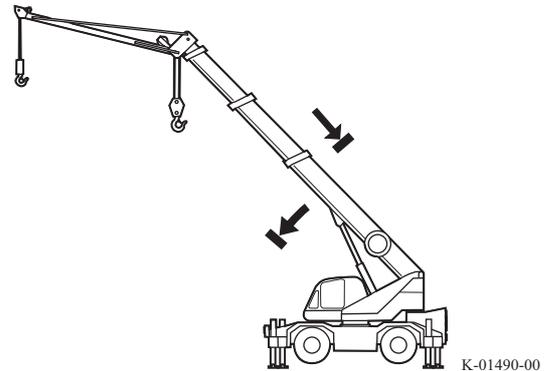
- 1.** Check the mounting state of each mounting pin.
- 2.** If there is any irregularity in the mounting conditions, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Operating conditions of and oil leakage of the boom elevating cylinder and boom telescoping cylinder

- 1.** Operate the boom elevating cylinder and boom telescoping cylinder to check the operating conditions.
- 2.** Check for any oil leakage from each cylinder.
- 3.** If there is oil leakage, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Spontaneous lowering of boom

1. Perform boom raising and boom extending operations.
 Stop operations just before each cylinder reaches the stroke end.
2. Stop the engine.
3. Check that the boom does not spontaneously lower (each cylinder does not retract).
4. If the boom spontaneously lowers, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

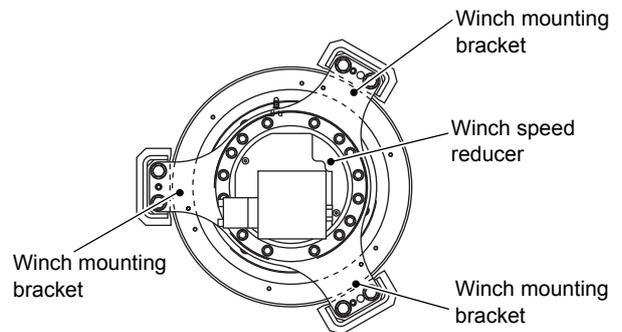


Lifting device

☞ Check both the main winch and the auxiliary winch.

Damage to the winch

1. Check that the winch speed reducer and winch mounting bracket are not deformed or damaged.
2. If there is any deformation or damage, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



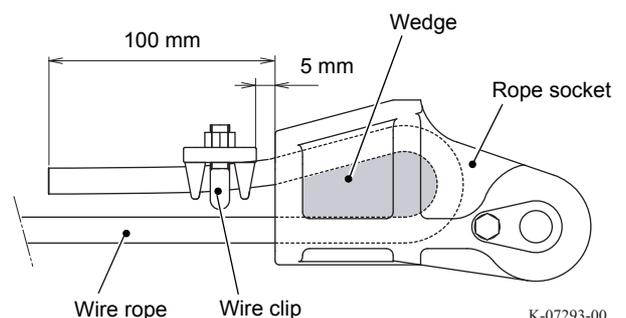
K-01039-00

Winch operating conditions, oil leaks

1. Perform winch winding-up/down operations, and check the winch operating conditions.
2. After the winch operation, check for any oil leakage from the winch.
3. If any irregularity is found in the operating conditions or there is oil leakage, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

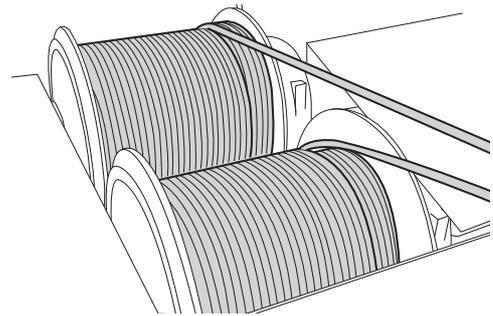
Checking Wire Ropes, Sheaves, and Guides

1. Check for any crack, wear, deformation of the wire rope end, and damage to the rope terminals.



K-07293-00

2. Check that the wire rope is not wound up disorderly on the winch drum.
If it is wound up disorderly, rewind it.

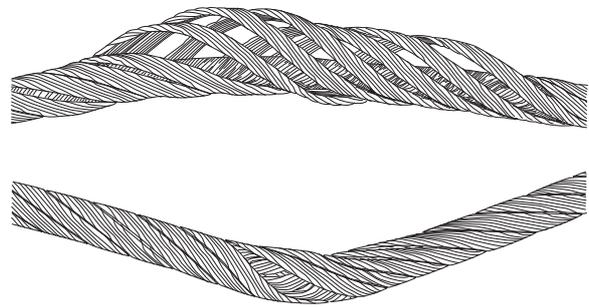


The wire rope is correctly wound on the winch drum

K-01041-00

3. Check the wire rope for wear, damage to outer and inner layers, breakage, reduction in outside diameter, and drying.

If any irregularity is found, replace the wire rope.

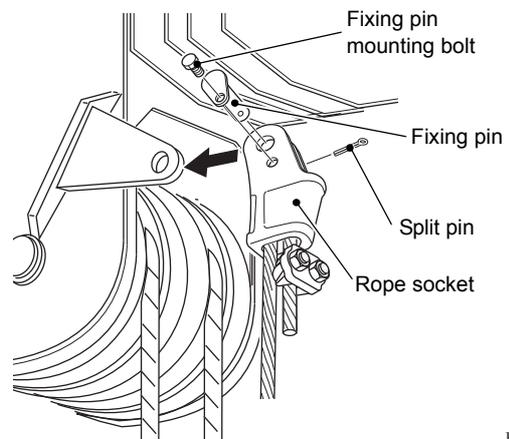


K-01042-00

4. Extend the outriggers, and set up the machine horizontally.
5. Raise the boom to approximately 45°, and check that the wire rope correctly passes through the sheaves and guides.
6. If the wire rope is off the sheaves and guides, pass the wire rope through the sheaves and guides.
7. If any irregularity is found, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

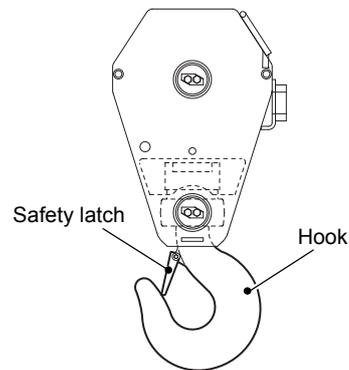
Hook Block Mounting Conditions, Damage

1. Check the mounting conditions of the rope sockets, fixing pins, fixing pin mounting bolts and split pins.



K-07282-00

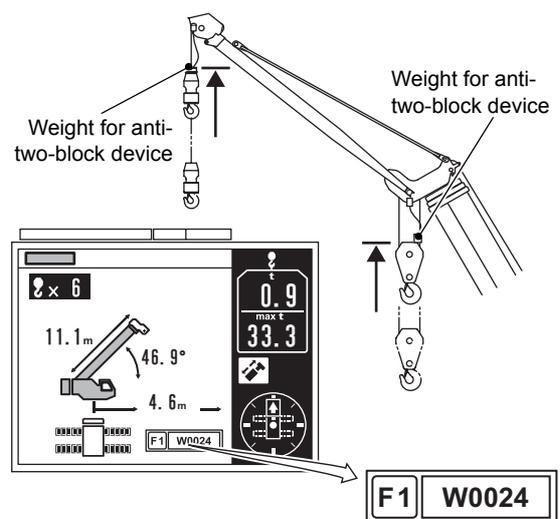
2. Check the rotating conditions of the hook, function of the rigging rope safety latch, and damage to each part.
3. If any irregularity is found, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



K-01044-00

Operating Conditions of Anti-Two-Block Device

1. Extend the outriggers, and set the machine to the crane operation configuration. Then, slowly wind up the winch.
2. Check that the winch winding up operation stops automatically, the alarm buzzer (tremolo) sounds, and then the error code "W0024" is displayed on the AML.
3. If the operation does not automatically stop, or the alarm buzzer does not sound, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

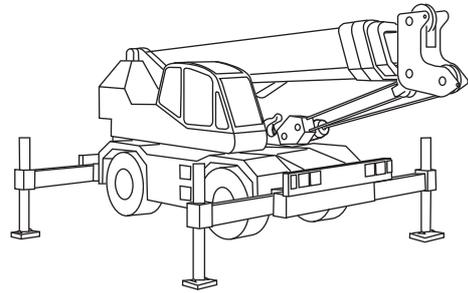


K-01045-00

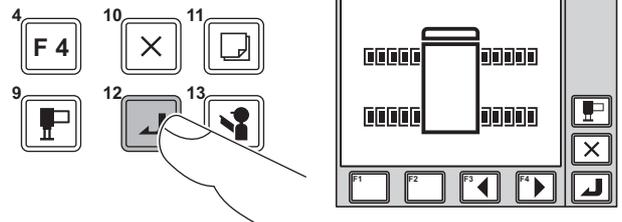
Registration of Operating Status and AML Function Check

1. Register the lift status to the AML, and perform AML function check.

☞ For registration of the operating state and AML function check, refer to "Registration of Operating Status and AML Function Check" (page 144).



2. If any irregularity is found, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



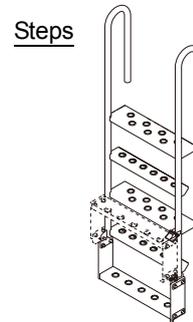
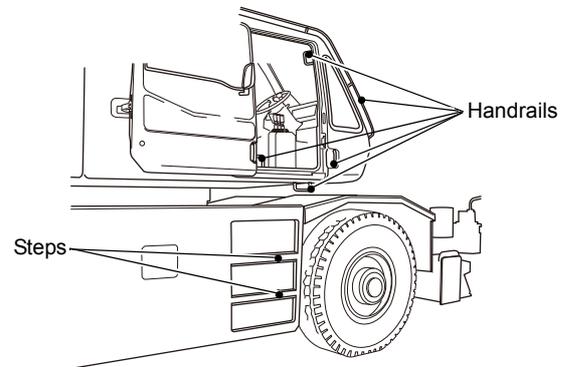
K-02330-00

Flood lamp Operating Conditions

1. Turn each flood lamp switch to "ON", and check the lighting state of the flood lamps.
2. If it does not light up, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Mounting state of steps and rails

1. Check the access path to the cab for damage.
2. If there is any damage, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

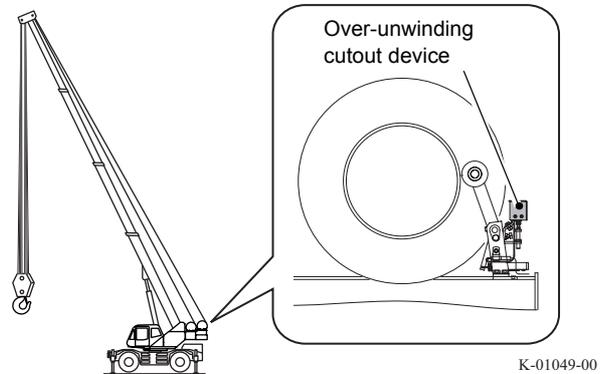


K-01493-00

Operation of Other Safety Devices (Options)

Operation of Over-unwinding Cutout Device

1. Hoist down the main and auxiliary winches and check that they stop automatically when the remaining turns of wire rope become 4 to 3 turns.
2. If the operation does not stop automatically, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



Operation Conditions of Anemometer

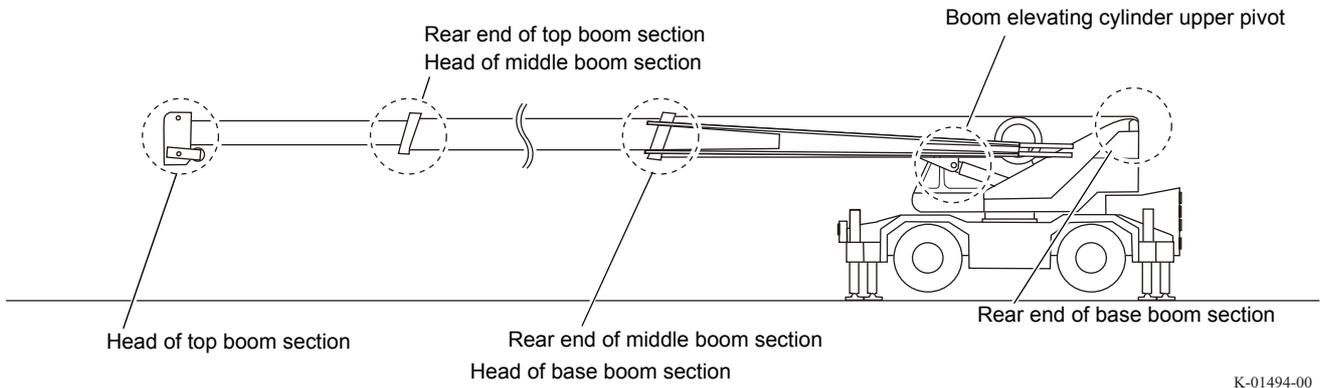
1. Check that wind speed is indicated on the wind speed display area while the anemometer is rotating.
2. If the device does not work properly, contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

Inspection of Crane Structure

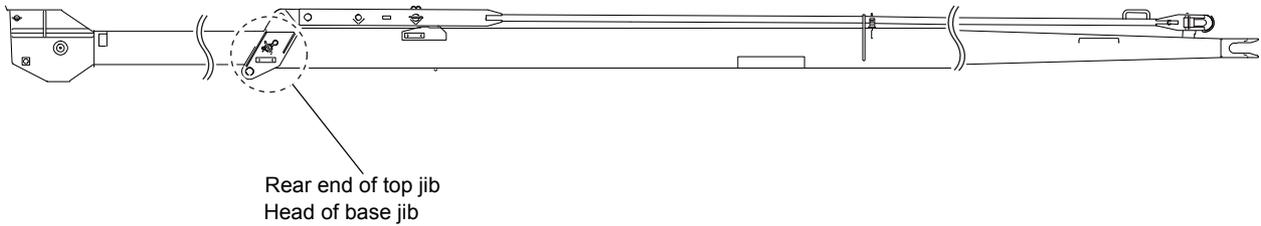
If the crane is used heavily (severe condition), during monthly (within 1 month) in-house inspections, inspect the items below for damage, wear, breakage, deformation and abnormal noise.

If any irregularity is found as a result of the inspection, contact Tadano Escorts India Private Ltd. or a dealer for repair.

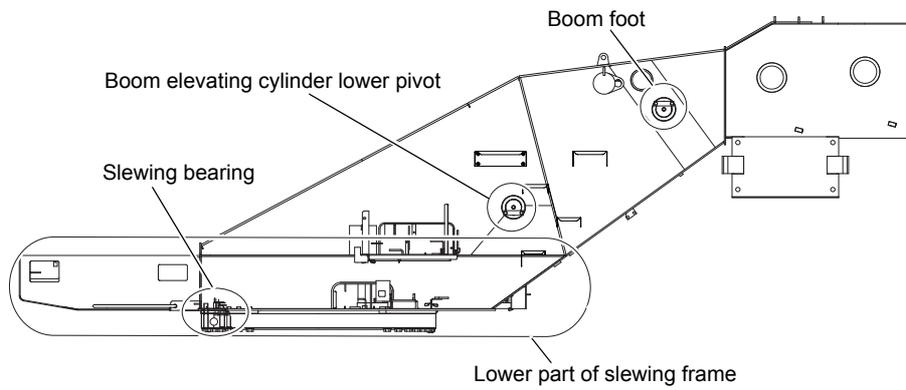
Boom Structure



Jib Structure

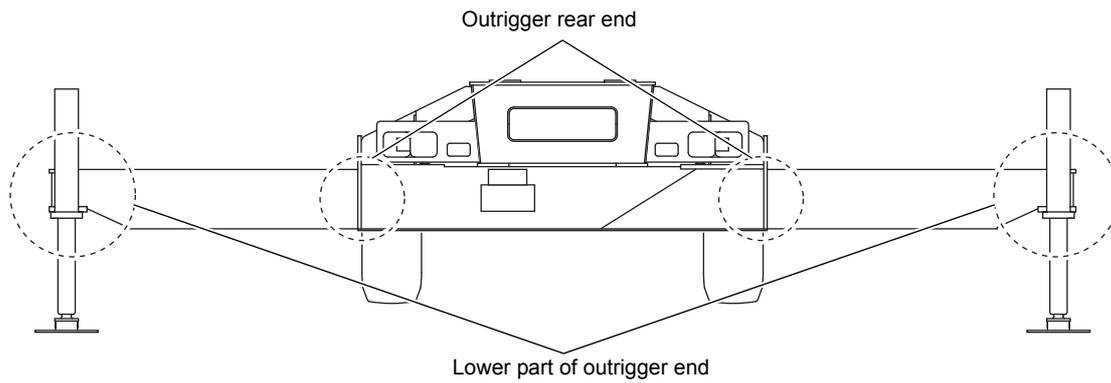


Slewing frame



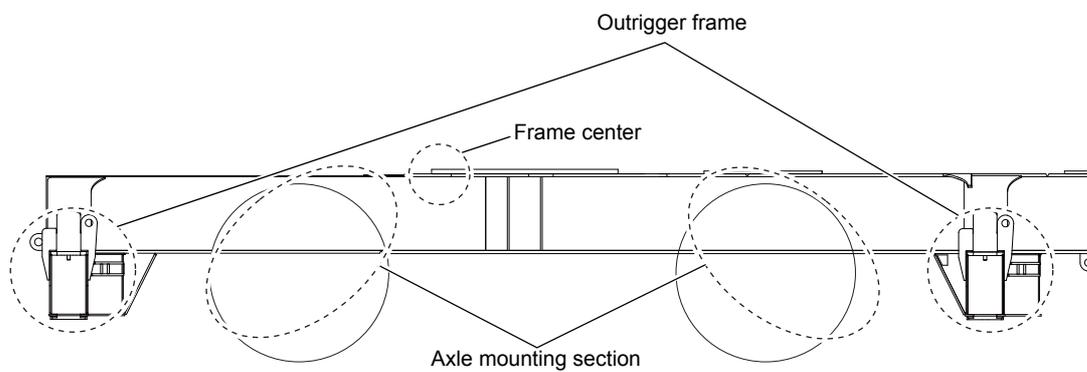
K-01495-00

Outrigger Structure



K-01054-00

Chassis frame



K-01055-00

CTI-500XL-1_OM1-11E

Greasing

NOTICE

- **Do not mix different brands of grease together.**
If mixed, the properties of greases can change and have an adverse effect on the machine.
When adding grease, use the same brand that is already used in the machine.
If a different brand of grease must be used, be sure to remove all remaining grease before adding the new grease.
- **If dust enters, it causes premature wear of sliding surfaces, and consequently, shortens the life of the crane. Clean the grease nipples and surfaces which require lubrication before applying grease to prevent dust and other foreign matter from entering.**
- **Clean the wire ropes with a wire brush, etc., before they are greased.**
- **In addition to the areas listed in the "Maintenance table", the following areas should also be lubricated with grease in a timely manner to prevent rusting and ensure smooth movement.**
 - **The hydraulic cylinder rods (boom elevating cylinder, jack cylinder, etc.) that are exposed when the cylinder is fully retracted.**
 - **Links and sliding sections that have been coated with grease before shipment from the factory.**

Greasing is necessary to minimize wear on sliding and rotating parts and extend the life of the machine, as well as for smooth operation.

For the bushes and bearings, fill new grease to force out the old grease.

Maintenance Table

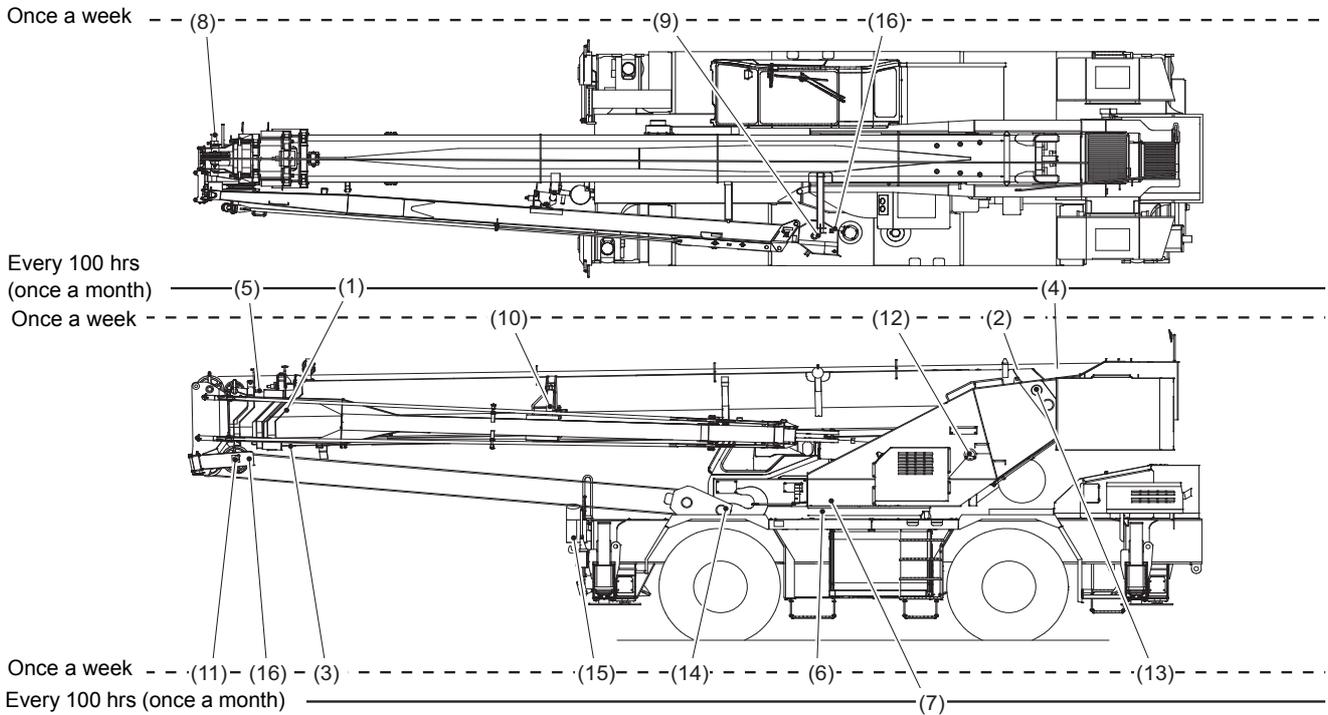
	No.	Item	Points	Inspection and maintenance interval			
				1 week	100 h 1 month	Others	
Upper structure	(1)	Side and lower surface of boom (sliding sections)	Coat	4 points		●	
	(2)	Slide plate (upper surface of boom)	Inject	8 points	●		
	(3)	Slide plate (lower side of boom)	Inject	16 points	●		
	(4)	Wire rope (for winch)	Coat	2 points		●	
	(5)	Wire rope (for boom telescoping)	Coat	2 points		●	
	(6)	Slewing bearing	Inject	3 points	●		
	(7)	Slewing gear	Coat	1 point		●	
	(8)	Jib connecting pin boss	Coat	2 points	●		
	(9)	Jib head sheave pin	Inject	1 point	●		
	(10)	Jib raising/lowering mechanism	Inject	2 points	●		
	(11)	Single top sheave pin	Inject	1 point	●		
	(12)	Boom elevating cylinder lower pivot pin	Inject	2 points	●		
	(13)	Boom bottom pivot pin	Inject	1 point	●		
	(14)	Main hook block (option)	Inject	1 point	●		
	(15)	Auxiliary hook block (option)	Inject	2 points	●		
	(16)	Mounting section of the switch for anti-two-block device for the auxiliary wire rope (jib and single top)	Coat	4 points	●		
Lower structure	(21)	Outrigger float	Inject	4 points	●		
	(22)	Propeller shaft	Inject	9 points		●	
	(23)	King pin	Inject	8 points			● (*1)
	(24)	Steering rod	Inject	4 points		●	
	(25)	Steering cylinder	Inject	4 points		●	
	(26)	Leaf spring pin	Inject	4 points		●	
	(27)	Leaf spring slide sheet	Inject	4 points		●	

(*1): Every 1,000 km or 100 h traveling

☞ For the brands of grease, refer to "Oils and Greases" (page 494).

Greasing Chart

Upper structure

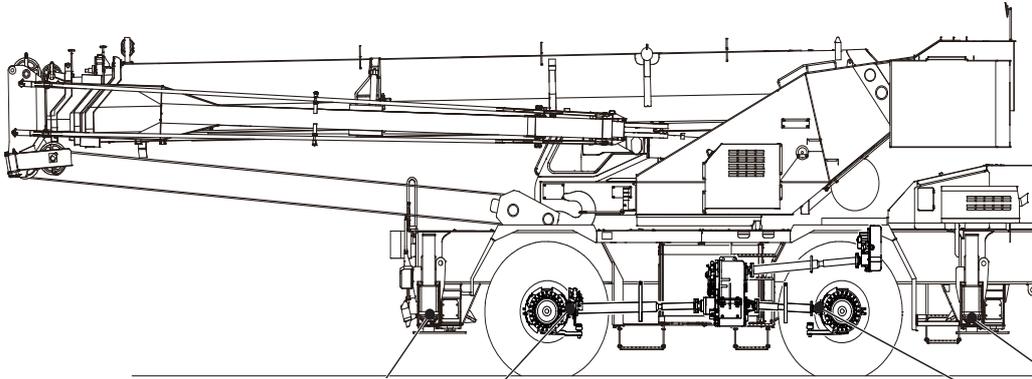


<p>(1) Top 4th 3rd 2nd Boom sliding surface</p>	<p>(2)</p>	<p>(3) Right and left bottom surface of boom</p>	<p>(4)</p> <p>(5)</p>
<p>(6) 3 points</p>	<p>(7) Cover Remove cover</p>	<p>(8)</p>	<p>(9)</p>
<p>(10)</p>	<p>(11)</p>	<p>(12)</p>	<p>(13)</p>
<p>(14)</p>	<p>(15)</p>	<p>(16)</p>	

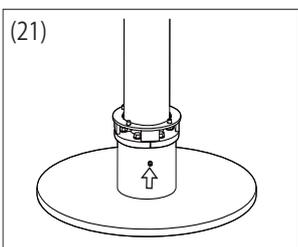
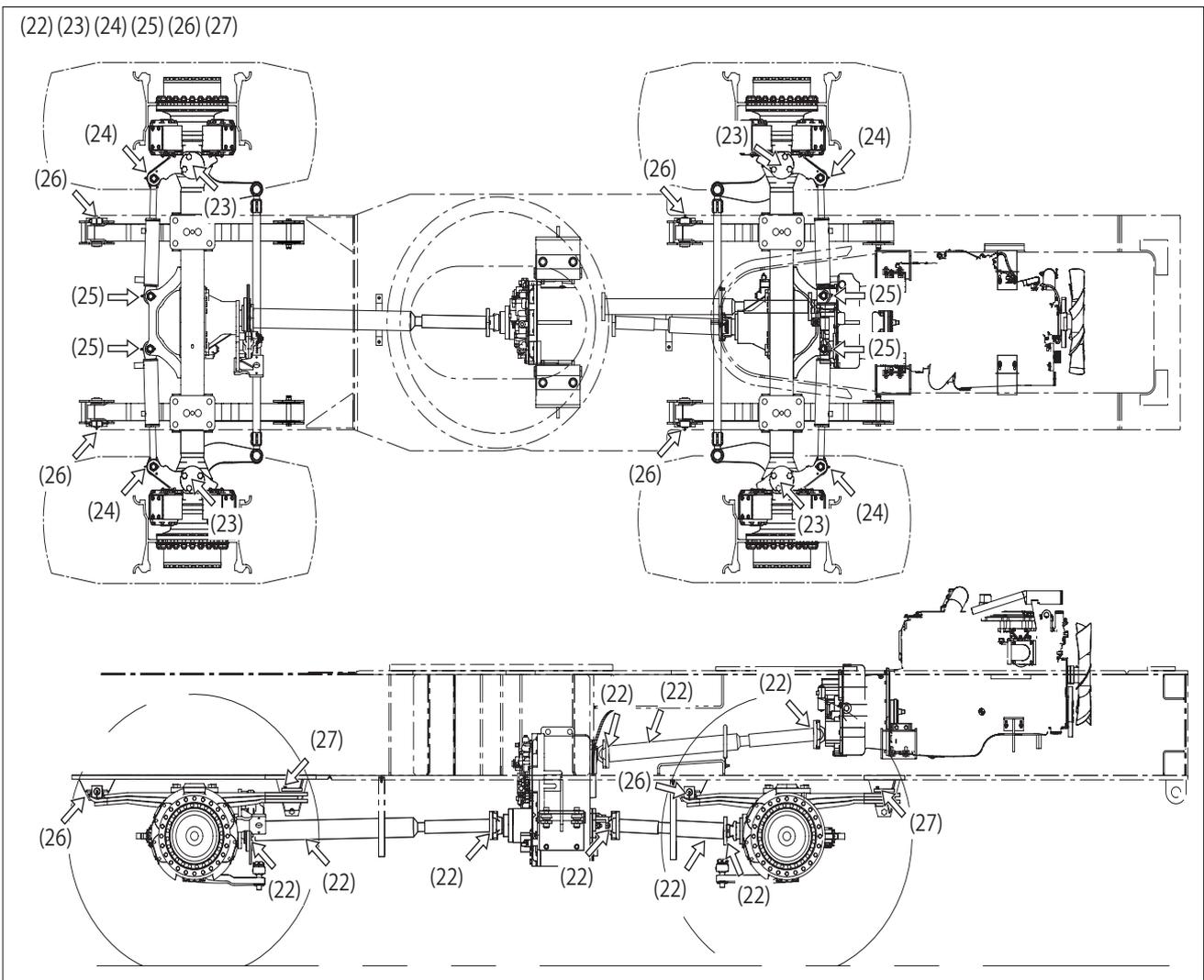
K-01496-00

CTI-500XL-1_OM1-11E

Lower structure



Once a week -----(21)-----
 Every 100 hrs (once a month) ---(22) (23) (24) (25) (26) (27)-----



CTI-500XL-1_OM1-11E

K-01497-00

Slide Plate (Upper Surface of Boom) (illustration 1)

1. Extend the outriggers to maximum, and set up the crane horizontally.
2. Fully retract the boom, and lower it to the horizontal position.
3. Apply grease.

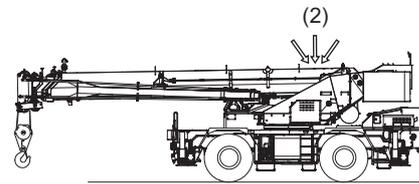


Illustration 1

K-01498-00

Sides and Lower sides of Boom, Wire Ropes (for boom telescoping) (Illustration 2, 3, 4 and 5)

1. Extend the outriggers to maximum, and set up the crane horizontally.
2. Fully retract the boom, and lower it to the horizontal position.
3. Extend the 2nd boom section in Boom telescoping mode I until the grease nipples on the bottom of the 2nd boom section are exposed, and supply grease to the points shown in the Illustration 2.
4. Retract the boom fully.
5. Fully extend the 3rd, 4th and top boom sections in Boom telescoping mode II, and then supply grease to the points shown in illustration 3.

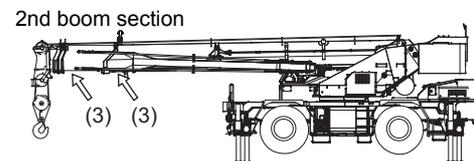


Illustration 2

K-01499-00

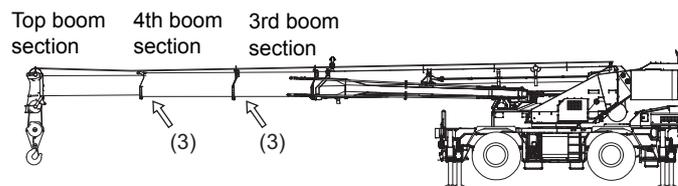


Illustration 3

K-02516-00

6. Retract the boom fully.

7. Fully extend the 2nd boom section in Boom telescoping mode I, and then supply grease to the points shown in the illustration 4.

8. Retract the boom fully.

9. Fully extend the 3rd, 4th and top boom sections in Boom telescoping mode II, and then supply grease to the points shown in the Illustration 5.

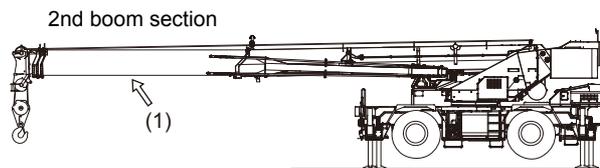


Illustration 4

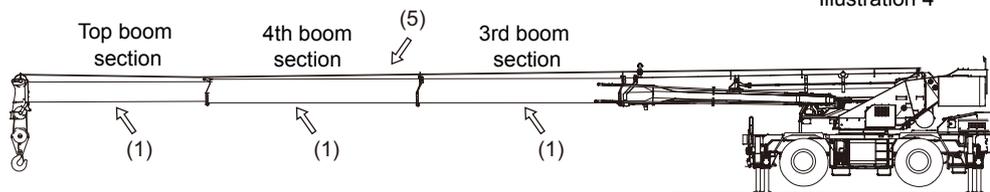


Illustration 5

K-02517-00

Greasing (Centralized Greasing Supply Unit)

NOTICE

Do not mix different brands of grease together.
If mixed, the properties of greases can change and have an adverse effect on the machine.
When adding grease, use the same brand that is already used in the machine.
If a different brand of grease must be used, be sure to remove all remaining grease before adding the new grease.

The centralized greasing supply unit automatically supplies grease to the necessary points of the carrier by switch operation.

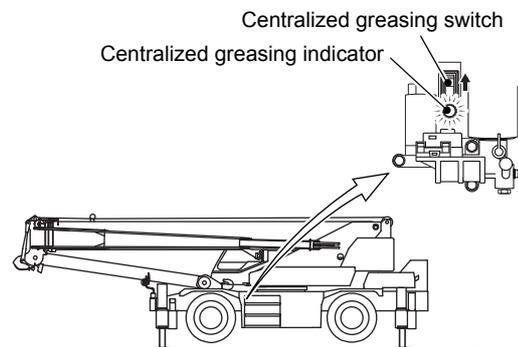
Before starting greasing, extend the outriggers and set up the machine horizontally.

Using Centralized Greasing Supply Unit (Option)

NOTICE

- **Do not operate the greasing supply unit when the grease tank is empty. Air can enter the system and cause malfunction of the unit.**
- **If a malfunction has occurred because of the entry of air, return the centralized greasing switch to neutral. After adding grease, operate the unit again.**

1. Press the upper side of the centralized greasing supply switch.
 - The centralized greasing indicator lights up, and the grease pump starts operating.

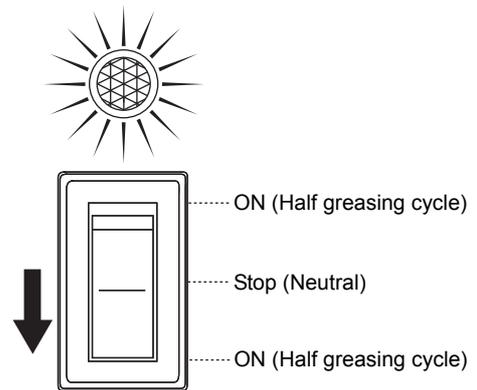


K-02518-00

2. When half of the greasing cycle is completed, the indicator goes out, and the grease pump stops.

3. Press the lower side of the centralized greasing switch.

- The centralized greasing indicator lights up, the grease pump starts operating again, and the second half of the greasing cycle is performed.



K-01063-00

4. The indicator goes out when the greasing is completed.

- The grease pump stops automatically.

5. Return the centralized greasing switch to neutral.

Greasing Period

- After one day of traveling, or after every 100 to 150 km of traveling: 1 cycle
- After traveling in rain or washing the vehicle: 1 cycle
- After traveling on exceptionally rough road: 1 cycle
- After being not operated for an extended period (Approximately 1 month): 2 cycles

Greasing Point

The points greased by the centralized greasing supply unit are as follows.

- King pins of the axles (top and bottom)
- Steering cylinder
- Steering rod
- Leaf spring pin
- Leaf spring slide sheet

Adding Grease

NOTICE

Do not add grease from the top of the tank with the tank cap removed. Air or contaminants can enter and cause a malfunction of the unit.

The "HIGH" and "LOW" levels are marked on the side of the grease tank. When the grease level has come below the "LOW", replenish grease as described below.

- Replenishment method

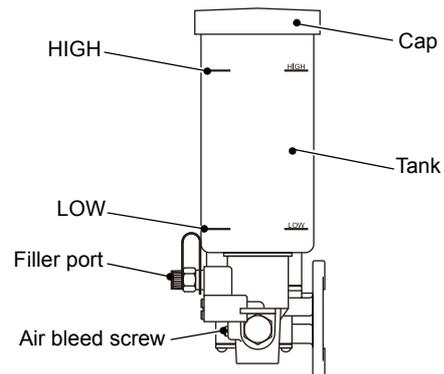
Attach the grease tube to the filler port at the bottom of the grease tank, and then add grease until it reaches the "HIGH" level. (Tank capacity: 400 cm³)

 For the brands of grease, refer to "Oils and Greases" (page 494).

- Air bleeding method

Loosen the air bleed screw, and press the centralized greasing switch while adding the grease from the filler port.

Grease containing air is discharged through the air bleed screw. When air is no longer contained in the discharged grease, tighten the air bleed screw and tighten the filler port cap.



K-01065-00

Gear Oil

NOTICE	
<ul style="list-style-type: none"> • Do not mix different brands of gear oil together. If mixed, the properties of the oil can change and have an adverse effect on the machine. When adding gear oil, use the same brand that is already used in the machine. If a different brand of gear oil must be used, be sure to drain all remaining oil before adding the new oil. • Before removing the plug, clean the area around the plug to prevent dust and other foreign matter from entering. • Wrap sealing tape around the taper plug, and tighten the plug until it does not turn any more. Do not over-tighten, or the plug mounting portion can be damaged. • Refer to the "Oils and Greases" (page 494) section and choose oil of the grade and viscosity suitable to the ambient temperature. If an unsuitable oil is used in an extremely cold environment, the oil can harden and cause machine damage or malfunction. 	

Maintenance Table

No.	Item	Points/ Quantity	Inspection and maintenance interval						
			1 week	100 h 1 month	300 h 3 months	600 h 6 months	1200 h 1 year		
1	Winch speed reducer (Main/auxiliary winch)	Check oil level	2 points				●		
		Replace oil	2.8 L×2			○		●	
2	Slewing Speed Reducer	Check oil level	1 point				●		
		Replace oil	2.3 L			○		●	
3	Axle (Carrier)	Check oil level	2 points		●				
		Replace oil	22.5 L×2					●	First replacement: 125 hours
		Check and Cleaning of Air Breather	2 points			●			
4	Axle (Planetary Gear)	Check oil level	4 points		●				
		Replace oil	2.3 L×4					●	

○: First check only

For brands of gear oil, refer to "Oils and Greases" (page 494).

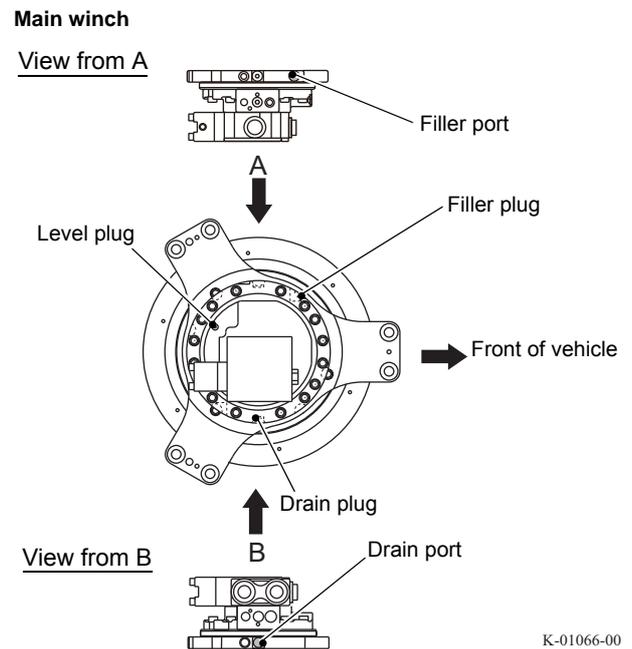
Winch Speed Reducer (Main/Auxiliary Winch)

CAUTION	
<p>The speed reducer is very hot immediately after operation, and you can suffer burns if you attempt to work on it. Before starting work, let it cool down until it is safe to touch with bare hands.</p>	

CTI-500XL-1_OM1-11E

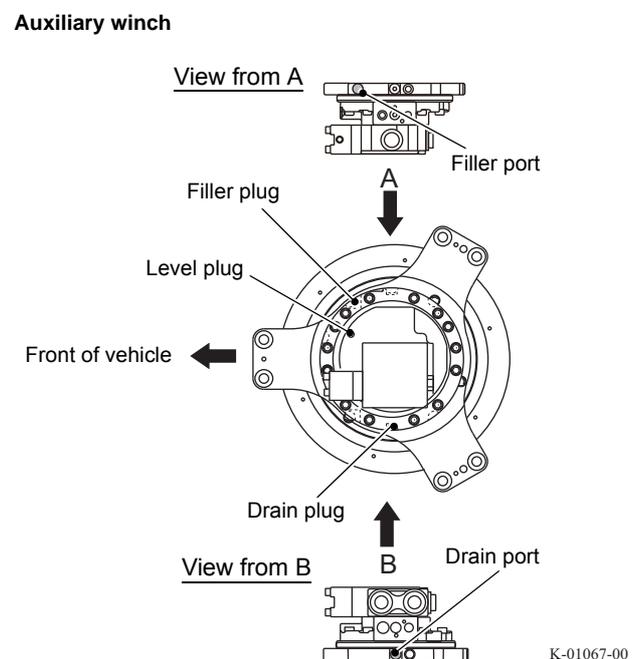
Checking oil level

1. Set up the machine on level ground.
2. Remove the level plug, and check the oil level.
When the oil level reaches the bottom of the plug hole, the oil amount is sufficient. If the oil level is low, remove the filler plug and add oil through the filler plug hole.
3. Wrap sealing tapes around the level plug and filler plug, and tighten the plugs.



Replacing oil

1. Set up the machine on level ground.
2. Place an oil pan.
3. Remove the drain plug, filler plug, and level plug to drain the oil.
4. After all the oil has drained out, tighten the drain plug.
5. Add new gear oil through the filler plug hole until the oil overflows from the level plug hole.
6. Tighten the level plug and filler plug.



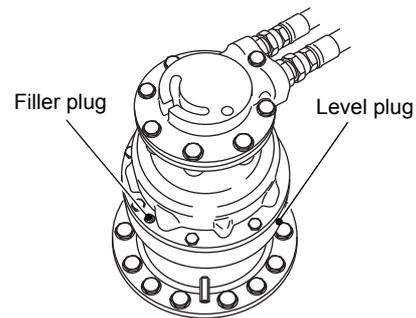
Slewing Speed Reducer

⚠CAUTION

The speed reducer is very hot immediately after operation, and you can suffer burns if you attempt to work on it. Before starting work, let it cool down until it is safe to touch with bare hands.

Checking oil level

1. Extend the outriggers, and set up the machine horizontally.
2. Raise the boom to an angle where it does not hinder work.
3. Remove the level plug, and check the oil level. When the oil level reaches the bottom of the plug hole, the oil amount is sufficient. If the oil level is low, remove the filler plug and add oil through the filler plug hole.
4. Wrap sealing tapes around the level plug and filler plug, and tighten the plugs.



K-01068-00

Replacing oil

1. Extend the outriggers, and set up the machine horizontally.
2. Raise the boom to an angle where it does not hinder work.
3. Place an oil pan under the drain plug.

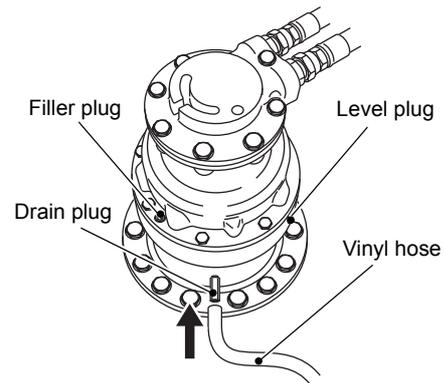
4. Remove the drain plug and attach a vinyl hose to the drain port. Then remove the filler plug, and drain the oil.

 The vinyl hose is to be prepared by the customer.

5. After all the oil has drained out, remove the vinyl hose. Wrap sealing tape around the drain plug, and tighten the plug.

6. Add new gear oil through the filler plug hole until the oil overflows from the level plug hole.

7. Wrap sealing tapes around the level plug and filler plug, and tighten the plugs.



K-01069-00

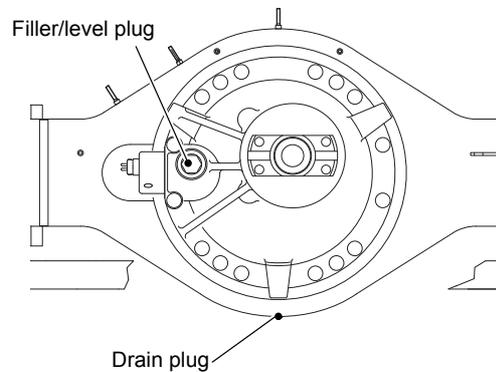
Axle (Carrier)

⚠ CAUTION

The axles are very hot immediately after operation, and you can suffer burns if you attempt to work on them. Before starting work, let them cool down until it is safe to touch with bare hands.

Checking oil level

1. Extend the outriggers, and set up the machine horizontally.
2. Remove the filler/level plug, and check the oil level. When the oil level reaches the bottom of the plug hole, the oil amount is adequate. If the oil level is low, add oil through the plug hole.
3. Wrap a sealing tape around the filler/level plug, and tighten the plug.



K-01070-00

Replacing oil

1. Extend the outriggers, and set up the machine horizontally.
2. Place an oil pan.
3. Remove the drain plug and filler/level plug, and then drain the oil.
4. Clean the drain plug and seal surface. If the seal surface is damaged, replace the seal ring with a new one.
5. Wrap a sealing tape around the drain plug and tighten it.

6. Add new gear oil until the oil overflows from the filler/level plug hole.
7. Wrap a sealing tape around the filler/level plug, and tighten the plug.
8. Check the oil level after several minutes, and if it is insufficient, add oil. Repeat this step until the oil level becomes stable.

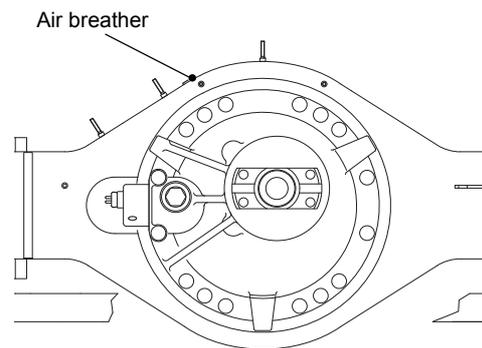
Checking and Cleaning of Air Breather

▲CAUTION

- Before doing repair paintwork, cover the air breather.
- Do not allow the air breather to be directly exposed to high-pressure water or high-pressure steam. It may cause a failure.

1. Check the following items.

- (1) The installation is normal.
Retighten if loose.



K-01071-00

- (2) The outer surfaces are not soiled.
If it is soiled, take out and clean the air breather with compressed air.
- (3) The cap rotates smoothly.
If not, replace with a new air breather.

2. To replace the air breather, contact Tadano Escorts India Private Ltd. or a dealer.

Axle (Planetary Gear)

⚠CAUTION

The axles are very hot immediately after operation, and you can suffer burns if you attempt to work on them. Before starting work, let them cool down until it is safe to touch with bare hands.

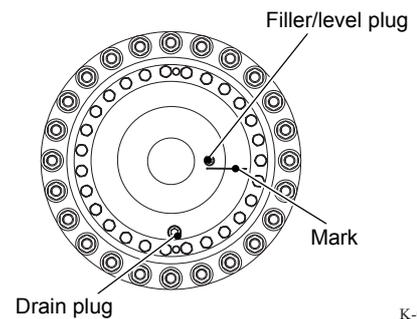
Checking oil level

1. Extend the outriggers, and set up the machine horizontally.

2. Release the parking brake.

 Refer to "Parking Brake Operation" (page 85).

3. Rotate the tire by hand to make the mark horizontal and the drain plug hole come to the lowest position.



K-01072-00

4. Remove the filler/level plug, and check the oil level. When the oil level reaches the bottom of the plug hole, the oil amount is adequate. If the oil level is low, add oil through the plug hole.

5. Wrap a sealing tape around the filler/level plug, and tighten the plug.

Replacing oil

1. Extend the outriggers, and set up the machine horizontally.

2. Release the parking brake.

 Refer to "Parking Brake Operation" (page 85).

3. Rotate the tire by hand to make the mark horizontal and the drain plug hole come to the lowest position.

4. Place an oil pan.

5. Remove the filler/level plug and drain plug and drain out the oil.

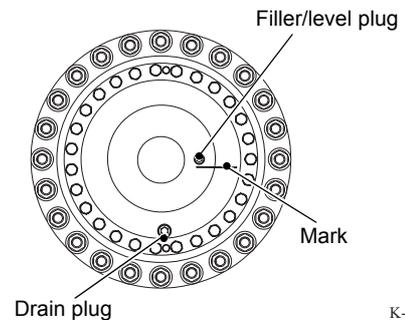
6. Clean the drain plug and seal surface. If the seal surface is damaged, replace the seal ring with a new one.

7. Attach the drain plug.

8. Add oil until the oil overflows from the filler/level plug hole.

9. Attach the filler/level plug.

10. Apply the parking brake, and retract the outriggers.



K-01072-00

Engine

NOTICE

- Do not mix different brands of engine oil together. If mixed, the properties of the oil can change and have an adverse effect on the machine. When adding engine oil, use the same brand that is already used in the machine.
If a different brand of engine oil must be used, be sure to drain all the remaining oil before adding new oil.
- Use engine oil that is suitable for ambient temperature. Refer to the separate engine manual and use an oil with suitable viscosity.

Maintenance Table

No.	Item		Points/Quantity	Inspection and maintenance interval					
				50 h	125 h	250 h	500 h	1,000 h	2,000 h
1	Engine	Replace oil	Approx. 11 L: When oil filter is not replaced Approx. 15 L: When oil filter is replaced			●			
		Replace oil filter	1 point				●		
2	Air cleaner	Cleaning Element	1 point			● (*1)			
		Replace element						●	
3	Radiator Fin	Clean	1 point				●		

(*1): Or when red signal is indicated on dust indicator

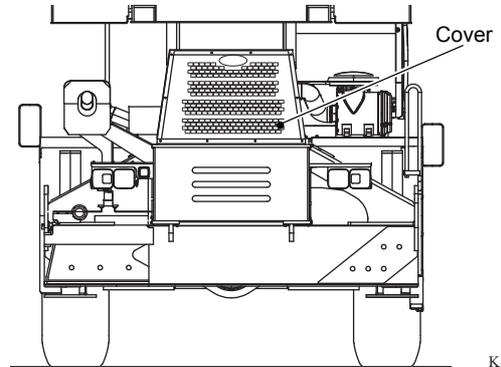
☞ Refer to the separate engine manual for how to replace the engine oil and oil filter, and cleaning/replacing the air cleaner element.

☞ For brands of engine oil, refer to "Oils and Greases" (page 494).

Radiator Fin

Cleaning

1. Remove the front cover of the radiator and clean the radiator with compressed air or a brush.



K-01074-00

Engine Cooling System

⚠ WARNING

- The coolant is very hot immediately after operation. If you open the radiator cap while the coolant is hot, the hot coolant can spout out and you can suffer burns. Let the coolant cool down before starting work.
- When handling long-life coolant (LLC), keep the following in mind:
 - LLC is poisonous. Do not ingest. If ingested accidentally, immediately induce vomiting and seek medical attention. If the LLC gets in your eye, immediately flush with clean water and seek medical attention.
 - Keep the LLC away from fire. LLC is flammable.

NOTICE

- To prepare coolant mixture, use soft water. Do not use water from wells or rivers.
- When you add the coolant, do not change the mixture ratio of the long-life coolant (LLC). Add coolant that has the same mixture ratio. Do not mix the LLC of different brands. If you must use different brand of LLC, drain all the remaining coolant before you add new coolant.
- Mix the long life coolant (LLC) with water in a 30:70 ratio.
- Keep the air conditioner turned on when you replace the coolant. The coolant in the air conditioner system is replaced only while the air conditioner is in operation.

Maintenance Table

No.	Item		Points/ Quantity	Inspection and maintenance interval					
				60 h	100 h	300 h	600 h	1,200 h	2,000 h
				1 month	3 months	6 months	1 year	2 years	
1	Coolant	Replace (Use long-life coolant.)	Approx. 30.3 L (*1)						●
2	Coolant Filter	Cleaning Element	1 point				●		

(*1): 13 L in engine, 8.8 L in radiator, 8.5 L in connecting hoses etc.

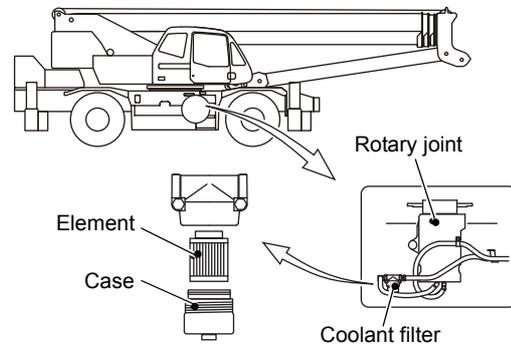
☞ For coolant replacement procedures, refer to the separate engine manual.

☞ For brands of long-life coolant, refer to "Oils and Greases" (page 494).

Coolant Filter

Cleaning Element

1. Remove the hoses at inlet/outlet port of the filter, and stop the flow of the coolant.
2. Remove the coolant filter case located at the bottom of the rotary joint, and clean the element. If the element is severely contaminated, replace it with a new one.



K-02519-00

Transmission System

NOTICE

- Do not mix different brands of torque converter oil together. If mixed, the properties of the oil can change and have an adverse effect on the machine. When adding torque converter oil, use the same brand of oil that is already used in the machine.
If a different brand of torque converter oil must be used, drain all the remaining oil before adding the new oil.
- Dust, foreign material or water in the torque converter circuit can cause a failure. Be especially careful when adding or replacing torque converter oil to prevent any foreign substances from entering the torque converter.

Maintenance Table

No.	Item		Points/ Quantity	Inspection and maintenance interval					
				1 week	100 h 1 month	300 h 3 months	600 h 6 months	1,200 h 1 year	2,400 h 2 years
1	Torque converter, transmission	Replace oil	Approx. 35 L (*1)		○			●	
		Cleaning Strainer	1 point		○			●	
2	Line filter	Replace element	1 point		○			●	

(*1): Total capacity ○: First replacement only

☞ For brands of torque converter oil, refer to "Oils and Greases" (page 494).

Transmission

⚠ CAUTION

The torque converter and transmission are very hot immediately after operation, and you can suffer burns if you attempt to work on them. Before starting work, let them cool down until it is safe to touch with bare hands.

NOTICE

- An excessively low or high oil level can cause the clutch to fail or overheat. Make sure that the oil level is in the specified range.
- Before removing the plug, clean the area around the plug to prevent dust and other foreign matter from entering.

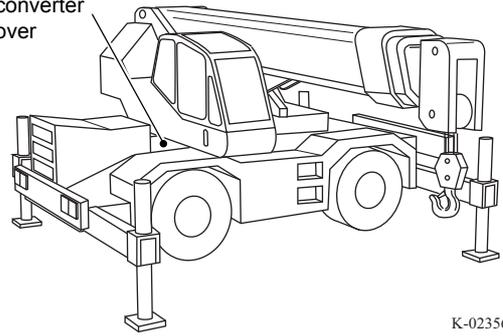
Replace oil

When you replace the oil, also clean the strainer and replace the line filter.

1. Extend the outriggers, and set up the machine horizontally.

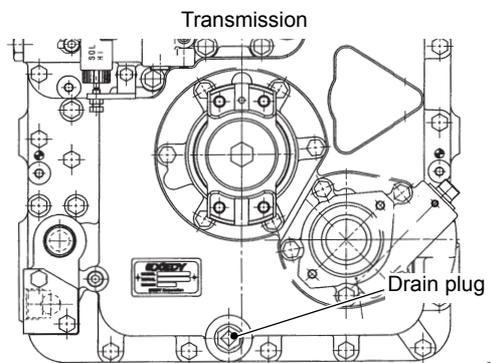
2. Slew the boom in the direction to make adding oil easier (approx. 90° to right or left), and stop the engine.
3. Remove the upper cover of the torque converter.

Torque converter upper cover



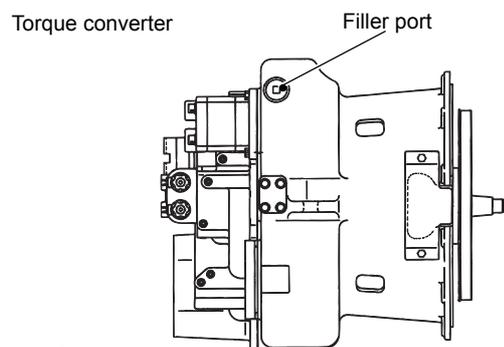
K-02356-00

4. Place an oil pan.
5. Remove the drain plug on the lower part of the transmission and drain the oil.
6. Clean the drain plug, and tighten the plug.



K-01077-00

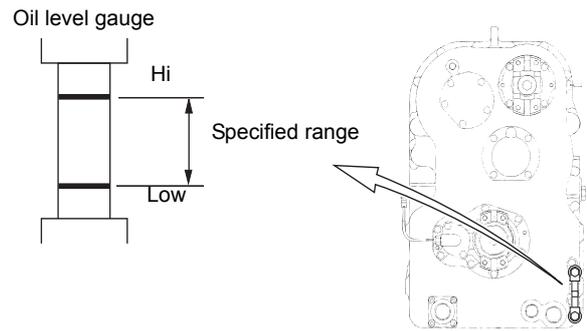
7. Add oil through the torque converter filler port until the oil level is in the specified range of the transmission oil level gauge.



K-01078-00

8. Turn the PTO switch to "OFF", and put the shift lever in "N". Then start the engine and let it idle.

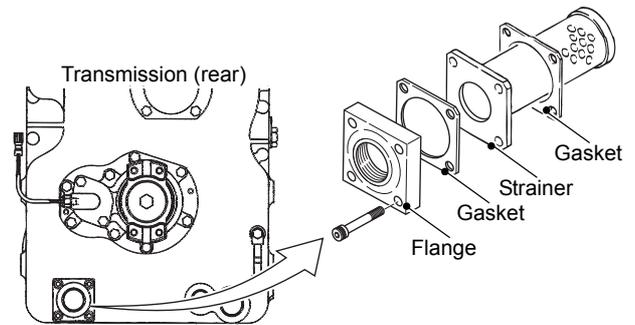
9. The oil level drops gradually as the oil passes through the torque converter, pipes, oil cooler, and filter, etc. Add oil little by little to compensate for the drop in oil level. Keep the engine idling for approx. 5 minutes and continue to add oil until the oil level becomes stable in the specified range at the oil temperature of 50°C. The specified oil level is between the "Hi" and "Low".



K-01005-00

Cleaning Strainer

1. Refer to "Replacing Oil" and drain oil in the transmission.
2. Remove the strainer from the lower part of the transmission.
3. Clean the bottom surface of the transmission case through the strainer installation hole.



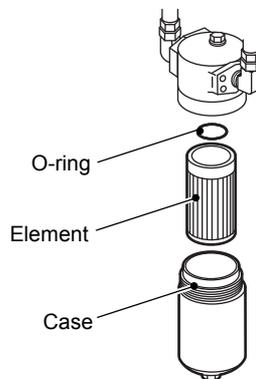
K-01080-00

4. Immerse the strainer in volatile solvent such as kerosene, and clean it with a soft tool such as nylon brush.
5. Blow compressed air of 300 to 400 kPa {3 to 4 kgf/cm²} on the inside of the strainer.
6. Dry out the strainer.
7. Attach the strainer in its initial position.
8. Refer to "Replacing Oil" and add oil into the transmission.

Line filter

Replacing Element (at front right of transmission)

1. Remove the case and replace the filter element.



K-01081-00

Fuel System

⚠ WARNING

- Fuel leakage can cause a fire. If fuel leakage is found, repair it immediately. If fuel spills during filter replacement or fuel system bleeding, wipe it off completely. Spilled fuel can catch fire.
- Do not use fuel other than diesel fuel. Do not use diesel fuel mixed with gasoline or alcohol. They can cause engine trouble. They can also cause a fire or explosion, and serious injury or death, or damage to the machine can occur. Use standard diesel fuel only.

NOTICE

- Use fuel that meets the standards shown in the right. ASTM (American Society for Testing Materials) recommends fuel with 0.5% or less sulfur residue. Note that a sulfur residue exceeding 0.5% shortens the engine oil replacement intervals by 50%.
- Carefully prevent contaminants and water from entering the storage tank and fuel tank, and tighten the filler cap securely.
- When you clean the fuel tank, discharge deposits from the drain plug at the bottom of the fuel tank.

Maintenance Table

No.	Item	Points/ Quantity	Inspection and maintenance interval					
			50 h	500 h	600 h	1,200 h		
1	Fuel tank	Refueling	As required					When required
		Drain water	1 point		●			
		Clean	1 point			●		
2	Engine fuel filter	Drain water	1 point					(*1)
		Replace element	1 point		●			
3	Strainer	Inspect and clean	1 point			●		
4	Gauze filter (fuel pump)	Inspect and clean	2 points				●	
5	Water separator	Drain water	1 point	●				
		Replace element	1 point			●		

(*1): When the water separator warning lights up

☞ For procedures of draining water and element replacement of the engine fuel filter, refer to the separate engine manual.

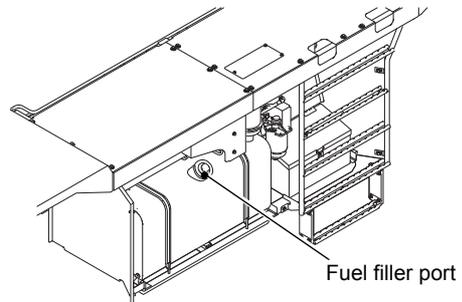
To inspect or clean the strainer and gauze filter, refer to the manual for the engine, or contact Tadano Escorts India Private Ltd. or a dealer.

Fuel tank

Refueling

1. Remove the cap of the fuel filler port, and add diesel fuel.

NOTICE
Do not use anything other than diesel fuel. Otherwise, it can cause an engine failure.

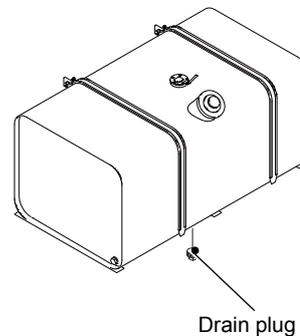


K-02521-00

Draining water

Depending on change in ambient temperature, water vapor in the fuel tank condenses into water and collects in the fuel tank. Drain the condensation regularly.

1. Place a pan under the fuel tank.
2. When the fuel level in the tank is low, discharge water from the drain plug at the bottom of the fuel tank.
3. When fuel containing no water flows out, attach the drain plug.



K-01083-00

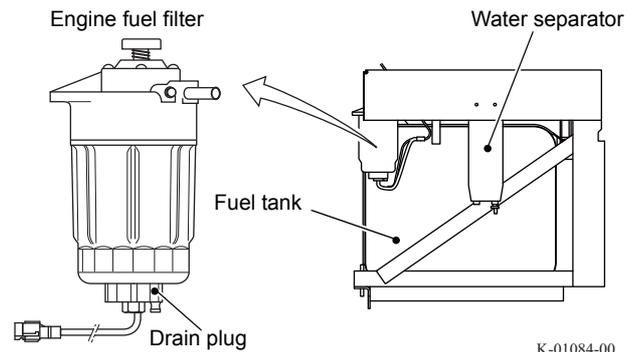
Engine fuel filter

⚠ CAUTION

The engine is very hot immediately after operation, and you can suffer burns if you attempt to work on it. Before starting work, let it cool down until it is safe to touch with bare hands.

Draining water

1. When the water separator warning lamp lights up, drain water from the engine fuel filter.
 - ☞ For procedures of draining water from the engine fuel filter, refer to the separate engine manual.



Water separator

⚠ CAUTION

The engine is very hot immediately after operation, and you can suffer burns if you attempt to work on it. Before starting work, let it cool down until it is safe to touch with bare hands.

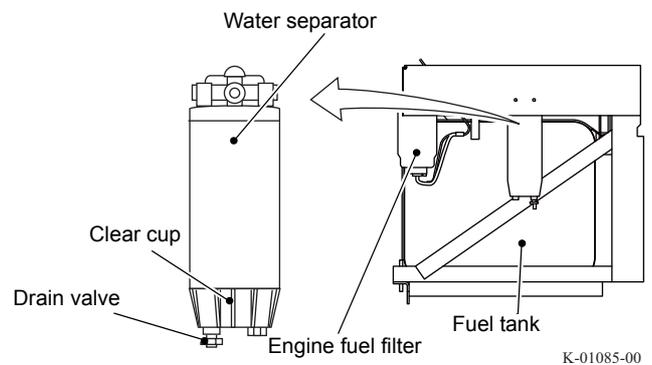
Draining water

1. If there is any water in the clear cup at the bottom of a water separator, loosen the drain valve to drain the water.

Replacing Cartridge

☞ Replace the cartridge together with the engine fuel filter.

1. Remove the cartridge together with the clear cup from the filter top.
2. Remove the clear cup from the cartridge and wash it with suitable solution such as diesel fuel.
3. Clean the sealing surface.
4. Apply diesel fuel on the sealing surface and insert into a gasket.
5. Place new cartridge in the clear cup and set it onto the filter top.
6. Tighten all the parts firmly and bleed air in the fuel system.



Axle

⚠CAUTION

The axles are very hot immediately after operation, and you can suffer burns if you attempt to work on them.

Before starting work, let them cool down until it is safe to touch with bare hands.

Maintenance Table

No.	Item		Points/ Quantity	Inspection and maintenance interval				Remarks
				50 h	100 h 1,000 km	500 h 5,000 km	1 year 10,000 km	
1	Axle and differential	Checking Tightening of Bolts	-	○	□	●		
2	Backlash of wheel bearing	Check	-		○		●	
3	Differential Lock Function	Check	-		●			
4	Propeller shaft	Checking Tightening of Bolts	-	○	□		●	
		Backlash check	-	○	□	●		
		Checking Tightening of Flange Fixing Bolt	-	○	□	●		

○: First check only

□: Second check only

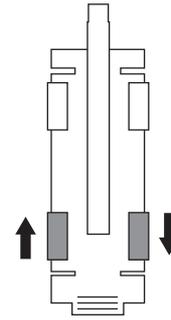
 For checking tightening of bolts for axles and differentials, and for checking backlashes of wheel bearings and propeller shafts, contact Tadano Escorts India Private Ltd. or a dealer.

Differential Lock Function

Check

1. Extend the outriggers, and set up the machine horizontally.
2. Move the shift lever to neutral, release the parking brake, and then stop the engine.

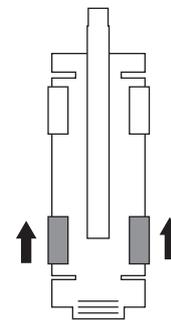
- 3.** Check the axles for oil leakage. When the rear wheel on one side is rotated, check that the wheel on the other side rotates in reverse direction.



K-01086-00

- 4.** Press the differential lock switch.
When the rear wheel on one side is rotated while the differential lock indicator is lighting up, check that the wheel on the other side rotates in the same direction.

 The differential is locked only while the differential lock switch is pressed.



K-01087-00

- 5.** Release the differential lock switch.

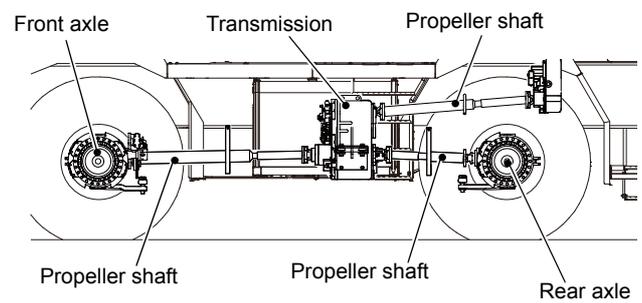
Propeller shaft

⚠ WARNING

Do not mount or dismount the propeller shaft. Any looseness in the propeller shaft connection can cause a serious accident. Contact Tadano Escorts India Private Ltd. or a dealer for mounting and dismounting of the propeller shaft.

Checking Tightening of Bolts

1. Check that there is no looseness in the connection between the axle and propeller shaft.



K-01088-00

Checking Tightening of Flange Fixing Bolt

1. Check the tightening of the following points.
 - Between transmission and front axle
 - Between transmission and rear axle

Brake System

⚠ WARNING

- Do not mix different brands of brake fluid together. If mixed, the properties of the fluid can change and have an adverse effect on the brake system, resulting in an accident. Be sure to use "TADANO Genuine Brake Fluid".
- The "TADANO Genuine Brake Fluid" is glycol-based. If silicon- or mineral-based brake fluid is used, it can damage the packings and cause brake failure, resulting in an accident. Always use "TADANO Genuine Brake Fluid".

NOTICE

Use unopened new brake fluid only for replenishment or replacement.

Maintenance Table

No.	Item		Points/ Quantity	Inspection and maintenance interval				
				1 week	100 h	300 h	600 h	1,200 h
					1 month	3 months	6 months	1 year
1	Brake Fluid Reservoir	Replace brake fluid	Approx. 2 L					●
2	Disc brake pad	Checking for Wear	12 points			●		
3	Air dryer	Replace desiccating agent, filters, packings	1 point					● ^(*1)
4	Air Tank	Check drain cocks	6 points			● ^(*2)		
5	Parking brake pad	Clearance Adjustment	1 point					●

(*1): Or every 100,000 km.

(*2): Or every 20,000 km.

Brake Fluid Reservoir

⚠ WARNING

The brake fluid has high moisture absorbing properties. Therefore, if you do not replace brake fluid for a long time, vapor lock can occur and cause an accident. Replace brake fluid at the specified intervals.

Replacing Brake Fluid

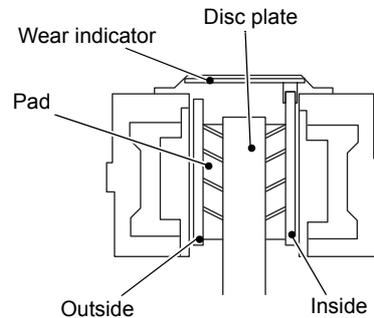
1. To replace the brake fluid, contact Tadano Escorts India Private Ltd. or a dealer.

Disc brake pad

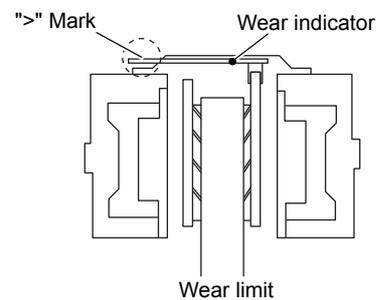
⚠ WARNING

- If you use brake pads whose thicknesses are near their wear limit, the disc plates can suffer damage and a brake failure can occur. It can cause an accident.

If inspection reveals that the pads are near their wear limit, stop use of the machine, and have Tadano Escorts India Private Ltd. or a dealer replace the pads immediately.



- Brake pads whose thickness is within working specifications can still be carbonized by heat build-up, worn unevenly or scratched. If the machine travels in this state, an accident can occur. If a scratch, abnormal wear or rust is discovered on the disc plates during inspection, have Tadano Escorts India Private Ltd. or a dealer inspect it.



⚠ CAUTION

The calipers and disc plates are very hot immediately after traveling, and you can suffer burns if you attempt to work on them. Before starting work, let them cool down until it is safe to touch with bare hands.

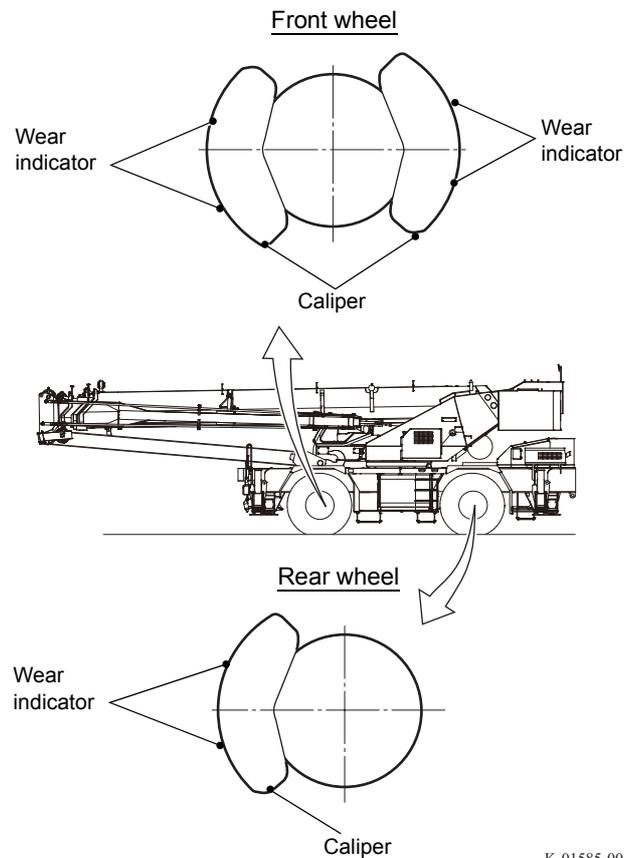
NOTICE

Carry out pad wear inspection for all wheels. If inspection reveals that even 1 pad is worn to near its wear limit, remove all pads and inspect them. Replace the following parts as a set: all the pads, the pads of the right and left front wheels, or the pads of right and left rear wheels

Checking for Wear

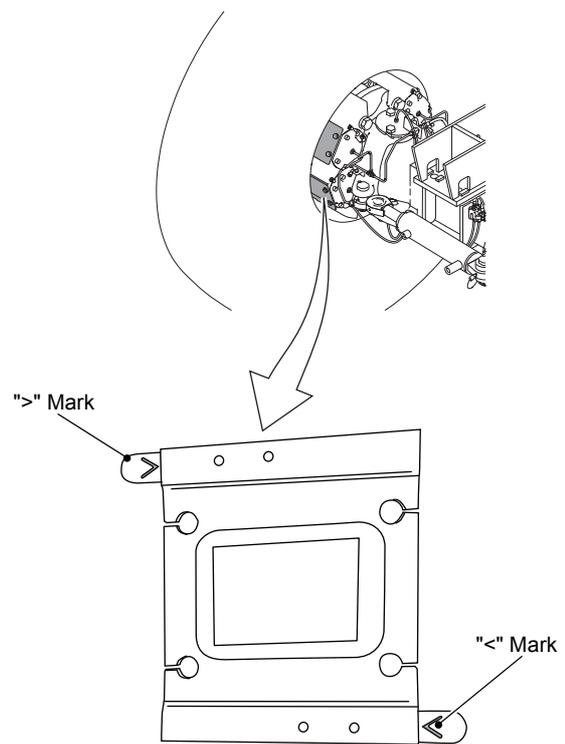
1. Extend the outriggers to maximum and set up the machine.
2. Turn the steering wheel fully, and check the wear indicators on the calipers.

 The front wheels have 8 wear indicators in all. The rear wheels have 4.



K-01585-00

3. If the entire ">" mark is exposed, the brake pad is at its wear limit. Replace the brake pads.
4. To replace the brake pad, contact Tadano Escorts India Private Ltd. or a dealer.



K-01092-00

Air dryer

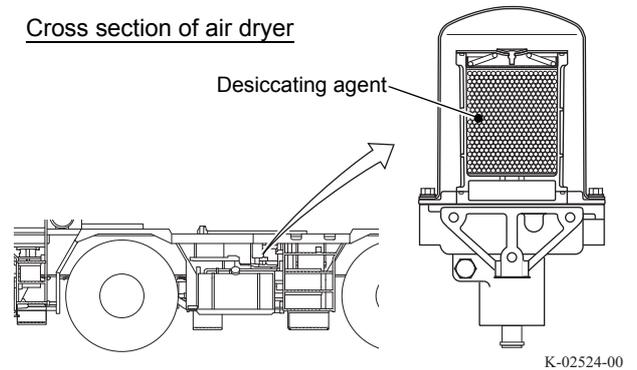
NOTICE

If the air dryer performance decreases, vapor contained in the compressed air condenses into water, which has an adverse effect on the equipment. Replace the desiccating agent at regular intervals.

Replacing Desiccating Agent, Filters and Packings

1. To replace the desiccating agent, filters and packings, contact Tadano Escorts India Private Ltd. or a dealer.

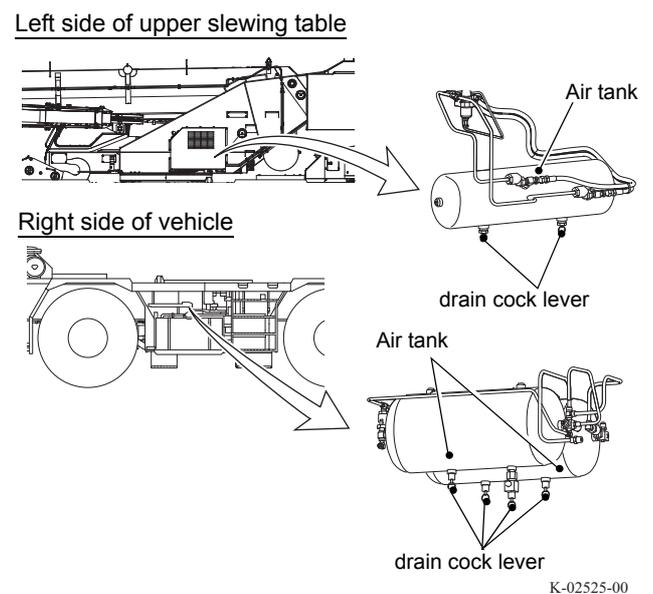
 The air dryer is installed in front of the air tank above the fuel tank.



Air Tank

Checking Drain Cocks

1. Check the drain cocks for air leak and damage, and check that air comes out when the drain cock lever is pulled.
2. If there is air leak or damage, or air does not come out when the drain cock lever is pulled, contact Tadano Escorts India Private Ltd. or a dealer.



Parking Brake Pad

⚠WARNING

- If you use brake pads whose thicknesses are near their wear limit, the disc plates can suffer damage and a brake failure can occur. It can cause an accident.
If inspection reveals that the pads are near their wear limit, stop use of the machine, and have Tadano Escorts India Private Ltd. or a dealer replace the pads immediately.
- Brake pads whose thickness is within working specifications can still be carbonized by heat build-up, worn unevenly or scratched. If the machine travels in this state, an accident can occur.
If a scratch, abnormal wear or rust is discovered on the disc plates during inspection, have Tadano Escorts India Private Ltd. or a dealer inspect it.
- A parking brake pad comes to wear limit when its remaining thickness becomes 2.2 mm or less at any point on the circumference. Have Tadano Escorts India Private Ltd. or a dealer replace the pads.

⚠CAUTION

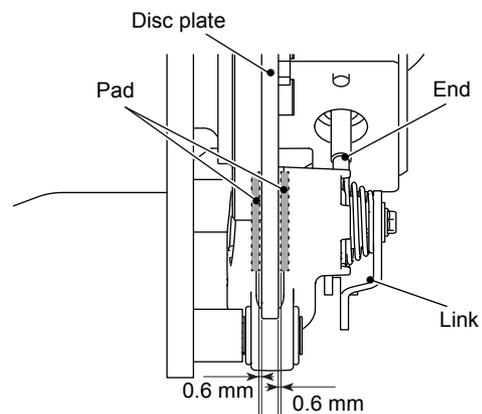
The pads and disc plates are very hot immediately after using the parking brake, and you can suffer burns if you attempt to work on them. Before starting work, let them cool down until it is safe to touch with bare hands.

Clearance Adjustment

Set the parking brake switch to "OFF", and check the clearance between the disc plate and each pads of the parking brake.

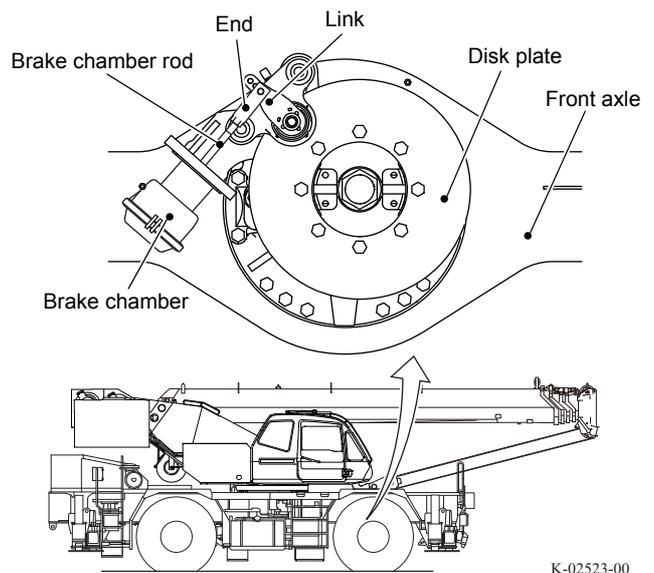
If the sum of the clearances is 1.2 mm or more, adjust the clearance.

1. Extend the outriggers to maximum and set up the machine.



K-01095-00

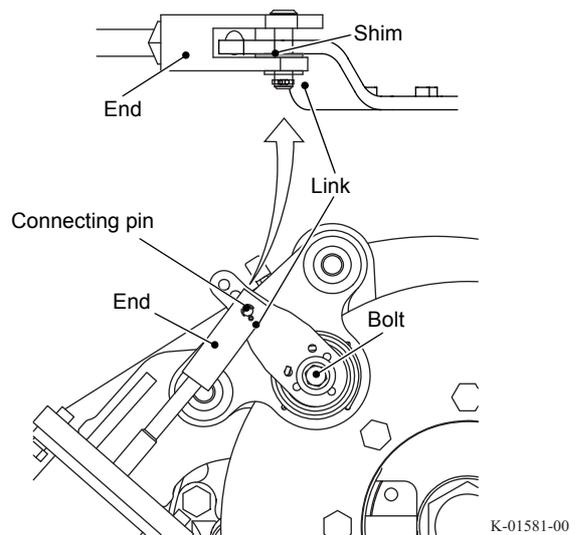
2. Switch the parking brake switch to "OFF" and fully extend the brake chamber rod.



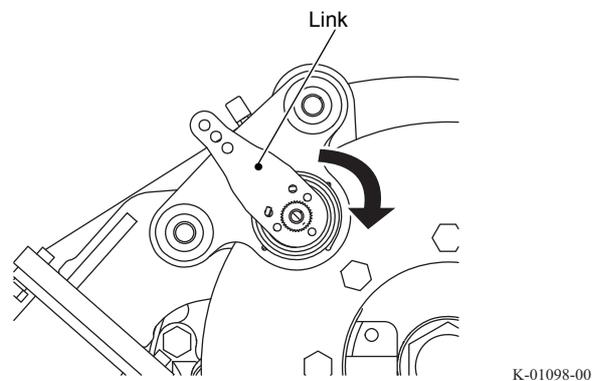
3. Remove the connecting pin and end from the link.

☞ Be careful not to lose the shim between the end and the link.

4. Remove the bolt fixing the link.



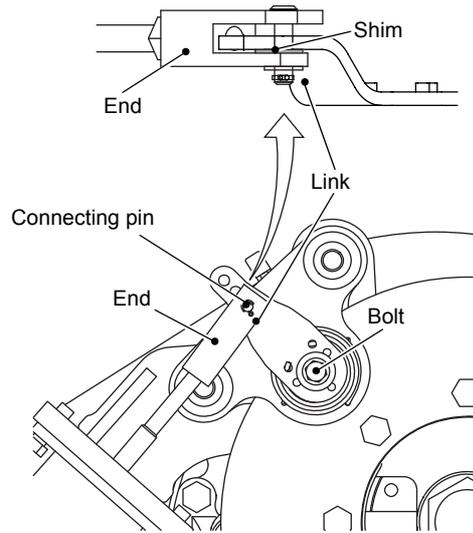
5. Turn the link 4 pitches clockwise so that the sum of the clearances between the pad and disc plate is 0.7 mm (± 0.1 mm).



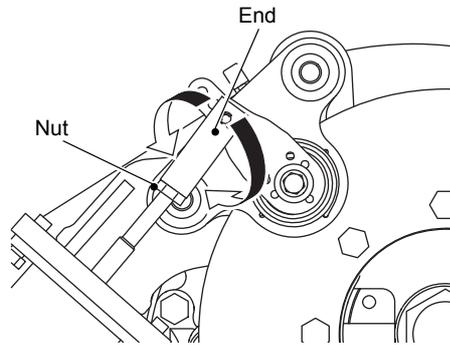
6. Attach the bolt and fix the link.
 - Tightening torque
 80 to 85 N·m {8.2 to 8.7 kgf·m}

⚠WARNING
The lack of tightening torque may cause the link to loosen and the brake to malfunction. Tighten the bolt securely.

7. Attach the end, shim, and connecting pin to the link.

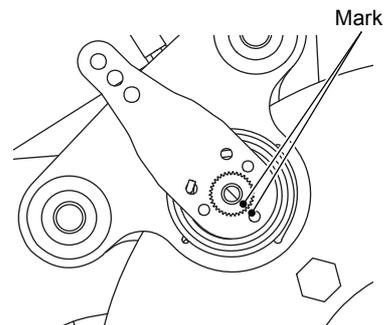


8. If the sum of the clearances between the disc plate and pads is not 0.7 mm (± 0.1 mm), loosen the nut that fixes the end, and turn the end and adjust the clearances.
 - Tightening torque
 42 to 48 N·m {4.3 to 4.9 kgf·m}



A pad comes to wear limit when its remaining thickness becomes 2.2 mm or less at any point on the circumference. Have Tadano Escorts India Private Ltd. or a dealer replace the parking brake pads.

- ☞ After pad replacement, install the link, with the marks aligned. If the sum of the clearances between the disc plate and pads is not 0.7 mm (± 0.1 mm), turn the end and adjust the clearances.



Tire, Wheel

⚠ WARNING

If you replace or remount a tire and wheel in an incorrect manner, the wheel can come off or the tire can burst, causing an accident. Contact Tadano Escorts India Private Ltd. or a dealer for replacement and installation.

Maintenance Table

No.	Item		Points/ Quantity	Inspection and maintenance interval					
				1 week	100 h 1 month	300 h 3 months	600 h 6 months	1,200 h 1 year	
1	Tires	Tire rotation	4 points						● ^(*1)
2	Wheel nut	Check for looseness	4 points			● ^(*2)			
3	Wheel parallelism	Check	-						● ^(*3)

(*1): Every 5,000 km.

(*2): For the first time or after tire replacement, perform after 50 km of traveling, and succeeding checks after 100, 200, 500, and 1,000 km of traveling, and then every 3 months.

(*3): If damage has occurred, contact Tadano Escorts India Private Ltd. or a dealer for inspection.

Tires

NOTICE

Long hours of traveling can wear the tire unevenly. Carry out tire rotation at regular intervals so that the tires wear evenly.

Tire rotation

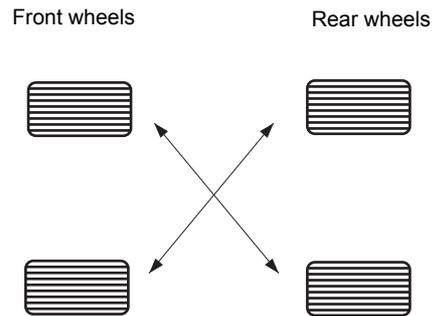
1. Slightly loosen the wheel nuts while the tires are in contact with the ground.
2. Extend the outriggers and raise the tires off the ground.
3. Remove the wheel nuts and remove the tires.

4. Clean the threads of the wheel nuts and wheel bolts. Replace the wheel nuts and wheel bolts with damaged threads. Also replace the deformed or cracked wheels.

 Dirt on the threads can cause wheel nuts to loosen.

5. Mount the wheels with the wheel bolts aligned to the wheel bolt holes.

 For tire rotation, change the tire positions as shown in the figure.



K-01101-00

6. Apply torque control agent or grease between the wheel nuts and washer, and on the threaded sections of the wheel bolts.

NOTICE
Do not use oil or grease which contains molybdenum disulfide. They can cause the wheel bolts to elongate.
Use a TADANO-designated torque control agent, or Daphne Eponex SR No. 2 or an equivalent.

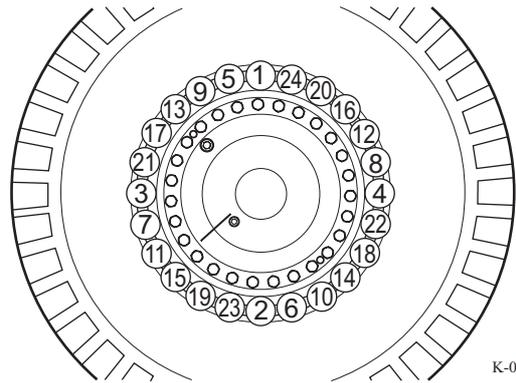
7. Temporarily tighten the wheel nuts.
8. Retract the outriggers and lower the tires to the ground gently.

9. Tighten the wheel nuts with the specified tightening torque. Tighten the wheel nuts diagonally and alternately in the sequence shown in the illustration at the right.

- Tightening torque

610 to 670 N•m{62.2 to 68.3 kgf•m}

 A wheel has 24 wheel nuts.



K-01102-00

10. After a tire is replaced, tighten the wheel nuts again with the specified tightening torque after approximately 50 km of traveling.

Wheel nut

▲WARNING

If a wheel nut is loose or tightened exceeding the specified torque, the wheel can come off or the wheel bolt can break. This can cause an accident. Check the wheel nuts at regular intervals and re-tighten them to the specified torque.

Check for looseness

1. Check looseness of the wheel nuts, and tighten them to the specified tightening torque.

Hydraulic System

⚠WARNING

Never dismount or disassemble the hydraulic components, piping, and couplings. Even when the engine is not running, some components remain under high pressure. Careless dismounting or disassembling may cause serious injury or death.

⚠CAUTION

The hydraulic oil and hydraulic components are very hot immediately after operation, and you can suffer burns if you attempt to work on them. Before starting work, let them cool down until it is safe to touch with bare hands.

NOTICE

- Do not use different brands of hydraulic oil together. If mixed, the properties of the oil can change and have an adverse effect on the machine. When adding hydraulic oil, use the same brand of oil that is already used in the machine. If a different brand of hydraulic oil must be used, replace entire amount of the oil.
- If the hydraulic oil temperature 85°C icon is shown on the AML, stop operation. Otherwise, the hydraulic oil deteriorates rapidly, and the life of the hydraulic components will be shortened.
- The hydraulic oil is more viscous when its temperature is low. If the crane is operated without warming-up in cold weather for high-speed operation with load, it damages the hydraulic components. When the ambient temperature is low, do not start crane operation right away. Instead, let the crane warm up sufficiently with the engine running at slow speed until the oil temperature rises to approx. 20°C.
- Handle the hydraulic pipes carefully. Incorrect handling of these pipes can cause oil leakage or hydraulic component malfunction. If a pipe has to be removed, contact Tadano Escorts India Private Ltd. or a dealer.
- If dust, foreign matter, water etc., enter into the hydraulic oil tank or pipes, it may cause a machine failure. Pay sufficient attention to keep these parts from dust when working on them.

Maintenance Table

No.	Item			Points/ Quantity	Inspection and maintenance interval						
					100 h	300 h	600 h	1,200 h	2,400 h	4,800 h	
					1 month	3 months	6 months	1 year	2 years	4 years	
1	Hydraulic Oil Tank	Hydraulic oil	Replacement	Approx. 615 L ^(*1) Approx. 820 L ^(*2)							● ^(*3)
		Return filter	Replacement	1 point				●			
		Air breather	Replacement	1 point			●				
2	Return filter (front of hydraulic oil tank)	Replacement	1 point				●				
3	Line filter (steering/slewing pump circuit)	Replacement	1 point				●				

CTI-500XL-1_OM1-11E

No.	Item		Points/ Quantity	Inspection and maintenance interval						
				100 h	300 h	600 h	1,200 h	2,400 h	4,800 h	
				1 month	3 months	6 months	1 year	2 years	4 years	
4	Line filter	Winch brake circuit	Clean	1 point					●	
		Source of upper pilot pressure	Clean	1 point					●	
		Automatic stop circuit	Clean	2 points					●	
		Pilot valve circuit for auxiliary winch/boom telescoping/telescoping pedal/slewing	Clean	1 point					●	
		Pilot valve circuit for auxiliary winch/boom telescoping/telescoping pedal	Clean	1 point					●	
		Pilot valve circuit for main winch/boom elevation	Clean	1 point					●	
		Steering circuit	Clean	1 point					●	
		Steering/slewing circuit	Clean	1 point					●	
		Slewing circuit	Clean	2 points					●	
		Changeover in upper structure pilot pressure	Clean	1 point					●	
		Telescoping changeover circuit	Clean	2 points					●	

(*1): Tank capacity

(*2): Total oil capacity

(*3): 2,400 h or 2 years when non Tadano hydraulic oil LL is used

☞ For replacement/cleaning of line filter in No. 4, contact Tadano Escorts India Private Ltd. or a dealer.

☞ For brands of hydraulic oil, refer to "Oils and Greases" (page 494).

Hydraulic Oil Tank

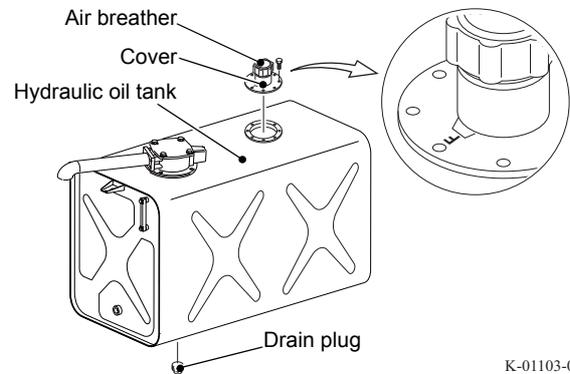
NOTICE

You must bleed air remaining on the suction side of the hydraulic pump after hydraulic oil replacement. Starting the hydraulic pump without bleeding air damages the pump. After replacing the hydraulic oil, do not attempt to start the pump until the air is bled. For the bleeding procedure, contact Tadano Escorts India Private Ltd. or a dealer.

Replacing Hydraulic oil

When replacing the hydraulic oil, also replace the return filter.

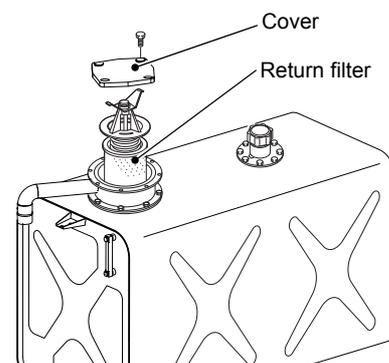
1. Set the machine into the traveling configuration, and set it up on a level ground.
2. Remove the cover from the filler port and use an oil pump to drain the hydraulic oil from the tank into an oil drum or other suitable container.
3. Remove the drain plug at the bottom of the tank to release any remaining hydraulic oil.
4. Check the inside of the tank, and clean it if any dust or foreign matter is found.
5. Clean the drain plug and wrap sealing tape around it, then tighten the plug.
6. While watching the oil level in the oil level gauge, add new hydraulic oil into the tank.
7. Remount the cover on the hydraulic oil tank so that the "F" mark on the hydraulic tank cover faces the front of the machine.
8. Bleed air from the hydraulic oil pump.
9. Check the oil level again. If low, add more hydraulic oil.



K-01103-00

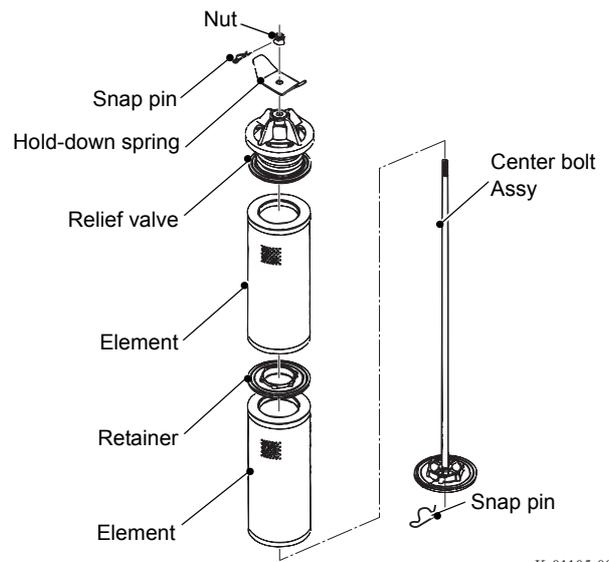
Replacing the Return Filter

1. Remove the top cover on the hydraulic oil tank and take out the return filter.



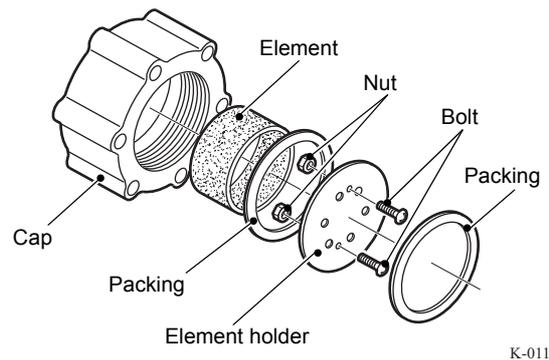
K-01104-00

2. Pull out the snap pin and then remove the nut from the return filter.
3. Replace the filter element with a new one and reassemble the return filter.
4. Install the return filter in the tank and remount the cover.



Replacing Air Breather

1. Loosen the bolts and remove the element holder.



2. Replace the element with a new one.

Return filter (front of hydraulic oil tank)

Replacement

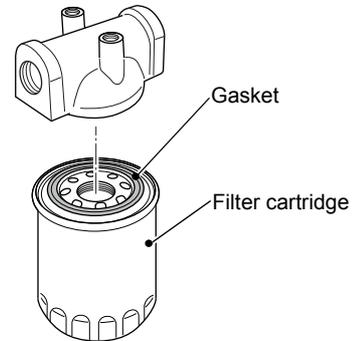
1. Remove the filter cartridge using a strap wrench.

 Place a rag beforehand to catch the hydraulic oil which may spill when the filter cartridge is removed.

2. Apply hydraulic oil thinly to the gasket and then install a new filter cartridge.

- Tightening torque:

11.7 to 15.7 N•m {1.2 to 1.6 kgf•m}

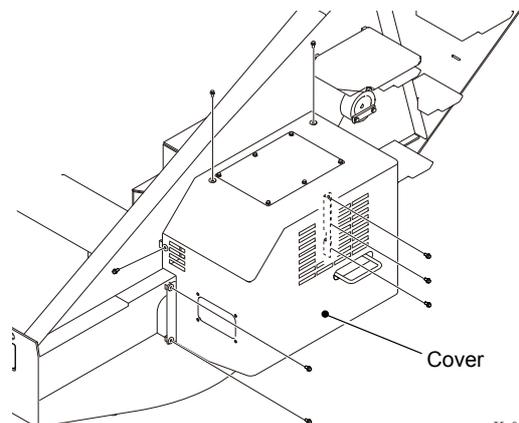


K-01107-00

Line filter (steering/slewing pump circuit)

Replacement

1. Set up the machine on level ground and stop the engine.
2. Remove the cover on the right of the slewing table.



K-02526-00

3. Place an oil pan under the line filter.

 There is approx. 0.6 L of oil in the case.

4. Remove the drain plug of the line filter and drain out the oil.

5. Remove the case.

6. Take out the filter element from the head.

7. Apply a thin coat of hydraulic oil to the O-ring (A), and install a new filter element on the head.

 Replace the O-ring (A) with a new one.

8. Apply a thin coat of hydraulic oil to the O-ring (B), and then install the case.

- Tightening torque:
20 N•m {2 kgf•m}

 Replace the O-ring (B) with a new one.

9. Apply a thin coat of hydraulic oil to the O-ring (C), and mount the drain plug.

- Tightening torque:
25 N•m {2.5 kgf•m}

 Replace the O-ring (C) with a new one.

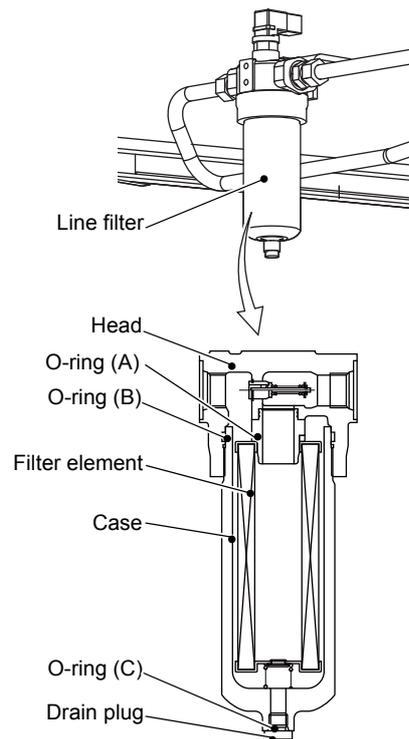
10. Start the engine to bleed air from the line filter.

⚠ WARNING

Bleed air from the line filter. Air in the line filter causes lag in the wheel operation when the steering wheel is turned. This can cause an accident.

11. Stop the engine.

12. Attach the cover on the right of the slewing table.



K-01109-00

Slewing System

Maintenance Table

No.	Item	Points/ Quantity	Inspection and maintenance interval					
			1 week	100 h	300 h	600 h	1,200 h	
				1 month	3 months	6 months	1 year	
1	Slewing bearing mounting bolt	48 bolts on inner ring 30 bolts on outer ring		●			●	

Slewing bearing mounting bolt

⚠ WARNING

Periodical check is required for the slewing bearing mounting bolts because they can sometimes come loose or be elongated.

If the machine is operated while the slewing bearing mounting bolts have any irregularity, the bolts can break off and cause the upper structure to come apart from the lower structure. This can result in a serious accident.

Be sure to check the mounting bolts periodically to prevent such an accident.

Check

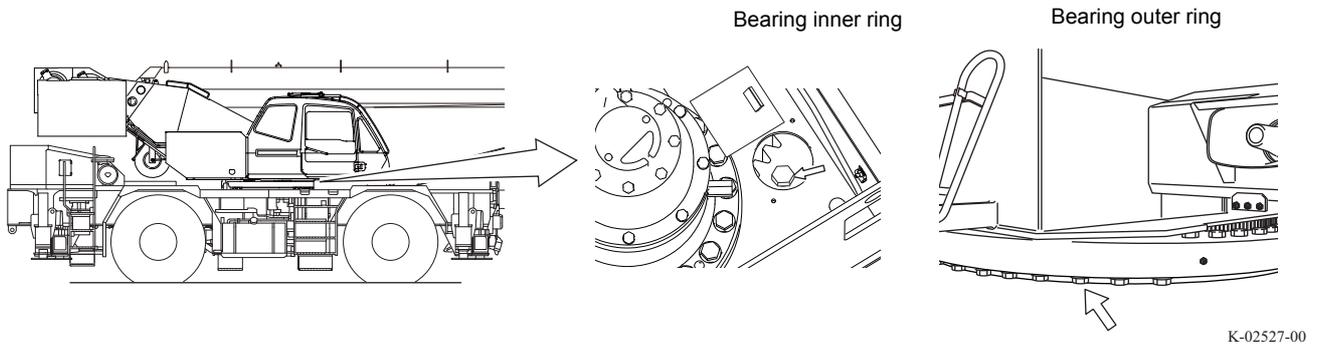
1. Examine the tightening torque for the slewing bearing mounting bolts.
2. Inspect the bearing inner ring bolts one by one while you slew the boom.

- Tightening torque (bearing inner ring bolts)

1,620 to 1,810 N•m {16,500 to 18,500
kgf•cm}

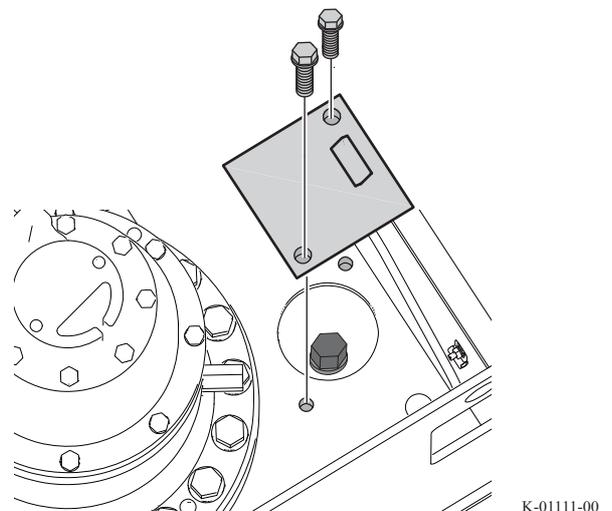
- Tightening torque (bearing outer ring bolts)

1,177 to 1,275 N•m {12,000 to 13,000
kgf•cm}



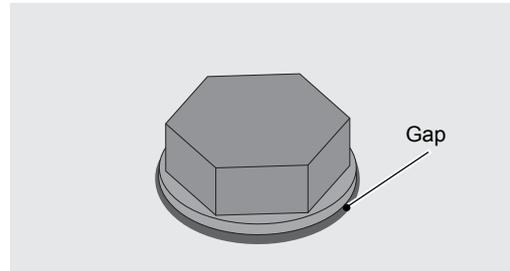
Checking the slewing bearing inner ring

1. Remove the inspection cover.



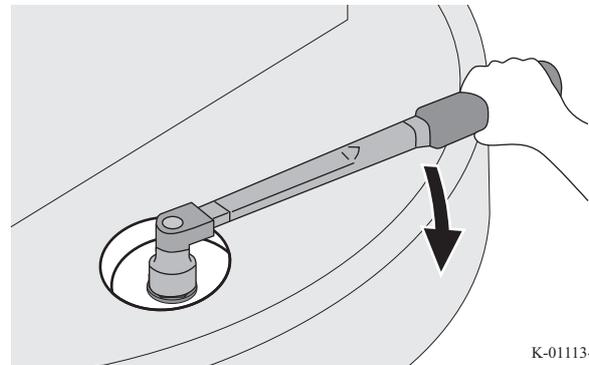
2. Slew the boom so that the slewing bearing mounting bolts come in the center of the inspection hole, and check the looseness of the bolts.

- Every 100 working hours or monthly inspection
Check the slewing bearing mounting bolts for any irregularities (looseness, elongation, rusting, breakage, or dropping off). For the looseness and elongation of the bolts, visually check the gap between the bolt and mounting surface. Also, check the looseness using a test hammer.



K-01112-00

- Every 1,200 working hours or yearly inspection
Check the slewing bearing mounting bolts for any irregularities (looseness, elongation, rusting, breakage, or dropping off). Also, have the tightening torque checked using a torque wrench by Tadano Escorts India Private Ltd. or a dealer.



K-01113-00

- If any irregularities are found
If any of the slewing bearing mounting bolts are loose, re-tighten them to the specified torque.
If any one of the bolts has an irregularity other than looseness, have all the bolts replaced by Tadano Escorts India Private Ltd. or a dealer.
When the bolts are replaced, make sure that the torque control agent is applied to the threaded area of the bolts, and that the bolts are tightened to the specified torque.

3. After checking is completed, remount the inspection cover.

Checking the slewing bearing outer ring

1. Check the slewing bearing mounting bolts for any irregularities (looseness, elongation, rusting, breakage, or dropping off). The requirements of the check are similar to those of the slewing bearing inner ring.

Electrical System

Maintenance Table

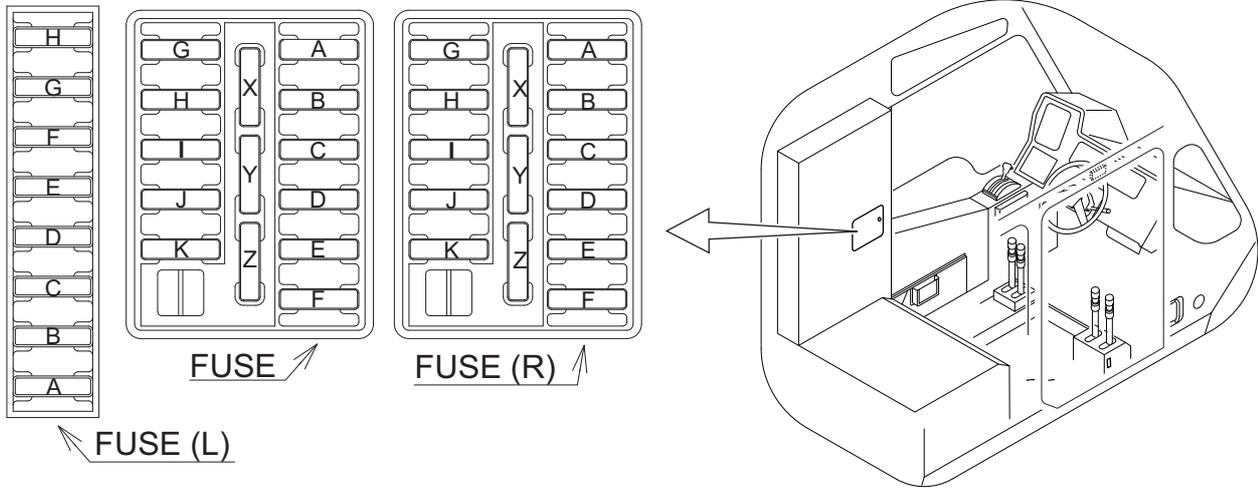
No.	Item	Points/ Quantity	Inspection and maintenance interval					
			1 week	100 h	300 h	600 h		
				1 month	3 months	6 months		
1	Fuse replacement		When fuse is blown					

Fuse Replacement

NOTICE

- To prevent short-circuit, set the starter switch to "OFF", and remove the cable from the negative terminal of the battery before fuse replacement.
- Using a fuse exceeding the rated capacity can burn out wiring or electrical components in case of short-circuit. Use a fuse with the specified capacity for replacement.
- If a fuse is blown again after replacement, other causes are conceivable. Contact Tadano Escorts India Private Ltd. or a dealer for inspection.

Upper structure



FUSE (L)

POSITION	CAPACITY	NO	COLOR	OBJECT
H	10A	820	O	POWER SOURCE FOR CRANE (AML)
G	5A	-	L	RESERVE
F	5A	-	W	RESERVE
E	5A	-	R	RESERVE
D	5A	327	L	POWER SOURCE FOR CRANE (PTO)
C	10A	254	W	POWER SOURCE FOR CRANE (PTO)
B	5A	-	Y	RESERVE
A	10A	1421	R	BEACON LAMP (OPT)

FUSE

POSITION	CAPACITY	NO	COLOR	OBJECT
A	5A	829	R	ICF
B	5A	154	R	PTO SWITCH
C	15A	156	W	POWER SOURCE FOR CRANE (PTO)
D	10A	430	B/R	VIEW SYSTEM (OPT)
E	15A	152	W/R	WORKING LAMP
F	10A	-	L/R	RESERVE
G	10A	-	W	RESERVE
H	10A	157	L	STEERING SELECT DRIVE SELECT DIFFERENTIAL LOCK OUTRIGGER CONTROL
I	10A	213	O	COMBINATION METER
J	15A	151	BR/R	CIGAR LIGHTER
K	15A	218	LG/R	POWER WINDOW
X	5A	-	-	SPARE
Y	10A	-	-	SPARE
Z	15A	-	-	SPARE

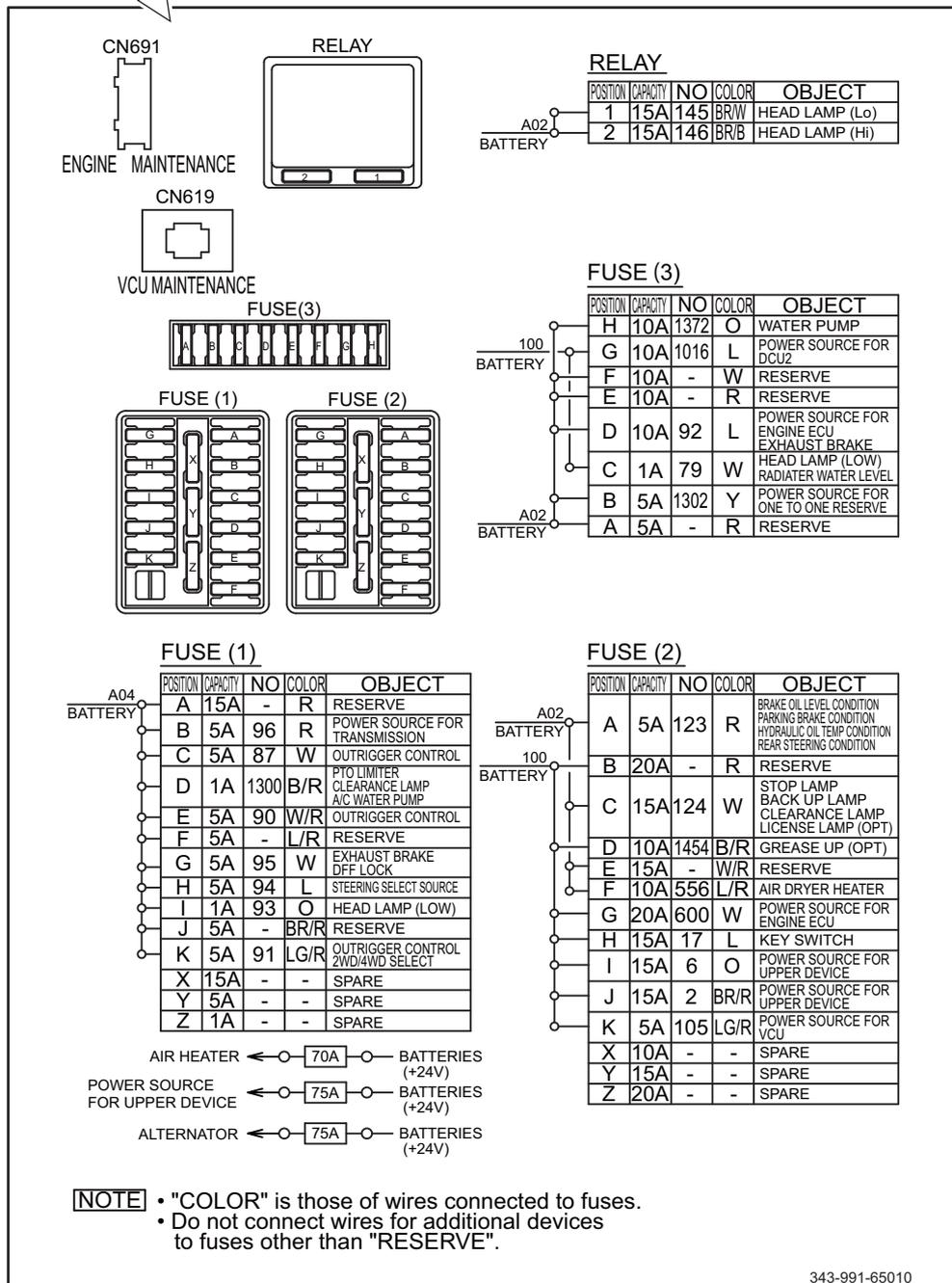
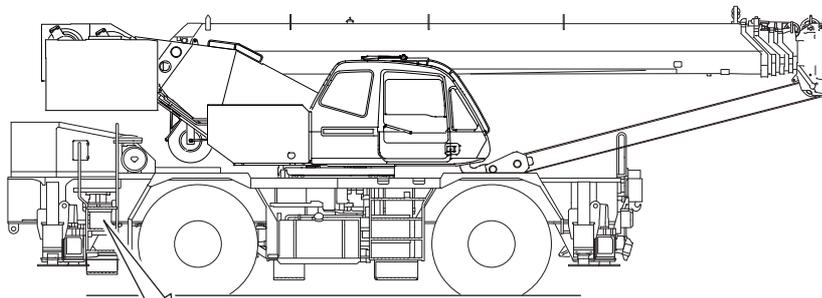
FUSE (R)

POSITION	CAPACITY	NO	COLOR	OBJECT
A	5A	299	R	PARKING BRAKE
B	5A	234	R	AIR CONDITIONER
C	15A	225	W	AIR CONDITIONER
D	10A	159	B/R	POWER SOURCE FOR CRANE (OPT)
E	15A	226	W/R	AIR CONDITIONER
F	10A	-	L/R	RESERVE
G	10A	-	W	RESERVE
H	10A	214	L	T/M SHIFT SELECT EMERGENCY TRANSMISSION EMERGENCY ACCELERATOR
I	10A	155	O	AIR HORN
J	15A	150	BR/R	FRONT WINDSHIELD WIPER
K	15A	158	LG/R	ROOF WINDSHIELD WIPER
X	5A	-	-	SPARE
Y	10A	-	-	SPARE
Z	15A	-	-	SPARE

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K-02528-00

Lower structure



Air Conditioner System

Maintenance Table

No.	Item		Points/ Quantity	Inspection and maintenance interval					
				100 h	300 h	600 h	1,200 h	2,400 h	
				1 week	1 month	3 months	6 months	1 year	2 years
1	Condenser	Check, Cleaning	1			●		(*1)	
2	Refrigerant Level	Check	1	●					
3	Refrigerant piping connection	Check	-			●			
4	Inside air filter	Check, Cleaning	1	●		●			
5	V-belt	Check	1			●			

(*1): Clean the fin yearly.

Condenser

Check, Cleaning

1. Wash away mud, dust and others stuck to the fins of the condenser.

⚠CAUTION

Before washing the condenser, stop the engine. Otherwise, an electric shock can occur.

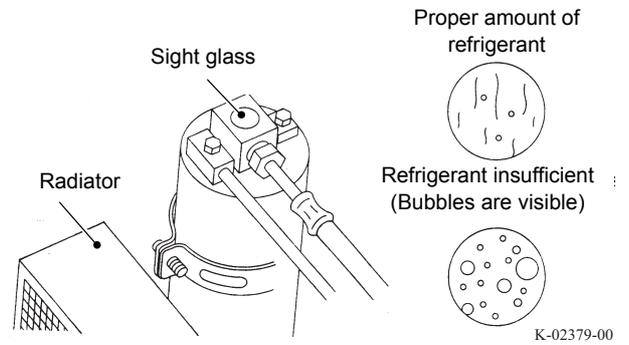
NOTICE

Do not use detergent. It can cause a unit failure.

Refrigerant Level

Check

1. Set the air conditioner switch to "ON".
2. While the magnet clutch of the compressor is ON, check the state of the bubbles through the sight glass. No bubbles are visible when the amount is proper.

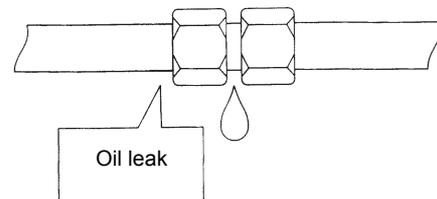


Refrigerant piping connection

Check

1. Check for oil leak from the refrigerant piping connection visually.

NOTICE
If seeping of oil is significant, the gas can be leaking out of the connection. Contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.



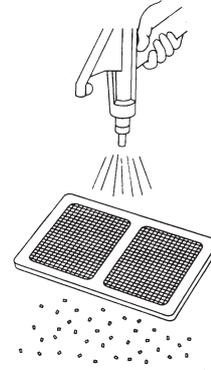
Inside air filter

Check, Cleaning

- Removing ordinary soiling
 - (1) Remove the inside air filter, and blow the clean compressed air to the dust-free side.
- Removing severe soiling
 - (1) Soak and wash the filter in the lukewarm water with mild detergent. Then rinse it with clear water, and airdry it completely.

⚠CAUTION

Do not use organic solvent such as gasoline, trichloroethylene and thinner.



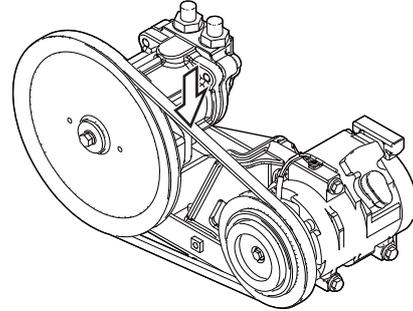
K-02381-00

V-belt

Check

1. Check the belt tension and presence of damage.

NOTICE	
<ul style="list-style-type: none"> • After adjustment, securely tighten bolts and nuts. • Do not tighten the belt excessively. The belt and bearings can be damaged. • Do not lubricate the belt. Oil and grease on the belt cause the belt slip and decrease the service life of the belt. 	



K-03720-00

Check method	Deflection when the center of the belt is pushed by approx. 98 N (10 kgf) of force	Belt tension gauge
At checking	9 to 12.5 mm	265 to 441 N (27 to 45 kgf)
At new belt installation	6.5 to 9 mm	451 to 666 N (46 to 68 kgf)

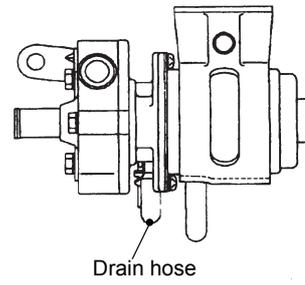
Periodic Replacement Part

To use the air conditioner system safely, replace the parts in the list below at regular intervals. Contact Tadano Escorts India Private Ltd. or a dealer for replacement.

Periodic Replacement Part	Replacement interval
Receiver dryer	Every 4 years
Blower motor	Every 5,200 hours
Electric fan motor	(varies depending on usage)
Water pump	Every 2,300 hours (varies depending on usage)

Water Pump

A little amount of the coolant (long life coolant) may leak from the drain hose of the water pump. It does not mean the pump is malfunctioning.



K-02382-00

Wire Rope

Replacing Wire Rope

⚠ CAUTION

- Do not handle wire ropes with bare hands, or you can suffer an injury. When you handle wire ropes, always wear protective leather gloves.
- When you replace a wire rope, wear protective gears. A wire rope can snap and hurt you.

Criteria for Wire Rope Replacement

⚠ WARNING

If the local laws, regulations or rules concerning the criteria of wire rope replacement is more strict than the standard described in this manual, observe the local ones.

If a wire rope breaks during operation, the load or hook block drops and causes a serious accident. Inspect the wire ropes at regular intervals. Immediately replace wire ropes that has met the criteria for replacement.

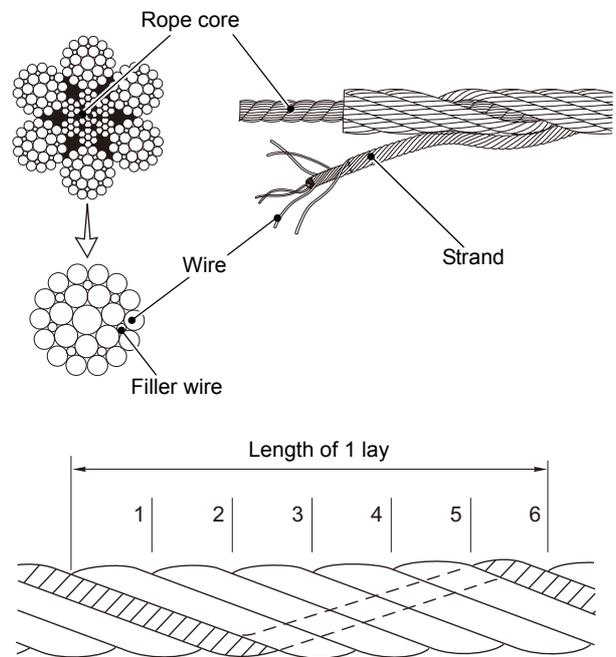
Perform daily and periodic (monthly) inspections of the wire ropes for breaks, wear, corrosion, deformation, damages due to sparks or heat, and also check the lubrication and rope end condition.

If any of the conditions listed below exist, replace the wire rope.

If the end of wire rope is not in good condition, repair it or cut it short.

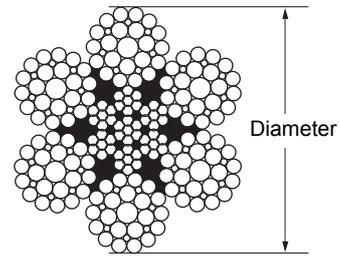
- In running ropes: six or more randomly distributed broken wires in one lay, or three or more broken wires in one strand in one lay.
- In standing ropes: more than two broken wires in one lay in sections beyond end connections, or more than one broken wire at an end connection.
- Wear of one-third of the original diameter of outside individual wires.

 The figure shows the standard 6-strand wire rope.



- Reductions from nominal diameter of more than:

Nominal diameter of Wire ropes	Wear Limits
Up to 8.0 mm	0.4 mm
9.5 to 12.7 mm	0.8 mm
14.3 to 19.0 mm	1.2 mm
22.2 to 28.6 mm	1.6 mm
32.0 to 38.0 mm	2.4 mm

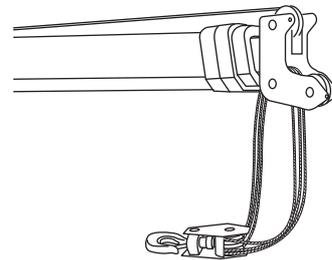


K-01123-00

- Evidence of kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure.
- Evidence of any heat damage from any cause.

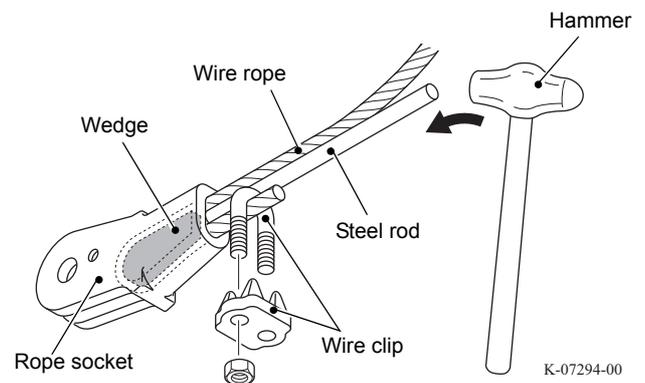
Removing Wire Rope

1. Extend the outriggers, and slew the boom toward the rear or side.
2. Lower the boom fully, and bring down the hook block to the ground.



K-01124-00

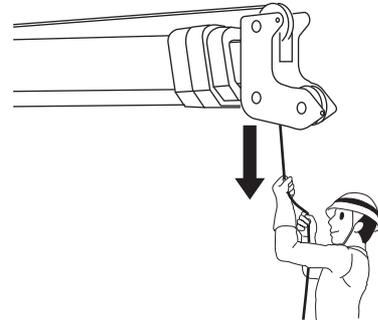
3. Remove the rope socket from the hook block or from the boom head.
4. Remove the wire clip. Hammer out the wedge from its position. And then remove the wire rope from the rope socket.



K-07294-00

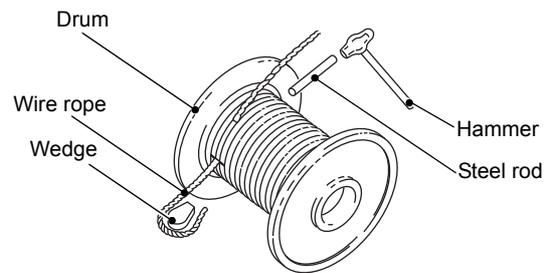
CTI-500XL-1_OM1-11E

- 5. Pull the wire rope out of the hook block and weight for anti-two-block device.
- 6. Unwind the winch while pulling the wire rope, and wind the wire rope around a wooden spool.



K-01126-00

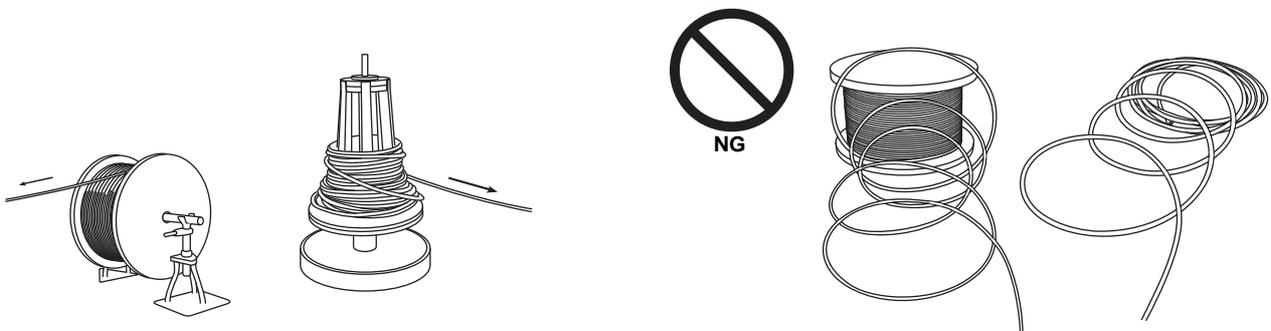
- 7. Wind in the wire rope until there is no wire rope left on the winch drum. Hammer out the wedge from the winch drum, and wind up all remaining wire rope.



K-01127-00

Unwinding Wire Rope

Wire rope is wound as a coil or wound on a wooden spool when supplied. Unwind the wire rope by rolling the coil, or pull out the rope while turning the spool. If the wire rope is unwound improperly, it can become twisted, untwisted, or develop kinks, rendering it unusable. Even a twist not so significant can cause the wire rope to become tangled.



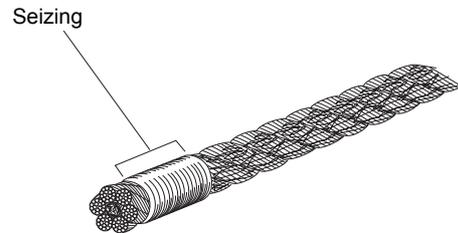
K-01128-00

Installing Wire Rope

When you cut or end-treat the wire rope, apply seizing to the wire to prevent the strands from coming loose. For seizing, use a galvanized steel wire and wrap it around the wire rope tightly.

The proper width of the seizing is 2 or 3 times the diameter of the rope.

Wire rope diameter	Seizing wire diameter
to 10 mm	0.6 to 1.2 mm
11 to 30 mm	1.0 to 2.0 mm



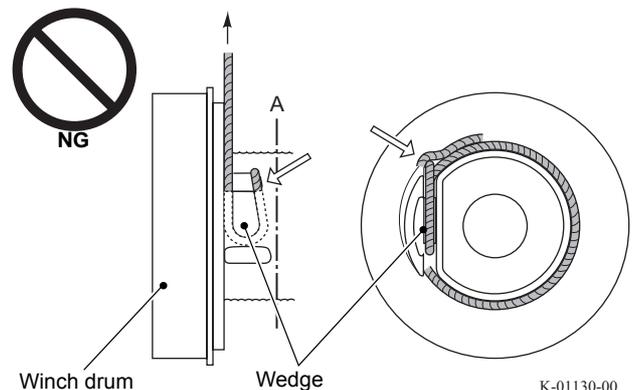
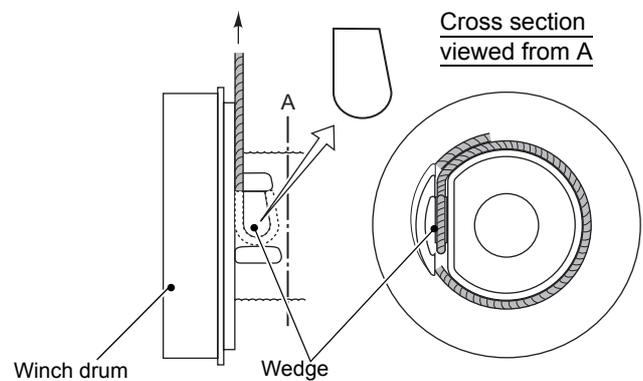
K-01129-00

1. Reeve through a new wire rope from the boom head or jib head to the winch drum.

NOTICE
Make sure that the routing of the wire rope is correct.

2. Secure the end of the wire rope to the winch drum.

NOTICE
Orient the wedge correctly. Make sure that the end of the wire rope does not protrude from the winch drum spool.



K-01130-00

CTI-500XL-1_OM1-11E

3. Wind up the winch to wind the wire rope around the winch drum until a length only sufficient for attaching it to the hook block is left.

Pay attention to the following when winding in the rope.

- At the start of the winding, wind the rope along the guide at the verge of the drum. (See Illustration 1)
- For the first layer of winding, put the rope in the grooves on the drum.
- When you wind over another layer of windings, set the rope in the valleys between the wire ropes. (See Illustration 2)

Illustration 1

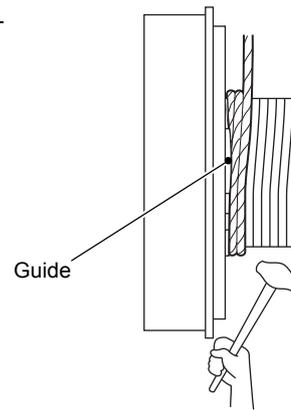
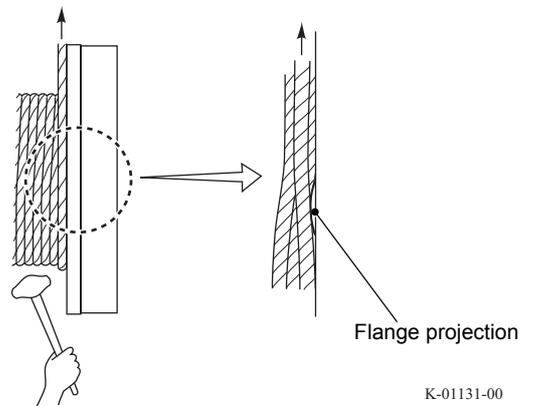


Illustration 2



K-01131-00

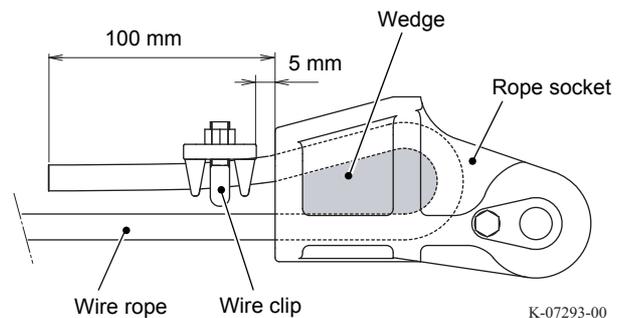
4. After reeving the wire rope through the boom and hook block sheaves in the pattern appropriate to the number of parts of line, pass it through the weight for anti-two-block device.

 For information on how to reeve the wire rope, refer to "Reeving Wire Rope" (page 236).

5. Pass the wire rope through the rope socket, and secure it with the wire clip.

NOTICE

Be careful of the orientations and installation positions of the wedge and wire clip.

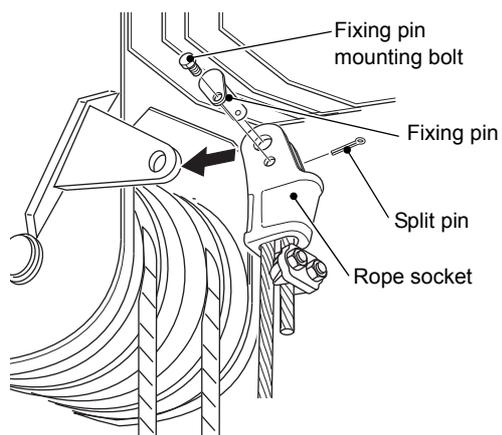


K-07293-00

6. Insert the fixing pin and secure the rope socket to the hook block or boom head.

⚠WARNING

Securely tighten the fixing pin mounting bolt for the rope socket using a wrench. Improper installation can cause the rope socket to come off and the lifted load to fall, resulting in an accident.



K-07282-00

Handling Wire Ropes

⚠CAUTION

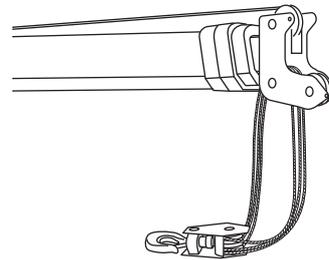
Do not handle wire ropes with bare hands, or you can suffer an injury. When you handle wire ropes, always wear protective leather gloves.

Always handle wire ropes with sufficient care. The life of wire ropes is maximized if they are handled correctly. If handled improperly, wire ropes can become unusable, or must be replaced prematurely. Handle the wire ropes correctly.

Disentangling Wire Rope

If a new wire rope is used with a long boom and when the number of parts of line is small, the rope can become tangled. This condition is dangerous because it causes the hook block or load to rotate. Correct this condition, following the procedures below.

- 1.** Extend the outriggers, and slew the boom toward the rear or side.
- 2.** Lower the boom fully, and bring down the hook block to the ground.



K-01134-00

- 3.** Remove the rope socket from the hook block or from the boom head.
- 4.** Let the rope socket turn freely until it no longer turns on its own.

⚠CAUTION

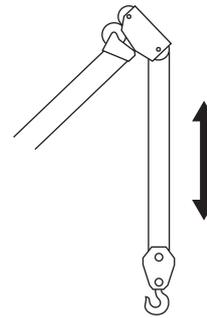
Be careful of the movement of the wire rope and of the rope socket.

The twist of the wire rope turns the rope socket, and you can be hit by the wire rope and be injured.

- 5.** Attach the rope socket to the hook block.

6. Hoist up and down the hook block several times to make the twist even throughout the wire rope. If the tangling still remains after this, do the procedure above again.

NOTICE
If the tangling is severe, correct it step by step several times.



K-01135-00

7. Make sure that the wire rope is not wound up disorderly on the winch drum. If the wire rope is wound up disorderly, unwind and wind it again.

Eliminating Excessive Twisting of Wire Rope

NOTICE
If operation is performed in the same configuration for a long time, the wire rope can suffer damage (become untwisted) at the same location, whereby twisting can gather at the rope ends. These causes damage to the wire rope.
To settle a twisting condition of the wire rope, change the number of parts of line, change the operating configuration, or re-reeve the wire rope, reversing the ends (at the rope socket and at the winch drum) of the rope.

EMERGENCY OPERATIONS

Action in Emergency

⚠️ WARNING

Do not travel or operate the crane if the machine is out of order. Traveling or operating the crane while faults are present can cause a serious accident. Follow emergency procedures, and then contact Tadano Escorts India Private Ltd. or a dealer for inspection and maintenance.

The following points are described.

- If failure occurs while traveling on a road
- If stalled at a railroad crossing
- If transmission cannot be operated
- If engine speed does not increase
- When overheating occurs
- When towed
- If error occurs in AML system
- When over-unwinding cutout function hinders operation
- If boom telescoping is not possible
- If outrigger status is not detected

If Failure Occurs while Traveling on a Road

Flash hazard lamps to alert the cars behind, and pull the machine to the safe area.

If Stalled at a Railroad Crossing

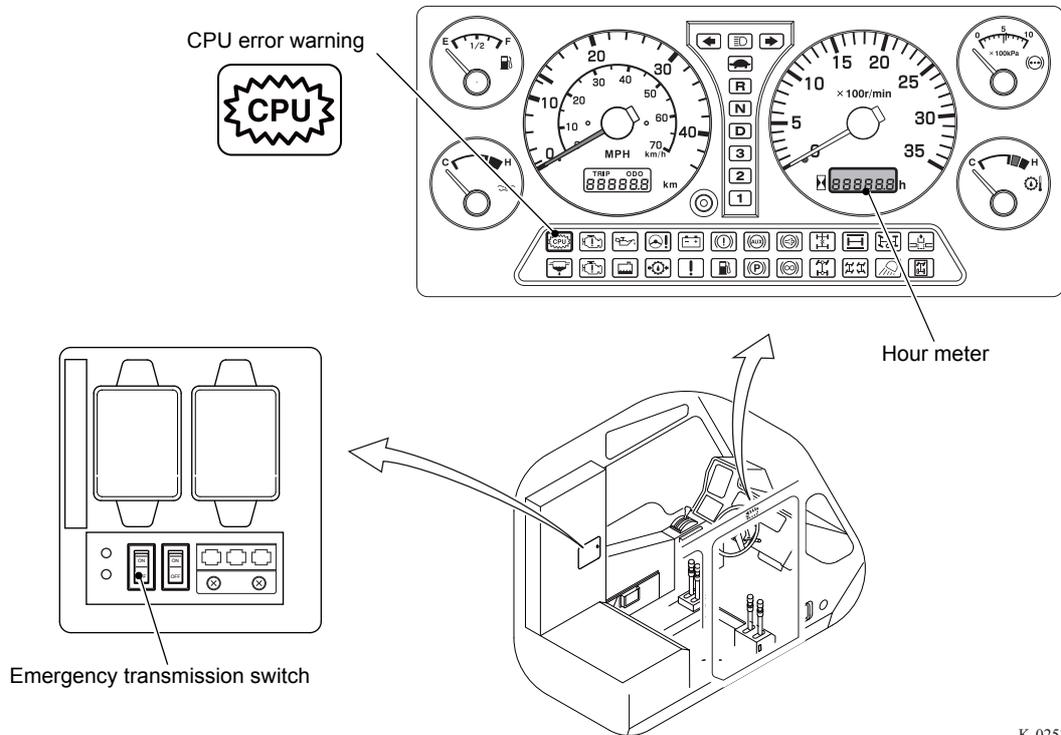
Immediately push the emergency button at the crossing.

If you cannot use an emergency button, post a person to alert the coming train, considering its braking distance.

If Transmission Cannot Be Operated

Transmission is controlled electrically by the computer system.

If this system malfunctions, an error code is shown on the hour meter display as well as the CPU error warning lighting up, and transmission operation becomes unavailable.



K-02535-00

Checking CPU error warning

1. Park the vehicle in a safe place or stop crane operation, and stow the crane.
2. Turn the starter switch to "OFF", and wait for 30 seconds or more, and then restart the engine.
3. After the engine is restarted, check the status of the CPU error warning according to the following table.

Condition of CPU error warning	Remedy
The warning lamp goes out, and does not light up even if the shift lever is operated.	The function of the computer system is recovered, and the normal transmission operation is possible. Even after it is recovered, have the machine inspected by Tadano Escorts India Private Ltd. or a dealer.

Condition of CPU error warning	Remedy
The warning lamp goes out, but lights up again when the shift lever is operated.	A failure has occurred in the computer system. Contact Tadano Escorts India Private Ltd. or a dealer.
The warning lamp is lit again.	When you move the machine, perform the "Emergency Operation of Transmission" in the next section.

Emergency Operation of Transmission

⚠ WARNING

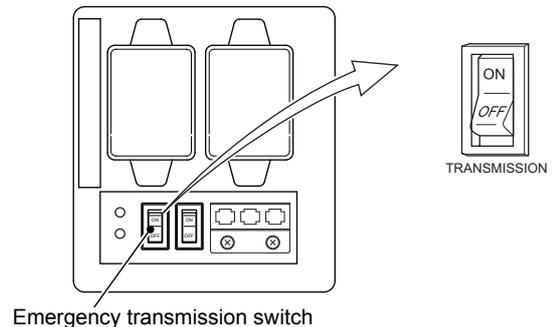
Use this procedure only in case of an emergency. The over-shift prevention device will be deactivated, which can cause damage to the engine. Use transmission emergency procedures only when necessary to move the vehicle to a safe area in the event of an emergency.

When the emergency transmission switch is set to "ON", the solenoid valves for transmission are switched over without the aid of the computer system.

1. Move the shift lever to "N", and turn the parking brake switch to "PARK".
2. Set the emergency transmission switch to "ON".

NOTICE

The torque converter oil temperature gauge, engine coolant temperature gauge, and fuel gauge will not work. This may result in an unexpected accident. Drive the machine carefully.



K-02536-00

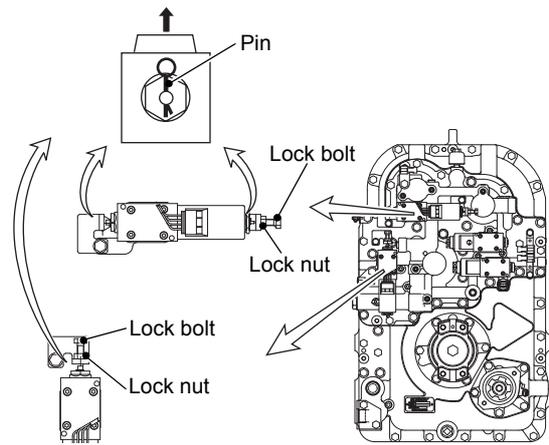
3. Operate the shift lever and move the vehicle.

NOTICE

Use shift lever position "1" or "R". Use of other shift lever positions can result in excessive speed.

4. After moving the vehicle, return the emergency transmission switch to "OFF".

☞ If you cannot move the vehicle even with the transmission emergency procedure, it may be possible to move the vehicle by forcibly changing over the solenoid valve with the hexagon bolt and lock nut. Before using this device, contact Tadano Escorts India Private Ltd. or a dealer for instructions on how to use.

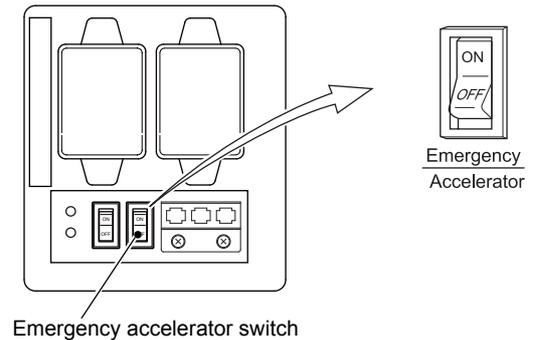


K-00643-00

If Engine Speed Does Not Increase

If the engine speed does not rise sufficiently even when the accelerator pedal is fully pressed, use the emergency accelerator switch.

1. Move the shift lever to "N", and turn the parking brake switch to "PARK".
2. Set the emergency accelerator switch to "ON".



K-02537-00

3. Press the accelerator pedal.

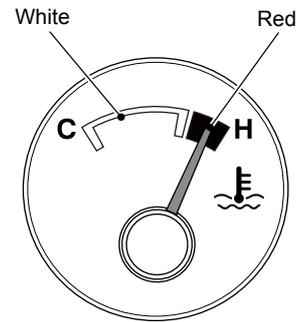
⚠ WARNING

The engine speed can rise to the maximum with minimum accelerator pedal operation. Operate the accelerator pedal very carefully. The vehicle can move suddenly.

4. Return the emergency accelerator switch to "OFF" after use.

When Overheating Occurs

When the pointer of the water temperature gauge reaches the red zone, the engine is overheated. Follow the procedures below.

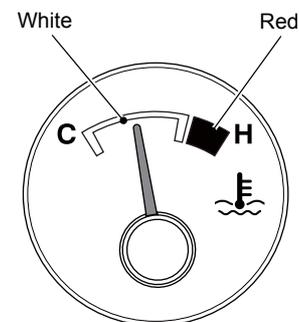


K-00645-00

1. Park the vehicle in a safe area, or stop crane operation.
2. Keep the engine idling.

<i>NOTICE</i>
Do not stop the engine immediately. Otherwise, the water temperature rises sharply, and it can cause seizure.

3. After the pointer of the water temperature gauge goes near the center of the white zone, stop the engine.



K-00646-00

- 4.** Check the coolant level in the coolant reservoir.
If the coolant level is below the LOW level, add the coolant up to the "FULL" level in the coolant reservoir.

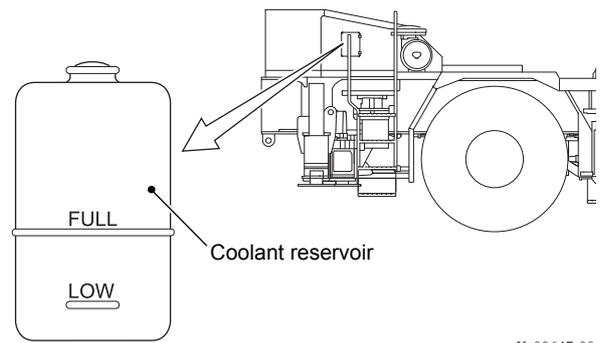
⚠ WARNING

Before removing the radiator cap, wait till the coolant temperature is lowered enough, and then slowly open the cap covering with a cloth. Otherwise, heated water or steam may spout out causing a burn.

NOTICE

If water is quickly poured into the overheated engine, a crack in the engine may occur. Slowly add water.

- 5.** Check the water leak, damage and looseness of the fan belt, and clogging of the radiator.



K-00647-00

When Towed (Vehicle with Emergency Steering Pump)

⚠CAUTION

When the engine is out of order, the steering may become heavy. Drive the vehicle very cautiously. Travel at a low speed with minimal speed change. Do not exceed 6.2 mph (10 km/h) when towed.

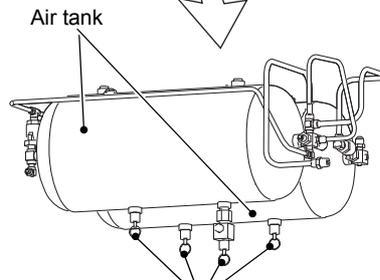
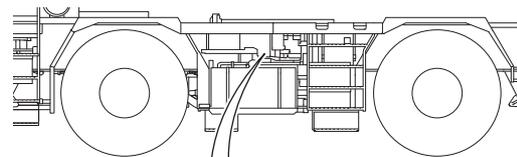
During towing, follow the steps below.

1. Open the drain cock on the air tank to decrease the pressure until the exhaust sound is no longer heard.

⚠WARNING

If the plug is removed from the air-supply port while the port is under pressure, the plug may fly off, resulting in an injury. Before removing the plug, open the drain cock on the air tank and release the pressure.

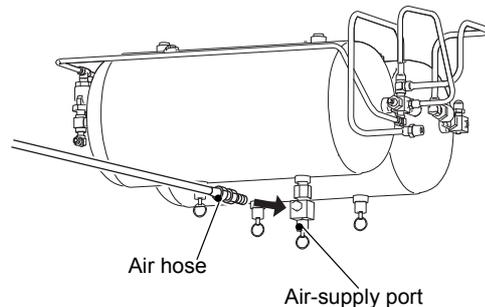
Right side of vehicle



Open this drain cock

K-02538-00

2. Prepare an air hose. Remove the plug on the air-supply port, and then connect the air hose from the towing vehicle to the air-supply port.

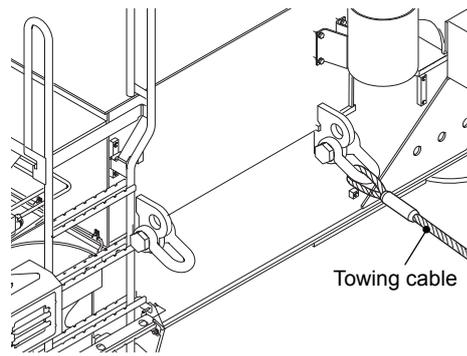


Air hose

Air-supply port

K-00649-00

3. Attach a towing cable to the towing hook while sufficient clearance between the towing vehicle and vehicle to be towed is maintained.

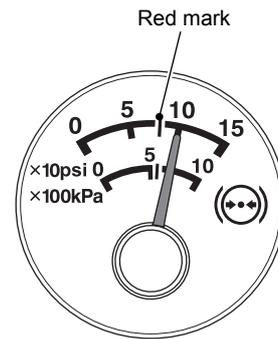


K-02539-00

4. Set the switches and levers to the following positions.

- Shift lever: "N"
- Drive mode selector: 2WD
- Starter switch: "ON"

5. Check that the pointer of the air pressure gauge exceeds the specified value (red mark).



K-00651-00

6. Set the parking brake to "OFF", and start towing of the crane.

If Error Occurs in AML System

⚠ DANGER

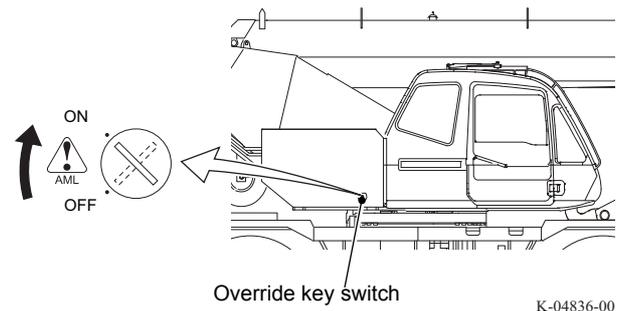
When the override key switch is turned to "ON" and the PTO switch is turned to "AML" (OVERRIDE), the AML automatic stop function is canceled. Never operate the crane in this condition. The crane can overturn or be damaged, resulting in a serious accident.

NOTICE

Make sure that the key for the override key switch is always kept by the responsible manager of the machine or of the work.

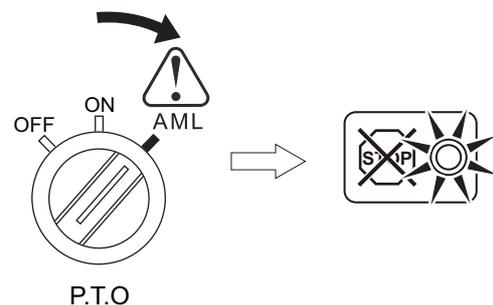
When an error is present in the AML system, the crane may not operate normally. In this case, stow the crane using the following procedures.

1. If a load is lifted, unwind the winch to lower the load to the ground.
2. Insert the key into the override key switch, and turn it to "ON".



3. Set the PTO switch to "AML" (OVERRIDE).
 - The AML is in the override status, and the emergency operation warning lamp will light up.

 When the switch is released, it automatically returns to "ON" position.



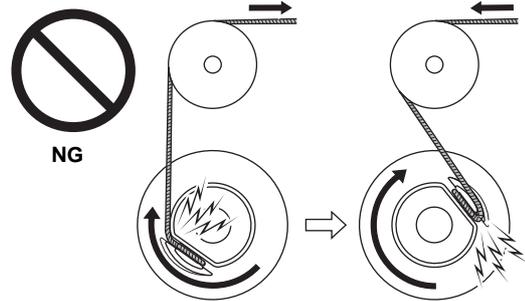
4. Stow the crane.
5. Return the override key switch to "OFF", and remove the key.

6. Set the PTO switch to "OFF".

When Over-unwinding Cutout Function Hinders Operation

⚠ WARNING

- When the override key switch is turned to "ON" and the PTO switch is turned to "AML" (OVERRIDE), the AML automatic stop function is canceled. Never operate the crane in this condition. The crane can overturn or be damaged, resulting in a serious accident. Use this only when you temporarily deactivate the over-unwinding cutout function for such work as replacing the wire rope.
- While the override key switch is "ON", and the PTO switch is "AML" (OVERRIDE), the machine will not stop automatically even if an over-unwinding occurs. If all the wire rope on the winch drum is wound out, the load will be applied to the end of the wire rope. This can break the wire rope and cause an accident. The wire rope can also be wound in the opposite direction, causing the hook block to be hoisted up during winch hoist-down operation and resulting in an accident.



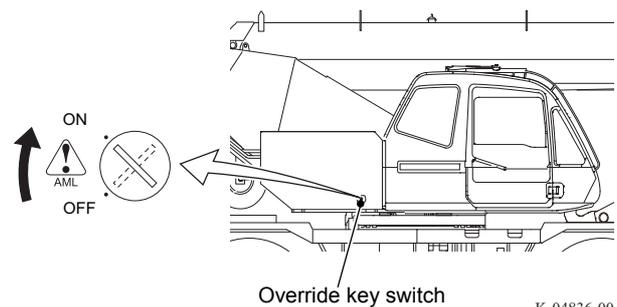
K-00653-00

NOTICE

Make sure that the key for the override key switch is always kept by the responsible manager of the machine or of the work.

The over-unwinding cutout function may hinder wire rope replacement work. In this case, cancel the over-unwinding function following the procedure below.

1. Insert the key into the override key switch, and turn it to "ON".

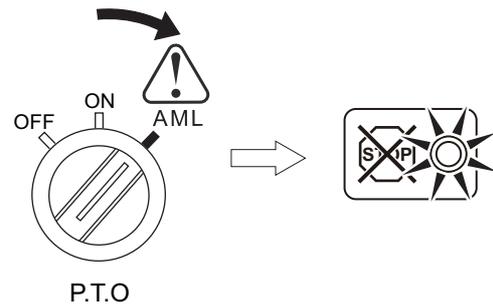


K-04836-00

2. Set the PTO switch to "AML" (OVERRIDE).

- The AML is in the override status, and the emergency operation warning lamp will light up.

 When the switch is released, it automatically returns to "ON" position.



K-01549-00

3. Operate the winch while paying attention to the remaining turns of the wire rope.

4. Return the override key switch to "OFF", and remove the key.

5. Set the PTO switch to "OFF".

If boom telescoping is not possible

⚠ DANGER

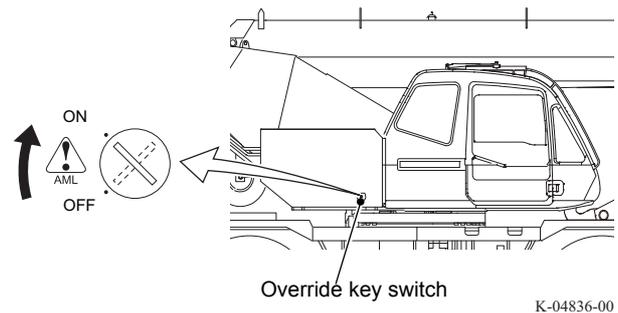
When the override key switch is turned to "ON" and the PTO switch is turned to "AML" (OVERRIDE), the AML automatic stop function is canceled. Never operate the crane in this condition. The crane can overturn or be damaged, resulting in a serious accident.

NOTICE

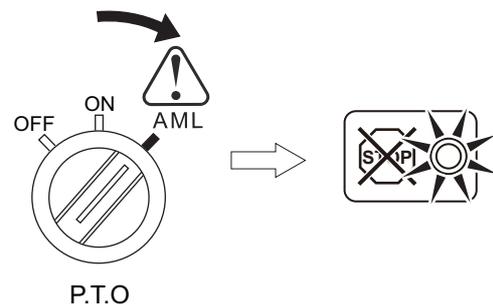
Make sure that the key for the override key switch is always kept by the responsible manager of the machine or of the work.

When an error is present in the AML system, the crane may not operate normally. In this case, stow the crane using the following procedures.

1. If a load is lifted, unwind the winch to lower the load to the ground.
2. Insert the key into the override key switch, and turn it to "ON".

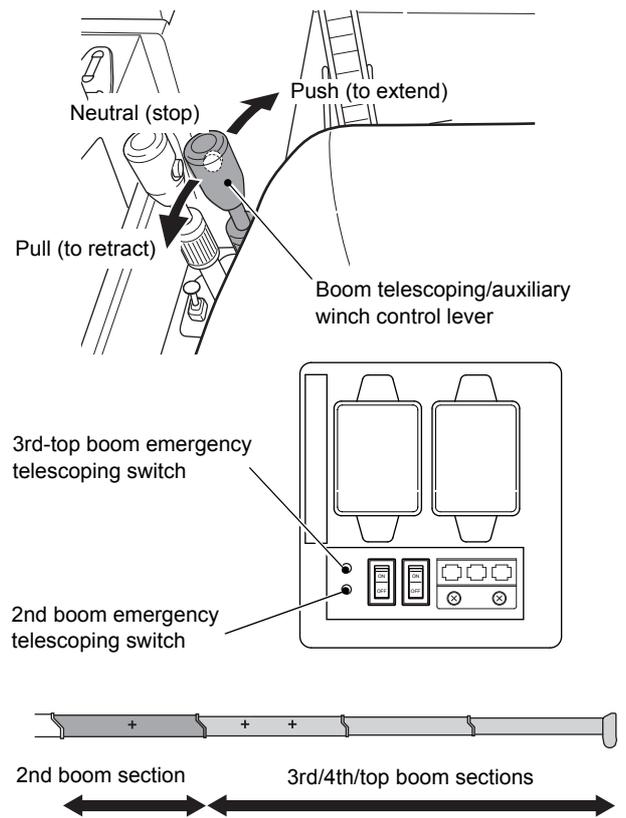


3. Set the PTO switch to "AML" (OVERRIDE).
 - The AML is in the override status, and the emergency operation warning lamp will light up.
-  When the switch is released, it automatically returns to "ON" position.



4. While pushing the emergency telescoping switch that corresponds to the section you want to telescope, operate the boom telescoping/auxiliary winch control lever.

- Pushing the 2nd boom emergency telescoping switch extends the 2nd boom section regardless of the state of the 3rd/4th/top boom sections.
- When you push the 3rd-top boom emergency telescoping switch, the 3rd, 4th, and top boom sections telescope regardless of the state of the 2nd boom section.



K-02540-00

5. Return the override key switch to "OFF", and remove the key.

6. Turn the PTO switch to "OFF".

If Outrigger Status Is Not Detected

⚠ WARNING

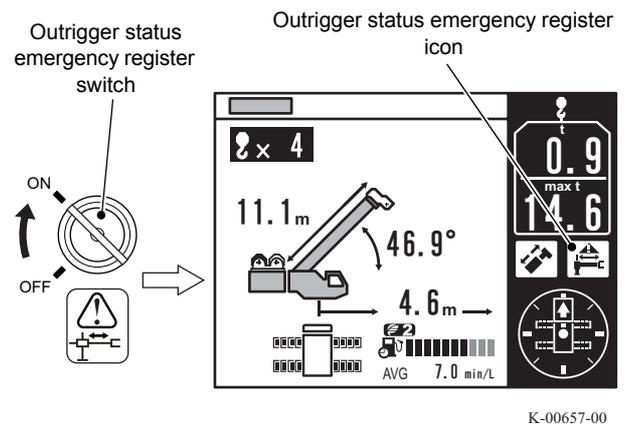
- Do not operate the crane with the outrigger status emergency register switch set to "ON". Use this switch only to stow the crane in an emergency.
- After the emergency registrations are set, check that the status of outrigger extension and indication on the AML match each other. If you make wrong registrations of the outrigger status, the machine can overturn or suffer damage. This can cause a serious accident.

NOTICE

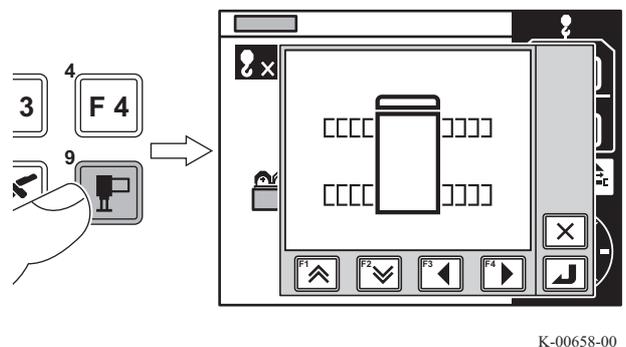
Make sure that the key for the outrigger status emergency register switch is always kept by the manager of the machine or the job.

When an error occurs in the outrigger length detector or other devices, the outrigger status is not detected. In this case, register the outrigger status by the following procedure.

1. If a load is lifted, unwind the winch to lower the load to the ground.
2. Insert the key into the outrigger status emergency register switch, and turn it to "ON".
 - The outrigger status emergency register icon appears on the display panel.



3. Press the outrigger status select key.
 - The pop-up window for the outrigger status emergency registration is shown on the display panel.
4. Press the F1 or F2 key to go to the outrigger for which the status is not detected due to the error.

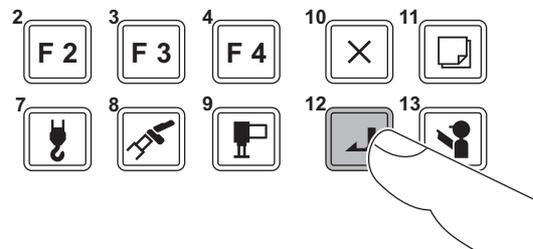


5. Press the outrigger status select key and F3 or F4 key to enter the actual outrigger extension status.
 - Outrigger status select key
Determines the outrigger whose status is to be set
 - F3 key
Extension status extends (when a left-side outrigger is selected)
Extension status retracts (when a right-side outrigger is selected)
 - F4 key
Extension status retracts (when a left-side outrigger is selected)
Extension status extends (when a right-side outrigger is selected)

6. Press the set key to register the setting.

7. Stow the crane.

8. Set the outrigger status emergency registration switch to "OFF", and remove the key.



K-00659-00

MEMO

INFORMATION AND DATA

Conversion Tables

The items enclosed in thick lines are in SI units.

Force

N	kgf
1	1.01972×10^{-1}
9.80665	1

Pressure

Pa	kPa	MPa	bar	kgf/cm ²
1	1×10^{-3}	1×10^{-6}	1×10^{-5}	1.01972×10^{-5}
1×10^3	1	1×10^{-3}	1×10^{-2}	1.01972×10^{-2}
1×10^6	1×10^3	1	1×10	1.01972×10
1×10^5	1×10^2	1×10^{-1}	1	1.01972
9.80665×10^4	9.80665×10	9.80665×10^{-2}	9.80665×10^{-1}	1

Torque, Moment

N·cm	N·m	kgf·cm	kgf·m
1	1×10^{-2}	1.01972×10^{-1}	1.01972×10^{-3}
1×10^2	1	1.01972×10	1.01972×10^{-1}
9.80665	9.80665×10^{-2}	1	1×10^{-2}
9.80665×10^2	9.80665	1×10^2	1

Power

W	kW	PS
1	1×10^{-3}	1.35962×10^{-3}
1×10^3	1	1.35962
7.355×10^2	7.355×10^{-1}	1

Major Specifications

Crane Specifications

Maximum Rated Lifting Capacity

Lift state	Maximum Rated Lifting Capacity	Load radius/boom angle	Standard number of parts of line
11.1 m boom	51,000 kg	2.5 m	13 ^(*1)
11.1 m boom	47,000 kg	3.0 m	12 ^(*2)
15.0 m boom	30,000 kg	4.5 m	Telescoping mode I: 8 ^(*2)
18.8 m boom	20,000 kg	Telescoping mode I: 6.0 m	Telescoping mode I: 6
26.6 m boom	13,000 kg	Telescoping mode I: 8.0 m	4
34.3 m boom	13,000 kg	Telescoping mode I: 7.0 m	4
38.1 m boom	8,000 kg	9.0 m	4
42.0 m boom	8,000 kg	9.0 m	4
8.0 m jib	4,500 kg	77°	1
12.7 m jib	2,800 kg	74°	1
Single top	4,500 kg	----	1

(*1): When 5 sheaves, attachment sheave and 51-ton hook block are used.

(*2): When 5 sheaves and 51-ton hook block are used.

Lifting Height, Length, Angle, and Speed

Item	Data	
Maximum lifting height	Boom	42.4 m
	Jib	56.0 m
Maximum load radius	Boom	35.6 m
	Jib	44.2 m
Boom length	11.1 m to 42.0 m	
Boom extension speed	30.9 m/150 s	
Jib length	8.0 m, 12.7 m	
Hoist-up speed	Main winch	132 m/min (4th layer)
	Auxiliary winch	124 m/min (3rd layer)
Boom angle	-1° to 80.5°	
Boom raising speed	20° to 60°/30 s	
Slewing angle	360° continuous	
Slewing speed	2.1 min ⁻¹ {rpm}	

Hoisting Performance

- Line Speeds and Pulls

Layer	Main or Auxiliary hoist - 0.32 m drum	
	Line speeds ^(*1)	Line pulls available ^(*2)
	m/min	kN (kgf)
1st	106	56.0 (5,710)
2nd	115	51.1 (5,210)
3rd	124	46.7 (4,760)

Layer	Main or Auxiliary hoist - 0.32 m drum	
	Line speeds ^(*1)	Line pulls available ^(*2)
	m/min	kN (kgf)
4th	132	43.1 (4,400)
5th	141	40.0 (4,080)
6th ^(*3)	150	37.3 (3,800)

(*1): Line speeds based only on hook block without any load.

(*2): Developed by machinery with each layer of wire rope, but not based on rope strength or other limitation in machinery or equipment.

(*3): Sixth layer of wire rope are not recommended for hoisting operations.

• Drum Wire Rope Capacities

Layer	Main drum grooved lagging		Auxiliary drum grooved lagging	
	16 mm wire rope		16 mm wire rope	
	Rope per layer	Overall length	Rope per layer	Overall length
	Meters	Meters	Meters	Meters
1st	41.8	41.8	29.1	29.1
2nd	45.3	87.1	31.6	60.7
3rd	48.8	135.9	34.1	94.8
4th	52.3	188.2	36.6	131.4
5th	55.9	244.1	39.1	170.5
6th	59.4	303.5	41.6	212.1

• Drum Dimensions

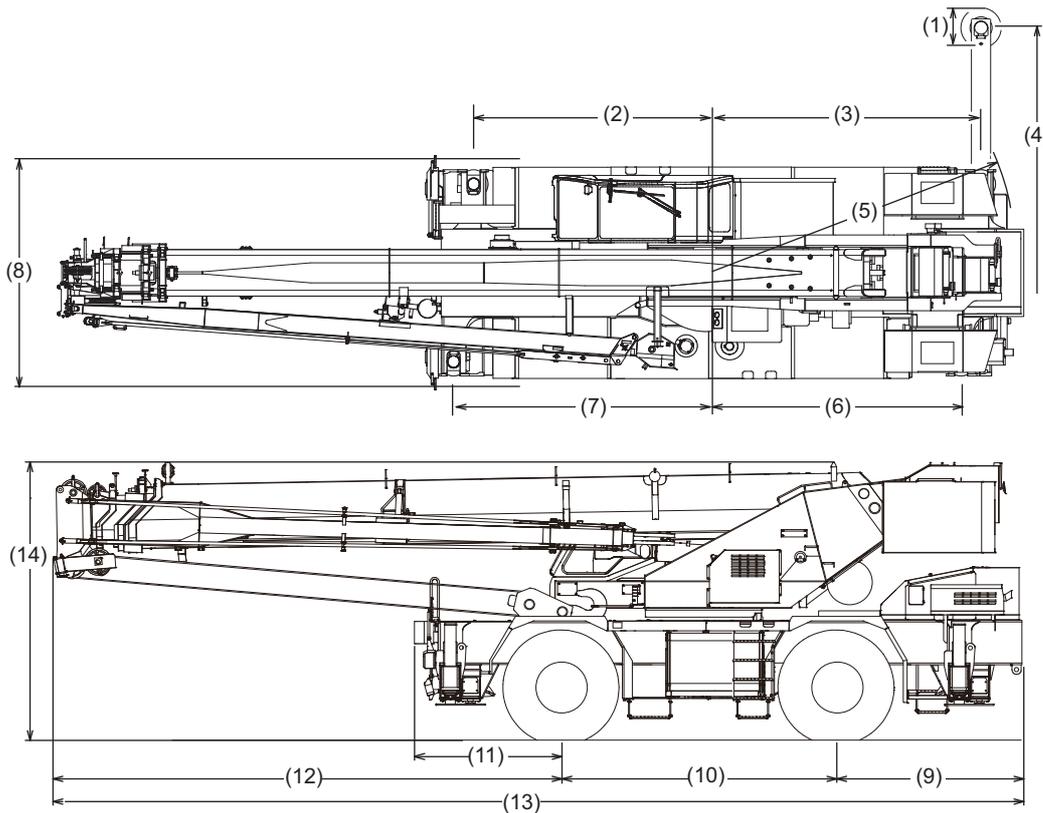
Item		mm
Root diameter		320
Length	Main winch	690
	Auxiliary winch	484
Flange diameter		530

Carrier Specifications

Item	Data
Engine	MITSUBISHI 6M60-TL Model code: 6M604 WTTD0G000
Displacement	7.54 L
Maximum speed	50 km/h

Overall Dimensions

Item	Dimension
1. Float size	φ 400 mm
2.	3,221 mm
3.	3,809 mm
4. Outrigger maximum extension width	7,000 mm
5. Tail slewing radius	4,100 mm
6.	3,531 mm
7.	3,499 mm
8. Overall width	2,960 mm
9. Rear overhang	2,570 mm
10. Wheelbase	3,800 mm
11.	2,020 mm
12. Front overhang	7,020 mm
13. Overall length	13,390 mm
14. Overall height	3,865 mm



K-02541-00

CTI-500XL-1_OM1-11E

Mass

Axle Weight Distribution Chart

Item		Unit (Kilograms)		
		GVW	Front	Rear
Base machine		38,020	18,220	19,800
Add:				
1	Main hook block (51 t) (on carrier deck)	460	460	0
2	Main hook block (51 t) (front bumper)	460	690	-230
3	Main hook block (25 t) (on carrier deck)	280	280	0
4	Main hook block (25 t) (front bumper)	280	420	-140
Remove:				
1	4.5 t hook block	-100	-150	50
2	Jib	-780	-1,230	450
3	Attachment sheave	-50	-135	85

Wire Rope

Specifications

Main winch	Posture	35 x P ·7
	Allowable load	4,500 kg
	Ultimate (failure) load	25,300 kg
	Diameter	16 mm
	Length	225 m
	Mass	1.3 kg/m
Auxiliary winch	Posture	35 x P ·7
	Allowable load	4,500 kg
	Ultimate (failure) load	25,300 kg
	Diameter	16 mm
	Length	117 m
	Mass	1.3 kg/m

Others

Item	Mass
Maximum vertical load capacity of outrigger	38,600 kg

Oils and Greases

Oil and Grease Table

The oils and greases listed below are used in new cranes at the time of shipment from the factory.

Oil/Grease	No.	Component	Brand (manufacturer), grade	Capacity/quantity
Grease (upper part)	1	Side and lower surface of boom (sliding sections)	TNR (TADANO Genuine)	As required
	2	Slide plate (upper surface of boom)		
	3	Slide plate (lower side of boom)		
	4	Wire rope (for winch)	Mobilarma 798 (Exxon Mobil)	
	5	Wire rope (for boom telescoping)		
	6	Slewing bearing	Daphne Eponex SR No. 2 (Idemitsu)	
	7	Slewing gear		
	8	Jib connecting pin boss		
	9	Jib head sheave pin		
	10	Jib raising/lowering mechanism		
	11	Single top sheave pin		
	12	Boom elevating cylinder lower pivot pin		
	13	Boom bottom pivot pin		
	14	Main hook block (option)		
	15	Auxiliary hook block (option)		
	16	Mounting section of the switch for anti-two-block device for the auxiliary wire rope (jib and single top)		
Grease (lower part)	21	Outrigger float	Daphne Eponex SR No. 2 (Idemitsu)	
	22	Propeller shaft		
	23	King pin		
	24	Steering rod		
	25	Steering cylinder		
	26	Leaf spring pin		
	27	Leaf spring slide sheet		
	28	Central grease supply unit (option)		
Gear Oil	1	Winch speed reducer	Mobilube GX 80W-90 (Exxon Mobil)	2.8 L × 2
	2	Slewing Speed Reducer	Mobilgear 600 XP320 (Exxon Mobil)	2.3 L
	3	Axle (Carrier)	Shell Gelco Multi Gear 80W-90(Shell) or	22.5 L × 2
	4	Axle (Planetary Gear)	Mobilube HD 80W-90(Exxon Mobil)	2.3 L × 4
Engine Oil	1	Engine	API service classification: SAE30, Class CD or better (SAE10W-30 for cold climates)	15.0 L
Long-life coolant	1	Radiator	TADANO Genuine Long-life Coolant LP	30.3 L ^(*1) 9.1 L ^(*2) (mixture ratio: 30%)

CTI-500XL-1_OM1-11E

Oil/Grease	No.	Component	Brand (manufacturer), grade	Capacity/quantity
Torque converter oil	1	Torque converter	TADANO Genuine Torque Converter Oil	35.0 L (*3)
Fuel	1	Fuel tank	ASTM/D-975 2-D (Ambient temperature: -12°C or over) ASTM D-975 1-D (Ambient temperature: -12°C or less)	300 L
Brake fluid	1	Brake Fluid Reservoir	TADANO Genuine Brake Fluid DOT-5.1	2 L
Hydraulic oil	1	Hydraulic Oil Tank	TADANO Hydraulic Oil LL (TADANO Genuine) (Daphne Super Hydro 22X (Idemitsu) for cold climates)	Approx. 615 L (*4) Approx. 820 L (*3)

(*1): Total capacity

(*2): Required amount of long-life coolant

(*3): Total oil capacity

(*4): Tank capacity

Recommended Oils and Greases

When replacing oils and greases, use the oils and greases used at the time of factory shipment. If you must use different brands of oils and greases, use the brands shown in the equivalent field in the table below.

Grease

Component	Oil/grease used at shipment		Equivalent	
	Manufacturer	Brand	Manufacturer	Brand
Boom	TADANO Genuine	TNR	----	----
Wire Rope	Exxon Mobil	Mobilarma 798	----	----
King pin	Cosmo	Cosmo Molybdenum Grease No. 2	Shell	Shell Gadus S2 V 220 AD
			Idemitsu	Daphne Grease M No.2
			JXTG Nippon Oil & Energy	Molynoc Grease AP2
Propeller shaft	Shell	Shell Alvania EP Grease 2	Exxon Mobil	Mobilux EP2
			Shell	Shell Gadus S2 V 220 AC
			Idemitsu	Daphne Eponex SR No.2
			JXTG Nippon Oil & Energy	Epnoc Grease AP(N) 2
Central grease supply unit	Nippon Grease	Nigtight LE-0	Shell	Shell Gadus S2 V 220
			Idemitsu	Daphne Eponex EP No.0
			Nippon Grease	Niglube EP-0K
Others	Idemitsu	Daphne Eponex SR No. 2	Exxon Mobil	Mobilux EP2
			Shell	Shell Gadus S2 V 220 AC
			JXTG Nippon Oil & Energy	Epnoc Grease AP(N) 2
			Cosmo	Cosmo Grease Dynamax EP No.2

Gear Oil

Component	Oil/grease used at shipment			Equivalent	
	Manufacturer	Brand	Class	Manufacturer	Brand
Winch speed reducer (main/auxiliary winch)	Exxon Mobil	Mobilube GX 80W-90	API service classification GL-4 SAE 90	Shell	Shell Spirax EP 90
				Idemitsu	Apolloil Gear HE 90
				JXTG Energy	Gear Oil GL-4 90
				Cosmo	Cosmo Gear GL-4 90
Slewing Speed Reducer	Exxon Mobil	Mobilgear 600 XP320	ISO VG 320	Shell	Shell Omala S2 G 320
				Idemitsu	Daphne Super Gear Oil 320
				JXTG Energy	Bonnoc M320
				Cosmo	Cosmo Gear SE320
Axle	Class		Ambient temperature		Grade
	API service classification GL-5		30°C or over		SAE140
			-10°C to 30°C		SAE 90
			-10°C or under		SAE 75W-90 SAE 75W-85

Engine Oil

Component	Oil/grease used at shipment		Equivalent	
	Class		Manufacturer	Brand
Engine	(Standard) API service classification: Class CD or better, SAE30		Refer to the separate engine manual.	
	(Cold climates) API service classification: Class CD or better, SAE10W-30			

LLC (Long-life Coolant)

Component	Oil/grease used at shipment		Equivalent	
	Manufacturer	Brand	Manufacturer	Brand
Radiator	TADANO Genuine	TADANO Genuine	Idemitsu	Apollo radiator coolant
		Long-life Coolant LP	JXTG Nippon Oil & Energy	Super coolant X

Torque converter oil

Component	Oil/grease used at shipment		Equivalent	
	Manufacturer	Brand	Manufacturer	Brand
Torque converter, transmission	TADANO Genuine	TADANO Genuine Torque Converter Oil	Exxon Mobil	Mobil ATF220
			Shell	Shell Gelco ATF
			Idemitsu	Apolloil ATF D-2
			JXTG Nippon Oil & Energy	ATF II (N)
			Cosmo	Cosmo ATF2

Brake fluid

Component	Oil/grease used at shipment		Equivalent	
	Manufacturer	Brand	Manufacturer	Brand
Brake Fluid Reservoir	TADANO Genuine	TADANO Genuine Brake Fluid DOT-5.1	BP	BP Brake Super DOT 4
			Pentosin	Pentosin Super DOT 4
			Textar	Textar Super DOT 4
			Ate	Ate Super DOT 4
			M.Benz	DOT 4 Plus

Hydraulic oil

Component	Oil/grease used at shipment			Equivalent		
	Manufacturer	Brand	Class (Ambient temperature)	Manufacturer	Brand	
Hydraulic Oil Tank	----	----	ISO VG68 (5°C or over)	Exxon Mobil	Mobil DTE 26	
	TADANO Genuine	TADANO Genuine Hydraulic Oil 46	ISO VG46 (-5°C or over)	Exxon Mobil	Mobil DTE 10 Excel 46	
				Shell	Shell Tellus S2 V 46	
				Idemitsu	Daphne Super Hydro 46X	
				JXTG Nippon Oil & Energy	Hyrand Wide 46	
		Cosmo		Cosmo Hydro HV46		
		TADANO Hydraulic Oil LL		ISO VG32 (-10 to 15°C)	Exxon Mobil	Mobil DTE 10 Excel 32
					Shell	Shell Tellus S2 V 32
					Idemitsu	Daphne Super Hydro 32X
	JXTG Nippon Oil & Energy		Hyrand Wide 32			
	Cosmo	Cosmo Hydro HV32				
	Idemitsu	Daphne Super Hydro 22X	ISO VG22 (-15 to 10°C)		Exxon Mobil	Univis S26
					Shell	Shell Tellus S2 V 22
					JXTG Nippon Oil & Energy	Hyrand Wide 22
				Cosmo	Cosmo Hydro HV22	

Transportation of Crane

⚠ WARNING

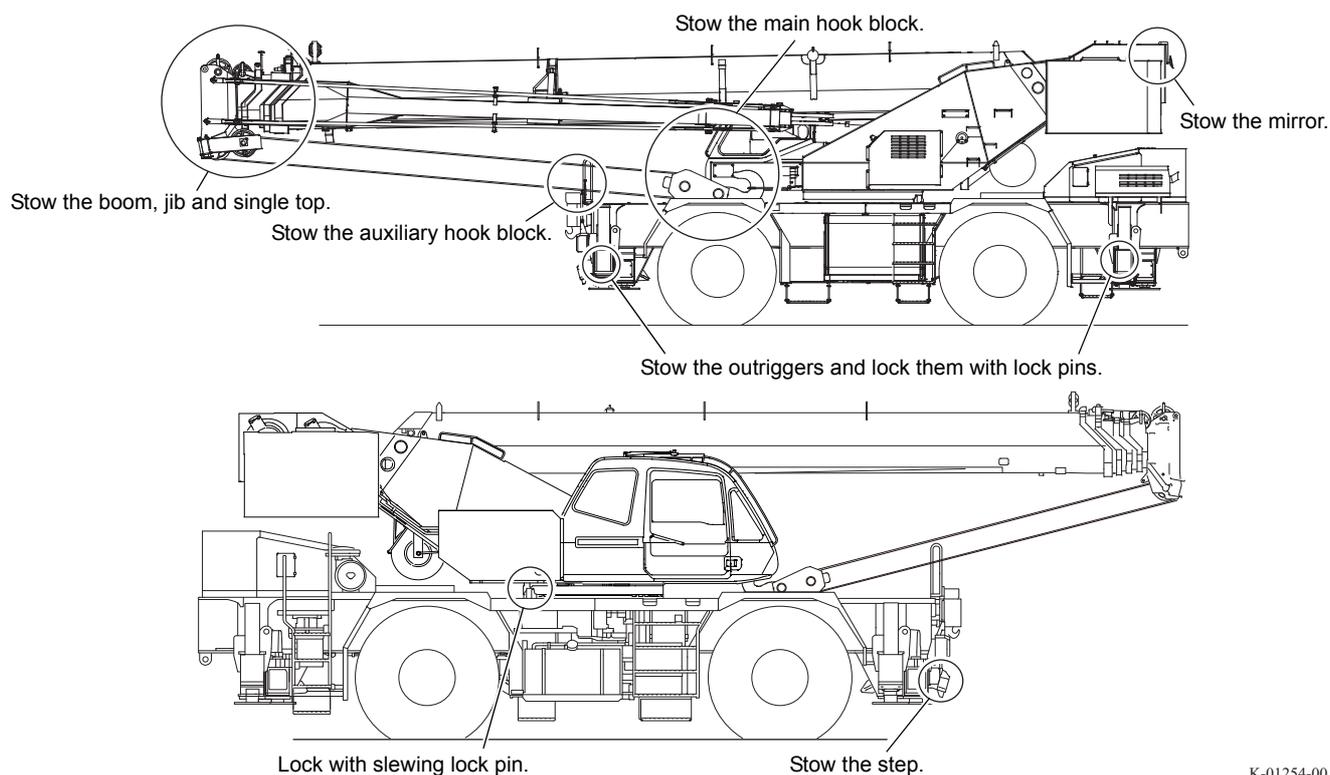
- Slipperiness caused by mud, oil, and ice on the trailer bed, ramp and crane tires can create hazard. Remove them completely.
- The crane can fall from the ramp if you change the direction of the crane on the ramp. If necessary, be sure to get the crane down to the ground, and then turn the direction of the crane on the ground.
- The crane can fall from the trailer if the crane is shaken and moved during transportation. After the crane is set on the trailer bed, place wheel chocks firmly on the tires and fix the crane securely using binding wire ropes, etc.
- Do not use the winch wire ropes of the crane for the purpose of fixing the crane. The wire ropes will get slack during transportation, causing the crane to fall.
- The binding ropes can get loose during a long time of traveling or traveling on rough roads. Check them frequently, and retighten them when necessary.
- Make sure that the specification of the binding points and binding method are in compliance with the local laws, standards and rules of the area where the machine is used.
- Before starting work, check the surrounding traffic and safety.

NOTICE

Do not use the binding points for purposes other than fixing the crane for transportation. If a heavy object is hung or a strong force is applied, the machine can be damaged.

Checking the Transportation Configuration

Before transporting the crane, make it in a proper configuration.

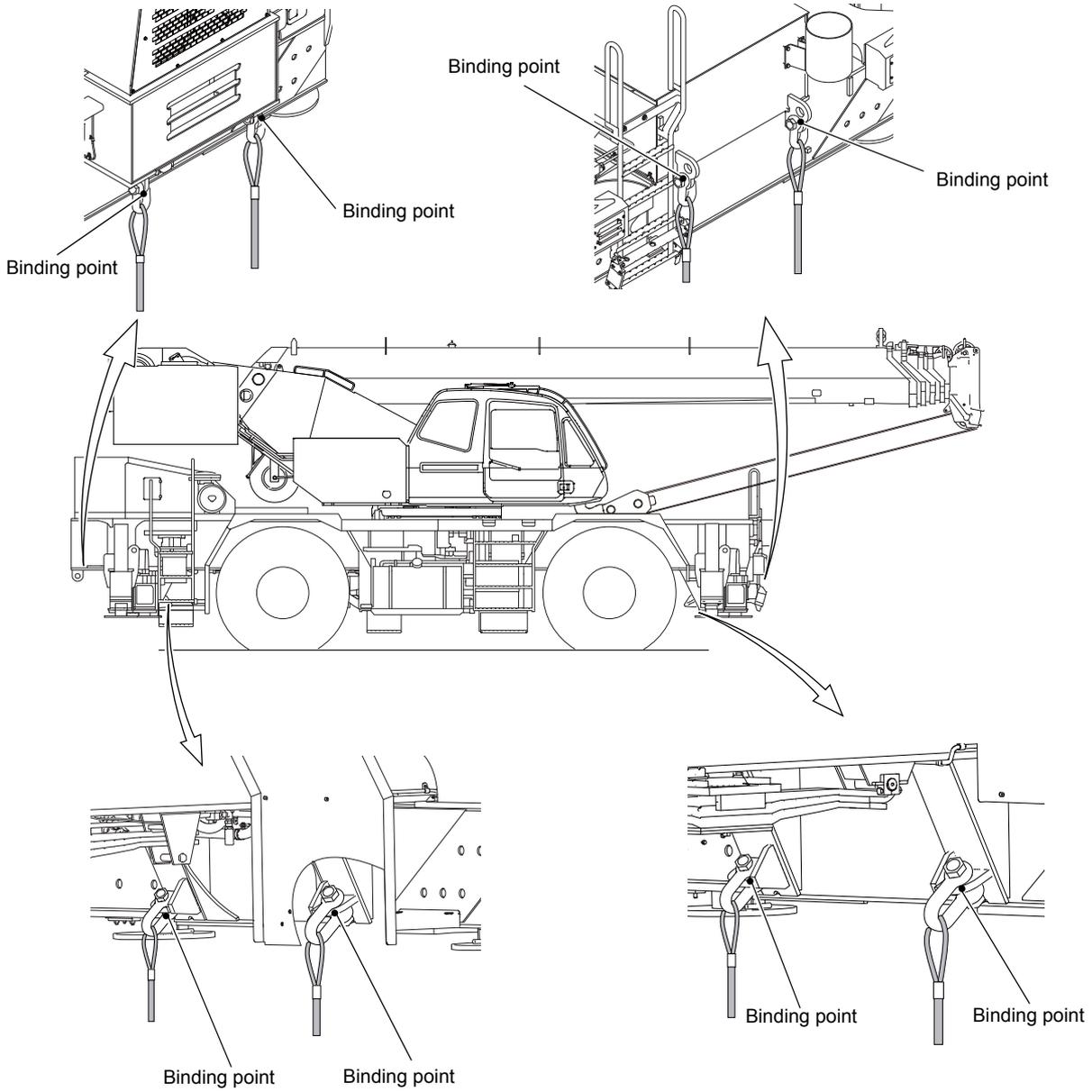


CTI-500XL-1_OM1-11E

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Binding Point

When transporting the crane, fix it securely using the binding points.



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Service Data

Service Data

Relief Valve Set Pressure

Circuit		Set pressure
Winch	Hoisted up	27.5 MPa {280 kgf/cm ² }
	Hoist down	8.8 MPa {90 kgf/cm ² }
Telescoping	Retract	20.6 MPa {210 kgf/cm ² }
	Extend	16.7 MPa {170 kgf/cm ² }
Elevating	Raise	27.5 MPa {280 kgf/cm ² }
	Lower	4.5 MPa {46 kgf/cm ² }
Slewing		18.6 MPa {190 kgf/cm ² }
Outrigger		20.6 MPa {210 kgf/cm ² }
Steering		19.6 MPa {200 kgf/cm ² }

Air Pressure in Air Tank

Specified pressure	710 to 830 kPa {7.2 to 8.5 kgf/cm ² }
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Oil Pressure in Torque Converter

Engine revolution	Set pressure
670 min ⁻¹ {rpm}	1.4 MPa {14 kgf/cm ² } or more
MAX	2.0 to 2.4 MPa {20.4 to 24.5 kgf/cm ² }

Tire Air Pressure

Tire size	Air pressure
505/95R25 183E	800 kPa {8.0 kgf/cm ² }

Recommended Tires

505/95R25 183E	YOKOHAMA RB-01
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TADANO ESCORTS

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Revision history		
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