

OPERATION & MAINTENANCE MANUAL

CK2500-II

APPLICABLE : From JD04-02002
BOOK CODE : S2JD10016ZE10

(C) Printed in Japan 2007.08

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IMPORTANT INFORMATION

Thank you for your purchasing KOBELCO crawler crane. Our CK series full-hydraulically operated crawler crane, is manufactured based on our many years of experience and expertise. This manual describes important information about Model CK2500-II.

Before operating the machine, be sure to thoroughly read this manual in order to use the machine safely and efficiently.



WARNING

Do not operate or maintain this machine until you read this manual and understand the instructions. Improper operation or maintenance of this machine may cause accidents and could result in serious injury or death.

Always keep this manual in the operator's cab.

If it is missing or damaged, place an order to a KOBELCO distributor for a replacement.

If you have any questions, please consult your KOBELCO distributor.


SAFETY INFORMATION

Most accidents, that occur during operation are due to neglect of precautionary measures and safety rules. Sufficient care should be taken to avoid these accidents.

Erroneous operation, lubrication or maintenance services are very dangerous and may cause injury to, or death of, personnel.

Precautionary measures or notes provided in this manual should be read and understood by personnel before starting each task.

Operation, inspection, and maintenance should be carefully carried out, and safety must be given first priority.

Safety labels are indicated with  marks. The safety information contained in this manual is intended only general safety information.

Safety labels appear both in this manual and on the machine. All safety labels are identified by the words "DANGER", "WARNING" and "CAUTION".

These words mean the following:



..... Indicates an imminently hazardous situation that may result in death or serious injury.



..... Indicates a potentially hazardous situation that may result in death or serious injury.



..... Indicates a potentially hazardous situation that may result in minor or moderate injury. It may also be used to alert against possible damage to the machine and its components.



..... Supplementary explanation.

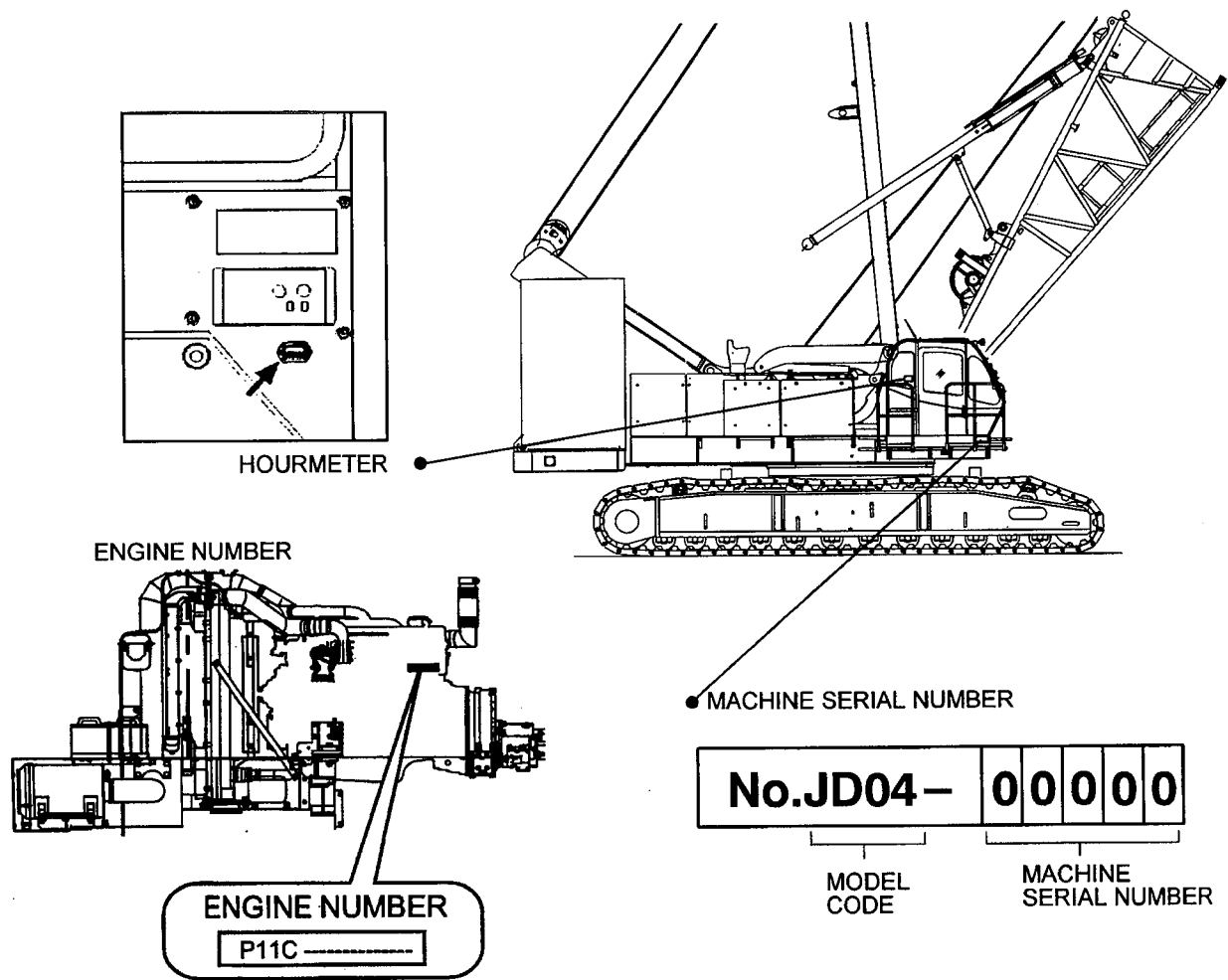
It is very difficult for us to forecast every danger that may occur during operation. However, safety can be ensured by operating this machine according to methods recommended by KOBELCO.

While operating the machine, be sure to perform work with great care, so as not to damage the machine or allow accidents to occur.

Please continue studying this manual until proper operation is completely understood.

■ MACHINE SERIAL NUMBER

When you order repair parts or need machine repair or service, always inform us of the machine serial number (stamped on the name plate) and the total number of hours indicated on the hourmeter.



■ ENTER MACHINE SERIAL NUMBER OF THIS MACHINE

MACHINE MODEL	CK2500-II	MACHINE SERIAL NO.	JD04	ENGINE NO.	P11C-
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■ WARRANTY

The terms under which this machine is guaranteed are clearly defined in the accompanying WARRANTY. Trouble and damage occurring during the terms of the guarantee shall be repaired at no cost to the purchaser, according to the warranty description, if the trouble or damage is determined to be our responsibility. However, if you use the machine contrary to the instructions of this manual, the WARRANTY does not cover any damage to the machine.

■ REPAIR PARTS

Use genuine KOBELCO parts when servicing and repairing the machine in order to ensure proper machine performance. Important security parts are designed to ensure operator safety and to protect the machine from serious damage. These parts must be replaced according to specified maintenance schedules.

■ EXPLANATION OF WARNING LABELS


Safety labels, shown on the following pages, are installed directly on the machine and indicate the three levels of safety precautions. Confirm the positions and contents of all safety labels before starting work. Put them to practical use to secure safety when operating the machine, or checking and performing maintenance.

■ HANDLING OF SAFETY LABELS

When the safety label is damaged or stained, order a replacement label from the designated service shop. Do not remove the safety labels. If the surface of the safety label is soiled and/or difficult to be seen, wipe it cleanly.

⚠ DANGER


Do not stand on or under the mast.
Mast may fall suddenly.
Failure to observe this precaution may result in serious injury or the loss of life.



JJ20T01242P1


⚠ DANGER

Do not stand on or under the mast.
Mast may fall suddenly.
Failure to observe this precaution may result in serious injury or the loss of life.



JJ20T01242P1

⚠ WARNING



Do not lower the mast without supporting the mast top with the stand to avoid accident due to sudden drop of the mast.
Failure to observe this precaution may result in serious injury or death.

JD20T01123P1

⚠ DANGER

DEATH OR INJURY MAY RESULT IF MACHINE, LOAD, OR LOAD LINE TOUCHES OR COMES CLOSE TO ELECTRICAL LINES. ALWAYS MAINTAIN A CLEARANCE OF AT LEAST 10 FEET (3 METERS) BETWEEN THE CRANE OR THE LOAD BEING HANDLED AND POWERLINES.

UNLAWFUL TO PLACE ANY PART OF THIS MACHINE OR LOAD WITHIN 10 FEET (3 METERS) OF HIGH VOLTAGE LINES OF 50,000 VOLTS OR LESS. GREATER CLEARANCES ARE REQUIRED FOR HIGHER VOLTAGES. SEE YOUR LOCAL, STATE, AND FEDERAL REGULATIONS.

ALWAYS NOTIFY ELECTRIC COMPANY IF THERE ARE ELECTRIC LINES IN THE AREA WHERE MACHINE WILL BE WORKING.

GG20T01127P1

⚠ WARNING

Confirm the roller is attached to the mast.
The mast without the roller may fall down suddenly when the mast is lowered below horizontal.

JD20T01124P1

⚠ DANGER

When lock pin is not installed, do not stand under gantry.

JJ20T01097P1

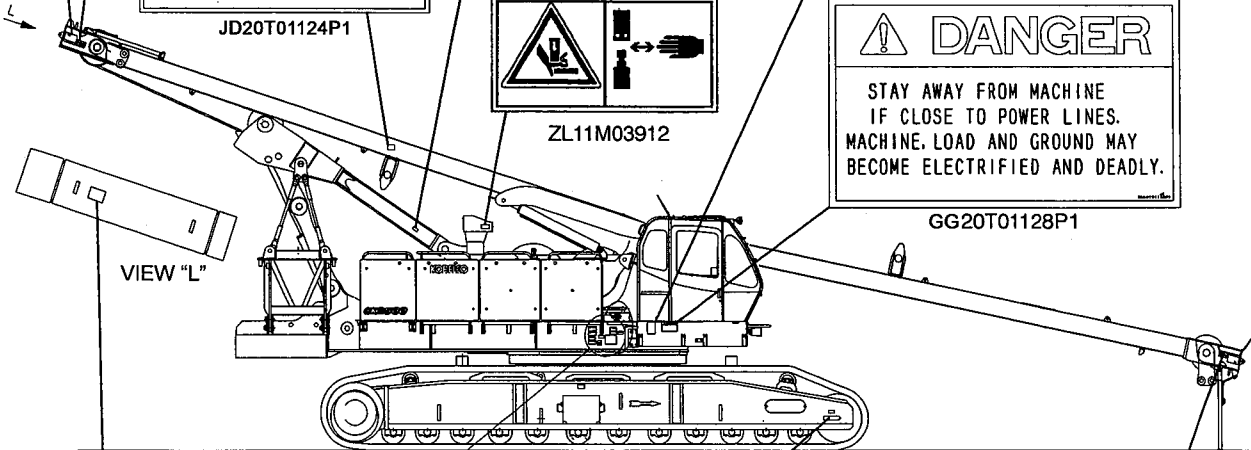


ZL11M03912

⚠ DANGER

STAY AWAY FROM MACHINE IF CLOSE TO POWER LINES. MACHINE, LOAD AND GROUND MAY BECOME ELECTRIFIED AND DEADLY.

GG20T01128P1



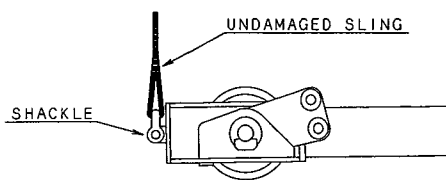
⚠ CAUTION

Moving parts.

JJ20T01096P1

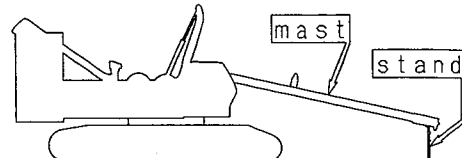
⚠ CAUTION

Use the shackle and undamaged slings for lifting mast safely. Do not use the hook does not have safety latch, or damaged slings to lift the mast. Failure to observe this caution may lead to the sudden fall of the mast.



JJ20T01259P1

⚠ WARNING



Do not lower the mast without supporting the mast top with the stand to avoid accident due to sudden drop of the mast.
Failure to observe this precaution may result in serious injury or death.

JD20T01123P1

⚠ DANGER

Do not lower the mast assist arms until the mast is connected to the boom with the guy lines. Mast may fall backwards if raised to vertical position when assist arms are down stored. Failure to observe this precaution may result in serious injury or the loss of life.

JJ20T01243P1

JJ20T01243P1

⚠ CAUTION

Stay out from crane swing area.

JJ20T01095P1

JJ20T01095P1

⚠ DANGER

Fully lower the mast assist arms to the backwards before raising the boom. Mast will buckle and may collapse if the mast contacts the assist arms. Failure to observe this precaution may result in serious injury or the loss of life.

JJ20T01244P1

JJ20T01244P1

⚠ DANGER

ALL COUNTERWEIGHTS MUST BE REMOVED BEFORE OPERATING THE LIFTER.

GN20T01041P1

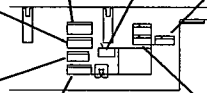
GN20T01041P1

⚠ CAUTION

Keep the power select switch to the OFF position except mast assist arms or gantry operation. Otherwise, the hydraulic valves may be damaged.

JJ20T01248P1

JJ20T01248P1



DETAIL Y

⚠ DANGER

WHEN INSTALLATION AND REMOVAL OF THE CRAWLERS (1)

- Do not stand under or near the crawlers being lifted.
- The lifter should be operated on the firm and level ground with the machine maintained horizontally.
- Steel plates may be needed under the floats unless the ground is concreted.

⚠ WARNING

WHEN INSTALLATION AND REMOVAL OF THE CRAWLERS (2)

- Do not insert fingers into pin holes for alignment.
- The quick couplers must be connected completely.

JJ20T01102P1

JJ20T01102P1

⚠ CAUTION

Operate the boom hoist to keep the wire rope slack as the gantry and mast are risen or lowered. Otherwise, the gantry, mast or boom hoist wire rope may be damaged.

JJ20T01249P1

JJ20T01249P1

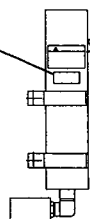
ACCUMULATOR

CHARGING GAS PRESSURE.

3.4~3.7Mpa
(35~38 Kg/cm²)

GG20T01079P1

GG20T01079P1



DETAIL OF ACCUMULATOR

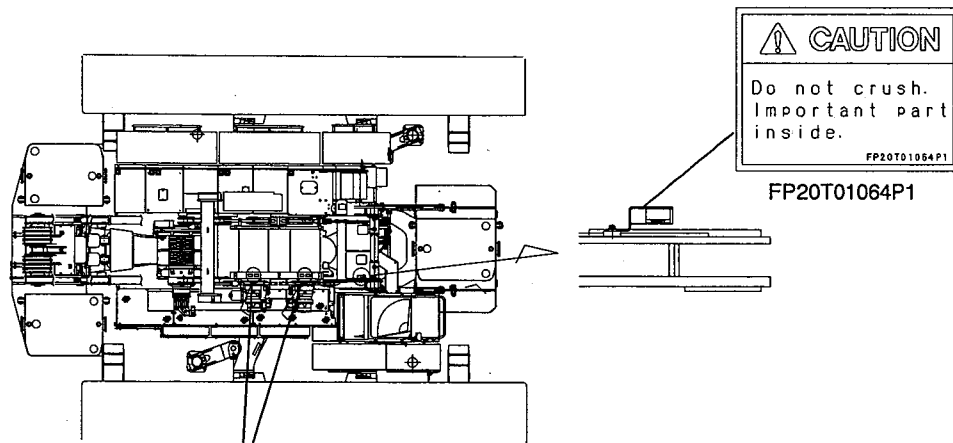
⚠ WARNING

AVOID EXPLOSION WHEN HANDLING ACCUMULATOR

THIS CASE IS CHARGED WITH HIGH PRESSURE NITROGEN GAS. NEVER ATTEMPT TO WELD, GAS-CUT, PUT ON FIRE, NOR DISASSEMBLE THE CASE TO AVOID EXPLOSION.

FP20T01042P1

FP20T01042P1



CAUTION
Do not crush.
Important part
inside.
FP20T01064P1

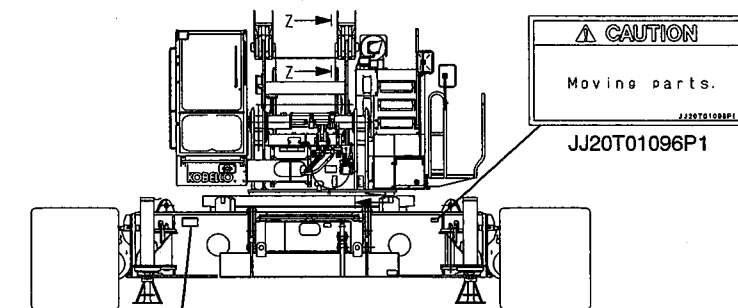
FP20T01064P1

CAUTION
Moving parts.
JJ20T01096P1

JJ20T01096P1

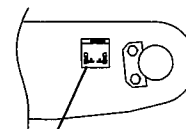
CAUTION
Only to open when
machine is stopped.
JJ20T01100P1

JJ20T01100P1



CAUTION
Moving parts.
JJ20T01096P1

JJ20T01096P1



SECTION Z-Z

DANGER

Strictly observe following precautions whenever operating the machine when raised on the translifter cylinders to avoid turning over the machine.

GROUND CONDITIONS
Make sure that the ground under the float of the translifter cylinders is firm and level, and capable of supporting machine weight.
Level the machine by adjusting the translifter cylinders.

INSTALLING CARBODY WEIGHTS AND CRAWLERS
When on translifters.
Be sure to install the CARBODY WEIGHTS FIRST and then install the crawlers.
Be sure to remove the CRAWLERS FIRST and then remove the carbody weights.

Failure to observe above precautions may result in serious accident and injury or death.

Note: See section 4. ASSEMBLY OF THE MACHINE in the operators manual for further information.

JD20T01122P1

JD20T01122P1

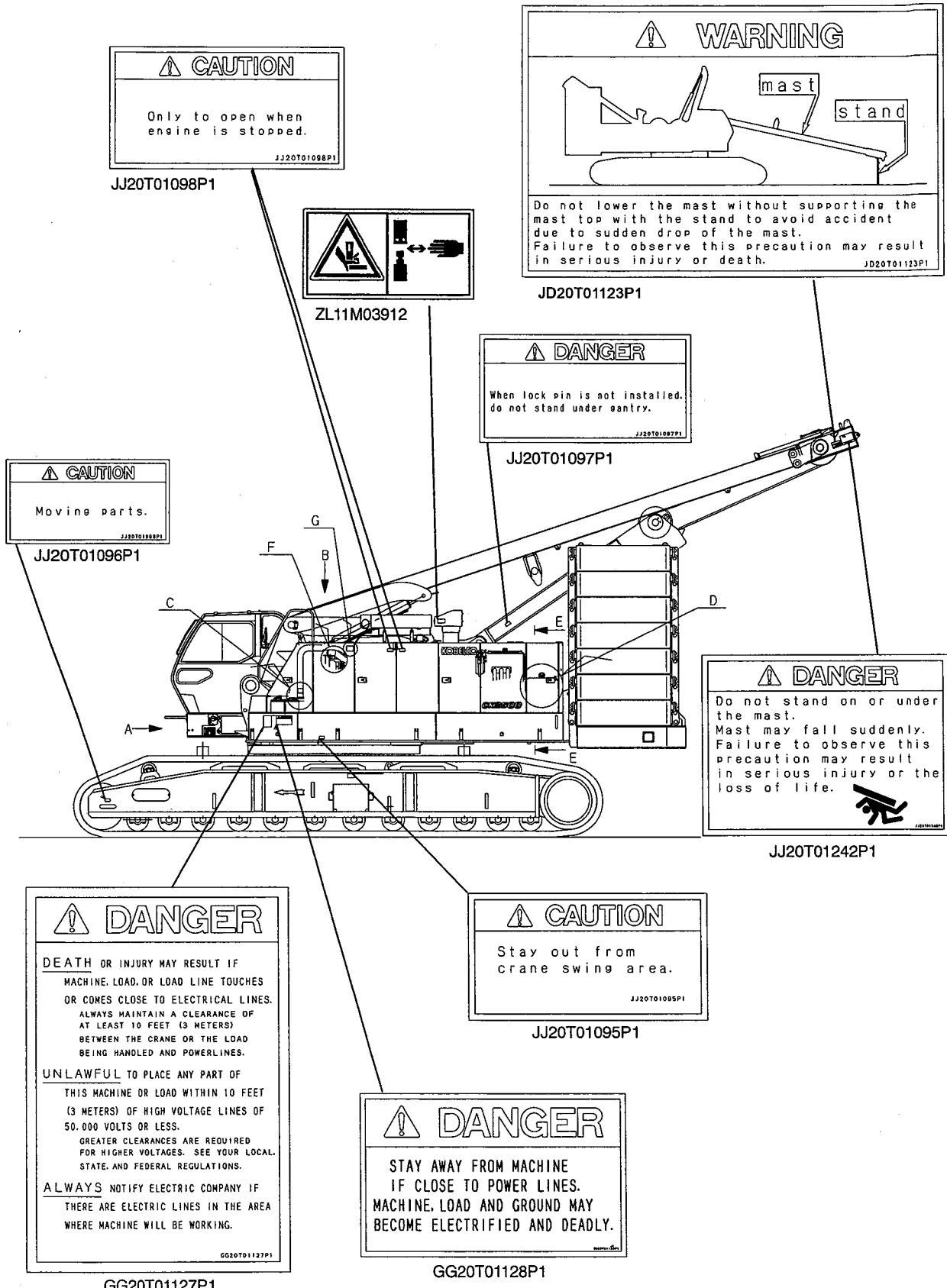
CAUTION

The bushing in the foot of mast is coated with plastic material.
Insert a pin after the pin hole is aligned completely, and do not hit the pin hard.
Failure to observe this caution may lead to damage of the coating of the bushing.

A diagram showing two bushing components. Arrows point to the bushings with the text 'REMOVE THE PAINT OR DUST COMPLETELY'. The bushings are labeled 'BUSHING'.

JJ20T01257P1

JJ20T01257P1

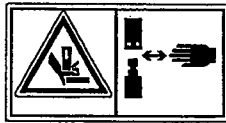


CAUTION

Only to open when engine is stopped.

JJ20T01098P1

JJ20T01098P1



ZL11M03912

WARNING

Do not lower the mast without supporting the mast top with the stand to avoid accident due to sudden drop of the mast. Failure to observe this precaution may result in serious injury or death.

JD20T01123P1

JD20T01123P1

DANGER

When lock pin is not installed, do not stand under gantry.

JJ20T01097P1

JJ20T01097P1

CAUTION

Moving parts.

JJ20T01096P1

JJ20T01096P1

DANGER

Do not stand on or under the mast. Mast may fall suddenly. Failure to observe this precaution may result in serious injury or the loss of life.

JJ20T01242P1

JJ20T01242P1

DANGER

DEATH OR INJURY MAY RESULT IF MACHINE, LOAD, OR LOAD LINE TOUCHES OR COMES CLOSE TO ELECTRICAL LINES. ALWAYS MAINTAIN A CLEARANCE OF AT LEAST 10 FEET (3 METERS) BETWEEN THE CRANE OR THE LOAD BEING HANDLED AND POWERLINES.

UNLAWFUL TO PLACE ANY PART OF THIS MACHINE OR LOAD WITHIN 10 FEET (3 METERS) OF HIGH VOLTAGE LINES OF 50,000 VOLTS OR LESS. GREATER CLEARANCES ARE REQUIRED FOR HIGHER VOLTAGES. SEE YOUR LOCAL, STATE, AND FEDERAL REGULATIONS.

ALWAYS NOTIFY ELECTRIC COMPANY IF THERE ARE ELECTRIC LINES IN THE AREA WHERE MACHINE WILL BE WORKING.

GG20T01127P1

GG20T01127P1

CAUTION

Stay out from crane swing area.

JJ20T01095P1

JJ20T01095P1

DANGER

STAY AWAY FROM MACHINE IF CLOSE TO POWER LINES. MACHINE, LOAD AND GROUND MAY BECOME ELECTRIFIED AND DEADLY.

GG20T01128P1

GG20T01128P1

⚠ DANGER

Do not stand on or under the counterweight during installation or removal.
Failure to observe this precaution may result in serious injury or the loss of life.

JJ20T01247P1

JJ20T01247P1

⚠ DANGER

Do not stand on or under the counterweight during installation or removal.
Failure to observe this precaution may result in serious injury or the loss of life.

JJ20T01247P1

JJ20T01247P1

⚠ DANGER

KEEP CLEAR OF SWING AREA

YN20T01003P2

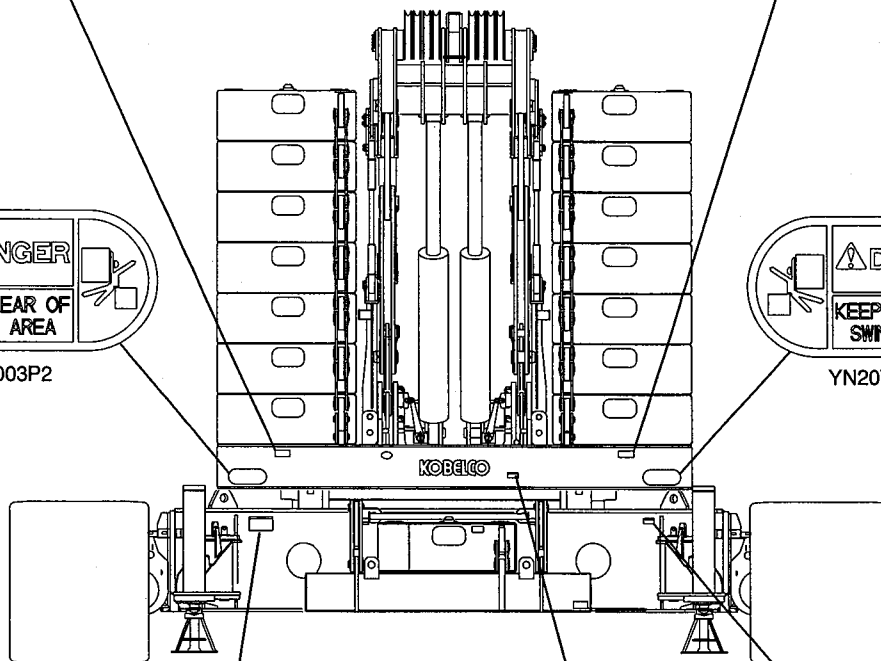
YN20T01003P2

⚠ DANGER

KEEP CLEAR OF SWING AREA

YN20T01003P2

YN20T01003P2



⚠ DANGER

Strictly observe following precautions whenever operating the machine when raised on the translifter cylinders to avoid turning over the machine.

GROUND CONDITIONS
Make sure that the ground under the float of the translifter cylinders is firm and level, and capable of supporting machine weight.
Level the machine by adjusting the translifter cylinders.

INSTALLING CARBODY WEIGHTS AND CRAWLERS
When on translifters
Be sure to install the CARBODY WEIGHTS FIRST and then install the crawlers.
Be sure to remove the CRAWLERS FIRST and then remove the carbody weights.

Failure to observe above precautions may result in serious accident and injury or death.

Note: See section 4. ASSEMBLY OF THE MACHINE in the operators manual for further information.

JD20T01122P1

JD20T01122P1

⚠ CAUTION

Moving parts.

JJ20T01096P1


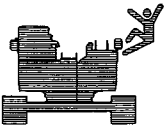
JJ20T01096P1

⚠ CAUTION


Stay out from crane swing area.

JJ20T01095P1

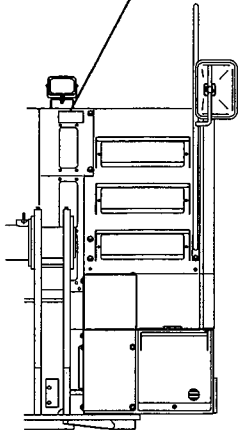
JJ20T01095P1

	WARNING
	<p>WALKING ON GUARDS MAY CAUSE STUMBLING AT PROJECTED ITEMS AND SLIPPING BY OIL, WATER, OR GREASE.</p> <p>PROTECTOR SHOULD BE EMPLOYED WHEN WALKING FOR MAINTENANCE JOB, TO AVOID TIPPING OVER AND FALLING DOWN FROM THE MACHINE.</p> <p style="text-align: right;">FP20T01051P1</p>

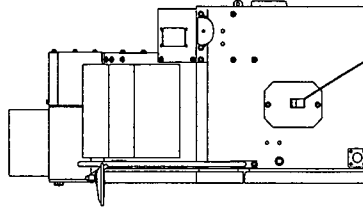
FP20T01051P1

	WARNING
<p>Steam of hot coolant can cause injury or blindness.</p> <p>Never loosen or open radiator cap when coolant is hot and under pressure.</p> <p>Before opening radiator cap: · Cool down engine completely. · Cover radiator with cloth rag. · Loosen cap slowly to relieve pressure.</p> <p style="text-align: right;">YN20T01010P1</p>	


YN20T01010P1



VIEW "A"



VIEW "B"

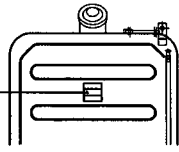
HYDRAULIC TANK

CAUTION
HIGH TEMPERATURE DO NOT TOUCH
<small>FP20T01049P1</small>

FP20T01049P1

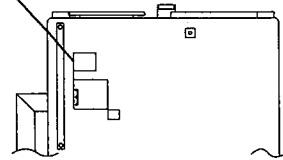
FUEL TANK

CAUTION
USE DIESEL FUEL ONLY
<small>FP20T01050P1</small>



FP20T01050P1






DETAIL "D"




SECTION E-E

	WARNING
	<p>PREVENT BATTERY EXPLOSION</p> <ul style="list-style-type: none"> · Batteries give off hydrogen gases that can explode and cause personal injury. · Keep sparks, open flames and cigarettes away from batteries. · Keep metallic articles away from batteries. · Keep all ventilation caps tightly secured. · Never check charge by placing metal articles across battery terminals. · Leave battery box open to improve ventilation when charging. <p style="text-align: right;">YN20T01001P1</p>



YN20T01001P1

	WARNING
	
<p>Rotating parts can cause personal injury.</p> <p>Keep away from fan and belt when engine is running.</p> <p>Stop engine before servicing.</p> <p style="text-align: right;">YN20T01009P1</p>	

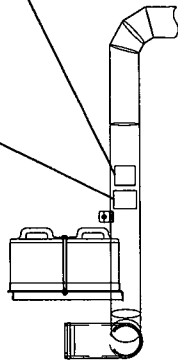
YN20T01009P1

	CAUTION
CAUTION	
FOR HIGH TEMPERATURE	
<p>AS ENGINES AND MUFFLERS MAY BE HEATED TO HIGH TEMPERATURES, DO NOT DIRECTLY TOUCH THEM BY HAND.</p> <p style="text-align: right;"><small>FP20T01043P1</small></p>	

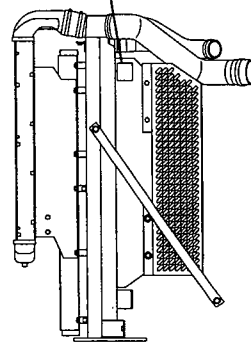
FP20T01043P1

	WARNING
	<p>AVOID ACID BURNS</p> <ul style="list-style-type: none"> · Electrolyte is an acid and can cause injury or blindness if it contacts skin or eyes. · Wear eye protection and protective clothing when handling or servicing batteries. · If electrolyte contacts skin or eyes, flush affected areas immediately with clean water and seek medical attention immediately. <p style="text-align: right;">YN20T01017P1</p>

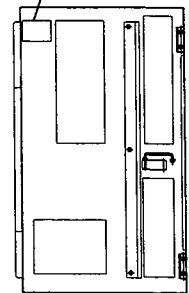
YN20T01017P1



DETAIL "C"



DETAIL "F"



DETAIL "G"

CAUTION

BE SURE TO SET THE FREE FALL INCREASED SELECTOR SWITCH TO THE "LOCK" SIDE WHEN RE-REEVING THE WIRE ROPE.

WHEN THE BRAKE IS RELEASED WITH THE FREE FALL INCREASED SELECTOR SWITCH SET TO THE "RELEASE" SIDE, THE DRUM IS AUTOMATICALLY ROTATED WITHOUT LOAD.

GG20T01291P1

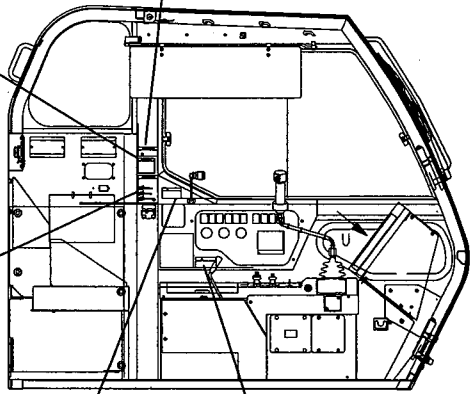
GG20T01291P1

WARNING

Do not support the boom in cantilever style, when the gantry is in the middle or low position.

JJ20T01344P1

JJ20T01344P1



CAUTION

LIMIT FOR BOOM CONNECTING LENGTH

WHEN BOOM IS SUPPORTED IN CANTILEVER STYLE, AND ATTEMPTING TO INCREASE BOOM LENGTH, STRICTLY FOLLOW RESTRICTED LENGTH AS SHOWN.

With boom tip
36.6m (120ft) and shorter

With aux. sheave
33.5m (110ft) and shorter

With insert boom only
41.1m (135ft) and shorter

JD20T01004P1

JD20T01004P1

DANGER

WHEN THE GANTRY IS IN THE MIDDLE LOWERD POSITION, DO NOT HOIST THE BOOM, NOR DO NOT LIFT ANY LOAD.

JJ20T01325P1

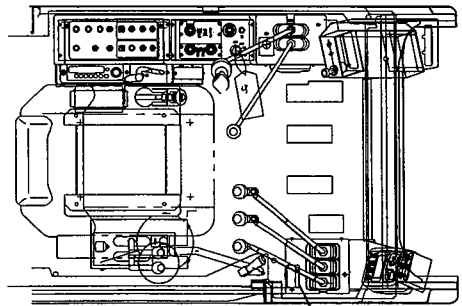
JJ20T01325P1

DANGER

CRANE WORK SHOULD BE EXERCISED ON "NEUTRAL BRAKE MODE". OPERATIONS ON "FREE FALL MODE" MAY CAUSE FALLING OF LOADS DUE TO OPERATIONAL ERROR.

FP20T01045P1

FP20T01045P1



SECTION H-H

CAUTION

READ BEFORE OPERATION

OPERATORS MANUAL SHOULD BE READ AND UNDERSTOOD BEFORE OPERATION. DAILY MAINTENANCE SHOULD ALWAYS BE EXERCISED. ALSO, CAUTIONS NOTED IN RATING PLATES MUST BE OBSERVED DURING OPERATION.

FP20T01047P1

FP20T01045P1

⚠ DANGER

STAY AWAY FROM MACHINE
IF CLOSE TO POWER LINES.
MACHINE, LOAD AND GROUND MAY
BECOME ELECTRIFIED AND DEADLY.

JJ20T01243P1

GG20T01128P1

⚠ WARNING

Do not lower the mast below the
horizontal position in high speed.
Mast will fall suddenly when lowering
the mast below horizontal.
Set the inching speed switch to the
inching position.

JJ20T01245P1

JJ20T01245P1

⚠ DANGER

Do not lower the mast assist arms
until the mast is connected to the
boom with the guy lines.
Mast may fall backwards if raised
to vertical position when assist
arms are down stored.
Failure to observe this precaution
may result in serious injury or
the loss of life.

JJ20T01243P1

JJ20T01243P1

⚠ DANGER

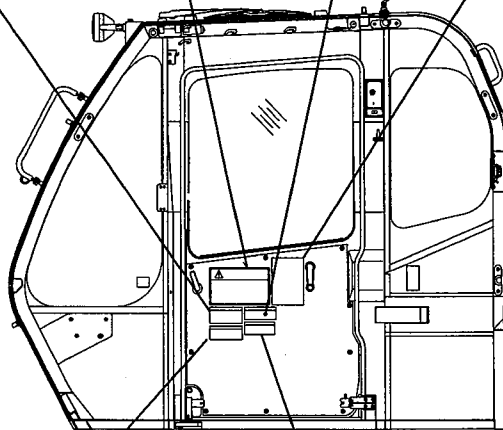
DEATH OR INJURY MAY RESULT IF
MACHINE, LOAD, OR LOAD LINE TOUCHES
OR COMES CLOSE TO ELECTRICAL LINES.
ALWAYS MAINTAIN A CLEARANCE OF
AT LEAST 10 FEET (3 METERS)
BETWEEN THE CRANE OR THE LOAD
BEING HANDLED AND POWERLINES.

UNLAWFUL TO PLACE ANY PART OF
THIS MACHINE OR LOAD WITHIN 10 FEET
(3 METERS) OF HIGH VOLTAGE LINES OF
50,000 VOLTS OR LESS.
GREATER CLEARANCES ARE REQUIRED
FOR HIGHER VOLTAGES. SEE YOUR LOCAL
STATE, AND FEDERAL REGULATIONS.

ALWAYS NOTIFY ELECTRIC COMPANY IF
THERE ARE ELECTRIC LINES IN THE AREA
WHERE MACHINE WILL BE WORKING.

GG20T01127P1

GG20T01127P1



⚠ DANGER

Fully lower the mast assist arms to
the backwards before raising the boom.
Mast will buckle and may collapse if
the mast contacts the assist arms.
Failure to observe this precaution
may result in serious injury or the
loss of life.

JJ20T01244P1

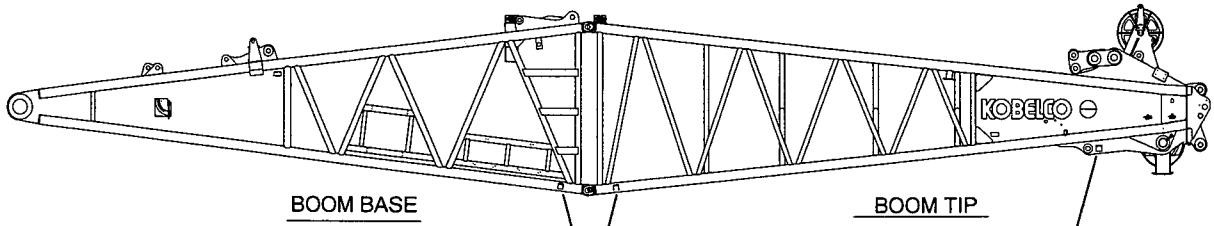
JJ20T01244P1

⚠ CAUTION

Operate the boom hoist to keep
the wire rope slack as the gantry
and mast are raised or lowered.
Otherwise, the gantry, mast or boom
hoist wire rope may be damaged.

JJ20T01249P1

JJ20T01249P1



⚠ DANGER

DO NOT ENTER UNDER BOOM

TO AVOID SERIOUS INJURY CAUSED BY FALLING OF BOOM, DO NOT ENTER UNDER BOOM WHILE DISASSEMBLING/ASSEMBLING OF BOOM.

FP20T01013P1

FP20T01013P1

⚠ CAUTION

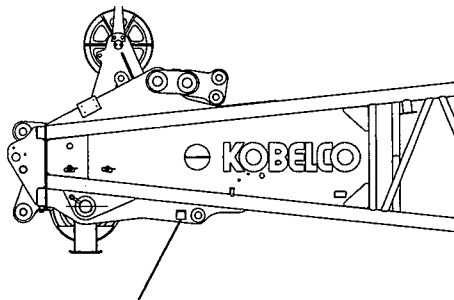
Boom top
Boom foot

CORRECT **WRONG**

GG20T01561P1

Install the rope socket in the correct direction. Otherwise, the rope socket or the wire rope may interfere with the boom, causing damage to the boom or cut of the wire rope.

GG20T01561P1



⚠ CAUTION

Boom top
Boom foot

CORRECT **WRONG**

GG20T01583P1

Install the rope socket in the correct direction. Otherwise, the rope socket or the wire rope may interfere with the boom, causing damage to the boom or cut of the wire rope.

GG20T01583P1