

QUICK OPERATION GUIDE

MINI-CRAWLER CRANE

MC-285C

Serial No.P00001 and up

WARNING

- This operation guide explains basic operation of the machine. Before starting work, always conduct checks written in “2.1 Checking Before Operation” in the separate “Operation Manual”.
For safety cautions and detailed operation of the machine not explained in this book, please read and understand the separate “Operation Manual” before operating this machine.
- This operation guide does not replace the operation manual. This is just a short helpdesk information paper to assist the trained operator of the crane with the basic operation of the crane. For complete and detailed information we refer to the operation manual of the crane.

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FOR SAFE USE OF MACHINE

This manual classifies the risks into the following three categories to present the details of the safety labels in easy-to-understand manner.

DANGER

This denotes that there is an imminent hazard which will cause serious personal injury or death.

The method of hazard circumvention is stated.

WARNING

This denotes that there is a hazard which can cause serious personal injury or death.

The method of hazard circumvention is stated.

CAUTION

This denotes that there is a potential hazard which may cause minor or moderate personal injury or serious damage to this machine.

The method of hazard circumvention is stated.

This manual also provides the following to indicate what must be observed for the sake of the machine and what will be of help.

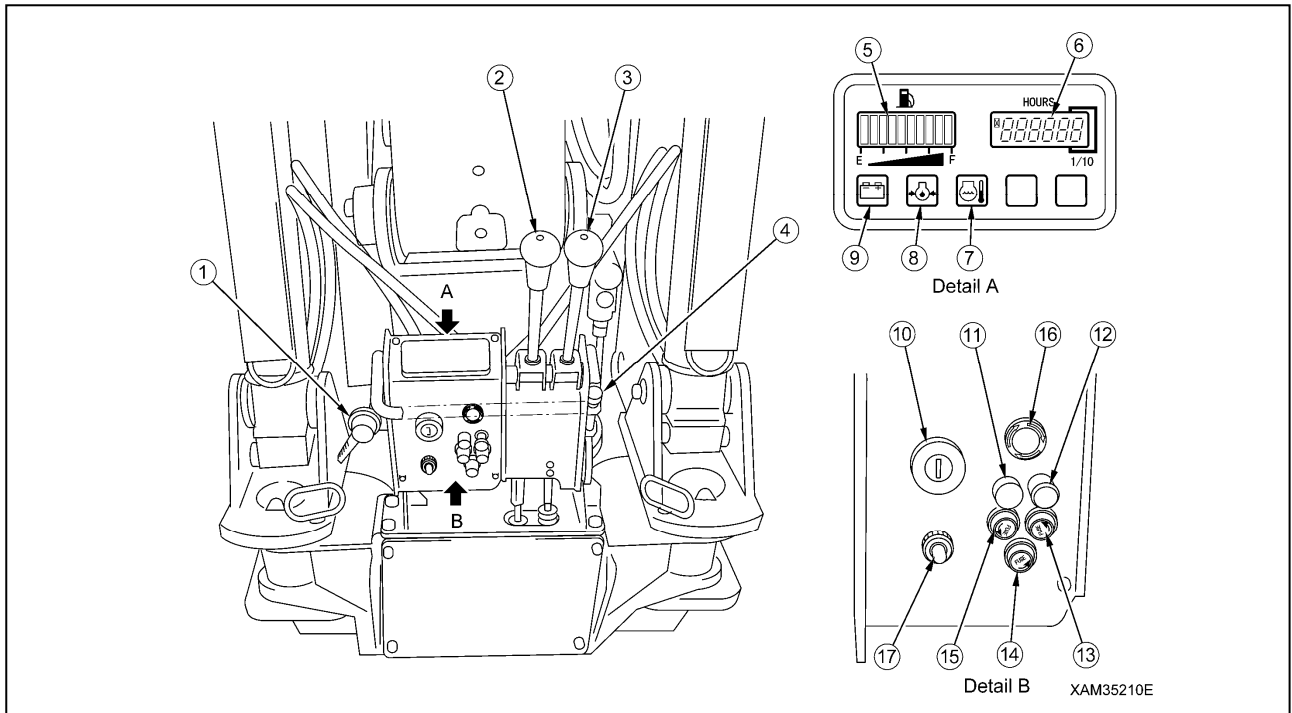
CAUTION

This denotes that failure to handle the machine properly may damage the machine or shorten its life.

NOTES

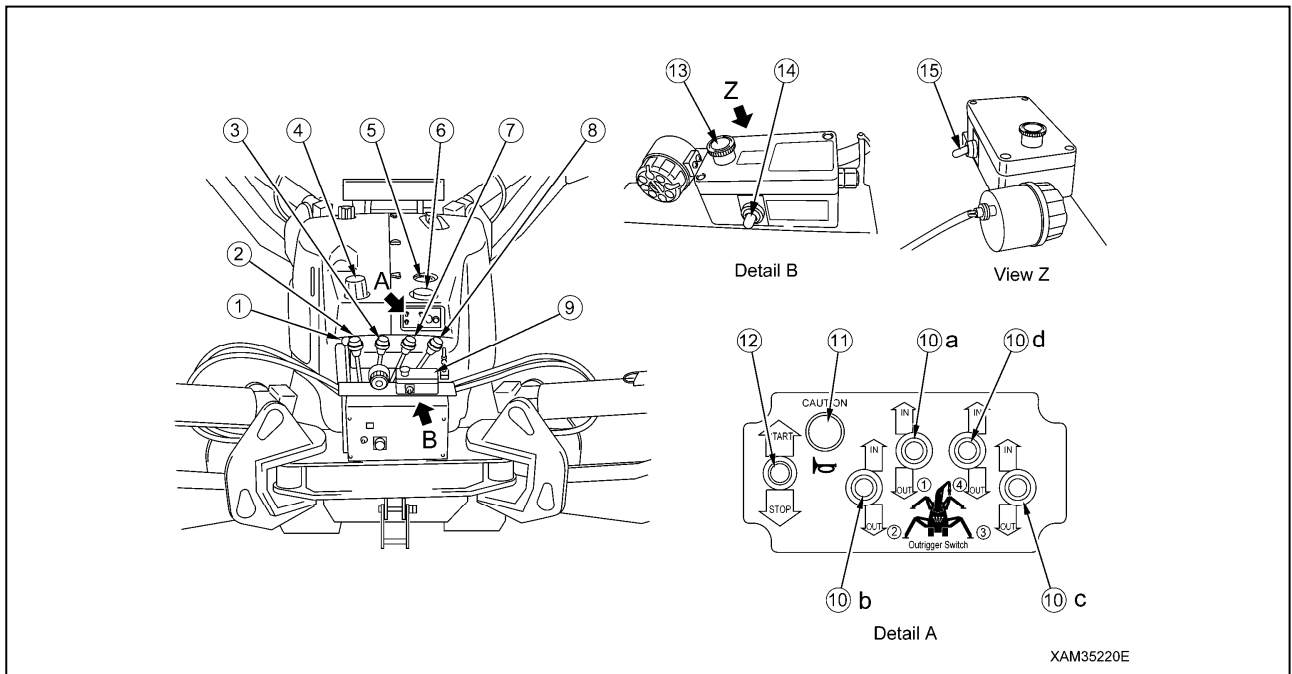
This denotes helpful information.

1. TRAVELLING OPERATION UNITS



- | | | |
|---------------------------------------|--------------------------------------|---------------------------------------|
| (1) Acceleration lever | (7) Engine water temperature monitor | (13) Fuse (15A) |
| (2) Left travelling lever | (8) Engine oil pressure monitor | (14) Fuse (20A) |
| (3) Right travelling lever | (9) Charge monitor | (15) Fuse (15A) |
| (4) Travelling lever stand lock lever | (10) Main starter switch | (16) Emergency engine stop switch |
| (5) Fuel gauge | (11) Horn switch | (17) Engine and electric motor switch |
| (6) Hour meter | (12) Working light switch | (MC285CRM-E only) |

2. CRANE OPERATION UNITS



- | | | |
|----------------------------|----------------------------------|-----------------------------------|
| (1) Acceleration lever | (8) Boom derricking lever | (11) Horn switch |
| (2) Slewing lever | (9) Alarm buzzer | (12) Auxiliary starter switch |
| (3) Boom telescoping lever | (10) Outrigger control switch | (13) Emergency engine stop switch |
| (4) Outrigger mode lamp | (a) Outrigger [1] control switch | (14) Hook stowing switch |
| (5) Load meter | (b) Outrigger [2] control switch | (15) Emergency stop cancel switch |
| (6) Level | (c) Outrigger [3] control switch | |
| (7) Winch lever | (d) Outrigger [4] control switch | |

3. STARTING AND STOPPING THE ENGINE

[1] STARTING THE ENGINE WITH MAIN STARTER SWITCH

1. Push the acceleration lever upward to operate the engine at medium speed (lever stroke about midway).
2. Insert the key and turn it left (preheating) for about four seconds or until the glow lamp light goes out.
3. Turn the key to the right to start the crane.

[2] STOPPING THE ENGINE WITH MAIN STARTER SWITCH

1. Pull the acceleration lever downward and change the engine speed to low idling.
2. Turn the main starter switch key to the OFF position. The engine stops.

[3] STARTING THE ENGINE WITH AUXILIARY STARTER SWITCH

1. Insert the key into the main starter switch and turn the key to the ON position.
2. Pull back the acceleration lever toward you to operate the engine at medium speed (lever stroke about midway).
3. Push the auxiliary starter switch up to the START position (upward) until the machine starts. Then release the starter switch and it will return to the neutral position.

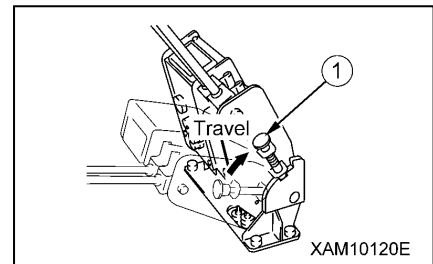
[4] STOPPING THE ENGINE WITH AUXILIARY STARTER SWITCH

1. Push the acceleration lever forward and change the engine speed to low idling.
2. Push the auxiliary starter switch down to the STOP position (downward). The engine stops.
3. Turn the main starter switch key to the OFF position.

4. TRAVELLING OPERATION

[1] STARTING/MOVING MACHINE

- ★ To start travelling, put the travel lever stand to the TRAVEL position (upwards).
- ★ To move the machine, there are two levers which work independently. The left lever operates the left rubber track, the right lever operates the right rubber track.
 - To move forward, push both levers to the front.
 - To move backward, pull both levers to the back.



[2] CHANGING PATH OF MACHINE

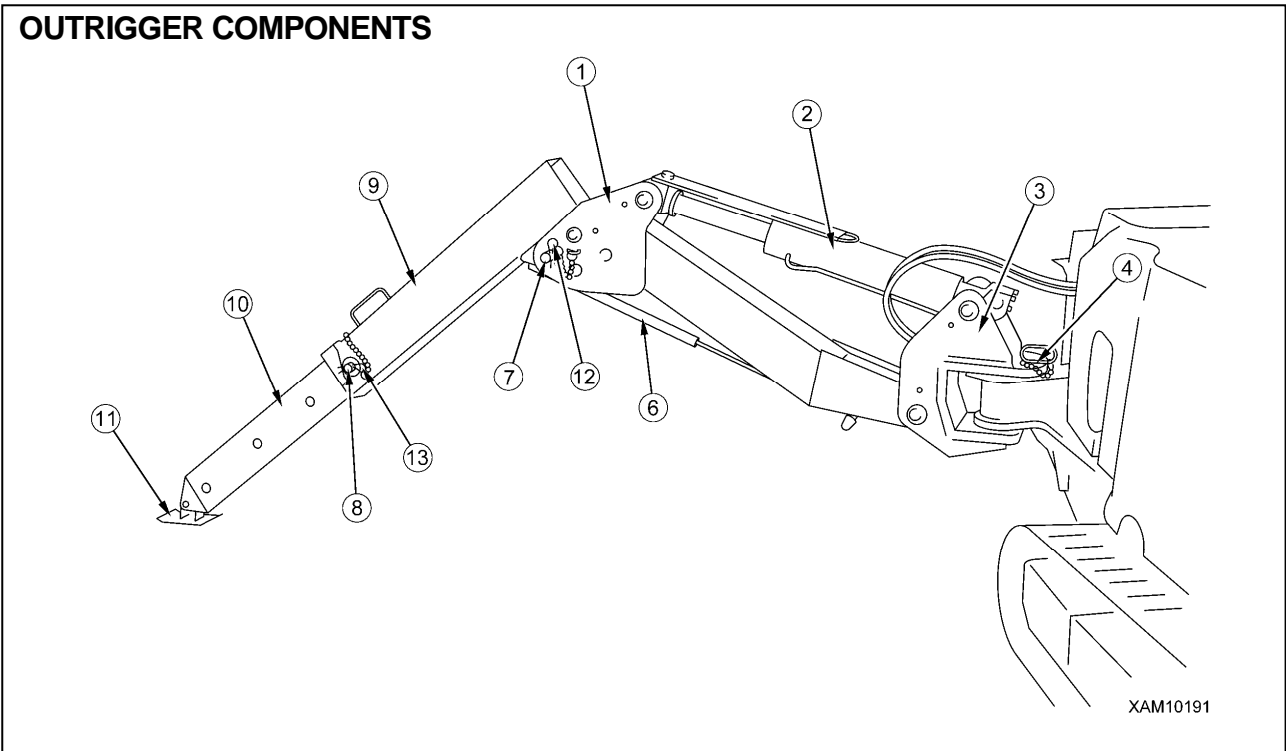
<p>Changing the machine direction while being stopped</p>	<p>Spin turns</p>	<p>Changing path while moving Forward/Backward</p>
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[3] STOPPING/PARKING MACHINE

Return the left and right travelling levers to the NEUTRAL position at the same time. The brakes are automatically applied and the machine will stop.

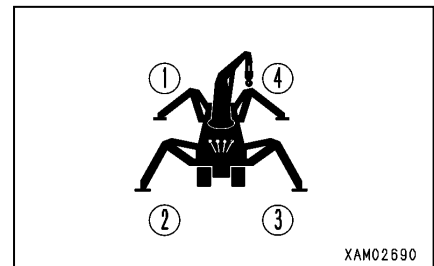
5. OUTRIGGER OPERATION

OUTRIGGER COMPONENTS



- | | | |
|-------------------------|--------------------------------|-------------------------------|
| (1) Outrigger base | (6) Stay (Damper type) | (10) Inner box |
| (2) Outrigger cylinder | (7) Outrigger top position pin | (11) Outrigger adapter (Foot) |
| (3) Outrigger rotary | (8) Inner box position pin | (12) Snap pin |
| (4) Rotary position pin | (9) Outrigger top | (13) Snap pin |

★There are four outriggers installed on the machine. Although the setting method is described for just one outrigger (outrigger (3)), set the other three outriggers in the same way.

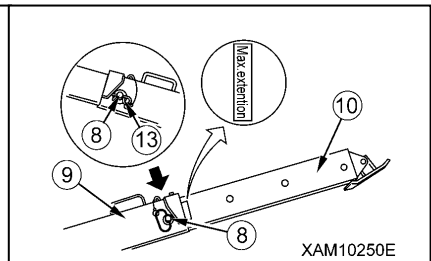
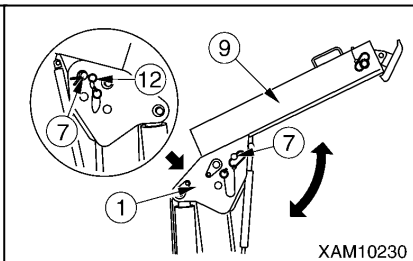
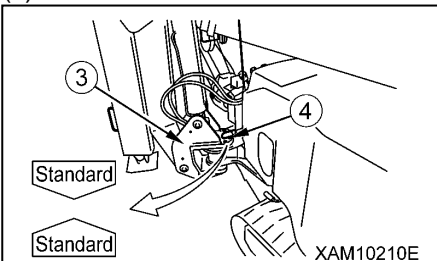


[1] OUTRIGGER SET UP OPERATION

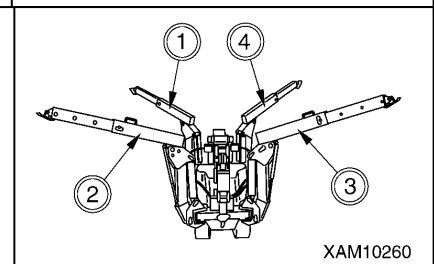
⚠ WARNING

It is forbidden to work with the crane without the outriggers.

(1) TASKS TO BE PERFORMED UPON ENGINE STOP



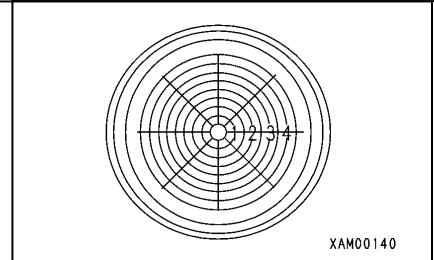
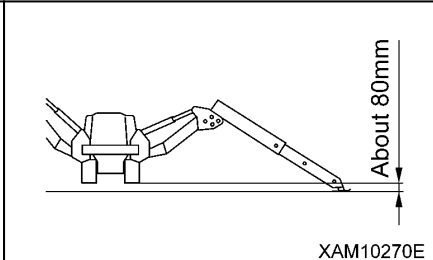
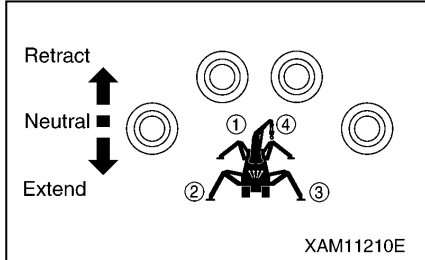
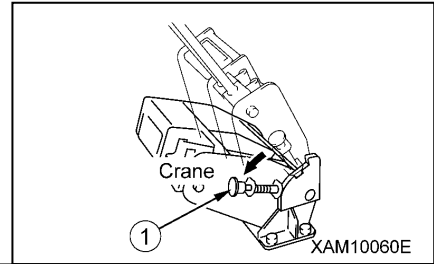
1. Rotate the outriggers as much as possible (check this with the alignment of the "STANDARD" decals). Secure with the position pin.
2. Open (lift up) the outriggers as much as possible and secure with the position pin and snap pin.
3. Pull out the inner box from the outrigger top as much as possible and secure with the position pin and snap pin.



(2) TASKS TO BE PERFORMED AFTER STARTING ENGINE

CAUTION

Before working with the outriggers and the crane, set the travel lever stand in CRANE position. (push the travel lever stand down)



1. Put the outriggers down ONE by ONE until they all just touch the ground.
2. Then use the outriggers TWO by TWO to stabilize the crane.
3. Check the bubble in the level in order to make sure the crane is in the correct position.
4. Make sure the rubber tracks are about 80mm above the ground.

[2] OUTRIGGER STOWING OPERATION

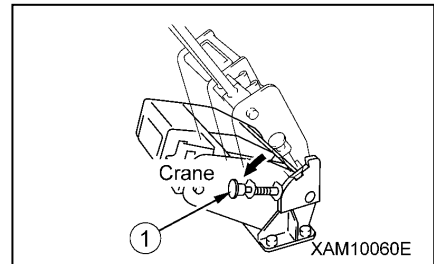
Reverse the outrigger set up procedure to stow the outrigger.

6. CRANE OPERATION

[1] OPERATIONS BEFORE CRANE OPERATIONS

CAUTION

Before working with the outriggers and the crane, set the travel lever stand in CRANE position. (push the travel lever stand down)



⚠ WARNING

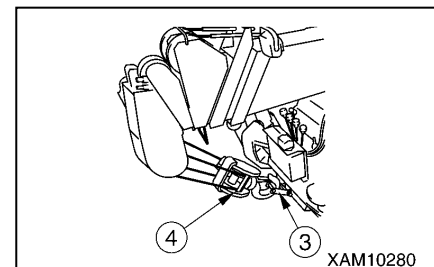
Never let the hook block touch the ground or let the winch rope slacken. This could damage the winch rope.

Un-stow the hook block :

Lower off the winch rope and raise the boom, until you can un-stow the hook.

NOTES

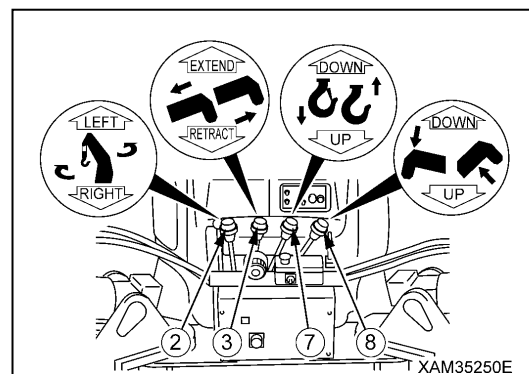
When extending the boom, always Lower the hook block simultaneously.



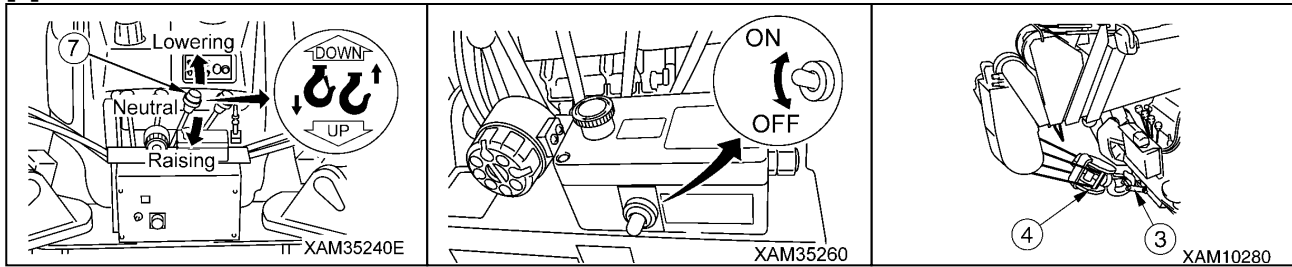
[2] CRANE OPERATIONS

There are 4 possible crane operations :

- (2): Slewing (forward: counterclockwise, backward: clockwise)
- (3): Boom telescoping (forward: extend, backward: retract)
- (7): Hook raising and lowering
(forward: lowering, backward: raising)
- (8): Boom derricking (forward: lowering, backward: raising)



[3] CRANE STOWING OPERATION



1. Completely retract the boom and slew until the boom is over the center of the crane. Lower the boom to the maximum (it stops automatically).
2. Attaching the hook block in the hook hanger:
Hoist up the hook block to the over hoist protection. Attach the hook to the hanger and raise the hook block using the over hoist DETECTOR (see drawing) and simultaneously pull the winch lever towards you.
3. Warning : Be careful with the over hoist detector. The hook block will not stop automatically, so don't apply to much tension, but apply enough tension to stop the hook block from moving .

7. MOMENT LIMITER (OVERLOAD DETECTOR)

MOMENT LIMITER FUNCTIONS

[1] PROHIBITED ACTIONS AFTER AUTO STOP

⚠ DANGER

The following crane operations are prohibited after the crane has stopped automatically due to overloading. These operations may cause overturning of the machine or breakage of the boom and are very dangerous.

- Boom lowering operation
- Boom extending operation
- Hook raising operation
- Crane slewing operation

[2] OVERLOAD WARNING

1. PRE-WARNING:

“Actual load” is 70 to less than 100 % of the “rated total load”.

- The LED “70~100” on the moment limiter display lights up.
- The alarm bleeps intermittently.
- The working status lamp changes from green to yellow.

2. LIMIT WARNING:

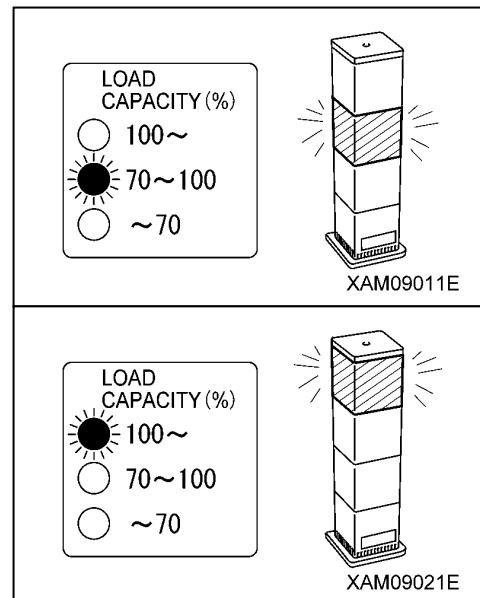
“Actual load” is 100 % or higher than the “rated total load”.

- The LED “100~” on the moment limiter display lights up.
- The alarm sounds continuously.
- The working status lamp changes from yellow to red.
- The hazardous operation of the crane stops automatically.
(Hook raising, boom lowering, boom extending)

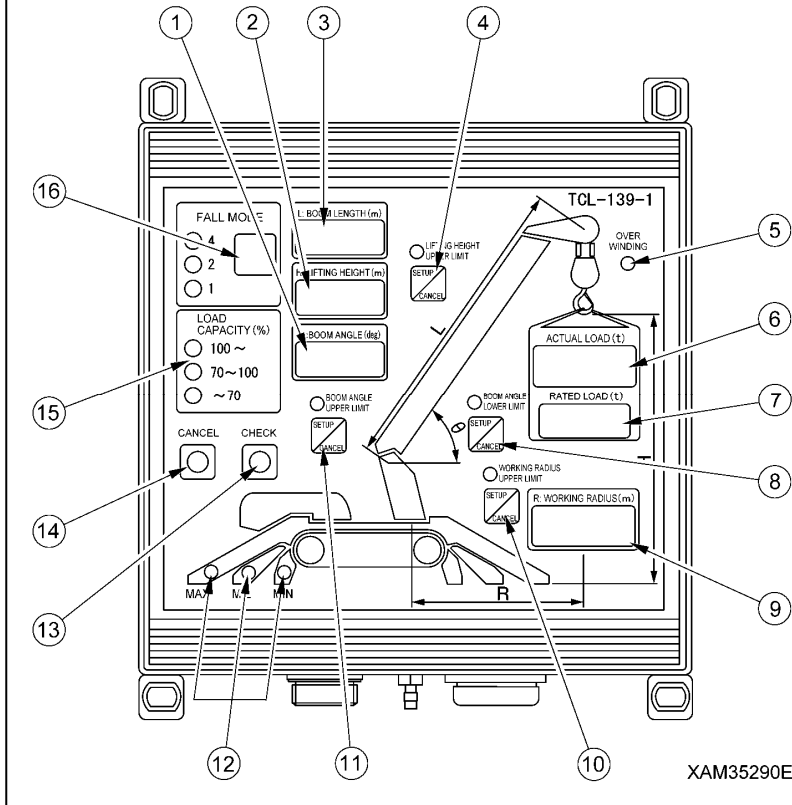
3. RECOVERY OPERATION AFTER AUTO STOP

If the system stops automatically, promptly perform one of following the recovery operation caused by overloading.

- (1) Hook lowering operation
- (2) Boom raising operation (never raise the boom to lift the load from the ground, always winch the load clear of the ground before any other operation is performed)
- (3) Boom retracting operation



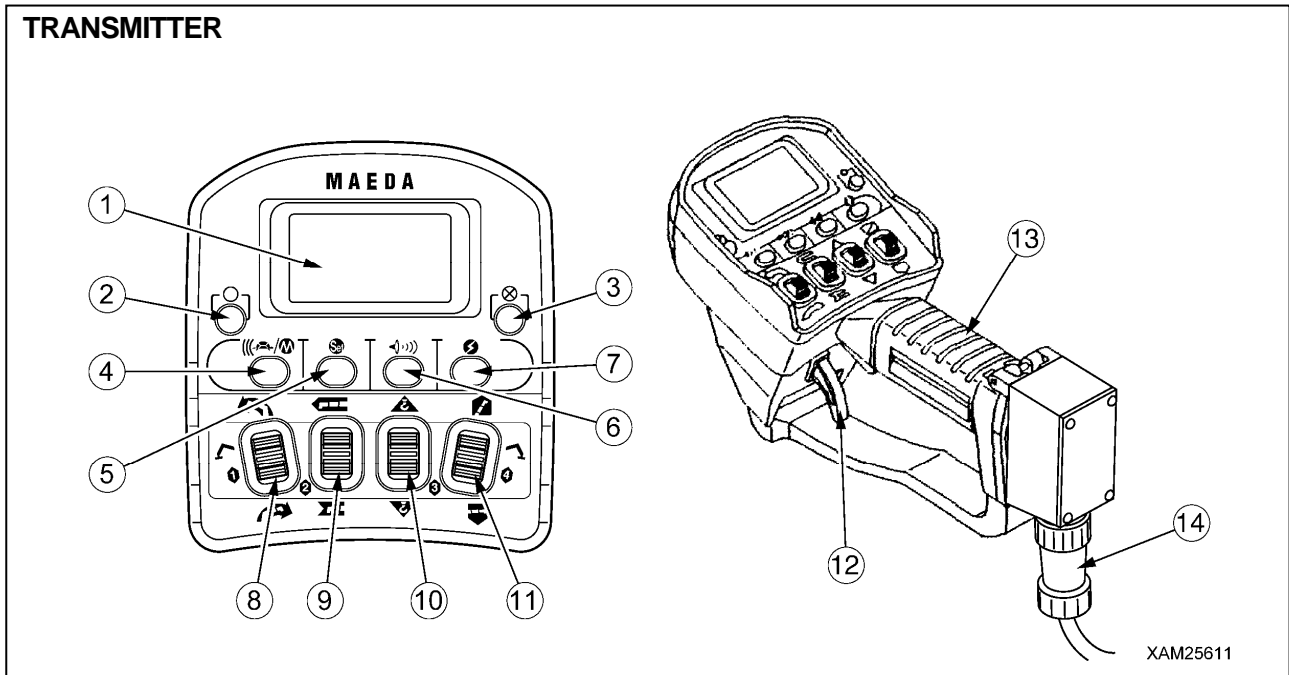
MOMENT LIMITER DISPLAY



- (1) Boom angle display
- (2) Lifting height display
- (3) Boom length display
- (4) Boom lifting height upper limit switch
- (5) Over hoist detection LED (Red)
- (6) Actual load display
- (7) Rated total load display
- (8) Boom angle lower limit switch
- (9) Working radius display
- (10) Working radius upper limit switch
- (11) Boom angle upper limit switch
- (12) Outrigger extension LED (Orange)
- (13) Check switch
- (14) Cancel switch
- (15) Load capacity LED (Orange)
- (16) Fall mode selector & Searcher hook mode switch

8. REMOTE CONTROL

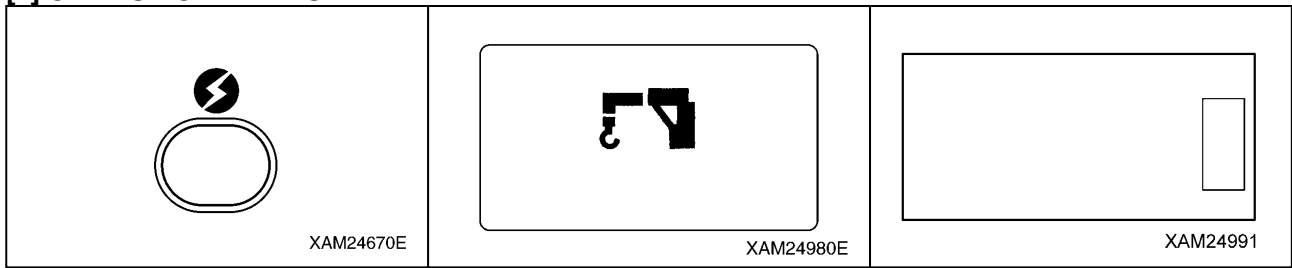
TRANSMITTER



- (1) LCD Screen
- (2) Start/Reset Button
- (3) Stop/EMO Button
- (4) Speed/Mode Button
- (5) Setting Button
- (6) Horn Button
- (7) Power Switch
- (8) Slewing/No.1 Outrigger Operation Lever
- (9) Boom Telescoping/No.2 Outrigger Operation Lever
- (10) Hook Raising and Lowering/No.3 Outrigger Operation Lever
- (11) Boom derricking/No.4 Outrigger Operation Lever
- (12) Accelerator Lever
- (13) Grip
- (14) Connection Cable

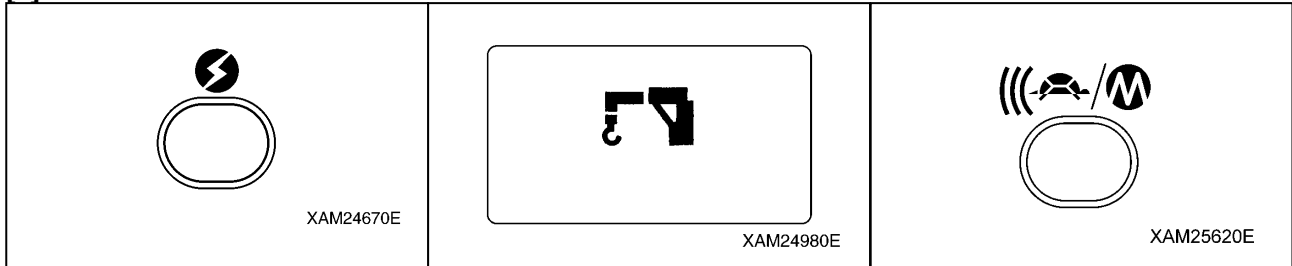
8.1 PROCEDURE IN THE OPERATION MODE

[1] CALL UP CRANE MODE

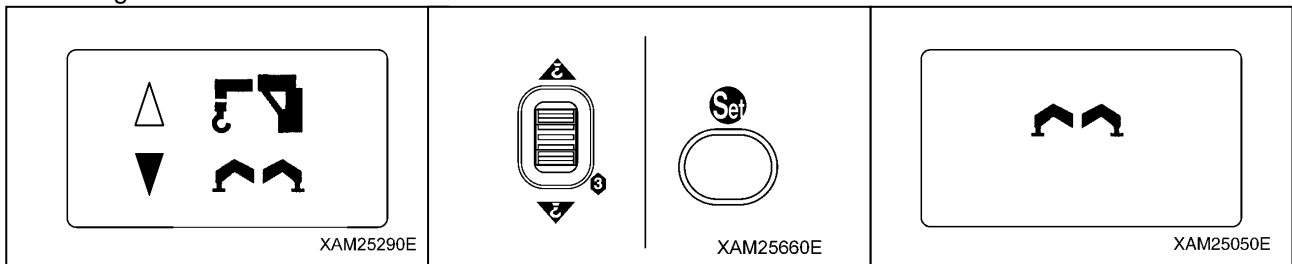


1. Push the Power button to turn ON the Transmitter.
2. The "Crane mark" is displayed in the LCD screen for about 2 seconds.
3. The crane is ready for operation.

[2] CALL UP OUTRIGGER MODE



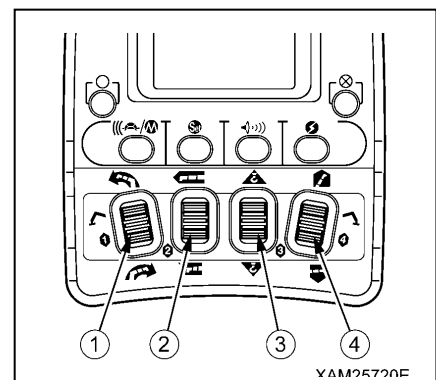
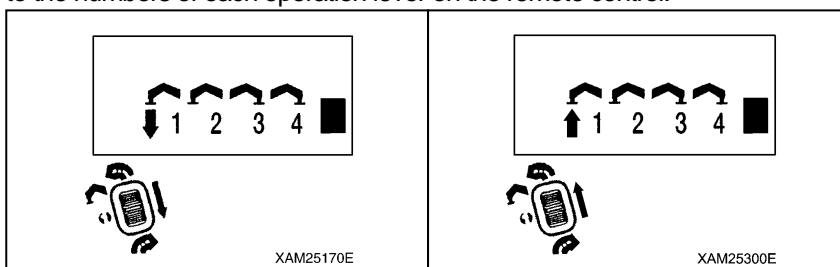
1. Push the Power button to turn ON the Transmitter.
2. The "Crane mark" is displayed in the LCD screen for about 2 seconds.
3. While the "Crane mark" is displayed, push the speed button for about 2 seconds. The LCD provides the screen for selecting "CRANE MODE" or "OUTRIGGER MODE".



4. Use the Hook raising and lowering Lever to shift the cursor (▲ or ▼), and push the Setting button when the cursor points to the "OUTRIGGER".

8.2 OPERATION IN OUTRIGGER MODE

The outriggers of the crane are numbered from 1 to 4 and these correspond to the numbers of each operation lever on the remote control.



NOTES

If you want to START any action, always use the operation lever first and only afterwards pull the accelerator (slowly).

If you want to END any action, first release the accelerator slowly, and then release the operation lever.

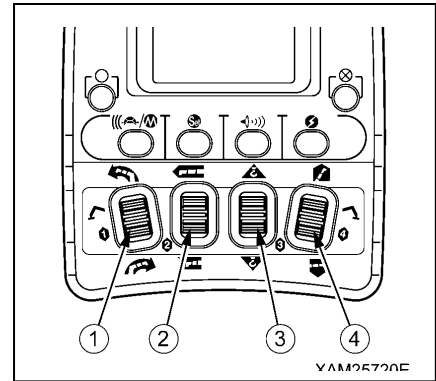
1. Put the outriggers down ONE by ONE (by pushing down the levers) until they all just touch the ground.
2. Then use the outriggers TWO by TWO to stabilize the crane.
3. Check the bubble in the level in order to make sure the crane is in the correct position.
4. Make sure the rubber tracks are about 80mm above the ground.

For stowing the outriggers : push the operation levers up.

8.3 OPERATION IN CRANE MODE

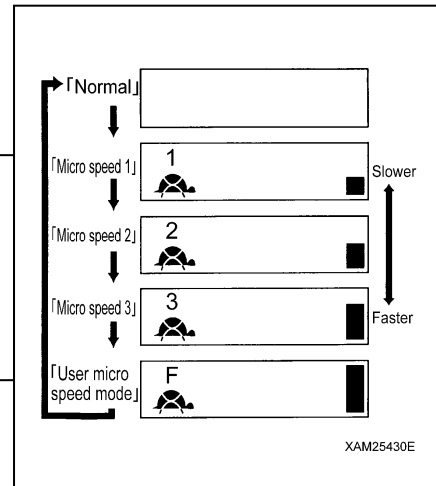
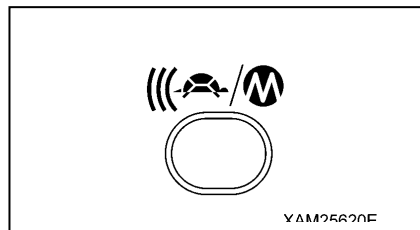
Four Crane operation switches are provided. Each controls the following operation, respectively. (See the figure on the right.)

- (1): Slewing (upper: counterclockwise, lower: clockwise)
- (2): Boom telescoping (upper: extend, lower: retract)
- (3): Hook raising and lowering (upper: raising, lower: lowering)
- (4): Boom derricking (upper: raising, lower: lowering)



8.4 SET-UP AND CANCEL MICRO SPEED

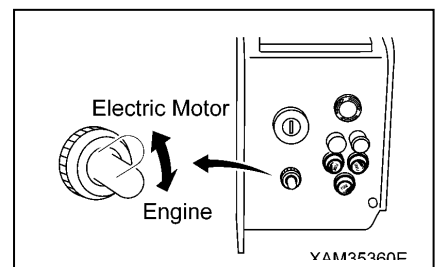
The speed of the crane can also be controlled by the MICRO SPEED MODE. Just push the speed/mode button and each push will forward the LCD screen indication as shown in the diagram to the right.



9. ELECTRIC MOTOR

If electric motor is required, please attach a electric cable and turn the engine and electric motor switch to the "Electric Motor" (upper) position. To start the electric motor, simply insert the key into the main starter switch and turn on the engine. (Pre-heating is not necessary.)

All other operations (travelling – outriggers – crane) are the same as described in previous chapters.



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Issued by Maeda Seisakusyo Co., Ltd.
1095 Onbegawa, Shinonoi
Nagano, Nagano 388-8522,
Japan

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