

MACHINE

Hitachi ZX17U-5A

Rubber tracks · canopy · blade

CONTROL PATTERN

ISO

Never to be altered

SEAT BELT

Every operator, every time

MAX SLOPE

25°

BEFORE YOU START

Engine. Oil and coolant levels, no oil or water leaks, radiator and oil cooler clear of grass and dust.

Undercarriage. Rubber tracks for sag, cuts and wear. Clear packed mud and stones before you move off.

Station. Seat belt condition, horn, work light, travel alarm. Every lever moves freely and springs back to neutral.

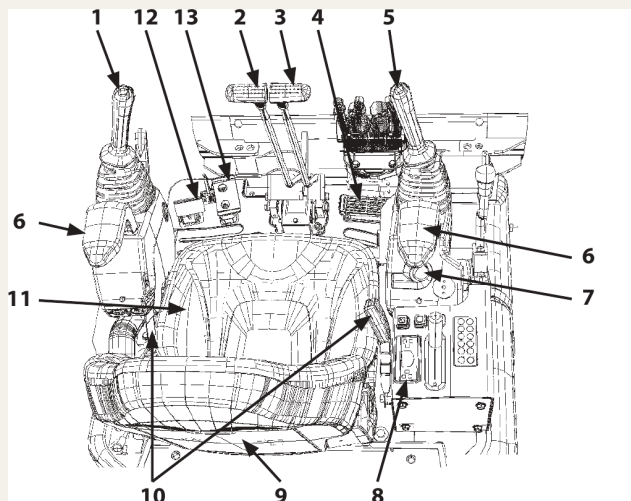
Hydraulics. Tank level, no leaks, hoses and pipework undamaged, cylinder rods clean.

Front attachment. Bucket and teeth, pins, retaining rings and stoppers, greasing, blade and blade cylinders.

Fuel. Diesel only. Check the gauge before you start — once the low-fuel lamp comes on you have roughly 5 litres left. We don't charge for refuelling, but running dry mid-job costs you the afternoon.

Found a fault, a leak or damage that wasn't there yesterday? Don't start work. Photograph it and email us before you use the machine — telling us early is what protects you under the hire agreement.

OPERATOR'S STATION



- | | |
|----------------------|----------------------|
| 1 Left control lever | 8 Monitor |
| 2 Left travel lever | 9 Seat back box |
| 3 Right travel lever | 10 Seat belt |
| 4 Swing pedal | 11 Operator's seat |
| 5 Right lever / horn | 12 Travel mode pedal |
| 6 Wrist rest | 13 Auxiliary pedal |
| 7 Key switch | |

Getting on and off: use the foothold and handrails, three points of contact, facing the machine. Never jump down. The control levers, the pilot control shut-off lever and the door furniture are not handrails.

STARTING & SHUTTING DOWN

START

- 1 Pilot control shut-off lever UP in LOCK before you touch the key.
- 2 All levers and pedals in neutral. Seat and belt set.
- 3 Engine control lever to slow idle.
- 4 Sound the horn to warn anyone nearby.
- 5 Turn the key to ON.
- 6 Enter the 4-digit security code.
- 7 Key to START, release the moment it fires.

Cold start. Turn the key to HEAT and hold it until the preheat lamp goes out — about 4 seconds — then straight to START.

Warm up before you work it. Hydraulic oil below 20 °C damages components. Once the coolant lamp goes out, run 5–10 minutes at medium revs, then cycle each cylinder and lightly swing and track.

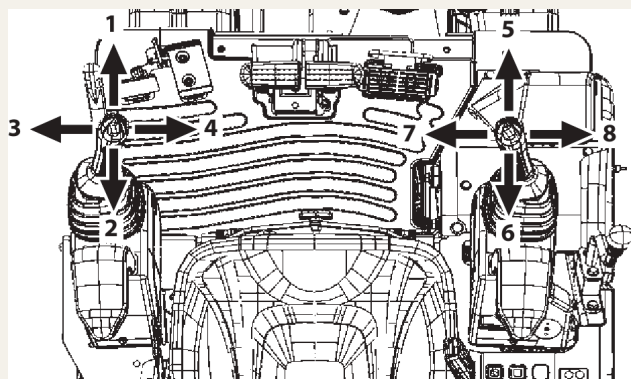
SHUT DOWN

- 1 Park on firm level ground. Bucket and blade down.
- 2 Levers to neutral, shut-off lever UP in LOCK.
- 3 Slow idle for 5 minutes to cool the engine.
- 4 Key OFF and out of the switch.
- 5 Close and lock the covers. Park it clear of anything that could fall on it.

Never crank for more than 15 seconds. If it doesn't fire, key OFF, wait 30 seconds and try again. Longer cranking cooks the starter.

Check the lamps. Alternator and oil pressure lamps light at key-on and must go out once running. If either stays on, stop the engine.

CONTROLS



- | | |
|----------------|-------------------|
| 1 Arm roll-out | 5 Boom lower |
| 2 Arm roll-in | 6 Boom raise |
| 3 Swing left | 7 Bucket roll-in |
| 4 Swing right | 8 Bucket roll-out |

Release a lever and it returns to neutral and the function stops. The pattern label is on the right of the station and must not be changed.

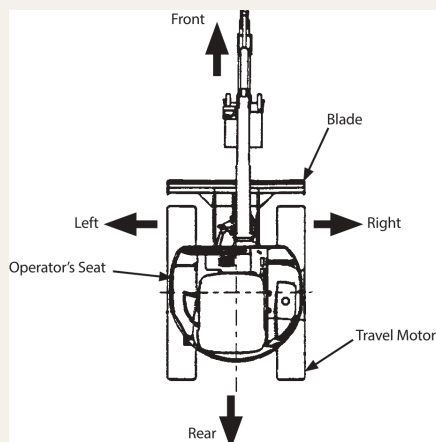
Pilot control shut-off lever. Pull it up and the console rises: every lever and pedal is dead. Push it down to go live — hold the lever itself, and keep clear of the control levers while you do it. Up and locked whenever you leave the seat.

Boom swing pedal (right foot). Flip the cover forward to unlock, press left to swing the boom left and right to swing right. Cover it again as soon as you're finished.

Blade lever (right console). Push down to lower, pull up to raise. The blade holds position when you let go.

Travel mode pedal. Selects slow or fast travel. Stay in slow for loading, rough ground and confined work. Never change mode part-way down a slope — bring the travel levers back to neutral first.

DRIVING THE MACHINE



Check which way you're pointed first. In the standard position the blade is in front of you and the travel motors are behind. Swing the house around and the travel levers work in reverse. Confirm the travel motors before you touch a lever, every time.

Both levers forward to travel forward, both back to reverse; stroke controls speed. One lever alone pivots the machine, opposite levers spin it on the spot. Neutral applies the travel brakes automatically.

The alarm sounds while you travel. The deactivation switch silences it for that move only.

At full travel stroke the arm and bucket won't move. For combined work, hold the travel levers part-way.

Ground. Flattest route, small gradual changes of direction, slow on rough ground. Use a spotter in tight areas.

Water. 370 mm maximum — the top of the upper rollers, on firm footing, in slow-moving water. Never submerge the swing bearing or centre joint.

Soft ground. Don't drive in deeper than you could be towed out of. If the tracks are packed solid, raise each one on the boom and arm and clear them.

Rubber tracks. Keep off rock, rubble, stumps, rebar and steel plate edges. Keep fuel and oil off them. Never travel with one track lifted on the front attachment.

SLOPES

- Never attempt a slope of **25° (47%) or steeper**, never with a loaded or suspended bucket, and always at slow travel speed. Seat belt on.
- Keep the bucket pointed in the direction of travel, 200–300 mm off the ground. If the machine starts to skid, drop it immediately.
- Don't drive across the face of a slope and don't turn on one. Come back to level ground to change direction.
- Swinging on a slope shifts the machine's balance. Swing slowly with an empty bucket, boom and swing together, and keep the load low.
- Engine stalls on a slope: bucket straight down, levers neutral, then restart. Don't park on a slope — if there's no choice, teeth into the ground, shut-off lever LOCK, both tracks chocked.

WHAT THIS MACHINE IS NOT FOR

Excavation and loading only. The machine is designed for nothing else and must not be worked beyond its specifications.

Never break material by swinging into it with the house or the boom swing. It wrecks the front end and the swing gear.

The blade dozes and backfills. It doesn't dig deep, it doesn't get rammed into loads, and it doesn't collide with rocks.

Don't work cylinders hard against their stroke ends, and don't let the boom drop and stop suddenly — both shock-load the machine.

Never hammer, tamp or drive piles with the bucket. The bucket bottom is curved — it is dangerous and it breaks buckets.

Never travel with the teeth in the ground and never lift the rear of the machine to force a cut.

Watch the blade. When the blade is at the front, the bucket and the boom cylinder will hit it if you're not careful.

The shackle bracket on the track frame is for light objects only, to 500 kgf. It is not a tow point for the machine, and neither are the blade lifting holes. Check your hire agreement before towing anything.

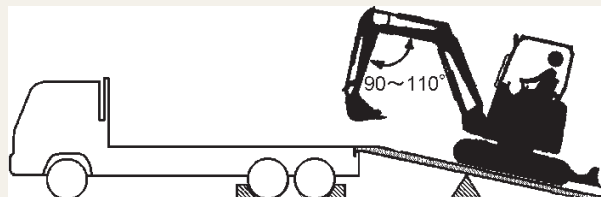
LOADING & TRANSPORT

Set up. Firm level ground. Ramps and dock clean, strong, and under 15°. Chock the truck wheels. In cold weather, warm the machine first.

Up the ramp. Slow travel mode, engine at slow idle, machine on the centreline. Never steer on a ramp — if you're off line, come back down and start again. Keep boom and arm at 90–110° and rest the bucket on the deck as you cross the lip.

On the deck. Swing 180° slowly with the arm rolled in, reverse into position, rest the front attachment on timbers, blade down. Engine off, key out, shut-off lever LOCK.

Tie down. Chocks front and back of both tracks. Chain each corner. Soft protectors against the left and right side frames — never run a chain or rope directly onto the rubber tracks.



IF SOMETHING GOES WRONG

Alternator or engine oil pressure lamp comes on

STOP THE ENGINE

Overheat lamp and buzzer

DROP TO SLOW IDLE, STOP WORK

Something moves when you unlock with all levers in neutral

RE-LOCK, STOP, CALL US

Bogged and can't reverse out under its own power

CALL US — DON'T DIG DEEPER

Engine dead and won't restart with the boom up

KEEP CLEAR UNDERNEATH, CALL US

Rubber track derailed or badly cut

STOP AND CALL US

Flat battery

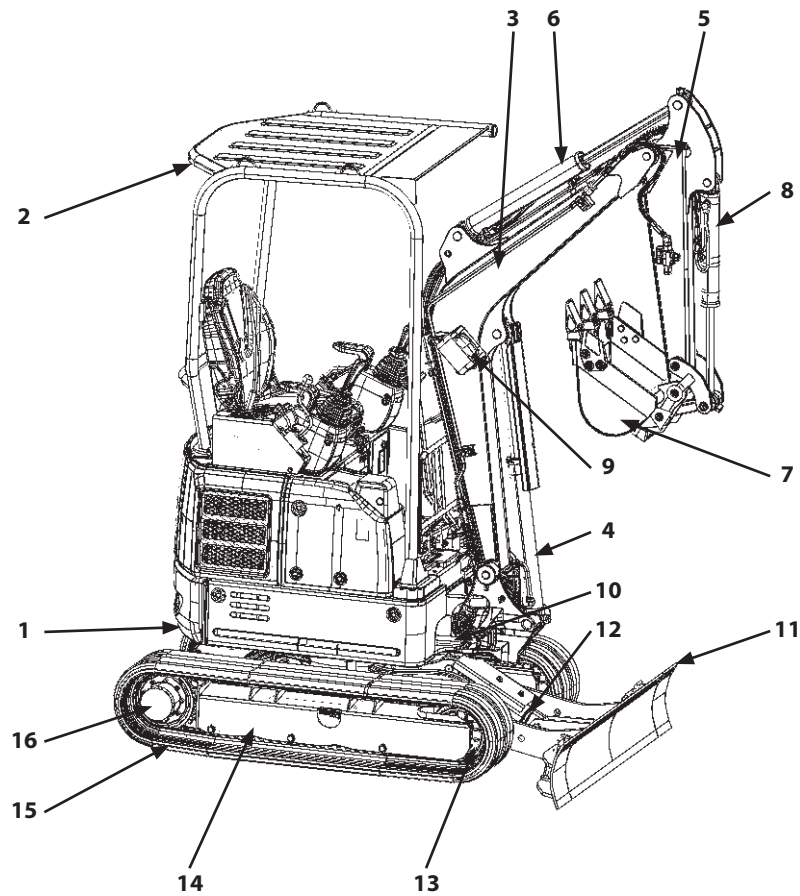
12 V JUMP ONLY — SEE MANUAL

Tell us before you attempt a recovery, a repair or a tow. Email contact@timech.com.au with the machine, the site and a photo — we will come to you. Repairs arranged without our agreement may not be covered, and a machine kept working with a warning lamp on will do damage you may be liable for.

This quick reference is a summary written for hirers. The full Hitachi operator's manual is supplied with the machine and governs its safe use — where the two differ, the manufacturer's manual applies. Nothing here replaces your obligations under the hire agreement, your duty to work within your own competence and licensing, or your duties under Western Australian work health and safety law.

COMPONENTS NAME

Components Name



MABA-01-001

1- Counterweight

2- Canopy

3- Boom

4- Boom Cylinder

5- Arm

6- Arm Cylinder

7- Bucket

8- Bucket Cylinder

9- Work Light

10- Boom Swing Cylinder

11- Blade

12- Blade Cylinder

13- Front Idler

14- Track Frame

15- Track Shoe

16- Travel Device

GETTING ON/OFF THE MACHINE

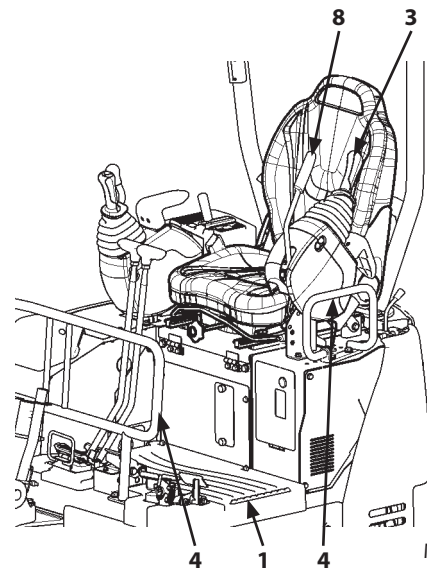
Getting ON/OFF the Machine

Foot hold (1) and handrails (4) are provided around the entrance. These are used to get on and off the cab safely as well as to do inspection and maintenance of the machine safely.

Never jump on or off the machine as it is very dangerous. Take extra care not to contact door striker (2).

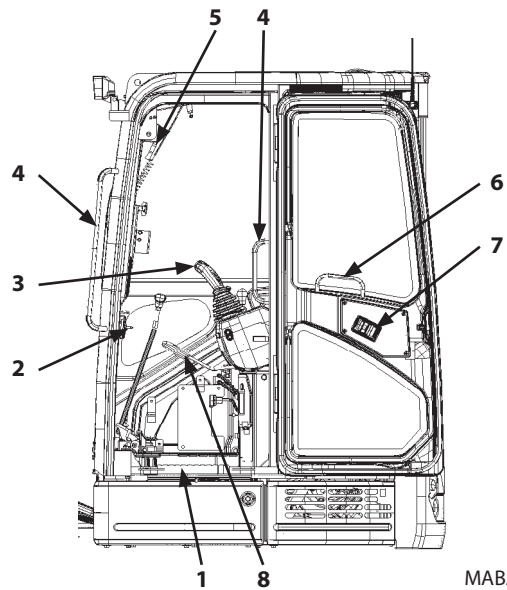
WARNING:

- **Never attach a wire on handrails (4) and door striker (2) to lift the cab or main body, or while transporting the machine on a truck or trailer as it is dangerous.**
- **Door knob (6), handle (5) on the front window and release lever (7) are not handrails. Do not use them as a handrail when getting on and off the machine.**
- **Do not hold control lever (3) or pilot control shut-off lever (8) when getting on and off the machine.**



MABA-01-002

Canopy



MABA-01-009

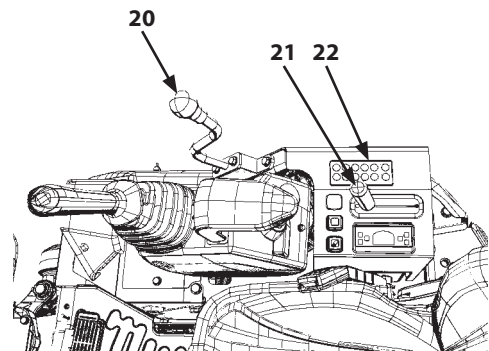
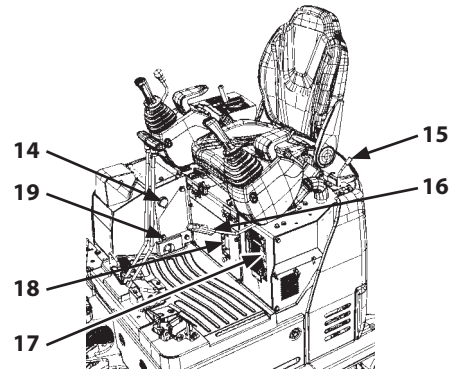
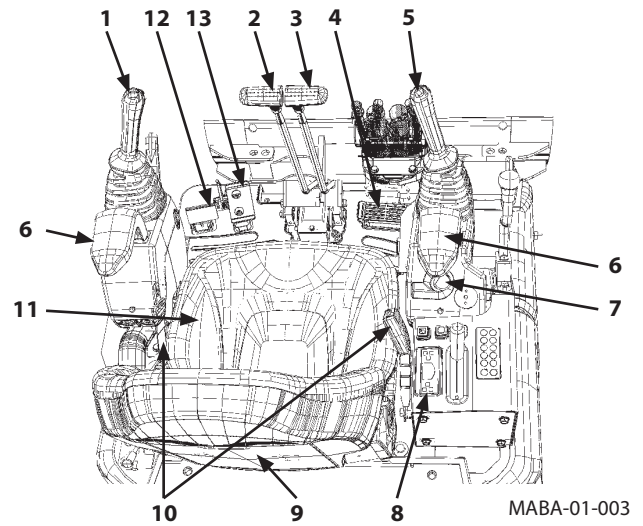
Cab

OPERATOR'S STATION

Layout

ZX17U-5A

- 1- Left Control Lever
- 2- Left Travel Lever
- 3- Right Travel Lever
- 4- Swing Pedal
- 5- Right Control Lever/Horn Switch
- 6- Wrist Rest
- 7- Key Switch
- 8- Monitor
- 9- Seat Back Box (Optional)
- 10- Seat Belt
- 11- Operator's Seat
- 12- Travel Mode Pedal
- 13- Auxiliary Pedal
- 14- Auxiliary Power
- 15- Side Frame Extend/Retract Lever
- 16- Pilot Control Shut-Off Lever
- 17- 2-Way Multi Lever (Optional)
- 18- Fuse Box
- 19- Selector Valve
- 20- Blade Lever
- 21- Engine Control Lever
- 22- Numeric Keypad Lock System (Optional)

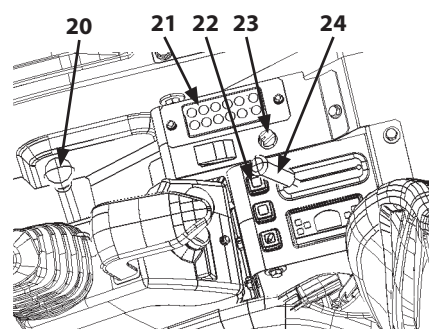
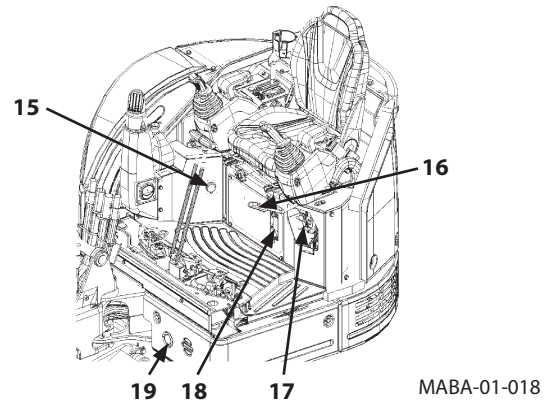
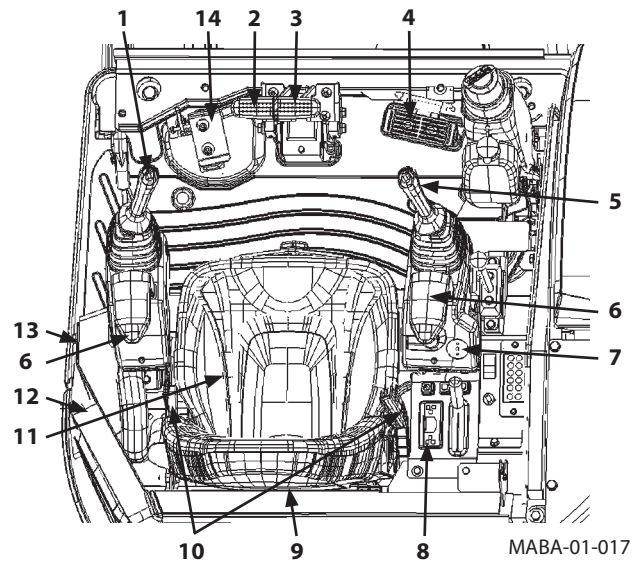


OPERATOR'S STATION

Layout

ZX26U-5A

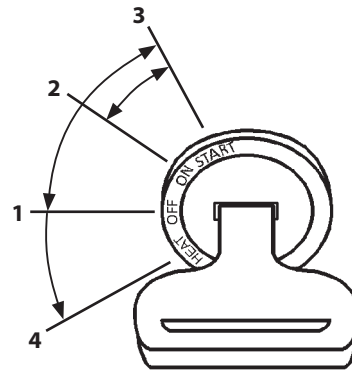
- 1- Left Control Lever
- 2- Left Travel Lever
- 3- Right Travel Lever
- 4- Swing Pedal
- 5- Right Control Lever/Horn Switch
- 6- Wrist Rest
- 7- Key Switch
- 8- Monitor
- 9- Seat Back Box (Optional)
- 10- Seat Belt
- 11- Operator's Seat
- 12- FM/AM Radio (Cab equipped machine) (Optional)
- 13- Door Opener (Cab equipped machine)
- 14- Auxiliary Pedal
- 15- Auxiliary Power
- 16- Pilot Control Shut-Off Lever
- 17- 2-Way Multi Lever (Optional)
- 18- Fuse Box
- 19- Selector Valve
- 20- Blade Lever
- 21- Numeric Keypad Lock System (Optional)
- 22- Travel Mode Switch
- 23- Heater Control Switch (Cab equipped machine)
- 24- Engine Control Lever



OPERATOR'S STATION

Key Switch

- 1- OFF (Engine Off)
- 2- ON
- 3- START (Engine Start)
- 4- HEAT (Engine Preheat)



M1M7-01-007

Switch Panel

- 5- Work Light Switch

Press the switch (5) to turn work lights (10) located on the boom ON.

- 6- Travel Alarm Deactivation Switch

- 7- Travel Mode Switch (ZX26U-5A)

- 8- Heater Control Switch (ZX26U-5A) (Cab equipped machine)

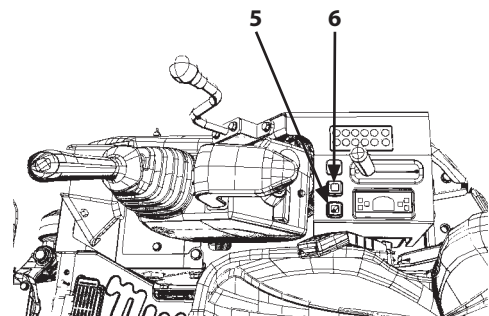
- 9- Wiper Switch (ZX26U-5A) (Cab equipped machine)

Three (operational) positions are provided on this switch.

OFF: Neither the wiper nor the washer operates.

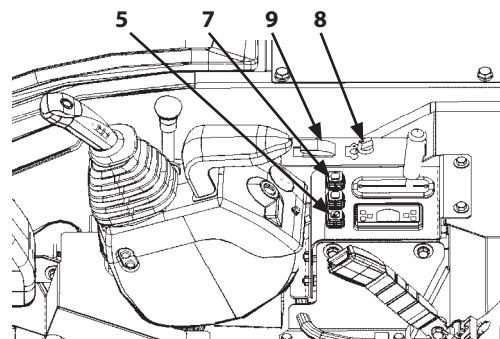
Center: The wiper operates.

WASHER: The washer operates together with the wiper.



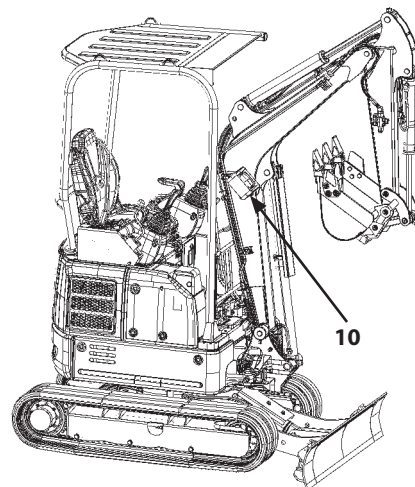
Canopy

MABA-01-005



Cab
ZX26U-5A

MABA-01-010

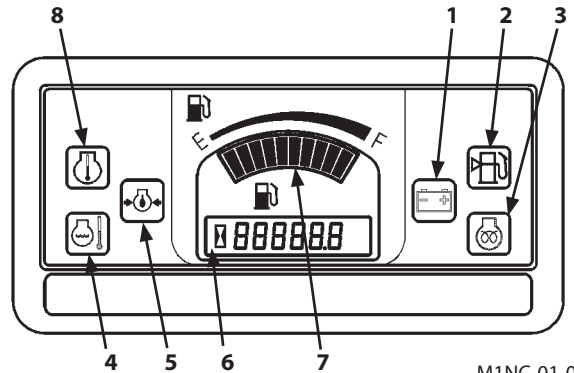


MABA-01-006

OPERATOR'S STATION

Monitor Panel

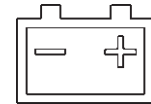
- 1- Alternator Indicator
- 2- Fuel Level Indicator
- 3- Preheat Indicator
- 4- Overheat Indicator
- 5- Engine Oil Pressure Indicator
- 6- Hour Meter
- 7- Fuel Gauge
- 8- Coolant Temperature Indicator



M1NC-01-005

Alternator Indicator

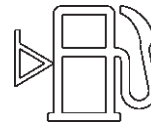
The red indicator will light when low alternator output is present.
Check the electrical system such as the alternator and/or battery system.



M178-01-038

Fuel Level Indicator

When the remaining fuel level indicator comes ON at flat ground, the remaining fuel level is as follows. Refill fuel as soon as possible.



M178-01-034

Model	Fuel Level
ZX17U-5A	Approximately 5 Liters
ZX26U-5A	Approximately 6 Liters

Preheat Indicator

It is lit when the key switch is turned to the HEAT position.
After turning the key switch to the HEAT position, the preheat indicator turns OFF when preheating is finished.
Preheating time is as follows.



M178-01-041

Model	Preheating time
ZX17U-5A	Approximately 4 Seconds
ZX26U-5A	Approximately 15 Seconds

OPERATOR'S STATION

Overheat Indicator

If the coolant temperature rises extremely high, this indicator lights. If the red light comes ON, the buzzer sounds at the same time.

Immediately stop machine operation and reduce engine speed to the slow idle speed to lower the coolant temperature.



M178-01-036

Engine Oil Pressure Indicator

The red indicator will light when the engine oil pressure is low. If the red indicator comes ON, the engine oil pressure warning buzzer will sound at the same time. Immediately stop the engine. Check the engine oil pressure system and the oil level for any abnormality.



M178-01-037

Hour Meter

Total (accumulated) machine operation hours counted since the machine started working, are displayed in the unit of HOUR (h). One digit after the decimal point indicates the tenths of an hour (6 minutes).



M1NC-01-006

Fuel Gauge

The gauge segment position indicates the fuel level. Refill the fuel before only the E-marked segment comes ON.



M1NC-01-007

Coolant Temperature Indicator

When the key switch is turned to the ON position, the indicator will light when the engine coolant temperature is low.



M1NC-01-008

OPERATOR'S STATION

Cab Heater Operation (ZX26U-5A) (Cab Equipped Machine)

Heater Operation

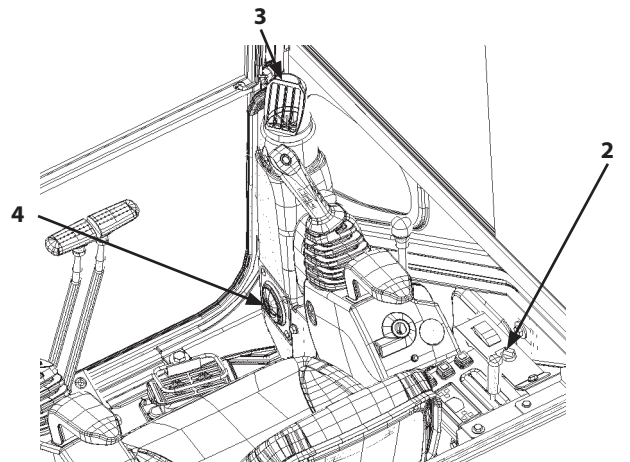
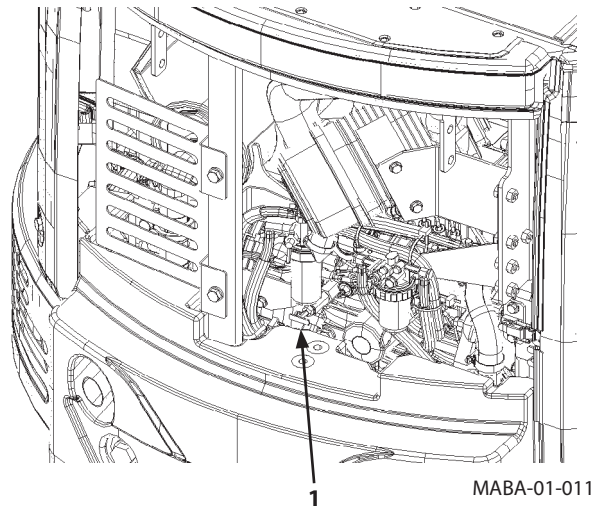
Turn heater cock (1) in the engine compartment counterclockwise. Adjust air flow by turning heater adjust knob (2) located at the right- rear in the operator's station.

Blower Operation

Turn heater cock (1) in the engine compartment clockwise to close it. Adjust air flow following the same method as mentioned in the Heater Operation.

Defroster Operation

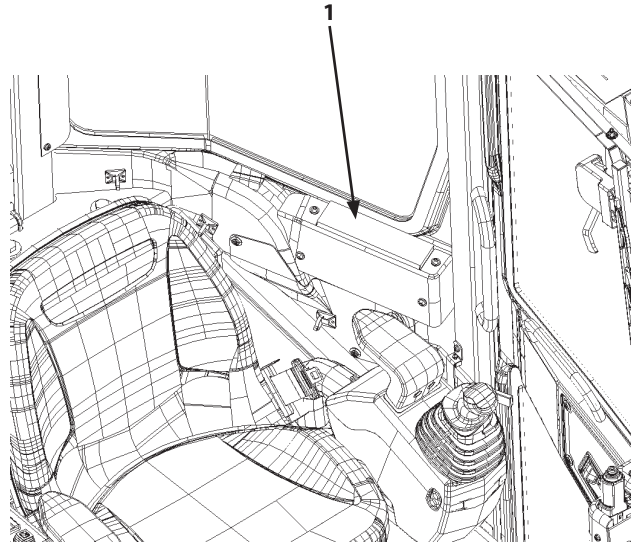
Adjust air flow by operating heater adjust knob (2). Remove clouding on the window pane by directing air flow from air vent (3) and (4) toward the window pane.



OPERATOR'S STATION

Radio (ZX26U-5A) (Cab equipped machine) (Optional)

1- Radio/Clock



MABA-01-013

OPERATOR'S STATION

AM/FM Radio Operation

Part Name and Function

1- Power Switch

Push this switch to turn ON/OFF the radio.

2- Sound Control Switch (SOUND)

Push this switch to adjust sound (Balance/Bass/Treble).

3- Up/Down Buttons (UP/DOWN)

This button is used to change the radio wave frequency, adjust the sound parameter and the clock setting.

4- Display

Time, radio receiving frequency and operation mode are displayed.

5- AM/FM Switch (AM/FM)

"FM" and "AM" are switched over alternately each time the switch is pressed.

The display indicates the receiving station frequency.

6- Display Switch (DISP)

Push this switch to switch over the display between radio wave frequency and time.

7- Preset Switch (PRESET)

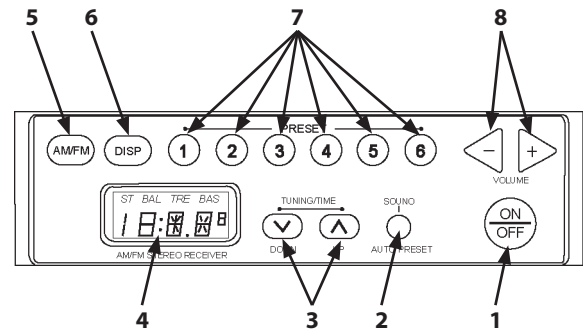
One FM and MW (AM) station per button can be preset using these respective buttons.

8- Volume Control Button (VOL)

Push this switch to adjust the volume.

Push the  button to increase the volume in a step-by-step manner.

Push the  button to decrease the volume in a step-by-step manner.



M1NE-01-003

Radio Operation

1. Turn the engine key switch to ON position. Push radio power switch (1) ON.
2. Select either MW (AM) or FM by operating AM/FM switch (5).
3. Select the station according to your preference using PRESET buttons (7) or UP/DOWN buttons (3).
4. Adjust the volume and tone according to your preference.
5. When turning the radio OFF, repress power switch (1).

OPERATOR'S STATION

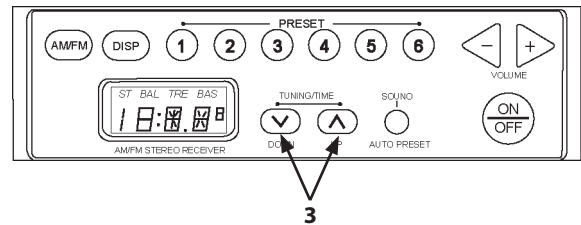
Tuning Procedure

1. Manual Tuning Procedure

Push UP (▲) button (3) to increase the frequency by one step. Push DOWN (▼) button (3) to decrease the frequency by one step.

2. Automatic Tuning (Auto-Seeking)

Push UP (▲) button (3) or DOWN (▼) button (3) long to scan the frequency upward or downward. When a station is received, the auto-seeking function is deactivated so that the received frequency station is tuned in.



M1NE-01-003

Station Presetting Procedure

1. Select MW (AM) or FM by pushing AM/FM switch (5).

2. Push one of PRESET buttons (7) long to save the receiving frequency in memory. When the preset procedure completes, the PRESET button No. flashes 3 times and frequency display becomes ON.

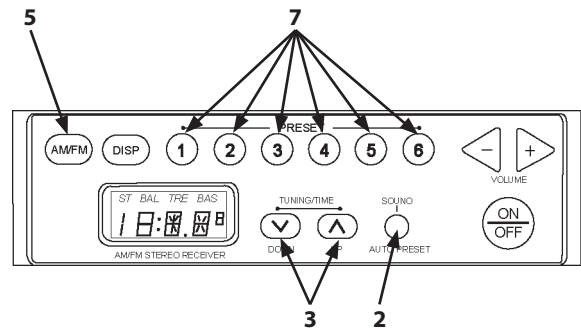
3. Repeat steps 1 and 2 for other PRESET buttons (7).

• Station Auto-Presetting Procedure

Pushing SOUND control switch (2) long with the radio switch ON will search for the optimum receiving radio frequency stations and automatically allocate each station in preset memory buttons (1 to 6).

 **NOTE:** Performing auto-presetting operation will delete the stations previously saved in memory.

If it is difficult to set the memory of the desired station to the desired button, follow the preset procedure.



M1NE-01-003

Deletion of Preset Memory

If the battery power is disconnected while servicing the machine or by removing the radio, the preset memory in PRESET buttons (7) will be deleted. In this case, preset the stations again.

OPERATOR'S STATION

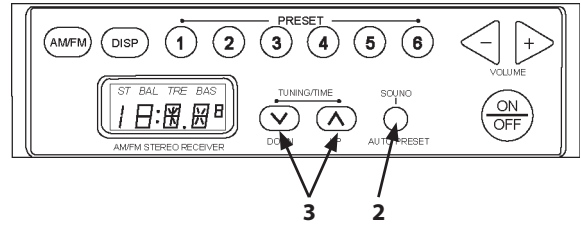
Sound Adjustment

When SOUND control switch (2) is pressed with the radio switch ON, it will be in the sound adjustment state.

Each time SOUND control switch (2) is pressed, the adjustment item can be changed as below.

BAL → TRE → BAS → BAL → TRE → BAS

When SOUND control switch (2) is pressed with the BAS state, the sound adjustment is deactivated.



M1NE-01-003

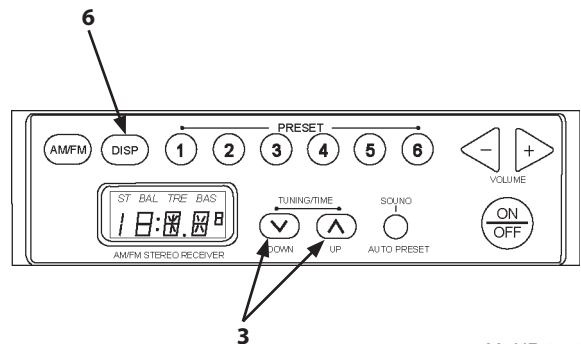
- Sound Adjustment (Balance Control)
When UP button (3) is pressed with the BAL state, loudspeaker output is increased from R output by one step. When DOWN button (3) is pressed with the BAL state, loudspeaker output is decreased from L output by one step.
- Sound Adjustment (Treble Control)
When UP button (3) is pressed with the TRE state, treble level is increased by one step. When DOWN button (3) is pressed with the TRE state, treble level is decreased by one step.
- Sound Adjustment (Bass Control)
When UP button (3) is pressed with the Bas state, bass level is increased by one step. When DOWN button (3) is pressed with the Bas state, bass level is decreased by one step.

Digital Clock Setting Procedure

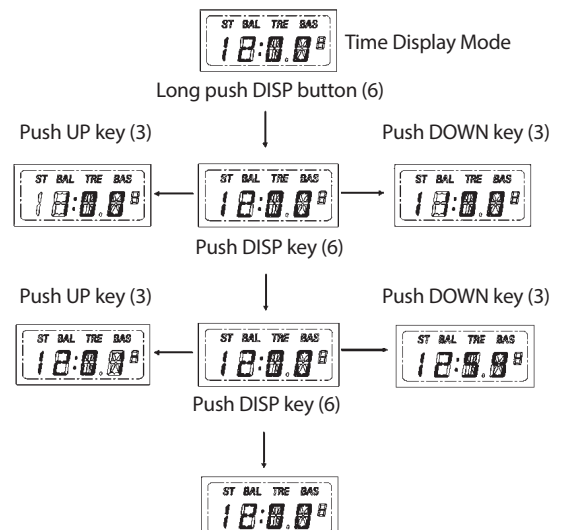
Pushing DISP button (6) long in the clock display mode makes the clock adjustable.

Pushing DISP button (6) in the clock adjustment mode will switch over the time unit from hours to minutes. Push UP or DOWN button (3) to adjust the time unit.

Push DISP button (6) in the minute adjustment mode to deactivate the time adjustment.



M1NE-01-003



M1NE-01-007

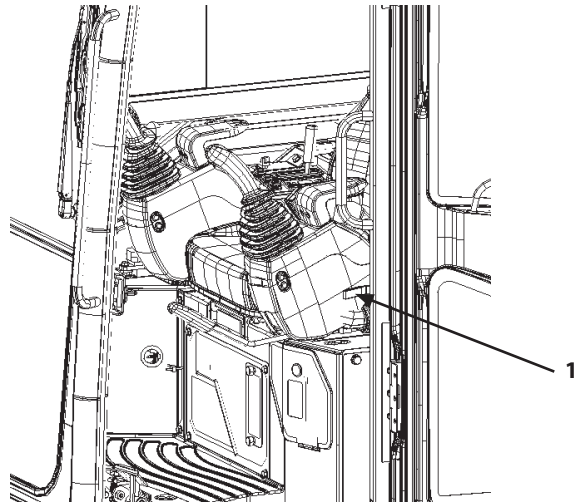
OPERATOR'S STATION

Door Lock Release Lever (ZX26U-5A) (Cab equipped machine)

⚠ CAUTION:

- Open the door all the way until it securely locks in the latch on the side of the cab.
- Do not unlock the cab door when the machine is parked on a slope or while the wind is strong. The door may close suddenly.
- When opening or closing the cab door, take extra care not to catch fingers between the base machine and the cab door. The cab door may close accidentally, possibly resulting in personal injury.

To release the door, push down the lever (1) from the inside of handrail.



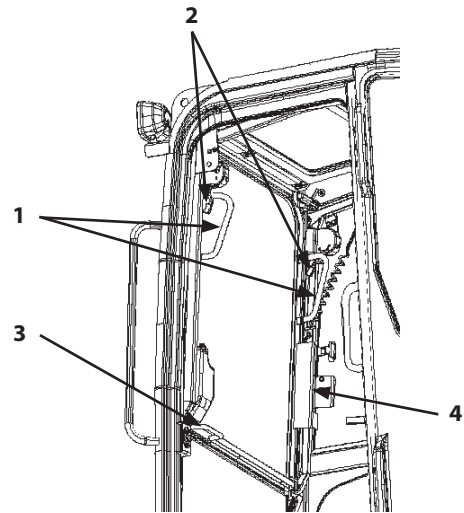
MABA-01-014

OPERATOR'S STATION

Opening Upper Front Window (ZX26U-5A) (Cab equipped machine)

Front Window

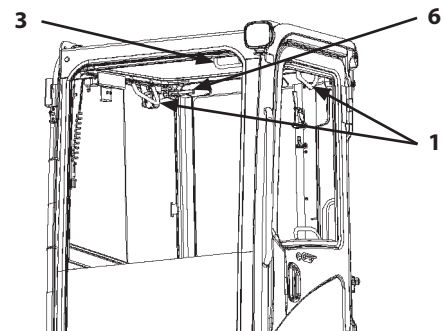
1. Hold handles (1) at upper part of the front door and pull lock levers (2) with your finger. Release the lock to open the front window.
2. Pull the upper front window up and back along the rail until it securely activates lock levers (2) at the rear end. This time, use handle (3) on the lower front window.
3. After confirming that lock levers (2) are securely activated, slide lock pin (6) to lock the window in position.



MADB-01-058

CAUTION:

- Slowly close the upper front window so as not to catch a finger.
- Switch (4) is provided on the front window to prevent the wiper from operating when the front window is opened. Before closing the front window, ensure that the wiper switch is turned OFF.
- When opening the front window, ensure that the left and right locks are definitely activated.



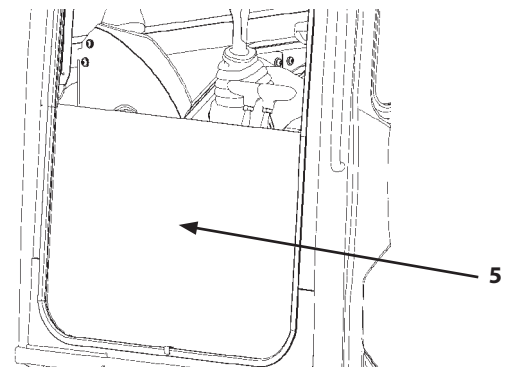
MADB-01-059

4. Close the upper front window by following steps 1 and 2 in the reverse order.

Removing and Storing Lower Front Window

1. Open the upper front window beforehand when removing the lower front window. Pulling lower front window (5) upward along the window frame will release the window towards the cabin side. Install the lower front window by following the steps in the reverse order.

 **CAUTION:** Lower window (5) breaks easily by drop or shock, so carefully place and keep the removed windowpane in the safe storage area.



MADB-01-060

OPERATOR'S STATION

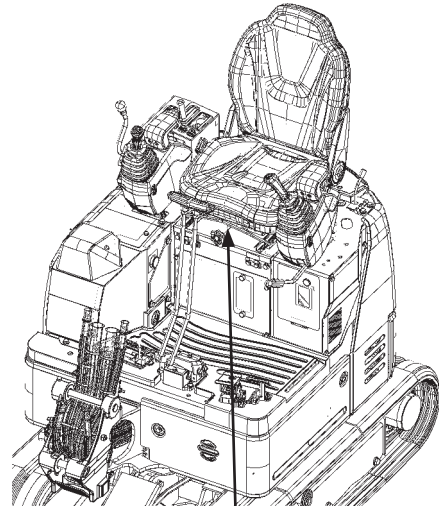
Adjusting the Seat (Optional)

Seat Fore-aft Adjustment

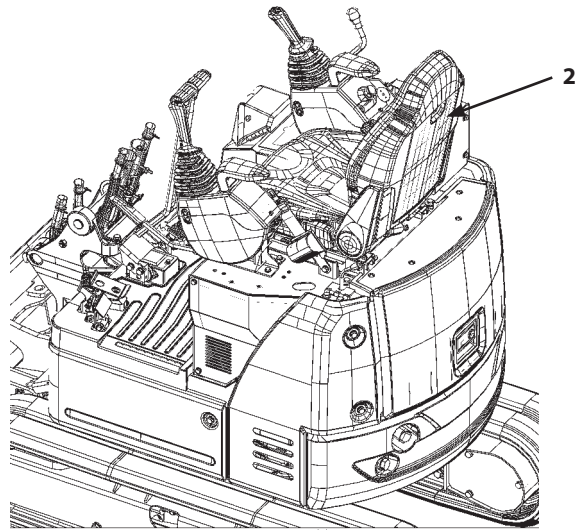
Release the seat lock by pulling in adjuster bar (1) horizontally. Move the seat backward and forward. Seat fore-aft is adjustable in 120mm range in 6 steps, 20mm per step.

Seat Back Box

Pocket (2) is located at the back side of the seat. Put the operator's manual inside.



MABA-01-007



MABA-01-008

OPERATOR'S STATION

Emergency Exit (ZX26U-5A) (Cab equipped machine)

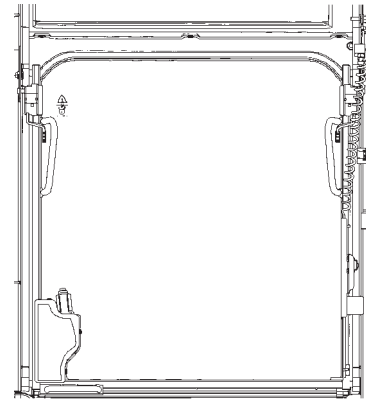
Escape from the cab in emergency in the following methods:

CAUTION: There is always a danger of downfall when escaping from the cab in emergency, which may result in serious personal injury. Escape from the cab as safely as possible, depending on the posture of machine and the external situation.

1. Open the cab door. Escape through the door.
2. If the cab door is difficult to open or use, open the upper front window. Escape through the window. See page "OPENING UPPER FRONT WINDOW" for the opening method of the upper front window.

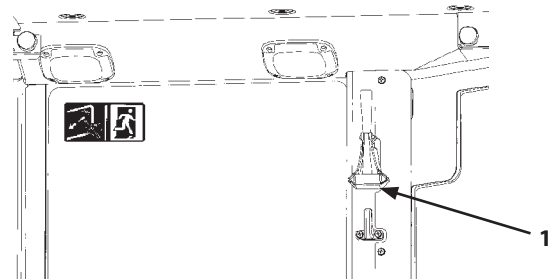
CAUTION: Take care not to be injured by pieces of broken window glass.

3. If the front window can not be opened, break the window glass by using the emergency evacuation tool (1) located at the cab rear. Then escape through the broken window.
4. If the front window is not available for escaping, break the rear window glass by using the emergency evacuation tool (1).



Front

MADC-01-004



Emergency Evacuation Tool, Rear

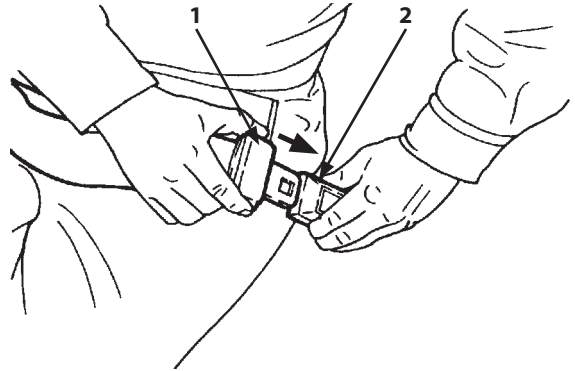
MADC-01-009

OPERATOR'S STATION

Seat Belt

WARNING:

- Be sure to use seat belt (1) when operating the machine.
- Before operating the machine, be sure to examine seat belt (1) and the hardware attached for any failure. Replace seat belt (1) and the hardware attached if they are damaged and/or worn.
- Replace seat belt (1) every 3 years regardless of its appearance.

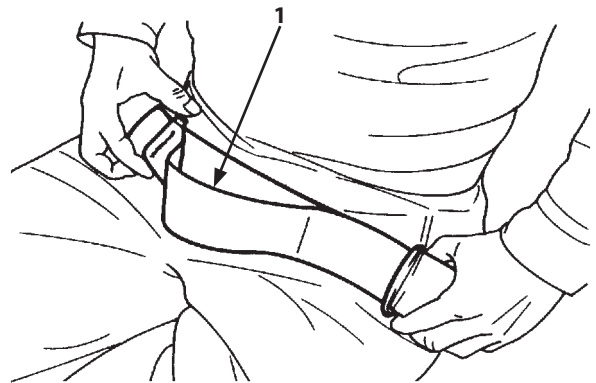


M573-01-014

Seat Belt

1. Confirm that seat belt (1) is not twisted. Securely insert the end of seat belt (1) into buckle (2). Lightly pull on the belt to confirm that the buckle latches securely.
2. Push button (3) on buckle (2) to unfasten seat belt (1).

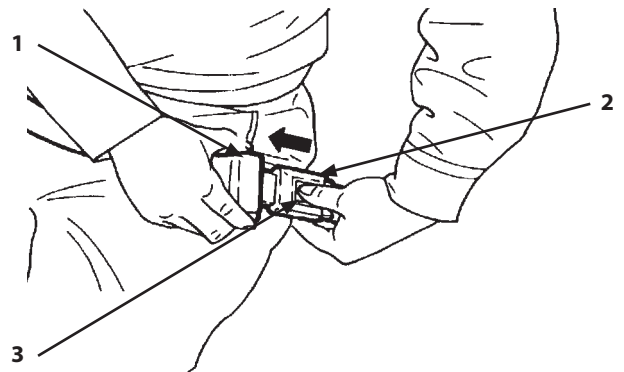
Replace the seat belt if it is damaged or worn out, or if the seat belt has external damage due to accident.



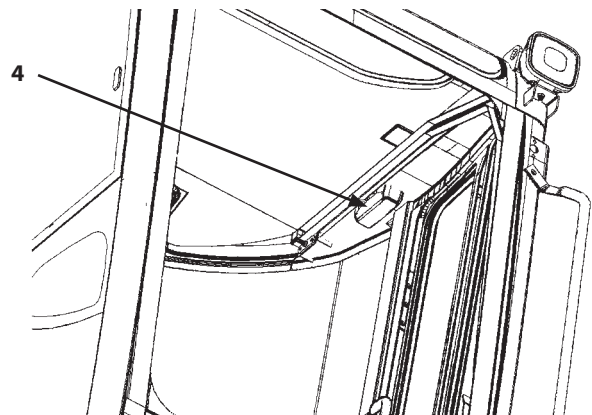
M107-01-045

Room Lamp (ZX26U-5A) (Cab equipped machine)

Push switch (4) on the cab light to turn the cab light ON. (The light turns ON while the key switch is ON.)



M573-01-015



M1M7-01-021

MEMO

[illegible]

BREAK-IN

Breaking in New Machine

IMPORTANT: Operating a new machine at full load without first breaking in can cause scratches and/or seizures, consequently affecting the service life of the machine. Thoroughly perform the break-in operation.

The service life and the performance of the machine can be greatly affected by operation and maintenance of the machine during the initial stage of operation. Perform the break-in operation with the engine output less than 80% of the maximum output for the first 50 hours.

BREAK-IN

MEMO

This image shows a full page of a document template. It consists of a series of evenly spaced, horizontal grey lines running across the width of the page. The lines are thin and light in color, providing a guide for writing without being distracting. There are no margins, text, or other markings present on the page.

OPERATING THE ENGINE

Inspect Machine Daily Before Starting

Perform the required daily check before starting the engine.

Engine

- Level and contamination of engine oil and coolant*
- Oil and water leaks, damage to hoses and pipe lines
- Clogging and damage to radiator, oil cooler
- Looseness and missing of mounting bolts and nuts

Upperstructure

- Fuel level, leaks and contamination of fuel in tank*
- Hydraulic oil level, leaks and contamination of hydraulic oil tank*
- Movement, play and operating force of all control levers
- Operation of all hydraulic components, oil leaks and damage to pipe lines and hoses
- Deformation, break and abnormal noise of upper structure
- Looseness and missing of mounting bolts and nuts
- Washer Fluid*

Undercarriage

- Sag, wear and break of crawler*
- Oil leaks and wear on upper/lower rollers and blade
- Oil leaks from travel devices
- Looseness and missing of mounting bolts and nuts

Working Device

- Check cylinders, pipe lines and hoses for oil leaks and damages
- Wear and damage of the bucket
- Check bucket teeth for looseness, wear and missing*
- Lubrication state of the working device
- Check for pin anti-extraction pins, stoppers, rings and bolts for damage
- Looseness and missing of mounting bolts and nuts

Others

- Operation of instruments, switches, lights and buzzer/horn*
- Function of parking brake
- Deformation and break of head guard
- Abnormal outside appearance of machine
- Wear and damage of the seat belt*

 **NOTE:** Item with *mark: Refer to "Maintenance" section for detailed information.

OPERATING THE ENGINE

Before Starting Engine

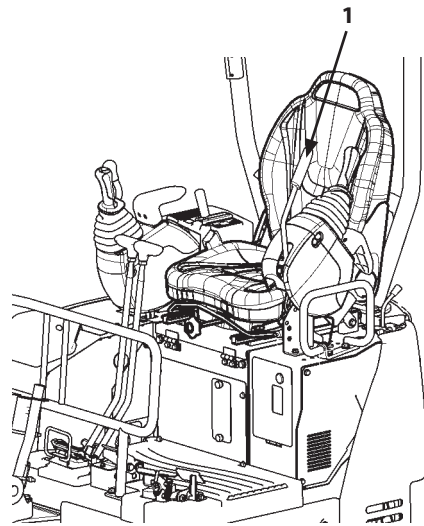
1. Confirm that pilot control shut-off lever (1) is in the LOCK position.
2. Confirm that all control levers are placed in neutral.
3. Check indicator bulbs as follows:

Turn key switch to the ON position. All indicator lights and warning lamps will come on. They will stay on for approximately 2 seconds, except for alternator (3) and engine oil pressure (4) indicator, which will continue to stay on further.

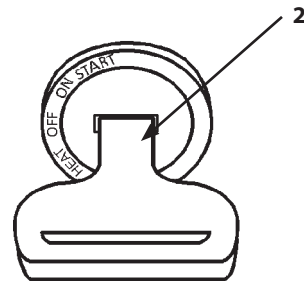
IMPORTANT: The monitor panel indicates the machine operating conditions. If the machine is operated with an indicator bulb or a warning lamp burned out, the alarm will not be displayed even if any abnormality occurs on the machine. Accordingly, in case any of the indicator bulbs or the warning lamps do not come ON, immediately contact your authorized dealer for repair. If any of alternator (3), or engine oil pressure (4) indicator fails to light after indicator light check is completed, the machine may have trouble. Immediately contact your authorized dealer for repair.

4. Adjust the seat to allow full pedal and control levers stroke with operator's back against the backrest. Fasten the seat belt.

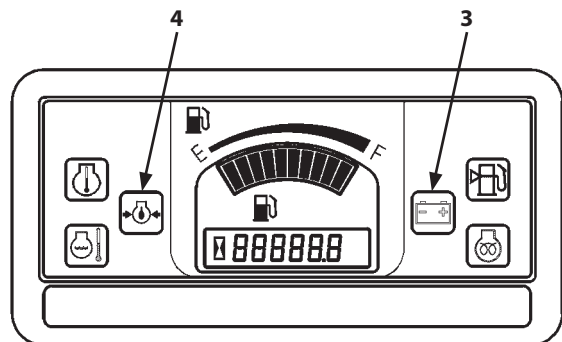
 **NOTE:** The monitor surface is a resin product. When the surface becomes dusty, lightly wipe the surface with a wet cloth. Never use an organic solvent.



MABA-01-002



M1M7-01-007



M1NC-01-005

OPERATING THE ENGINE

Starting the Engine

Starting the Engine at Normal Temperature

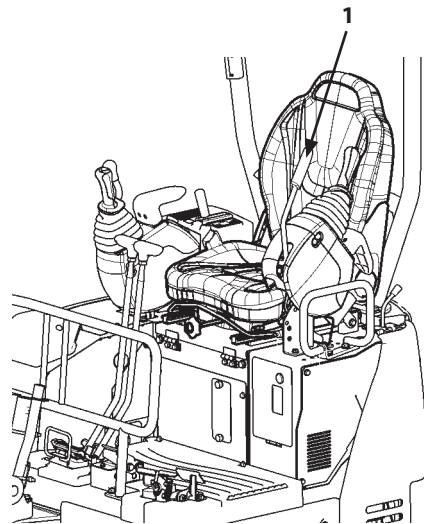
1. Confirm that pilot control shut-off lever (1) is in the LOCK position.
2. Turn engine control lever (3) to the slow idle position.
3. Sound horn to alert bystanders.
4. Turn key switch (2) to START position to rotate the starter. The engine will start.

IMPORTANT: Never operate the starter for more than 15 seconds at a time. If engine fails to start, return key switch to OFF. Wait for more than 30 seconds, then try again. Failure to do so may cause damage to the starter and/or discharging the batteries.

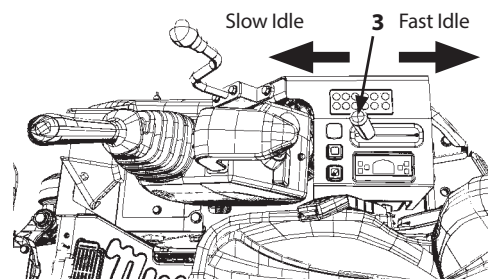
5. Release key switch (2) immediately after the engine has started. Key switch (2) will automatically return to ON position.

 **NOTE:** The horn sounds even though key switch (2) is turned OFF. The engine does not start unless pilot control shut-off lever (1) is in the LOCK position.

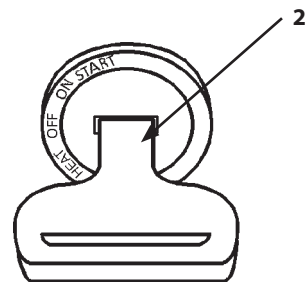
IMPORTANT: Avoid operating key switch (2) with stained hands or gloves.



MABA-01-002



MABA-01-005



M1M7-01-007

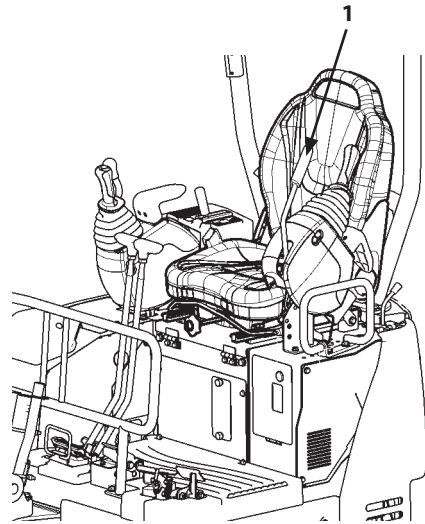
OPERATING THE ENGINE

Starting in Cold Weather

Preheating

1. Confirm that pilot control shut-off lever (1) is in the LOCK position.
2. Turn engine control lever (3) to around the middle between the slow idle and fast idle position.
3. Turn key switch (2) to the HEAT position; hold it until preheat indicator (4) turns OFF.
4. Sound the horn to alert bystanders.
5. As soon as preheat indicator (4) goes OFF, turn key switch (2) to START position to rotate the starter.

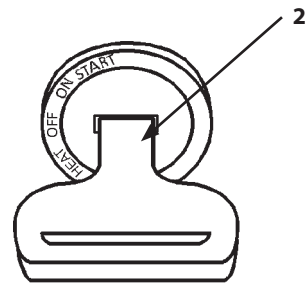
IMPORTANT: Never operate the starter for more than 15 seconds at a time. If engine fails to start, return key switch to OFF. Wait for more than 30 seconds, then try again. Failure to do so may cause damage to the starter and/or discharging the batteries.



MABA-01-002

6. Release key switch (2) immediately after the engine has started. Key switch (2) will automatically return to ON position.

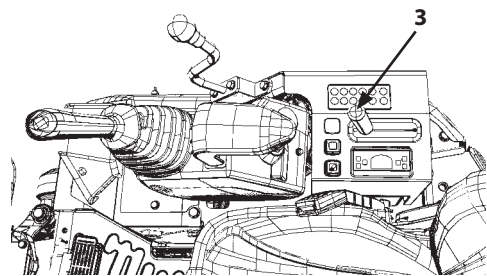
 **NOTE:** The horn sounds even though key switch (2) is turned OFF. The engine does not start unless pilot control shut-off lever (1) is in the LOCK position.



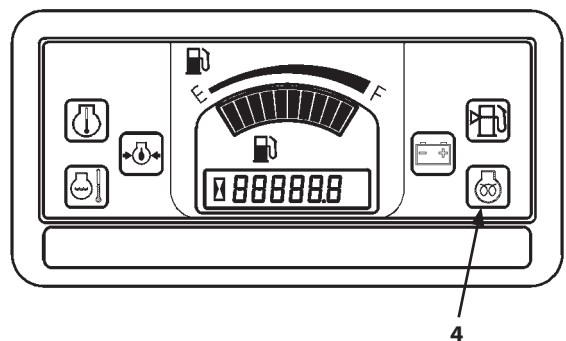
M1M7-01-007

IMPORTANT: Avoid operating key switch (2) with stained hands or gloves.

 **NOTE:** Set the engine control lever (3) to the fast idle position to start the engine in an extreme cold weather district. After the engine is started, gradually reduce the engine speed and perform warm-up operation at the medium speed range.



MABA-01-005



M1NC-01-005

OPERATING THE ENGINE

Check Instruments After Starting Engine

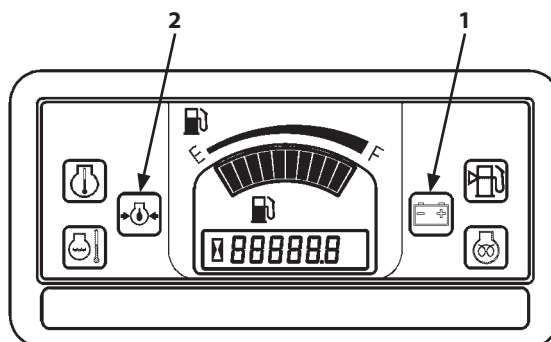
Checking instruments through monitor functions

After starting the engine, check the following points through the monitor functions.

1. Check that alternator alarm indicator (1) is OFF. In case alternator alarm indicator (1) stays ON, immediately stop the engine. Inspect the alternator and the battery system for any abnormality.
2. Check that engine oil pressure indicator (2) is OFF.

In case engine oil pressure indicator (2) stays ON, immediately stop the engine. Inspect the engine oil pressure system and the oil level.

IMPORTANT: In case any abnormality is found on the monitor unit, immediately stop the engine. Inspect the cause of the trouble.



M1NC-01-005

Check engine noise and exhaust gas color:

Check that the engine noise and exhaust gas color are normal.

 **NOTE:** Check the exhaust gas color as follows. (After warm-up operation, run the engine with no loads.)

Colorless or light blue : Normal (Perfect combustion)

Black : Abnormal (Imperfect combustion, abnormal fuel system)

White : Abnormal (Oil is leaking into the combustion chamber, abnormal fuel system)

OPERATING THE ENGINE

Using Booster Battery

WARNING:

- An explosive gas is produced while battery is in use or being charged. Keep open flames and sparks away from the battery area. Do not continue to use or charge the battery when electrolyte level is lower than specified. Explosion of the battery may result.
- Park the machine and a machine with the booster battery on a dry or concrete surface, not on steel plates. If the machine is parked on steel plates, dangerous sparks may be unexpectedly created on the machine.
- Never connect a positive terminal to a negative terminal, as a dangerous short circuit will occur.



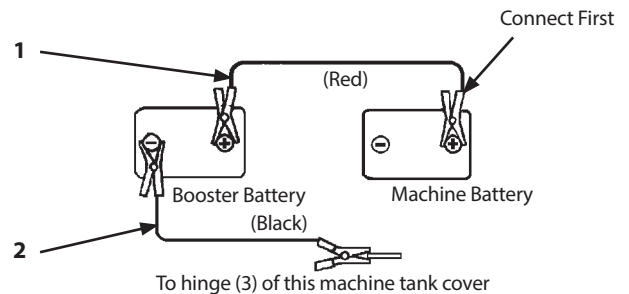
SA-032

IMPORTANT: The machine electrical system is a 12 volt negative (-) ground. Use only 12 volt booster battery with sufficient capacity to start this machine.

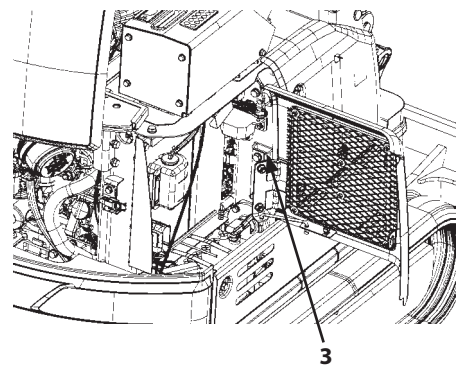
When the machine battery is exhausted, start the engine using booster battery as shown below.

Connecting the booster batteries

1. Stop the engine of the machine on which booster battery is mounted.
2. Connect one end of red cable (1) to the positive (+) terminal of the machine battery, and the other end to the positive (+) terminal of the booster battery.
3. Connect one end of black cable (2) to the negative (-) terminal of the booster battery, and then connect the other end to hinge (3) of this machine cover. In the last connection to frame, sparks may fly. Be sure to connect the cable end as far away from the machine battery as possible.
4. After securely connecting the booster cables, start the engine of the machine on which booster battery is mounted. Run the engine at a middle speed.
5. Start the engine of this machine.
6. After the engine starts, disconnect booster cables (2) and (1), following the procedure on the next page.



M503-03-002

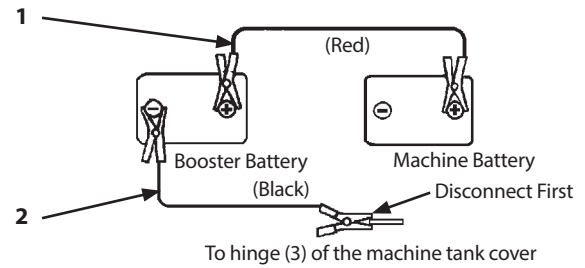


MABA-03-001

OPERATING THE ENGINE

Disconnecting the booster cables

1. Disconnect black booster negative (-) cable (2) from hinge (3) of the machine cover first.
2. Disconnect the other end of black booster negative (-) cable (2) from the booster battery.
3. Disconnect red booster positive (+) cable (1) from the booster battery.
4. Disconnect red booster positive (+) cable (1) from the machine battery.



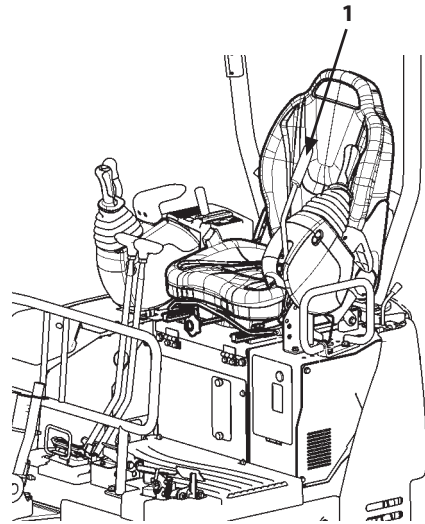
M503-03-002

OPERATING THE ENGINE

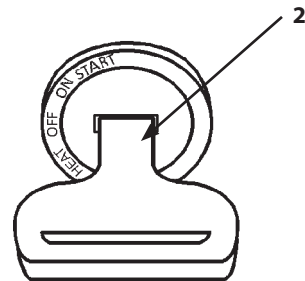
Stopping the Engine

Engine Stop Procedure

1. Except for special cases, before stopping the engine, lower the bucket and the blade to the ground.
2. Pull pilot control shut-off lever (1) to LOCK position.
3. Turn the engine control lever to the slow idle position and run the engine for 5 minutes to cool the engine.
4. Turn key switch (2) OFF to stop the engine.



MABA-01-002



M1M7-01-007

DRIVING THE MACHINE

Travel Levers (ZX17U-5A)

Travel operation can be performed with the mechanical levers.

WARNING: In the standard traveling position, the blade is located in front of the operator's seat and the travel motors at the rear. If the travel motors are positioned at the front of the machine, when the travel levers are operated in the direction as illustrated on the operation decals, the travel direction of the machine will be reversed. Be sure to confirm the position of the travel motors before traveling.

IMPORTANT: Because of the hydraulic circuit structure, the arm and bucket will not move while operating the travel lever in the full stroke. When combined operation is needed, set the travel lever in an intermediate position.

NOTE: Travel lever dampers are provided for smooth control. In extremely cold weather (lower than -20°C), the travel lever will become heavy to operate. This is caused by increase in oil viscosity which is not abnormal.

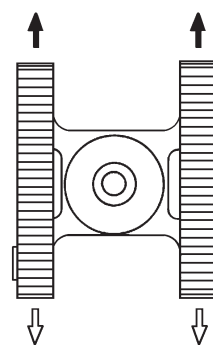
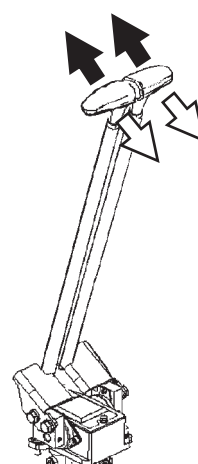
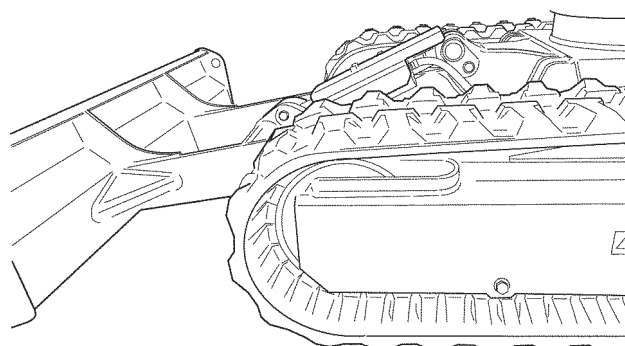
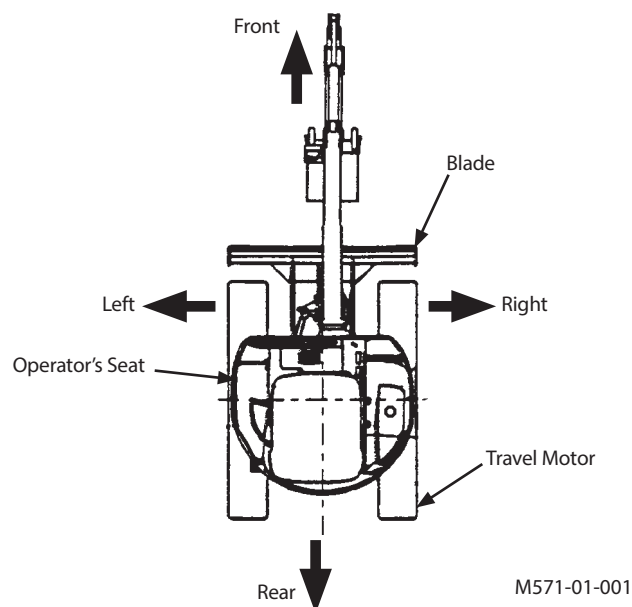
- Forward/Reverse Travel

Move both levers forward together to travel forward.

Pull the levers back together to travel in reverse. The travel speed can be controlled by adjusting the lever operating stroke.

- Ascending/Descending Slopes

The machine gradeability is 25° (47%). Slowly operate the travel levers when descending a slope. When the travel levers are placed in neutral, the travel brakes are automatically applied to stop the machine.

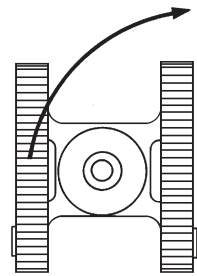
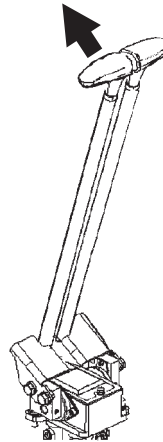


Forward/Reverse Travel Direction

DRIVING THE MACHINE

- Pivot Turn

Steer the machine by driving only one side crawler.
Operate either of the travel levers.



M1MF-04-001

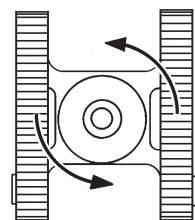
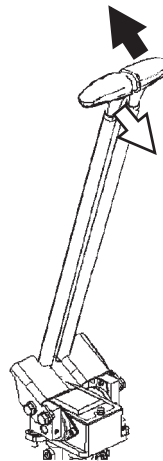
M104-04-005

Pivot Turn

- Spin Turn

Steer the machine in a position by driving both side crawlers in opposite directions each other. Move one lever forward and pull the other back at the same time.

⚠ CAUTION: During pivot or spin turn machine operations, the base machine may shake. When turning the machine in a tight area, slowly operate the machine while taking care not to allow the machine to come into contact with the surrounding objects.



M1MF-04-001

M104-04-007

Spin Turn

DRIVING THE MACHINE

Travel Levers and Pedals (ZX26U-5A)

Travel operation can be performed with either the levers or pedals.

WARNING: In the standard travel position, the blade is positioned at the front of the machine and the travel motors at the rear. If the travel motors are positioned at the front of the machine, the control actions of the travel pedals will be reversed. Be sure to confirm the position of the travel motors before traveling.

NOTE: Travel lever dampers are provided for smooth control. In extremely cold weather (lower than -20°C (-68°F)), the travel lever (or pedal) will become heavy to operate. This is caused by increase in oil viscosity which is not abnormal.

- Forward/Reverse Travel

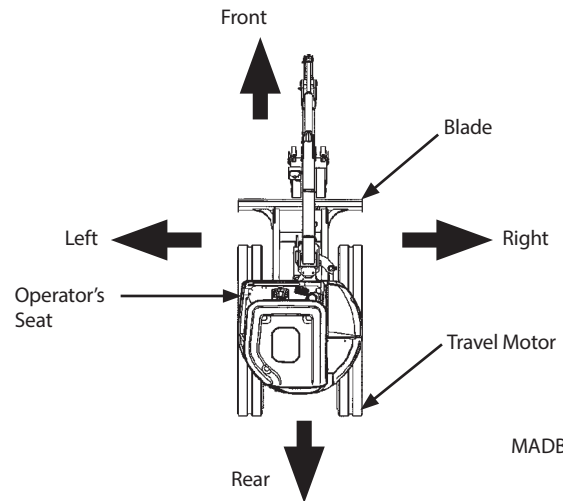
Move both levers (or pedals) forward together to travel forward.

Pull the levers (or pedals) back together to travel in reverse. The travel speed can be controlled by adjusting the lever (or pedal) operating stroke.

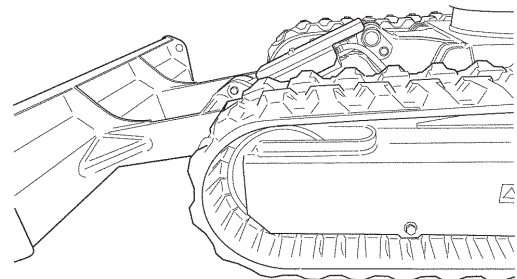
- Ascending/Descending Slopes

The machine gradeability is 25° (47%). Slowly operate the travel levers (or pedals) when descending a slope. When the travel levers are placed in neutral, the travel brakes are automatically applied to stop the machine.

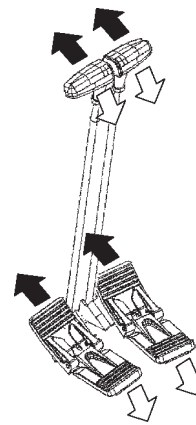
NOTE: The travel pedal on this machine is a folding type. When traveling the machine using the travel pedals, unfold the pedals.



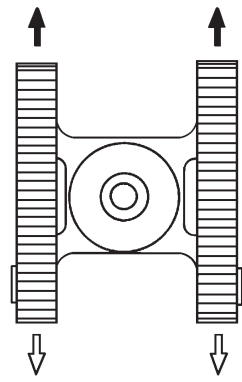
MADB-00-001



M1LA-04-001

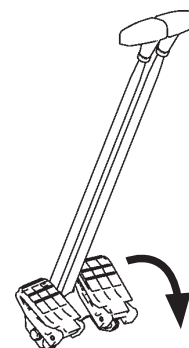


M1M7-04-011



M104-04-003

Forward and Reverse



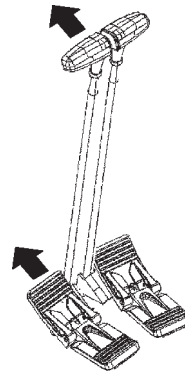
M1M7-04-010

Travel Pedal Folding Position

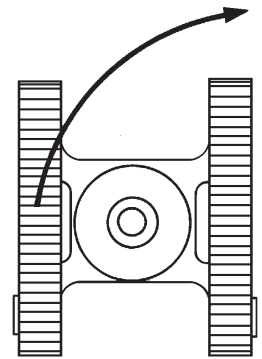
DRIVING THE MACHINE

- Pivot Turn

Steer the machine by driving only one side crawler.
Operate either of the travel levers (or pedals).



M1M7-04-012



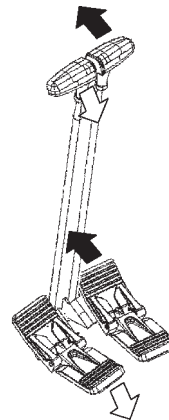
M104-04-005

Pivot Turn

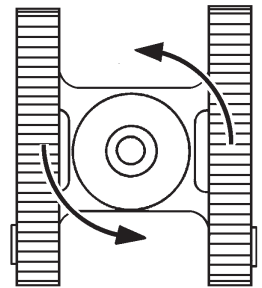
- Spin Turn

Steer the machine by driving each crawler in the opposite directions. Push one lever (or pedal) forward and pull the other back at the same time.

⚠ WARNING: During pivot or spin turn machine operations, the base machine may shake. When turning the machine in a tight area, slowly operate the machine while taking care not to allow the machine to come in contact with the surrounding objects.



M1M7-04-013



M104-04-007

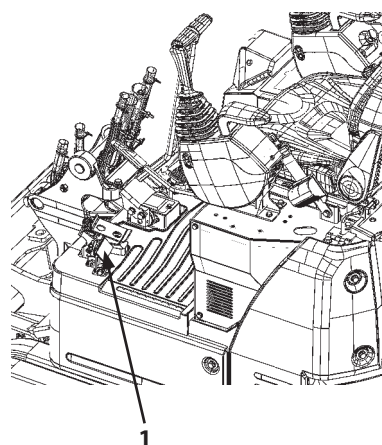
Spin Turn

DRIVING THE MACHINE

Travel Mode Pedal (ZX17U-5A)

⚠ WARNING: Never attempt to shift the travel mode from the slow to fast while descending a slope. Return the travel levers to neutral once before shifting the travel mode.

Depress the travel mode pedal (1) to select the fast travel mode while depressing.
When release the travel mode pedal (1), return to the slow travel mode.



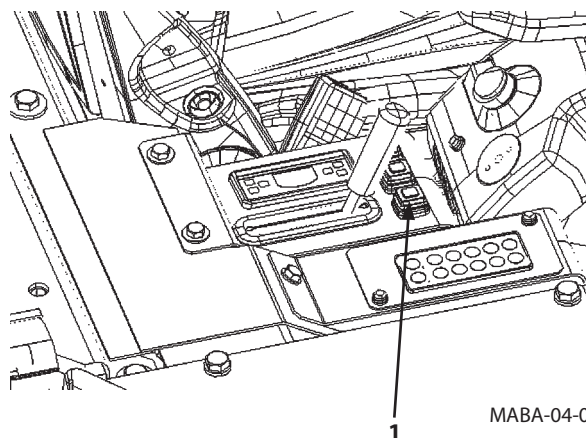
MABA-04-001

Travel Mode Switch (ZX26U-5A)

⚠ WARNING: Tipping-over accidents can cause serious personal injury. Do not change travel mode switch (1) while traveling; especially, changing to fast mode when descending slopes will create a very dangerous situation. Always stop the machine before changing the travel speed mode.

When travel mode switch (1) is pushed while the machine is traveling at slow speed, the travel speed becomes high. Travel mode switch (1) is lit.

When travel mode switch (1) is pushed while the machine is traveling at high speed, the travel speed becomes slow. Travel mode switch (1) turns OFF.



MABA-04-003

✎ NOTE: At low temperature, when the machine is traveling with travel mode switch (1) in the fast travel mode position, the slow travel mode may not automatically be selected even if the traveling loads increase. This symptom is not abnormal. Drive the machine after conducting sufficient warm-up operation.

The slow travel mode will automatically be selected if the traveling loads increase.

The operation state of travel mode switch (1) is kept until next operation. When the engine is stopped at high speed state, the engine starts at high speed next time.

DRIVING THE MACHINE

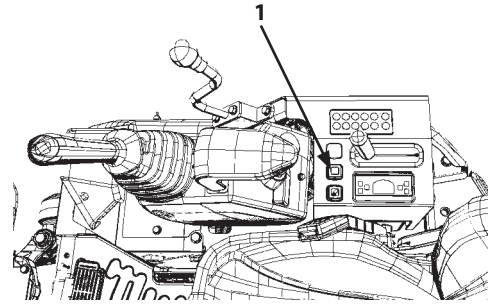
Travel Alarm

During travel operation, the travel alarm sounds to warn the people near the machine that the machine is traveling.

Deactivating Travel Alarm

Push the travel alarm deactivation switch (1) to stop the travel alarm.

Once the machine stops traveling and when restarting to travel, the travel alarm will sound again. If desired to stop the alarm, operate the deactivation switch (1) once more.



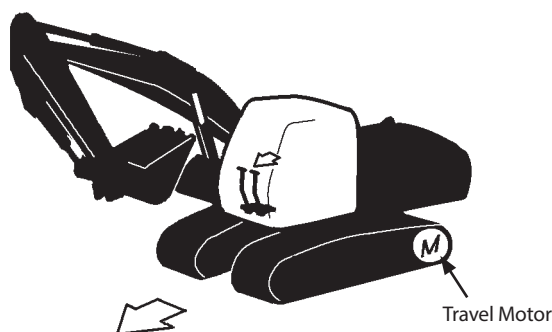
MABA-01-005

DRIVING THE MACHINE

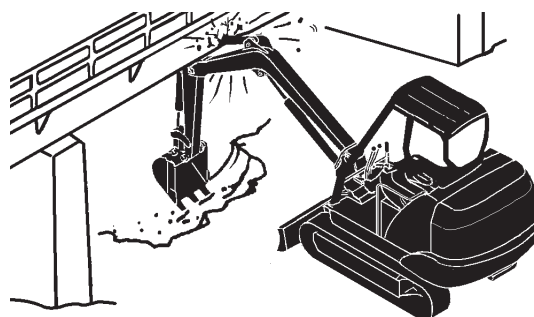
Traveling

CAUTION: Use a signal person when traveling the machine along road shoulders or in congested areas. Coordinate hand signals before starting the machine.

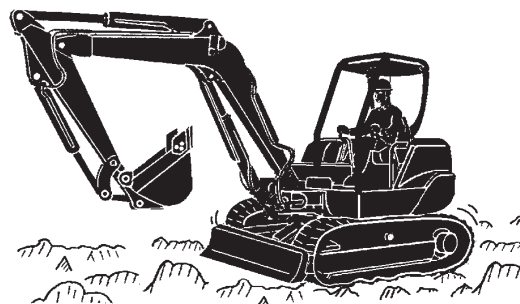
- Be sure to confirm the position of travel motors before traveling and operate the travel levers/pedals.
- Select a travel route that is as flat as possible. Steer the machine as straight as possible, making small gradual changes in direction.
- Before traveling on them, check the strengths of bridges and road shoulders, and reinforce if necessary.
- Use wood plates in order not to damage the road surface. Be careful of steering when operating on asphalt roads in summer.
- When crossing train tracks, use wooden plates in order not to damage them.
- Do not make contact with electric wires or bridges.
- When crossing a river, measure the depth of the river using the bucket and cross slowly. Do not cross the river when the depth of the river is deeper than the upper edge of the upper roller.
- When traveling on rough terrain, reduce engine speed. Select slow travel speed. Slower speed will reduce possible damage to the machine.
- Avoid operations that may damage the track and undercarriage components.
- During freezing weather, always clean snow and ice from track shoes before loading and unloading machine, to prevent the machine from slipping.



M104-05-008



SA-673



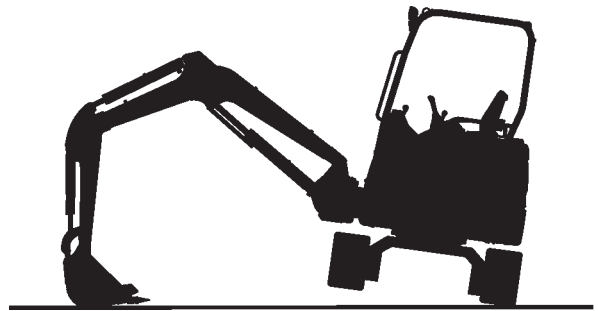
M586-05-002

DRIVING THE MACHINE

Traveling on Soft Ground

Avoid traveling on soft ground as much as possible. If traveling on a soft ground is unavoidable, carefully operate the machine while observing the following points.

- Drive the machine as far as the machine can move by its own propelling power. Towing the machine may become necessary. Do not drive the machine to a deeper location than towing the machine is possible.
- In case it becomes impossible for the machine to travel by its own propelling power, lower the bucket to the ground. While supporting the machine weight with the boom and the arm, slowly pull the arm to evacuate the machine. Operate the boom, the arm, and the travel levers simultaneously at this time to prevent the machine from being loaded abnormally.
- If the track frame bottom comes in contact with the ground, or if mud and/or grabbles are tightly packed into the undercarriage, the machine may become impossible to travel. Raise each track above the ground with the boom and arm extended, remove mud and/or grabbles from the track. Then, evacuate the machine. Rotate the raised track in forward or reverse directions alternately to remove the caught rocks and/or mud from the track.
- Tow the machine with another machine if the machine becomes stuck in soft ground and impossible to evacuate by its own propelling power. Refer to the descriptions for TOWING MACHINE for the correct usage of wire ropes.



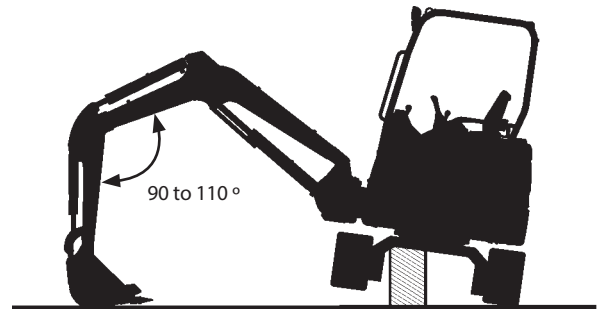
M1M7-04-005

DRIVING THE MACHINE

Raise One Track by Using Boom and Arm

⚠ WARNING: Operate the machine carefully. The machine may slide. Keep the angle between the boom and the arm at 90 to 110° and position the bucket's round side on the ground.

1. Swing the upperstructure 90°.
2. Position the boom and the arm so that the angle between them becomes 90 to 110°. Push the ground with the round part of the bucket bottom to raise the track off the ground.
3. Do not raise the track with the boom and the arm when the boom is swung.
4. Place blocks under the machine frame to support the machine.



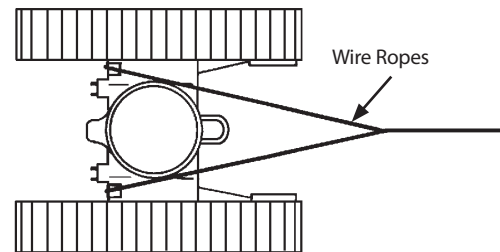
M1M7-04-006

DRIVING THE MACHINE

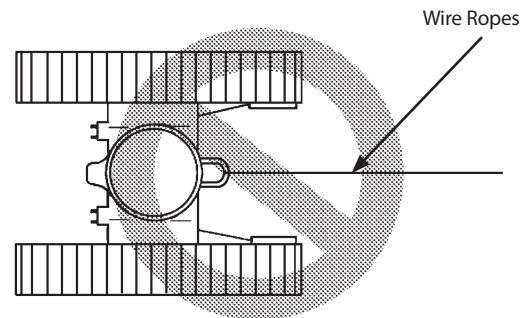
Towing Machine

In case it is difficult for the machine to evacuate from a soft terrain by own propelling power, attach wire ropes as illustrated to the right. Tow the machine using another machine. Be sure to attach the wire ropes around the track frames. To prevent the wire ropes from being damaged, place pieces of soft protective material between the wire ropes and the edge corners if the frame.

IMPORTANT: A bracket is provided on the track frame to install a shackle for towing a lightweight object on some machines. Never attempt to tow the machine using this lightweight object-towing bracket. Breaking the towing bracket may result. Refer to the descriptions on Shackle Bracket Usage on page 5-15 in "Operating the Machine" section for usages of the shackle bracket. In addition, do not tow the machine with the complete machine lifting holes prepared on the blade. The lifting holes may be damaged.



M1MS-04-003



MZX5-04-006

DRIVING THE MACHINE

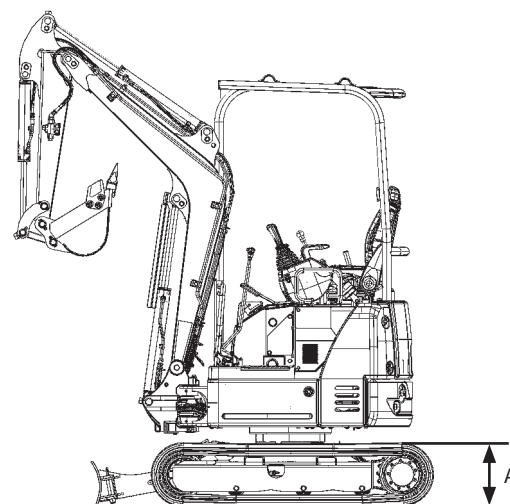
Operating in Water or Mud

The machine can be operated in water up to the upper edge of the upper rollers only if worksite footing has sufficient strength to prevent the machine from sinking under the upper edge of the upper roller, and only if the water is flowing slowly.

When operating in such conditions, check the machine's position often. Reposition the machine if necessary.

Avoid submerging the swing bearing, swing gears and center joint.

IMPORTANT: If the swing bearing, swing gears and center joint are submerged in water or mud by mistake, premature wearing on parts such as the swing bearing may result. Grease must be changed or overhauling will be required immediately. Stop operating the machine as soon as possible, and contact your authorized dealer.



MABA-04-002

Swing Internal Gear Grease Capacity

Model	Grease Capacity
ZX17U-5A	0.6 L (0.63 US qt)
ZX26U-5A	3.0 to 3.3 L (3.2 to 3.5 US qt)

Model	Operable Water Depth (A)
ZX17U-5A	370 mm (15 in)
ZX26U-5A	460 mm (18 in)

Lubricate swing bearing. (See Maintenance Guide, 500 hours)

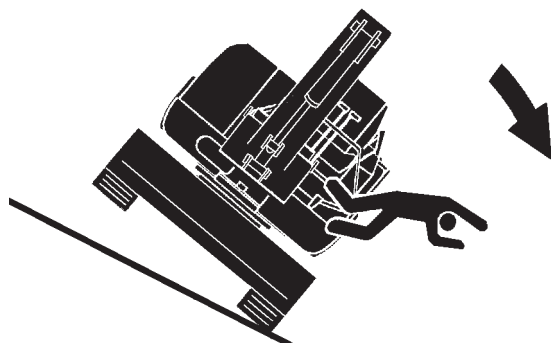
DRIVING THE MACHINE

Precautions for Traveling on Slopes

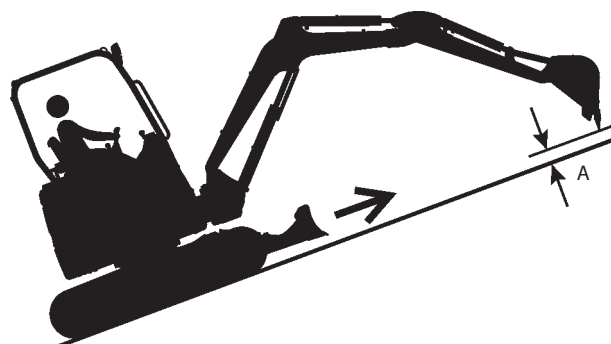
CAUTION: Avoid possible injury from traveling on slopes. Tipping over or skidding down of the machine may result. Thoroughly read and understand precautions below and be sure to travel at slow speed on slopes. Never attempt to travel on slopes with the bucket loaded or any load suspended by the bucket.

Travel with the tracks at their fully extended width if using a variable leg specification machine. If the full width of the track is shortened, the machine is more likely to tip over.

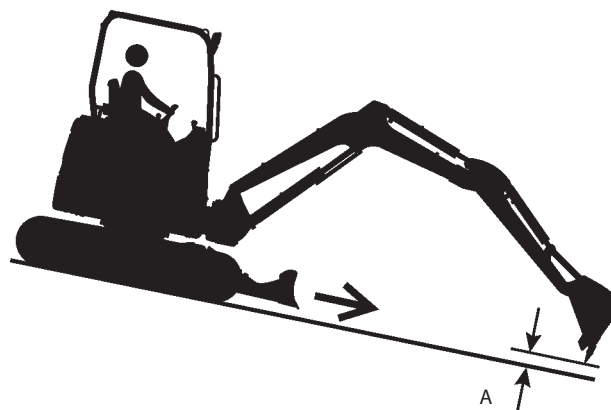
- Never attempt to ascend or descend slopes of 25 degrees and over.
- Be sure to fasten the seat belt.
- Keep the bucket pointed in the direction of travel, approximately 200 to 300 mm (8 to 12 in) (A) above the ground. If the machine starts to skid or becomes unstable, lower the bucket immediately.
- Driving across the face of a slope or steering on a slope may cause the machine to skid or turnover. If the direction must be changed, move the machine to level ground, then, change the direction to ensure safe operation.



SA-264



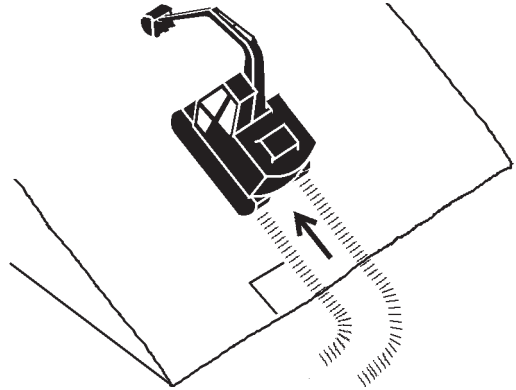
SA-1295



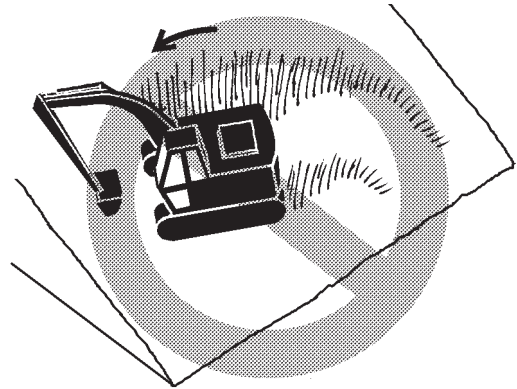
SA-1296

DRIVING THE MACHINE

- Avoid swinging the upperstructure on slopes. Never attempt to swing the upperstructure downhill. The machine may tip over. If swinging uphill is unavoidable, carefully operate the upperstructure and the boom at slow speed.
- If the engine stalls on a slope, immediately lower the bucket to the ground. Return the control levers to neutral. Then, restart the engine.
- Be sure to thoroughly warm up the machine before ascending steep slopes. If hydraulic oil has not warmed up sufficiently, adequate performance may not be obtained.



SA-441



MZX5-04-002

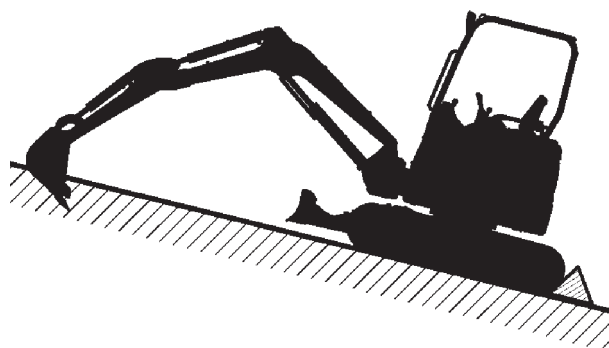
DRIVING THE MACHINE

Parking the Machine on Slopes

⚠ WARNING: Avoid parking and/or stopping the machine on slopes. The machine may tip over, possibly resulting in personal injury.

If parking the machine on a slope is unavoidable:

- Thrust the bucket teeth into the ground.
- Return the control levers to neutral and pull pilot control shut-off lever (1) to the LOCK position.
- Block both tracks.



M1M7-04-009

Parking the Machine

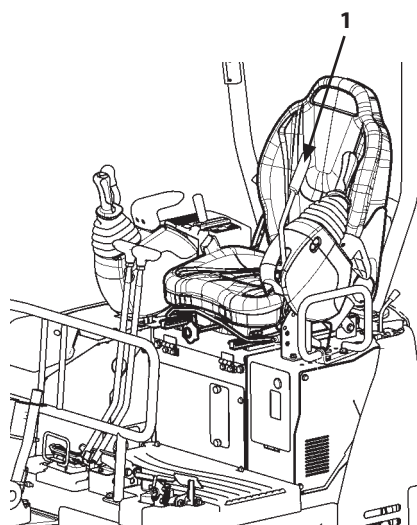
1. Park the machine on a level surface.
2. Lower the bucket and the blade to the ground.

IMPORTANT: Turbocharger may be damaged if the engine is not properly shut down.

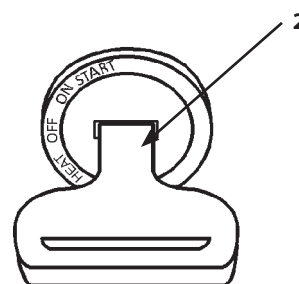
3. Turn the engine control lever counterclockwise to the slow idle position. Run the engine at slow idle speed for approximately 5 minutes to cool the engine.
4. Turn the key switch to OFF. Remove key (2) from the key switch.
5. Pull pilot control shut-off lever (1) to the LOCK position.

IMPORTANT: Protect cab electrical components from bad weather. Always close windows, roof vent and cab door when parking the machine.

6. Close the windows, the roof vent, and the cab door, if the cab is provided.
7. Lock all doors and covers.



MABA-01-002



M1M7-01-007

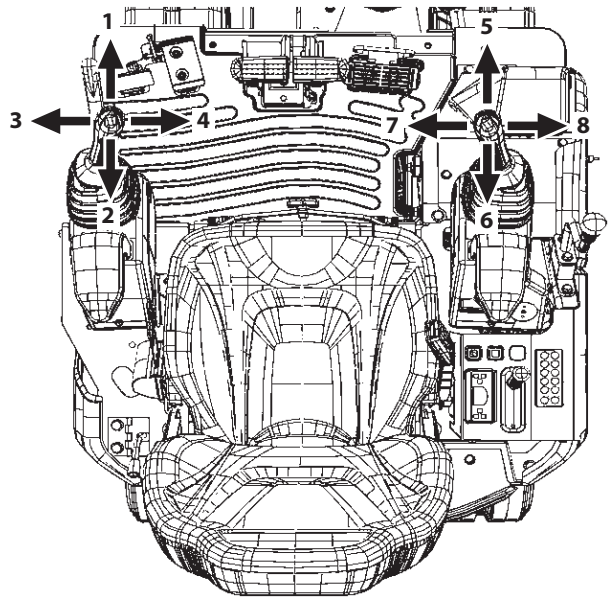
OPERATING THE MACHINE

Control Lever (ISO Pattern)

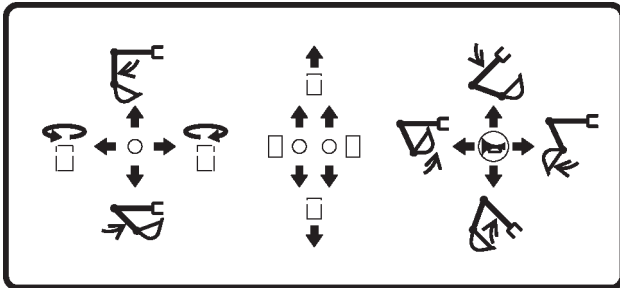
WARNING:

- **Never place any part of body beyond window frame. It could be crushed by the boom if boom control lever is accidentally bumped or otherwise engaged. Never remove the window sash bar.**
- **Make sure you know the location and function of each control before operating.**
- **Do not change the control lever operation pattern. Failure to do so may result in operation mistake of the machine.**

A label showing the control patterns of the levers and pedals is attached on the right side in the cab.



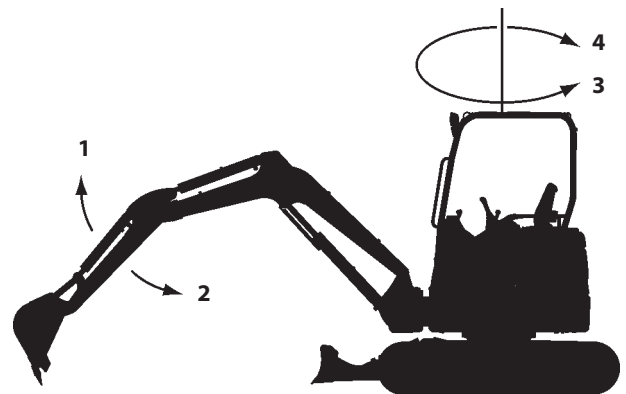
MABA-05-001



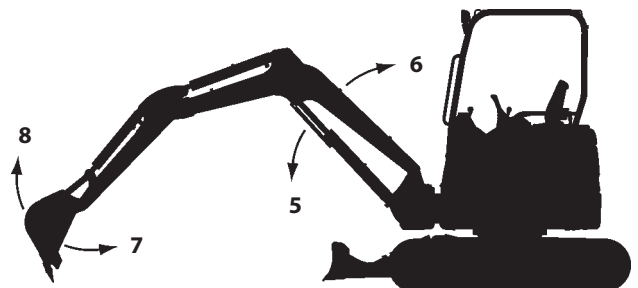
MABA-05-016

When a lever is released, it will automatically return to neutral, and that machine function will stop.

- 1- Arm Roll-Out
- 2- Arm Roll-In
- 3- Swing Left
- 4- Swing Right
- 5- Boom Lower
- 6- Boom Raise
- 7- Bucket Roll-In
- 8- Bucket Roll-Out



M1M7-05-001



M1M7-05-002

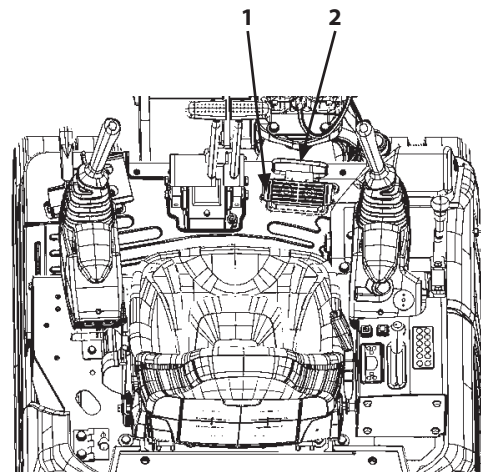
OPERATING THE MACHINE

Boom-Swing Pedal

Use the boom swing function to efficiently operate the machine when excavating grooves along roadsides or near walls. The boom swing operation is performed using boom-swing pedal (1) located at the operator's right foot as illustrated to the right.

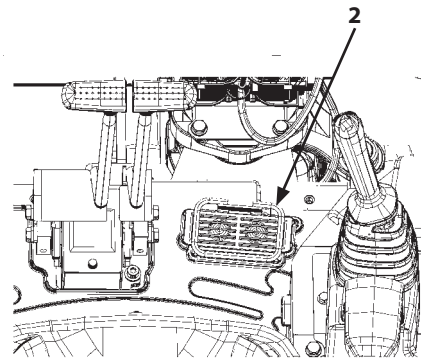
Boom-Swing Operation

1. Turn cover (2) for boom-swing pedal (1) forward.
2. Step on the left side of boom-swing pedal (1) to swing left. Step on the right side of pedal (1) to swing right.
3. Turn cover (2) backward over boom-swing pedal (1) when boom-swing operation is no longer required.



Unlock Position

MABA-05-002

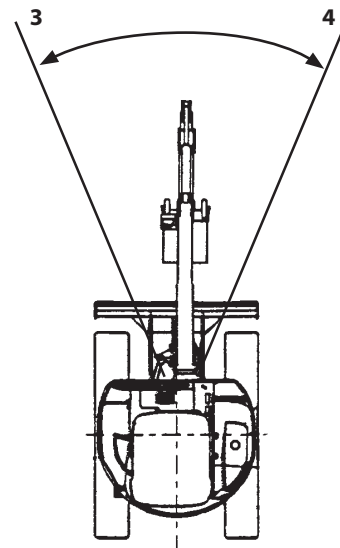


Lock Position

MABA-05-003

3- Swing Left

4- Swing Right



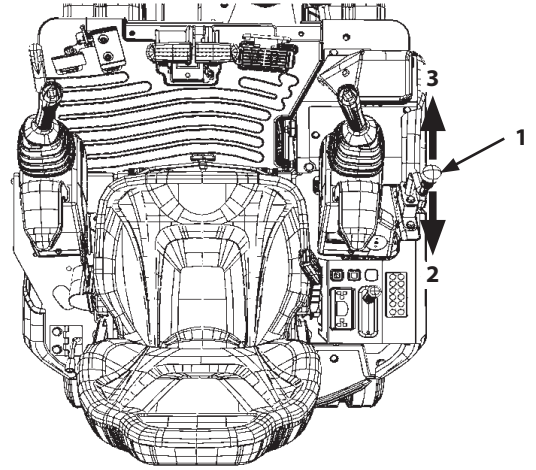
M571-01-001

OPERATING THE MACHINE

Blade Lever

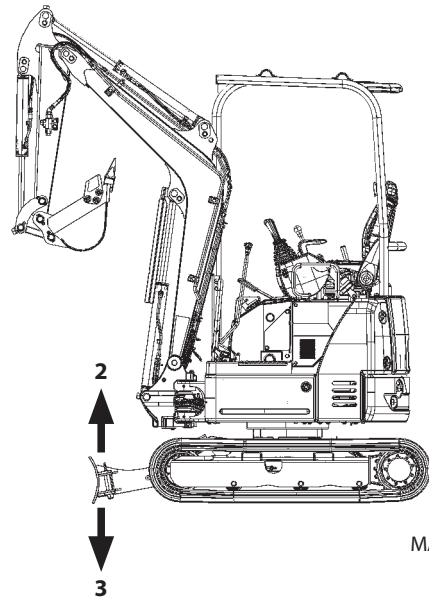
Use blade lever (1) on the operator's right to raise and lower the blade.

When blade lever (1) is released, it automatically returns to neutral, holding the blade in the present position until lever (1) is operated again.



MABA-05-001

- 2- Blade Raise
- 3- Blade Lower



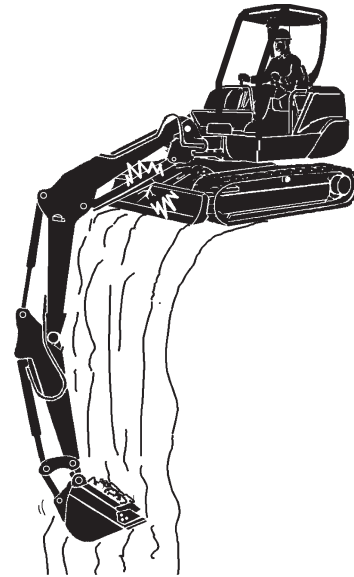
MABA-04-002

OPERATING THE MACHINE

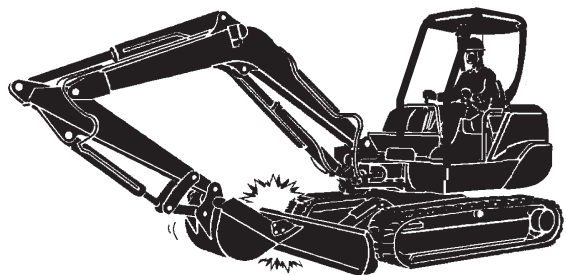
Precautions for Blade Operation

This blade is designed as a light service attachment of the hydraulic excavator. Please keep the following points in mind:

- This blade is designed for bull dozing work only. Do not attempt to dig deeply with the blade. Doing so may damage not only the blade but the undercarriage as well.
- Do not apply concentrated or uneven loads to the blade. Never allow the blade to forcefully collide with a load by running the machine into the load. Failure to do so may result in damage to the blade and the undercarriage.
- When jacking up the machine with this blade, the surface beneath the blade comes under high pressure, increasing the risk of surface collapse. Always be sure that the surface is strong enough to support the weight of the machine before jacking up the machine. Avoid dangerous uneven distribution of weight to the blade by maintaining even contact between the blade and the ground.
- While digging with the blade positioned in the front of the machine, take care not to allow the bucket to come into contact with the blade.
- When digging, take care not to allow the boom cylinder to come in contact with the blade.



M586-05-016



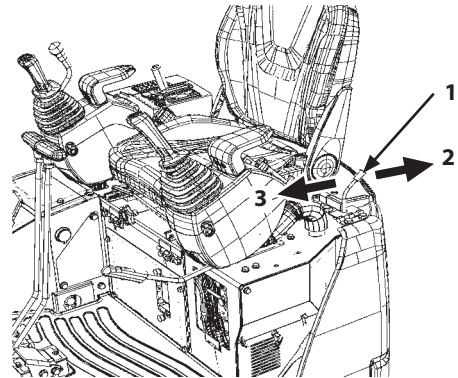
M586-05-017

OPERATING THE MACHINE

Side Frame Extend / Retract Lever

To adjust the side frame width, operate side frame extend / retract lever (1) as illustrated to the right.

⚠ WARNING: Operate the machine with the side frames fully extended (1280 mm) or retracted (980 mm). If the machine is operated with the side frames extended insufficiently, the extended side frames are not securely held, causing the upper structure to keep moving and constituting a safety hazard. Operate the machine with the side frames fully retracted only when traveling through a flat narrow work site. Except for this condition, whenever traveling the machine, performing excavation, or operating the blade, be sure to fully extend the side frames. Failure to do so may cause the machine to turn over.



MABA-05-004

IMPORTANT: Before extending or retracting the side frames, park the machine on a level surface with no obstructions and remove packed mud or gravel from the side frame extend / retract mechanism if any.

Operating the side frame extend / retract lever

1. Pull up side frame extend /retract lever (1) to extend the side frame.
2. Push down side frame extend /retract lever (1) to retract the side frame.

2- Extension

3- Retraction

OPERATING THE MACHINE

Extending / Retracting Blade Width

Change the blade width in accordance with the side frame extension / retraction.

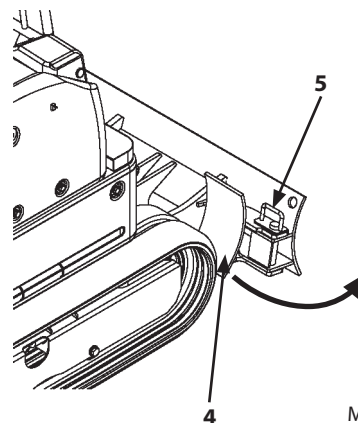
When working with the blade contact to ground, there are some cases that it is difficult to remove the pins. Work after raising the blade, and stopping the engine.

When extending the blade width:

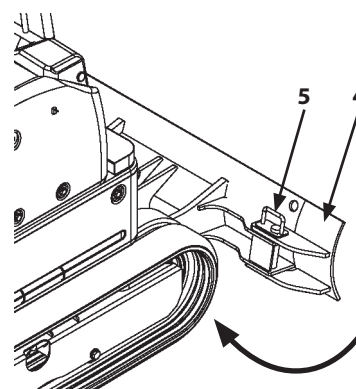
1. Remove blade pin (5).
2. Turn over the extension blade (4) and align the pin hole.
3. Install blade pin (5).
4. Extend the left side following steps 1 to 3 above.

When retracting the blade width:

1. Remove blade pin (5).
2. Turn over the extension blade (4) so that the cutting edge side may turn to the track shoe side. Align the pin hole.
3. Install blade pin (5).
4. Retract the left side following steps 1 to 3 above.



MABA-05-014



MABA-05-015

OPERATING THE MACHINE

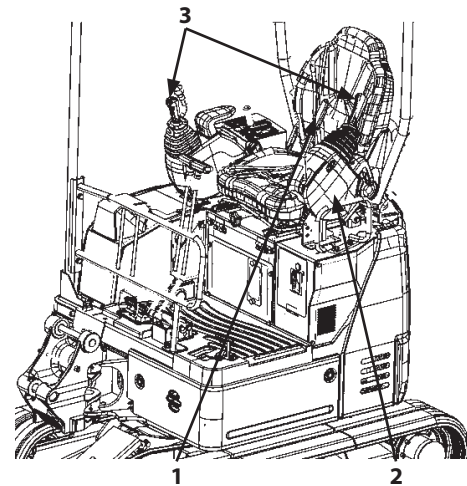
Pilot Control Shut-Off Lever

Pilot control shut-off lever (1) functions to prevent misoperation of the machine from occurring if the control levers are accidentally moved when leaving the operator's seat or when entering the cab.

Pilot control shut-off lever (1) is linked to console (2) latch mechanism so that console (2) is raised in the LOCK position to aid in entering and exiting the operator's station and for maintenance.

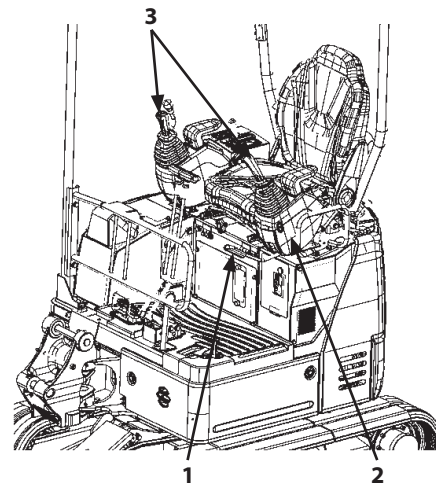
WARNING:

- **To deactivate control lever (3) and pedal functions, be sure to pull pilot control shut-off lever (1) and raise console (2) to the fully locked position. To reactivate control lever (3) function, always hold and push pilot control shut-off lever (1) down. Never attempt to lower raised console (2) or control lever (3) to reactivate all control lever function without holding pilot control shut-off lever (1).**
- **Be sure not to touch control lever (3) when operating pilot control shut-off lever (1). Failure to do so may allow the machine to unexpectedly move when a body part unintentionally comes in contact with the control lever, possibly resulting in serious personal injury or death.**
- **When leaving the machine, always stop the engine. Then, pull the pilot control shut-off lever (1) up to the LOCK position.**
- **Always check to be sure that the pilot control shut-off lever (1) is pulled up to the LOCK position before transporting the machine or leaving the machine at the end of the shift.**



Lock Position

MABA-05-005



Unlock Position

MABA-05-006

Before Leaving the Machine

1. Park the machine on a firm and level surface. Lower the bucket and the blade to the ground. Return all control levers to neutral. Properly shut down the engine.
2. Pull pilot control shut-off lever (1) and raise console (2) to the full LOCK position.

OPERATING THE MACHINE

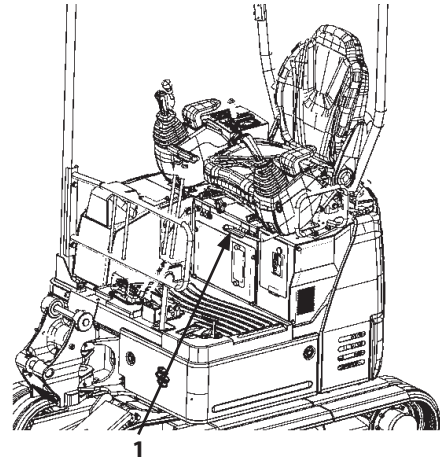
Before Starting Operation:

Confirm that pilot control shut-off lever (1) is pulled up to the LOCK position before starting the engine.

Slowly push down control shut-off lever (1) to UNLOCK position before starting operation.

Confirm that all control levers and pedals are in neutral and that no part of the machine is in motion.

⚠ WARNING: If any part of the machine (any actuator) moves when pilot control shut-off lever (1) is lowered to the UNLOCK position despite the fact that all controls are placed in neutral, the machine is malfunctioning. Immediately pull pilot control shut-off lever (1) back to the LOCK position, and stop the engine. Then, see your authorized dealer.



Unlock Position

MABA-05-006

OPERATING THE MACHINE

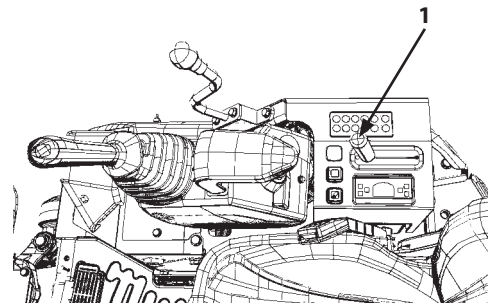
Warming Up Operation

The normal operating temperature of hydraulic oil is between 50 and 80 °C (122 and 176 °F). Hydraulic components may be seriously damaged if the machine is operated when the hydraulic oil temperature is below 20 °C (68 °F).

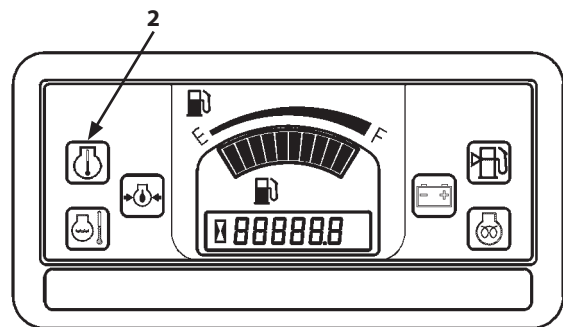
Before starting work, be sure to follow these warm-up procedures until the temperature of the hydraulic oil reaches above 20 °C (68 °F).

Warm-Up Procedures:

1. Turn engine control lever (1) to the slow idle position. (Do not operate the machine until coolant temperature indicator (2) goes off.)
2. When coolant temperature indicator (2) goes off, run the engine for 5 to 10 minutes with the engine speed control lever at the medium position.
3. Extend and retract each cylinder several times and lightly operate the swing and travel motors to warm up them.



MABA-01-005



M1NC-01-005

Warming Up in Cold Weather

IMPORTANT: In case the hydraulic oil temperature is low, never operate the machine until all actuator speeds become normal after warming up operation.

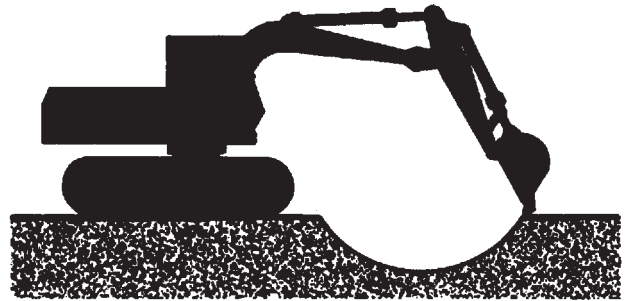
 **NOTE:** During cold weather season, the warm-up operation system automatically operates so that the engine speed increases for a moment even though the engine control lever is in the slow idle position.

1. Run the engine at intermediate speed for 5 minutes (longer if the air temperature is extremely low).
2. Do not run the engine at either slow or fast speed during this time.
3. Extend and retract each cylinder several times and lightly operate the swing and travel motors to warm up them.
4. Extend the bucket cylinder to the stroke end. Be sure not to hold the bucket lever in this position for more than 30 seconds.
5. Retract the bucket cylinder to the other stroke end. Be sure not to hold the bucket lever in this position for more than 30 seconds.
6. Repeat steps 4 to 5 until the bucket cylinder cycle time becomes normal.

OPERATING THE MACHINE

Operating Backhoe

- Use the appropriate arm and bucket for the work. (Refer to the "Bucket Types and Applications" in the Specifications section.)
- Pull the bucket toward the machine using the arm as the main digging force.
- When soil sticks to the bucket, remove it by moving the arm and/or bucket rapidly back and forth.
- Place the bucket teeth on the ground with the bottom of the bucket at a 45 degree angle to the ground.
- When trenching a straight line, position the tracks parallel to the trench. After digging to the desired depth, move the machine as required to continue the trench.
- When operating with hydraulic cylinders fully retracted or extended, all hydraulic cylinders and equipment may be damaged.



M107-05-037

IMPORTANT:

- **When digging at an angle, avoid striking the tracks with the bucket teeth.**
- **When lowering the boom, avoid sudden stops that may cause shock load damage to the machine.**
- **When digging a deep excavation, avoid striking the boom or bucket cylinder hoses against the ground.**
- **When operating the machine with the blade positioned towards the front, the bucket teeth may come in contact with the blade if you are not careful.**
- **When the bucket load is dumped with the boom raised, falling material may hit the base machine and/or the canopy. Always be aware of loads in the bucket during operation.**

OPERATING THE MACHINE

Grading Operation

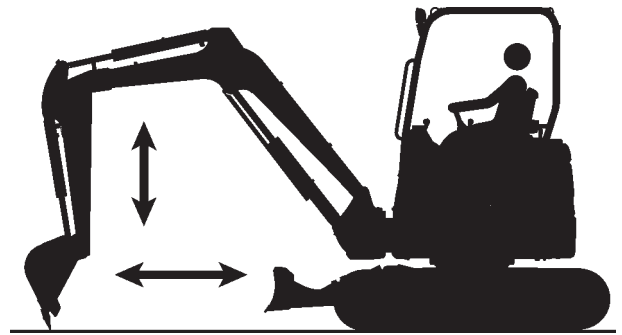
Use the blade for soil refilling and general grading operations after excavation. Grading operation can be also performed by operating the boom, arm, and bucket simultaneously.

IMPORTANT: Do not pull or push dirt with the bucket when traveling. Excess force will be applied on each part, and the machine may be damaged.

When grading by operating the boom, arm, and bucket simultaneously:

1. When grading from the forward to the backward, slowly roll in the arm while slightly raising the boom. As soon as the arm passes the vertical position, slowly lower the boom so that the bucket can be horizontally moved.
2. When grading from the backward to the forward, operate the arm and bucket rolled back as described in step 1.

Do the slope finishing work in the same procedure as described in steps 1 and 2.

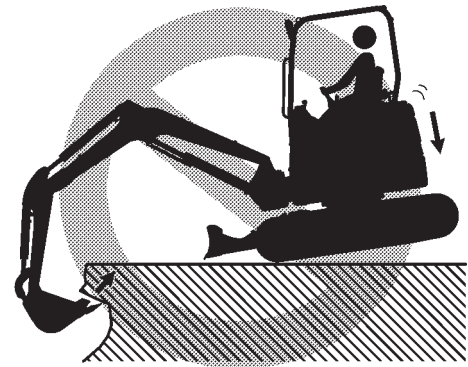
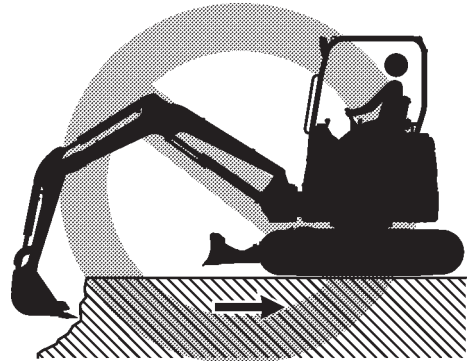


M1M7-05-012

OPERATING THE MACHINE

Avoid Abusive Operation

Do not travel while thrusting the bucket teeth into the ground and do not raise the rear of the machine to use the machine's weight as additional digging force. Severe machine damage may result.



MZX5-05-002

Avoid Excavation Using Upperstructure and/or Boom Swing Power

Never attempt to move rocks or excavate a cliff face by hitting the bucket using upperstructure and/or boom swing power. Damage to the front attachment, or shortening of the service life of the swing systems may result.

OPERATING THE MACHINE

Avoid Driving Bucket Teeth into Ground

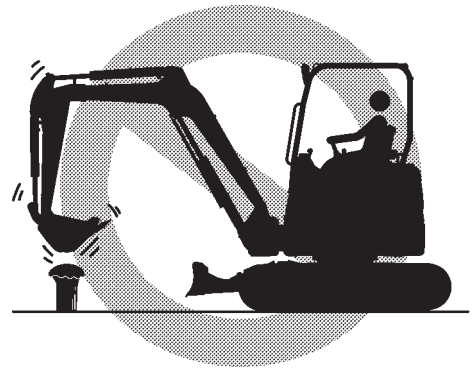
⚠ WARNING: If the bucket teeth are forcedly driven into the ground, crushed material may spatter, possibly resulting in injury of the operator and/or co-workers around the machine. Furthermore, the service lifetime of all front attachment parts may be shortened.

If the bucket teeth are forcedly driven into the ground, the service lifetime of all front attachment parts (especially the bucket) may be severely shortened. When excavating tightly fastened gravelly soil, use the bucket digging out force. Operate the boom, arm, and bucket simultaneously so that the bucket teeth can be effectively penetrated into the excavation surface. Carefully operate the machine to prevent crushed material from spattering, possibly resulting in injury to the operator and/or co-workers around the machine.

Avoid Striking With Bucket

⚠ WARNING: The bucket bottom is curved. Therefore, hammering or piling work with the bucket is very hazardous. In addition, damage to the bucket and the front attachment parts may result.

Hammering or piling work with the bucket may create hazardous situations. Never attempt to perform hammering or piling work with the bucket. Damage to the bucket and the front attachment parts may also result.

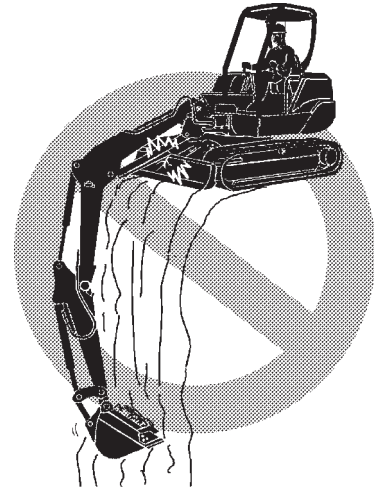


MZX5-05-001

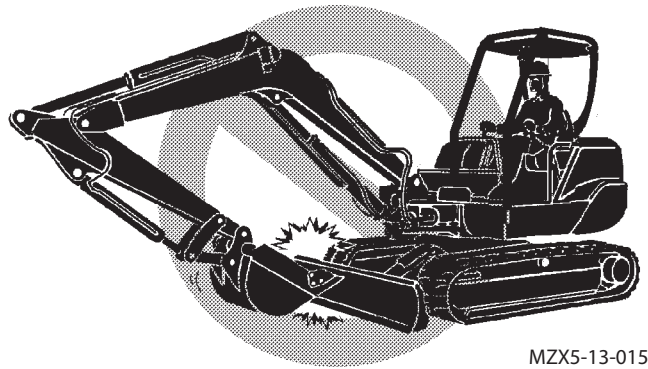
OPERATING THE MACHINE

Boom Cylinder may Hit Blade

When digging deeply with the blade positioned at the front, the boom cylinder or bucket may accidentally hit the blade, causing damage. Take care to prevent this from happening.



MZX5-13-014

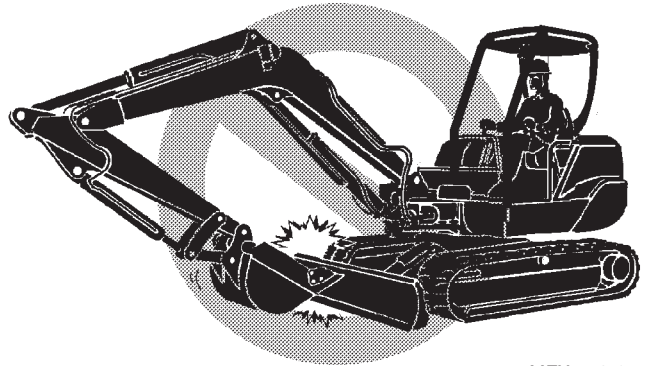


MZX5-13-015

OPERATING THE MACHINE

Avoid Hitting Blade With Bucket

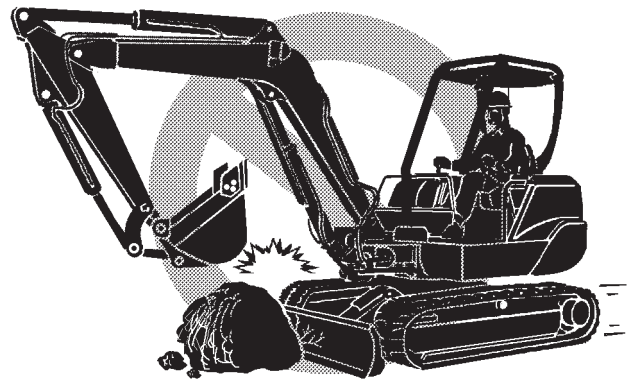
When rolling in the arm in a travel or transportation position, be careful not to hit the blade with the bucket.



MZX5-13-015

Avoid Colliding Blade Against Rocks

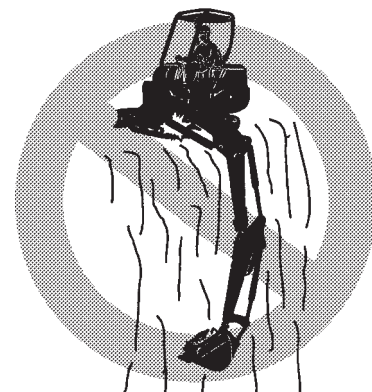
Do not attempt to allow the blade to collide with rocks. Premature damage to the blade and the blade cylinders may result.



MZX5-13-016

Avoid Colliding Boom Cylinder With Track

When digging deeply with the front attachment positioned at an angle, as illustrated, the boom cylinder may accidentally collide with the track, causing damage. Take extra care to prevent this from happening.



MZX5-13-018

Precautions for Installing Wide Bucket or Special Type Bucket

If the boom is fully offset to the left and raised on the cab-equipped machine with a bucket wider than shown to the right installed, the bucket will come in contact with the cab. Be sure to install a specially arranged bucket only after consulting your authorized dealer to prevent the cab collision with the bucket.

ZX26U-5A: 550 mm (22 in)

OPERATING THE MACHINE

Use Correct Track Shoe

Never use rubber crawlers or wide track shoes on rough terrain with scattered rocks, gravel or boulders. Failure to do so may cause breakages of rubber crawlers, shoe bending, looseness of shoe bolts, or damage to track parts such as track links, or rollers. (Refer to the table for Shoe Types and Applications in the specification chapter.) Soil may easily become packed into the crawler during travel operation on sandy ground. If the machine is driven without removing the packed soil from the crawlers, the rubber crawlers will be overloaded, possibly resulting in breakage of the crawlers. Avoid causing the crawlers to become packed with soil by removing soil as often as possible.



M1M7-05-015

OPERATING THE MACHINE

Using Rubber Crawler

Rubber crawlers are designed to allow the machine to travel without damaging road surfaces such as paved road surfaces. Avoid damage to the rubber crawlers by following the precautions below:

Forbidden Operations

1. Do not operate or steer the machine on or near river-terrace, boulder and boulder mixed ground, crushed-stone ground, uneven hardpan surfaces, stumps, reinforcing bars, scraps, and steel plate edges. Failure to do so may shorten the service life of the rubber crawlers to a great extent.
2. Do not leave engine oil, fuel, and other kinds of lubricants remaining on the rubber crawlers, and avoid traveling on road surface covered with oil to reduce the danger of sliding.
3. Do not travel the machine while raising one side crawler off the ground with the front attachment. Shear or damage to the rubber crawler may result.

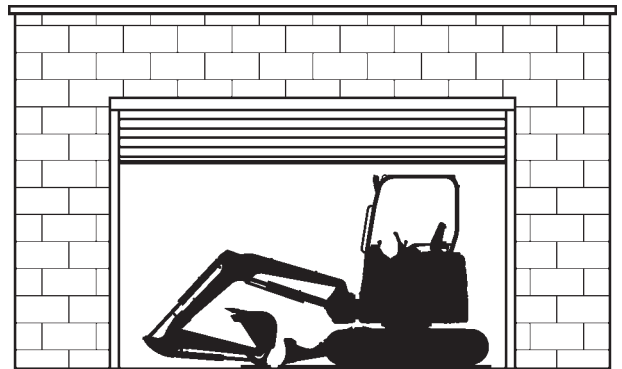


M1M7-05-015

Precautions for Using Rubber Crawlers

⚠ WARNING: The rubber crawler machine is less stable than the steel crawler machine, as the edge of the rubber crawler is easier to deform than steel crawler. Pay attention when operating the machine at an angle to the tracks.

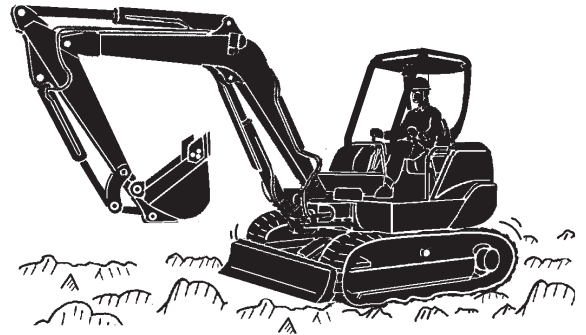
1. Do not store the rubber crawlers in a place where they will be exposed to direct sunlight for a period of more than three months.
2. Avoid unnecessary steering operations on concrete roads, possibly resulting in premature wear of shoe lugs and core metals. Also, avoid operating the machine on high temperature [over 60 °C (140 °F)] road surfaces during asphalt pavement work, possibly causing premature wear of the rubber crawlers as well as damage to the road surface.



M1M7-05-016

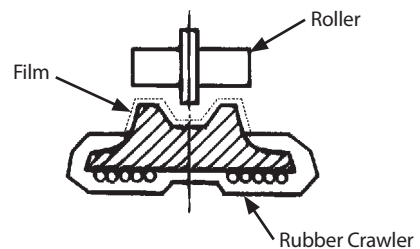
OPERATING THE MACHINE

3. Operating the machine with rubber crawlers sagging on uneven surfaces can result in derailment of rubber crawler, possibly causing the rubber crawlers to be damaged.



M586-05-024

4. When lowering the machine raised above the ground using the front attachment, slowly lower the machine to the ground.
5. The new rubber crawler has a thin rubber film (shown in dotted line) on its roller tread. During operation of a new machine, or immediately after the rubber crawlers are replaced, the rubber film may come off due to contact with the rollers. This is not abnormal. (See the right illustration.)
6. If the rubber crawler is damaged and the rubber crawler core wire rusts, the service lifetime of the rubber crawler will become short. If damaged, the rubber crawler must be repaired. Contact your authorized dealer.



M503-05-040

OPERATING THE MACHINE

Avoid other than Specified Machine Operations

This machine has been exclusively designed for excavation and loading works.

Do not apply this machine to works other than excavation and loading. Do not operate the machine under any conditions beyond these specifications.



CAUTION:

Precautions for Lifting Work

- **Operate the machine on level ground. Operating the machine on a slope may cause the machine to become unstable, possibly resulting in tipping accident.**
- **When lifting a load, carefully swing the machine not to cause the lifted load to come in contact with personnel working near the machine. Reduce the engine speed to slowly swing the machine. Failure to do so may cause the machine to tip over by swing centrifugal force.**
- **If traveling the machine with a lifted load is unavoidable, reduce the engine speed to slowly travel the machine.**
- **Never move the front attachment and/or swing the machine while traveling the machine with a lifted load. The lifted load may sway, possibly creating a hazardous situation.**

OPERATING THE MACHINE

Shackle Bracket Usage

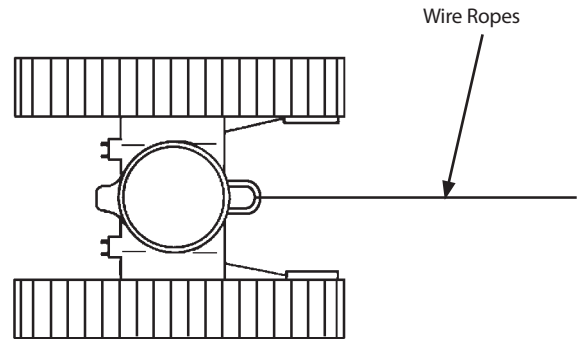
A shackle bracket is provided on the track frame to tow light weight objects as specified below.

IMPORTANT: Be sure to conform to the restrictions and precautions stated below when towing a light weight object using the shackle bracket provided on the track frame. The track frame and/or the shackle bracket may be damaged otherwise.

- The maximum drawbar pull

Model	Maximum Drawbar Pull
ZX17U-5A	4900 N (500 kgf)
ZX26U-5A	7800 N (800 kgf)

- Be sure to use a shackle.
- Keep the tow line horizontal, straight, and parallel to the tracks.
- Select the slow travel mode. Slowly drive the machine when towing.



M1MS-04-004

OPERATING THE MACHINE

Emergency Boom Lowering Procedure

WARNING:

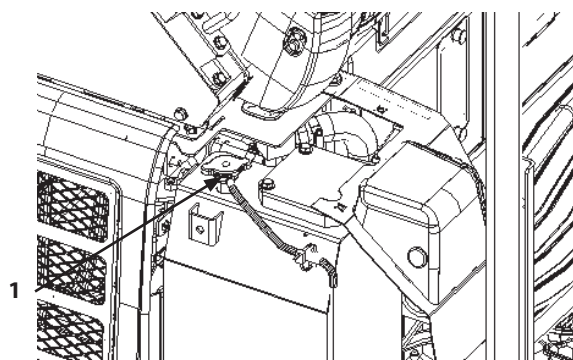
- Prevent personal injury. Confirm that no one is under the front attachment before starting the procedure below.
- Be sure to work only after oil temperature is low or before operation. Failure to do so may allow high temperature oil to spray, possibly causing severe burns.

If the engine stalls and cannot be restarted, lower the boom to lower the bucket to the ground referring to the emergency boom lowering procedure stated below.

1. Remove the cover above the hydraulic oil tank. Loosen filler cap (1) on the hydraulic oil tank to release air pressure from the hydraulic oil tank.

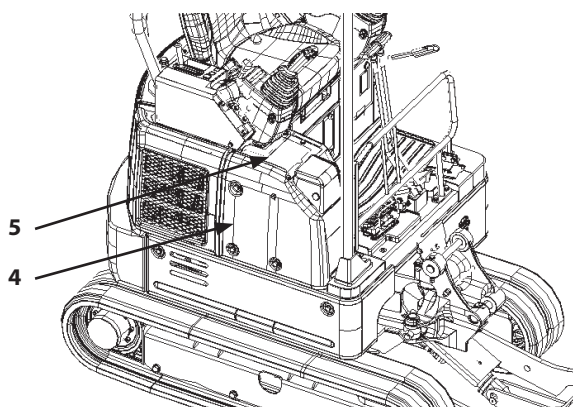
 NOTE: Upper cover (5) can not be removed unless cover (4) at the right side of hydraulic oil tank is removed for ZX17U-5A.

2. Remove bolts (2) from the front and left side of cover (3) to remove cover (3).
3. Lower the boom in the procedures on the next page.



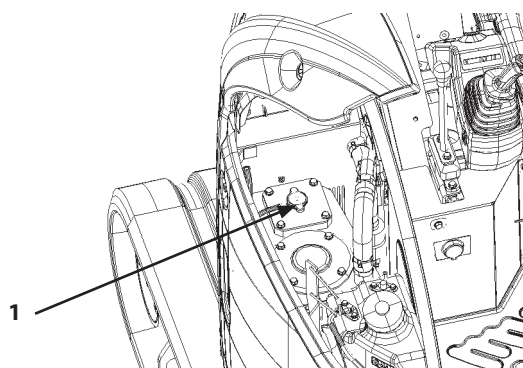
ZX17U-5A

MABA-05-007



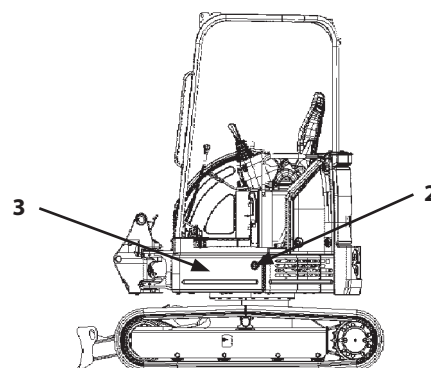
ZX17U-5A

MABA-05-008



ZX26U-5A

MABA-05-009



MABA-05-010

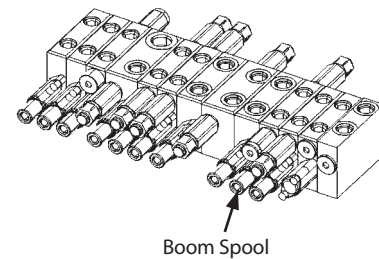
OPERATING THE MACHINE

ZX17U-5A

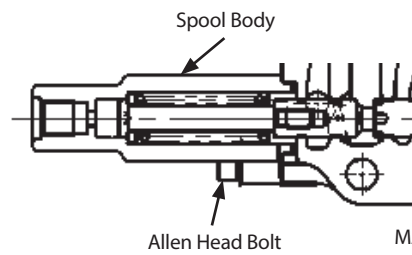
⚠ WARNING: Do not pull the boom spool rapidly. Otherwise, the boom may lower rapidly and hydraulic oil may spout out from the control valve. Be sure to pull the boom spool slowly.

1. Remove allen head bolts and boom spool to lower the boom. Place a container to receive oil escaping from the control valve when removing the boom spool.
2. Ensure the boom is completely lowered, and then install the boom spool with allen head bolts.

Tightening Torque: 6 to 7 N·m
(0.6 to 0.7 kgf·m, 4.4 to 5.2 lbf·ft)



MABA-05-012



MABA-05-013

OPERATING THE MACHINE

ZX26U-5A

Releasing Overload Relief Valve

• If the front attachment is not loaded

⚠ WARNING: Loosen overload relief valve slowly. If it is loosened rapidly, the boom may also lower rapidly. Do not loosen it more than 3/4 turns, as the hydraulic oil may spout.

1. Loosen the overload relief valve slowly by checking the movement of boom.
2. After checking that the boom is completely lowered, tighten the overload relief valve.

Tightening Torque: 60 to 70 N·m
(6 to 7 kgf·m, 44 to 52 lbf·ft)

• If the front attachment is loaded

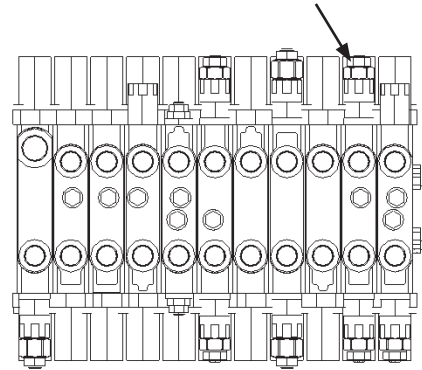
1. Put the matching marks on lock nut in overload relief valve and adjusting screw in the boom raise circuit (cylinder bottom side).

⚠ WARNING: Loosen the adjusting screw slowly. If it is loosened rapidly, the boom may also lower rapidly.

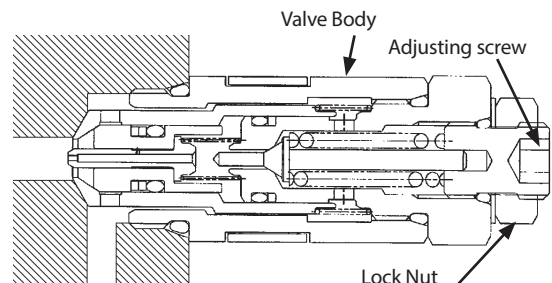
2. Loosen the lock nut. Loosen adjusting screw slowly by checking the movement of boom.
3. After checking that the boom is completely lowered, align the matching marks and tighten the lock nut.

Torque: 28 to 32 N·m
(2.8 to 3.2 kgf·m, 20 to 23 lbf·ft)

Overload Relief Valve in Boom Raise Circuit



MABA-05-011



T152-03-03-015

OPERATING THE MACHINE

Precautions for After Operations

- After finishing the day's operation, drive the machine to a firm, level ground where no possibility of falling stones, ground collapse or floods are present.
(Refer to the group for "PARKING THE MACHINE" in the DRIVING THE MACHINE section.)
- Fully refill the fuel in the fuel tank.
- Clean the machine.



M1M7-05-024

TRANSPORTING

Transporting by Road

When transporting the machine on public roads, be sure to first understand and follow all local regulations.

- When transporting the machine using a truck, check the width, height, length and weight of the trailer with the machine loaded. Note that transporting weight and dimensions may vary depending on the type of shoe or front attachments installed.
- Investigate beforehand the conditions of the route to be traveled, such as dimensional limits, weight limits, and traffic regulations.

In some cases, getting the permission from the local authority concerned or disassembling the machine to bring it within dimensional limits or weight limits of local regulations may become necessary.

Notify the authorized dealer that you are transporting the unit.

TRANSPORTING

Loading/Unloading on a Truck

Always load and unload the machine on a firm, level surface.



WARNING:

- **Be sure to use a loading dock or a ramp for loading/unloading. Never load or unload the machine onto or off a truck or trailer using the front attachment functions when driving up or down the ramp.**
- **The machine may meander when the front attachment is operated during travel on a slope. Do not operate the front attachment when traveling on a slope.**

Ramp/Loading Dock:

1. Before loading, thoroughly clean the ramps, loading dock and flatbed. Dirty ramps, loading docks, and flatbeds with oil, mud, or ice on them are slippery and dangerous.
2. Place blocks against the truck wheels while using a ramp or loading dock.
3. Ramps must be sufficient in width, length, and strength. Be sure that the incline of the ramp is less than 15 degrees.
4. Loading docks must be sufficient in width and strength to support the machine and have an incline of less than 15 degrees.
5. When transporting the machine equipped with a blade, take care not to hit the blade.

TRANSPORTING

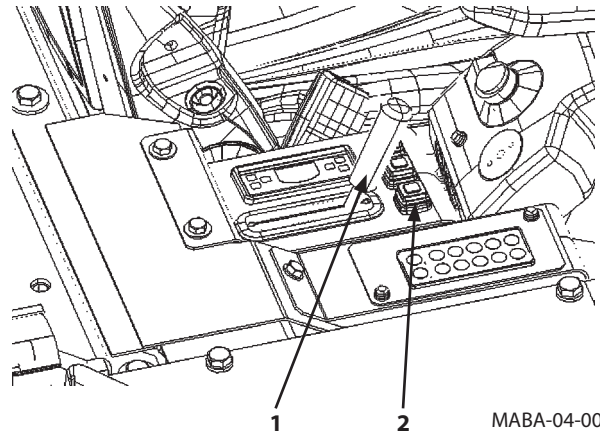
Loading

WARNING:

- Always travel the machine slowly.

Before descending a slope, always ensure that engine control lever (1) is in the slow idle position, and then reduce the engine speed. Turn the travel mode switch (2) to slow speed for ZX26U-5A.

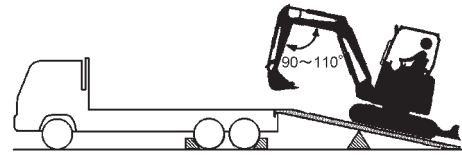
- Never steer while driving up or down a ramp as it is extremely dangerous and may cause the machine to turnover. NEVER attempt to change directions whilst positioned on the ramp. If repositioning is necessary, first move back to the ground or flatbed, modify traveling direction, and begin to drive again.
- The top end of the ramp where it meets the flatbed is a sudden bump. Take care when traveling over it as the balance may be lost.
- Extreme care must be taken when swinging the upper structure when the machine is on the truck flatbed. If the front attachment is fitted, swing slowly with the arm fully roll-in underneath the boom being careful not to lose the balance of the machine.



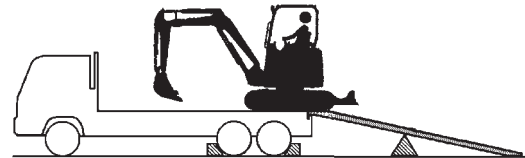
MABA-04-003

TRANSPORTING

1. Load the machine so that the centerline of the machine aligns with the centerline of the trailer flatbed.
2. Drive the machine onto the ramp slowly.
3. Determine a position for the bucket in line with the truck. Adjust the angle of the boom and the arm at 90 to 110°.
4. Lower the bucket onto to the deck of the truck before the unit passes over the end of the ramp for support.
5. Move the machine as illustrated right. And then, slowly rotate the upperstructure 180° while keeping the arm fully rolled in.
6. Reverse the machine to the specified position.
7. Rest the front attachment on supports such as wooden blocks placed on the truck flatbed. Also lower the blade onto the deck at this time (if fitted).
8. Stop the engine. Remove the key from the key switch.
9. Place the pilot control shut-off lever in the LOCK position.
10. Cover the openings on the machine to prevent wind and/or rain from coming in.



MADB-06-001



MABA-06-003

CAUTION: In cold weather, be sure to warm up the machine before loading or unloading.

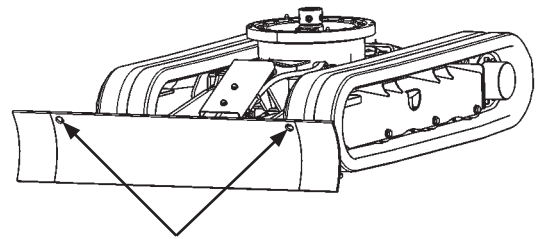
TRANSPORTING

Fastening Machine for Transporting

CAUTION:

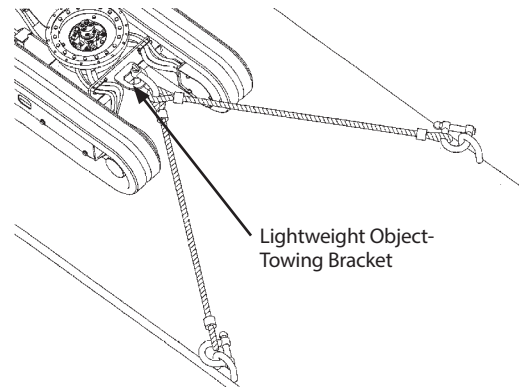
- Securely fasten the machine to the flatbed with wire ropes.
- Fasten the machine using the lightweight object-towing bracket of the truck frame to the truck flatbed with wire ropes. Be careful not to allow the wire rope to come in contact with the track shoe.

1. Place cog stoppers or blocks in front of and behind the tracks to help secure the unit.
2. Fasten each corner of the machine and front attachment to the truck with appropriate strength of chains or cables.



Transportation Bracket

MABA-06-002

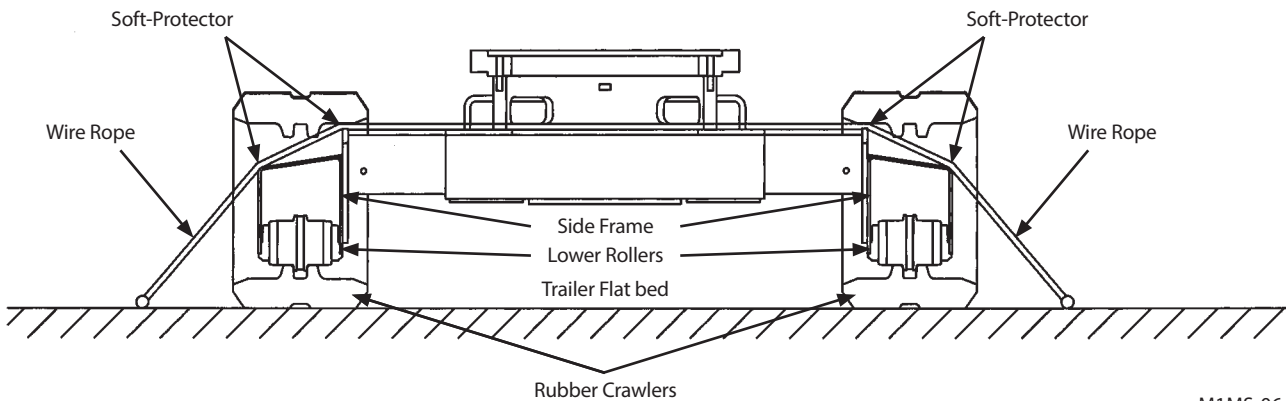


Lightweight Object-Towing Bracket

M1MS-06-003

Transporting the machine equipped with rubber crawlers

When securing the machine to the flatbed, do not directly tighten the rubber crawler with wire ropes. As illustrated below, place soft-protectors against left/right side frame respectively to securely tighten the machine to the flatbed before transporting the machine.



M1MS-06-001

TRANSPORTING

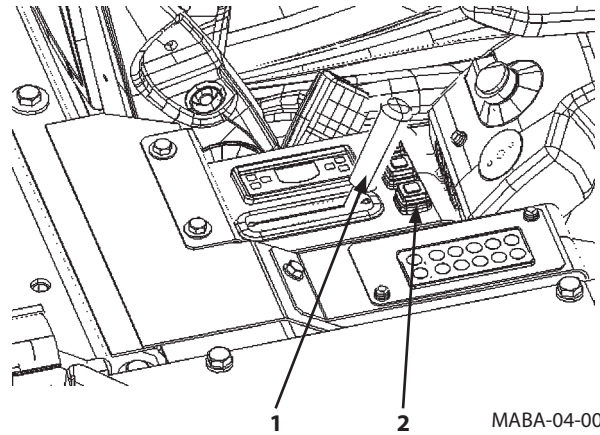
Unloading

WARNING:

- Always travel the machine slowly.

Before descending a slope, always ensure that engine control lever (1) is in the slow idle position, and then reduce the engine speed. Turn the travel mode switch (2) to slow speed for ZX26U-5A.

- Never steer while driving up or down a ramp as it is extremely dangerous and may cause the machine to turnover. NEVER attempt to change directions whilst positioned on the ramp. If repositioning is necessary, first move back to the ground or flatbed, modify traveling direction, and begin to drive again.
- The top end of the ramp where it meets the flatbed is a sudden bump. Take care when traveling over it as the balance may be lost.

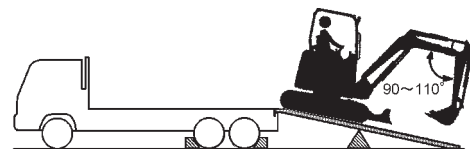


MABA-04-003

IMPORTANT: Make sure that the angle of the boom and the arm is kept at between 90 to 110 ° when unloading the unit.

Damage to the unit is possible if the arm is kept in a suspended state during unloading.

1. Travel extremely slowly with the bucket on the ground and the angle of the arm and the boom kept at between 90 to 110 ° when moving from the edge of the truck onto the ramp.



MADB-06-004

IMPORTANT: When driving the machine over the ramp, do not allow the machine to hit the ground too hard with the arm. Possible damage to the hydraulic cylinders may result.

2. The bucket must be on the ground before the machine begins to tip forward.
3. As the machine moves forward, raise the boom and extend the arm until the machine is completely off the ramp.



MADB-06-005

TRANSPORTING

Lifting Machine



WARNING:

- Use lifting cables and other lifting tools being free from any damage and/or aging, and having sufficient strength.
- Consult your authorized dealer for correct lifting procedures, and the size and types of lifting cable and tools.
- Pull the pilot control shut-off lever to the LOCK position so that the machine does not accidentally move while being lifted.
- Incorrect lifting procedure and/or incorrect wire rope attachment will cause the machine to move while being lifted, resulting in machine damage and/or personal injury.
- Do not lift the machine quickly. Excessive load will be applied to the lifting wire ropes and/or lifting tools, possibly causing them to break.
- Do not allow anyone to come close to or under the lifted machine.
- The indicated gravity center is for the standard specification machine. The gravity center will vary depending on the kinds of attachments and/or optional equipment to be installed or their position to be taken. Therefore, take care not to lose the balance of the machine while lifting.
- Be sure to set the blade position with the engine running. Failure to do so may cause the blade to be moved from the set-position when lifted with a crane.

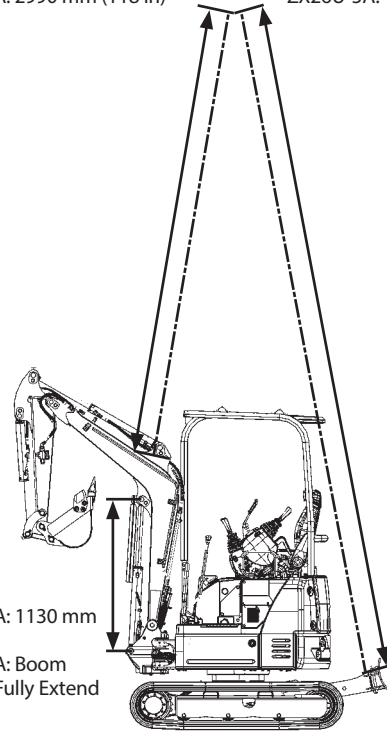
TRANSPORTING

1. Swing the upperstructure so that the blade is positioned at the rear of the counterweight.
2. Fully retract the blade cylinder.
3. Fully extend the boom, arm and bucket cylinders, as illustrated to the right.
4. Position the boom straight ahead of the upperstructure. Apply the boom swing pedal lock.
5. Pull the pilot control shut-off lever to the LOCK position.
6. Stop the engine. Remove the key from the key switch.
7. Set a crane in an appropriate position.
8. Attach shackles to the boom and blade hooks. Securely thread wire ropes through the shackles.
9. Slowly lift the machine so that shock loads will not be applied to the machine. Take sufficient care not to lose the balance of the machine.

ZX17U-5A: 3100 mm (122 in)
ZX26U-5A: 2990 mm (118 in)

ZX17U-5A: 4710 mm (185 in)
ZX26U-5A: 4990 mm (196 in)

ZX17U-5A: 1130 mm
(44 in)
ZX26U-5A: Boom
Cylinder Fully Extend



MABA-06-001