

Hitachi Zaxis 470-5 / 870-5 Hydraulic excavator



OPERATION MANUAL

SAFETY

Prepare for Emergencies

- Be prepared if a fire starts or if an accident occurs.
 - Keep a first aid kit and fire extinguisher on hand.
 - Thoroughly read and understand the label attached on the fire extinguisher to use it properly.
 - To ensure that a fire extinguisher can be always used when necessary, check and service the fire extinguisher at the recommended intervals as specified in the fire extinguisher manual.
- Establish emergency procedure guidelines to cope with fires and accidents.
- Keep emergency numbers for doctors, ambulance service, hospital, and fire department posted near your telephone.



SA-437

Wear Protective Clothing

- Wear close fitting clothing and safety equipment appropriate to the job.

You may need:

A hard hat
Safety shoes
Safety glasses, goggles, or face shield
Heavy gloves
Hearing protection
Reflective clothing
Wet weather gear
Respirator or filter mask.



SA-438

Be sure to wear the correct equipment and clothing for the job. Do not take any chances.

- Avoid wearing loose clothing, jewelry, or other items that can catch on control levers or other parts of the machine.
- Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating the machine.

SAFETY

Never Undercut a High Bank

- The edges could collapse or a land slide could occur causing serious injury or death.



SA-489

Dig with Caution

- Accidental severing of underground cables or gas lines may cause an explosion and/or fire, possibly resulting in serious injury or death.
 - Before digging check the location of cables, gas lines, and water lines.
 - Keep the minimum distance required, by law, from cables, gas lines, and water lines.
 - If a fiber optic cable should be accidentally severed, do not look into the end. Doing so may result in serious eye injury.
 - Contact your local "diggers hot line" if available in your area, and/or the utility companies directly. Have them mark all underground utilities.



SA-382

Operate with Caution

- If the front attachment or any other part of the machine hits against an overhead obstacle, such as a bridge, both the machine and the overhead obstacle will be damaged, and personal injury may result as well.
 - Take care to avoid hitting overhead obstacles with the boom or arm.



SA-389

SAFETY

Remove Paint Before Welding or Heating

- Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch. If inhaled, these fumes may cause sickness.
 - Avoid potentially toxic fumes and dust.
 - Do all such work outside or in a well-ventilated area.
- Dispose of paint and solvent properly.
- Remove paint before welding or heating:
 1. If you sand or grind paint, avoid breathing the dust.
Wear an approved respirator.
 2. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



SA-029

Beware of Asbestos and Silicon Dust and Other Contamination

- Take care not to inhale dust produced in the work site. Inhalation of asbestos fibers may be the cause of lung cancer. Inhalation of silicon dust or other contamination may cause sickness.
 - Depending on the work site conditions, the risk of inhaling asbestos fiber, silicon dust or other contamination may exist. Spray water to prevent asbestos fibers, silicon dust or other contamination from becoming airborne. Do not use compressed air.
 - When operating the machine in a work site where asbestos fibers, silicon dust or other contamination might be present, be sure to operate the machine from the upwind side and wear a mask rated to prevent the inhalation of asbestos, silicon dust or other contamination.
 - Keep bystanders out of the work site during operation.
 - Asbestos fibers might be present in imitation parts. Use only genuine Hitachi Parts.



SA-029

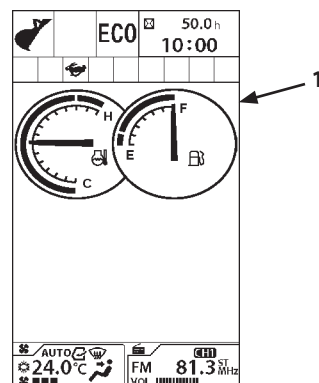
OPERATOR'S STATION

Work Mode

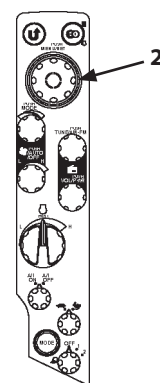
Front attachment is selected in the Work Mode screen under the Work Mode menu in the main menu.

Attachment Selection

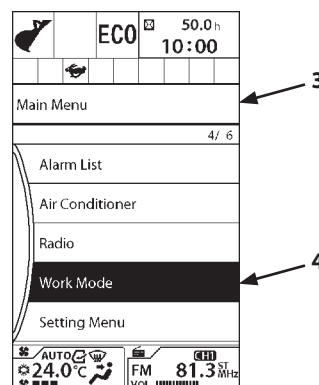
1. Press selector knob (2) while displaying Basic screen (1) to display Main Menu screen (3).
2. Rotate selector knob (2) to highlight Work Mode (4).
3. Press selector knob (2) to display Work Mode screen (5).
4. Rotate selector knob (2) to highlight the desired front attachment.
(In the right example, "Bucket" is highlighted.)
5. Press selector knob (2) to enable the changes.



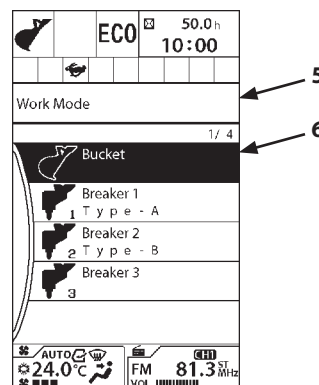
MDAA-01-001EN



MDAA-01-040



MDAA-01-100EN




MJAA-01-009EN

OPERATOR'S STATION

Opening/Closing Upper Front Window (ZX470-5G, 470LC-5G, 870-5G, 870LC-5G)

Opening Upper Front Window


1. Press lock release lever (1) at the upper center to release the upper front window lock.
2. Holding lock release lever (1) at the upper center and lower handle on the upper front window, pull the upper front window up and back until it securely catches into auto locks (3).
3. After confirming that the window securely catches into auto locks (3), slide lock pin (2) into the left bracket boss hole to lock the window in position.

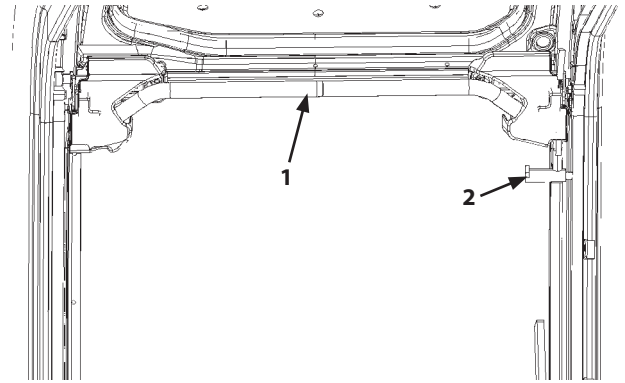
 **NOTE:** When the upper front window is opened, the wiper and washer are inoperable.

CAUTION:

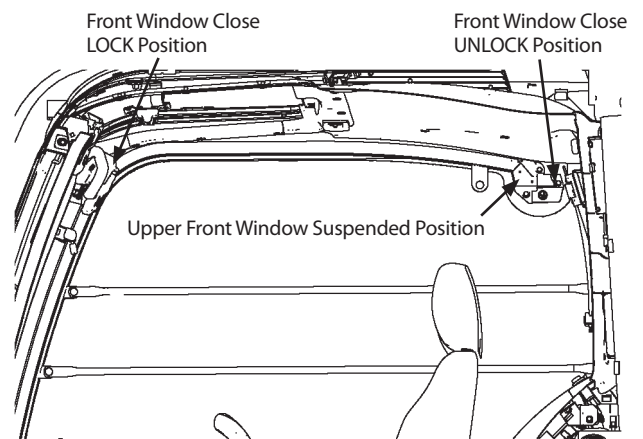
- Slowly close the upper front window so that not to catch your fingers.
 - Always secure lock pin (2) in the lock position after the upper front window is opened.
4. To close the upper front window, by following the steps 1 to 3 in the reverse order. The window stops before it completely closes, so close the front window by pushing release lever (1) upward.

Push release lever (1) downward to release auto lock (3).

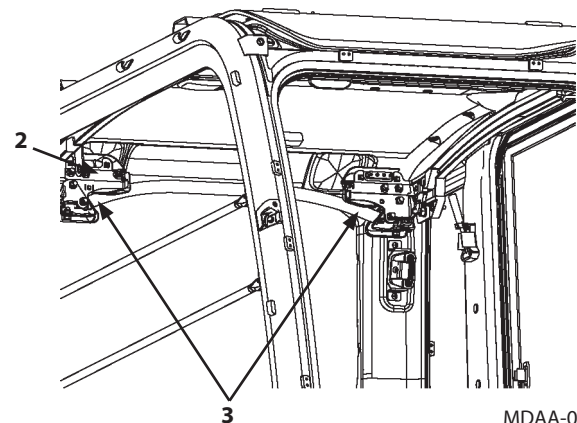
 **NOTE:** Unless the upper front window is securely closed, the wiper and washer will not operate.



M1U1-01-028



MDAA-01-328



MDAA-01-306

DRIVING THE MACHINE

Raise One Track Using Boom and Arm

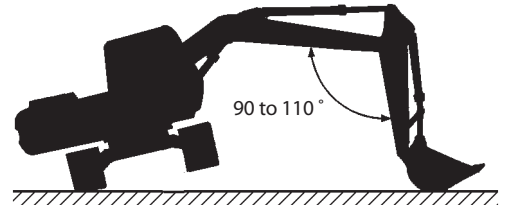
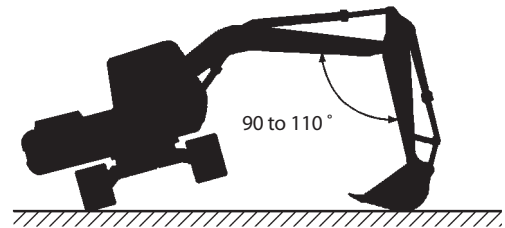
⚠ WARNING: Keep the angle between boom and arm 90 to 110 ° and position the bucket's round side on the ground.

Swing the upperstructure 90 ° and lower the bucket to raise track off ground. Do not dig bucket teeth into the ground when using the hoe bucket reversed.

Place blocks under machine frame to support the machine.

IMPORTANT: When the machine is modified as a face shovel by installing the hoe bucket in reverse, avoid raising the machine above the ground using the front attachment with the bucket cylinder fully extended. Excessive loads will be applied to the pins around the bucket and the bucket cylinder, resulting in breakage of the pins.

(The hoe bucket can not be installed in reverse depending on the machine specification.)



M104-05-013



SA-817

TRANSPORTING

Loading/Unloading

WARNING:

- Always turn the auto-idle switch [A/I OFF] and turn the mode switch to ECO position when loading or unloading the machine. In the auto-idle mode, speed may automatically increase.
- The engine speed may unexpectedly change while performing the muffler filter regeneration. Turn the muffler filter regeneration switch to inhibited position.
- Always select the slow speed mode with the travel mode switch.
- Run the engine at slow idle to ensure the machine travels at a slow pace.
- 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. If the front attachment is not fitted, reverse onto the trailer.
- Extreme care must be taken when swinging the upper structure when the machine is on the trailer flatbed.

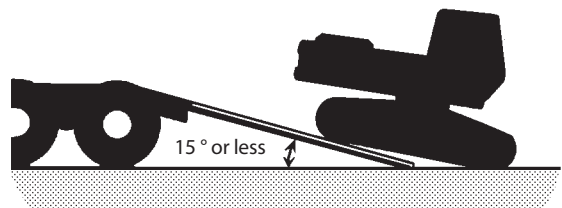
Loading

If the front attachment is not fitted, reverse onto the trailer.

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.

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

3. Securely close cab windows, overhead window, cab door and covers and tighten tank caps to prevent entry of wind and water. Lock all doors, covers and caps if they have a lock. Put covers on the opening of mufflers.
4. Put all mirrors and the radio antenna away correctly.



M107-06-018

MAINTENANCE

Daily Check

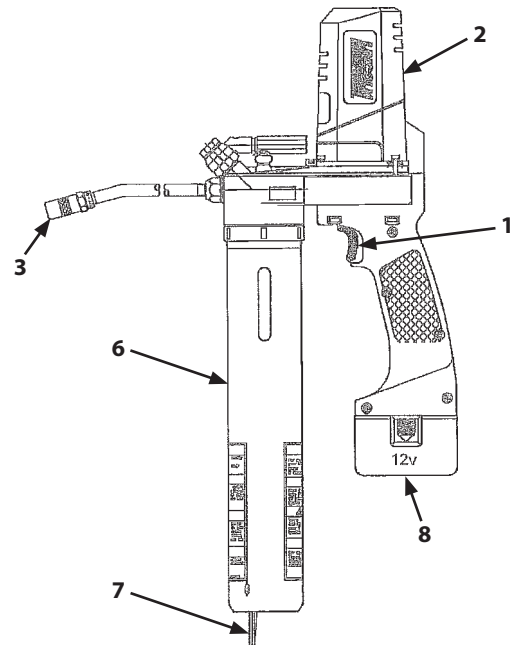
	Check Item	Reference Page
Engine	1. Level of engine oil and coolant	7-43, 86
	2. Starting easiness, exhaust gas color, and noise	
	3. Oil and water leaks, damage to hoses and pipe lines	7-68, 82, 85
	4. Clogging and damage to radiator, oil cooler and intercooler	7-89
	5. Looseness and missing of mounting bolts and nuts	7-115 to 139
	6. Drain Fuel Filter	7-76
Upperstructure	1. Fuel level, leaks, contamination and drainage of fuel in tank	7-72 to 75
	2. Hydraulic oil level, leaks and contamination of hydraulic oil tank	7-56 to 57
	3. Movement, play and operating force of all control levers	
	4. Operation of all hydraulic components, oil leaks and damage to pipe lines and hoses	7-68
	5. Deformation, break and abnormal noise of upper structure	
	6. Looseness and missing of mounting bolts and nuts	7-115 to 139
	7. Washer Fluid	7-111
Undercarriage	1. Sag, wear and break of crawler	7-110, 122, 134
	2. Oil leaks and wear on upper/lower rollers and front idlers	
	3. Oil leaks from travel devices	7-51
	4. Looseness and missing of mounting bolts and nuts	7-115 to 139
Working Device	1. Check cylinders, pipe lines and hoses for oil leaks and damages.	7-68
	2. Wear and damage of the bucket	
	3. Check bucket teeth for looseness, wear and missing	7-103
	4. Lubrication state of the working device	7-25 to 26
	5. Check for pin anti-extraction pins, stoppers, rings and bolts for damage	7-125, 137
	6. Looseness and missing of mounting bolts and nuts	7-115 to 139
	7. Grease leaks and damage of auto-lubrication piping and hoses	
Others	1. Operation of instruments, switches, lights and buzzer/horn	1-6 to 102
	2. Function of parking brake	
	3. Deformation and break of head guard	
	4. Abnormal outside appearance of machine	
	5. Wear and damage of the seat belt	7-108

- Conduct daily check before the machine is operated.

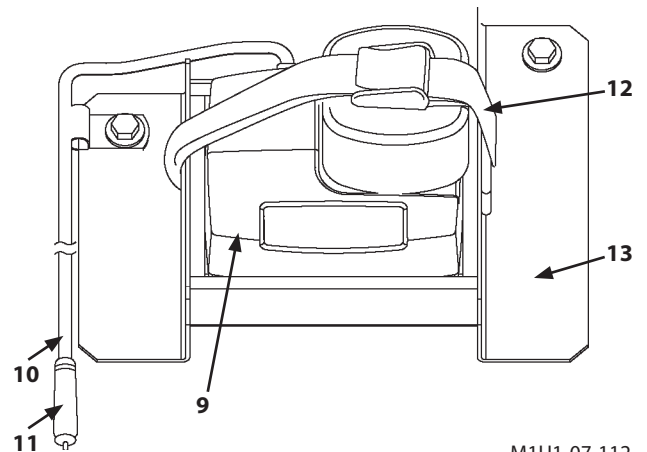
MAINTENANCE

Components Name

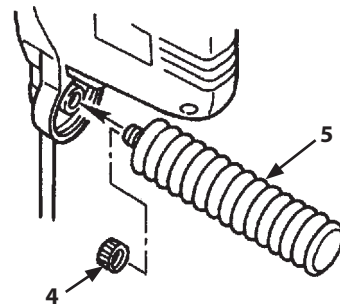
- 1- Switch
- 2- Motor assembly
- 3- Nozzle (CNP-2)
- 4- Cap
- 5- Grease cartridge
- 6- Grease cartridge cylinder
- 7- Chain (Lever)
- 8- Battery pack
- 9- Battery charger
- 10- Code
- 11- Plug
- 12- Band
- 13- Holding bracket



M1U1-07-115



M1U1-07-112



M16J-07-043

MAINTENANCE

2 Water Drain from Hydraulic Oil Tank --- every 250 hours

WARNING: Hydraulic oil becomes hot and pressurized during operation. Severe burns may result if skin comes in contact with escaping hydraulic oil immediately after operation. Start work only after oil temperature cools, or conduct work before operating the machine in the morning.

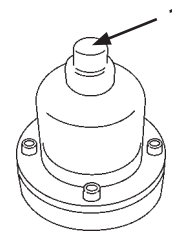
1. Park the machine on a solid level surface and rotate the upperstructure 90° (1/4 turn).
2. Park the machine by following the instructions on page 7-8 "Preparations for Inspection and Maintenance".
3. After leaving the machine without operating to cool the oil temperature, bleed air pressure from the hydraulic oil tank.

CAUTION: Hydraulic oil tank is pressurized. Push air bleed button (1) of the air breather before removing plug (2).

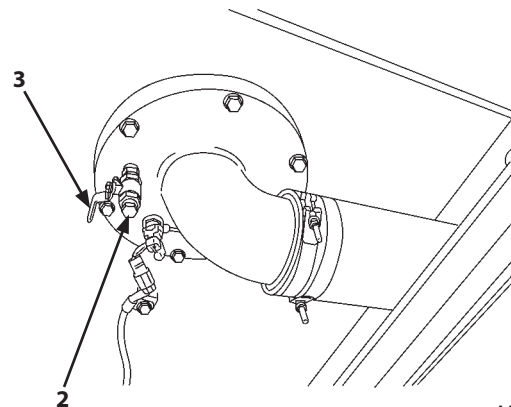
4. Push air bleed valve (1) to bleed air from the hydraulic oil tank.
5. Remove plug (2) from drain cock (3) on the bottom of the hydraulic oil tank and slowly open drain valve (3) to drain water and/or sediment from the hydraulic oil tank.



M104-07-117



M1J1-07-006



M1J1-07-037

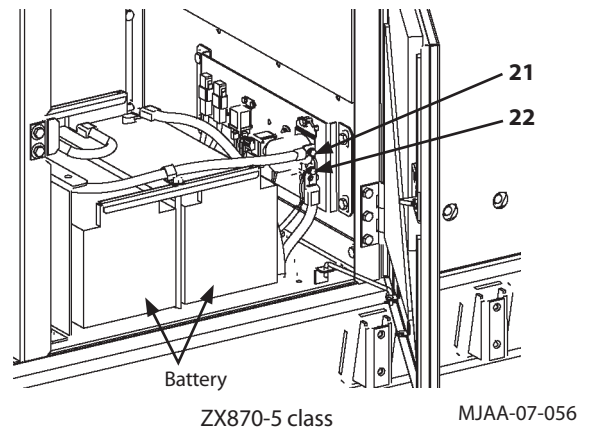
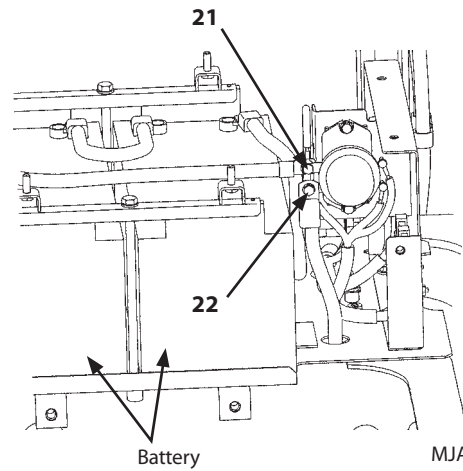
MAINTENANCE

- Fusible Link (Main Fuse)

In case the starter won't rotate even if the key switch is turned to the START position, fusible link may be the cause of the trouble. Remove the cover next to the engine coolant reservoir to check the fuse. Replace it if blown.

21- + Side (Red)
45 A

22- - Side (Black)
65 A

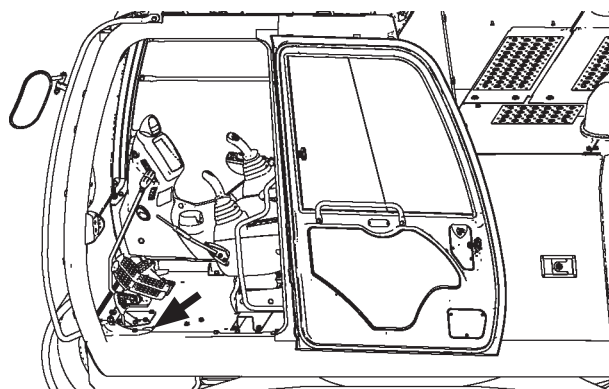


MAINTENANCE

8 Clean Cab Floor --- as required

IMPORTANT: When cleaning the cab floor with tap water, spray the floor only. Take care not to splash the surrounding area. Do not increase water spray speed by restricting the hose end, and do not use high pressure steam for cleaning. Be sure to completely remove any moisture from the surrounding area.

1. Park the machine on solid and level surface. Lower the bucket to the ground. Before cleaning, stop the engine.
2. Sweep the cab floor clean using a brush, and brush dust from the cab floor while spraying water.
3. When cleaning the floor mat, sweep dust (water) along the grooves on the floor mat.
4. When cleaning after removing the floor mat, sweep dust or water through a cleaning hole.



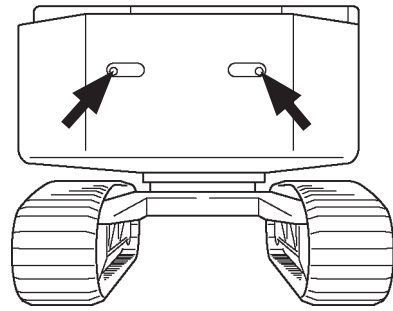
MDAA-07-041

MAINTENANCE

26. Counterweight mounting bolt

Wrench size : 65 mm

Tightening torque : 2800 N·m (280 kgf·m)

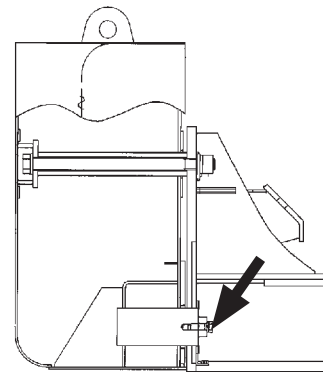


MJAA-07-057

Counterweight retaining bolt

Wrench size : 36 mm

Tightening torque : 700 N·m (70 kgf·m)

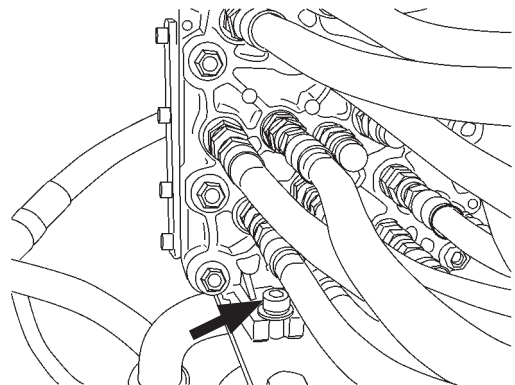


MJAA-07-058

27. Signal control valve mounting bolt

Wrench size : 8 mm Hexagonal socket wrench

Tightening torque : 50 N·m (5.0 kgf·m)



M1J1-07-030