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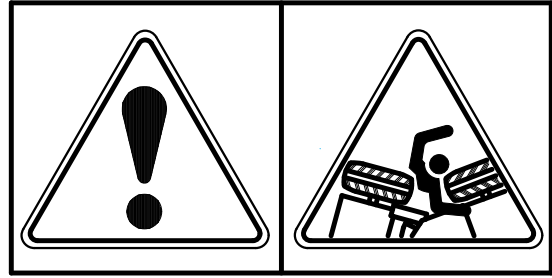
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8) STEERING WARNING (item 11, 12)

The warning label is positioned on the side of the front frame.

- ▲ No clearance for person in this area when machine turns.
- ▲ Severe injury or death from crushing could occur.

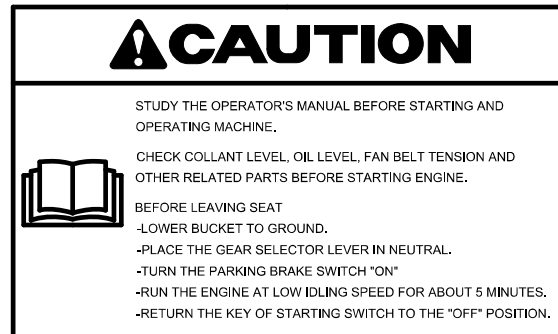


77070FW07

9) ENGINE START CAUTION (item 13)

This warning label is positioned on the right side window of the cab.

- ▲ Study the operator's manual before starting and operating machine.



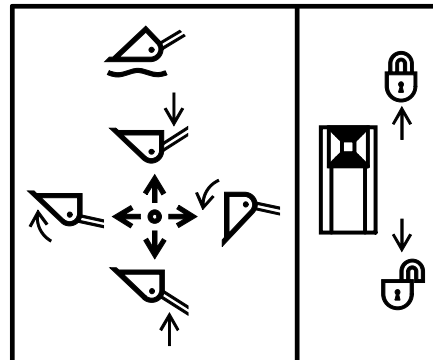
77070FW08

10) CONTROL IDEOGRAM (item 14)

This warning label is positioned on the right side window of the cab.

- ▲ Confirm the operation of control lever and working device before operating the machine.

※ Refer to the page 4-9 for details.

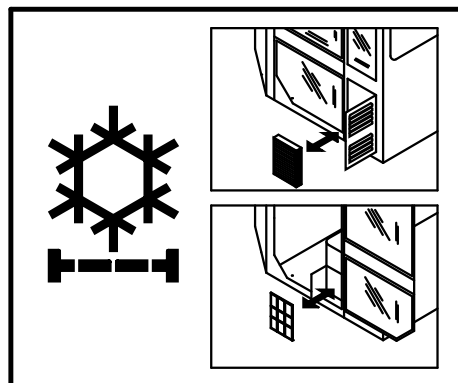


74090FW04

11) AIR CONDITIONER FILTER (item 15)

This warning label is positioned on the washer tank cover.

- ※ Periodic and proper inspection, cleaning and change of filter prolong air conditioner life time and maintain good performance.



77070FW10

PRECAUTIONS FOR ATTACHMENTS

When installing and using an optional attachment, read the instruction manual for the attachment and the information related to attachments in this manual.

Do not use attachments that are not authorized by or your distributor. Use of unauthorized attachments could create a safety problem and adversely affect the proper operation and useful life of the machine.

Any injuries, accidents, product failures resulting from the use of unauthorized attachments will not be the responsibility of Hyundai.

SAFETY RULES

Only trained and authorized personnel can operate and maintain the machine.

Follow all safety rules, precautions and instructions when operating or performing maintenance on the machine.

When working with another operator or a person on worksite traffic duty, be sure all personnel understand all hand signals that are to be used.

SAFETY FEATURES

Be sure all guards and covers are in their proper position. Have guards and covers repaired if damaged.

Use safety features such as the safety lock lever and seat belts properly.

Never remove any safety features. Always keep them in good operating condition.

Improper use of safety features could result in serious bodily injury or death.

Guidelines for Reducing Vibration Levels on Earthmoving Equipment

Properly adjust machines. Properly maintain machines. Operate machines smoothly. Maintain the conditions of the terrain. The following guidelines can help reduce the whole body vibration level :

1. Use the right type and size of machine, equipment, and attachments.
2. Maintain machines according to the manufacturer's recommendations.
 - a. Tire pressures
 - b. Brake and steering systems
 - c. Controls, hydraulic system and linkages
3. Keep the terrain in good condition.
 - a. Remove any large rocks or obstacles.
 - b. Fill any ditches and holes.
 - c. Provide machines and schedule time in order to maintain the conditions of the terrain.
4. Use a seat that meets "ISO 7096". Keep the seat maintained and adjusted.
 - a. Adjust the seat and suspension for the weight and the size of the operator.
 - b. Inspect and maintain the seat suspension and adjustment mechanisms.
5. Perform the following operations smoothly.
 - a. Steer
 - b. Brake
 - c. Accelerate
 - d. Shift the gears.
6. Move the attachments smoothly.
7. Adjust the machine speed and the route in order to minimize the vibration level.
 - a. Drive around obstacles and rough terrain.
 - b. Slow down when it is necessary to go over rough terrain.
8. Minimize vibrations for a long work cycle or a long travel distance.
 - a. Use machines that are equipped with suspension systems.
 - b. Use the ride control system on machines.
 - c. If no ride control system is available, reduce speed in order to prevent bounce.
 - d. Haul the machines between workplaces.
9. Less operator comfort may be caused by other risk factors. The following guidelines can be effective in order to provide better operator comfort:
 - a. Adjust the seat and adjust the controls in order to achieve good posture.
 - b. Adjust the mirrors in order to minimize twisted posture.
 - c. Provide breaks in order to reduce long periods of sitting.
 - d. Avoid jumping from the cab
 - e. Minimize repeated handling of loads and lifting of loads.
 - f. Minimize any shocks and impacts during sports and leisure activities.

Sources

The vibration information and calculation procedure is based on "ISO/TR 25398 Mechanical Vibration-Guideline for whole body vibration exposure of operators of earthmoving equipment. The method is based on measured vibration emission under real working conditions for all machines.

You should check the original directive. This document summarizes part of the content of the applicable law. This document is not meant to substitute the original sources. Other parts of these documents are based on information from the United Kingdom Health and Safety Executive.

MOUNTING AND DISMOUNTING

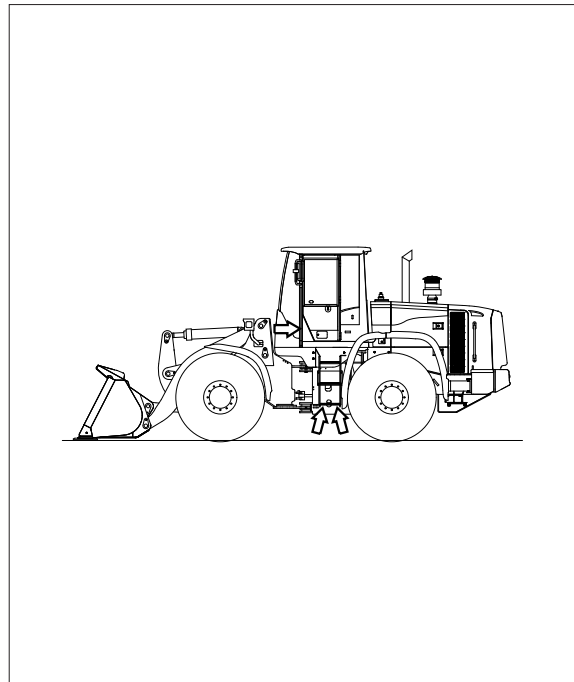
Never jump on or off the machine. Never get on or off a moving machine.

When getting on or off the machine, face the machine and use the handhold and steps.

Never hold any control levers when getting on or off the machine.

Always maintain three-point contact with the handholds and steps to ensure that you support yourself.

If there is any oil, grease, or mud on the handholds, steps or nonslip tapes, wipe it off immediately. Inspect, and as necessary, repair or replace the damaged parts and tighten any loose bolts.

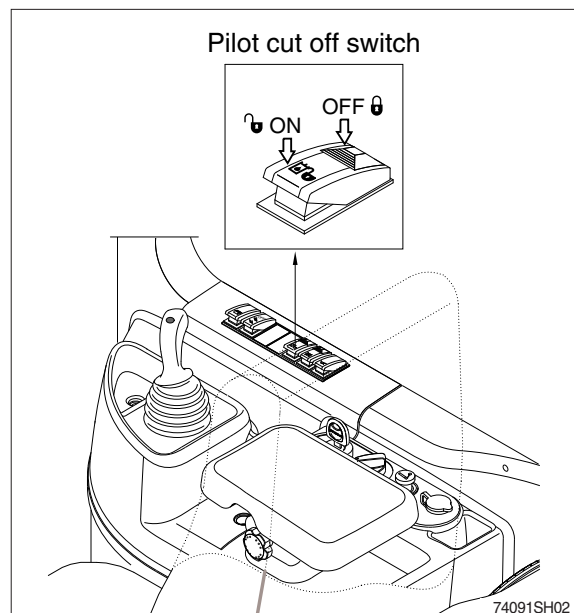


ALWAYS APPLY LOCK WHEN LEAVING OPERATOR'S SEAT

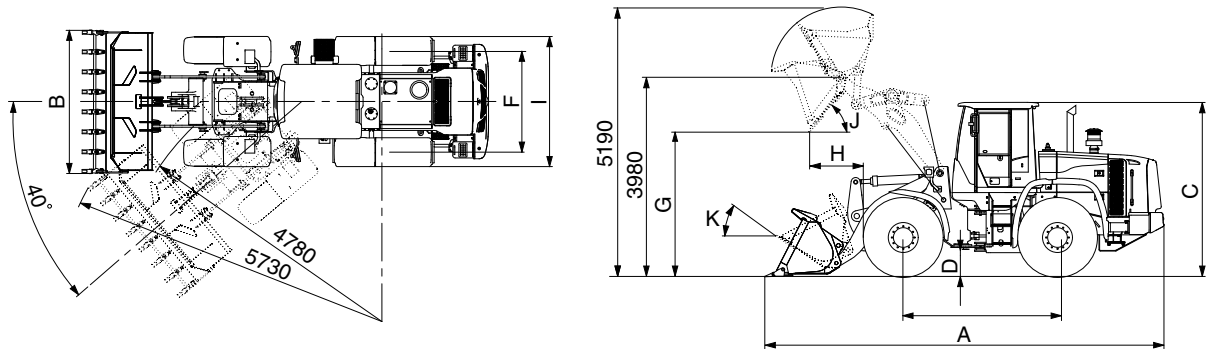
When standing up from the operator's seat, always place the pilot cut off switch to the **OFF** position. If you accidentally touch the RCV lever when they are not locked, the work equipment may suddenly move and cause serious injury or damage.

When leaving the machine, lower the work equipment to the ground, set the pilot cut off switch to the **OFF** position, then stop the engine and use the key to lock all the equipment. Always take the key with you.

※ Refer to the page 3-34 for details.



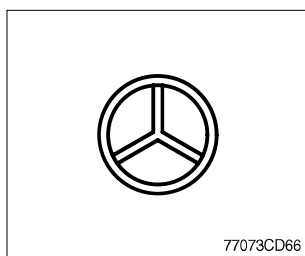
WITH TOOTH TYPE BUCKET (HL730XTD-9A)



7309A2SP04

Description		Unit	Specification	
Operating weight		kg (lb)	10700 (23590)	
Bucket capacity	Struck	m ³ (yd ³)	1.5 (2.0)	
	Heaped		1.8 (2.4)	
Overall length	A	mm (ft-in)	7400 (24' 3")	
Overall width	B		2480 (8' 2")	
Overall height	C		3170 (10' 5")	
Ground clearance	D		370 (1' 3")	
Wheelbase	E		2800 (9' 2")	
Tread	F		1850 (6' 0")	
Dump clearance at 45°	G		2950 (9' 8")	
Dump reach (full lift)	H		1080 (3' 7")	
Width over tires	I		2295 (7' 6")	
Dump angle	J		degree (°)	47
Roll back angle (carry position)	K			49
Cycle time	Lift (with load)	sec	5.4	
	Dump (with load)		1.0	
	Lower (empty)		2.8	
Maximum travel speed		km/hr (mph)	39.2 (24.4)	
Braking distance		m (ft-in)	12 (39' 4")	
Minimum turning radius (center of outside tire)			4.78 (15' 8")	
Gradeability		degree (°)	30	
Breakout force		kg (lb)	9070 (20000)	
Travel speed	Forward	First gear	6.8 (4.2)	
		Second gear	12.4 (7.7)	
		Third gear	24.1 (15.0)	
		Fourth gear	39.2 (24.4)	
	Reverse	First gear	7.2 (4.5)	
		Second gear	13.1 (8.1)	
Third gear		25.3 (15.7)		

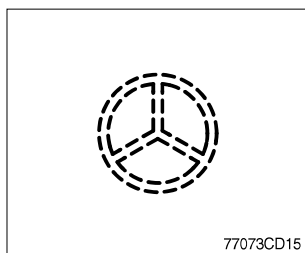
(9) Steering warning lamp



① Primary

This lamp indicates that the primary steering has failed. When the indicator comes on and the action alarm sounds, steer the machine immediately to a convenient location and stop the machine. Stop the engine and investigate the cause.

※ **Do not operate the machine until the cause has been corrected.**



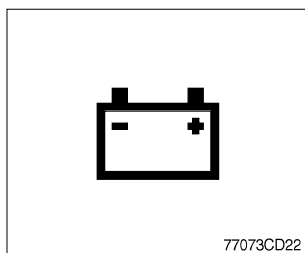
② Emergency

This lamp indicates the emergency steering system is active.

※ **Immediately pull the machine to a convenient stop and stop the engine.**

※ **The emergency steering system can be manually tested. Refer to page 3-36.**

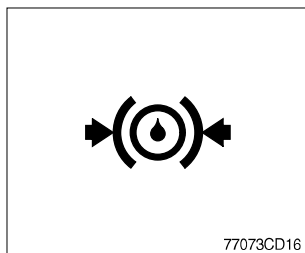
(10) Battery charging warning lamp



① This lamp is ON when key ON, it is turned OFF after starting the engine.

② Check the battery charging circuit when this lamp comes ON, during engine operation.

(11) Brake fail warning lamp

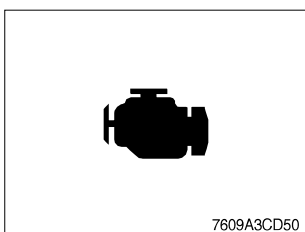


① The lamp lights ON when the oil pressure of service brake drops below the normal range.

② When the lamp is ON, stop the engine and check for its cause.

※ **Do not operate until any problems are corrected.**

(12) Check engine warning lamp



① This lamp lights ON and the buzzer sounds when the communication between MCU and engine ECM on the engine is abnormal, or if the cluster received any fault code from engine ECM.

② Check the communication line between them.

If the communication line is OK, then check the fault codes on the cluster.

(1) Function of sub menu icons

1 Previous step button (same as ESC function)

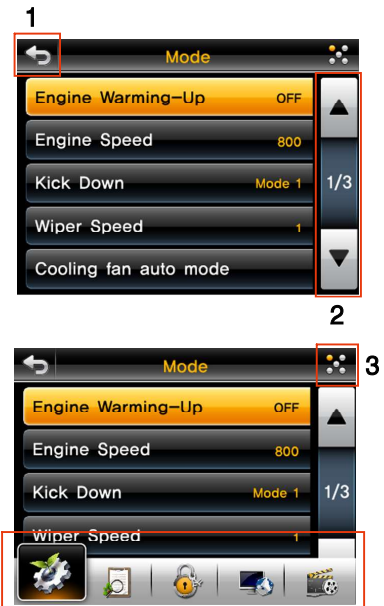
- Move to previous screen.
- Close pop up screen.

2 Scroll

- Display present page/total page.
- Move to page by using up / down arrow button.

3 Move to main menu

- Main menu icon is shown at the below of screen.
- You can choose the main menu directly.



7609A3CD30/31

(2) Mode

① Engine warming up



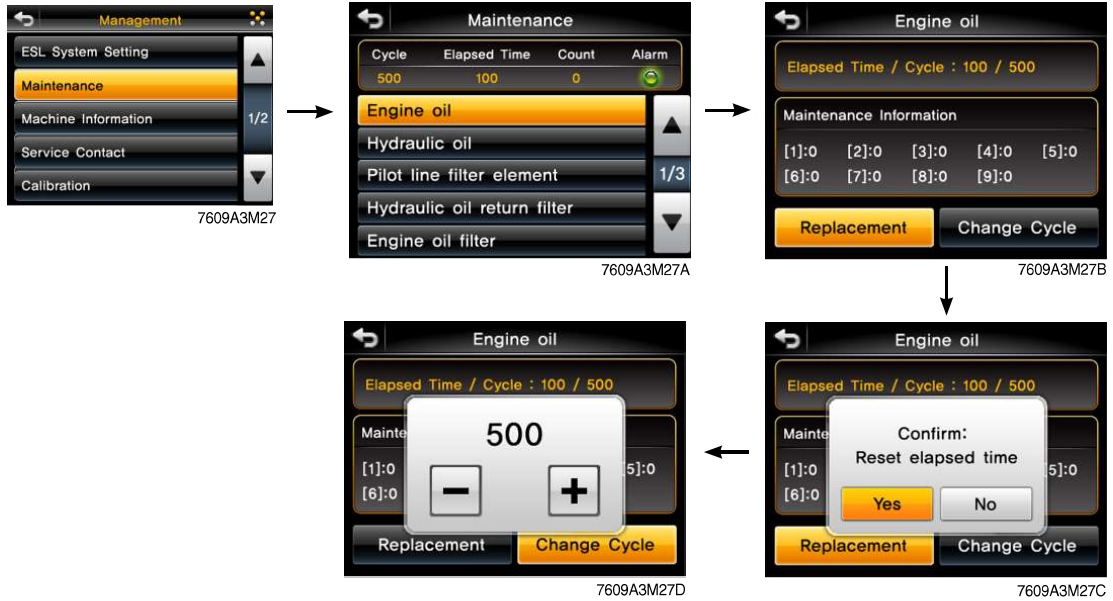
- Setting engine warming-up ON/OFF

② Engine speed



- Setting engine low idle rpm

② Maintenance



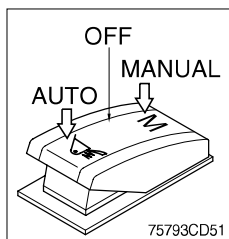
- Alarm : Warning
- Replacement : The elapsed time will be reset to zero.
- Change cycle : The change or replace cycle can be changed in the unit of 50 hours.
- To change cycle, press +/- button (◀ or ▶/OK).
- **Change or replace interval**

No	Item	Interval
1	Engine oil	500
2	Hydraulic oil	★ ¹ 2000 ★ ² 5000
3	Pilot line filter element	1000
4	Hydraulic oil return filter	1000
5	Engine oil filter	500
6	Fuel filter element	500
7	Fuel pre-filter	500
8	Hydraulic tank air breather	250
9	Radiator coolant	2000
10	Transmission oil and filter	1000
11	Axle oil (front and rear)	1500
12	Aircon & heater outer filter	1000
13	Air cleaner element (safety)	4000
14	Air cleaner element (primary)	4000
15	Crankcase ventilation filter	2000

★¹ : Conventional hydraulic oil

★² : Hyundai genuine long life hydraulic oil

12) RIDE CONTROL SWITCH (option)



(1) AUTO

Press in the bottom of the ride control switch in order to turn on the automatic ride control. The automatic ride control automatically turns on when the travel speed exceeds a preset speed of approximately 7 km/h. The automatic ride control automatically shuts off during low speed travel (below 7 km/h).

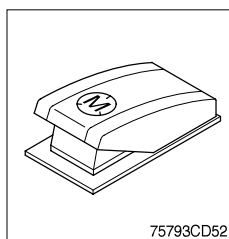
(2) MANUAL

Press in the top of the ride control switch in order to turn on the system for ride control regardless speed. The ride control will smooth the ride of the machine during travel.

(3) OFF

Press the ride control switch to the middle position in order to turn off the system for the ride control.

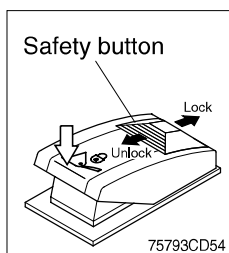
13) EMERGENCY TEST SWITCH (option)



(1) The emergency steering system can be manually tested. Push the switch in order to determine if the emergency steering and the emergency steering lamp are functional.

(2) When the switch is pressed, the emergency steering pump motor will run. The emergency steering lamp will light. If the emergency steering lamp does not light, do not operate the machine.

14) ATTACHMENT LOCK SWITCH (option)



(1) Press this switch in order to engage the quick coupler pins.

(2) If this switch is pressed for 5 seconds, the quick coupler pins move in the engaged position. If the switch is released, the quick coupler pins will remain in the engaged position.

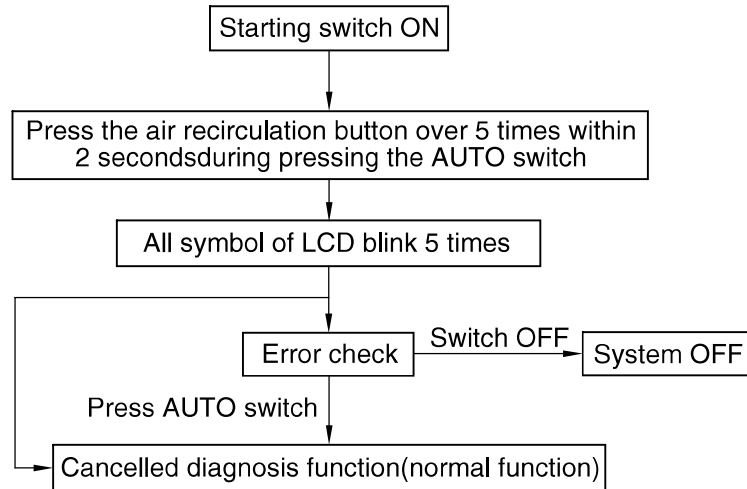
※ **This switch can be pressed only when the safety button is pulled to the unlock position.**

※ **Check for engagement as followings.**

- ① Put down pressure on the attachment.
- ② Back up the machine and make sure that there is no movement between the quick coupler and attachment.

8) SELF DIAGNOSIS FUNCTION

(1) Procedure



3607A3CD69

(2) Error check

- The corresponding error code flickers on the setup temperature display panel, the other symbol will turn OFF.
- Error code flickers every 0.5 second.
- If error code is more than two, each code flickers 2 times in sequence.
- Error code

Error code	Description	Error code	Description
11	Cabin inside sensor	16	Mode actuator 1
12	Ambient sensor	17	Mode actuator 2
14	Duct (evaporator) sensor	18	Intake actuator
15	Temp actuator	-	-

(3) Fail safe function

Error description	Fail safe function
Cabin inside sensor (11)	25°C alternate value control
Ambient sensor (12)	20°C alternate value control
Duct (evaporator) sensor (14)	1°C alternate value control
Temp actuator (15)	If opening amount is 0 %, the alternate value is 0 %
	If not, the alternate value is 100 %
Mode actuator 1, 2 (16, 17)	The alternate value is Vent

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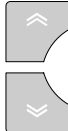














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■ Type B



75793CD62-2

■ FRONT PANEL PRESENTATION

- | | |
|--|--|
| <p>1  Audio selection button</p> <p> Audio selection knob</p> <p>2  Power and volume button</p> <p>3  Mode button
(select RADIO / USB / AUX)</p> <p>4  UP / DOWN tuning button</p> <p>5  Preset memory button 1
DISP ID3 v2 display</p> <p>6  Preset memory button 2
SCN File scan</p> <p>7  Preset memory button 3
RPT Repeat play selector</p> <p>8  Preset memory button 4
RDM Random play selector</p> <p>9  Preset memory button 5
D- Directory down</p> | <p>10  Preset memory button 6
D+ Directory up</p> <p>11  Aux function</p> <p>12  Preset scan (PS)
Best station memory (BSM)</p> <p>13  Audio mute button</p> <p>14  AM / FM button (radio)</p> <p>15  Send</p> <p>16  End</p> <p>17  MIC (microphone)</p> <p>18  Aux connector</p> |
|--|--|

(2) Bluetooth function

① Pairing a bluetooth mobile phone or music player

A bluetooth connection must first be established between your bluetooth mobile phone or bluetooth music player and the bluetooth radio. The first step to connecting the bluetooth radio and bluetooth device is to introduce or "Pair" the bluetooth radio and bluetooth device together.

It is recommended that you have the instruction manual for your bluetooth mobile phone or music player with you during the pairing process described below to understand how to set your device to pair with the bluetooth radio.

- ※ It is recommended that all other bluetooth devices other than mobile phones are switched off during the registration or pairing process.

a. Connection method

- a) Press SEND button for 2 seconds in any mode, **PAIRING** appears on the bluetooth radio display.
 - b) Browse your mobile phone or music player menu to find the **SETTINGS** or **CONNECTIVITY** section to find the bluetooth connection section.
 - c) Find the command that may be called search for bluetooth device or discovery mode so that your bluetooth device can locate all the bluetooth devices within range that may be connected.
 - d) After the search is complete, **HFI AUDIO** should appear on your mobile phone or music player screen.
 - e) Select **CONNECT** or **SELECT** on your mobile phone or music player.
 - f) The mobile phone or music player should now prompt you to enter a PIN code. Enter 0000 into your bluetooth device and select OK.
 - g) The mobile phone or music player should confirm that it has established a new paired connection with the bluetooth radio.
 - h) The connecting process is now complete.
 - i) If the connecting process is successful, the bluetooth logo appears on the radio display and paired phone name (e.g. Samsung or LG) and **CONNECTED** appear on the display for 2 seconds.
 - j) Your bluetooth device is now ready for use with the bluetooth radio.
 - k) If the pairing failed, **FAIL** appears on the bluetooth radio display.
- ※ (a) The bluetooth radio allows a maximum of 6 bluetooth devices to be paired.
 - (b) Bluetooth technology only allows one phone to be connected to your bluetooth radio at one time.
 - (c) If a bluetooth music player is to be connected together with a mobile phone, refer to the page 3-64, PLAYING MUSIC USING BLUETOOTH AUDIO.
 - (d) Bluetooth connection with a mobile phone is normally established using the Hands-Free Profile (HFP). However, in some cases, the connection may use Head Set Profile (HSP) and some functions may not be available.
 - (e) As each mobile phone or music player brand and model has a different menu structure and control names, you may need to refer to the user manual of your bluetooth device for the correct procedure to connect to another bluetooth device.
 - (f) Once the bluetooth pairing is complete, automatic connection between mobile phone and the bluetooth radio is possible whenever the starting switch is switched ON.

The mobile phone must be set to automatically connect to the bluetooth radio to allow this automatic connection.

■RADIO

(1) Mode button



9403CD104

- ① Repeat press MODE button to select FM1, FM2 or AM.

(2) Manual tuning button



9403CD105

- ① To manually tune to a radio station, simply turn encoder TUNE (2) left or right to increase or decrease the radio frequency.

(3) Auto tuning button



9403CD106



9403CD107

- ① To automatically select a radio station, simply press Seek up or Track down button.

(4) Station preset button



9403CD108



- ① In radio mode, pressing buttons (6) to (11) will recall the radio stations that are memorized. To store desired stations into any of the 6 preset memories, in either the AM or FM bands, use the following procedure :

- a. Select the desired station.
- b. Press and hold one of the preset buttons for more than 2 seconds to store the current station into preset memory. Six stations can be memorized on each of FM1, FM2, and AM.

■ RESET AND PRECAUTIONS

1) Reset function

Interfere noise or abnormal compressed files in the MP3 disc or USB instrument may cause extraordinary operation (or unit frozen/locking up). It's strongly recommended to use appropriate USB storage not cause any malfunction to the audio unit. In the unlikely event that the player fails to operate correctly, try out to reset unit by any of following two methods.

(1) press and hold   simultaneously for about 5 seconds. (without Bluetooth)

Press and hold   simultaneously for about 5 seconds. (with Bluetooth)

(2) Take out the fuse for the audio system in the vehicle once and then plug again.

※ It will be necessary to re-enter the radio preset memories as these will have been erased when the microprocessor was reset.

After resetting the player, ensure all functions are operation correctly.

2) Precautions

When the inside of the car is very cold and the player is used soon after switching on the heater, moisture may form on the disc or the optical parts of the player and proper playback may not be possible.

If moisture forms on the optical parts of the player, do not use the player for about one hour. The condensation will disappear naturally allowing normal operation.

(1) Operation voltage : 9~32 volts DC, negative

(2) Output power : 40 watts maximum (20 watts x 2 channels)

(3) Tuning range

Area	Band	Frequency range	Step
USA	FM	87.5~107.9 MHZ	200K
	AM	530~1710 KHZ	10K
EUROPE	FM	87.5~108.0 MHZ	50K
	AM	522~1620 KHZ	9K
ASIA	FM	87.5~108.0 MHZ	100K
	AM	531~1602 KHZ	9K
LATIN	FM	87.5~107.9 MHZ	100K
	AM	530~1710 KHZ	10K

● AREA Selection :

- To select an area, press and hold related buttons at FM1 band for about 3 seconds.
- USA Area: Press and hold mode + 1DIS buttons for 3 seconds
- EUROPE Area: Press and hold mode + 2 buttons for 3 seconds
- ASIA Area: Press and hold mode + 3RPT buttons for 3 seconds
- LATIN Area: Press and hold mode + 4RDM buttons for 3 seconds.

(4) USB version : USB 1.1

(5) Bluetooth version : V2.1

(6) Bluetooth supported profile :

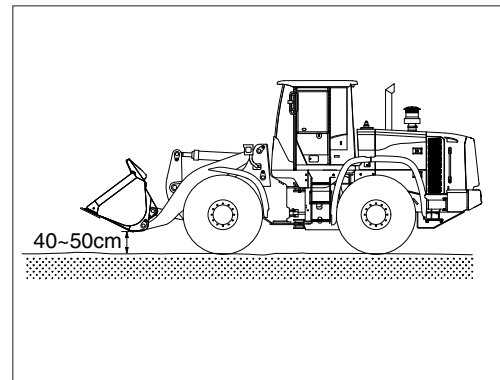
- A2DP : Advanced Audio Distribution Profile
- AVRCP : Audio/Video Remote Control Profile
- HFP : Hands-Free Profile

6. TRAVELING OF THE MACHINE

1) BASIC OPERATION

(1) Traveling posture

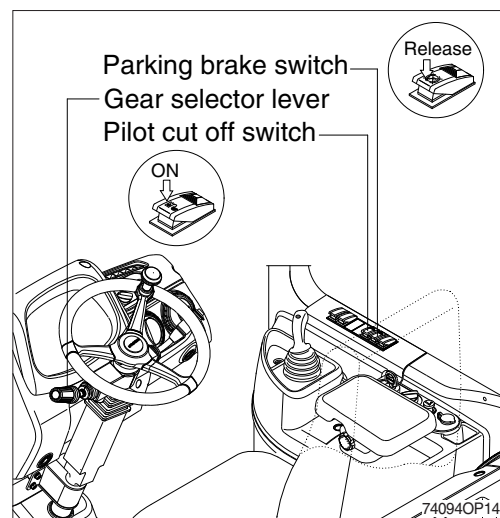
Lift the boom so that the bucket is placed 40-50cm above the ground.



(2) Traveling operation

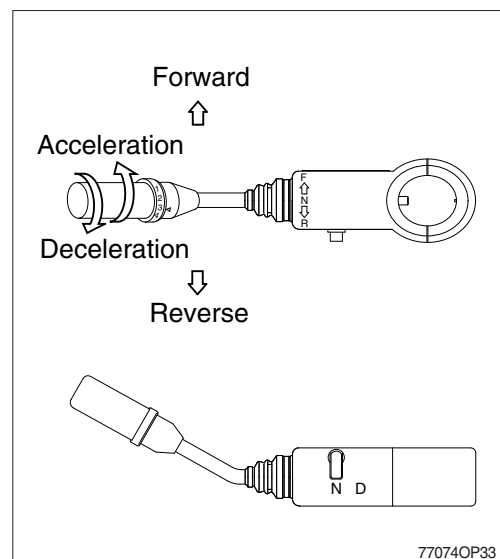
When warm-up operation is completed after the engine is started, move the machine according to the following procedure.

- ① Push the pilot cut off switch to the ON position.
- ② Release the parking brake.
- ③ Put the gear selector lever in the 1st stage of forward or backward direction and press gently the accelerator pedal to move the machine.



(3) Changing direction and speed

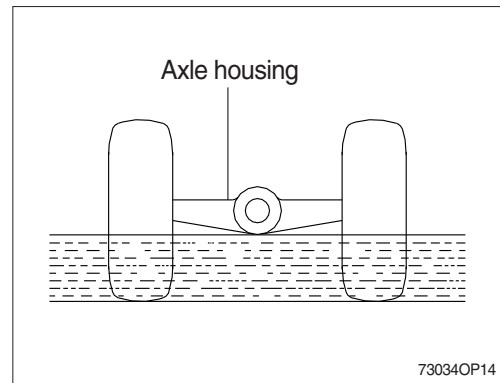
- ① The gear selector is designed for the mounting on the left side of the steering column.
- ② The positions (speeds) 1 to 4 are selected by a rotary motion, the driving direction Forward (F)-Neutral (N)-Reverse (R) by tilting the gear selector lever.
- ③ A neutral lock is installed as protection against inadvertent drive off.
 - Position N - Gear selector lever blocked in this position
 - Position D - Driving
- ④ When doing digging or dumping work, run the machine in the 1st or 2nd speed.



7) PRECAUTIONS DURING OPERATION

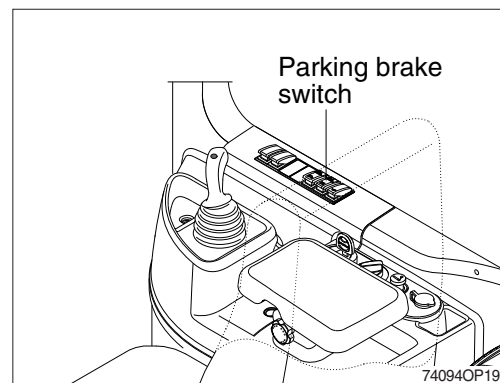
(1) Permissible water level

- ① Do not work in water or damp ground deeper than the permissible depth (Up to lower part of the axle housing).
- ② After the work is completed, grease parts which has been immersed in water.



(2) When the brake does not operate

- ① If the machine does not stop even though the brake pedal is applied, use the parking brake.
- ※ After using the parking brake as an emergency brake, ask Hyundai dealer to check complete brake system.

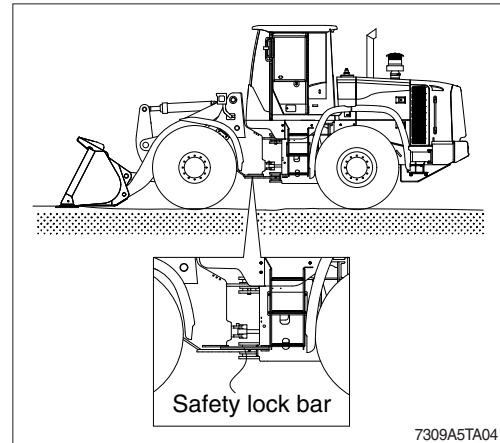


(3) Precautions when driving on a slope

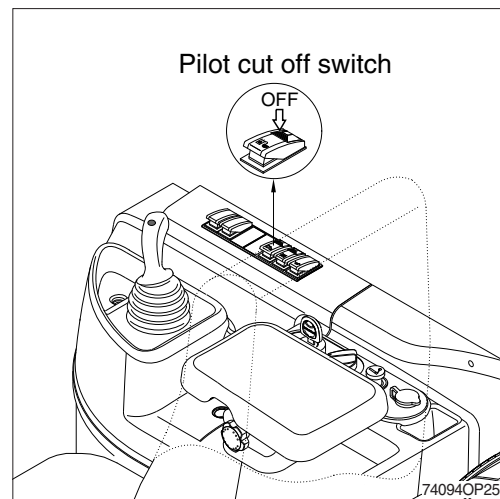
- ① When turn on a slope, lower the work equipment to lower its center of gravity. Avoid turn on a slope if possible.

4. FIXING THE MACHINE

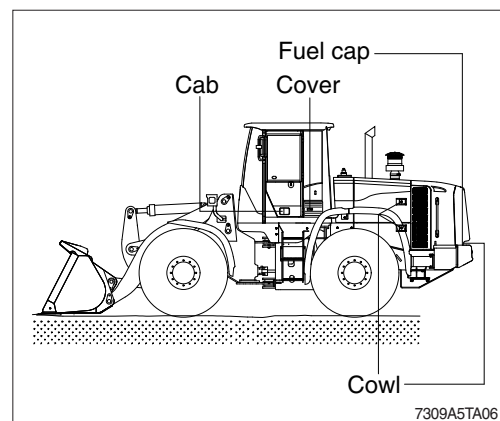
- 1) Fix front and rear frame by linking safety lock bar.
- 2) Push the parking brake switch.



- 3) Push the pilot cut off switch to the OFF position to prevent the hydraulic system from operating.
- 4) Stop the engine, turn the starting switch off and remove the key.



- 5) Secure all locks.



2. TIGHTENING TORQUE

Use following table for unspecified torque.

1) BOLT AND NUT

(1) Coarse thread

Bolt size	8T		10T	
	kg · m	lb · ft	kg · m	lb · ft
M 6 × 1.0	0.85 ~ 1.25	6.15 ~ 9.04	1.14 ~ 1.74	8.2 ~ 12.6
M 8 × 1.25	2.0 ~ 3.0	14.5 ~ 21.7	2.73 ~ 4.12	19.5 ~ 29.8
M10 × 1.5	4.0 ~ 6.0	28.9 ~ 43.4	5.5 ~ 8.3	39.8 ~ 60
M12 × 1.75	7.4 ~ 11.2	53.5 ~ 79.5	9.8 ~ 15.8	71 ~ 114
M14 × 2.0	12.2 ~ 16.6	88.2 ~ 120	16.7 ~ 22.5	121 ~ 167
M16 × 2.0	18.6 ~ 25.2	135 ~ 182	25.2 ~ 34.2	182 ~ 247
M18 × 2.5	25.8 ~ 35.0	187 ~ 253	35.1 ~ 47.5	254 ~ 343
M20 × 2.5	36.2 ~ 49.0	262 ~ 354	49.2 ~ 66.6	356 ~ 482
M22 × 2.5	48.3 ~ 63.3	350 ~ 457	65.8 ~ 98.0	476 ~ 709
M24 × 3.0	62.5 ~ 84.5	452 ~ 611	85.0 ~ 115	615 ~ 832
M30 × 3.0	124 ~ 168	898 ~ 1214	169 ~ 229	1223 ~ 1655
M36 × 4.0	174 ~ 236	1261 ~ 1703	250 ~ 310	1808 ~ 2242

(2) Fine thread

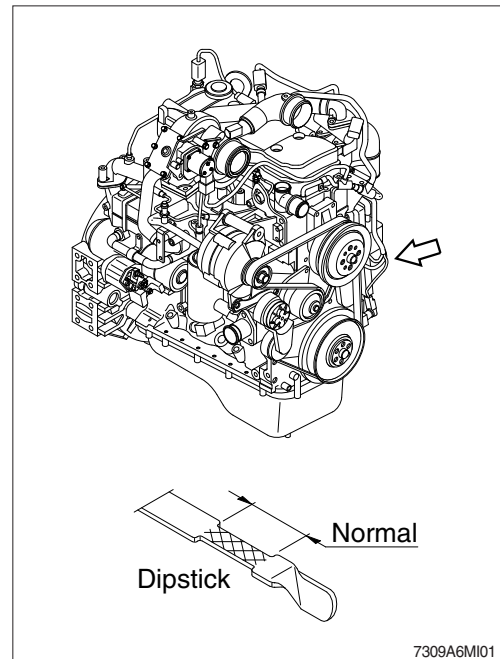
Bolt size	8T		10T	
	kg · m	lb · ft	kg · m	lb · ft
M 8 × 1.0	2.17 ~ 3.37	15.7 ~ 24.3	3.04 ~ 4.44	22.0 ~ 32.0
M10 × 1.25	4.46 ~ 6.66	32.3 ~ 48.2	5.93 ~ 8.93	42.9 ~ 64.6
M12 × 1.25	7.78 ~ 11.58	76.3 ~ 83.7	10.6 ~ 16.0	76.6 ~ 115
M14 × 1.5	13.3 ~ 18.1	96.2 ~ 130	17.9 ~ 24.1	130 ~ 174
M16 × 1.5	19.9 ~ 26.9	144 ~ 194	26.6 ~ 36.0	193 ~ 260
M18 × 1.5	28.6 ~ 43.6	207 ~ 315	38.4 ~ 52.0	278 ~ 376
M20 × 1.5	40.0 ~ 54.0	289 ~ 390	53.4 ~ 72.2	386 ~ 522
M22 × 1.5	52.7 ~ 71.3	381 ~ 515	70.7 ~ 95.7	512 ~ 692
M24 × 2.0	67.9 ~ 91.9	491 ~ 664	90.9 ~ 123	658 ~ 890
M30 × 2.0	137 ~ 185	990 ~ 1338	182 ~ 248	1314 ~ 1795
M36 × 3.0	192 ~ 260	1389 ~ 1879	262 ~ 354	1893 ~ 2561

6. SERVICE INSTRUCTION

1) CHECK ENGINE OIL LEVEL

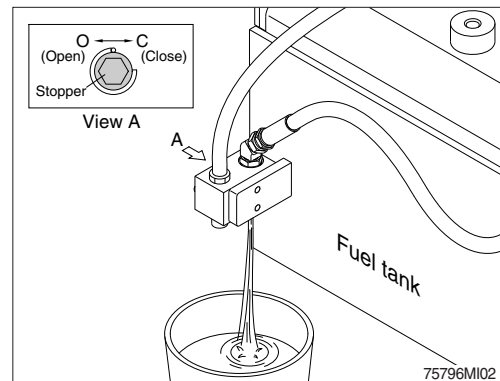
Check the oil level with the machine on a flat ground before starting engine.

- (1) Pull out the dipstick and wipe with a clean cloth.
 - (2) Check the oil level by inserting the dipstick completely into the hole and pulling out again.
 - (3) If oil level is LOW, add oil and then check again.
- ※ If the oil is contaminated or diluted, change the oil regardless of the regular change interval.
 - ※ Check oil level after engine has been stopped for 15 minutes.
 - ▲ Do not operate unless the oil level is in the normal range.

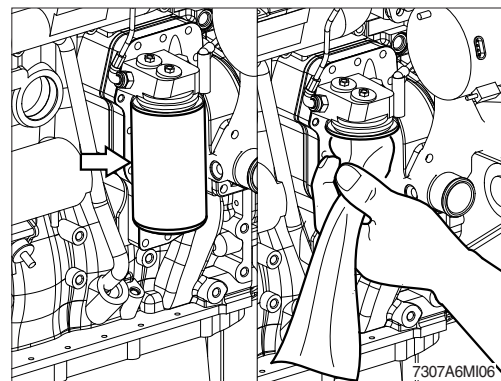


2) REPLACEMENT OF ENGINE OIL AND OIL FILTER

- (1) Operate the engine until the coolant temperature reaches 60°C (140°F). Shut off the engine.
 - (2) Turn the stopper to the open position and allow the oil to drain.
 - Wrench size : 10 mm
- ※ A drain pan with a capacity of 20 liters (5.3 U.S.gallons) will be adequate.

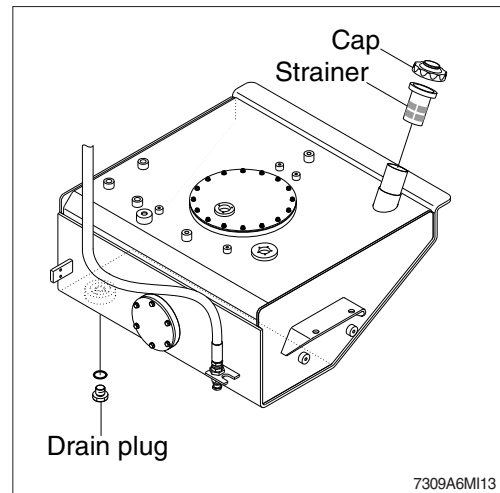


- (3) Clean the area around the oil filter head.
 - (4) Use oil filter wrench to remove the oil filter.
 - (5) Clean the gasket surface of oil filter head.
- ※ The O-ring can stick on the filter head; make sure it is removed.



11) FUEL TANK

- (1) Fill fuel fully when system the operation to minimize water condensation, and check it with fuel gauge before starting the machine.
 - (2) Drain the water and sediment in the fuel tank by opening the drain cock.
 - ※ Be sure to LOCK the cap of fuel tank.
 - ※ Remove the strainer of the fuel tank and clean it if contaminated.
- ▲ Stop the engine when refueling.**
All lights and flames shall be kept at a safe distance while refueling.

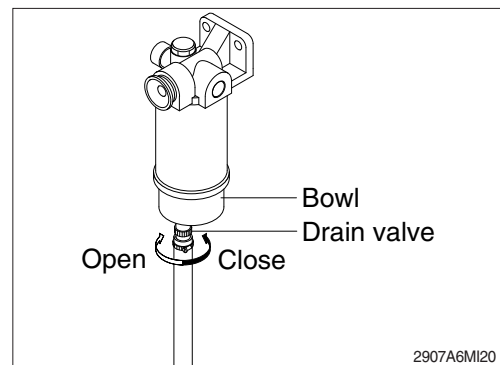


12) PREFILTER

- ※ Inspect or drain the collection bowl of water daily and replace the element every 500hours.

(1) Drain water

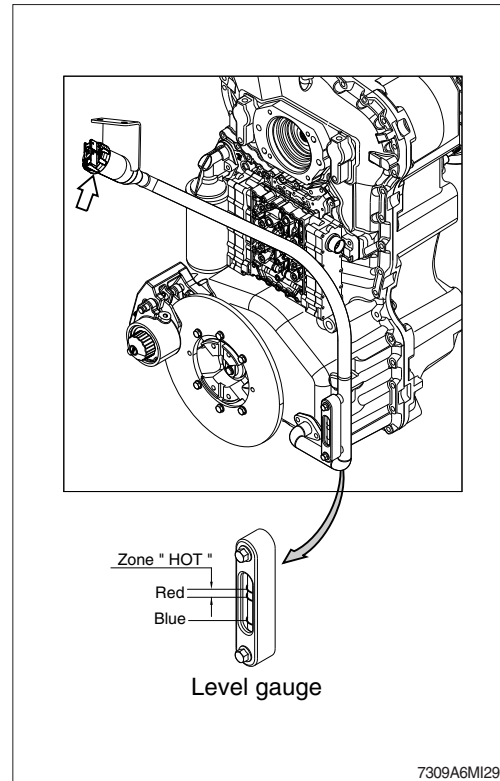
- ① Open bowl drain valve to evacuate water.
- ② Close drain valve.



28) CHECK TRANSMISSION OIL LEVEL

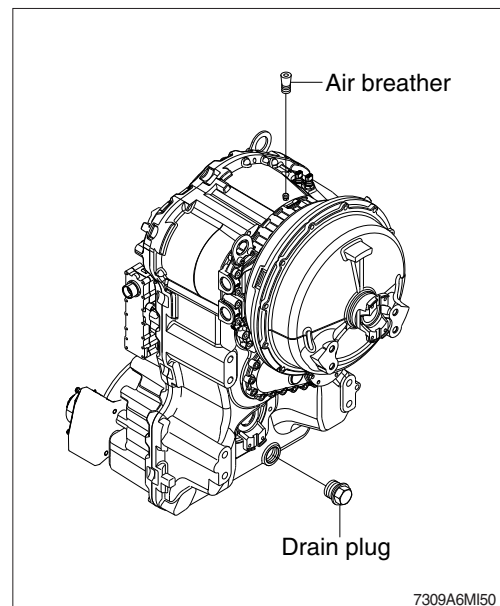
- (1) The oil level check must be carried out as follows; oil level check (weekly).
- (2) Before the oil level check, Transmission must have been running to warm up enough.
- (3) When the oil level is checked, machine must be on flat ground and engine must be at idling speed, transmission must be in neutral position.
- (4) Check the oil level on level (sight) gauge.
- (5) Oil level
 - Operating temperature (about 80~90°C)
:The Oil level must be lying in zone HOT (between two red lines).
 - Cold phase (about 40°C)
:The Oil level must be lying near cold mark (blue line).

▲ When checking, press the parking brake switch and fix the front and rear frames with the safety lock bar.



29) REPLACEMENT OF TRANSMISSION OIL AND FILTER ELEMENT

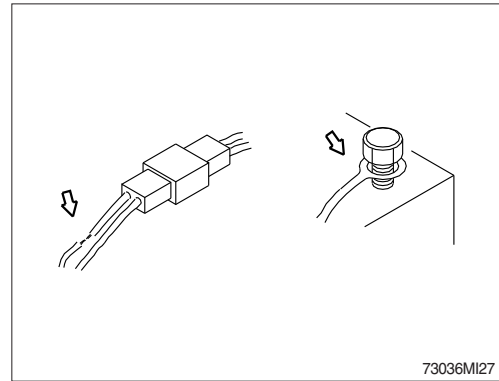
- (1) Operate the machine for a few minutes in order to warm the transmission oil.
- (2) Move the machine to flat ground. Lower the bucket to the ground and slightly apply downward force.
- (3) Press the parking brake switch and stop the engine.
- (4) Open transmission air breather to relieve internal air pressure.
- (5) Remove the transmission drain plug. Allow the transmission oil to drain into a suitable container.



7. ELECTRICAL SYSTEM

1) WIRING, GAUGES

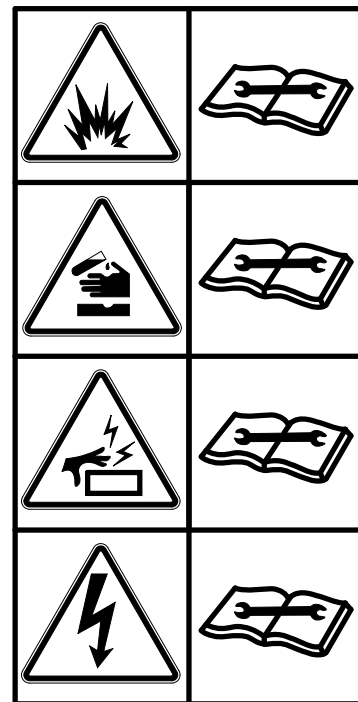
Check regularly and repair loose or malfunctioning gauges when found.



2) BATTERY

(1) Clean

- ① Wash the terminal with hot water if it is contaminated, and apply grease to the terminals after washing.
- ⚠ Battery gas can explode. Keep sparks and flames away from batteries.
- ⚠ Always wear protective glasses when working with batteries.
- ⚠ Do not stain clothes or skin with electrolyte as it is acid.
Be careful not to get the electrolyte in eyes.
Wash with clean water and go to the doctor if it enters the eyes.
- ⚠ Avoid short-circuiting the battery terminals through accidental contact with metallic objects, such as tools, across the terminals.
- ⚠ Do not store tools, bucket tooth and other flammable things in battery box. They could cause a fire.
- ⚠ Tighten the battery terminals securely. Loosened terminals can generate sparks and lead to explosion.
- ⚠ Make sure that the battery terminal's caps always are installed.



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