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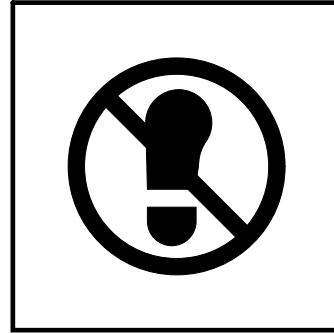
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14) NO STEP-ENGINE HOOD(Item 16)

This warning label is positioned on the engine hood.

- △ Don't step on the engine hood.

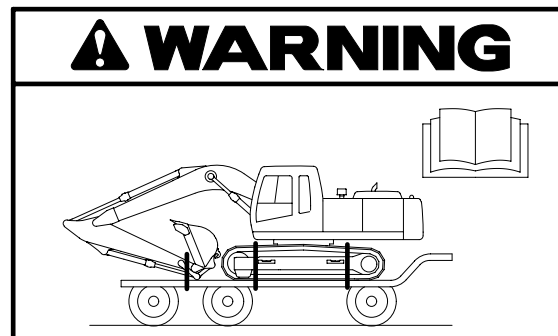


21070FW16

15) TRANSPORTING(Item 17)

This warning label is positioned right side of upper frame.

- ▲ Study the operator's manual before transporting the machine, if provided and tie down arm and track to the carrier with lashing wire.
- i See page 5-7 for details.



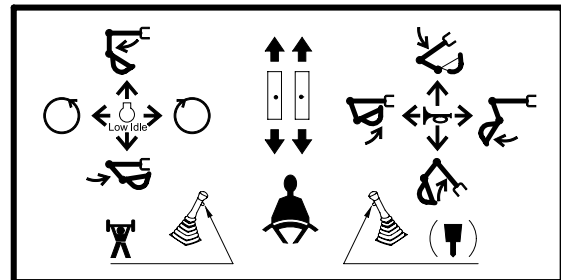
14070FW17

16) CONTROL IDEOGRAM(Item 19)

This warning label is positioned in right window of the cab.

- ▲ Check the machine control pattern for conformance to pattern on this label. If not, change label to match pattern before operating machine.
- ▲ Failure to do so could result in injury or death.

- i See page 4-12 for details.



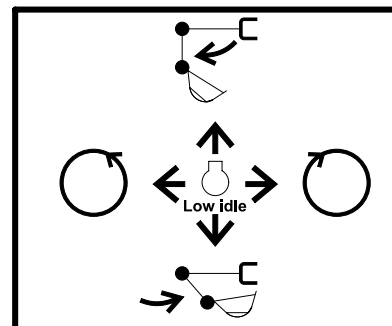
36070FW19

17) CONTROL IDEOGRAM-LH(Item 20)

This warning label is positioned on the LH console box.

- ▲ Check the machine control pattern for conformance to pattern on this label. If not, change label to match pattern before operating machine.
- ▲ Failure to do so could result in injury or death.

- i See page 4-12 for details.



36070FW20

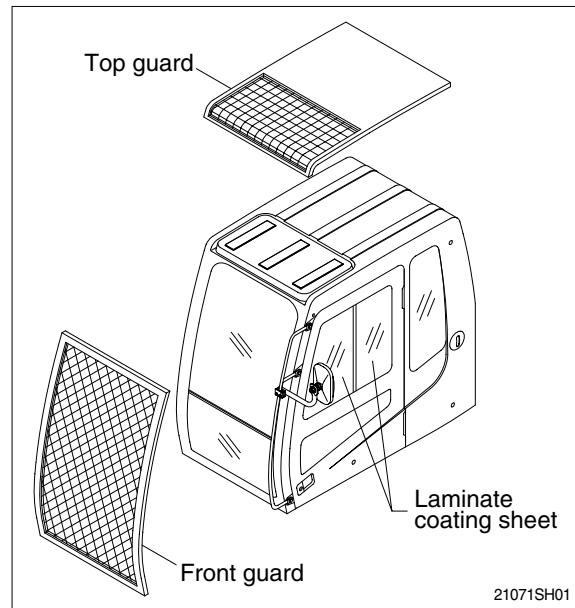
PROTECTION AGAINST FALLING OR FLYING OBJECTS

If there is any danger of falling or flying objects hitting the operator, install protective guards in place to protect the operator as required for each particular situation.

Be sure to close the front window before commencing work.

Make sure to keep all persons other than operator outside the range of falling or flying objects.

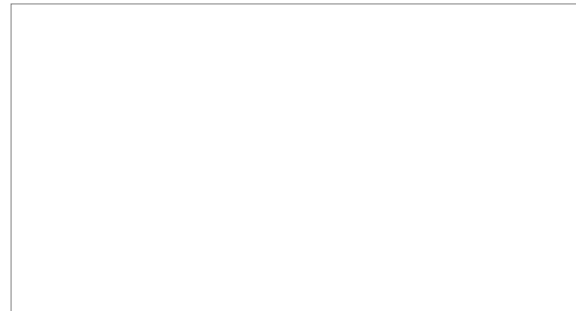
In case you need top guard, front guard and FOPS(Falling object protective structure), please contact Hyundai distributor in Europe.



UNAUTHORIZED MODIFICATION

Any modification made without authorization from Hyundai can create hazards.

Before making a modification, consult your Hyundai distributor. Hyundai will not be responsible for any injury or damage caused by any unauthorized modification.



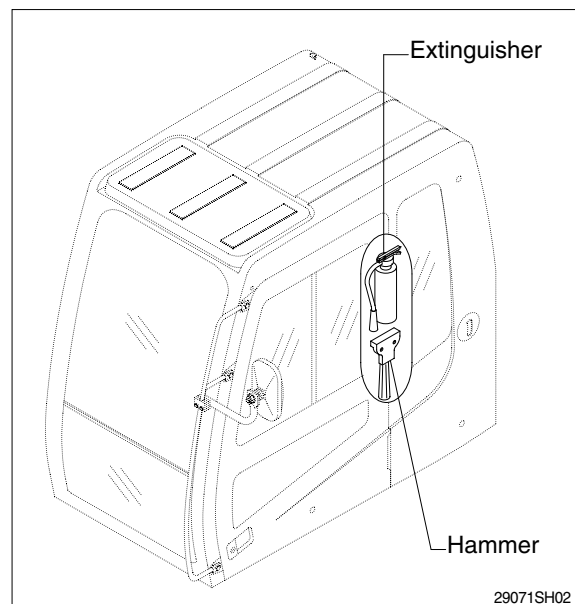
PREPARE FOR EMERGENCY

Only in case of emergency, use the installed hammer for breaking the windshield of the cab, and then exit carefully.

Have a fire extinguisher and first aid kit ready for emergencies such as fires or accidents.

Learn how to use the fire extinguisher.

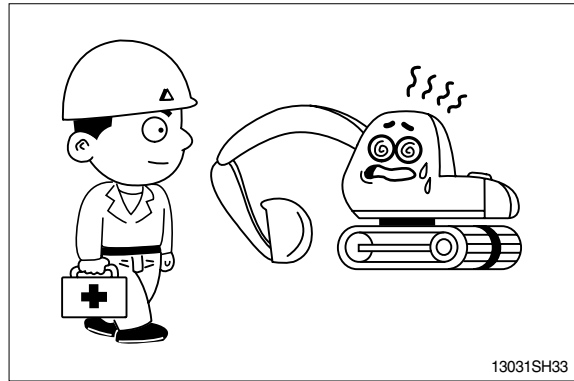
Be sure you know the phone numbers of persons you should contact in case of an emergency.



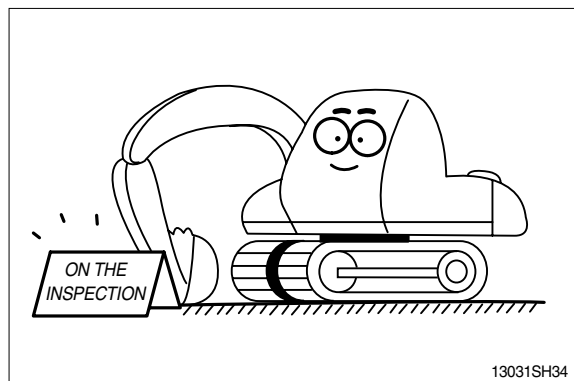
3. DURING MAINTENANCE

Stop the engine immediately when the trouble of the machine is found.

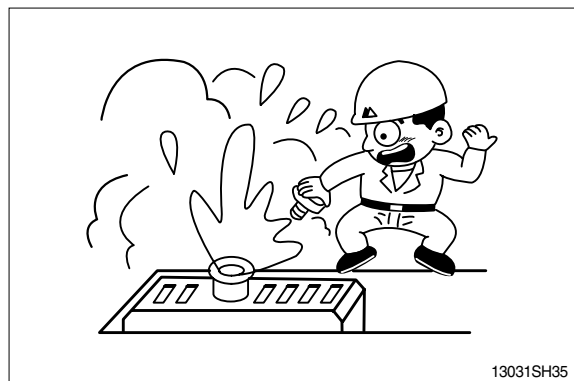
Inspect immediately the cause of trouble such as vibration, overheating and trouble in the cluster then repair.



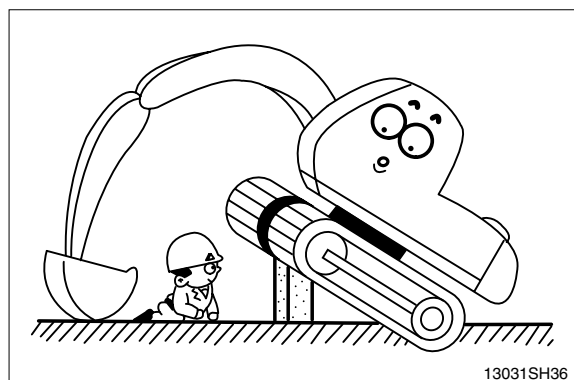
Park on a flat place and stop the engine for inspecting and repairing. Properly TAG machine is not operational. (Remove start key)
Extreme care shall be taken during maintenance work. Parts may require additional safe guard.



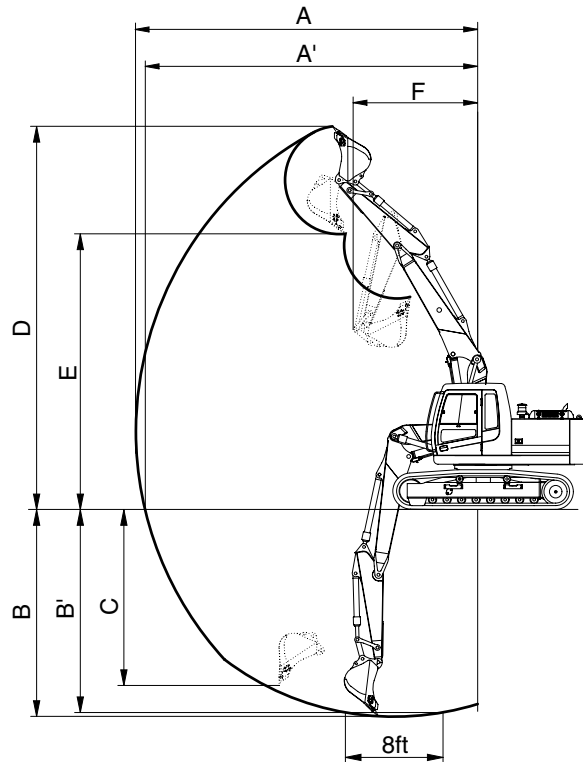
Do not remove the radiator cap from hot engine. Open the cap after the engine cools, below 50° C(122°F) to prevent personal injury from heated coolant spray or steam.



Do not work below the machine.
Be sure to work with proper safety supports.
Do not depend on the hydraulic cylinders to hold up the equipment and attachment.



2) 5.1m(16' 9") HYDRAULIC ADJUSTABLE BOOM



1807A2SP06

Description		2.2m(7' 3") Arm	2.6m(8' 6") Arm
Max digging reach	A	8750mm (28' 8")	9110mm (29'11")
Max digging reach on ground	A'	8600mm (28' 3")	8960mm (29' 5")
Max digging depth	B	5460mm (17'11")	5830mm (19' 2")
Max digging depth (8ft level)	B'	5350mm (17' 7")	5750mm (18'10")
Max vertical wall digging depth	C	4670mm (15' 4")	5030mm (16' 6")
Max digging height	D	9390mm (30'10")	9600mm (31' 6")
Max dumping height	E	6680mm (21'11")	6900mm (22' 8")
Min swing radius	F	3130mm (10' 3")	2970mm (9' 9")
Bucket digging force	SAE	108.6 [118.4] kN	108.6 [118.4] kN
		11070 [12080] kgf	11070 [12080] kgf
		24410 [26630] lbf	24410 [26630] lbf
	ISO	124.5 [135.9] kN	124.5 [135.9] kN
		12700 [13850] kgf	12700 [13850] kgf
		28000 [30550] lbf	28000 [30550] lbf
Arm digging force	SAE	85.2 [93.0] kN	75.0 [81.8] kN
		8690 [9480] kgf	7650 [8350] kgf
		19160 [20900] lbf	16870 [18400] lbf
	ISO	89.0 [97.1] kN	77.6 [84.6] kN
		9080 [9910] kgf	7910 [8630] kgf
		20020 [21840] lbf	17440 [19030] lbf

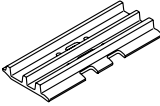
[] : Power boost

7. UNDERCARRIAGE

1) TRACKS

X-leg type center frame is integrally welded with reinforced box-section track frames. The design includes dry tracks, lubricated rollers, idlers, sprockets, hydraulic track adjusters with shock absorbing springs and assembled track-type tractor shoes with triple grousers.

2) TYPES OF SHOES

Model	Shapes		Triple grouser			
						
R180LC-7A	Shoe width	mm (in)	500 (20)	600 (24)	700 (28)	800 (32)
	Operating weight	kg (lb)	17950 (39580)	18200 (40120)	18450 (40680)	18700 (41230)
	Ground pressure	kgf/cm ² (psi)	0.49 (6.97)	0.42 (5.97)	0.36 (5.12)	0.32 (4.55)
	Overall width	mm (ft-in)	2750 (9' 0")	2850 (9' 4")	2950 (9' 8")	3050 (10' 0")
R180LCD-7A	Shoe width	mm (in)	500 (20)	600 (24)	700 (28)	800 (32)
	Operating weight	kg (lb)	19010 (41910)	19260 (42460)	19510 (43010)	19770 (43580)
	Ground pressure	kgf/cm ² (psi)	0.52 (7.39)	0.44 (6.26)	0.38 (5.40)	0.34 (4.83)
	Overall width	mm (ft-in)	2750 (9' 0")	2850 (9' 4")	2950 (9' 8")	3050 (10' 0")

3) NUMBER OF ROLLERS AND SHOES ON EACH SIDE

Item	Quantity
Carrier rollers	2EA
Track rollers	8EA
Track shoes	51EA

3) Warning of main operation screen

(1) Warning display

① Engine coolant temperature



- This lamp blinks and the buzzer sounds when the temperature of coolant is over the normal temperature 105°C (221°F).
- Check the cooling system when the lamp blinks.

② Fuel level



- This lamp blinks and the buzzer sounds when the level of fuel is below 38 l (10.0U.S. gal).
- Fill the fuel immediately when the lamp blinks.

③ Hydraulic oil temperature



- This warning lamp operates and the buzzer sounds when the temperature of hydraulic oil is over 105 °C (221 °F).
- Check the hydraulic oil level when the lamp blinks.
- Check for debris between oil cooler and radiator.

④ All gauge



- This lamp blinks and the buzzer sounds when the all gauge is abnormal.
- Check the each system when the lamp blinks.

⑤ Communication error



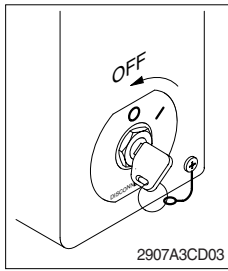
- Communication problem between MCU controller and cluster makes the lamp blinks and the buzzer sounds.
- Check if any fuse for MCU burnt off.
If not check the communication line between them.

(2) Pop-up icon display

No	Switch	Selected mode	Display
1	Work mode switch	General work mode	
		Heavy duty work mode	
		Breaker operation mode	
2	Power mode switch	High power work mode	
		Standard power work mode	

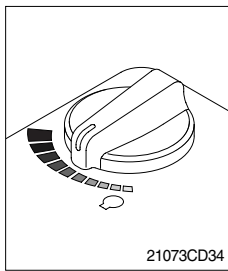
No	Switch	Selected mode	Display
3	Auto deceleration switch	Light ON	
		Light OFF	
4	Travel speed control switch	Low speed	
		High speed	

2) MASTER SWITCH



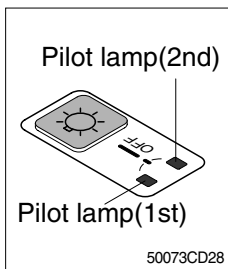
- (1) This switch is used to shut off the entire electrical system.
 - (2) I : The battery remains connected to the electrical system.
O : The battery is disconnected to the electrical system.
- ※ **Never turn the master switch to O(OFF) with the engine running. Engine and electrical system damage could result.**

3) ACCEL DIAL SWITCH



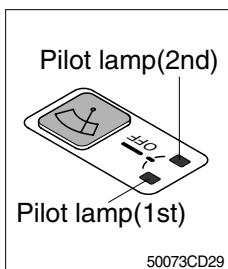
- (1) There are 10 dial setting.
- (2) Setting 1 is low idle and setting 10 is high idle.
 - By rotating the accel dial to right : Engine speed increases
 - By rotating the accel dial to left : Engine speed decreases

4) MAIN LIGHT SWITCH



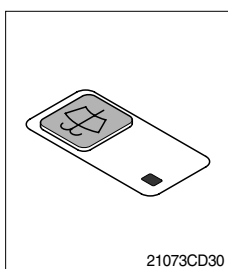
- (1) This switch used to operate the head light and work light.
 - Press the switch once to head light comes ON.
 - Press the switch once more to work light comes ON.
 - Press the switch again, return to a first step position.
 - Press the switch more than one second to turn off lights.

5) WIPER SWITCH



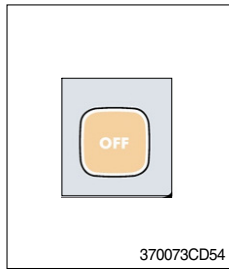
- (1) This switch used to operate wiper.
 - Press the switch once to intermittently operate wiper.
 - Press the switch once more to operate wiper low speed.
 - Press the switch again return to a first step position.
 - Press the switch more than one second to turn off wiper.

6) WASHER SWITCH



- (1) The washer liquid is sprayed and the wiper is operated only while pressing this switch.
- (2) The indicator lamp is turned ON when operating this switch.

1) POWER OFF SWITCH

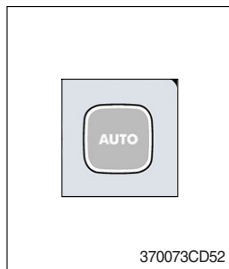


- (1) This switch makes the system and the LED OFF.
Just before the power OFF, setted values are stored.

(2) Default setting values

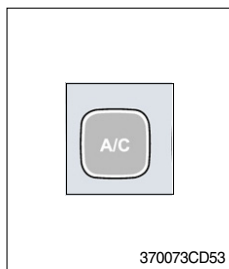
Function	Air conditioner	In/outlet	LCD	Temperature	Mode
Value	OFF	Inlet	OFF	Previous sw OFF	Previous sw OFF

2) AUTO SWITCH



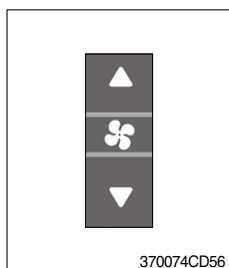
- (1) Turn the starting switch to ON position, LCD lights ON.
Auto air conditioner and heater system automatically keeps the optimum condition in accordance with operator's temperature configuration sensing ambient and cabin inside temperature.
- (2) This switch can restart system after system OFF.

3) AIR CONDITIONER SWITCH(Compressor switch)



- (1) This switch turns the compressor and the LCD ON.
 - (2) In accordance with the temperature sensed by duct(evaporator) sensor, compressor turns ON or OFF automatically.
- ※ **Air conditioner operates to remove vapor and drains water through a drain hose. Water can be sprayed into the cab in case that the drain cock at the ending point of drain hose has a problem.**
In this case, exchange the drain cock.

4) FAN SPEED SWITCH



- (1) Fan speed is controlled automatically by setted temperature.
- (2) This switch controls fan speed manually.
 - There are 8 up/down steps to control fan speed.
 - The maximum step or the minimum step beeps 5 times.
- (3) This switch makes the system ON.
 - ▲ : First step(AUTO)
 - ▼ : First step(Manually)

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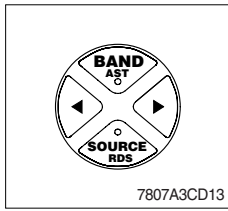
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(4) Source button



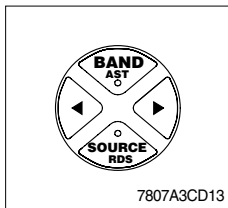
① Press SOURCE to select the desired source :

↻ - TUNER
↻ - CD

※ Products with cassette mechanism will change source to cassette only when a tape is inserted.

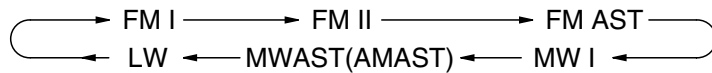
■ RADIO

(1) Wave band / Automatic search button



① WAVEBAND

· Press BAND to select the desired band:



② AUTOMATIC SEARCH

Use search tuning to automatically search for a station.

- Press ◀ to tune a station of a lower frequency or ▶ to a higher frequency.
- To search for another station, press the key again.

③ MANUAL TUNING(If you know the frequency of the required station)

· **To switch to manual tuning :**

Long press the search button ◀ or ▶ for more than 2 seconds will switch the tuning to manual tuning.

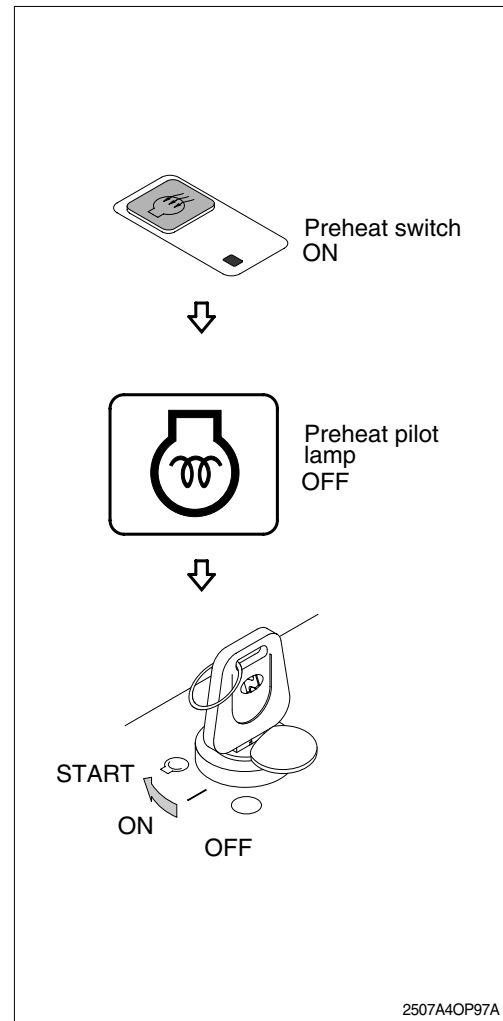
· Then press ◀ to tune to a station of a lower frequency or ▶ to a higher frequency.

· When keys are released, a time-out start to count. After 5 seconds time-out, display 'Auto' for one second and return to automatic search.

3) STARTING ENGINE IN COLD WEATHER

- ※ Sound horn to warn surroundings after checking if there are obstacles in the area.
- ※ Replace the engine oil and fuel referring to recommended oils at page 2-21.
- ※ Fill the anti-freeze solution to the coolant as required.
- ※ If you turn ON the starting switch, the fuel warmer is automatically operated to heat the fuel by sensing the coolant temperature.

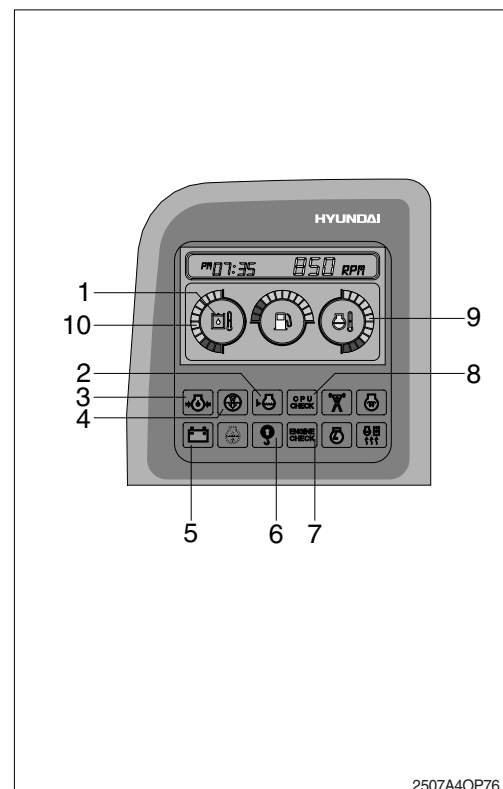
- (1) Check if all the levers are in the neutral position.
 - (2) Turn the starting switch to ON position, and wait 1~2 minutes. More time may take according to ambient temperature.
 - (3) Press the preheat switch ON.
 - (4) Start the engine by turning the starting switch to the START position after the preheat pilot lamp OFF.
- ※ If the engine does not start, allow the starter to cool for about 2 minutes before attempting to start the engine again.
- (5) Release the starting switch immediately after starting engine.
 - (6) The operation for the warming up machine is automatic.



4) INSPECTION AFTER ENGINE START

Inspect and confirm the following after engine starts.

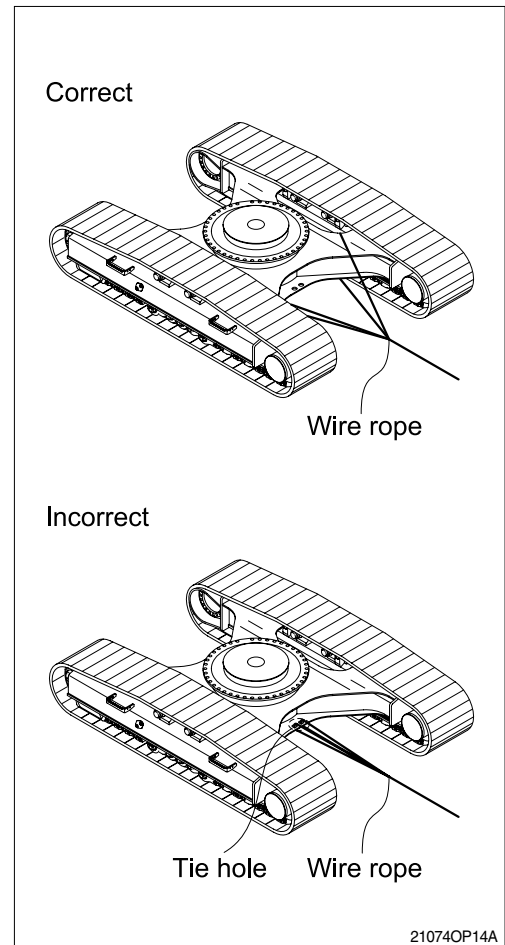
- (1) Is the level gauge of hydraulic oil tank in the normal level?
 - (2) Are there leakages of oil or water?
 - (3) Are all the warning lamps OFF(1-8)?
 - (4) Is the indicator of water temperature gauge(9) and hydraulic temperature gauge(10) in the 2nd~10th step zone?
 - (5) Is the engine sound and the color of exhaust gas normal?
 - (6) Are the sound and vibration normal?
- ※ Do not increase engine speed quickly after starting, it can damage engine or turbocharger.
 - ※ If there are problems in the control panel, stop the engine immediately and correct problem as required.



4) TOWING THE MACHINE

Tow the machine as follows when it can not move on it's own.

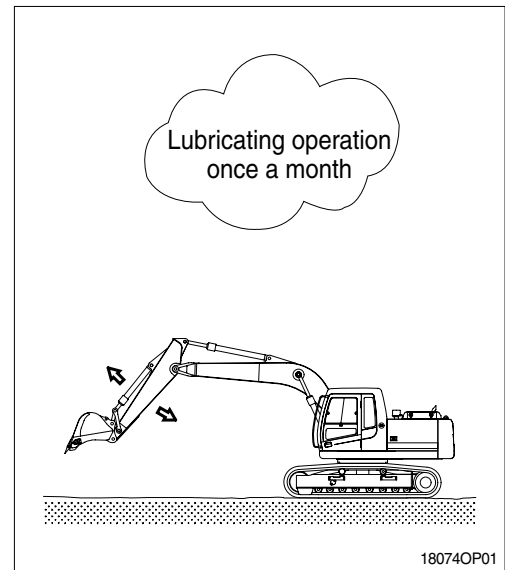
- (1) Tow the machine by other machine after hook the wire rope to the frame as shown in picture at right.
 - (2) Hook the wire rope to the frame and put a support under each part of wire rope to prevent damage.
- ※ **Never tow the machine using only the tie hole, because this may break.**
 - ▲ **Make sure no personnel are standing close to the tow rope.**



6) DURING STORAGE

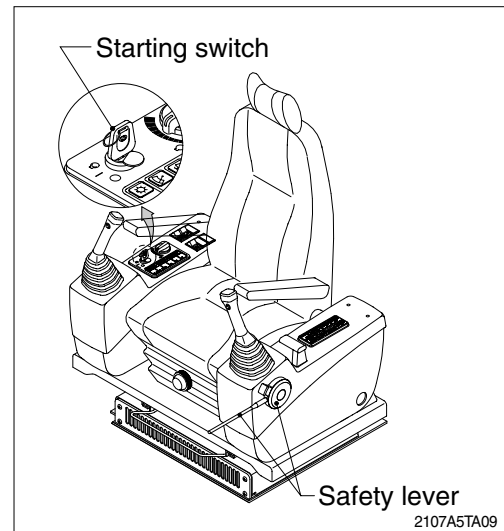
Start engine and move the machine and work equipment once a month and apply lubrication to each part.

- ※ Check the level of engine oil and coolant and fill if required when starting engine.
- ※ Clean the anticorrosive on the piston rod of cylinder.
- ※ Operate the machine such as traveling, swing and work equipment operation to make sure enough lubrication of all functional components.

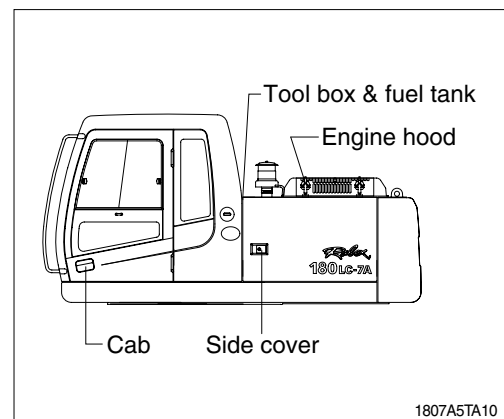


4. FIXING THE MACHINE

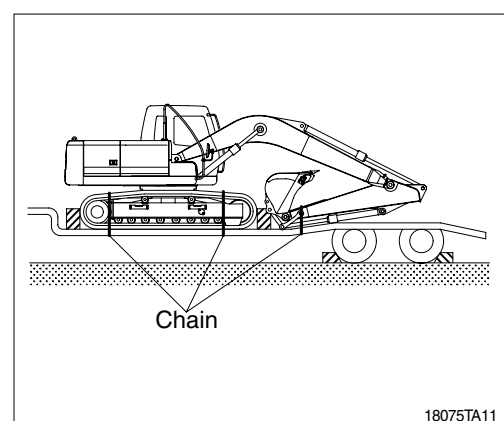
- 1) Place the swing lock lever on the LOCK position.
- 2) Lower down the working device on the loading plate of trailer.
- 3) Keep the safety lever on the LOCK position.
- 4) Turn OFF all the switches and remove the key.



- 5) Secure all locks.



- 6) Place timber underneath of the track and fix firmly with wire rope to prevent the machine from moving forward, backward, right or left.



3. FUEL, COOLANT AND LUBRICANTS

1) NEW MACHINE

New machine used and filled with following lubricants.

Description	Specification
Engine oil	SAE 15W-40(API CH-4)
Hydraulic oil	ISO VG 46(SAE 10W)
Swing and travel reduction gear	SAE 85W-140(API GL-5)
Grease	Lithium base grease NLGI No. 2
Fuel	ASTM D975-No. 2
Coolant	Mixture of 50% ethylene glycol base antifreeze and 50% water.

SAE : Society of Automotive Engineers

API : American Petroleum Institute

ISO : International Organization for Standardization

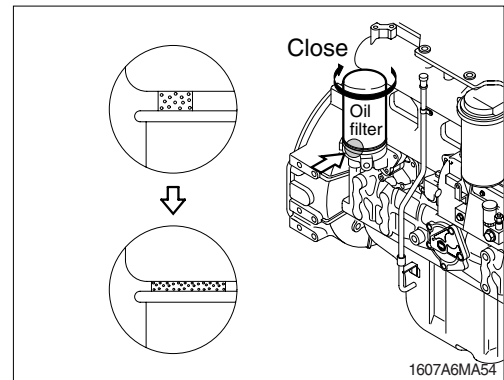
NLGI : National Lubricating Grease Institute

ASTM : American Society of Testing and Material

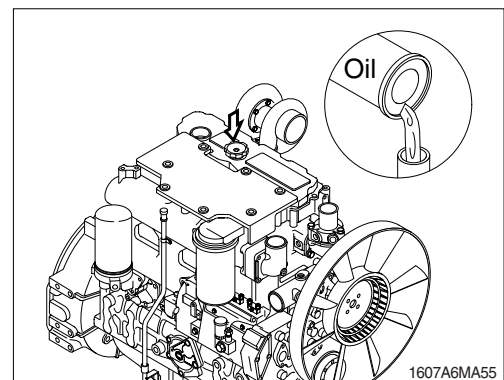
- (4) Apply a light film of lubricating oil to the gasket sealing surface before installing the filters.



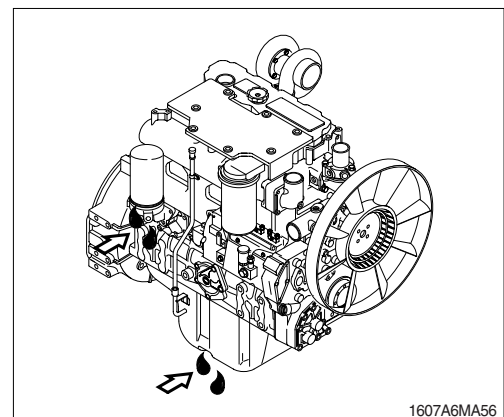
- (5) Install the filter to the filter head.
- ※ **Mechanical over-tightening may distort the threads or damage the filter element seal.**
- Install the filter as specified by the filter manufacturer.



- (6) Fill the engine with clean oil to the proper level.
- Quantity : 18.5 l (4.9U.S.gallons)

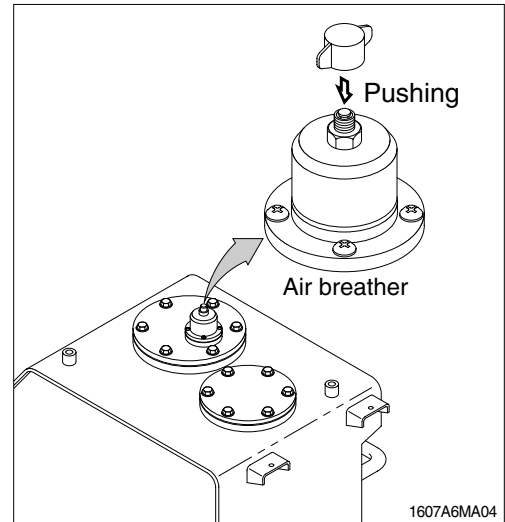


- (7) Operate the engine at low idle and inspect for leaks at the filters and the drain plug.
- Shut the engine off and check the oil level with the dipstick. Allow 15minutes for oil to drain down before checking.



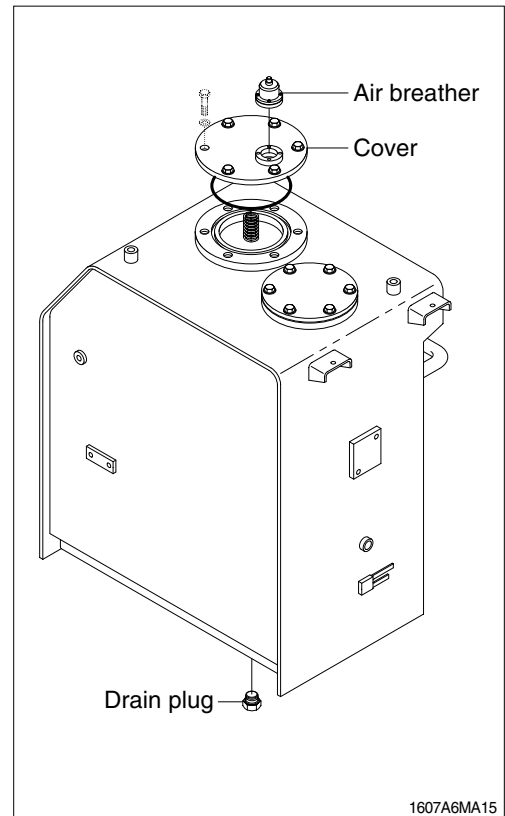
16) FILLING HYDRAULIC OIL

- (1) Stop the engine to the position of level check.
- (2) Loosen the cap and relieve the pressure in the tank by pushing the top of the air breather.
- (3) Remove the breather on the top of oil tank and fill the oil to the specified level.
 - Tightening torque : $1.44 \pm 0.3 \text{kgf} \cdot \text{m}$
($10.4 \pm 2.1 \text{lb} \cdot \text{ft}$)
- (4) Start engine after filling and operate the work equipment several times.
- (5) Check the oil level at the level check position after engine stops.



17) CHANGE HYDRAULIC OIL

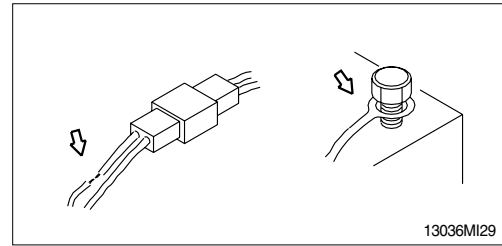
- (1) Lower the bucket on the ground pulling the arm and bucket cylinder to the maximum.
- (2) Loosen the cap and relieve the pressure in the tank by pushing the top of the air breather.
- (3) Remove the cover.
 - Tightening torque : $6.9 \pm 1.4 \text{kgf} \cdot \text{m}$
($50 \pm 10 \text{lb} \cdot \text{ft}$)
- (4) Prepare a suitable container.
- (5) To drain the oil loosen the drain plug at the bottom of the oil tank.
- (6) Fill proper amount of recommended oil.
- (7) Put the breather in the right position.
- (8) Bleed air hydraulic pump loosen the air breather at top of hydraulic pump assembly.**
- (9) Start engine and run continually. Release the air by full stroke of each control lever.



7. ELECTRICAL SYSTEM

1) WIRING, GAUGES

Check regularly and repair loose or malfunctioning gauges when found.



2) BATTERY

(1) Check and repair

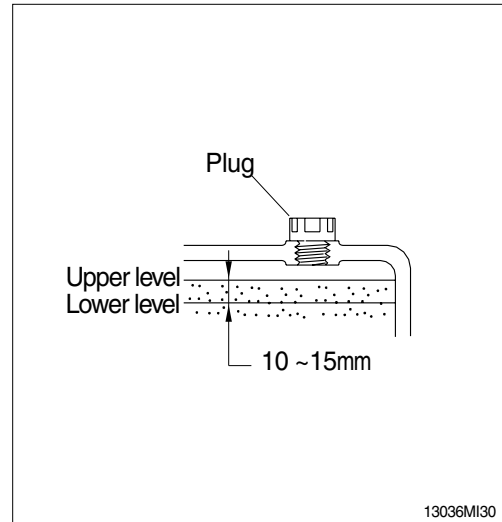
- ① Check the electrolyte level and fill with distilled water to the prescribed level as necessary.
- ② Wash the terminal with hot water if it is contaminated, and apply grease to the terminals after washing.

▲ 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.

※ Remove the fire and spark around battery.

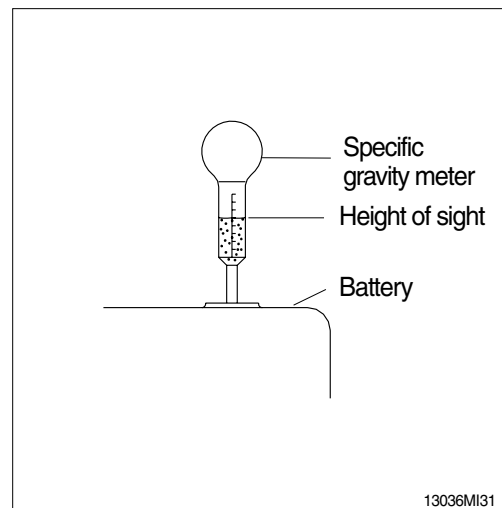


(2) Specific gravity of battery

Judge the charging rate of battery by the specific gravity. The specific gravity changes by the ambient temperature.

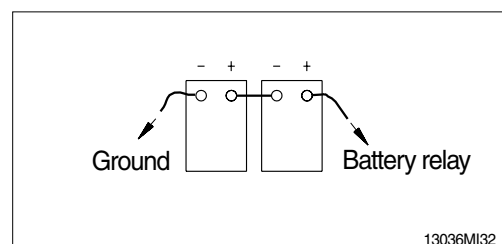
Check the charging rate by referring to the chart below.

Temperature	20°C (68°F)	10°C (50°F)	-10°C (14°F)
Charging rate			
100%	1.26	1.27	1.28
90%	1.24	1.25	1.26
80%	1.22	1.23	1.24
75%	1.21	1.22	1.23



(3) Method of removing the battery cable

Remove the cable from the ground connection first(⊖ terminal side) and reconnect it last when reassembling.



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