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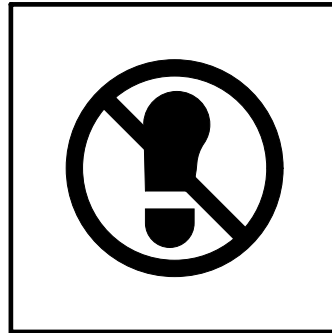
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14) NO STEP-ENGINE HOOD(Item 16)

This warning label is positioned on the engine hood.

△ Don't step on the engine hood.



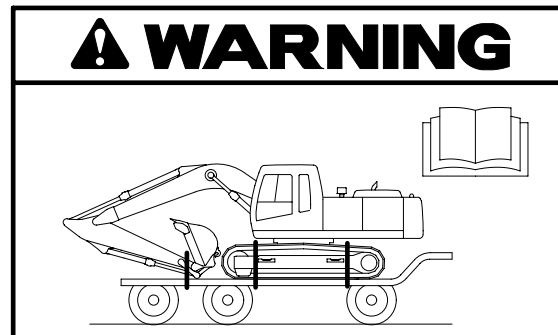
21070FW16

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.

※ See page 5-6 for details.



14070FW17

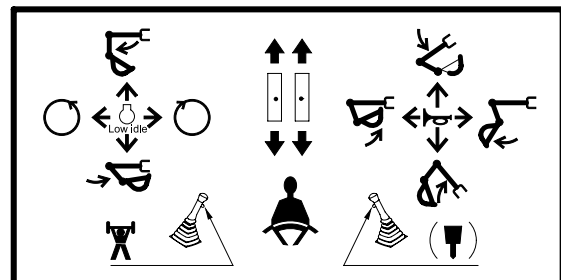
16) CONTROL IDEOGRAM(Item 19)

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.

※ See page 4-11 for details.



36070FW19

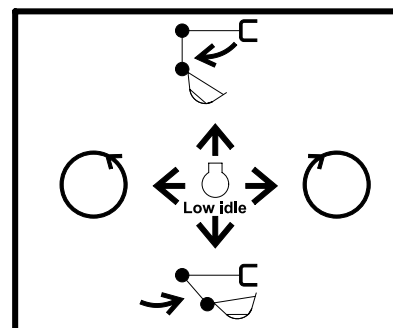
17) CONTROL IDEOGRAM-LH(Item 20)

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.

※ See page 4-11 for details.

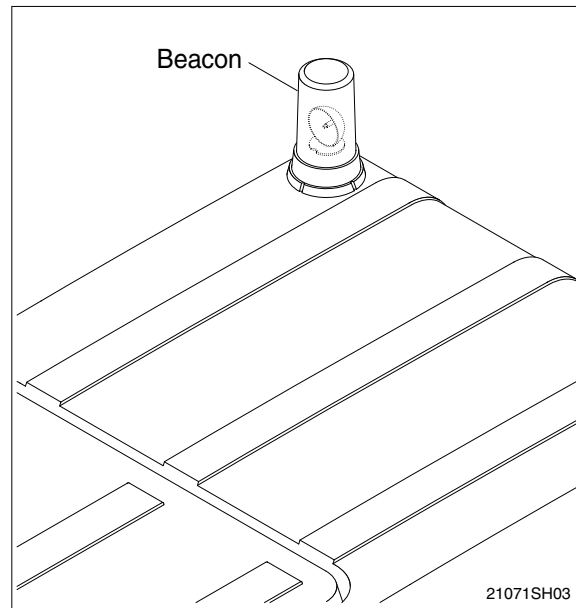


36070FW20

ROTATING BEACON

When you operate a machine on a road or beside a road, a rotating beacon is required to avoid any traffic accident.

Please contact your Hyundai distributor to install it.

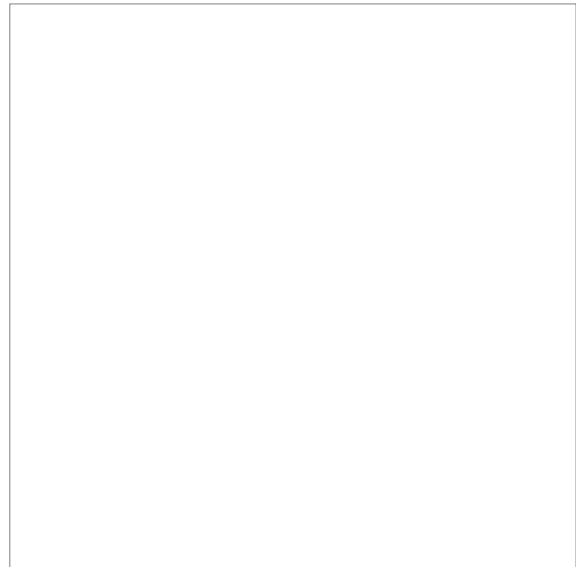


PRECAUTIONS FOR ATTACHMENTS

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 Hyundai or your Hyundai 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 are not the responsibility of Hyundai.

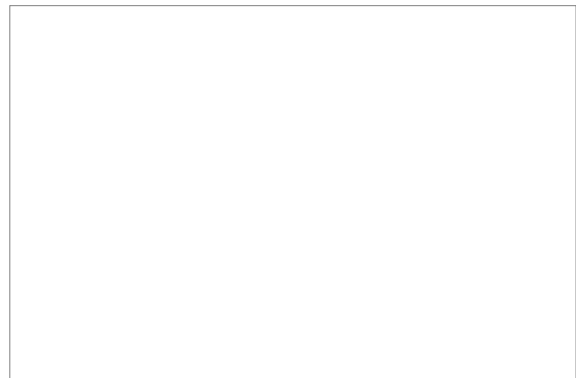


SAFETY RULES

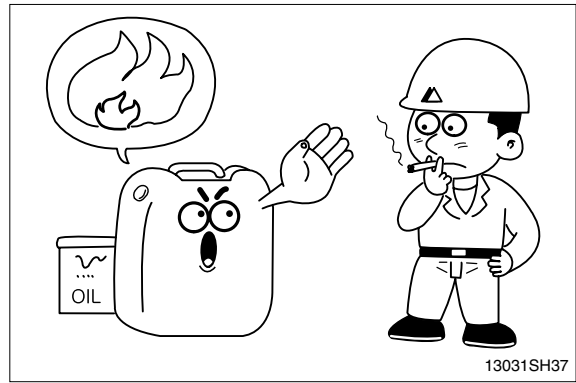
Only trained and authorized personnel can operate and maintain the machine.

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

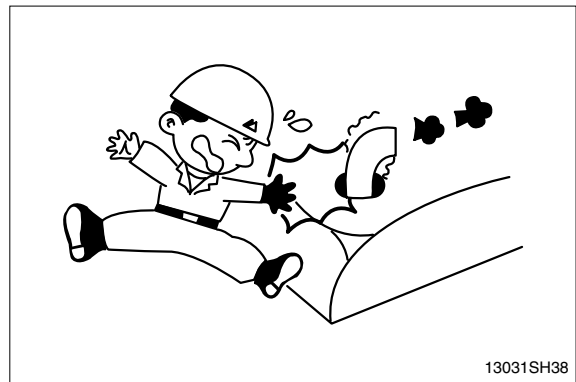
When working with another operator or a person on worksite traffic duty, be sure all personnel understand all hand signals that are to be used.



There is the danger of fire in fuel and oil.
Store in cool and dry area, away from any open flames.



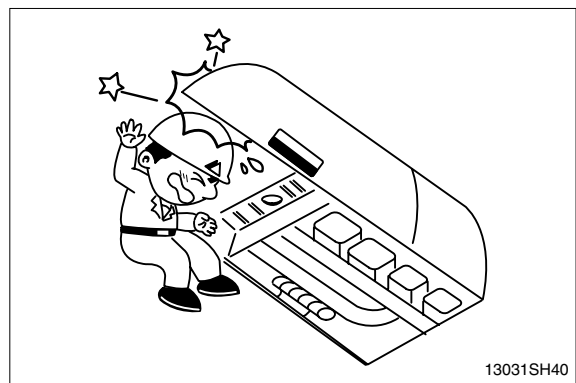
Do not touch exhaust pipe, or may cause severe burn.



Do not open the engine hood and covers while the engine is running.



Be careful of not hitting the edges when you service engine.



2) HYDRAULIC ADJUSTABLE BOOM

Item	R210NLC-7A	
	kg	lb
Upperstructure assembly	8950	19730
Main frame weld assembly	2600	5730
Engine assembly	560	1240
Main pump assembly	170	370
Main control valve assembly	200	440
Swing motor assembly	190	420
Hydraulic oil tank assembly	240	530
Fuel tank assembly	195	430
Counterweight	4700	10360
Cab assembly	310	680
Lower chassis assembly	8400	18520
Track frame weld assembly	2525	5570
Swing bearing	260	570
Travel motor assembly	305	670
Turning joint	55	120
Track recoil spring and idler	270	600
Idler	170	370
Carrier roller	20	45
Track roller	40	90
Track-chain assembly(500mm standard triple grouser shoe)	1200	2650
Front attachment assembly(5.56m boom, 2.4m arm, 0.87m ³ SAE heaped bucket)	3185	7020
5.56m boom assembly	1810	3990
2.4m arm assembly	665	1470
0.87m ³ SAE heaped bucket	740	1630
Boom cylinder assembly	185	410
Arm cylinder assembly	290	640
Bucket cylinder assembly	175	390
Adjust cylinder assembly	200	440
Bucket control rod assembly	170	370

3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	15cc/rev
Maximum pressure	35kgf/cm ² (500psi)
Rated oil flow	28.5 l /min(7.5U.S. gpm/6.3U.K. gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	9 spools twin-block
Operating method	Hydraulic pilot system
Main relief valve pressure	330kgf/cm ² (4695psi) [360kgf/cm ² (5120psi)]
Overload relief valve pressure	390kgf/cm ² (5550psi)

[]: Poer boost

5) SWING MOTOR

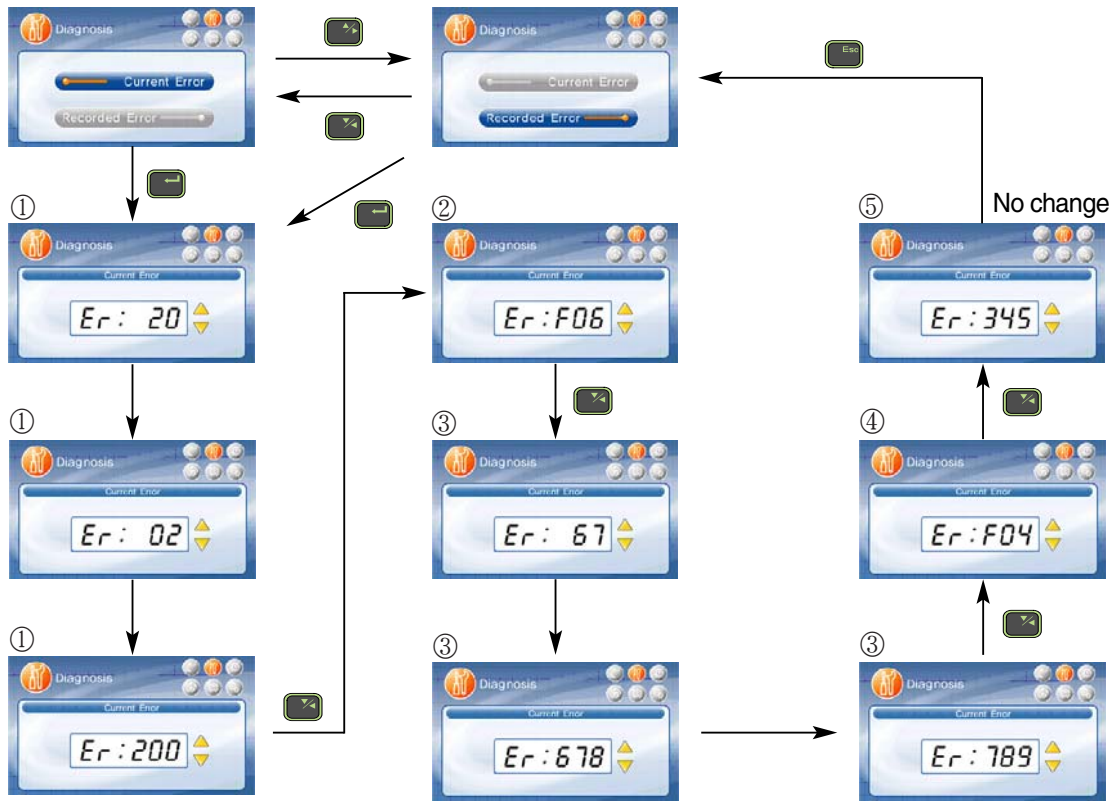
Item	Specification
Type	Fixed displacement axial piston motor
Capacity	151cc/rev
Relief pressure	240kgf/cm ² (3414psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	59kgf · m(427lb · ft)
Brake release pressure	33~50kgf/cm ² (470~711psi)
Reduction gear type	2 - stage planetary

6) TRAVEL MOTOR

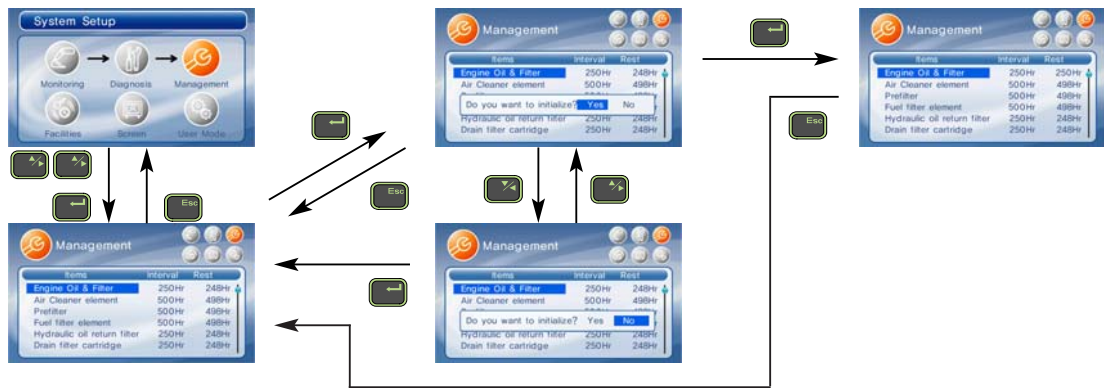
Item	Specification
Type	Variable displacement axial piston motor
Relief pressure	330kgf/cm ² (4695psi)
Reduction gear type	3-stage planetary
Braking system	Automatic, spring applied hydraulic released
Brake release pressure	11kgf/cm ² (156psi)
Braking torque	49.3kgf · m(357lb · ft)

b. Old protocol : Old CPU controller

- If there are more than 2 error codes, each one can be displayed by pressing or switch respectively.
- 3 error codes (①SPN200200, ②FMI06, ③SPN6789, ④FMI04, ⑤345) display.



③ Maintenance



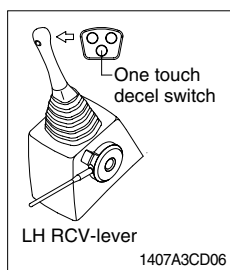
④ Setting

a. Time set



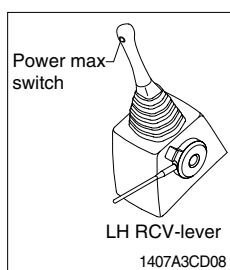
b. System lock - Reserved

17) ONE TOUCH DECEL SWITCH



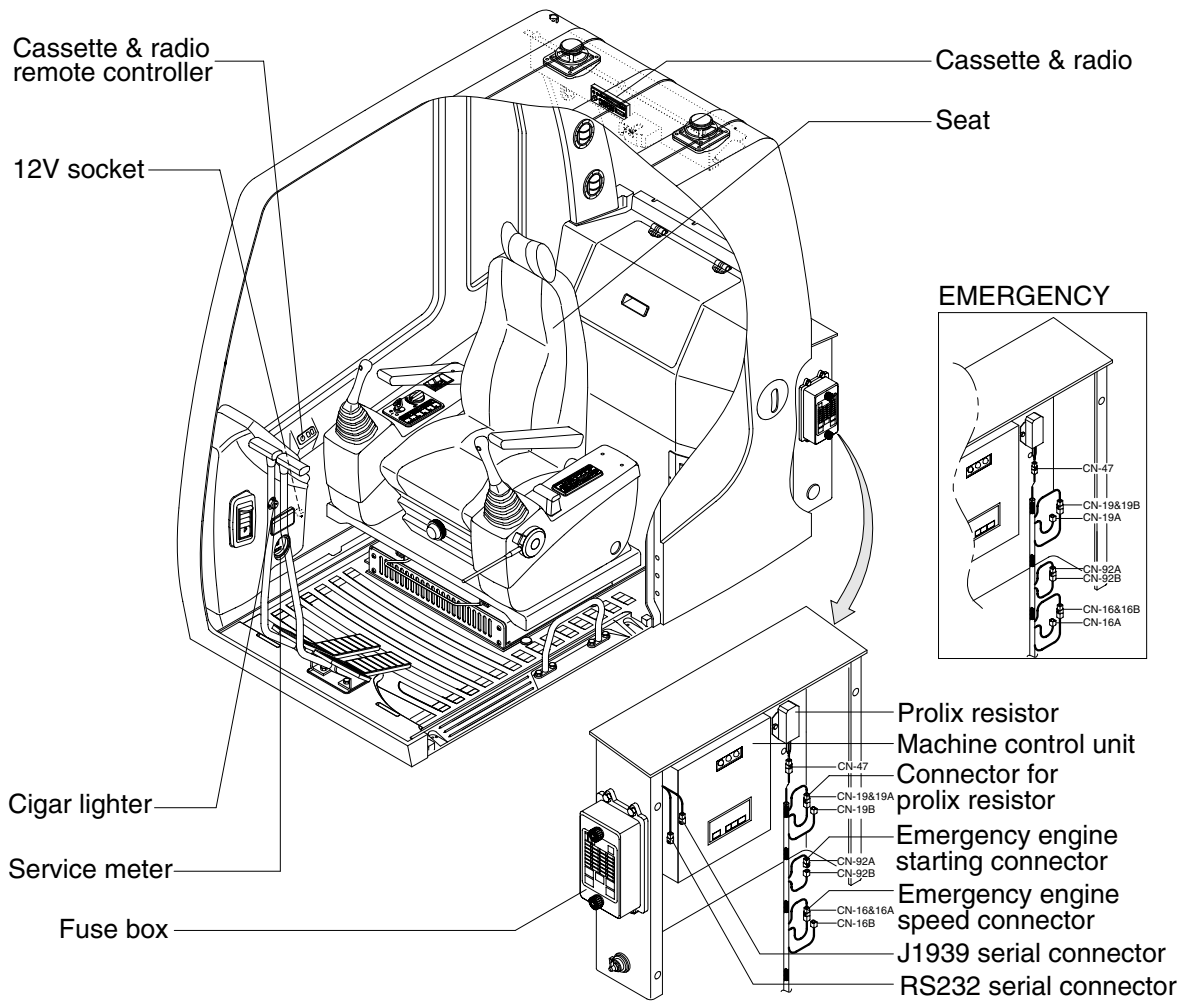
- (1) This switch is used to actuate the deceleration function quickly.
- (2) The engine speed is increased to previous setting value by pressing the switch again.
- (3) One touch decel function is available only when the auto decel switch on the cluster "OFF".

18) POWER MAX SWITCH



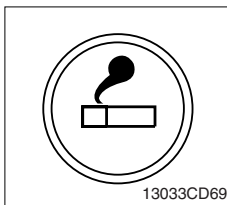
- (1) This switch activate power max function.
When this switch is kept pressed, hydraulic power of work equipment will increased approx 110 percent during 8 seconds.
 - (2) After 8 seconds, function is cancelled automatically even switch is keep pressed.
- ※ **Do not use for craning purposes.**

6. OTHERS



210N7A3CD03

1) CIGAR LIGHTER



- (1) This can be used when the engine starting switch is ON.
- (2) The lighter can be used when it springs out in a short while after being pressed down.

※ **Service socket**

**Use cigar lighter socket when you need emergency power.
Do not use the lighter exceeding 24V, 100W.**

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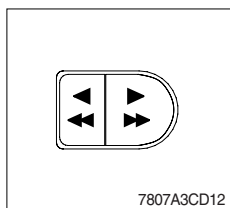


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■ CASSETTE PLAYER

(1) Winding/Rewinding button



- ※ Only use good quality cassettes.
- ※ To avoid possible tape damage always take out the cassette after use. Protect your cassettes. Put them back in their boxes immediately after use.
- ※ Never expose cassettes to heat or direct sunlight.

① Play back

Slide the cassette, with the open side to the right into the cassette opening. Playback starts.

The direction of playback is shown by indicator ► .

② Stopping playback(▲)

- To stop playback, Press the ▲ button fully home.
- The unit will switch over to radio reception.
- The cassette is partially ejected.

③ Reverse(before the end of the tape)

Press the ◀◀ and ▶▶ buttons at the same time halfway in.

④ Fast rewind / Fast forward(◀◀ or ▶▶)

The direction of fast winding depends on the direction of play indicated on the display.

Display during playback	Action	Key to press
►	Fast forward	▶▶
▶	Fast rewind	◀◀
◀	Fast forward	◀◀
◀	Fast rewind	▶▶

During fast forward or rewind the radio resumes. If you continue fast winding until the end of the tape, play back restarts automatically.

⑤ To stop fast winding

To stop fast winding before the end of the tape, press the key which is not pressed(◀◀ or ▶▶). Playback is then resumed.

⑥ End of the tape

At the end of the tape, playback continues in the revers direction.

⑦ Maintenance

After extended use of the cassette player, dust, contamination or grime can accumulate on the playback head.

This results in diminishing high-note reproduction. This can be remedied using a cleaning cassette(one or twice a month) and playing it through like an ordinary cassette.

② High idle rpm, auto decel rpm, EPPR pressure can be modulated and memorized separately in the U-mode.

※ Refer to the page 3-8 for set of user mode.



· LCD segment vs parameter setting

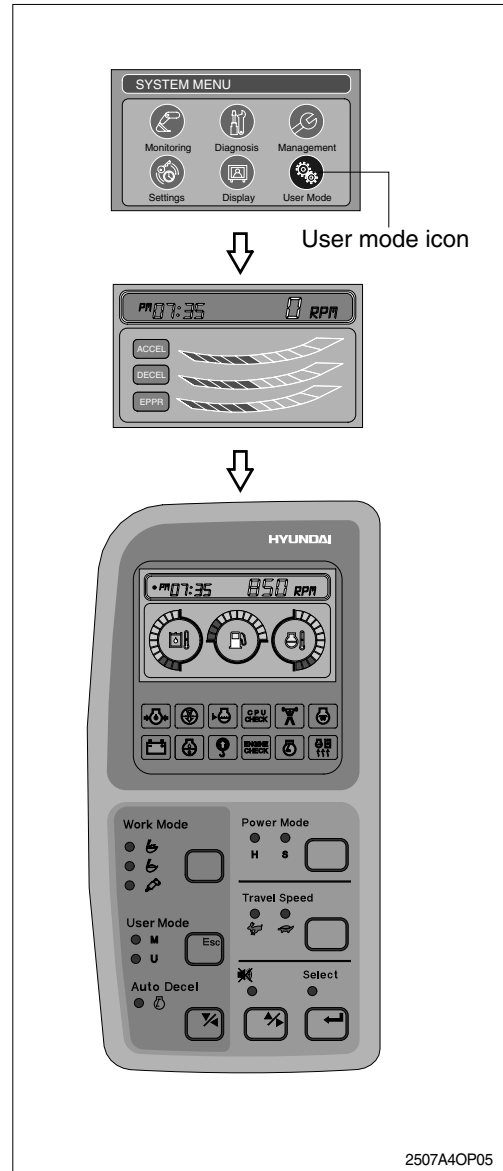
Segment ()	ACCEL (rpm)	DECEL (rpm)	EPPR (mA)
1	1500	700	135
2	1550	750	200
3	1600	800	250
4	1650	Low idle(850)	300
5	1700	900	350
6	1750	950	400
7	1800	Decel rpm(1000)	450
8	1850	1050	500
9	1900	1100	550
10	1950	1150	600

(4) Auto decel mode

Engine quick deceleration.

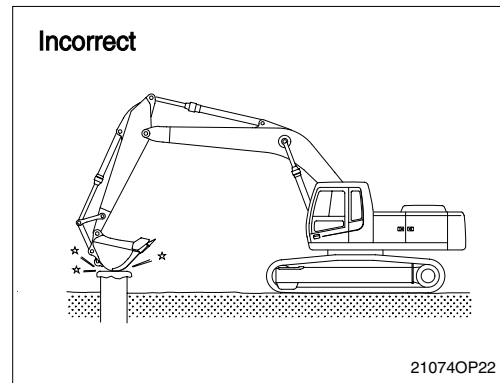
(5) Travel mode

-  : Low speed traveling.
-  : High speed traveling.

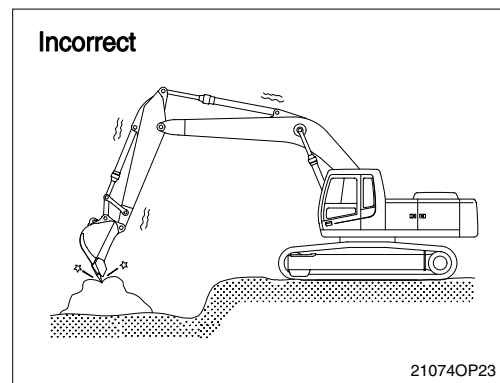


2507A4OP05

- 9) Do not use the dropping force of the work equipment for digging.
The machine can be damaged by the impact.



- 10) Do not use the bucket to crack hard objects like concrete or rocks.
This may break a tooth or pin, or bend boom.



11) NEVER CARRY OUT EXCESSIVE OPERATIONS

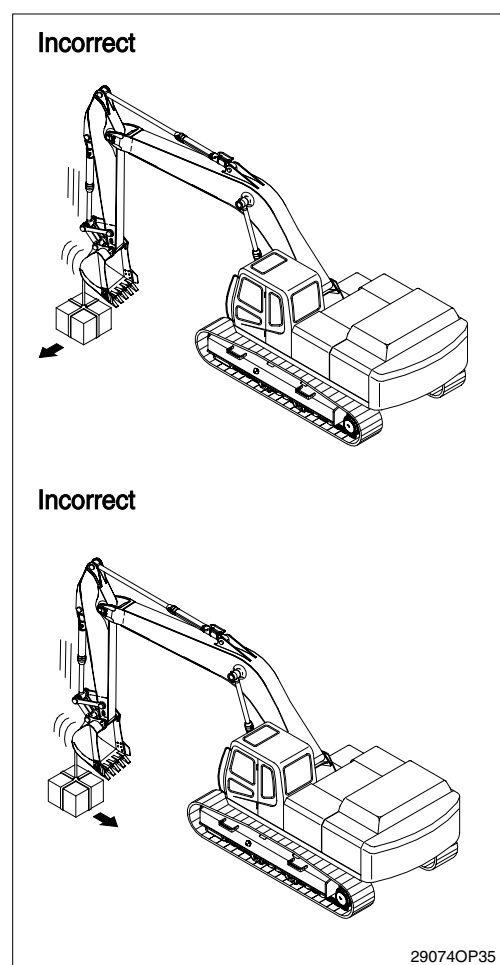
Operation exceeding machine performance may result in accident or failure.

Carry out lifting operation within specified load limit.

Never carry out operations which may damage the machine such as overload or over-impact-load.

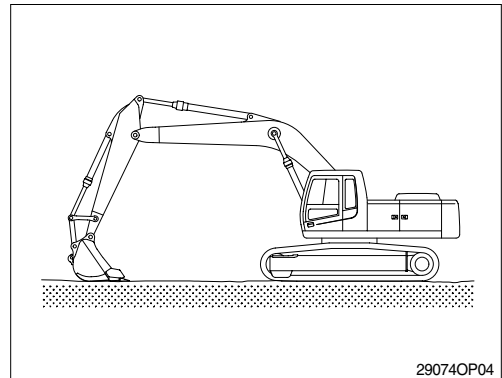
Never travel while carrying a load.

In case you need installing over load warning device for object handling procedure, please contact Hyundai distributor.



13. SWITCHING HYDRAULIC ATTACHMENT CIRCUIT

- 1) The combined hydraulic attachment circuit is capable of providing single action or double action.
- 2) The position of 3 way valve selects the single action hydraulic attachment circuit or the double action hydraulic attachment circuit.
- 3) Before you change the flow mode of hydraulic attachment circuit, place the machine in the servicing position as shown. Stop the engine.



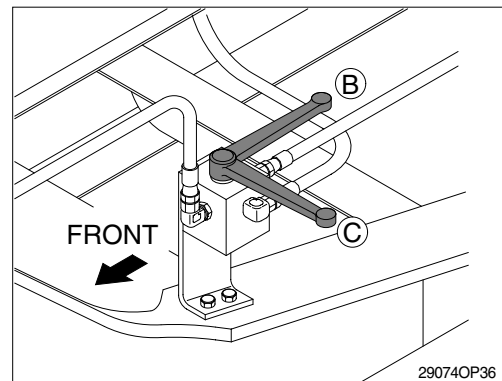
- 4) Use the manual lever to turn the 3 way valve. Make sure that you fully turn the valve until the valve stops.

(1) **One way flow**(Hydraulic breaker)

Position the manual lever parallel to the piping (B).

(2) **Two way flow**(Clamshell or shear)

Position the manual lever perpendicular to the piping (C).

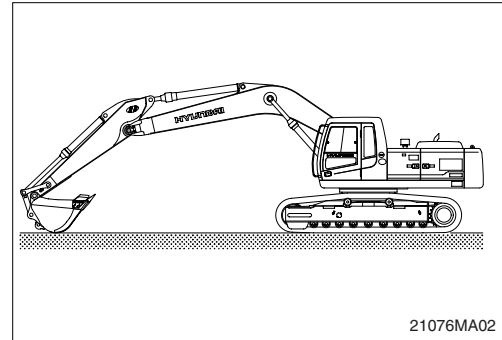


4) RELIEVING THE PRESSURE IN THE HYDRAULIC SYSTEM

※ Spouting of oil can cause the accident when loosening the cap or hose right after the operating of machine as the machine or oil is on the high pressure on the condition.

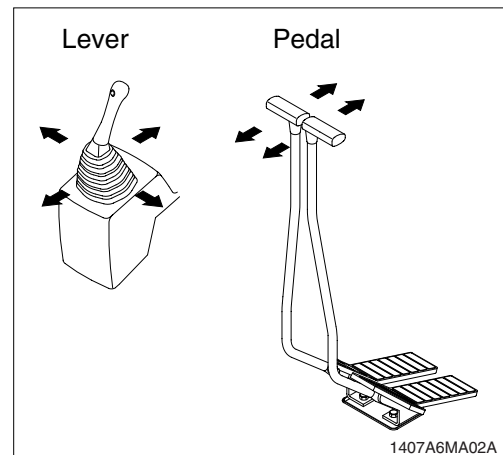
Be sure to relieve the pressure in the system before repairing hydraulic system.

- (1) Place machine in parking position, and stop the engine.

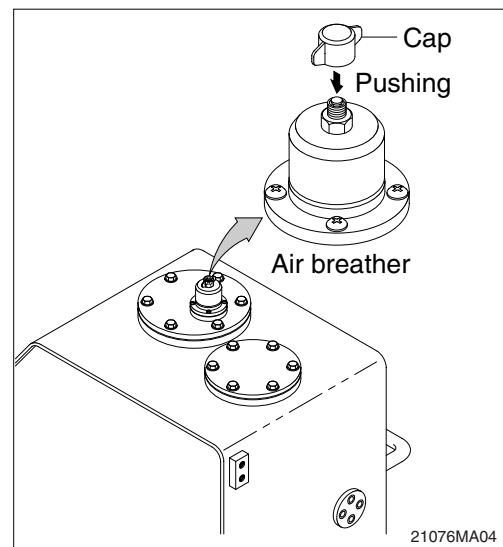


- (2) Set the safety lever completely in the release position, operate the control levers and pedals fully to the front, rear, left and right, to release the pressure in the hydraulic circuit.

※ This does not completely release the pressure, so when serving hydraulic component, loosen the connections slowly and do not stand in the direction where the oil spurt out.



- (3) Loosen the cap and relieve the pressure in the tank by pushing the top of the air breather.



6) EVERY 250 HOURS SERVICE

Check items	Service	Page
Battery electrolyte	Check, Add	6-40
Aircon & heater flesh filter	Check	6-44
Air breather element	Replace	6-32
Bolts & Nuts	Check, Tight	6-8
· Sprocket mounting bolts		
· Travel motor mounting bolts		
· Swing motor mounting bolts		
· Swing bearing mounting bolts		
· Engine mounting bolts		
· Counterweight mounting bolts		
· Turning joint locating bolts		
· Track shoe mounting bolts and nuts		
· Hydraulic pump mounting bolts		

7) INITIAL 500 HOURS SERVICE

Check items	Service	Page
Travel reduction gear oil	Change	6-34

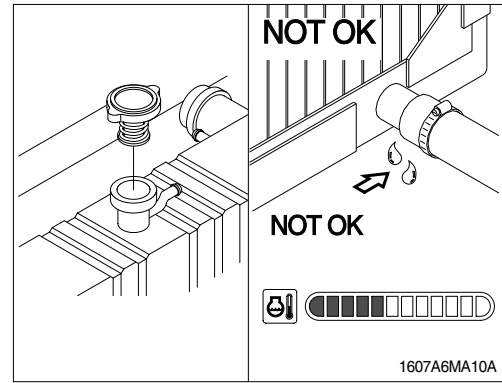
8) EVERY 500 HOURS SERVICE

Check items	Service	Page
★Engine oil	Change	6-18, 19
★Engine oil filter	Replace	6-18, 19
Radiator, cooler fin and charge air cooler	Check, Clean	6-23
☆Air cleaner element(Primary)	Check, Clean	6-25
Fuel filter element	Replace	6-27
Prefilter	Change	6-26

★ If you use high sulfur containing fuel above than 0.5% or use low grade of engine oil reduce change interval.

☆ Clean the primary element only after 500 hours operation or when the air cleaner warning lamp blinks. Replace primary element and safety element after 4 times cleanings of primary element.

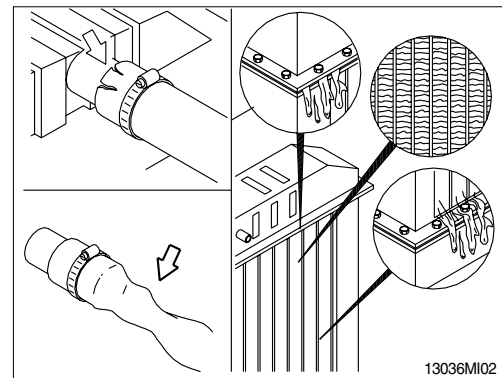
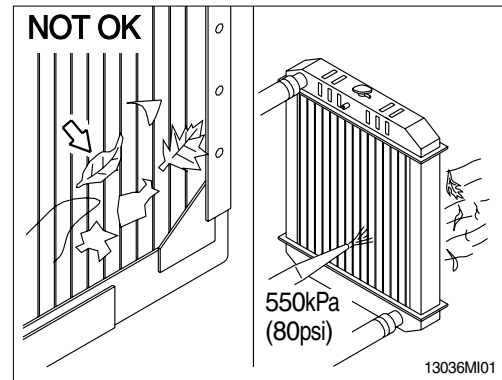
- ③ Install the pressure cap. Operate the engine until it reaches a temperature 80°C (176°F), and check for coolant leaks. Check the coolant level again to make sure the system is full of coolant.



5) CLEAN RADIATOR AND OIL COOLER

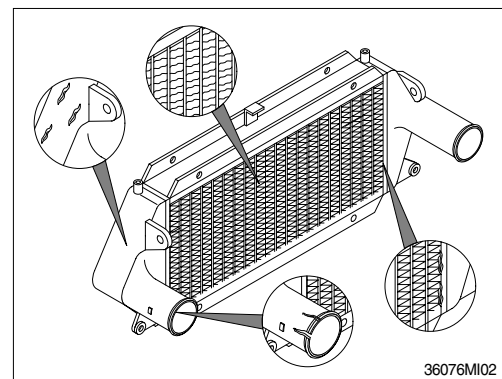
Check, and if necessary, clean and dry outside of radiator and oil cooler. After working in a dusty place, clean radiator more frequently.

- (1) Visually inspect the radiator for clogged radiator fins.
- (2) Use 550kPa (80psi) air pressure to blow the dirt and debris from the fins. Blow the air in the opposite direction of the fan air flow.
- (3) Visually inspect the radiator for bent or broken fins.
 - ※ If the radiator must be replaced due to bent or broken fins which can cause the engine to overheat, refer to the manufacturer's replacement procedures.
- (4) Visually inspect the radiator for core and gasket leaks.



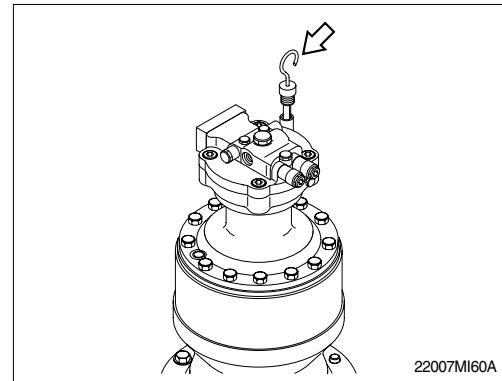
6) CHECK CHARGE AIR COOLER

Inspect the charge air cooler for dirt and debris blocking the fins. Check for cracks, holes, or other damage. If damage is found, please contact Hyundai distributor.



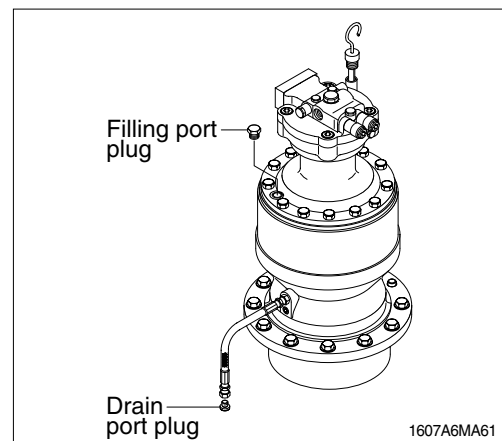
24) CHECK THE SWING REDUCTION GEAR OIL

- (1) Pull out the dipstick and clean it.
- (2) Insert it again.
- (3) Pull out one more time to check the oil level and fill the oil if the level is not sufficient.



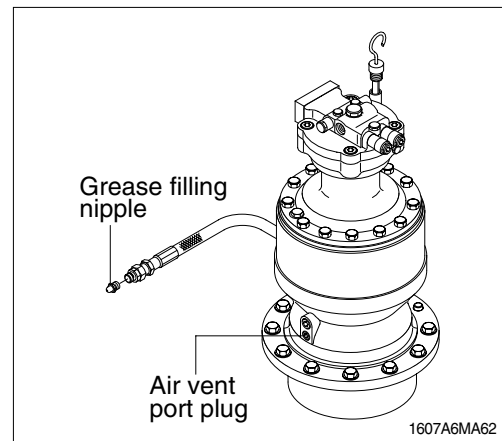
25) CHANGE SWING REDUCTION GEAR OIL

- (1) Raise the temperature of oil by swinging the machine before replace the oil and park the machine on the flat ground.
 - (2) Loosen the plug of the drain port.
 - (3) Drain into a proper container.
 - (4) Wash the drain plug and reinstall it with sealing tape.
- Fill proper amount of recommended oil.
- Amount of oil : 5.0 l (1.3U.S.gal)



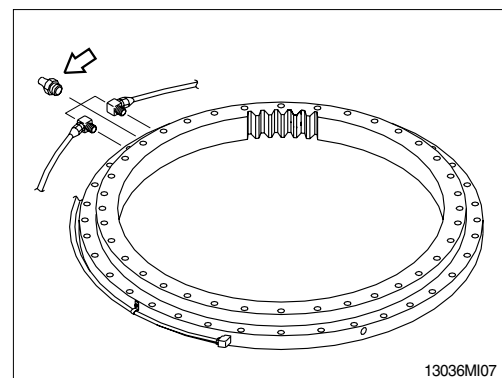
26) LUBRICATE BEARING OF OUTPUT SHAFT IN REDUCTION GEAR

- (1) Remove air vent plug.
 - (2) Remove grease fill plug and install grease filling hose and nipple at that place.
 - (3) Lubricate NLGI No.2 with grease gun until comes out new grease from air vent port.
- Amount of oil : 1.1kg(2.4lb)



27) LUBRICATE SWING BEARING

- (1) Grease at 3 fitting.
- ※ Lubricate every 50 hours.

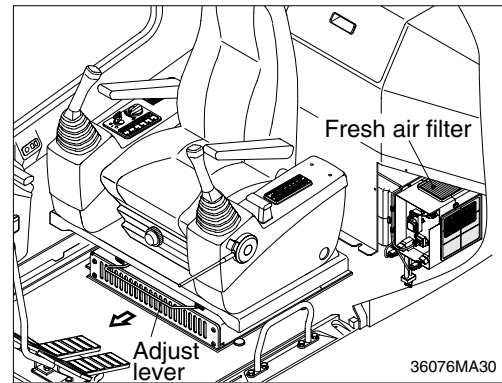


8. AIR CONDITIONER AND HEATER

1) CLEAN AND REPLACE OF OUTER FILTER

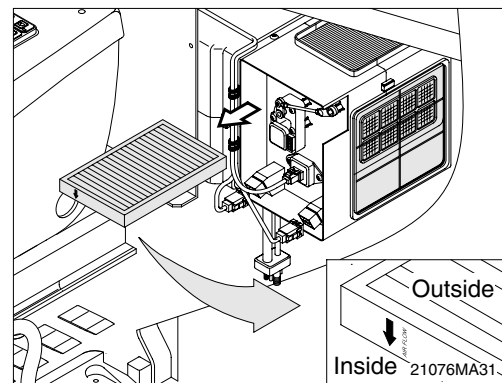
※ **Always stop the engine before servicing.**

- (1) Move seat and console box to arrow direction using the adjust lever.



- (1) Remove the outer filter.

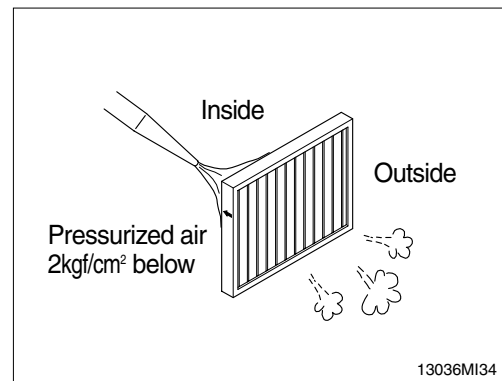
※ **When installing a filter, be careful not to change the filter direction.**



- (3) Clean the filter using a pressurized air (Below 2kgf/cm^2 , 28psi).

△ **When using pressurized air, be sure to wear safety glasses.**

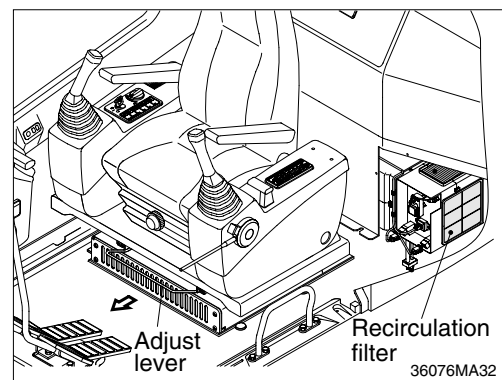
- (4) Inspect the filter after cleaning. If it is damaged or badly contaminated, use a new filter.



2) CLEAN AND REPLACE OF INNER FILTER

※ **Always stop the engine before servicing.**

- (1) Move seat and console box to arrow direction using the adjust lever.



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