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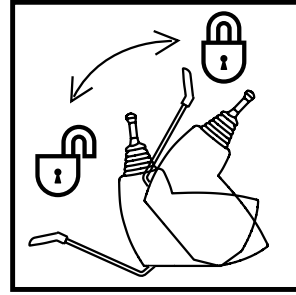
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10) CONSOLE TILTING (Item 11)

This warning label is positioned on the LH console box.

- ※ Before you get off the machine be sure to tilt the LH console box.



R5570FW17

11) HYDRAULIC OIL LUBRICATION (Item 6)

This warning label is positioned on the right side of air breather.

- ※ Do not mix with different brand oils.
- ▲ Never open the filler cap while engine running or at high hydraulic oil temperature.
- ▲ Loosen the cap slowly and release internal pressure completely.

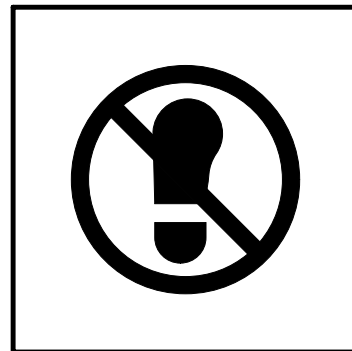


21070FW08

12) NO STEP-ENGINE HOOD (Item 10)

This warning label is positioned on the engine hood.

- ▲ Do not step on the engine hood.

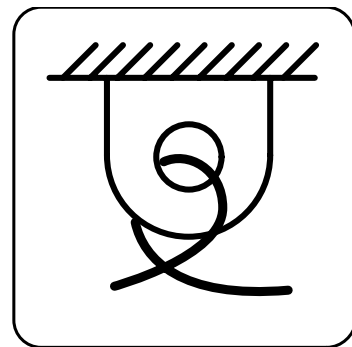


21070FW16

13) TIE (Item 5)

This warning label is positioned on the lower frame.

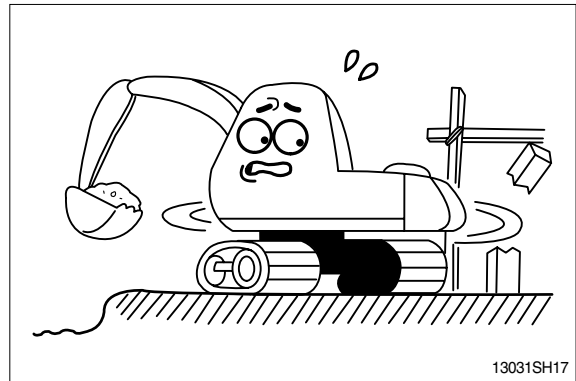
- ※ Never tow the machine using tie hole, because this may break.
- ※ See page 4-10 for detail.



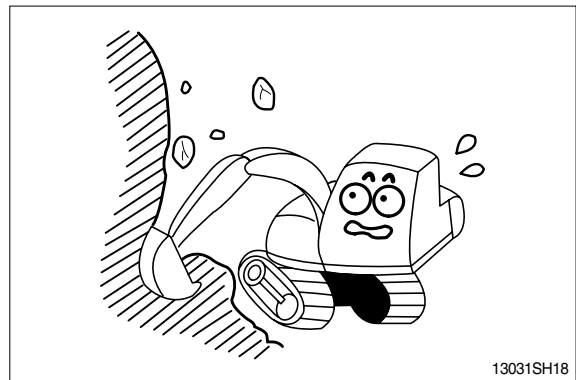
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Watch out for obstacles.

Be particularly careful to check the machine clearance during the swing.

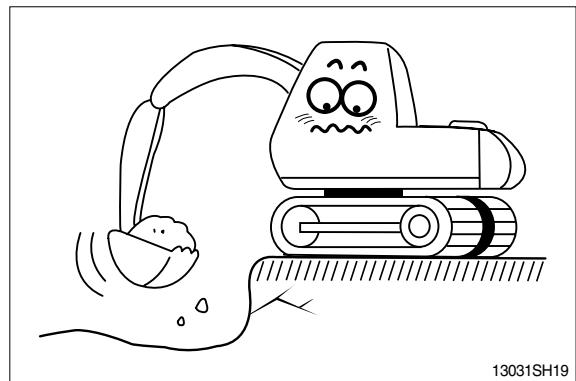


When using the machine as breaker or working in a place where stones may fall down, cab roof guard and head guard should be provided for proper protection.



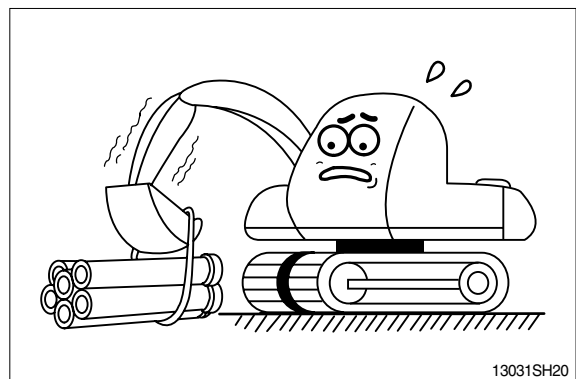
Avoid operating on a cliff or soft ground as there is danger of rolling over.

Make sure to get off easily as keeping the track at a right angle and putting the travel motor into the backward position when working on a cliff or soft ground inevitably.



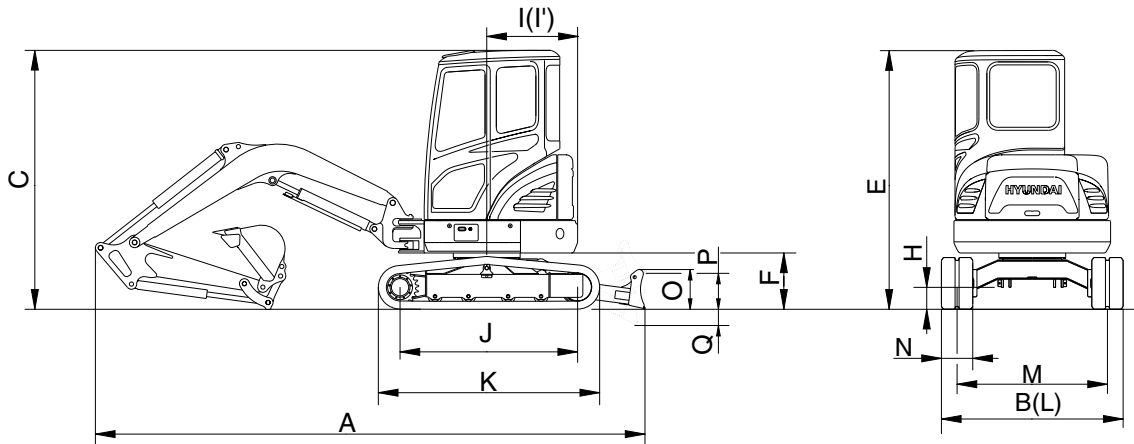
Operate for the lifting work considering the capacity of machine, weight and width of the load.

Be careful not to lift exceeding the machine capacity as it can be the cause of machine damage and safety accident.



2. SPECIFICATIONS

1) 2.5m(8' 2") MONO BOOM, 1.3m(4' 3") ARM, WITH BOOM SWING POST



R35Z72SP02

Description		Unit	Specification	
Operating weight		kg(lb)	3650(8050)	
Bucket capacity(SAE heaped), standard		m ³ (yd ³)	0.11(0.14)	
Overall length	A	mm(ft-in)	4790(15' 9")	
Overall width, with 300mm shoe	B		1740(5' 9")	
Overall height	C		2500(8' 2")	
Overall height of cab	E		2500(8' 2")	
Ground clearance of counterweight	F		540(1' 9")	
Minimum ground clearance	H		290(0' 11")	
Rear-end distance	I		870(2' 10")	
Rear-end swing radius	I'		870(2' 10")	
Distance between tumblers	J		1700(5' 7")	
Undercarriage length	K		2130(7' 0")	
Undercarriage width	L		1740(5' 9")	
Track gauge	M		1440(4' 9")	
Track shoe width, standard	N		300(1' 0")	
Height of blade	O		370(1' 3")	
Ground clearance of blade up	P		375(1' 3")	
Depth of blade down	Q		390(1' 3")	
Travel speed(Low/high)			km/hr(mph)	2.5/4.5(1.6/2.8)
Swing speed			rpm	9.5
Gradeability			Degree(%)	30(58)
Ground pressure(300mm shoe)		kgf/cm ² (psi)	0.34(4.83)	

9. RECOMMENDED OILS

Use only oils listed below or equivalent.

Do not mix different brand oil.

Service point	Kind of fluid	Capacity l (U.S. gal)	Ambient temperature °C(°F)								
			-20 (-4)	-10 (14)	0 (32)	10 (50)	20 (68)	30 (86)	40 (104)		
Engine oil pan	Engine oil	6.7(1.8)					SAE 30				
			SAE 10W								
			SAE 10W-30								
			SAE 15W-40								
Final drive	Gear oil	0.5×2 (0.1×2)		SAE 85W-140							
Hydraulic tank	Hydraulic oil	Tank: 37(9.8) System: 60(15.9)	ISO VG 32								
			ISO VG 46								
			ISO VG 68								
Fuel tank	Diesel fuel	40(10.5)	ASTM D975 NO.1								
			ASTM D975 NO.2								
Fitting (Grease nipple)	Grease	As required	NLGI NO.1								
			NLGI NO.2								
Radiator (Reservoir tank)	Mixture of antifreeze and water 50 : 50	5(1.3)	Ethylene glycol base permanent type								

SAE : Society of Automotive Engineers

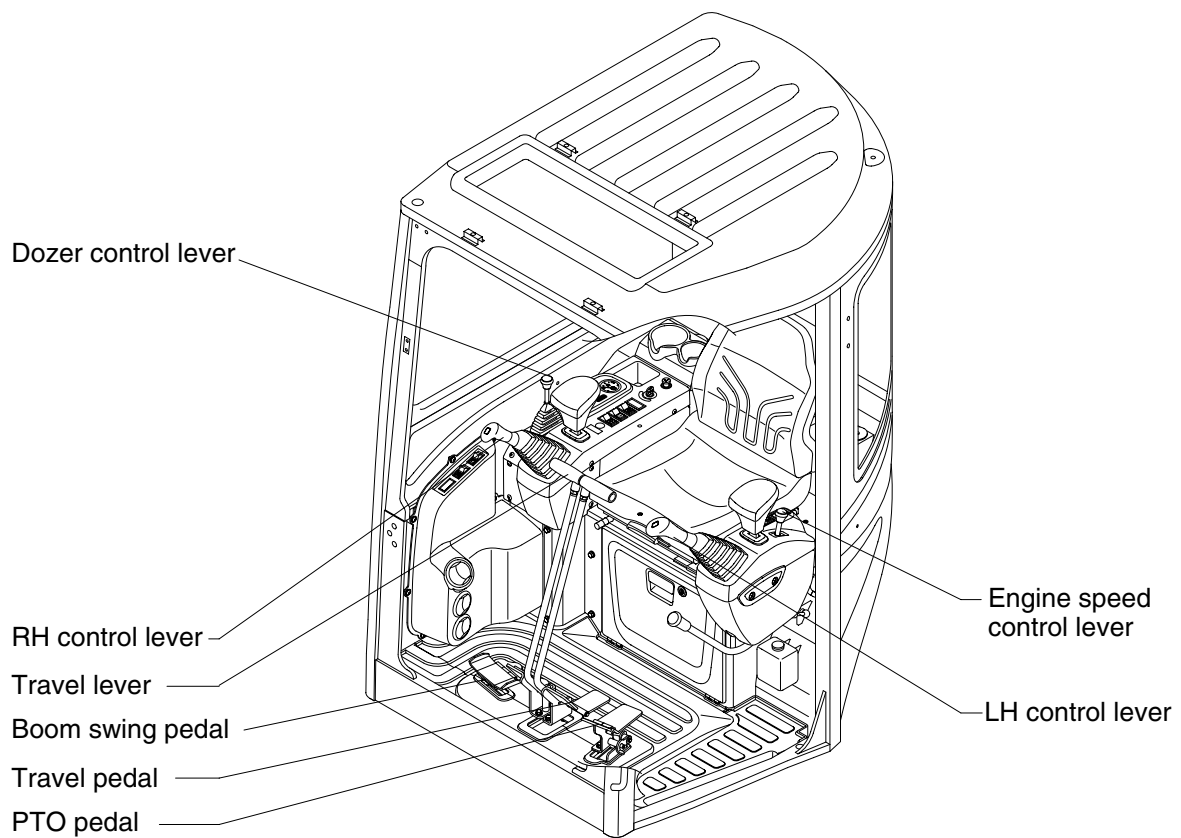
API : American Petroleum Institute

ISO : International Organization for Standardization

NLGI : National Lubricating Grease Institute

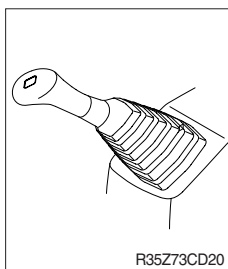
ASTM : American Society of Testing and Material

4. LEVERS AND PEDALS



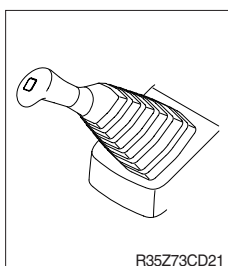
R35Z73CD12

1) LH CONTROL LEVER



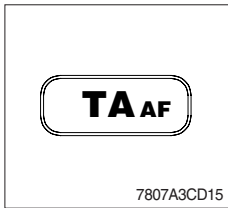
- (1) This joystick is used to control the swing and the arm.
- (2) Refer to **operation of working device** in chapter 4 for details.

2) RH CONTROL LEVER



- (1) This joystick is used to control the boom and the bucket.
- (2) Refer to **operation of working device** in chapter 4 for details.

■ RADIO DATA SYSTEM(RDS) ON FM



More and more stations broadcasts RDS informations in order to offer you many advantages including:

(1) Program service name(PS)


Allows the radio to display the name of the station instead of its frequency.

(2) Automatic returning(AF)

The set remains tuned to the current station by continually searching the best alternative frequency for best reception.

You can switch AF off.

- Activate/Deactivate AF

This set continuously search for other alternative frequencies for the tuned radio station and automatically selects the best frequency for reception. Long press  for more than 2 second to activate/deactivate AF.

(3) Alarm messages(PHY ALARM)


This set automatically receives emergency messages made by the broadcaster.

- During the messages the display shows 'ALARM' and the station-name alternately.

(4) Traffic announcements(TA)

You can activate the TA modes to give priority so as to hear traffic announcements related to these subjects(even if you play a cassettes/CD or mute the set).

- Activate/Deactivate TA


- Short press BAND to select an FM band.
- Press  to activate/deactivate TA.

- If you activate TA mode

- You will hear the traffic announcements when broadcast by station(even if you play a cassette/CD or mute the set).
- If the tuned station does not enable the reception of traffic announcements, the display shows 'NO TA'. The radio automatically searches and appropriate station.

- Interrupting traffic announcement mode

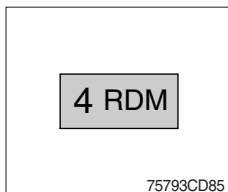
If you do not wish to continue listening to a particular traffic announcement

- Short press  key to interrupt traffic announcement without switching off the mode
- The set will return to the previous operating mode.

※ You can switch off RDS features if not required.

- Long press RDS key to switch off RDS.
- All RDS related features e.g., TA, etc...will be deactivated when RDS is switch off.

(7) Random play selector (RDM)

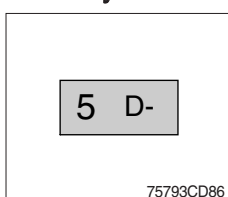


- ① During USB play, press RDM button to play the files on the USB in a random shuffled order (RDM will appear on the LCD display). The file select function will also select file in the random order instead of the normal process.

The random play mode can be cancelled by this button again.

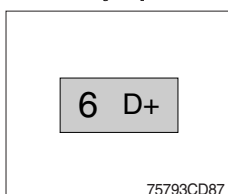
- ※ In case of MP3 file, when the random button is pressed and held longer than 2 seconds, the RDM mark will blink on the LCD display and play all files in directory randomly until the directory random mode is cancelled by pressing the random button again or by activating the scan or repeat functions (RDM mark will disappear from LCD display).

(8) Directory down



- ① Press D- button briefly while playing MP3. The previous directory is located each time you press this button.

(9) Directory up

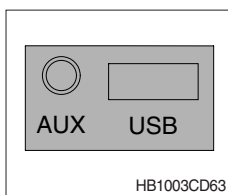


- ① Press D+ button briefly while playing MP3. The next directory is located each time you press this button.
- ※ If the MP3 file does not have a directory, the unit play MP3 at 10-file intervals.
 - ※ If any MP3 file does not exist in USB, this button can not operate.

■ AUX PLAYER

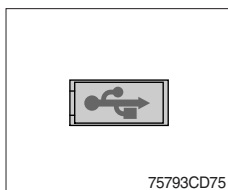
(1) Aux function

· Use of USB socket



- ① If you want to listen to music of a external audio device, connect a external audio device into the USB port.
- ② Press mode button to change a current mode for AUX. If audio file of audio device is playing, you can listen to music through speaker.

· Use of USB/AUX cable (option)



- ① If you want to listen to music of a external audio device, connect a external audio device through USB/AUX cable.
- ② Press mode button to change a current mode for AUX. If audio file of audio device is playing, you can listen to music through speaker.

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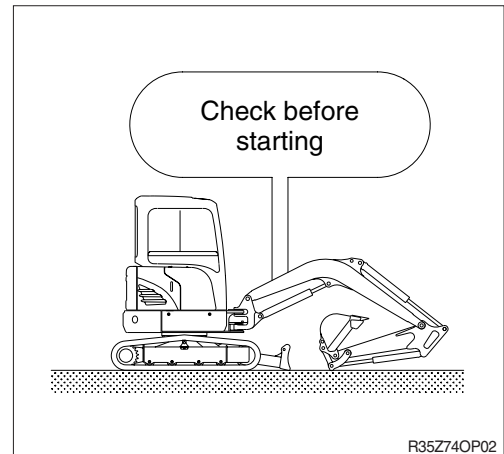


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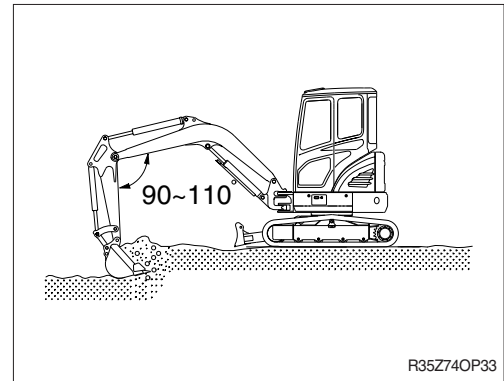
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2. CHECK BEFORE STARTING THE ENGINE

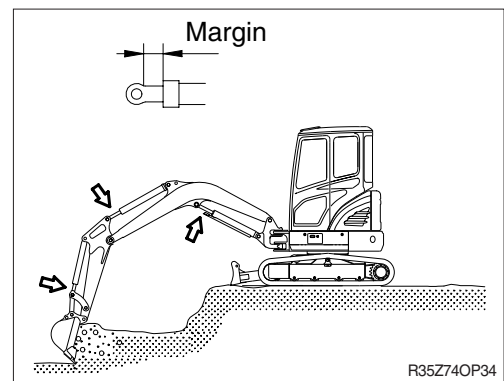
- 1) Look around the machine and under the machine to check for loosen nut or bolts, collection of dirt, or leakage of oil, fuel or coolant and check the condition of the work equipment and hydraulic system. Check also loosen wiring, and collection of dust at places which reach high temperature.
※ **Refer to the daily check on the chapter 6, maintenance.**
- 2) Adjust seat to fit the contours of the operator's body for the pleasant operation.
- 3) Adjust the rear view mirror.



- 5) Dig slowly with keeping the angle of boom and arm, 90-110 degree when maximum digging force is required.

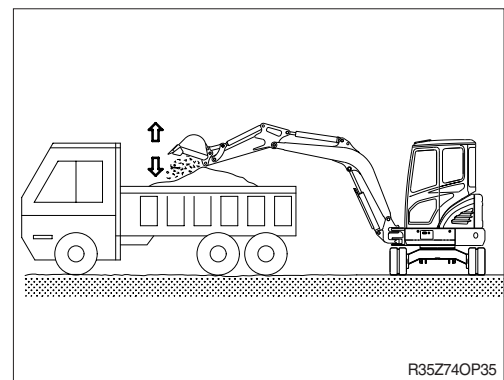


- 6) Operate leaving a small safety margin of cylinder stroke to prevent damage of cylinder when working with the machine.

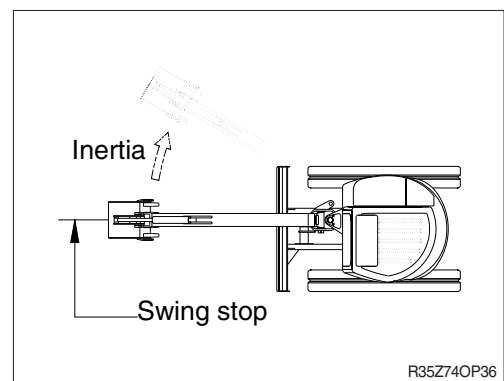


- 7) Keep the bucket to the dumping position and the arm horizontal when dumping the soil from the bucket.
Operate bucket lever 2 or 3 times when hard to dump.

※ Do not use the impact of bucket tooth when dumping.



- 8) Operate stop of swing considering the swing slip distance is created by inertia after neutralizing the swing lever.



12. HANDLING THE RUBBER TRACKS

1) USING THE RUBBER TRACKS PROPERLY

Rubber tracks have some advantages over steel tracks.

However, you cannot take full advantage of them if you use them in the same manner as steel ones. Use care in operating with rubber tracks in accord with the conditions of the work site and the type of work.

Comparison table of rubber and steel tracks

	Rubber	Steel
Low vibration	Excellent	Ordinary
Smooth travel	Excellent	Good
Silent travel	Excellent	Ordinary
Less damage to paved roads	Excellent	Ordinary
Simple handling	Excellent	Ordinary
Susceptibility to damage (strength)	Ordinary	Excellent
Drawber full	Excellent	Excellent

Rubber tracks have many advantages inherent in the unique properties of the material. On the other hand, however, they are low in strength. It is essential that you fully understand the properties of rubber tracks, and observe the precautions for operating and handling them to prolong their life and get the most out of them. Be sure to read this section for using the rubber tracks before using them.

2) WARRANTY FOR RUBBER TRACKS

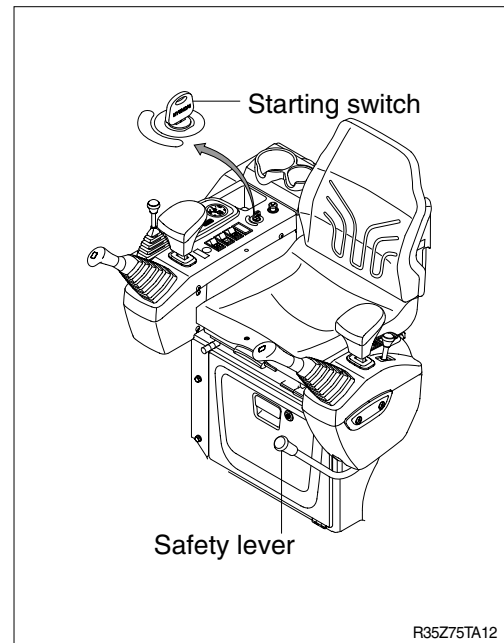
The rubber tracks are not warranted for free repair or replacement if they are damaged because of misuse by the customer, including the failure to comply with the prohibitions and the instructions for safe operation; (for example, the failure to check the tension of the rubber tracks or service the rubber tracks properly, or "using the rubber tracks on surfaces and terrains which could physically damage them".)

3) PROHIBITIONS FOR USING THE RUBBER TRACKS

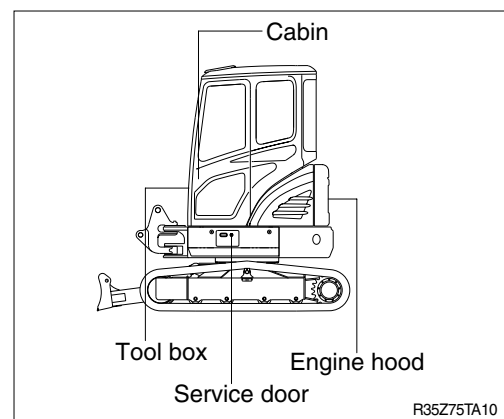
- (1) Do not operate or turn on surfaces of terrains that have sharp stones, a hard, uneven rock base, or that expose the tracks to steel rods, scrap iron, or edges of iron plates. Failure to observe these prohibitions may damage the rubber tracks.
- (2) Do not operate the machine on a stony surface like a riverbed. Doing this may damage the rubber tracks by catching gravel in the tracks or may cause the tracks to come off. Forcibly pushing obstacles will also shorten the life of the rubber tracks.
- (3) Prevent the rubber tracks from getting exposed to oil, fuel or chemical solvents. If they are exposed, immediately wipe them. Also, do not travel on roads which have oily surfaces.
- (4) When storing the rubber tracks for a long time period (more than three months), avoid placing them in a place subject to direct exposure to sunlight or rain.

4. FIXING THE MACHINE

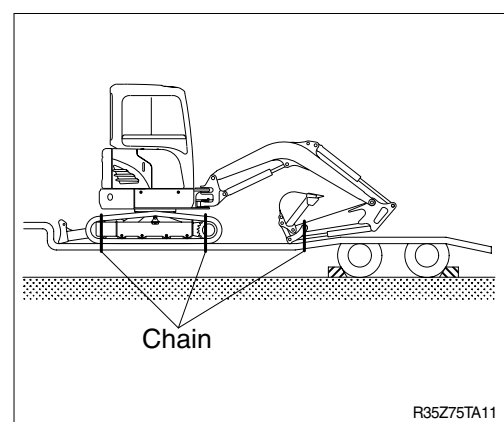
- 1) Lower down the working device on the loading plate of trailer.
- 2) Keep the safety lever on the LOCK position.
- 3) Turn OFF all the switches and remove the key.



- 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.



2) RECOMMENDED OILS

Use only oils listed below or equivalent.

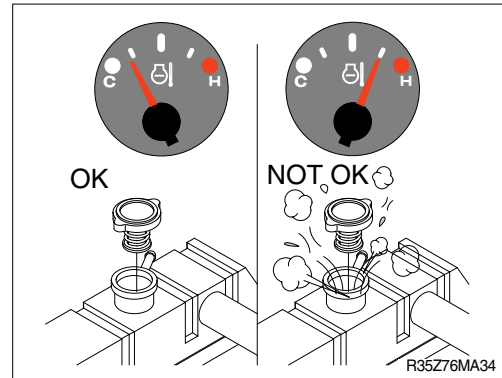
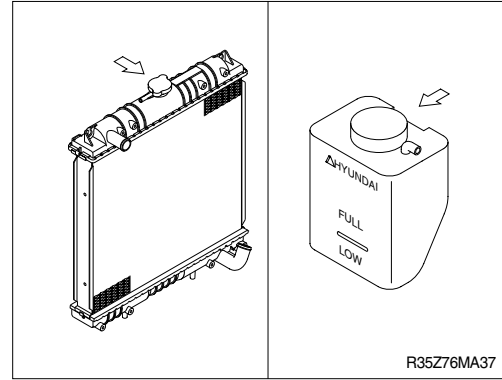
Do not mix different brand oil.

Service point	Kind of fluid	Capacity l (U.S. gal)	Ambient temperature °C(°F)								
			-20 (-4)	-10 (14)	0 (32)	10 (50)	20 (68)	30 (86)	40 (104)		
Engine oil pan	Engine oil	6.7(1.8)							SAE 30		
										SAE 10W	
										SAE 10W-30	
										SAE 15W-40	
Final drive	Gear oil	0.5×2 (0.1×2)						SAE 85W-140			
Hydraulic tank	Hydraulic oil	Tank: 37(9.8) System: 60(15.9)							ISO VG 32		
										ISO VG 46	
										ISO VG 68	
Fuel tank	Diesel fuel	40(10.5)							ASTM D975 NO.1		
										ASTM D975 NO.2	
Fitting (Grease nipple)	Grease	As required							NLGI NO.1		
										NLGI NO.2	
Radiator (Reservoir tank)	Mixture of antifreeze and water 50 : 50	5(1.3)							Ethylene glycol base permanent type		

3) CHECK COOLANT

- (1) Check if the level of coolant in reservoir tank is between FULL and LOW.
- (2) Add the mixture of antifreeze and water after removing the cap of the reservoir tank if coolant is not sufficient.
- (3) Be sure to add the coolant by opening the cap of radiator when coolant level is below LOW.
- (4) Replace gasket of radiator cap when it is damaged.

▲ Hot coolant can spray out if radiator cap is removed while engine is hot. Remove the cap after the engine has cooled down.

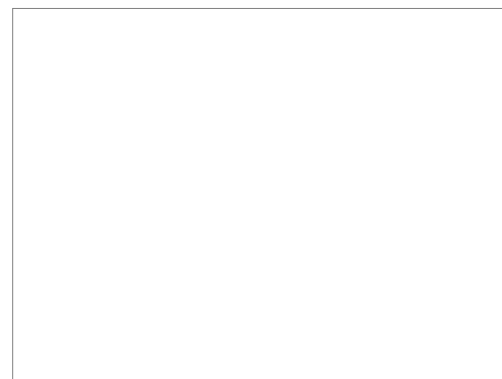
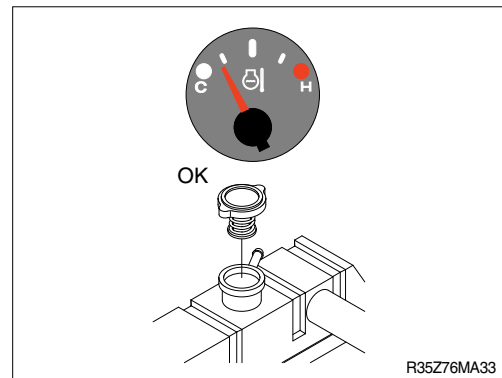


4) FLUSHING AND REFILLING OF RADIATOR

(1) Change coolant

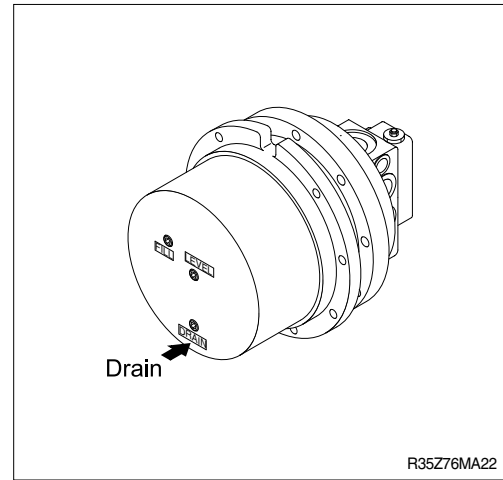
- ▲ Avoid prolonged and repeated skin contact with used antifreeze. Such prolonged repeated contact can cause skin disorders or other bodily injury. Avoid excessive contact-wash thoroughly after contact. Keep out of reach of children.**

※ Protect the environment : Handling and disposal of used antifreeze can be subject to federal, state, and local law regulation. Use authorized waste disposal facilities, including civic amenity sites and garages providing authorized facilities for the receipt of used antifreeze. If in doubt, contact your local authorities for guidance as to proper handling of used antifreeze.



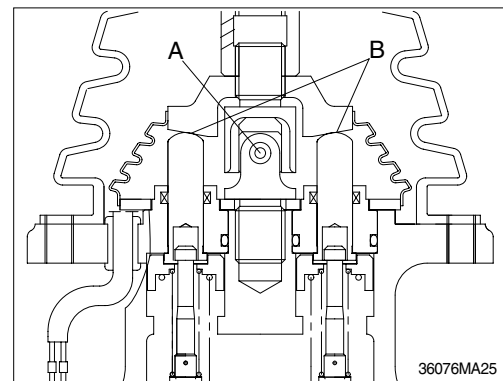
22) CHANGE OF THE TRAVEL REDUCTION GEAR OIL

- (1) Raise the temperature of the oil by traveling machine first.
- (2) Stop when the position of the drain plug is down.
- (3) Loosen the level plug and then the drain plug.
- (4) Drain the oil to adequate container.
- (5) Tighten the drain plug and fill specified amount of oil at filling port.
- (6) Tighten the level plug and travel slowly to check if there is any leakage of oil.



23) LUBRICATE RCV LEVER

Remove the bellows and with a grease gun grease the joint part(A) and sliding parts(B).



TROUBLESHOOTING GUIDE

1. ENGINE

This guide is not intended to cover every conditions, however many of the more common possibilities are listed.

Trouble	Service	Remark
The engine oil pressure lamp lights ON when engine speed is raised after completion of warm up.	<ul style="list-style-type: none"> • Add the oil to the specified level. • Replace the oil filter cartridge. • Check oil leakage from the pipe or the joint. • Replace the monitor. 	
Steam is emitted from the top part of the radiator(The pressure valve). Coolant level warning lamp lights ON.	<ul style="list-style-type: none"> • Supply the coolant and check leakage. • Adjust fan belt tension. • Wash out inside of cooling system. • Clean or repair the radiator fin. • Check the thermostat. • Tighten the radiator cap firmly or replace the packing of it. • Replace the monitor. 	
The engine does not start when the starting motor is turned over.	<ul style="list-style-type: none"> • Add fuel. • Repair where air is leaking into fuel system. • Check the injection pump or the nozzle. • Check the valve clearance. • Check engine compression pressure. 	
Exhaust gas is white or blue.	<ul style="list-style-type: none"> • Adjust to specified oil quantity. • Replace with specified fuel. 	
Exhaust gas occasionally turns black.	<ul style="list-style-type: none"> • Clean or replace the air cleaner element. • Check the nozzle. • Check engine compression pressure. • Clean or replace the turbocharger. 	
Combustion noise occasionally changes to breathing sound.	<ul style="list-style-type: none"> • Check the nozzle. 	
Unusual combustion noise or mechanical noise.	<ul style="list-style-type: none"> • Check with specified fuel. • Check over-heating • Replace the muffler. • Adjust valve clearance. 	

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