

# OPERATION MANUAL

*Relex* 22-7

SER. NO. HY2270001~

 **HYUNDAI**  
HEAVY INDUSTRIES CO.,LTD.

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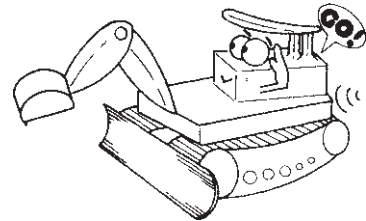
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# SAFETY PRECAUTIONARY NOTES BEFORE START

## ⚠ DANGER

### Signal before start.

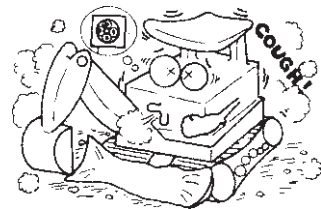
Before starting the engine, travelling or swivelling, always signal to other workers, using the horn etc.



## ⚠ WARNING

### Pay attention to the ventilation.

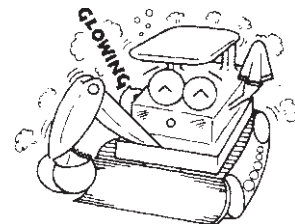
For indoor work or work in tunnel, ventilate sufficiently to prevent carbon monoxide poisoning from the exhaust.



## ⚠ CAUTION

### Warm-up

Before starting, always warm up the machine.

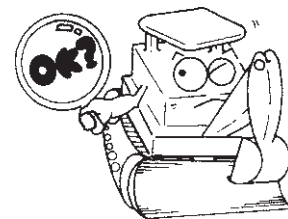


## ⚠ WARNING

### Prestart inspections

Do prestart inspections. If you find any wrong point, you should repair the machine immediately. Using the machine having a trouble cause an accident.

☞ Refer to "Inspections" on page 48.

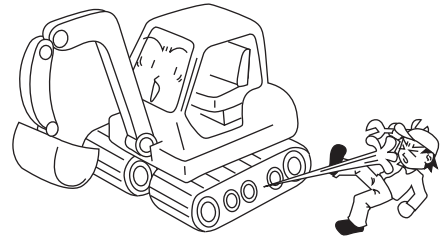


# SAFETY PRECAUTIONS DURING INSPECTION AND MAINTENANCE

## ▲ WARNING

### Take care about high-pressure grease

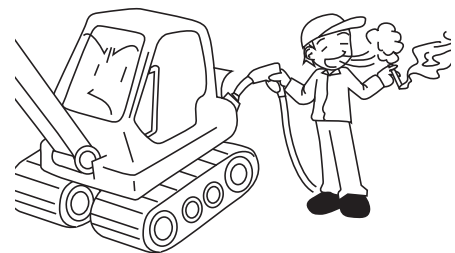
- The grease cylinder adjusting the track tension is prepacked with grease with the result that the grease may be of high pressure. In this status, if the plug is loosened carelessly, the plug and grease may spring out, inviting danger.
- When reducing the pressure by turning the cartridge valve (lubrication valve), do not turn the valve more than one turn. Do not face the worker's body to the front side of the cartridge valve or bring the face close to it.
- Do not disassemble the recoil spring, otherwise it may lead to a serious accident resulting in injury or death.



## ▲ WARNING

### Prevention against the danger of fire or explosion

- Take care when handling combustible materials such as fuel, oil, and antifreeze etc. If fuel leaks onto electric system parts, this may result in ignition.
- Perform fuel supply and oil supply outdoors and keep fire and a light away.- If fuel, oil, or any other combustible solution spills out onto a machine, remove it at once.
- Do not heat a fuel tank and a hydraulic device or bring fire near them, otherwise ignition may be caused.
- Put each of fuel and oil in a proper container and store it in a safe place that does not allow any person other than persons concerned to touch it.

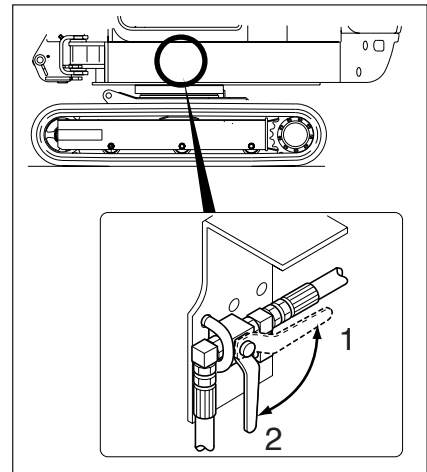


# EXPLANATION OF EACH DEVICE

## Manual boom lowering lever

Incorporated in the boom circuit is a manual lowering valve, this valve allows the boom to be lowered should the engine or hydraulics fail.

1. Lower the boom
2. Normal position.

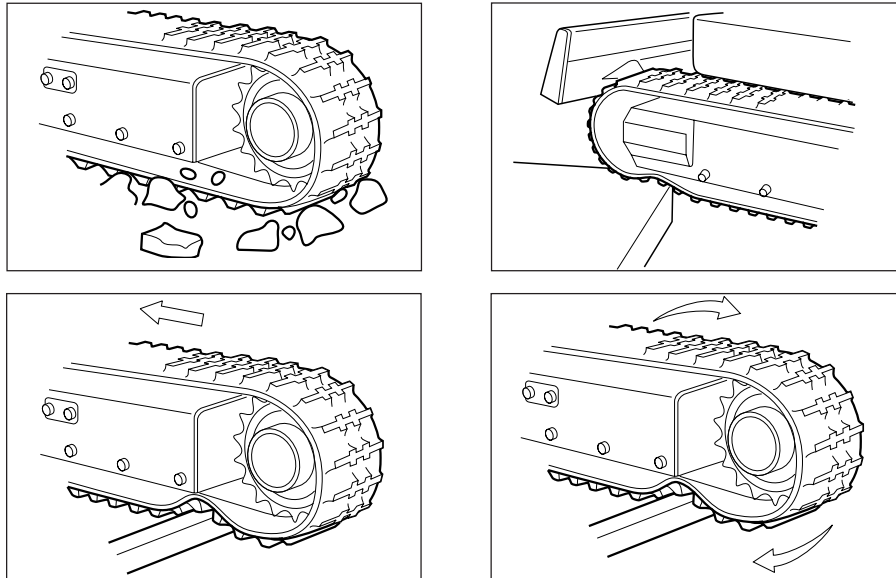


# OPERATIONAL PRECAUTIONS

## OPERATING THE RUBBER CRAWLER

### Do not Travel or Turn on a Sharp Edge or Stepped Grade.

If you travel or turn on a projecting edge or a stepped grade, the machine will put an extra load on the rubber crawler causing it to split or cut the treads of the rubber crawler and the inner steel cord.



### Prevent Foreign Matter from Entering the Rubber Crawler

Foreign matter will strain the crawler and cut it.

### Make sharp Turns

Do not turn sharply on road with a high-friction factor such as a concrete road.

### Keep Oil Products Away from the Rubber Crawler

If you spill fuel or hydraulic fluid on the rubber crawler, clean it.

### Protection from Salt

Do not operate on a beach. (Core metal will rust due to salt corrosion.)

### Attention to indoor Storage

If the machine is not used for a long time, keep it indoors to prevent exposure to direct sunlight and rain.

### ⚠ CAUTION

- Be careful to operate the machine with rubber shoes.
- Rubber shoe isn't more stable than steel because of its flexibility.

### ⚠ WARNING

Even a rubber shoe is easy to slip on frozen or snow surface. Be careful to travel and work under its condition.

### ⚠ CAUTION

- Driving and slewing on a projecting edge or so cause slacking a rubber shoe to be apt to remove it or cut the inner steel code.
- Driving and slewing with trackroller banked against the rubber shoe is apt to remove the rubber shoe.

# INSPECTIONS

Do the following inspections. Neglecting any of the inspections may result in trouble with the machine including the hydraulic equipment.

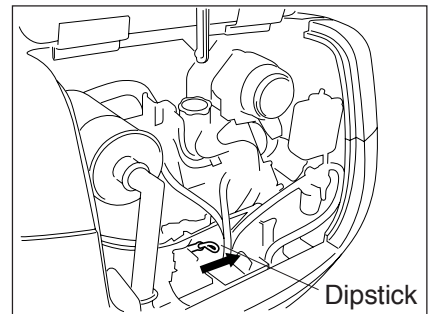
## Prestart Inspections

Check the following items before operation everyday.

### ⚠ CAUTION

- For inspection, always park the machine on level ground.
- Keep other persons away from the machine while inspecting it.
- Before inspection and maintenance, be sure to stop the engine.

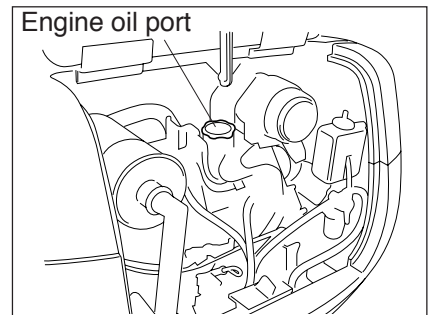
1. Checking the amount of oil in the engine oil pan.  
Pull out the dipstick Wipe the oil off the dipstick using a cloth and insert it again.  
If the oil amount is insufficient, add engine oil through the oil port.



### IMPORTANT

Use high-quality engine oil. It is recommended to use the following engine oils.

☐	Engine oil	SAE10W-30
	Capacity	MAX. 3.5 ℓ



### ⚠ WARNING

- Do not inspect engine oil level after stopping the engine immediately. Engine oil is so hot that it is dangerous and it takes 30 minutes that the engine oil thoroughly flows down the crankcase. Inspect it before working or after 30 minutes after the engine has stopped.
- Take care not to add too much engine oil.
- Check that the engine oil level 30 minutes after replenishment.

### IMPORTANT

Also check the sample oil on the dipstick for fouling and degrees of viscosity.

### ⚠ CAUTION

In adding oil, take care not to spill it. If you spill oil, wipe it properly, or this could lead to fire and the risk of personal injury and equipment damage.

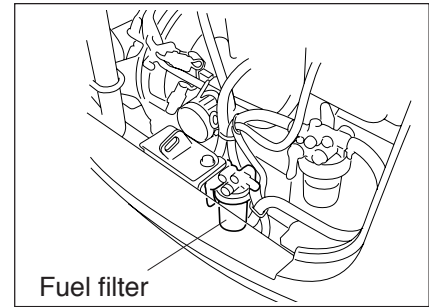
# MAINTENANCE EVERY 500 SERVICE HOURS

1. Replacing the fuel filter element  
You can take out the element by closing the cock and removing the retainer ring.  
Replace it with new one.

## ⚠ CAUTION

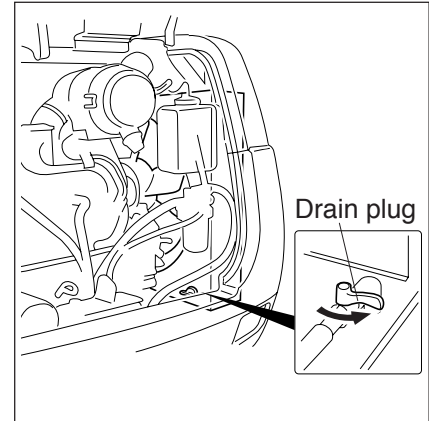
O ring must be replaced with new one in this time.  
After replacing the element, bleed air.

🔧 For details refer to page 64.



2. Replacing cooling water in radiator  
Remove the drain plug on radiator to replace the cooling water.

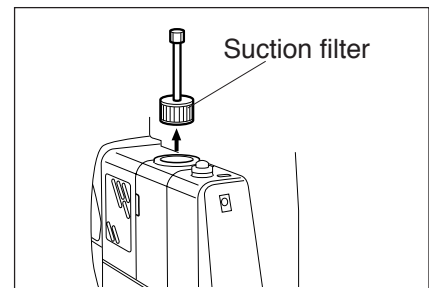
📦 5.6 ℓ



3. Cleaning the suction filter  
Remove the suction filter from the hydraulic oil tank. Clean the filter with diesel fuel or kerosene to remove the dirt. If the strainer is broken, replace it with new one.

## IMPORTANT

To reinstall the lid, set the O-ring securely into the flange groove in order to prevent a leak of hydraulic oil.



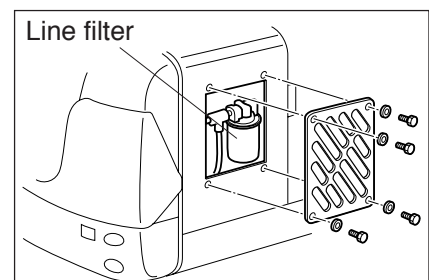
## ⚠ CAUTION

Do not perform this operation while the hydraulic oil is still hot to avoid being burned.

4. Replacing the line filter element  
Remove the filter with a filter wrench and replace it with new one.

## IMPORTANT

Before replacing the filter, be sure to open the hydraulic oil tank to bleed the filter.



# PERIODICAL INSPECTIONS AND MAINTENANCE LIST

○ Inspect, Add, Adjust, Grease    △ Clean    ⊙ Replace

Period Item		Check before start-up	First 50 hours	First 100 hours	Every 50 hours	Every 100 hours	Every 250 hours	Every 500 hours	Every 1000 hours	Every 2000 hours	Remarks	Refer to
Attachment	Inspecting the bolt and nut for tightness	○										
	Inspecting and greasing the attachment pins	○										
	Check for loose parts and damaged parts	○										
	Greasing the slew bearing gear				○							
	Inspecting the crawler tension (grease cylinder)	○										
	Inspecting and greasing the lower roller					○			⊙			
	Replacing the lubricant for the crawler drive unit reduction gears								⊙		First 500 hours	
Hydraulic system	Inspecting the joint for looseness and oil leaks	○										
	Supplying or replacing the hydraulic oil	○					* △		⊙		* Drain water and sediment	
	Replacing the line filter element			⊙				⊙				
	Cleaning or replacing the suction filter			△				△	⊙			
Electric system	Check wiring for non-connection short circuit, loose connections	○										
	Inspecting the electrical parts	○										
	Inspecting the battery fluid level				○							

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