

SERVICE MANUAL

Relex 28-7

SER. NO. HY2870001~

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

[*http://marengine.com/r28-7-excavator*](http://marengine.com/r28-7-excavator)

INTRODUCTION

To insure a long life for the machine and the engine and to prevent failure and problems, proper operation, maintenance and repairs are imperative.

This service manual includes an “outline,” “structure and operation,” “inspection and adjustment,” “disassembly and assembly,” “standard maintenance,” and “repair and replacement of parts” of the machine which are necessary to carry out the inspections and repairs in the repair shop.

We trust that this manual will help you to effectively carry out the necessary. Repairs should they arise, also provide a accurate description of the product, and the correct repair procedures.

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(Swing, PTO)
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1 PRECAUTIONS ON MAINTENANCE

1. Correct operation

Correct operation means to follow the correct “procedure” and “method.”

Procedure focuses on speed and accuracy of each job.

In the method, are addressed what type of facility, tools, instruments, materials, oil should be used, how and which part should be checked, adjusted or disassembled, and what matters to attend to.

2. Precautions on operation

1. Safety check

Check that stoppers and sleepers are correctly installed for the vehicle jack-up operation.

2. Preparation

Prepare all of the tools and inspect and adjust the instruments.

3. For efficiency

1) Understand the state before disassembly.

What is the problem? Is disassembly absolutely necessary?

2) Before disassembly

Determine whether match marks are necessary. For the electrical system, disconnect the cable from the battery terminal.

3) Precautions for disassembly

In stead of checking all of the disassembled parts at once, check each part individually as it is disassembled. When removing the hydraulic unit or the hoses, mount a dust cap on the connection.

4) Repair of disassembled parts

Keep the disassembled parts in order. Clearly distinguish the parts to be replaced with new parts from those to be reused. Packings, seals, rings, split pins must be replaced.

NOTE:

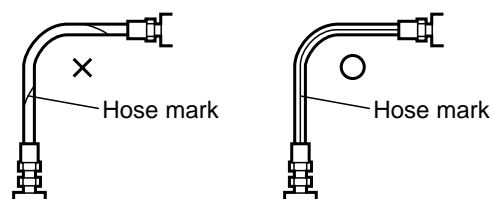
Electrical equipment, rubbers and V belts (which are easily affected by water and oil) must be handled carefully in order to prevent soiling them.

5) Clean disassembled parts

Thoroughly clean the disassembled parts.

6) Assembly

Perform the assembly correctly (tightening torque, application of Three Bond, screw lock, grease, use of seal tape, etc.). Also install the hose correctly.

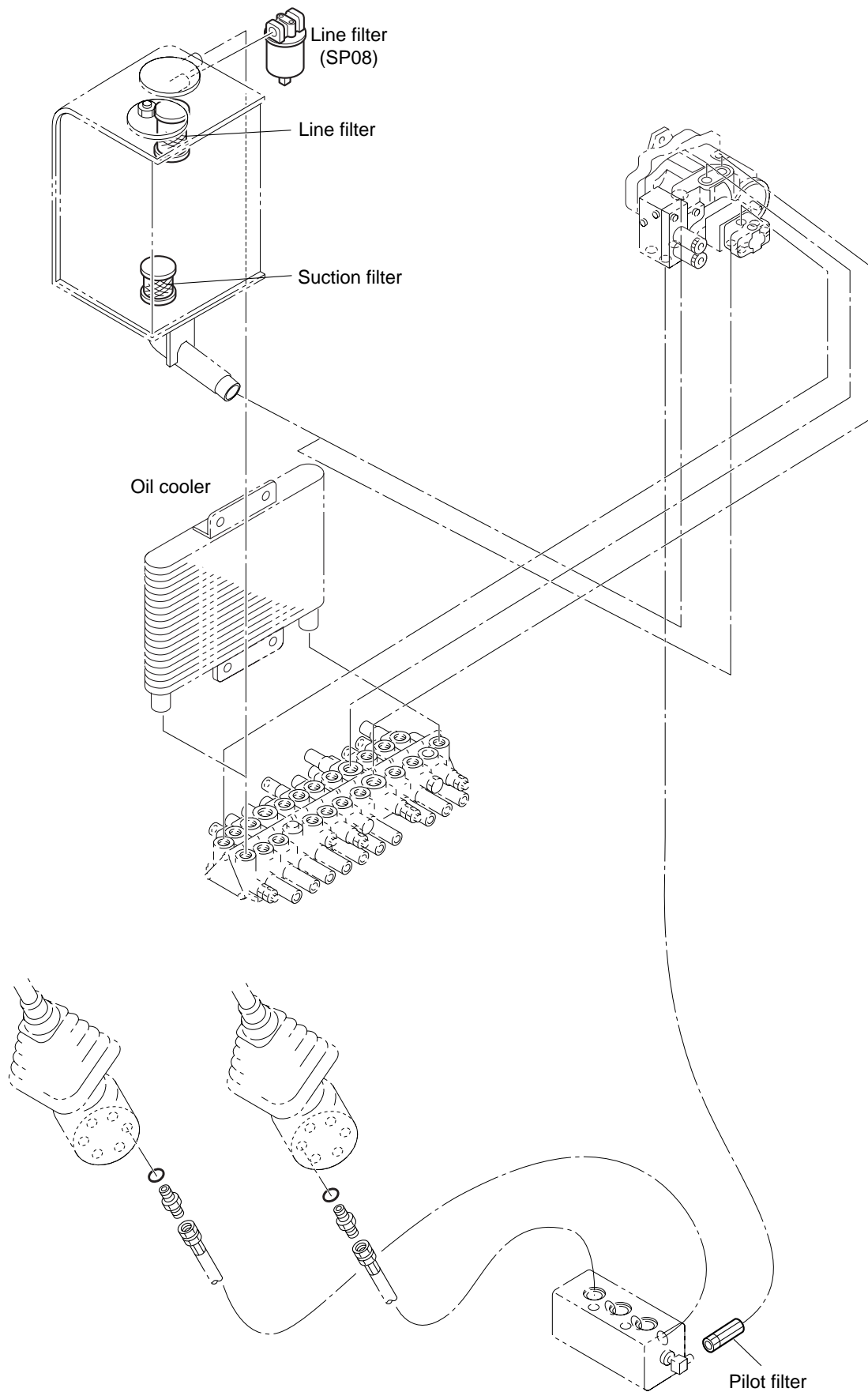


6 HYDRAULIC OIL FILTER

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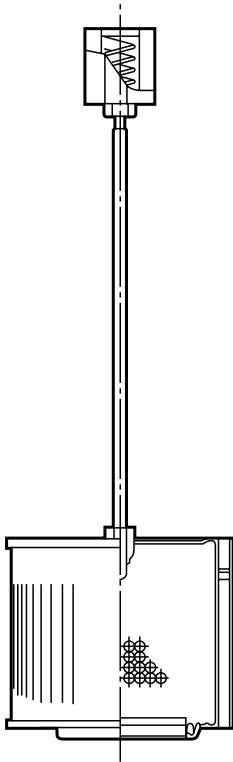
- 6-1 Installation
- 6-2 Hydraulic oil filter
 - 6-2-1 Line filter (SP10)
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 - 6-3-1 Replacing the line filter
 - 6-3-2 Replacing the suction filter
 - 6-3-3 Replacing the pilot filter
 - 6-3-4 How to clean the suction filter

6-1 Installation



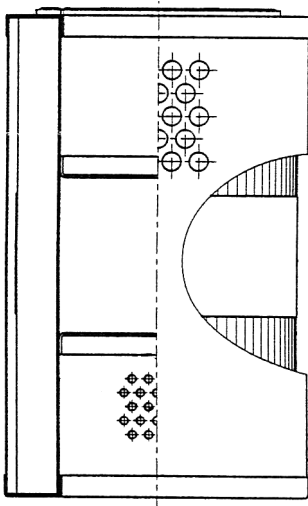
6-2 Hydraulic oil filter

6-2-1 Suction filter



Grain size	150 mesh
Filtration capacity	330ℓ /min(Max)
Oil temperature	-20°C~120°C

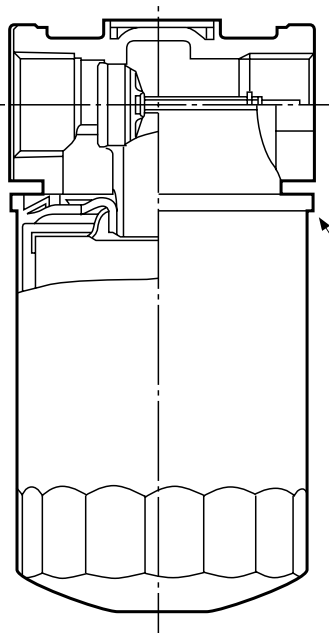
6-2-2 Line filter



Filtration accuracy	10μ
Filtration capacity	125ℓ /min (Max.)
Proof pressure	0.7 MPa
Oil temperature	-20°C~120°C

※ Opening pressure of bypass valve
(other part) 0.15Mpa

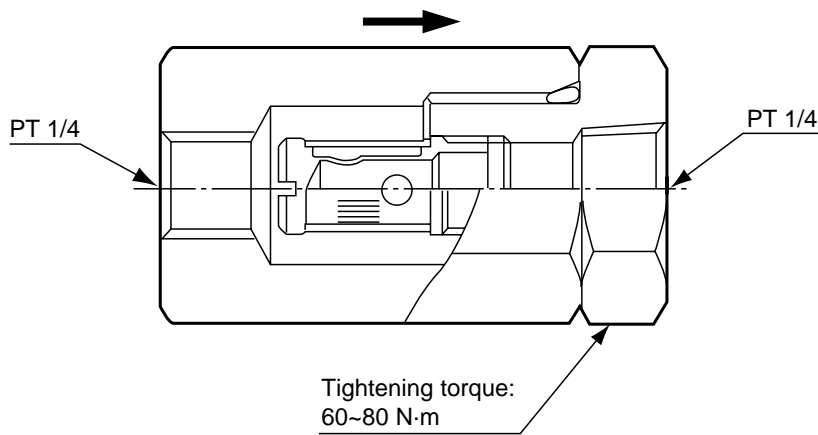
6-2-3 Line filter(only P.T.O return)



Tightening torque
20 N·m

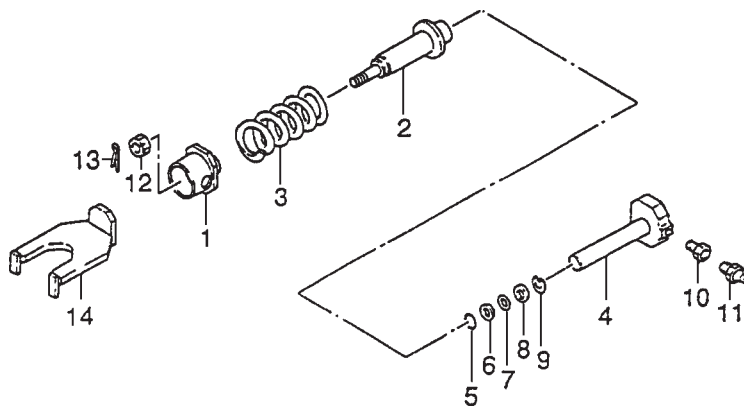
Filtration accuracy	10 μ
Filtration capacity	125 ℓ /min (Max.)
Opening pressure of bypass valve	0.103 MPa
Proof pressure	0.7 MPa
Oil temperature	-20°C~120°C
Port size	2 \times PT1

6-2-4 Pilot filter



Filtration capacity	2 ℓ /min.(Max.)
Proof pressure	3.9 MPa
Filtration accuracy	31 μ
Filtration area	5 cm ²
Oil temperature	-20°C~120°C

17-3 Disassembly and assembly



- | | |
|-------------------------|---------------------|
| 1. O-ring (IB-P30) | 8. Spacer |
| 2. Cylinder | 9. Split pin |
| 3. Backup ring (T2-P40) | 10. Cartridge valve |
| 4. Rod | 11. Spring |
| 5. Scraper (DSI) | 12. Castle nut |
| 6. Backup ring (T2-P40) | 13. Split pin |
| 7. Castle nut | 14. Idler yoke |

Cylinder effective stroke: 150 mm(5.9")

17-3-1 How to disassemble and assemble the adjust cylinder

1. Disassembly

- Remove the cartridge valve from the adjust cylinder rod.
- Remove the cylinder rod from the adjust cylinder tube.
- Remove the snap ring, spacer, dust seal, backup ring and O-ring.

2. Assembly

The assembly procedure is the reverse of the disassembly procedure.

- Attach the O-ring, backup ring and spacer to adjust cylinder tube.
*Coat grease on the O-ring and dust seal before assembly.
- Attach the adjust cylinder rod to adjust the cylinder tube carefully so that the seals are not damaged. Apply grease before hand in the adjust cylinder tube. Attach the cartridge valve to the adjust cylinder rod so that the screw on the second step reaches the tapped hole. When attaching the adjust cylinder rod, tighten the cartridge valve after checking that grease comes out of the grease drain hole.

Note:

- Adjust and assemble carefully so that air does not remain in the adjust cylinder tube.
- Coat grease on the piston of the cylinder tube rod before assembly.
Tightening torque of the cartridge valve: 187 to 210 N·m

17-3-2 How to disassemble and assemble the spring case

1. Disassembly

Lower the spring force between the front idler and adjust cylinder tube using a pressing machine and the special purpose tool.

- a. Remove the castle nut for the mounting spring.
- b. Remove the spring from adjust cylinder tube.

Note:

- Be careful when using the tool when removing the spring. Also, be careful during assembly.

2. Assembly

The assembly procedure is the reverse of disassembly.

Attach the spring to adjust cylinder tube using the special tool and set the spring to the specified position with the castle nut.

After adjustment, completely bend the split pin.

Spring set length: 233.5mm(9.2")

19 SPROCKET

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- 19-1 Disassembly and assembly
 - 19-1-1 Removing the sprocket
 - 19-1-2 Installing the sprocket
- 19-2 Standard of maintenance
 - 19-2-1 Sprocket

19-1 Disassembly and assembly

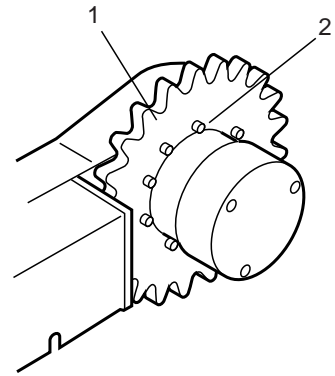
19-1-1 Removing the sprocket

1. Crawler

Refer to the explanation on crawler removal.

2. Sprocket

Remove sprocket mounting bolts (1) and then sprocket (2) from the travelling motor assembly.



19-1-2 Installing the sprocket

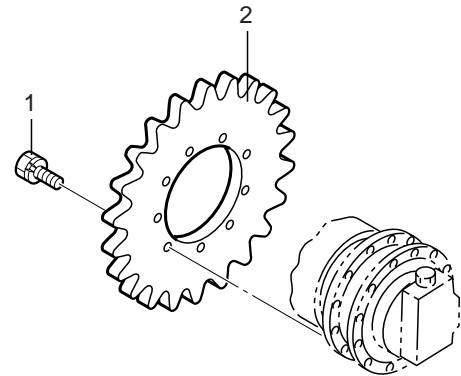
1. Sprocket

Attach the sprocket to travelling motor assembly and tighten the mounting bolts (1).

Tightening torque: 100 N·m~110 N·m (72.3~80 lb-ft)

2. Crawler

Refer to the explanation of crawler installation.



Diesel Engines

ABS	Agco-Sisu
Akasaka	Baudouin
BMW	Bukh
Caterpillar	CHN 25/34
Cummins	Daihatsu
Detroit	Deutz
Doosan-Daewoo	Fiat
Ford	GE
Grenaa	Guascor
Hanshin	Hatz
Hino	Honda
Hyundai	Isotta
Isuzu	Iveco
John-Deere	Kelvin
Kioti	Komatsu
Kubota	Liebherr
Lister	Lombardini
MAK	MAN B&W
Mercedes	Mercruiser
Mirrlees BS	Mitsubishi
MTU	MWM
Niigata	Paxman
Perkins	Pielstick
Rolls / Bergen	Ruggerini
Ruston	Scania
Shibaura	Sisu-Valmet
SKL	Smit-Bolnes
Sole	Stork
VM-Motori	Volvo
Volvo Penta	Westerbeke
Wichmann	Yanmar

Machinery

ABG	Airman
Akerman	Ammann
Astra	Atlas Copco
Atlas Weyha.	Atlet
Bell	Bendi
Bigjoe	Bobcat
Bomag	BT
Carelift	Case
Caterpillar	Cesab
Challenger	Champion
Claas	Clark
Combilift	Crown
Daewoo-Doosan	Demag
Deutz-Fahr	Dressta

Machinery

Drott	Dynapack
Extec	Faun
Fendt	Fiat
Fiatallis	Flexicoil
Furukawa	Gehl
Genie	Grove-gmk
Halla	Hamm
Hangcha	Hanix
Hanomag	Hartl
Haulpack	Hiab
Hidromek	Hino truck
Hitachi	Hyster
Hyundai	IHI
Ingersoll-rand	JCB
JLG	John-Deere
Jungheinrich	Kalmar
Kato	Kioti
Kleeman	Kobelco
Komatsu	Kramer
Kubota	Lamborghini
Landini	Liebherr
Linde	Link-belt
Manitou	Massey-Ferg.
Mccormick	MDI-Yutani
Mitsubishi	Moxy
Mustang	Neusson
New-Holland	Nichiyu
Nissan	OK
OM-Pimespo	others-tech
Pel-Job	PH-mining
Poclain	Powerscreen
Same	Samsung
Sandvik	Scania
Schaefer	Schramm
Sennebogen	Shangli
Shibaura	Steiger
Steinbock	Steyr
Still	Sumitomo
Super-pac	Tadano
Takeuchi	TCM
Terex	Toyota
Valpadana	Venieri
Versatile	Vogele
Volvo	Weidemann
Wirtgen	Yale
YAM	Yanmar