SERVICE MANUAL

Robex 15-7

SER. NO. HY1570001~

HYUNDAI
HEAVY INDUSTRIES CO.,LTD.

Description				Unit	Robex15-7
Machine weight	Canopy		Rubber shoe	Kg	1460
			Steel shoe		1510
	Cabin		Rubber shoe		1570
			Steel shoe		1620
Standard bucket	Capacity			m^3	0.04
	Width			mm	400
Engine	Maker, model				MITSUBISHI L3E
	Rated power			kW(ps)/min^{-1}	12.5(17)/2400
	Displacement			cc	952
Working range	Max.digging depth			mm	2175
	Max.vertical digging depth				1535
	Max.digging height				3250
	Max.dumping height				2180
	Max.digging reach				3730
	Min.swing radius		Front		1630
			Swing		1235
	Rear end radius				1140
	Boom swing angle			deg	Left80/Right50
Dimension	Overall length			mm	3720
	Overall width				1000
	Overall height				2260
	Dozer(width × height)				1000×240
Performance	Travel speed			km/hr	2.1/3.9
	Swing speed			min^{-1}	11.5
	Gradeability			deg(%)	25(47)
	Max.digging force		Bucket	kN(kgf)	14.4(1470)
			Arm		9.0(920)
	Max. drawbar pull				12.6(1290)
Under-carriage	Ground pressure	Canopy&rubber shoe		kpa(kgf/cm^2)	26(0.27)
		Cabin&rubber shoe			28(0.29)
	Tumbler distance × track gauge			mm	1130×770
	Track shoe width				230
	Type of travelling motor				Piston shoe-in type
	Crawler tension system				Grease cylinder
Hydraulic	Type of hydraulic pump				Gear×3
	Pump oil flow			ℓ/min	3×15.7
	Auxiliary circuit oil flow				31.4
	Relief valve setting pressure			MPa(kgf/cm^2)	18.6(190)
Capacity	Hydraulic oil tank			ℓ	24
	Engine oil				3.5
	Fuel tank				20
	Cooling water				5.6
Noise	Noise level(LwA/LpA)			dB	95/84

2-7-8 Maintenance every 1,000 service hours

	Item	Content	Remarks
1	Engine oil pan	Clean engine oil pan	
8	Hydraulic oil tank	Replace the hydraulic oil and clean the oil tank	Clean the inside of the tank
12	Lubricating oil of slew and travelling reduction gears	Replace the lubricating oil	Refer to Table of Oil/Grease Supply Points. (For new machine, every 200 service hours)

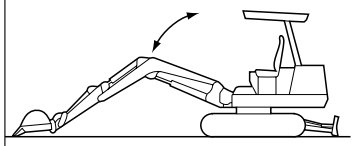
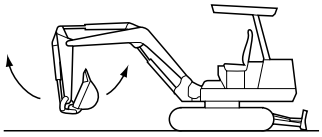
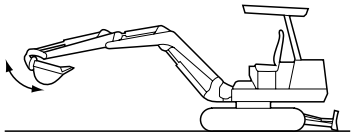
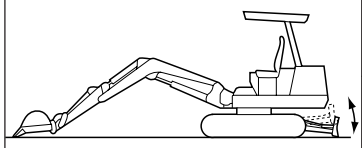
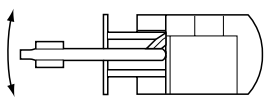
2-7-9 Maintenance every 2,000 service hours

	Item	Content	Remarks
15	Track roller	Replace	

Table of Oil/Grease Supply Points

No.	Oil/Grease Supply Point	Specified oil (genuine part)	Quantity	Time
1	Travelling motor	API Classification CD Class SAE30	250 cm^3	Every 1,000 service hours (At first, replace after the first 500 service hours)
2	Track roller		100 cm^3	Every 2,000 hours
3	Front idler		100 cm^3	Every 2,000 hours

3-2-2 Measuring the speed of attachment cylinder (at full engine speed and oil temperature 50±5°C)

Condition	Machine position		Unit	New standard value	Allowable limit
Boom Make bucket teeth touch the ground		Up	sec	2.4±0.5	3.4
Extend cylinder to the Maximum length		Down		2.0±0.5	3.0
Arm Retract cylinder to the minimum length		Dig		2.9±0.5	3.9
Extend cylinder to the maximum length		Dump		3.0±0.5	4.0
Bucket Retract cylinder to the minimum length		Dig		3.3±0.5	4.3
Extend cylinder to the maximum length		Dump		2.4±0.5	3.4
Dozer Make dozer contact the ground		Up		1.0±0.3	1.5
Lift dozer to the maximum height		Down		0.5±0.3	1.0
Swing Retract cylinder to the minimum length		Right swing		4.0±0.5	5.0
Extend cylinder to the maximum ground		Left swing		4.1±0.5	5.1

5-4 Performance test of the hydraulic pump

5-4-1 Measuring instrument

Hydraulic pressure tester	Measuring range of flow rate (ℓ/min)	7~ 200ℓ
	Measuring range of pressure	0 ~ 34.3MPa(350kgf/cm^2)
	Measuring range of temperature (°C)	0 ~ 150
	Port size	PF1 O ring type
Pressure gauge		49.0MPa(500kg/cm^2), 4.9MPa(50kgf/cm^2)
Tachometer		Diesel tachometer (digital type)
Hose for testing		Equivalent to the hose of 20.6MPa (210kgf/cm^2) high pressure (Nominal size PF1/ 2-PF1/ 2 × 1m)

5-4-2 Preparation

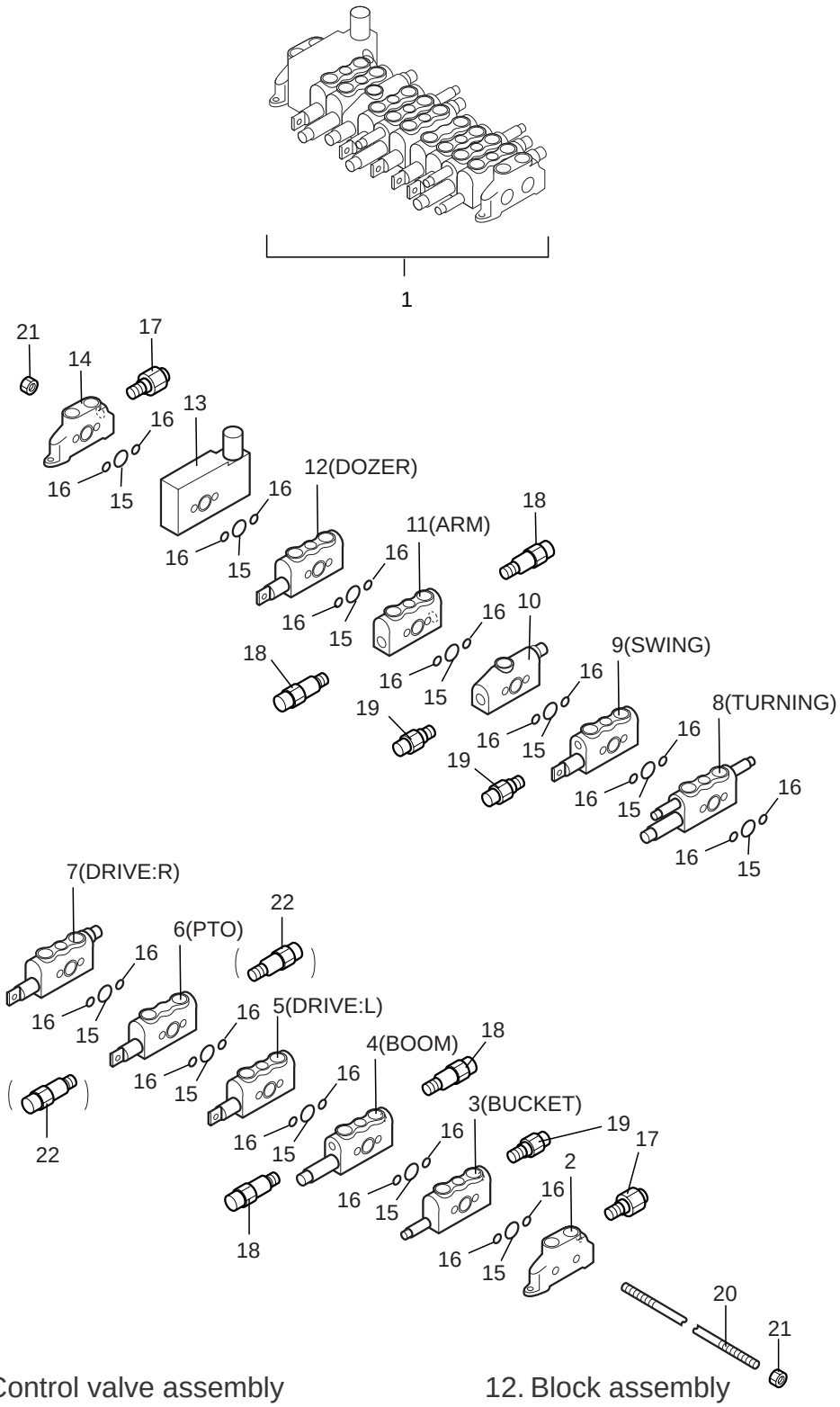
1. Park machine on flat ground and stop engine.

5-4-3 Connecting tester

1. Remove the hose on the pump port of the control valve.
2. Connect the removed hose to the outlet of the tester.
3. Connect the hose on the discharge of the pump to the inlet of the tester.
4. Connect pressure gauge to port measuring port.

5-4-4 Measuring procedure

Open the throttle valve of the tester and start the engine. Read the pressures on the pressure gauge and measure the flow at that time. At the same time, record the engine speed.



1. Control valve assembly
2. Block assembly
3. Block assembly
4. Block assembly
5. Block assembly
6. Block assembly
7. Block assembly
8. Block assembly
9. Block assembly
10. Block assembly
11. Block assembly
12. Block assembly
13. Block assembly
14. Block assembly
15. O-ring
16. O-ring
17. Relief valve assembly
18. Relief valve assembly
19. Relief valve assembly
20. Rod
21. Nut
22. Relief valve assembly

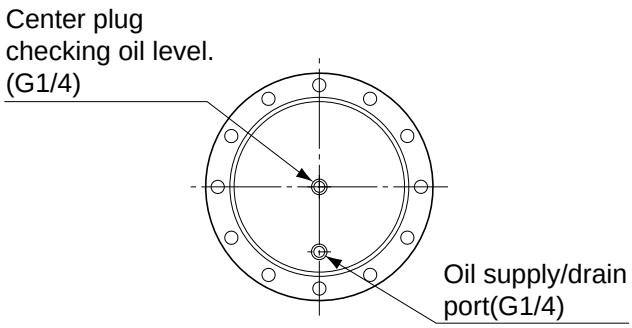
9 SLEW MOTOR

CONTENTS

10-4 Handling the travelling motor

Add lubricating oil according to the following procedure.

1. The cover has two plugs. Turn the motor so that two plugs are at the right angle to the floor. Use them as the oil quantity check port, oil intake and oil drain ports, starting from the top in that order.



2. First, remove the plugs from the (A) port with an Allen wrench.
3. Add lubricating oil through the oil intake until the oil comes out of the intake port.
4. Plug the (A) port, then wind seal tape around the plug before tightening.

Amount of lubricating oil	250 cc

Schedule for replacing lubricating oil:

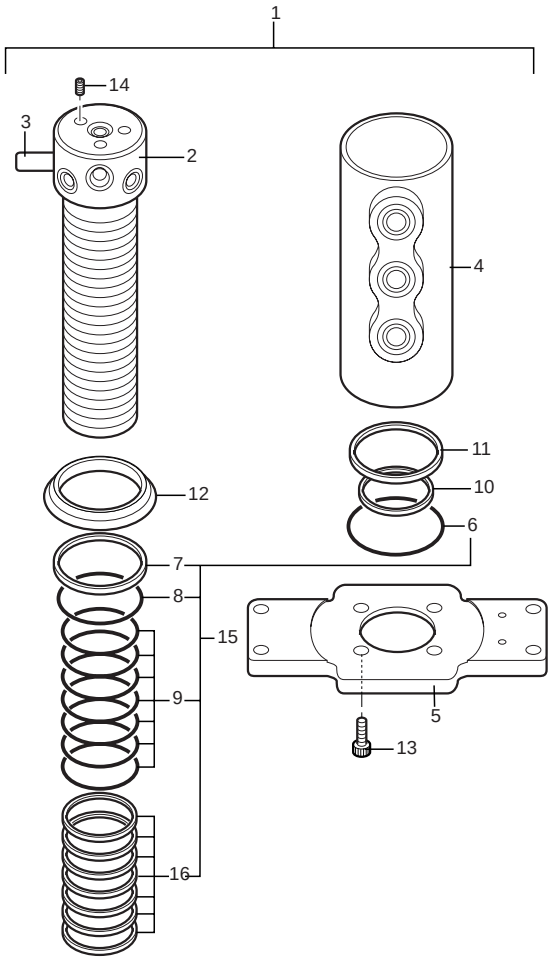
First: After the first 200 service hours or 2 months
Second and later times : Every 1,000 service hours or 1 year

Standard maintenance

Tightening torque

Sprocket tightening torque	72.6N-m(7.4kgf-m)
Motor tightening torque	72.6N-m(7.4kgf-m)

12-2 Structure,disassembly and assembly



1. Swivel joint ass'y
2. Shaft
3. Pin
4. Hub
5. Frange
6. O-ring
7. Back up ring
8. O-ring
9. O-ring
10. Snap ring
11. Thrust washer
12. Dust seal
13. Socket head bolt
14. Plug
15. Packing Ass'y
16. Seal slipper

Disassembly:

1. Remove bolt (14) and Frange (5).
2. Remove the snap ring (11).
3. Remove the shaft (2) from the hub (4) upward. Because the shaft is tightened by the tension of the O ring, tap a hammer on the shaft by rotating it and pull it up.
   * Be careful so that O ring does not become trapped.

Assembly:

1. Before assembly, check the O ring and sliding part for flaws and other defects.
2. Assembly is usually executed in the opposite order of disassembly.
   Coat a little hydraulic oil or grease on the O rings before assembly.

14 SPRING CASE AND GREASE CYLINDER

CONTENTS

17 TRACK ROLLER

CONTENTS