KOBELCO

SERVICE MANUAL

HYDRAULIC EXCAVATOR

SK100 V

SK120 V

SK120LC V

S5LP0007E

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LP01

SPECIFICATION

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MAINTENANCE STANDARD AND TEST PROCEDURE

LP04

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WORKING STANDARD

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2. WEIGHT OF COMPONENTS (DRY WEIGHT)

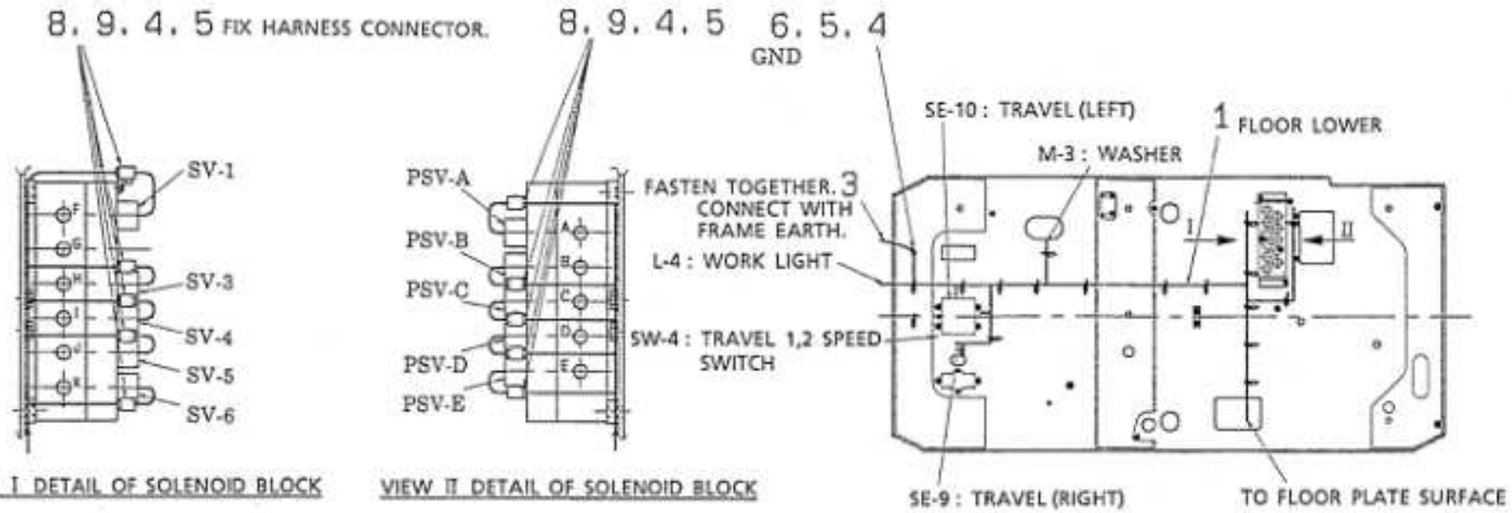
Unit:kg (lbs)

Item \ Model	SK100 v	SK120 v	SK120Lc v
Complete Machine [Std Export 500 mm (20 in) shoe]	10600 (23400)	11800 (26000)	12000 (26400)
1. Upper frame assembly	4650 (10250)	5500 (12100)	←
1.1 • Counterweight	1500 (3300)	2300 (5100)	←
1.2 • Cab	250 (550)	←	←
1.3 • Engine	✻325 (720)	✻345 (760)	←
1.4 • Hydraulic oil tank	✻98 (220)	←	←
1.5 • Fuel tank	✻72 (160)	←	←
1.6 • Swing motor and reduction unit	119 (260)	←	←
1.7 • Control valve	110 (240)	←	←
1.8 • Pump	80 (180)	←	←
1.9 • Boom cylinder	89 (200) × 2	105 (230)	←
1.10 • Radiator	✻57 (130)	←	←
2. Lower frame assembly	4000 (8820)	4150 (9150)	4350 (9590)
2.1 • Slewing ring	150 (330)	←	←
2.2 • Travel motor and reduction units	165 (360) × 2	←	←
2.3 • Upper roller	16 (35) × 2	←	←
2.4 • Lower roller	27 (60) × 12	←	27 (60) × 14
2.5 • Front idler	70 (150) × 2	←	←
2.6 • Track tention	58 (130) × 2	←	←
2.7 • Sprocket	36 (80) × 2	←	←
2.8 • Swivel joint	30 (70)	←	←
2.9 • Track link with 500 mm (20 in) shoes assembly	680 (1500) × 2	730 (1610) × 2	770 (1700) × 2
Track link with 600 mm (24 in) shoes assembly	820 (1800) × 2	880 (1940) × 2	920 (2030) × 2
Track link with 700 mm (27 in) shoes assembly	910 (2000) × 2	970 (2140) × 2	1020 (2250) × 2
2.9.1 •• Track link assembly	270 (600) × 2	290 (640) × 2	310 (680) × 2
3. Attachment			
[4.26 m (14 ft) boom + 2.22 m (7 ft-3 in) arm + 0.4 m³ bucket]	1950 (4300)	—	—
[4.6 m (15 ft-1 in) boom + 2.5 m (8 ft-2 in) arm + 0.45 m³ bucket]	—	2150 (4740)	←
3.1 • Bucket assembly (standard)	340 (750)	370 (820)	←
3.2 • Standard arm assembly (including the following:)	500 (1100)	650 (1400)	←
3.2.1 •• Standard arm	310 (680)	450 (990)	←
3.2.2 •• Bucket cylinder	87 (190)	←	←
3.2.3 •• Idler link	24 (50)	←	←
3.2.4 •• Bucket link	35 (80)	43 (90)	←
3.2.5 •• Pin (2pcs for mounting the bucket cylinder and bucket)	30 (70)	←	←
3.3 • Boom assembly (including the following:)	1080 (2380)	1230 (2710)	←
3.3.1 •• Boom	690 (1520)	800 (1760)	←
3.3.2 •• Arm cylinder	130 (290)	150 (330)	←
3.3.3 •• Pin (for mounting the arm)	14 (30)	←	←
4. Lubricant and water (including the following:)	370 (810)	←	←
4.1 • Hydraulic oil and engine oil	150 (330)	←	←
4.2 • Fuel	205 (450)	←	←
4.3 • Water	19 (40)	←	←

NOTE: Numerical values marked ✻ indicate the dry weight.

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2.2 FLOOR PLATE HARNESS

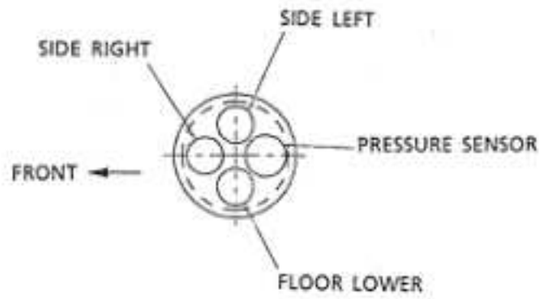


VIEW I DETAIL OF SOLENOID BLOCK

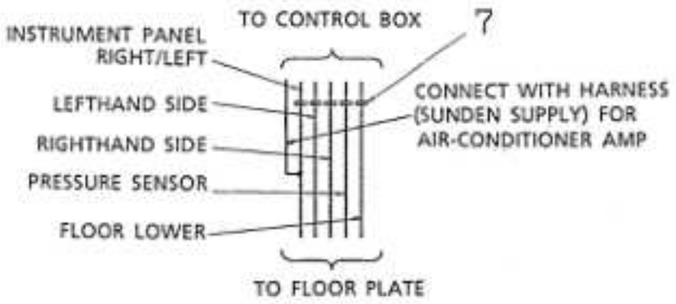
VIEW II DETAIL OF SOLENOID BLOCK

AS SEEN FROM THE BACK FACE OF FLOOR PLATE

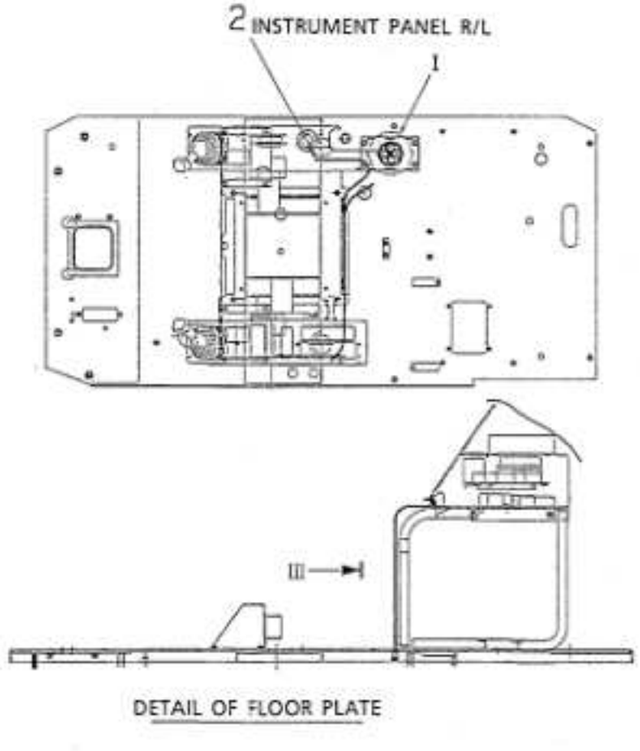
No.	NAME	Q'ty
1	FLOOR LOWER HARNESS	1
2	INSTRUMENT PANEL R/L HARNESS	1
3	FLOOR EARTH CABLE	1
4	LOCK WASHER (M8)	12
5	WASHER (M8)	12
6	NUT	1
7	CLIP	5
8	BRACKET	11
9	CAPSCREW M8×12	11



DETAIL I METHOD OF FIXING HARNESS



VIEW III CLAMPING HARNESS



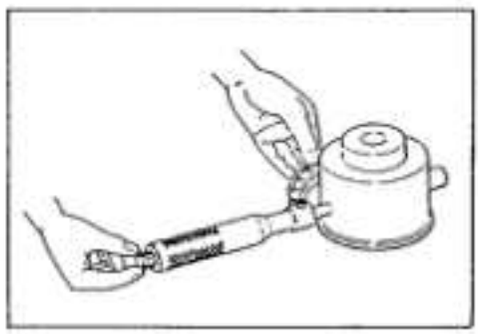
DETAIL OF FLOOR PLATE

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UNEVEN WEAR OF IDLE GEAR SHAFT

	Nominal size	Service limit	Remedy
Uneven wear	ø45 (1.77")	more than 0.1 (0.00394")	Replace.



Clearance between Idle Gear Bushing and Shaft

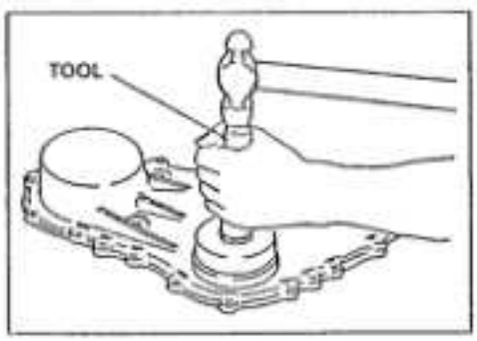
	Standard value	Service limit	Remedy
Clearance mm (in)	0.009~0.060 (0.00035~00.00236)	more than 0.2 (0.00787)	Replace bushing and shaft.



GEAR CASING COVER

Press in the oil seal, using a special tool.

Special tool ; setting tool front oil seal
9 – 8522 – 0034 – 0

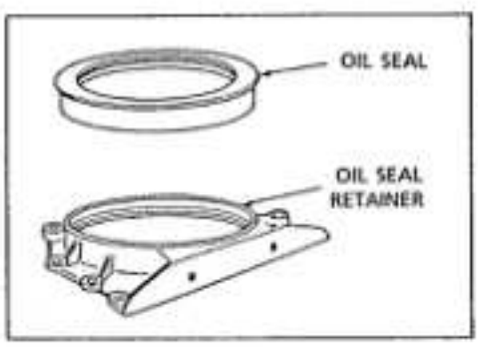


ATTACHING REAR OIL SEAL

Attach the oil seal retainer to the rear oil seal, using a special tool.

Retainer tightening kgf-m (ft-lbs)	2.0 ~ 3.1 (0.0787~0.122)

Special tool ; setting tool ; 9 – 8522 – 1254 – 0



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3.18 ARM DIGGING + SWING COMPOSITE OPERATION (SLANTED TOW DIGGING)

(1) Converting the Arm Digging Operating Circuit and Output Voltage Signals
When the lever is operated for arm digging, secondary pilot pressure is generated the same way as in single operation. This pressure acts upon port (PAa) of the control valve and changes over the arm spool. At the same time the pressure is converted to an output voltage signal by the pressure sensor (SE5).

(2) Converting the Right Swing Operating Circuit and Output Voltage Signals
When right swing action is performed, secondary pilot pressure is produced the same way as in single operation. This pressure enters port (PAS) of the control valve and changes over the swing spool. At the same time the pressure is converted to an output voltage signal by the pressure sensor (SE7).

(3) Positive Control of Pump
An output voltage signal from the pressure sensor (SE5, SE7) is transmitted to proportionate valves E, F of the pump via the control valve and permits the pump to discharge a flow according to lever strokes. Composite operation is carried out in this case, but only the pump on the P2 side operates. Consequently a command to pump proportionate valve E is minimized. A command to pump proportionate valve F is the result of the computation between the higher of the pressure of the pressure sensor (SE5) for arm digging and the pressure of the swing pressure sensor (SE7) and the discharge pressure (SE11) of the pump. Thus the pump discharges a flow according to lever strokes.

(4) Releasing the Swing Parking Brake
Where the swing pilot pressure is more than 6kgf/cm² (85psi), the controller de-energizes electromagnetic selector valve F of proportionate valve block (17) in order to release the swing parking brake. In arm digging operation also, the controller de-energizes electromagnetic selector valve F in order to release the swing parking brake.

(5) Main Circuit (Swing Priority Circuit)
When the arm spool and the swing spool are changed over, the oil discharged from pump P2 passes through port P2 of the control valve and runs into the swing motor and the arm cylinder past various spools. Since the circuits are constructed in parallel, pressure flows toward a lower level when simultaneous motions are performed. In order to use the oil delivery of pump P2 preferentially for swing action and to stabilize the swing speed, the secondary pilot pressure for swing action is admitted to port PIS of the arm spool and changes over the arm spool to the forced recycle position. This reduces the amount of oil used for arm action, thereby boosting the arm load pressure.

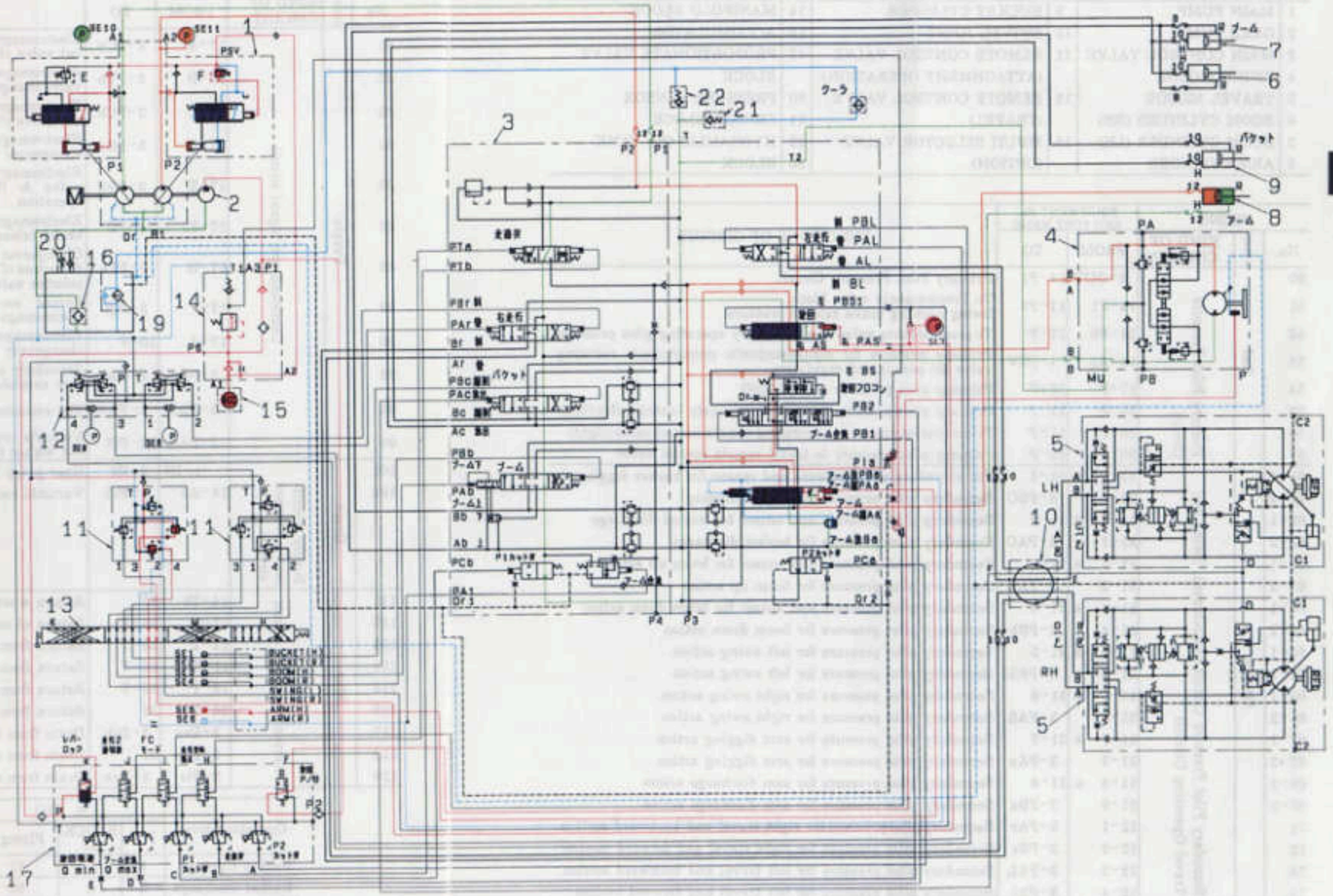


Fig. 15 Arm Digging+Right Swing (Slanted Tug Digging) Operating Circuit

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