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MIDI CRAWLER EXCAVATOR

E80

SERVICE MANUAL

87360644 NA

Issued 01-2006

NEW HOLLAND

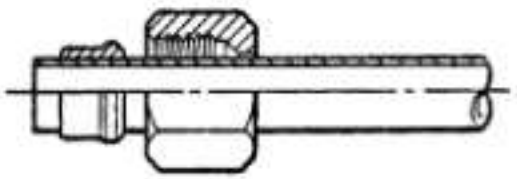
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11.4 TORQUE SPECIFICATIONS FOR SLEEVE TYPE TUBE FITTINGS

11.4.1 SLEEVE TYPE TUBE FITTINGS

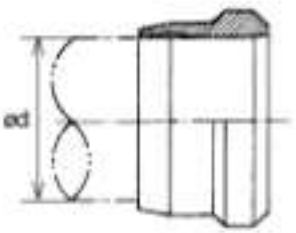
Tube size OD× Thickness (mm)	Spanner size (mm)	Tightening Torque Nm (lb ft)
10 × 1.5	19	44±4.9 (33±4)
15 × 2.0	27	147±20 (110±14)
18 × 2.5	32	177±20 (130±14)
22 × 3.0	36	216±20 (160±14)
28 × 4.0	41	275±29 (200±22)
35 × 5.0	55	441±44 (330±33)



SPW1100020E01

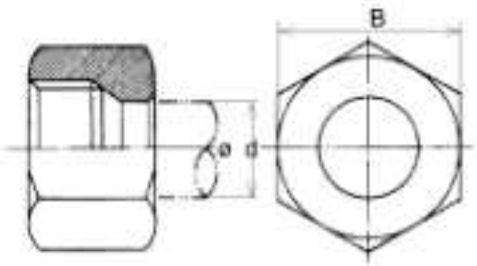
11.4.2 PART NO.

SLEEVE



SPW1100004J01

NUT



SPW1100005J01

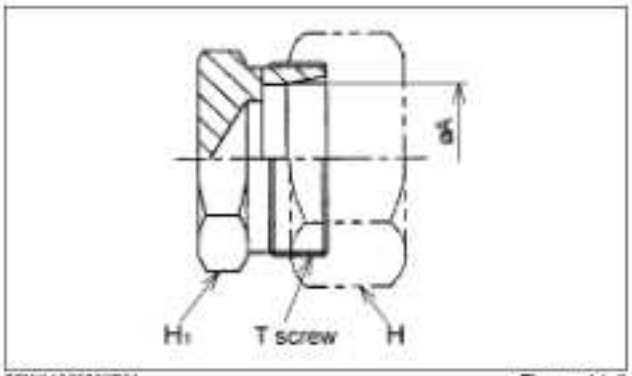
Tube size ød	Part No.		Tube size ød	Opposing flats (HEX) B	Part No.	
	Ihara Koatu	Nippon A.M.C			Ihara Koatu	Nippon A.M.C
6	ZF93S06000	—	6	14	ZF93N06000	—
8	ZF93S08000	—	8	17	ZF93N08000	—
10	ZF93S10000	ZA93S10000	10	19	ZF93N10000	ZA93N10000
12	ZF93S12000	—	12	22	ZF93N12000	—
15	ZF93S15000	ZA93S15000	15	27	ZF93N15000	ZA93N15000
18	ZF93S18000	ZA93S18000	18	32	ZF93N18000	ZA93N18000
22	ZF93S22000	ZA93S22000	22	36	ZF93N22000	ZA93N22000
28	ZF93S28000	ZA93S28000	28	41	ZF93N28000	ZA93N28000
32	ZF93S32000	—	32	50	ZF93N32000	—
35	ZF93S35000	ZA93S35000	35	55	ZF93N35000	ZA93N35000
38	ZF93S38000	—	38	60	ZF93N38000	—

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11.5 PLUGS

11.5.1 PLUG FOR HYDRAULIC PIPE JOINT

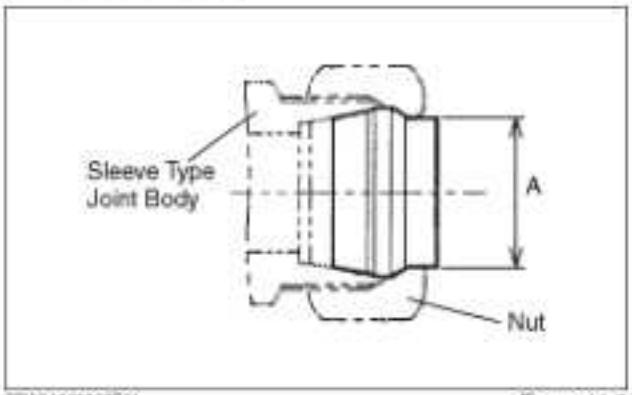
(1) Cap nut (Joint plug)



SPW1100006E01 Figure 11-8

Applicable tube O. D: A	Cap nut parts No.	T screw	Opposing flats	
			H_1	H
6	ZF83H06000	M12 X 1.5	14	14
8	ZF83H08000	M14 X 1.5	17	17
10	ZF83H10000	M16 X 1.5	17	19
12	ZF83H12000	M18 X 1.5	19	22
15	ZF83H15000	M22 X 1.5	24	27
18	ZF83H18000	M26 X 1.5	27	32
22	ZF83H22000	M30 X 1.5	32	36
28	ZF83H28000	M36 X 1.5	38	41

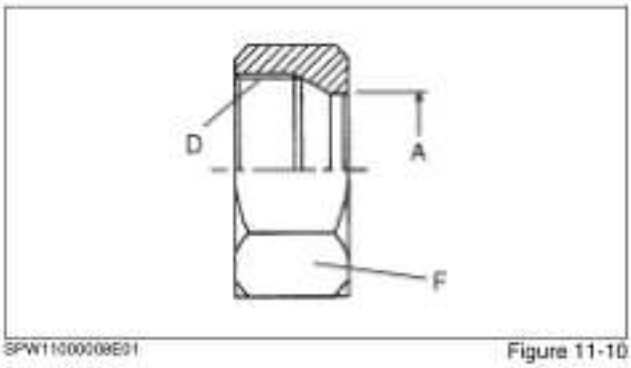
(2) Plug (Tube plug)



SPW1100007E01 Figure 11-9

Applicable tube O. D: A A	Plug parts No.
6	ZF83P06000
8	ZF83P08000
10	ZF83P10000
12	ZF83P12000
15	ZF83P15000
18	ZF83P18000
22	ZF83P22000
28	ZF83P28000

(3) Nut

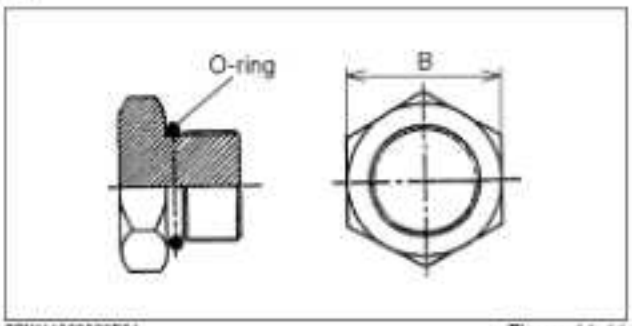


SPW1100008E01 Figure 11-10

Applicable tube O. D: A	Nut parts No.	D screw	Opposing flats
6	ZF93N06000	M12 X 1.5	14
8	ZF93N08000	M14 X 1.5	17
10	ZF93N10000	M16 X 1.5	19
12	ZF93N12000	M18 X 1.5	22
15	ZF93N15000	M22 X 1.5	27
18	ZF93N18000	M26 X 1.5	32
22	ZF93N22000	M30 X 1.5	36
28	ZF93N28000	M36 X 1.5	41
32	ZF93N32000	M42 X 1.5	50
35	ZF93N35000	M45 X 1.5	55
38	ZF93N38000	M48 X 1.5	60

11.5.2 PLUG FOR HYDRAULIC EQUIPMENT

(1)PF screw



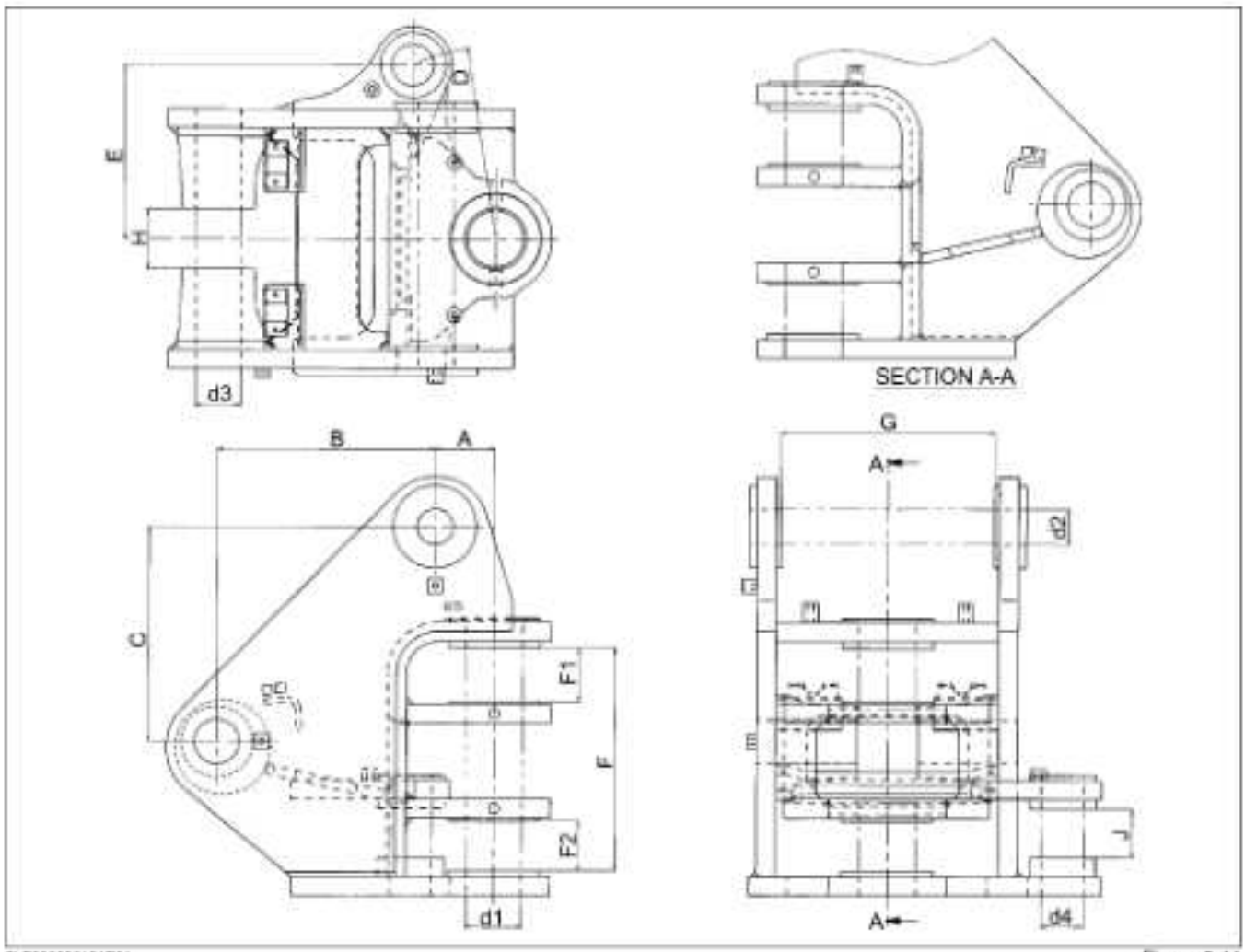
SPW1100009E01 Figure 11-11

PF screw	Plug parts No.	B mm	O ring parts No.	Nominal O ring
PF1/4	ZE72X04000	19	ZD12P01100	1B P11
PF3/8	ZE72X06000	22	ZD12P01400	1B P14
PF1/2	ZE72X08000	27	ZD12P01800	1B P18
PF3/4	ZE72X12000	36	ZD12P02400	1B P24
PF1	ZE72X16000	41	ZD12P02900	1B P29

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3.5 SWING

3.5.1 SWING BRACKET DIMENSION



SLF0300001121E01

Figure 3-11

SWING BRACKET DIMENSION

Unit: mm (in)

No.	NAME	DIMENSION	
A	Distance between swing center pin and boom foot pin	100	(3.94")
B	Distance between boom foot pin and boom cylinder pin	365	(14.37")
C	Distance between boom foot pin and boom cylinder pin	365	(14.37")
D	Distance between swing center pin and swing cylinder pin	R326	(12.83")
E	Distance between swing center pin and swing cylinder pin	295	(11.61")
F	Swing center inner width	378	(14.88")
F1	Swing center inner width	90.5	(3.56")
F2	Swing center inner width	84.5	(3.33")
G	Boom foot inner width	360	(14.17")
H	Inner width of boom cylinder attaching section	102	(4.02")
J	Inner width of swing cylinder attaching section	83	(3.27")
d1	Swing center pin dia.	Ø95	(3.74")
d2	Boom foot pin dia.	Ø60	(2.36")
d3	Pin dia. of boom cylinder attaching section	Ø75	(2.95")
d4	Pin dia. of swing cylinder attaching section	Ø70	(2.76")

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22.1 SUMMARY

22.1.1 FUNCTION AND FEATURES OF HYDRAULIC CIRCUIT

The hydraulic circuits are built up with the following functions and features in order to achieve easy operability, safety mass volume handling, and low fuel consumption.

Perfor-mance	Device	Function	Features
Easy Operability and Safety	Travel	•Travel straight	•Travel straight at composite operation.
		•2-speed travel changeover	•2-speed changeover of travel speed.
		•Auto parking brake	•Automatic braking when parking.
		•Motor overrun protection	•Secure people from danger caused by overrunning of motor on the slope.
		•Travel pilot operation	•Slow start and stop.
		•Travel boost-up	•Travel speed up at travelling.
	Slewing	•Reverse rotation protective function	•Easy positioning to protect it from slewing back when stops slewing.
		•Slewing priority circuit (simultaneous operation of arm digging and swing motions)	•Easy operation of stable slewing speed, arm slanted leveeing, slewing press digging.
		•Automatic swing parking brake	•Protect it from slewing drift on the slope.
	Attachment	•Hydraulic pilot control system	•Delicate operability.
		•Pilot lock system	•Cut out of pilot circuit by safety lock lever.
		•Lock valve (boom / arm / boom swing)	•Protect boom, arm, and the boom swing from natural drop when parking.
	Others	•Closed pressure type hydraulic oil tank	•To prevent hydraulic oil from being contaminated and to promote self suction ability of pump.
		•Suction strainer	•Remove dust on suction side.
		•Line filter: pilot circuit	•To prevent pilot operating circuit from malfunctioning.
		•Return circuit	•To prevent hydraulic oil from fouling.
		•Cooling hydraulic oil by oil cooler	•To prevent hydraulic oil from being deteriorated.
Mass handling capability	Pump	•Total power shift control variable displacement pump	•Use engine power effectively with 2 variable displacement pumps (delivery side).
	Attachment	•Boom raise conflux circuit	•Speed up for boom raise operation.
		•Arm conflux circuit	•Speed up for arm operation.
		•Dozer circuit	•Speed up the back-filling during dozing.
Low Fuel Consumption	Micro computer	•Auto accel The delay auto accelerator works when boom swing and N& B operate.	•Reduce fuel consumption and noise by lowering engine speed when control lever is in neutral position.

TABLE 22-1

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CHAPTER 44
TROUBLESHOOTING (ENGINE)
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44.2.1 Troubleshooting Diagrams 44-6

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SECTION 2 - SYSTEMS
CHAPTER 22 - HYDRAULIC SYSTEM

22.15 CONTROL LINES

No.	PARTS	Q'ty	REMARKS
(1)	YT06H00015F2		Pump control
1	INLINE FILTER	1	YN50V00007F1
2	CONNECTOR	1	PF3/8
3	ELBOW	3	PF3/8
4	PLUG	1	PF1/4
5	ELBOW	1	PF3/8
6	TEE	1	PF3/8
7	TEE	1	2-PF3/8-PF1/4
8	CAPSCREW	2	M10 X 20
9	WASHER	2	M10
10	HOSE; L=550 PF3/8	1	Delivery relief
11	HOSE; L=400 PF3/8	1	Pilot delivery
12	CONNECTOR	1	PF1-Ø 25.4
13	HOSE	1	Suction
14	CLIP	2	
15	ELBOW	1	PF3/4-Ø 25.4
16	HOSE GUARD	2	L=250
17	CONNECTOR	1	PF1/4
18	ELBOW	1	PF1/4
19	TUBE	1	L=540
20	HOSE; L=650 PF1/4	1	Drain
(2)	LF64H00010F3		SOL. valve control lines
2	CAPSCREW	2	M10 X 70
3	WASHER	2	M10
4	ELBOW	1	PF3/8
5	ELBOW	8	PF1/4
6	CONNECTOR	1	PF3/8 with filter
8	ELBOW	2	PF3/8
9	HOSE; L=450 PF3/8	1	Sol. 4; lever lock primary press.
10	HOSE; L=3400 PF1/4	1	Sol C; Travel priority command
11	HOSE; L=850 PF1/4	1	Sol. 3; Travel 2speed changeover
12	HOSE; L=1550 PF1/4	1	Sol.1; Parking brake primary press.
13	HOSE; L=2600 PF1/4	1	Sol. D; P1 bypass cut & arm conflux
14	HOSE; L=3150 PF1/4	2	Sol. B; P2 bypass cut command Sol. 2; Slewing flow conflux changeover
15	HOSE; L=3200 PF3/8	1	Drain
16	HOSE; L=2700 PF3/8	1	A3 Pilot pump delivery
18	TUBE	1	L=500
19	GROMMET	2	
20	CLIP	8	
21	RUBBER	1	L=290
22	RUBBER	2	L=100
23	RUBBER	1	L=220
24	CLIP	3	
25	RUBBER	1	L=270
26	TUBE	1	L=750
27	TUBE	1	L=400
29	GROMMET	1	

No.	PARTS	Q'ty	REMARKS
31	HOSE; L=3700 PF1/4	1	SOL. A; Travel boost-up press.
32	ELBOW	1	PF1/4-PF3/8
33	TUBE	1	L=500
35	SOLENOID VALVE	1	YT35V00018F1
(3)	LF64H00011F1		P/T block control lines
1	BLOCK	1	
2	CONECTOR	1	PF3/8
3	CONECTOR	2	PF1/4
4	CONECTOR	1	PF3/8 L=23
5	ELBOW	3	PF3/8
6	ELBOW	3	PF1/4
7	ELBOW	1	PF3/8
10	ELBOW	1	PF3/8-PF1/4
11	CAPSCREW	2	M8 X 40
12	WASHER	2	M8
13	TEE	1	PF3/8
15	CONNECTOR	1	PF1/4 L=23
(4-1)	LF68H00013F2		Att remote control lines
2	CONNECTOR	8	PF1/4
3	CONNECTOR	2	PF1/4 with filter
4	CONNECTOR	2	PF3/8-PF1/4
5	HOSE; L=1450 PF1/4	1	P/V P; Primary pressure
6	HOSE; L=2050 PF1/4	1	P/V P; Primary pressure
7	HOSE; L=1400 PF3/8	1	P/V T; Drain
8	HOSE; L=1900 PF3/8	1	P/V T; Drain
9	HOSE; L=2600 PF3/8	1	P/V T; Drain
10	HOSE; L=3450 RED	1	P/V 6; Slewing right
11	HOSE; L=3450 BLUE	1	P/V 7; Arm in
12	HOSE; L=3800 GREEN	1	P/V 8; Arm out
13	HOSE; L=2700 GRAY	1	P/V 5; Slewing left
14	HOSE; L=3200 RED	1	P/V 1; Bucket digging
15	HOSE; L=2800 BLUE	1	P/V 2; Bucket dump
16	HOSE; L=3200 GREEN	1	P/V 3; Boom up
17	HOSE; L=2800 GLAY	1	P/V 4; Boom down
18	HOSE	2	
19	BOOT	2	
20	GROMMET	1	
21	WASHER	1	M10
22	CLIP	1	
23	CLIP	2	
24	CAPCREW	8	M6 X 25
25	CAPCREW	1	M10 X 20
26	WASHER	8	M6
27	BUSHING	1	
28	PILOT VALVE	2	PX30V00043F2

No.	PARTS	Q'ty	REMARKS
(4-2)	LF68H00014F3		ATT. remote control
2	CONNECTOR	8	PF1/4
3	CONNECTOR	2	PF1/4 with filter
4	CONNECTOR	2	PF3/8-PF1/4
5	HOSE; PF1/4 L=1450	1	Pilot primary
6	HOSE; PF1/4 L=2050	1	Pilot primary
7	HOSE; PF3/8 L=1400	1	Drain
8	HOSE; PF3/8 L=1900	1	Drain
9	HOSE; PF3/8 L=2600	1	Drain
10	HOSE; PF1/4 L=3450	1	RED PV6; Slewing right
11	HOSE; PF1/4 L=3450	1	BLUE PV7; Arm in
12	HOSE; PF1/4 L=3450	1	GREEN PV8; Arm out
13	HOSE; PF1/4 L=3450	1	GRAY PV5; Slewing left
14	HOSE; PF1/4 L=2800	1	RED PV1; Bucket digging
15	HOSE; PF1/4 L=2800	1	BLUE PV2; Bucket dump
16	HOSE; PF1/4 L=2800	1	GREEN PV3; Boom up
17	HOSE; PF1/4 L=2800	1	GRAY PV4; Boom down
18	HOSE	2	
19	BOOT	2	
20	TUBE	2	L=400
21	GROMMET	1	
22	WASHER	1	M10
23	CLIP	1	
24	CLIP	8	
25	CAPSCREW	8	M6 X 25
26	CAPSCREW	1	M10 X 20
27	WASHER	8	M6
28	BUSHING	1	
30	PILOT VALVE	2	PX30V00034F2
(5)	LF64H00006F2		Tower block control lines
1	BLOCK	1	
2	BRACKET	1	
3	ELBOW	8	PF1/4
5	HOSE; PF1/4 L=500	1	B4; Boom down
6	HOSE; PF1/4 L=900	1	B7; Arm in
7	HOSE; PF1/4 L=1000	1	B2; Bucket dump
8	HOSE; PF1/4 L=1600	1	B6; Slewing RH
9	CAPSCREW	2	M8 X 25
10	CAPSCREW	2	M10 X 25
11	WASHER	2	M8
12	WASHER	2	M10
13	PLUG	1	PF1/4
14	PRESSURE SENSOR	3	LC52S00011P1
(6)	LF64H00005F2		Multi control lines
1	CONTROL VALVE	1	YY30V00019F2
2	BRACKET	1	
3	SUPPORT	1	

No.	PARTS	Q'ty	REMARKS
4	ELBOW	15	PF3/8-PF1/4
5	TEE	3	PF1/4
6	ELBOW	3	PF1/4
8	ELBOW	1	PF3/8-PF1/4
9	HOSE; PF1/4 L=300	1	⑧: Arm out
10	HOSE; PF1/4 L=400	2	①: Bucket digging, ③: Boom up
11	HOSE; PF1/4 L=600	1	④: Boom down
12	HOSE; PF1/4 L=900	1	⑦: Arm in
13	HOSE; PF1/4 L=1000	1	⑤: Bucket dump
14	HOSE; PF1/4 L=1500	2	S/V P1 & P2 line
15	CAPSCREW	4	M8 X 20
16	CAPSCREW	4	M10 X 20
17	CAPSCREW	3	M10 X 30
18	WASHER	4	M8
19	WASHER	7	M10
20	PRESSURE SENSOR	3	LC52S00011P1
(7)	LF06H00005F5		STD Main control valve lines
1	ELBOW	15	PF1/4
2	TEE	5	PF1/4
3	CONNECTOR	15	PF1/4
4	CONNECTOR	5	PF1/4 L=38
5	PRESSURE SENSOR	4	LC52S00011P1
6	CONNECTOR	1	PF1/4-PF3/8 L=84
7	HOSE; L=1000 PF1/4	1	DR1; Drain
8	HOSE; L=1200 PF1/4	1	DR3; Drain
9	HOSE; L=750 PF1/4	2	DR7; Drain
10	HOSE; L=1650 PF1/4	1	DR6; Drain
11	HOSE; L=750 PF1/4	2	PC3'; Arm in check open command PS; Slewing priority command for check close
12	HOSE; L=1050 PF1/4	1	PC4; Boom conflux command
13	HOSE; L=900 PF1/4	2	Pb2'; Boom down check open command Pd2'; Slewing priority command at slewing left
14	CONNECTOR	1	PF1/4 L=23
15	CONNECTOR	2	PF1/4 L=60
16	CONNECTOR	1	PF1/4 L=75
17	CLIP	5	
18	ELBOW	3	PF1/4
19	ELBOW	5	PF1/4
20	CONNECTOR	3	PF1/4-PF3/8
21	ELBOW	4	PF1/4-PF3/8
22	TEE	3	PF3/8
23	CONNECTOR	1	PF1/4 with throttling
24	CONNECTOR	1	With filter & throttling

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