CASE CONSTRUCTION

SERVICE MANUAL

COMPACT CRAWLER EXCAVATOR

CX27B TIER 4

S5PV0019E01 EN-US

Issued 01Sep 08

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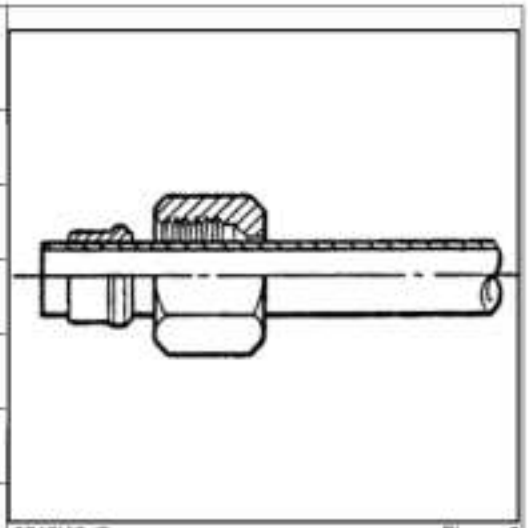
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TIGHTENING TORQUES FOR NUTS AND SLEEVES

Over tightening or under tightening of nuts and sleeves in FLARELESS JOINT may develop oil leaks through pipe connections.
Always tighten nuts and sleeves to proper torques.

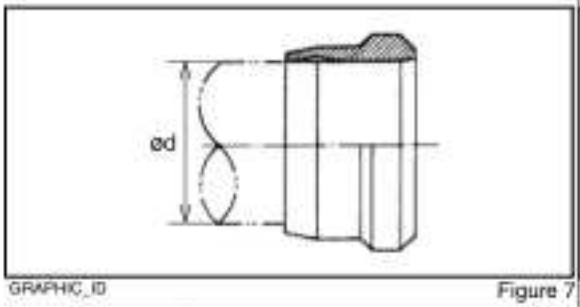
SLEEVE TYPE TUBE FITTINGS

Tube size OD × thickness mm (in)	Opposing flats (HEX) mm	Tightening torque Nm (pound-ft)
ø10×1.5 (0.394×0.059)	19	49.0±9.8 (36±7.2)
ø15×2.0 (0.591×0.079)	27	118±12 (87±8.7)
ø18×2.5 (0.709×0.098)	32	147±15 (110±11)
ø22×3.0 (0.866×0.118)	36	216±22 (160±16)
ø28×4.0 (1.10×0.157)	41	275±27 (200±20)
ø35×5.0 (1.38×0.197)	55	441±44 (330±33)


GRAPHIC_ID Figure 6

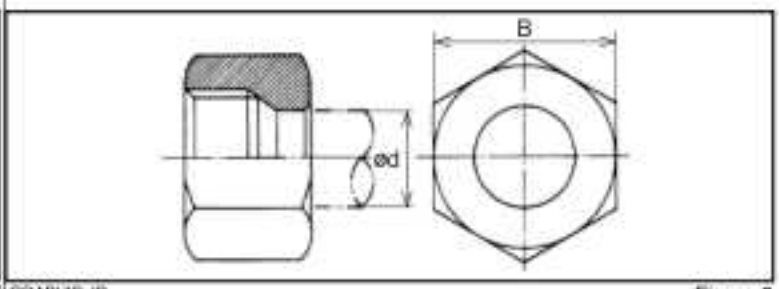
Part Number

SLEEVE



GRAPHIC_ID Figure 7

NUT



GRAPHIC_ID Figure 8

Tube size ød	Parts No.		Tube size ød	Opposing flats (HEX) mm	Parts 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	—

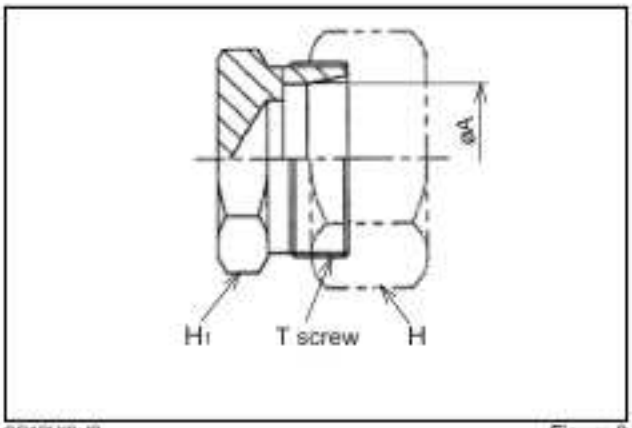
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PLUGS

PLUG FOR HYDRAULIC PIPE JOINT

1. Cap nut (Joint plug)

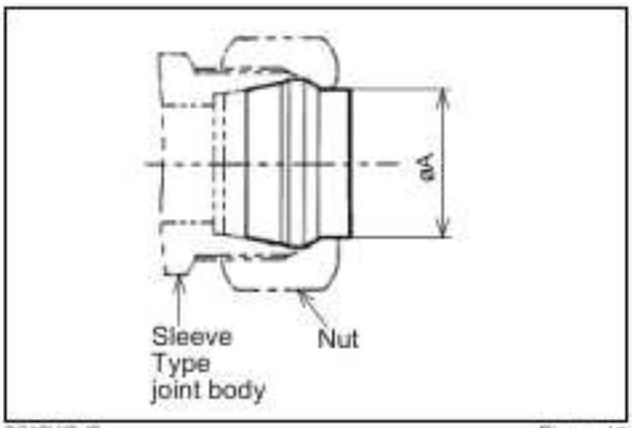
Applicable tube O.D.: A	Cap nut parts No.	T screw	Opposing flats	
			H_1	H
6	ZF83H06000	M12x1.5	14	14
8	ZF83H08000	M14x1.5	17	17
10	ZF83H10000	M16x1.5	17	19
12	ZF83H12000	M18x1.5	19	22
15	ZF83H15000	M22x1.5	24	27
18	ZF83H18000	M26x1.5	27	32
22	ZF83H22000	M30x1.5	32	36
28	ZF83H28000	M36x1.5	38	41



GRAPHIC_ID Figure 9

2. Plug (Tube plug)

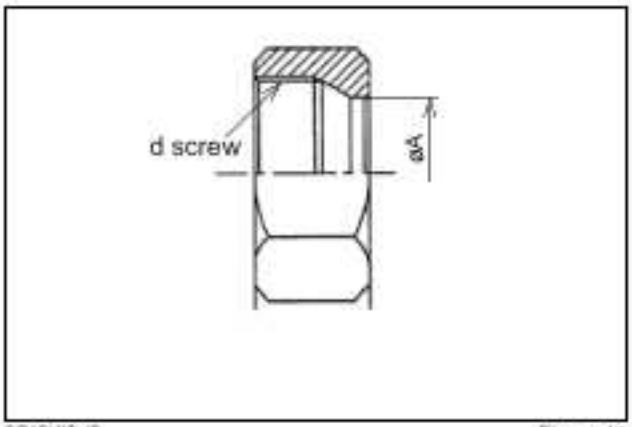
Applicable tube O.D.: A	Plug parts No.
6	ZF83P06000
8	ZF83P08000
10	ZF83P10000
12	ZF83P12000
15	ZF83P15000
18	ZF83P18000
22	ZF83P22000
28	ZF83P28000



GRAPHIC_ID Figure 10

3. Nut

Applicable tube O.D.: A	Cap nut parts No.	d screw	Opposing flats
6	ZF93N06000	M12x1.5	14
8	ZF93N08000	M14x1.5	17
10	ZF93N10000	M16x1.5	19
12	ZF93N12000	M18x1.5	22
15	ZF93N15000	M22x1.5	27
18	ZF93N18000	M26x1.5	32
22	ZF93N22000	M30x1.5	36
28	ZF93N28000	M36x1.5	41
32	ZF93N32000	M42X1.5	50
35	ZF93N35000	M45X1.5	55
38	ZF93N38000	M48X1.5	60



GRAPHIC_ID Figure 11

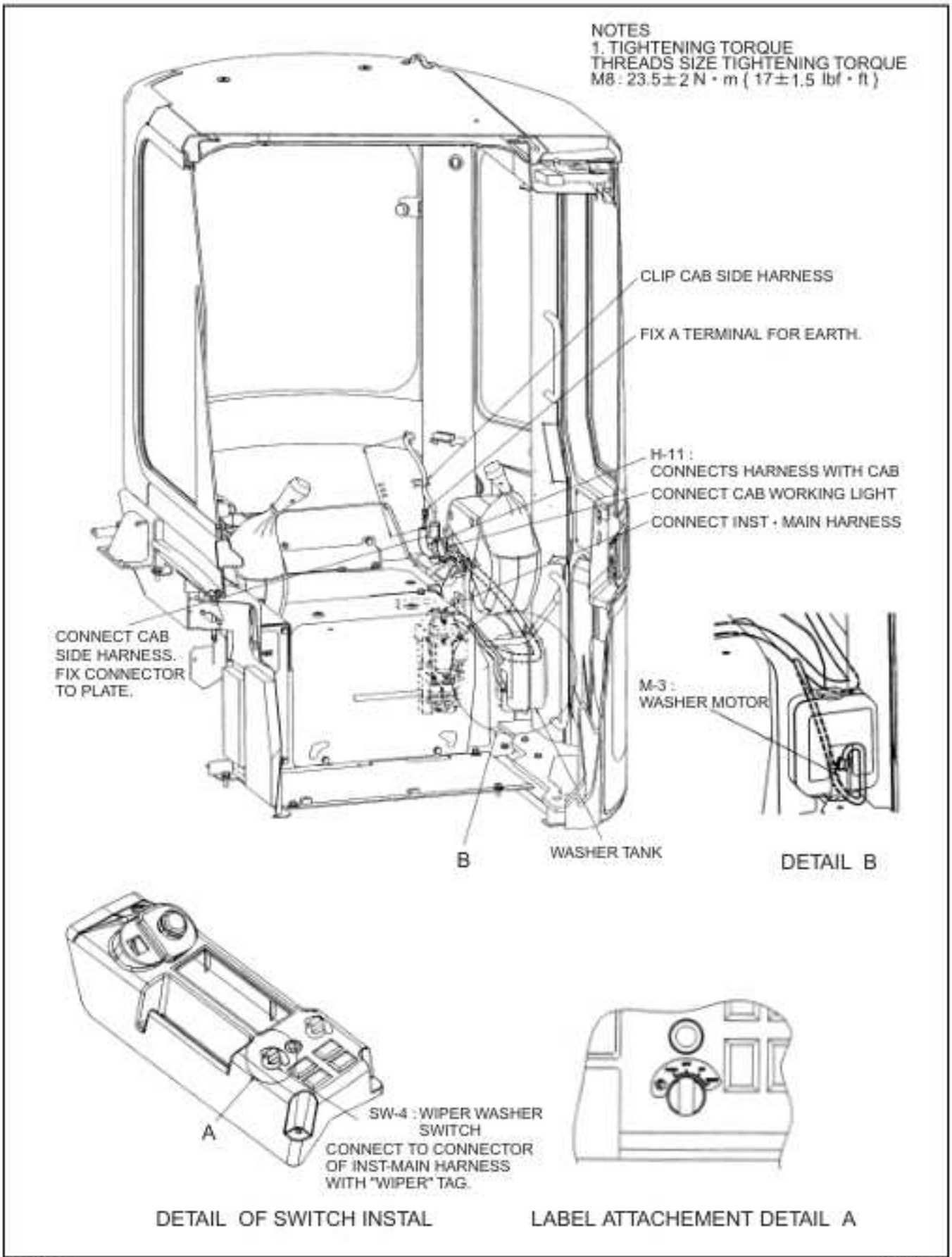
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Unit : mm (in)

Sec.	Item		Standard Dimension		Clearance X adjusted with shim (total of both sides)			Remedy	Pin length	
			No.	Dimensions	Standard value	Standard value for repair	Serviceability limit		No.	Dimensions
A-A	Swing cylinder (Rod side)	Cylinder	L1	$55^{0}_{-0.5}$ ($2.165^{0}_{-0.020}$)	0.5–0.9 (0.020–0.035)	1.5 (0.059)	—	Adjusted with shim	PL1	103.5 (4.07)
		Bracket		$56^{+2}_{+0.079}$ ($2.205^{+0.079}_{0}$)						
B-B	Swing cylinder (Head side)	Cylinder	L2	$55^{0}_{-0.5}$ ($2.165^{0}_{-0.020}$)	0.1–0.5 (0.004–0.020)	1.0 (0.039)	—		PL2	118 (4.65)
		Upper frame		$57^{+1}_{+0.039}$ ($2.244^{+0.039}_{0}$)						
C-C	Swing center (Upper side)	Upper frame	L3	59±0.5 (2.322 ±0.020)	—			Replace washer	PL3	117 (4.61)
		Bracket		63.2 (2.488)						
D-D	Swing center (Lower side)	Upper frame	L4	59±0.5 (2.322 ±0.020)	0.5–0.9 (0.020–0.035)	1.5 (0.059)	—	Adjusted with shim	PL4	117.5 (4.63)
		Bracket		62.5 (2.460)						

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Cab Portion (OPT) ; PW14E00002F1



GRAPHIC_10

Figure 19

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CHAPTER 2

CX27B
COMPACT CRAWLER EXCAVATOR
TIER 4

TROUBLESHOOTING (ELECTRICAL SYSTEM)

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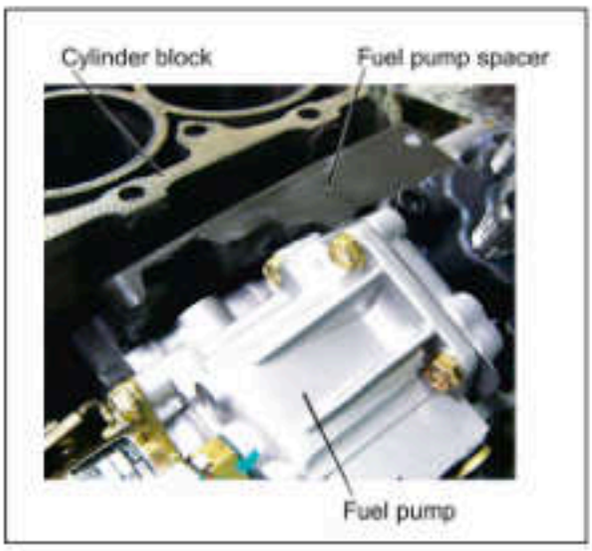
Point 3

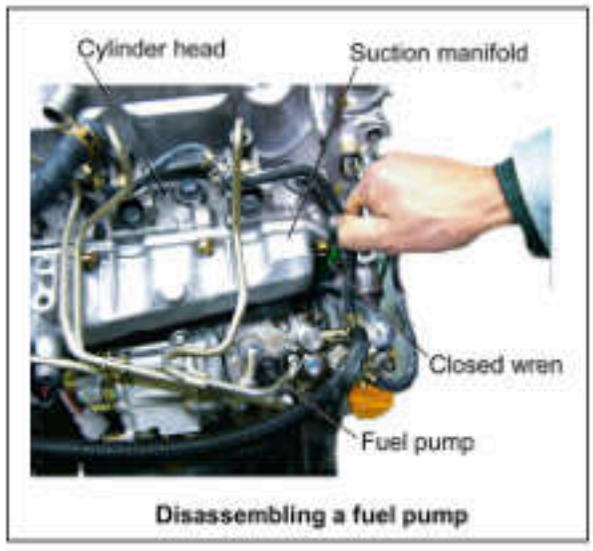
[Disassemble]

There is an acoustic material part to name as fuel pump spacer between the fuel pump and the cylinder block. Loosen fuel pump installation bolts with a closed wrench when disassembling a fuel pump.

[NOTICE]

An intake manifold may obstruct the disassembly of the fuel pump by the engine model. Remove the fuel pump after removing the intake manifold first.





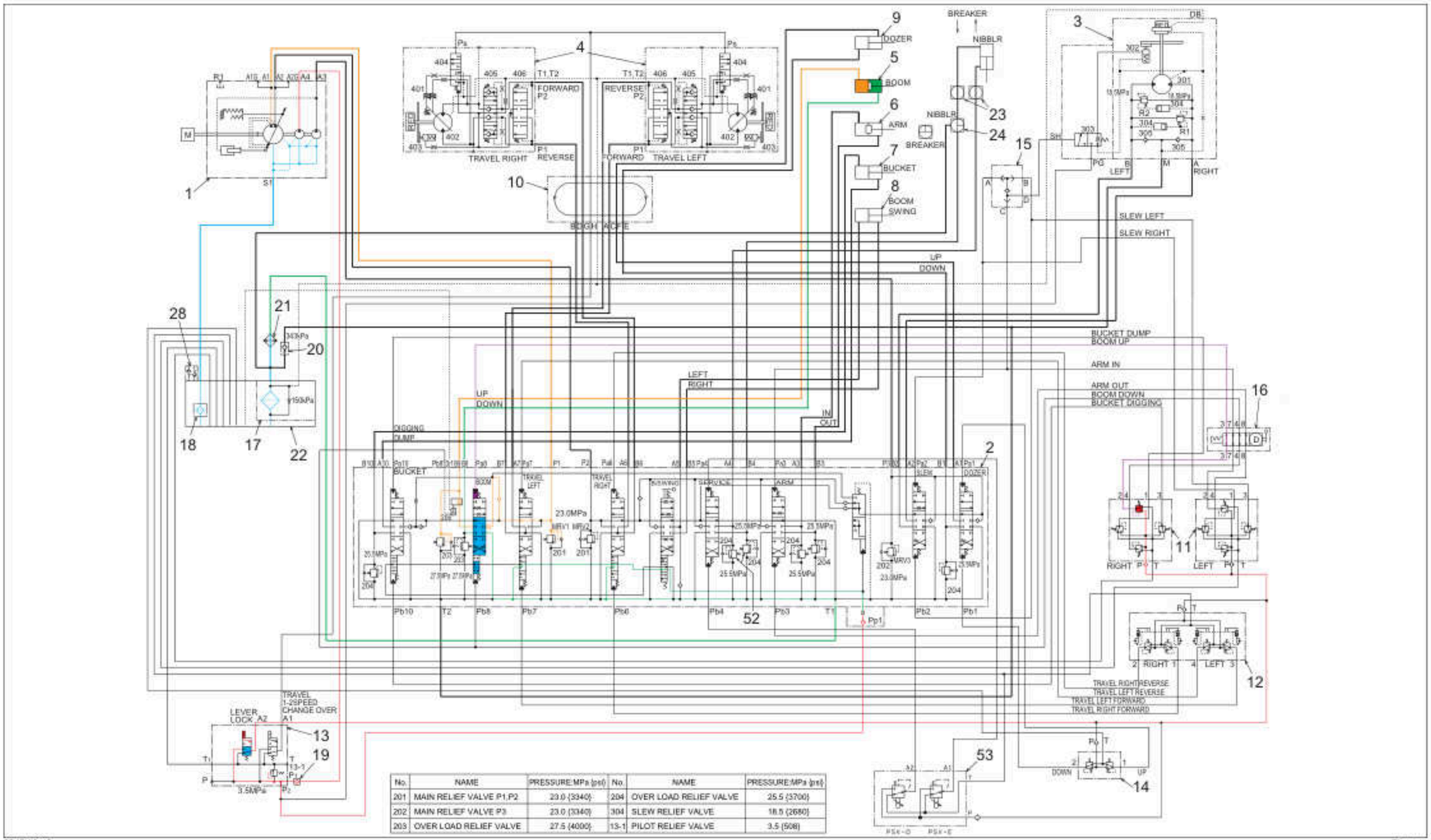
Disassembling a fuel pump

[Reassemble]

When installing a fuel pump on the gear case, put a fuel pump spacer between the cylinder blocks, and install it .

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SECTION 3 - SYSTEMS
CHAPTER 1 - HYDRAULIC SYSTEM



No.	NAME	PRESSURE:MPa {psi}	No.	NAME	PRESSURE:MPa {psi}
201	MAIN RELIEF VALVE P1,P2	23.0 {3340}	204	OVER LOAD RELIEF VALVE	25.5 {3700}
202	MAIN RELIEF VALVE P3	23.0 {3340}	304	SLEW RELIEF VALVE	18.5 {2680}
203	OVER LOAD RELIEF VALVE	27.5 {4000}	13-1	PILOT RELIEF VALVE	3.5 {508}

GRAPHIC_10

Figure 6

BOOM CIRCUIT : BOOM UP OPERATION

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