CX75SR, CX80
CRAWLER EXCAVATOR

Service Manual

9-93290NA

CASE

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Attachment

Breakout force	**5690 daN**
Breakout force (dipper **1.71 m**)	**3830 daN**
Breakout force (dipper **2.10 m**)	**XXXX daN**

PRIMARY HYDRAULIC POWER SYSTEM - Special tools (A.10.A - D.20.A.40)

CX75SR WE, CX80 WE

Digital tester assembly



CRE00G253E00

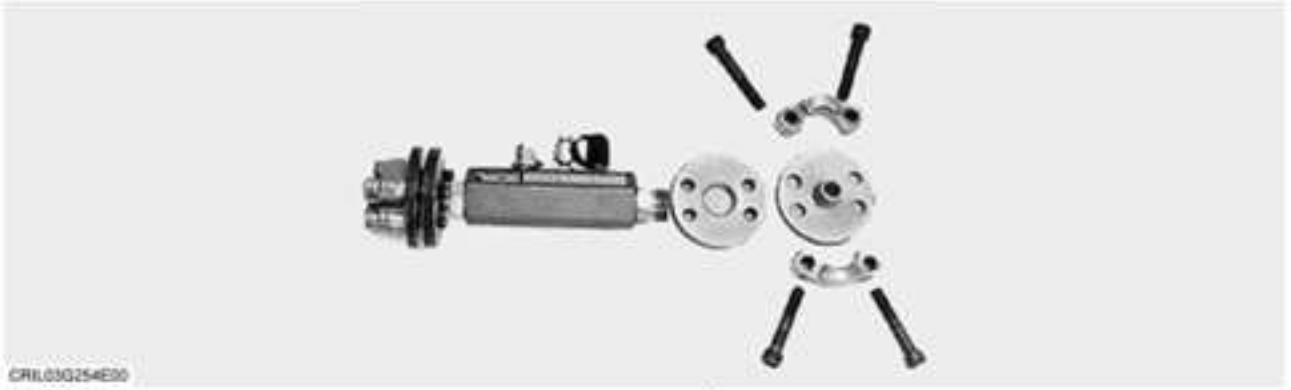
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DESCRIPTION	QUANTITY	CODE
Tester assembly for Multi-Handy 2051	-	E54444449
Multi-Handy 2051 tester	1	D5444448
Pressure sensor (**0 bar** to **600 bar**)	2	V5344460
Straight union for sensor	2	W5344461
Elbow union for sensor	1	X5344462
Engine speed sensor	1	Z5344463
Cable (length **5 m**)	3	E3144472
Electric plug **220 volts 50 Hz**	1	D5344467
Cigarette lighter cable	1	E5344468
Instruction Sheet	1	-
Carrying case	1	N5344476

The Multi-Handy tester is used to:
Check pressure (two pressure scales)
Check differential pressure (delta P)
Check temperature
Check engine rpm
Check the flow

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600 litre turbine



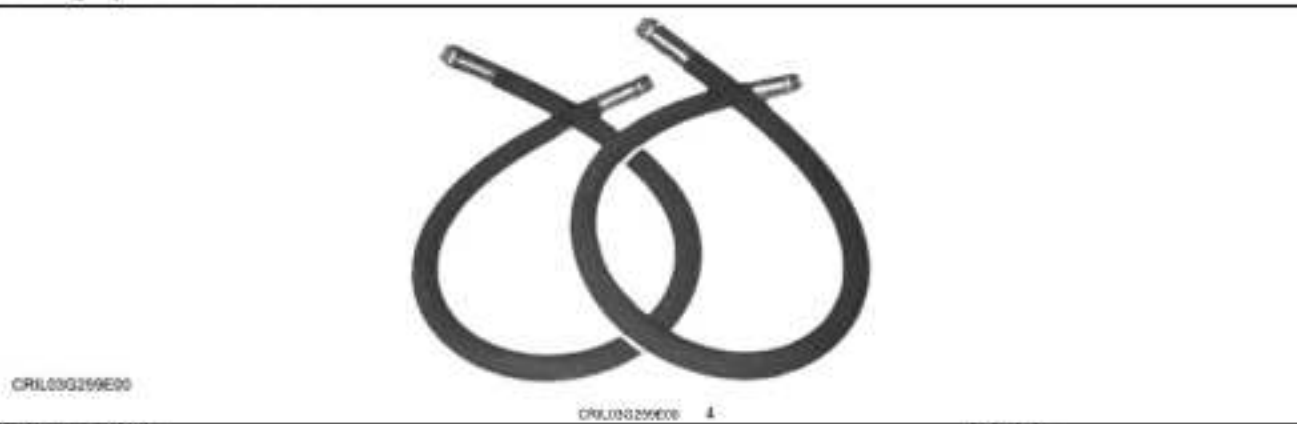
DESCRIPTION	QUANTITY	CODE
Turbine	1	RE3 Z5344486
Plates **M45x2**	2	D4323359
Flange diameter **24 mm**	2	B8230183
Semi-flange	4	D4024267
Screw **M12** length **75 mm**	8	Z1232983

Union assembly for testing pressure and flow



DESCRIPTION	CODE
Union assembly for testing pressure and flow	CAS30038

Set of high pressure hoses



DESCRIPTION	CODE
Set of high pressure hoses	CAS30036

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Stack valve Inlet section - Assemble (A.10.A.18.10 - F.10.A.20) 59
CX75SR, CX80

Stack valve Outlet section - Assemble (A.10.A.18.20 - F.10.A.20) 60
CX75SR, CX80

Stack valve - Install (A.10.A.18 - F.10.A.15) 61
CX75SR

Stack valve - Install (A.10.A.18 - F.10.A.15) 62
CX80

Relief valve

Relief valve - Disassemble (A.10.A.16 - F.10.A.25) 63
CX75SR, CX80

Relief valve - Assemble (A.10.A.16 - F.10.A.20) 64
CX75SR, CX80

Relief valve - Pressure setting (A.10.A.16 - F.45.A.70) 65
CX75SR, CX80

Sensing system

Sensing system Temperature sensor - Electrical test (A.10.A.95.90 - F.40.A.50) 66
CX75SR, CX80

DIAGNOSTIC

PRIMARY HYDRAULIC POWER SYSTEM - Troubleshooting (A.10.A - G.40.A.10) 67
CX75SR, CX80

Stack valve

Stack valve - Troubleshooting (A.10.A.18 - G.40.A.10) 67
CX75SR, CX80

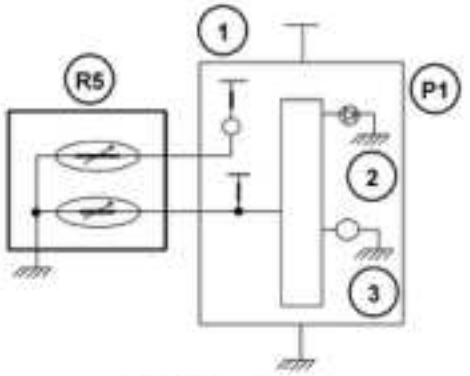
Relief valve

Relief valve - Troubleshooting (A.10.A.16 - G.40.A.10) 68
CX75SR, CX80

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Sensing system Level sensor - Electronic schema (B.20.A.95.90 - C.20.A.50)

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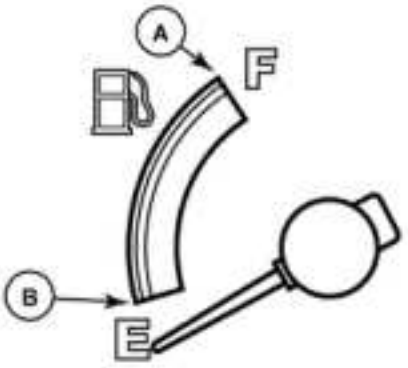


CRILO3GO87E01

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Circuit layout

(1)	Fuel level indicator	**(2)**	Minimum fuel level indicator lamp
(3)	Audible alarm device	**(P1)**	Instrument panel
(R5)	Fuel level sensor		



CRILO3GO88E01

CRILO3GO88E01 2

Fuel level indicator (1)

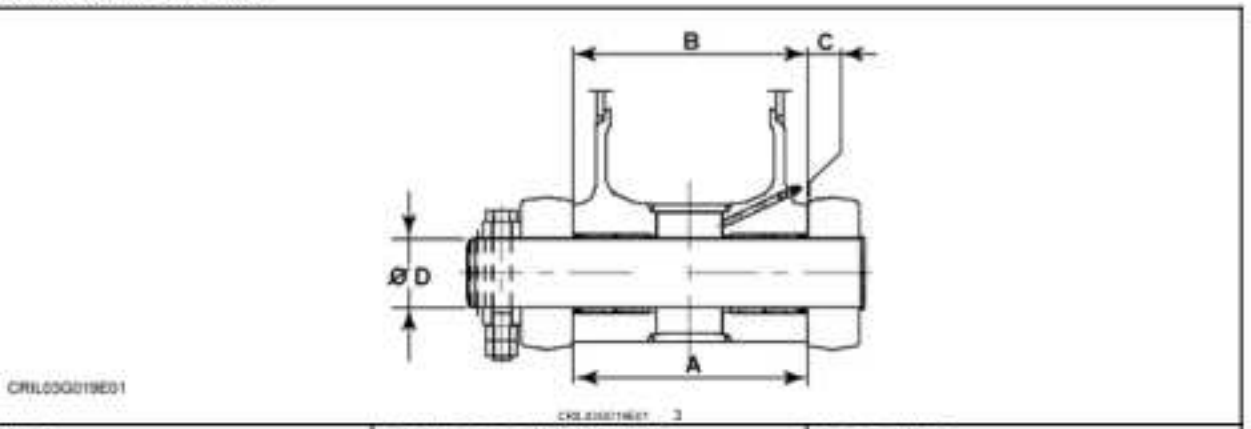
Sensor specification (R5)

(A)	Tank full	Sensor resistance **10 ohms**
(B)	Tank empty	Sensor resistance **90 ohms**
	Tank half empty	Sensor resistance **38 ohms**

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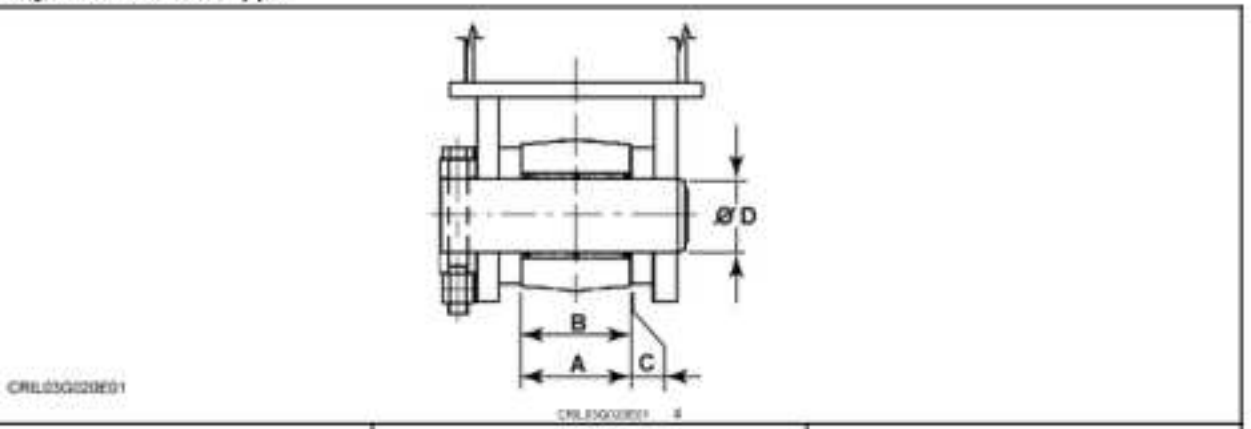
(D) pin diameter	55 mm	54 mm
(D) bushing diameter	55 mm	56,5 mm

2. ***Cylinder foot on boom head***



MARKING	STANDARD DIMENSION	WEAR LIMIT
(A)	184,5 mm	187,5 mm
(B)	184 mm	182 mm
(C) clearance	0,5 à 1,1 mm	shims
(D) pin diameter	60 mm	59 mm
(D) bushing diameter	60 mm	61,5 mm

3. ***Dipper cylinder head on dipper***



MARKING	STANDARD DIMENSION	WEAR LIMIT
(A)	81 mm	87 mm
(B)	80 mm	78 mm
(C) clearance	0,5 à 3,0 mm	shims
(D) pin diameter	60 mm	59 mm
(D) bushing diameter	60 mm	61,5 mm

Command valve Hand control valve - Torque (H.25.B.12.10 - D.20.A.10)

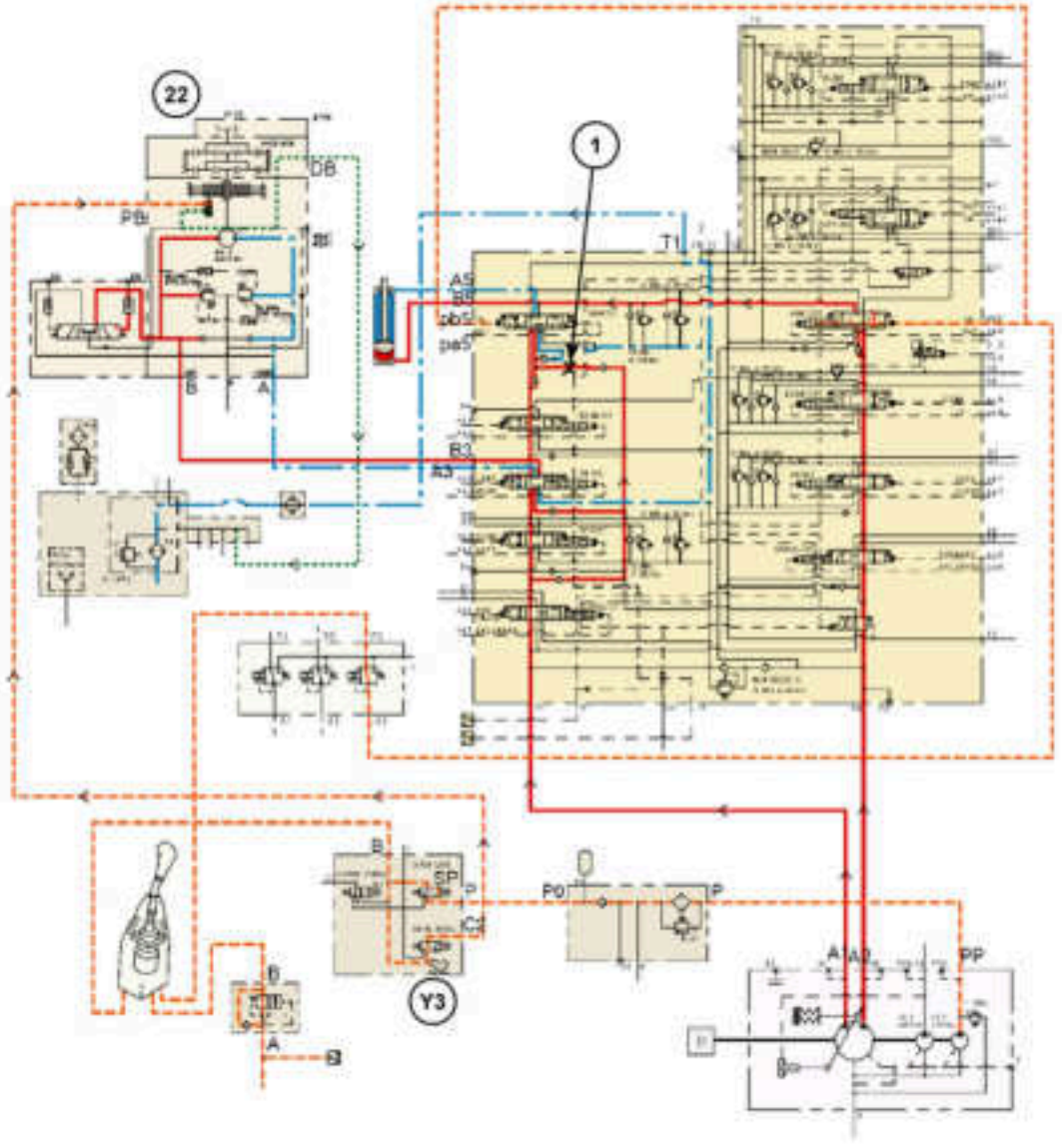
CX75SR, CX80

NOTE: *Refer to* ***Command valve Hand command valve - Torque (F.40.C.12.10 - D.20.A.10)***

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(Y3) Swing brake solenoid valve (green band)

Starter switch	Functions	Swing pilot pressure switch	Upper pilot pressure switch	Swing brake solenoid valve	Swing motor
Open	none	Open	Open	De-activated	Braked
Closed	none	Open	Open	Energised	Braked
	Attachment	Open	Closed	Activated	Braked
	Swing	Closed	Closed	De-activated	Brake is released
	Attachment + Swing	Closed	Closed	De-activated	Brake is released
	Stop Attachment	Open	Open	Energised after **5 secondes**	Braked



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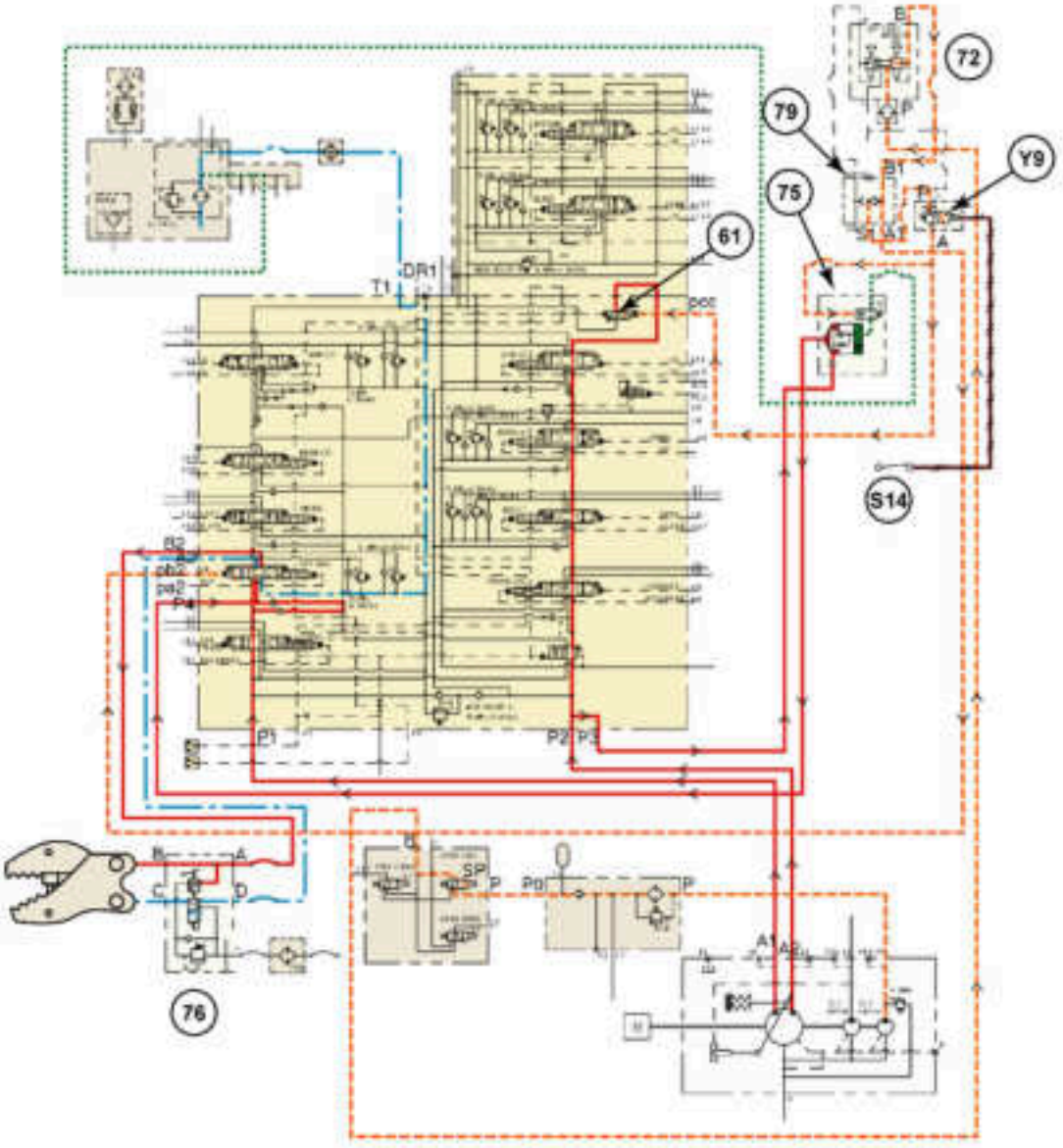
Swing priority circuit - Dynamic description

Swing priority calibrated port **(1)** enables maximum torque to be applied to the swing motor **(22)** with high swing pressure even if the dipper is used at the same time. The swing flow is therefore in parallel with the dipper via the swing priority calibrated port **(1)**. This has the effect of improving the speed of the dipper.
When the swing and dipper retraction or boom raising functions are operated simultaneously, the swing pressure is maintained.

(1) Swing priority calibrated port

(22) Swing motor

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2

Grab circuit - dynamic description

The 3-way selector **(76)** must be positioned for the grab function.
The grab can be supplied by the outputs from pumps **(P1)** and **(P2)**.
The output from pump **(P1)** directly supplies the option spool. The output from pump **(P2)** is forced towards the flow reinjection valve **(75)** and joins the output from pump **(P1)** at the option spool inlet.
When the hammer/grab switch **(S14)** is in the grab position, the hammer/grab dual output solenoid valve option **(Y9)** is activated.
When the control pedal **(72)** is moved forwards or backwards, the pilot pressure, after passing through the control shuttle block **(79)** and the hammer/grab dual flow option solenoid valve **(Y9)**, unlocks the flow reinjection valve **(75)** and pilots the flow reinjection valve spool **(61)**. This closes the free passage from the output feedback slide valve **(61)** and the output from pump **(P2)** to be reinjected into the output feedback valve **(75)** through port **(P3)**.
The pilot pressure from the hammer/grab dual output solenoid valve option **(Y9)** reaches port **(P)** of the output feedback valve **(75)** and actuates the unlocking slide valve for the load holding valve of the output feedback valve **(75)**. As a result, the oil reaching port **(B)** is re-injected via port **(A)** of the output feedback valve **(75)** into port **(P4)** of the main control valve **(15)** and joins the output from pump **(P1)** at the option slide valve inlet.
When the dipper extending control is operated at the same time as the grab, the output from pump **(P1)** supplies the grab and the output from pump **(P2)** supplies the dipper.

(61) Flow reinjection valve spool

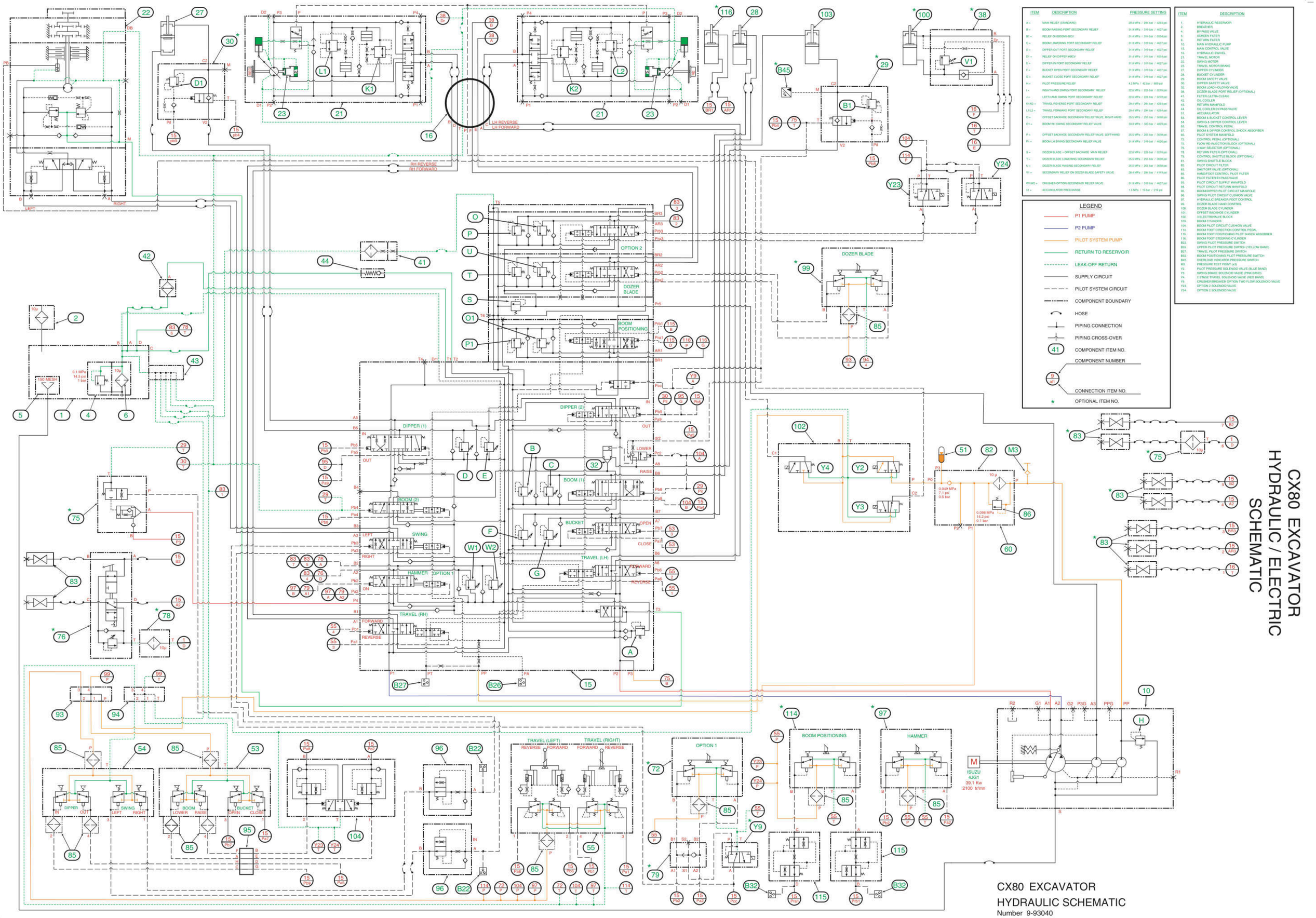
(72) Foot control

(75) Flow reinjection valve

(76) 3-way selector

(79) Control shuttle block

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ITEM	DESCRIPTION	PRESSURE SETTING
A =	MAIN RELIEF (STANDARD)	29.4 MPa / 294 bar / 4264 psi
B =	BOOM RAISING PORT SECONDARY RELIEF	31.9 MPa / 319 bar / 4627 psi
B1 =	RELIEF ON BOOM HBCV	31.4 MPa / 314 bar / 5554 psi
C =	BOOM LOWERING PORT SECONDARY RELIEF	31.9 MPa / 319 bar / 4627 psi
D =	DIPPER OUT PORT SECONDARY RELIEF	31.9 MPa / 319 bar / 4627 psi
D1 =	RELIEF ON DIPPER HBCV	31.4 MPa / 314 bar / 8554 psi
E =	DIPPER IN PORT SECONDARY RELIEF	31.9 MPa / 319 bar / 4627 psi
F =	BUCKET OPEN PORT SECONDARY RELIEF	31.9 MPa / 319 bar / 4627 psi
G =	BUCKET CLOSE PORT SECONDARY RELIEF	31.9 MPa / 319 bar / 4627 psi
H =	PILOT PRESSURE RELIEF	4.2 MPa / 42 bar / 609 psi
I =	RIGHT-HAND SWING PORT SECONDARY RELIEF	22.6 MPa / 226 bar / 3278 psi
J =	LEFT-HAND SWING PORT SECONDARY RELIEF	22.6 MPa / 226 bar / 3278 psi
K1/K2 =	TRAVEL REVERSE PORT SECONDARY RELIEF	29.4 MPa / 294 bar / 4264 psi
L1/L2 =	TRAVEL FORWARD PORT SECONDARY RELIEF	29.4 MPa / 294 bar / 4264 psi
O =	OFFSET BACKHOE SECONDARY RELIEF VALVE, RIGHT-HAND	25.5 MPa / 255 bar / 3698 psi
O1 =	BOOM RH SWING SECONDARY RELIEF VALVE	33.3 MPa / 333 bar / 4825 psi
P =	OFFSET BACKHOE SECONDARY RELIEF VALVE, LEFT-HAND	25.5 MPa / 255 bar / 3698 psi
P1 =	BOOM LH SWING SECONDARY RELIEF VALVE	31.9 MPa / 319 bar / 4626 psi
S =	DOZER BLADE + OFFSET BACKHOE MAIN RELIEF	22.6 MPa / 226 bar / 3278 psi
T =	DOZER BLADE LOWERING SECONDARY RELIEF	25.3 MPa / 253 bar / 3698 psi
U =	DOZER BLADE RAISING SECONDARY RELIEF	25.5 MPa / 255 bar / 3698 psi
V1 =	SECONDARY RELIEF ON DOZER BLADE SAFETY VALVE	28.4 MPa / 284 bar / 4115 psi
W1/W2 =	CRUSHER OPTION SECONDARY RELIEF VALVE	31.9 MPa / 319 bar / 4627 psi
I1 =	ACCUMULATOR PRECHARGE	4.5 MPa / 45 bar / 216 psi

ITEM	DESCRIPTION
1.	HYDRAULIC RESERVOIR
2.	BREATHER
4.	BY-PASS VALVE
5.	SCREEN FILTER
6.	RETURN FILTER
10.	MAIN HYDRAULIC PUMP
15.	MAIN CONTROL VALVE
16.	HYDRAULIC SWIVEL
21.	TRAVEL MOTOR
22.	SWING MOTOR
23.	TRAVEL MOTOR BRAKE
27.	DIPPER CYLINDER
28.	BUCKET CYLINDER
29.	BOOM SAFETY VALVE
30.	DIPPER SAFETY VALVE
32.	BOOM LOAD HOLDING VALVE
38.	DOZER BLADE PORT RELIEF (OPTIONAL)
41.	FILTER (ULTRA-CLEAN)
42.	OIL COOLER
43.	RETURN MANIFOLD
44.	OIL COOLER BY-PASS VALVE
51.	ACCUMULATOR
53.	BOOM & BUCKET CONTROL LEVER
54.	SWING & DIPPER CONTROL LEVER
55.	TRAVEL CONTROL PEDAL
57.	BOOM & DIPPER CONTROL SHOCK ABSORBER
60.	PILOT SYSTEM MANIFOLD
72.	CONTROL PEDAL (OPTIONAL)
75.	FLOW RE-INJECTION BLOCK (OPTIONAL)
76.	3-WAY SELECTOR (OPTIONAL)
78.	RETURN FILTER (OPTIONAL)
79.	CONTROL SHUTTLE BLOCK (OPTIONAL)
81.	SWING SHUTTLE BLOCK
82.	PILOT CIRCUIT FILTER
83.	SHUT-OFF VALVE (OPTIONAL)
85.	HANDIFOOT CONTROL PILOT FILTER
86.	PILOT FILTER BY-PASS VALVE
93.	PILOT CIRCUIT SUPPLY MANIFOLD
94.	PILOT CIRCUIT RETURN MANIFOLD
95.	BOOM-DIPPER PILOT CIRCUIT MANIFOLD
96.	SWING PILOT CIRCUIT CUSHION VALVE
97.	HYDRAULIC BREAKER FOOT CONTROL
99.	DOZER BLADE HAND CONTROL
100.	DOZER BLADE CYLINDER
101.	OFFSET BACKHOE CYLINDER
102.	3 ELECTROVALVE BLOCK
103.	BOOM CYLINDER
104.	BOOM PILOT CIRCUIT CUSHION VALVE
114.	BOOM FOOT DIRECTION CONTROL PEDAL
115.	BOOM FOOT POSITIONING PILOT SHOCK ABSORBER
116.	BOOM FOOT STEERING CYLINDER
B22.	SWING PILOT PRESSURE SWITCH
B26.	UPPER PILOT PRESSURE SWITCH (YELLOW BAND)
B27.	TRAVEL PILOT PRESSURE SWITCH
B32.	BOOM POSITIONING PILOT PRESSURE SWITCH
B45.	OVERLOAD INDICATION PRESSURE SWITCH
M3.	PRESSURE TEST POINT (x3)
Y2.	PILOT PRESSURE SOLENOID VALVE (BLUE BAND)
Y3.	SWING BRAKE SOLENOID VALVE (PINK BAND)
Y4.	2 STAGE TRAVEL SOLENOID VALVE (RED BAND)
Y9.	CRUSHER/BREAKER OPTION TWO FLOW SOLENOID VALVE
Y23.	OPTION 2 SOLENOID VALVE
Y24.	OPTION 2 SOLENOID VALVE

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