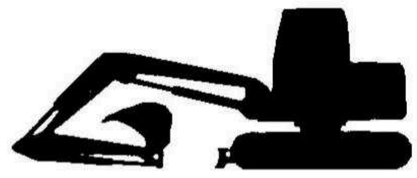
WEBM000100

Shop Manual



PC12R-8
PC15R-8

HYDRAULIC EXCAVATOR

SERIAL NUMBERS **PC12R-8 - F30001** and up
PC15R-8 - F20001

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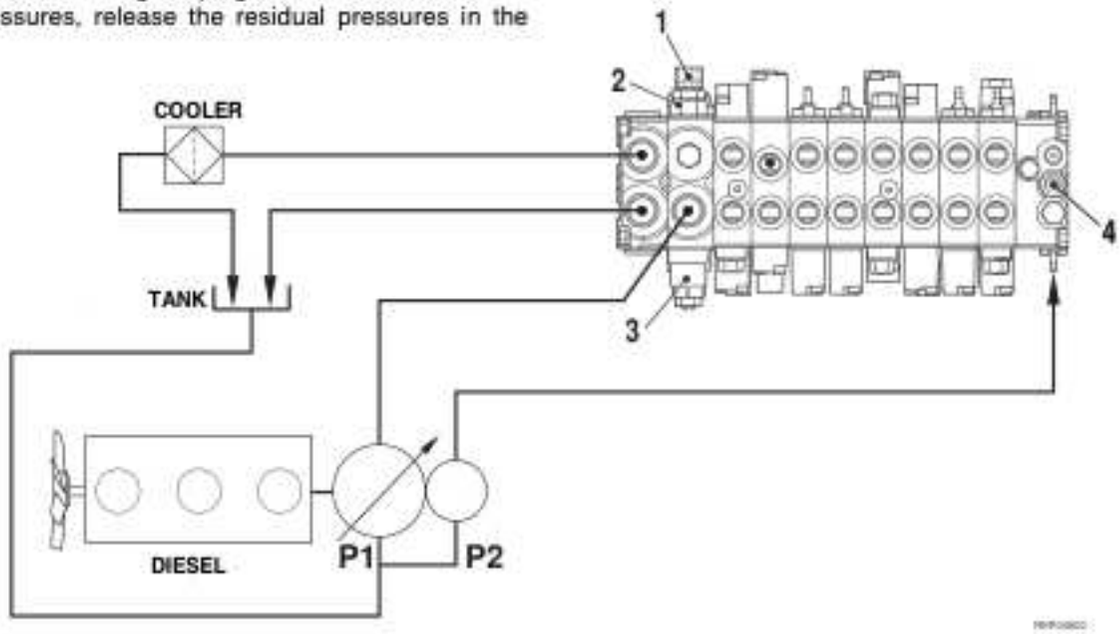
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CONTROL AND REGULATION OF THE PRESSURES IN THE HYDRAULIC CIRCUITS (PC15R)

★ Test conditions:
- Engine: at working temperature.
- MIN and MAX. engine speeds: within permissible limits.
- Hydraulic oil: 45 – 55 °C.

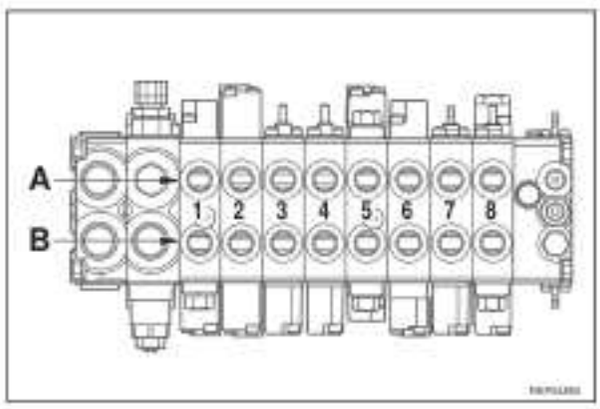
Before removing the plugs in order to measure the pressures, release the residual pressures in the circuits (see «ELIMINATION OF THE RESIDUAL PRESSURES IN THE CIRCUITS AND IN THE TANK») and place the safety engagement levers into their locked positions.

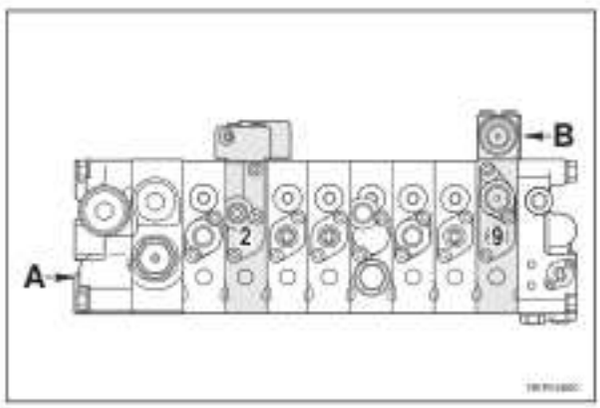
After having connected the pressure gauges, pressurise the tank. For details, see «PRESSURISATION OF THE TANK».



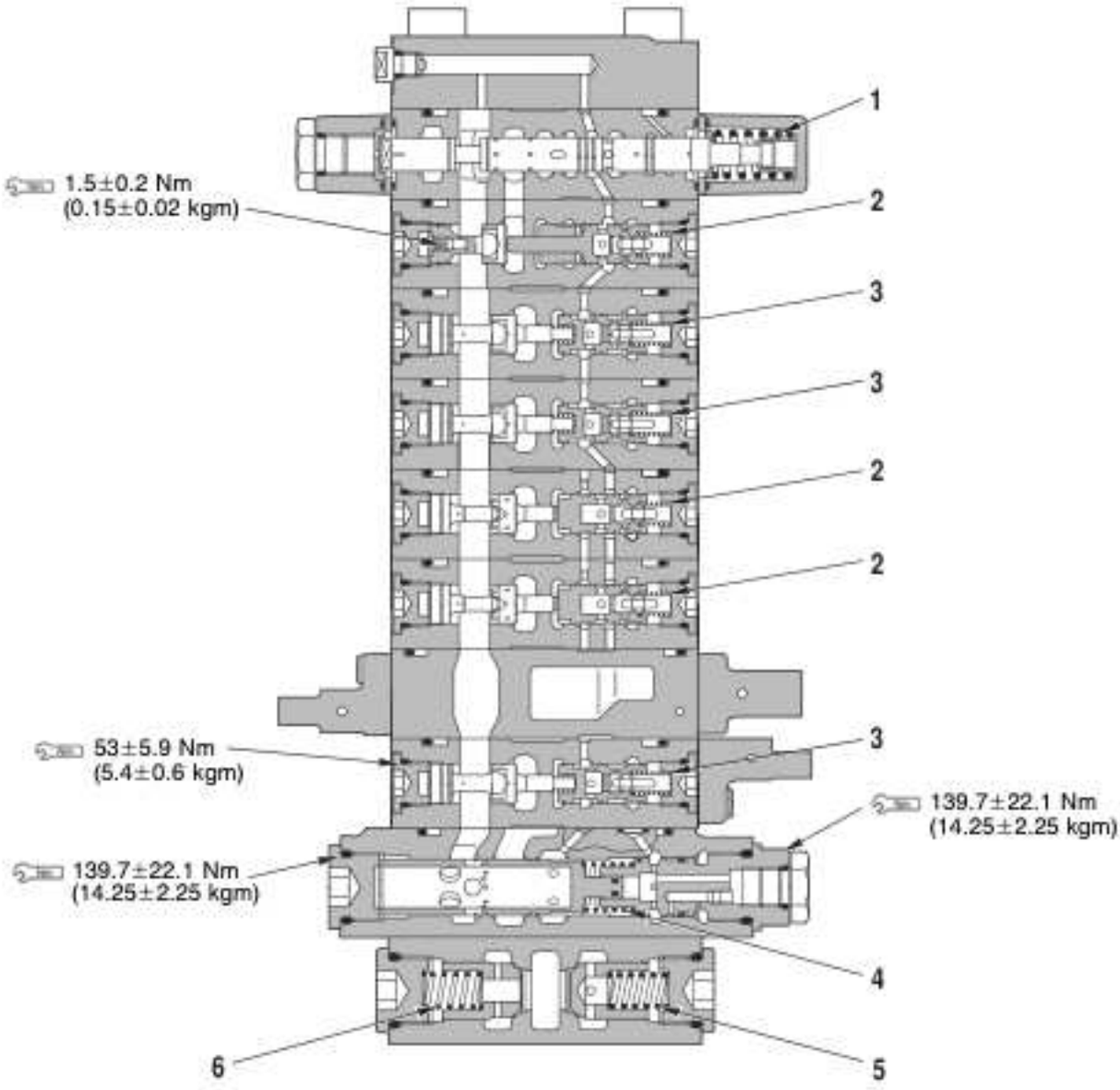
- The control valve consists of the spools that command:

Command	Ports
Arm (Open - Close)	A1 - B1
Swing (Right - Left)	A2 - B2
Engine travel to the left (Backwards and Forwards)	A3 - B3
Engine travel to the right (Backwards and Forwards)	A4 - B4
Boom (Raise - Lower)	A5 - B5
Bucket (Curl - Dump)	A6 - B6
Blade (Lower - Raise)	A7 - B7
Boom swing (Right - Left)	A8 - B8
Hammer (Throw)	B9





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Section C-C

RKP02151

Unit: mm

No.	Check item	Criteria					Remedy
		Standard size			Repair limit		
1	Spool return spring (hammer)	Free length x Ø.D.	Installed length	Installed load	Free length	Installed load	When damage or deformation is found, replace the spring
		29x17.5	28.5	22.6 N (2.3 kg)	—	18.1 N (1.84 kg)	
2	Pressure compensation valve spring	20x8.4	12	6.86 N (0.7 kg)	—	5.49 N (0.56 kg)	
3	Pressure compensation valve spring	16.9x8.4	15	7.64 N (0.78 kg)	—	6.11 N (0.62 kg)	
4	Unload valve spring	38.5x17.7	18	28.8 N (2.94kg)	—	23.1 N (2.36 kg)	
5	Cooler check valve spring	27.2x13.2	21	78.8 N (8.04 kg)	—	63.0 N (6.43 kg)	
6	Back pressure check valve spring	29x13.3	21	15.3 N (1.56 kg)	—	12.2 N (1.25 kg)	

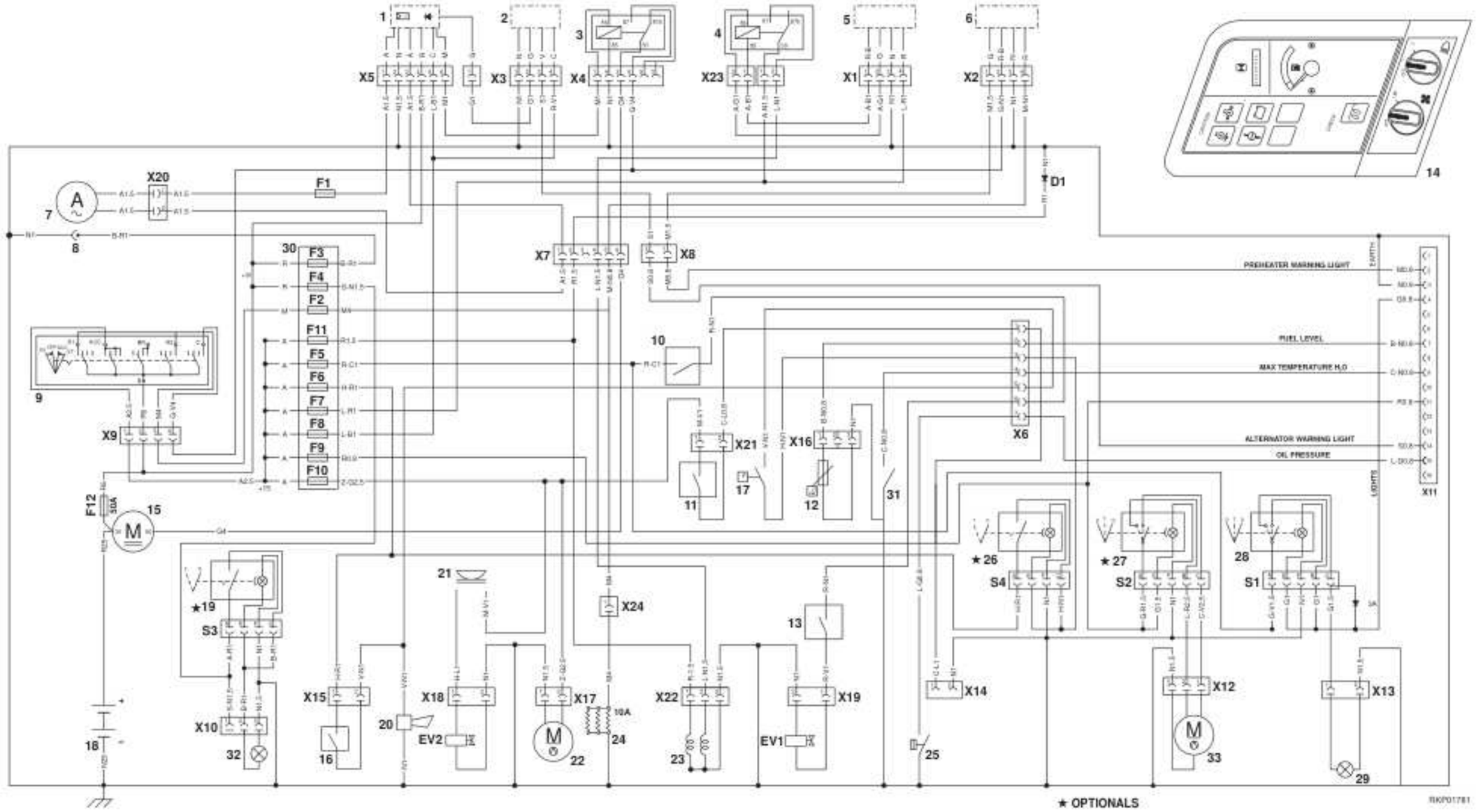
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Unit: mm

No.	Check item	Criteria					Remedy
1	Clearance between piston and cylinder	Standard clearance			Clearance limit		Replace
2	Clearance between shoe and piston						
3	Cylinder block spring	Standard size			Repair limit		When damage or deformation is found, replace the spring
		Free length	Installed length	Installed load	Free length	Installed load kg/cm^2	
4	Check valve spring						
5	Braking valve return spring						

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ELECTRICAL CIRCUIT DIAGRAM



COMPONENTS

1 - Rectfier - Voltage regulator
2 - Battery warning light relay
3 - Starter relay
4 - Stop motor relay
5 - Timer 1" stop motor solenoid
6 - Timer 15" preheather warning light
7 - Alternator (20A)
8 - Electric socket
9 - Starter switch
10 - R.H. Servocontrol push-button
11 - Optional push-button (L.H. PPC valve)
12 - Fuel level
13 - L.H. Servocontrol push-button
14 - Warning lights - Instrument - check box
15 - Starting motor
16 - Horn push-button
17 - Safety pressure switch (TBG)
18 - Battery (12V 45Ah 210A)
19 - Rotating beam switch (optional)
20 - Horn
21 - Travel increment pedal
22 - Fuel pump
23 - Stop motor (instantaneous current 30A - constant current 0.8A)
24 - Preheater (10A)
25 - Engine oil pressure switch
26 - TBG switch (optional)
27 - Fan heating switch (optional)
28 - Working beam and dashboard switch
29 - Working beam
30 - Fuses box
31 - Coolant temperature sensor
32 - Rotating beam
33 - Fan heating
EV1 - Servocontrol solenoid valve
EV2 - Travel increment solenoid valve
D1 - Hold solenoid diode
S1 - Working beam and dashboard switch
S2 - Fan heating switch (optional)
S3 - Rotating beam switch (optional)
S4 - TBG switch (optional)

CONNECTORS

X1 - 4 ways connector stop motor timer, solenoid
X2 - 4 ways connector preheater timer
X3 - 4 ways connector battery warning light relay
X4 - 6 ways connector starter relay
X5 - 6 ways connector voltage regulator relay
X6 - 6 ways connector motor line
X7 - 7 ways connector motor line
X8 - 2 ways connector check box line
X9 - 4 ways connector starter switch line
X10 - 3 ways connector cabin line
X11 - 6 ways connector instrument and warning light line
X12 - 3 ways connector heater line
X13 - 2 ways connector working beam line
X14 - 2 ways connector optional solenoid valve line
X15 - 2 ways connector horn line
X16 - 3 ways connector fuel indicator level line
X17 - 2 ways connector fuel pump line
X18 - 2 ways connector travel increment solenoid valve line
X19 - 2 ways connector servocontrol solenoid valve line
X20 - 2 ways connector alternator line
X21 - 2 ways connector optional push-button line
X22 - 3 ways connector stop motor line
X23 - Connector stop motor relay
X24 - Connector preheater

FUSES

F1 - Alternator
F2 - Preheater
F3 - Electrical socket
F4 - Rotating beam + cabin
F5 - Servocontrol + working beam
F6 - Horn + TBG
F7 - Stop motor relay
F8 - Compound alternator
F9 - Instrument
F10 - Fuel pump + travel increment push-button
F11 - Stop motor solenoid
F12 - General fuse

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