CRAWLER EXCAVATOR

SERVICE MANUAL

R140LC-7

HYUNDAI

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4. WEIGHT

Item	R140LC-7		R140LCD-7	
	kg	lb	kg	lb
Upperstructure assembly	5630	12420	←	
Main frame weld assembly	1100	2410	←	
Engine assembly	330	730	←	
Main pump assembly	70	120	←	
Main control valve assembly	80	180	←	
Swing motor assembly	130	260	←	
Hydraulic oil tank assembly	180	390	←	
Fuel tank assembly	140	300	←	
Counterweight	2200	4850	←	
Cab assembly	310	680	←	
Lower chassis assembly	5340	11760	6160	13580
Track frame weld assembly	1590	3510	1840	4060
Swing bearing	190	410	←	
Travel motor assembly	480	1060	←	
Turning joint	50	120	←	
Track recoil spring	210	460	←	
Idler	250	550	←	
Carrier roller	40	90	←	
Track roller	490	1080	←	
Track-chain assembly(600mm standard triple grouser shoe)	2030	4480	←	
Dozer blade assembly	-		550	1220
Front attachment assembly(4.6m boom, 2.5m arm, 0.58m³ PCSA heaped bucket)	2420	5330	←	
4.6m boom assembly	880	1940	←	
2.5m arm assembly	440	970	←	
0.58m³ PCSA heaped bucket	480	1060	←	
Boom cylinder assembly	260	570	←	
Arm cylinder assembly	160	350	←	
Bucket cylinder assembly	110	240	←	
Bucket control rod assembly	90	200	←	
Dozer blade cylinder assembly	-		50	120

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Item	R140LCM-7	
	kg	lb
Upperstructure assembly	5630	12420
Main frame weld assembly	1100	2410
Engine assembly	330	730
Main pump assembly	70	120
Main control valve assembly	80	180
Swing motor assembly	130	260
Hydraulic oil tank assembly	180	390
Fuel tank assembly	140	300
Counterweight	2200	4850
Cab assembly	310	680
Lower chassis assembly	8700	19180
Track frame weld assembly	2180	4810
Swing bearing	190	410
Travel motor assembly	305	670
Turning joint	50	120
Tension cylinder assembly	280	620
Idler assembly	320	710
Carrier roller assembly	200	440
Track roller assembly	700	1540
Track-chain assembly(800mm standard triple grouser shoe)	2740	6040
Front attachment assembly(4.6m boom, 2.5m arm, 0.58m³ PCSA heaped bucket)	2420	5330
4.6m boom assembly	880	1940
2.5m arm assembly	440	970
0.58m³ PCSA heaped bucket	480	1060
Boom cylinder assembly	260	570
Arm cylinder assembly	160	350
Bucket cylinder assembly	110	240
Bucket control rod assembly	90	200

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8. SPECIFICATIONS FOR MAJOR COMPONENTS

1) ENGINE

Item	Specification	
Model	Cummins B3.9-C	*4BTAA
Type	4-cycle turbocharged diesel engine	*Charge air cooled
Cooling method	Water cooling	
Number of cylinders and arrangement	4 cylinders, in-line	
Firing order	1-3-4-2	
Combustion chamber type	Direct injection type	
Cylinder bore × stroke	102× 120mm	
Piston displacement	3900cc(238cu in)	
Compression ratio	17.8 : 1	*18 : 1
Rated gross horse power(SAE J1995)	107Hp (80kW) at 2100rpm	
	*115Hp (86kW) at 2100rpm	
Maximum torque	46.2kgf m(334lbf ft) at 1500rpm	
	*47.7kgf m(345lbf ft) at 1500rpm	
Engine oil quantity	9.5 ℓ (2.5U.S. gal)	*15.3 ℓ (4.0U.S. gal)
Dry weight	329kg(726lb)	*317kg
High idling speed	2350± 50rpm	
Low idling speed	950± 100rpm	*850± 100rpm
Rated fuel consumption	167.8g/Hp hr at 2100rpm	*162g/Hp hr at 2100rpm
Starting motor	Nippon denso(24V-4.5kW)	
Alternator	Delco Remy 24V-50A	
Battery	2× 12V× 80Ah	

* : TIER II

2) MAIN PUMP

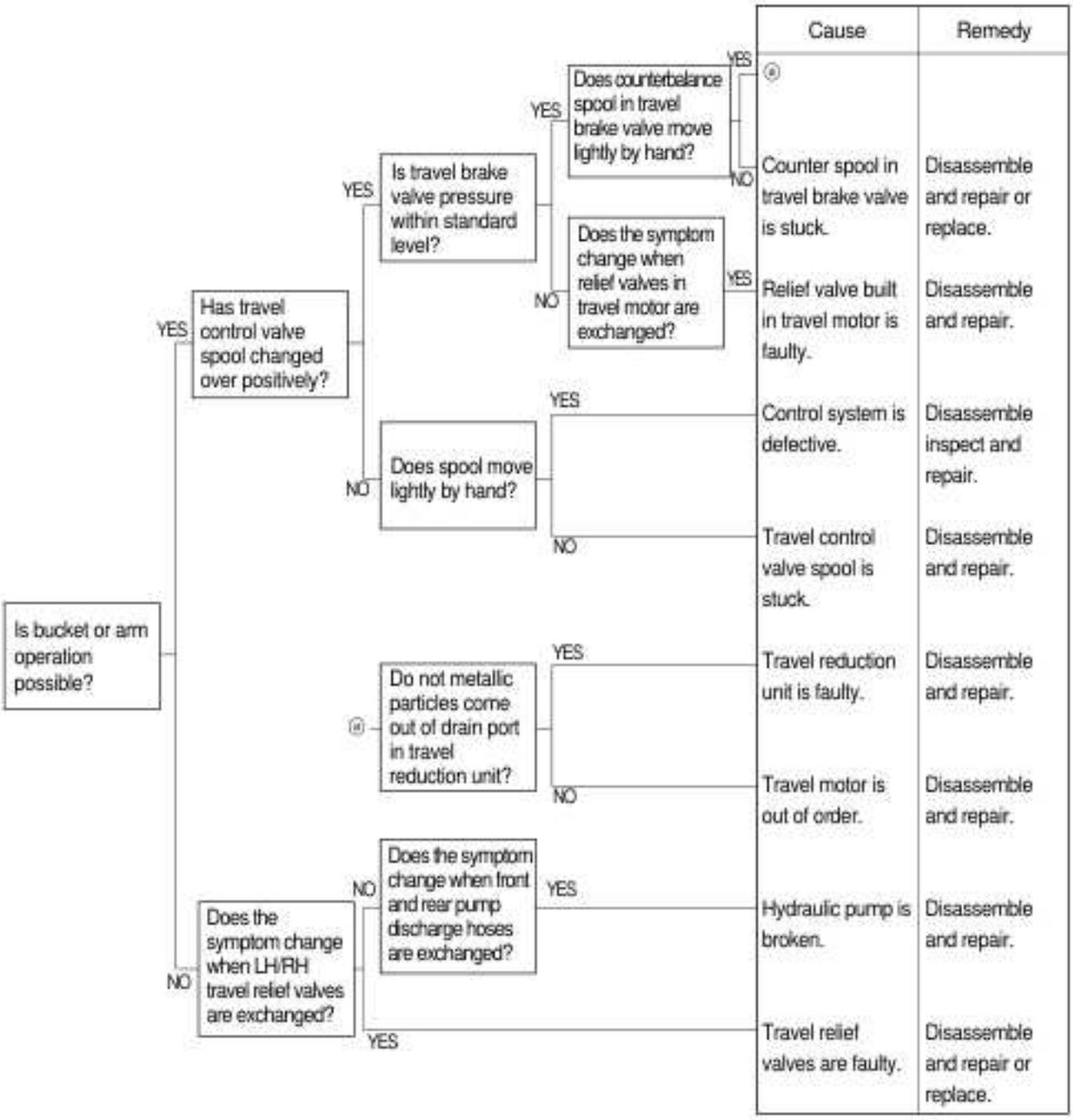
Item	Specification
Type	Variable displacement tandem axis piston pumps
Capacity	2× 62cc/rev
Maximum pressure	330kgf/cm² (4690psi)[360kgf/cm² (5120psi)]
Rated oil flow	2× 130 ℓ /min (34.3U.S. gpm/ 28.6U.K. gpm)
Rated speed	2100rpm

[ ]: Power boost

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5. TRAVEL SYSTEM

1) TRAVEL DOES NOT FUNCTION AT ALL ON ONE SIDE

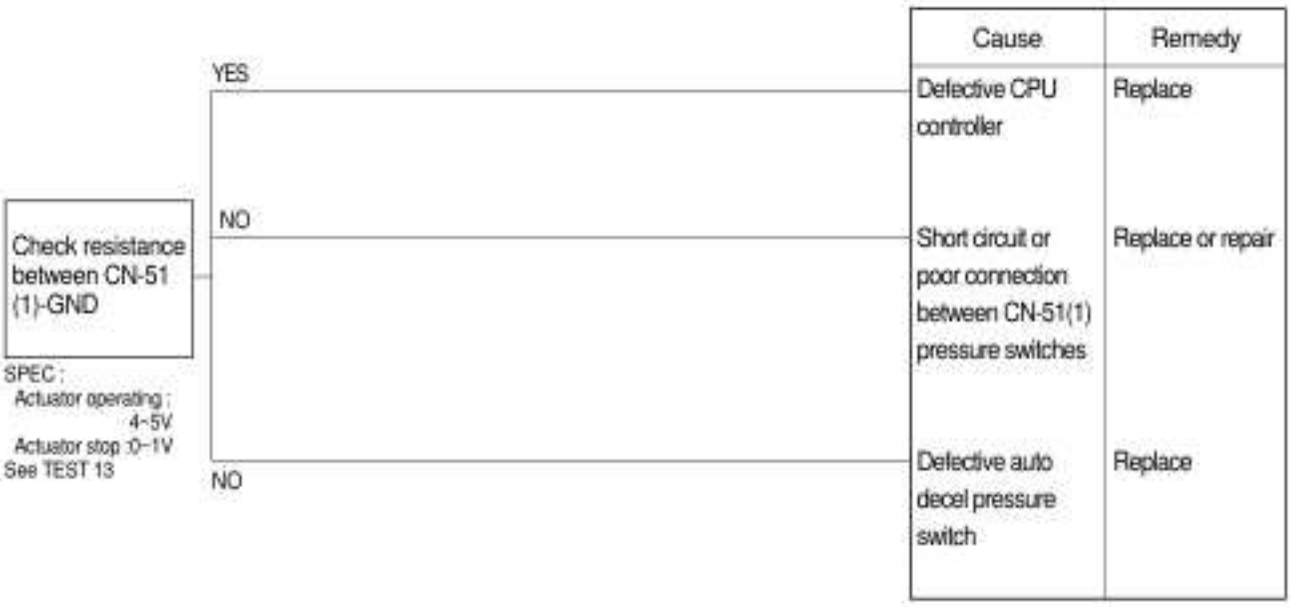


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6. AUTO DECEL SYSTEM DOES NOT WORK

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



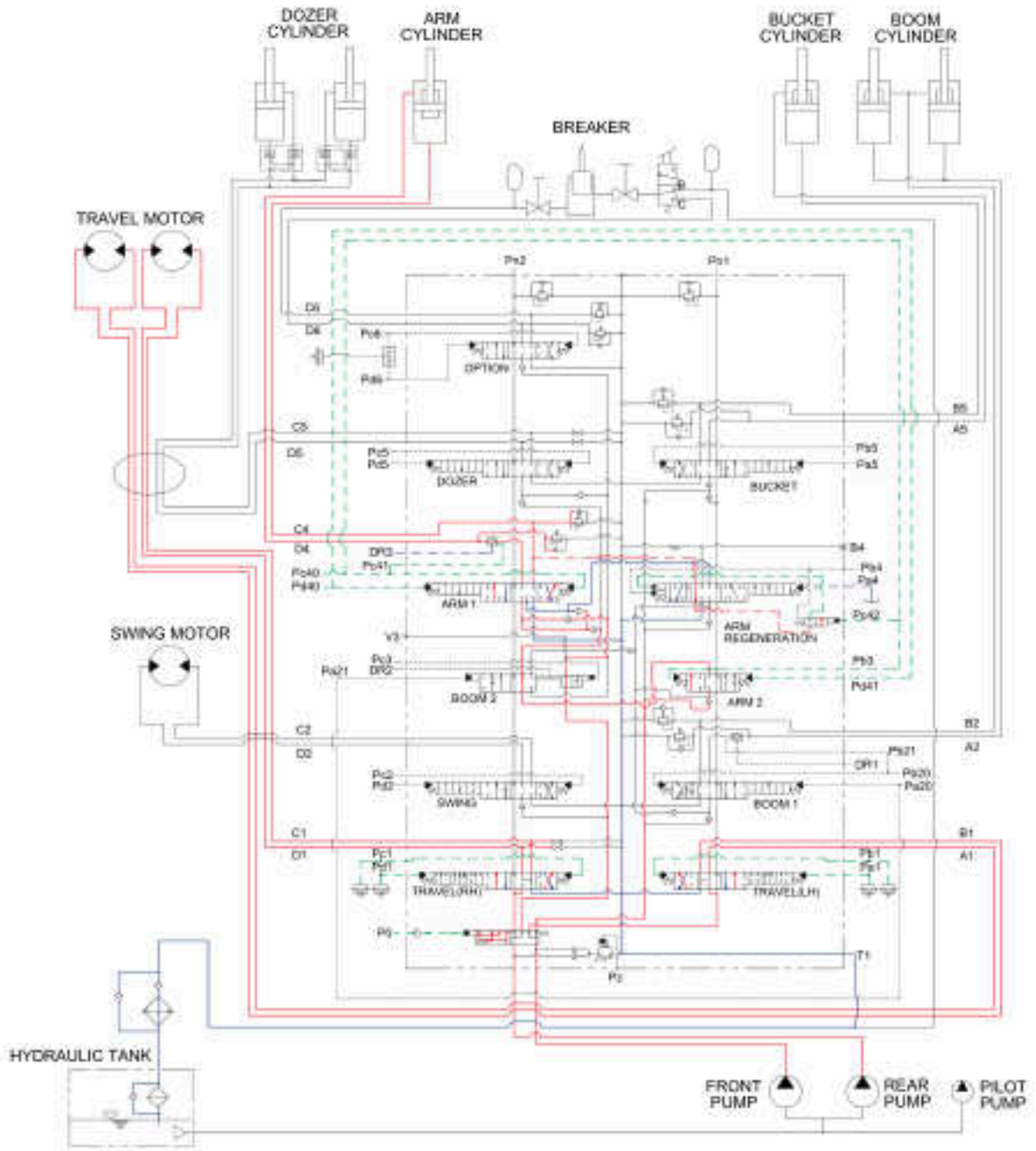
Cause	Remedy
Defective CPU controller	Replace
Short circuit or poor connection between CN-51(1) pressure switches	Replace or repair
Defective auto decel pressure switch	Replace

Wiring diagram



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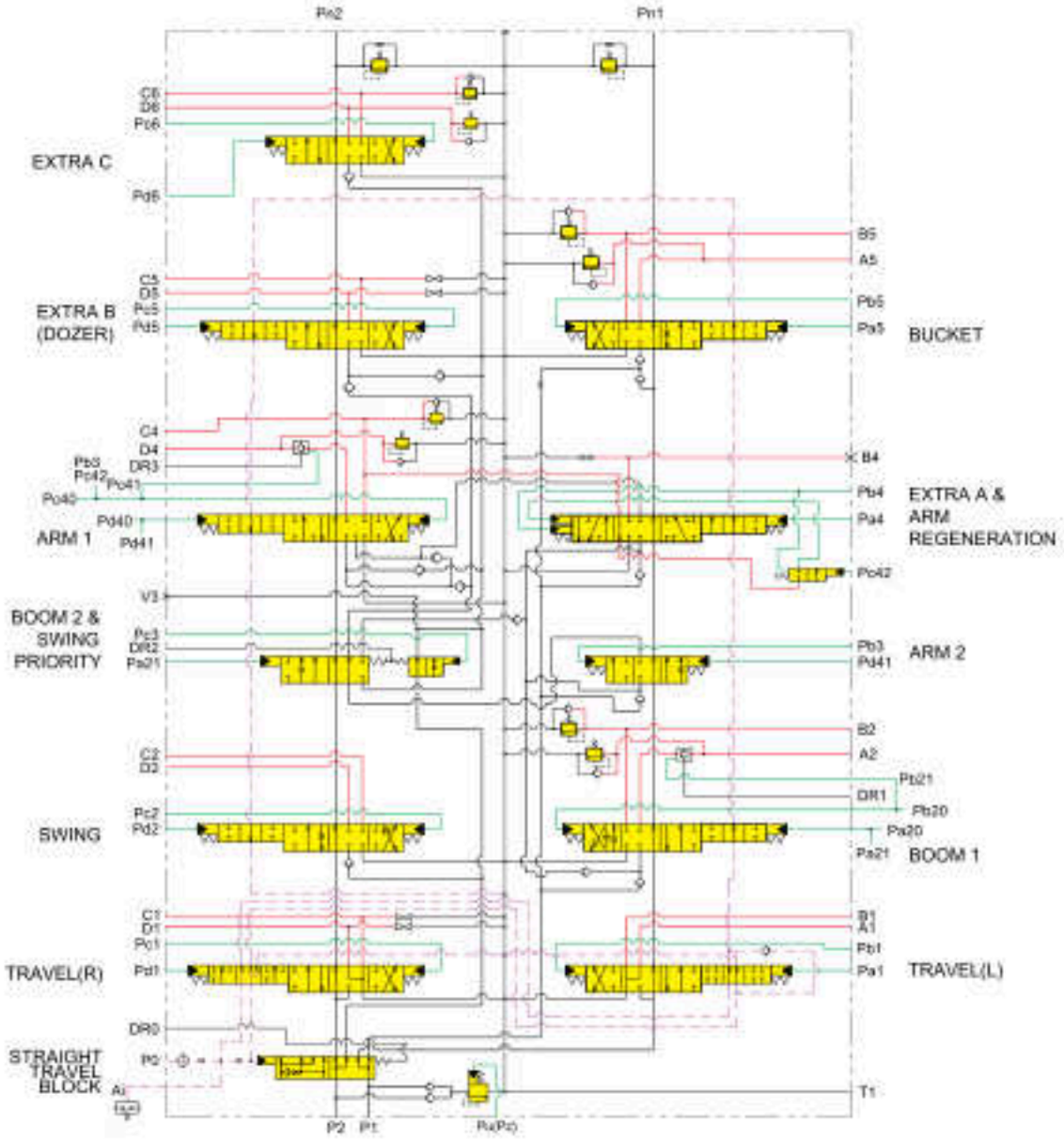
8. COMBINED ARM AND TRAVEL OPERATION



When the arm and travel functions are operated, simultaneously the arm spools and travel spools in the main control valve are moved to the functional position by the pilot oil pressure from the remote control valve and the straight travel spool is pushed to the left by the oil pressure from pilot pump.
The oil from the rear pump flows into the arm cylinders through the arm 1 spool and arm 2 spool via the parallel and confluence oil passage. The oil from the front pump flows into the travel motors through the RH travel spool and the LH travel spool via the straight travel spool.
The arm is operated and the machine travels straight.

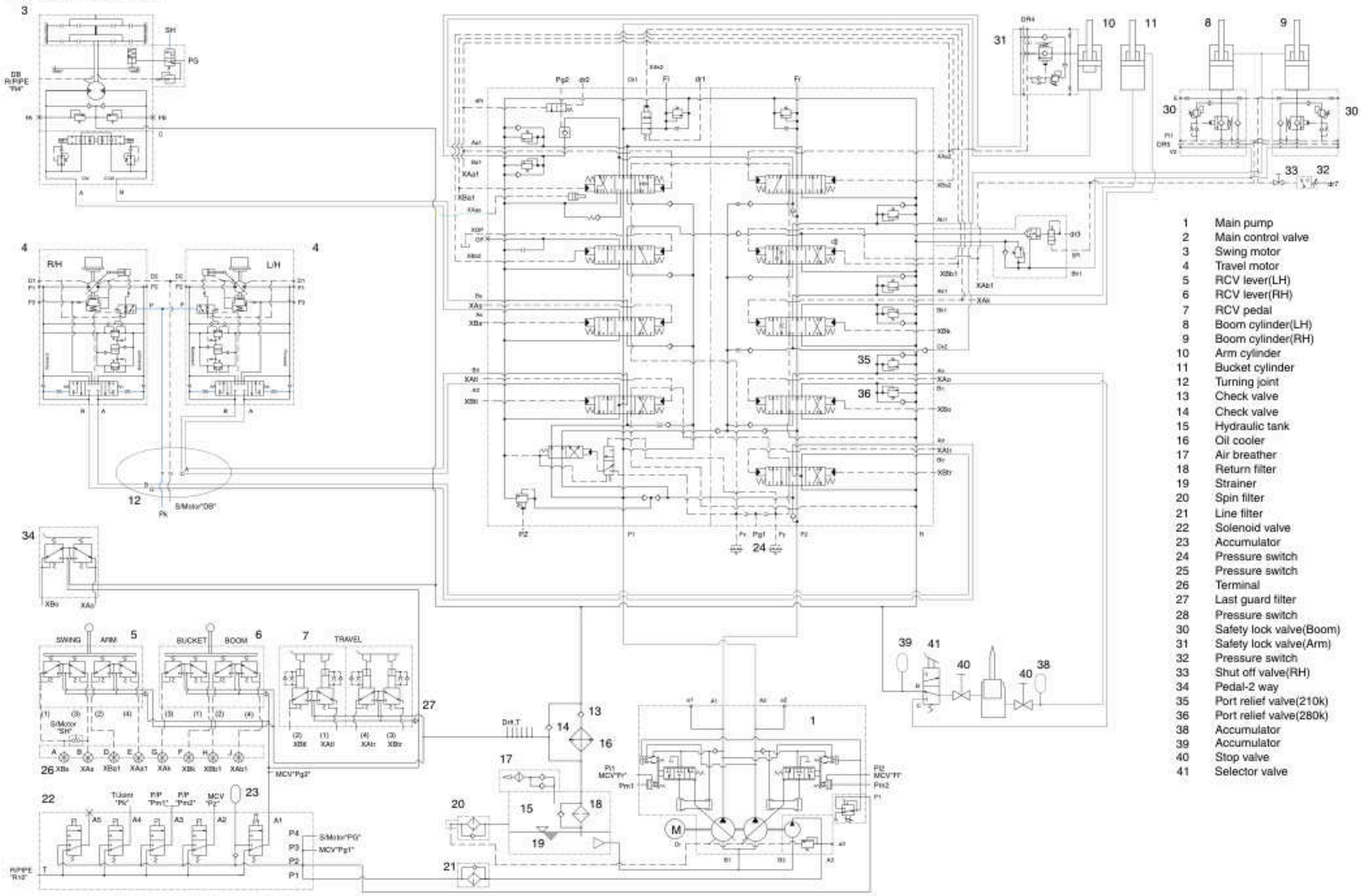
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2. HYDRAULIC CIRCUIT



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MCV TYPE: UHX22-26



1 Main pump
2 Main control valve
3 Swing motor
4 Travel motor
5 RCV lever(LH)
6 RCV lever(RH)
7 RCV pedal
8 Boom cylinder(LH)
9 Boom cylinder(RH)
10 Arm cylinder
11 Bucket cylinder
12 Turning joint
13 Check valve
14 Check valve
15 Hydraulic tank
16 Oil cooler
17 Air breather
18 Return filter
19 Strainer
20 Spin filter
21 Line filter
22 Solenoid valve
23 Accumulator
24 Pressure switch
25 Pressure switch
26 Terminal
27 Last guard filter
28 Pressure switch
30 Safety lock valve(Boom)
31 Safety lock valve(Arm)
32 Pressure switch
33 Shut off valve(RH)
34 Pedal-2 way
35 Port relief valve(210k)
36 Port relief valve(280k)
38 Accumulator
39 Accumulator
40 Stop valve
41 Selector valve

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