CRAWLER EXCAVATOR

SERVICE MANUAL

R230LM

HYUNDAI

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3) GEAR PUMP

Item	Specification
Type	Fixed displacement gear pump single stage
Capacity	10cc/rev
Maximum pressure	35kgf/cm²(500psi)
Rated oil flow	19.5 ℓ/min(5.2U.S. gpm/4.3U.K. gpm)

4) MAIN CONTROL VALVE

Item	Specification
Type	9 spools mono-block
Operating method	Hydraulic pilot system
Main relief valve pressure	330kgf/cm²(4695psi)
Overload relief valve pressure	390kgf/cm²(5550psi)

5) SWING MOTOR

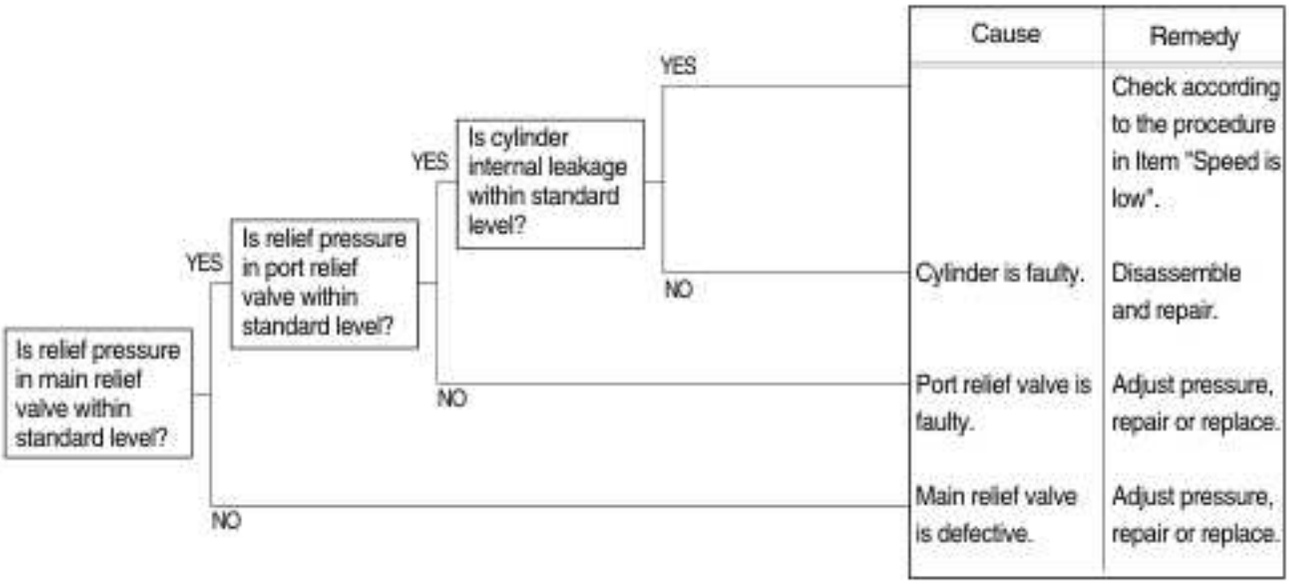
Item	Specification
Type	Two fixed displacement axial piston motor
Capacity	151cc/rev
Relief pressure	240kgf/cm²(3414psi)
Braking system	Automatic, spring applied hydraulic released
Braking torque	59kgf m(427lbf ft)
Brake release pressure	33~50kgf/cm²(470~711psi)
Reduction gear type	2 - stage planetary
Swing speed	11.0rpm

6) TRAVEL MOTOR

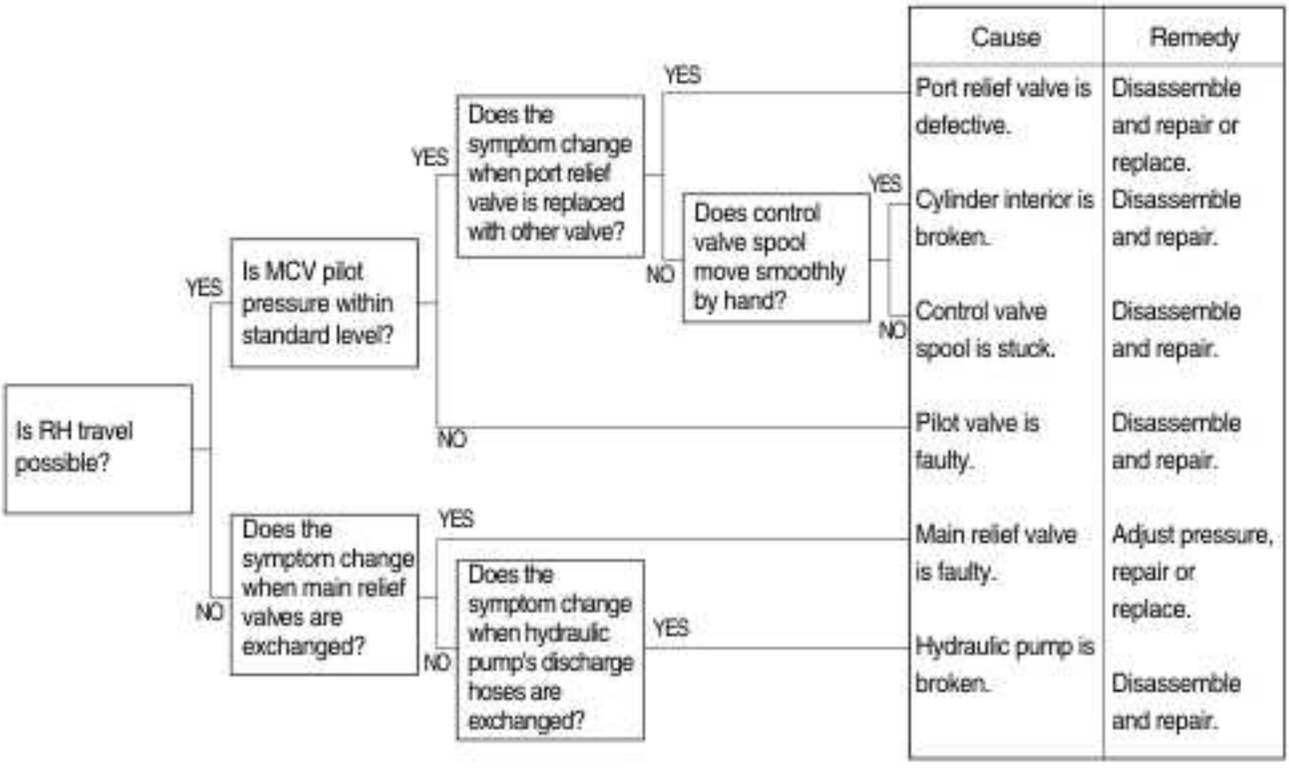
Item	Specification
Type	Variable displacement axial piston motor
Relief pressure	330kgf/cm²(4695psi)
Reduction gear type	2-stage planetary
Braking system	Automatic, spring applied hydraulic released
Brake release pressure	11kgf/cm²(156psi)
Braking torque	49.3kgf m(357lbf ft)

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4) BOOM, ARM OR BUCKET POWER IS WEAK



5) ONLY BUCKET OPERATION IS TOTALLY IMPOSSIBLE



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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

Check resistance between CN-51 (1)-GND and CN-51(13)-GND

SPEC :
Actuator operating : 4–5V
Actuator stop :0–1V
See TEST 13
See TEST 14

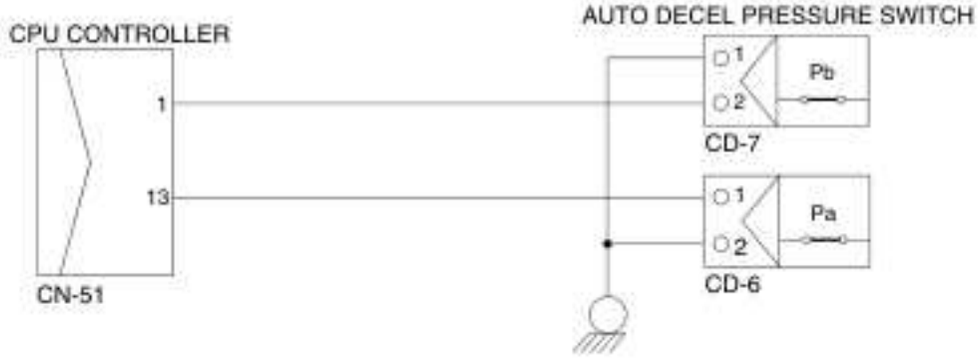
YES

NO

NO

Cause	Remedy
Defective CPU controller	Replace
Short circuit or poor connection between CN-51(1), (13)- pressure switches	Replace or repair
Defective auto decel pressure switch	Replace

Wiring diagram



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3) ASSEMBLING PINION GEAR SUB ASSY

(1) Prepare drive shaft pinion gear vertical with ground.

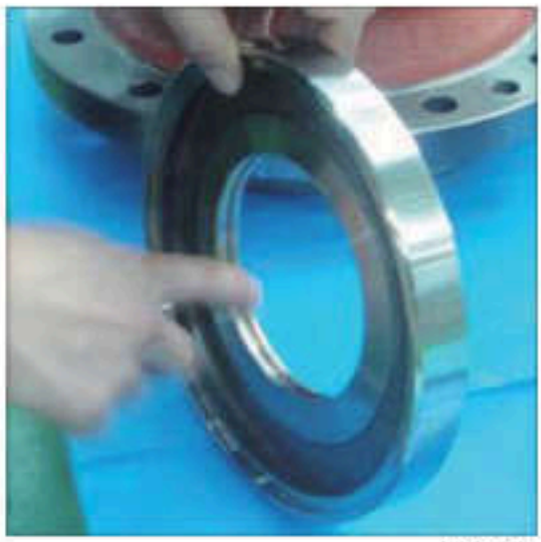


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(2) Fully apply grease (albania EP02) to O-ring groove of sleeve.

※ Be sure to maintain it vertical with ground when assembling it.

(3) Put O-ring into O-ring groove of sleeve. Fully apply grease on O-ring.



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(4) Assemble taper bearing and sleeve into drive shaft using press jig.
Use special jig for pressing. Leave no space between sleeve and taper bearing.

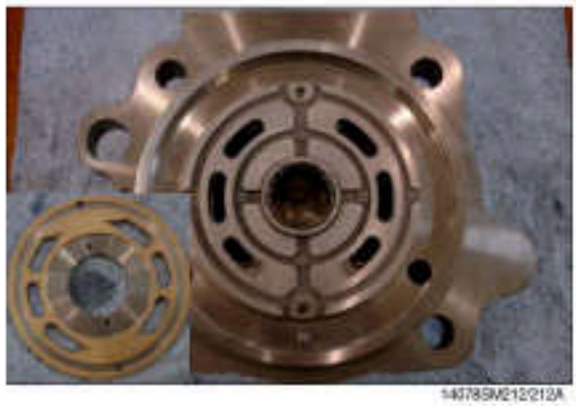


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(3) Disassemble rear cover assy sub

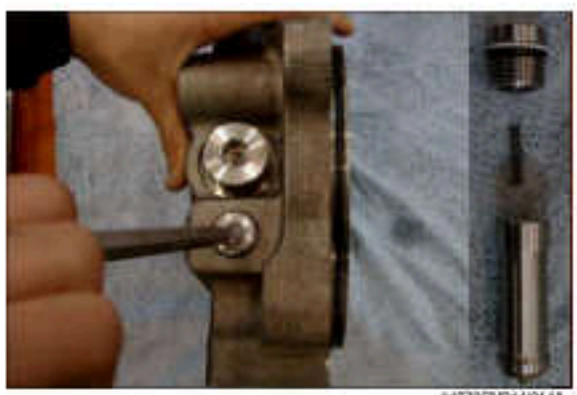
① Disassemble pin(8, 23), valve plate(24) from rear cover(21).



② Using a torque wrench, disassemble relief valve assy(33) 2 set from rear cover(21).



③ After disassembling plug with a L-wrench from rear cover(21), disassemble respectively back up ring, O-ring, O-ring, spring, anti-inversion valve assy(34)

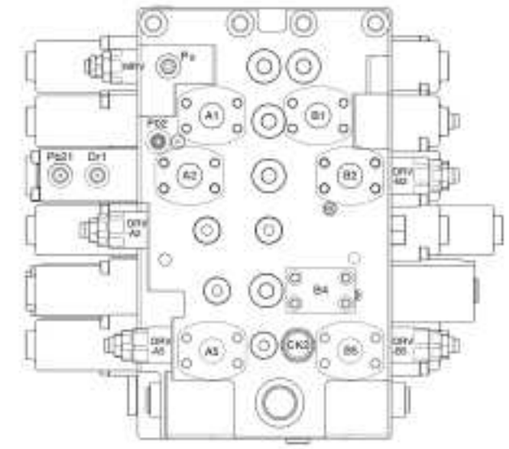


④ Disassemble make up check valve assy with a torque wrench from rear cover(21).

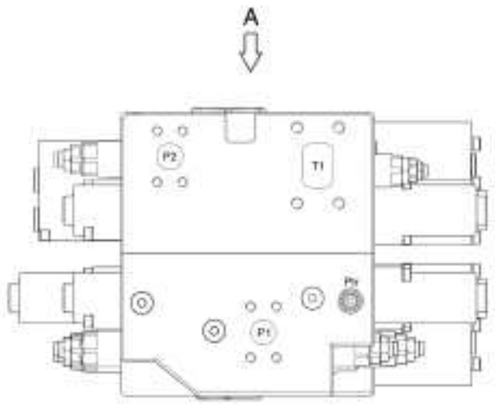


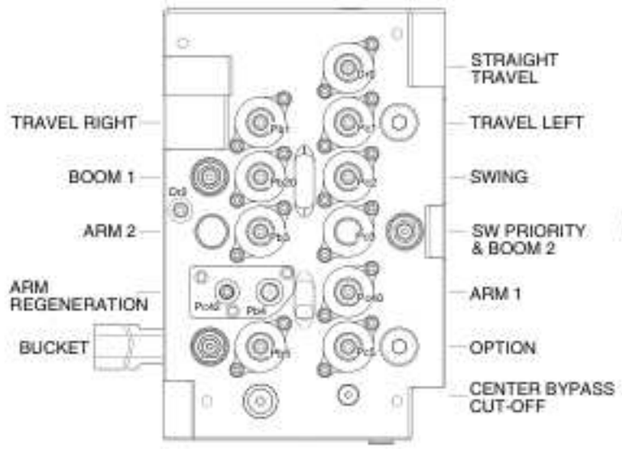
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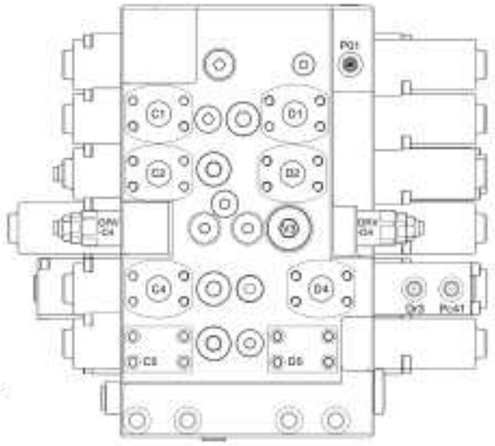
1. STRUCTURE

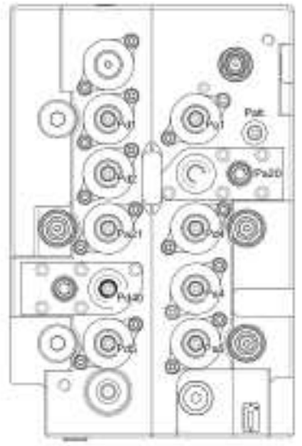


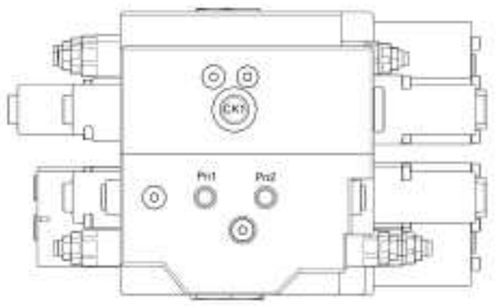
VIEW A











2107V2MC01

Mark	Port name	Port size	Tightening torque
Rs	Make up for swing motor	G1	20–25 kgf · m (145–180 lbf · ft)
Patt Pb21 Pcb P01 P02 Pc41 Pc42 Ptr Pu Dr1 Dr2	Auto idle signal-attachment Lock valve pilot port (boom) Bucket in confluence pilot port Pilot signal port Pilot signal port Unlock signal Arm in regen-cut signal selector port Auto idle signal-travel Power boost Drain port Drain port	G1/4	3.5–3.9 kgf · m (25.3–28.2 lbf · ft)
Ck1 Ck2	Bucket confluence Bucket confluence	G3/4	17–19 kgf · m (123–137.4 lbf · ft)
Pa1 Pb1 Pc1 Pd1 Pa20 Pa21 Pb20 Pc2 Pd2 Pb3 Pc3 Pa4 Pb4 Pc40 Pd40 Pd41 Pa5 Pb5 Pc5 Pd5 Dr0 Pn1 Pn2	Travel pilot port-RH (FW) Travel pilot port-RH (BW) Travel pilot port-LH (BW) Travel pilot port-LH (FW) Boom up pilot port Boom up confluence pilot port Boom down pilot port Swing pilot port (LH) Swing pilot port (RH) Arm in confluence pilot port Swing priority pilot port Option A pilot port (breaker) Arm in regeneration cut port Arm in pilot port Arm out pilot port Arm out confluence pilot port Bucket in pilot port Bucket out pilot port Option B pilot port Option B pilot port Drain port Negative control signal port (A2 port side) Negative control signal port (A1 port side)	G3/8	7–8 kgf · m (50.6–57.8 lbf · ft)
A1 B1 C1 D1 A2 B2 C2 D2 B4 C4 D4 A5 B5 C5 D5 P1 P2	Travel motor port-LH (FW) Travel motor port-LH (BW) Travel motor port-RH (BW) Travel motor port-RH (FW) Boom up port Boom down port Swing motor port (LH) Swing motor port (RH) Option A port (breaker) Arm in port Arm out port Bucket in port Bucket out port Option B port Option B port Pump port (A2 side) Pump port (A1 side)	SAE 5000 psi 1"	7.5–9.2 kgf · m (54.2–66.5 lbf · ft)
Dr5	Drain port	G1/8	1.5–1.9 kgf · m (10.8–13.7 lbf · ft)
T1	Return port	SAE 3000 psi 2" (M12)	6.4–8.6 kgf · m (46.2–62.2 lbf · ft)

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