CRAWLER EXCAVATOR

SERVICE MANUAL

RD215L

HYUNDAI

MidWestTech | Hyundai RD215L Crawler Excavator Service Manual | Publication RD215L

Order the manual at mid-west-tech.com >

CONTENTS

SECTION 1 GENERAL

Group 1 Safety Hints 1-1
Group 2 Specifications 1-10

SECTION 2 STRUCTURE AND FUNCTION

Group 1 Pump Device 2-1
Group 2 Main Control Valve 2-21
Group 3 Swing Device 2-54
Group 4 Travel Device 2-63
Group 5 RCV Lever 2-71
Group 6 RCV Pedal 2-78

SECTION 3 HYDRAULIC SYSTEM

Group 1 Hydraulic Circuit 3-1
Group 2 Main Circuit 3-2
Group 3 Pilot Circuit 3-5
Group 4 Single Operation 3-12
Group 5 Combined Operation 3-22

SECTION 4 ELECTRICAL SYSTEM

Group 1 Component Location 4-1
Group 2 Electrical Circuit 4-3
Group 3 Electrical Component Specification 4-23
Group 4 Connectors 4-32

SECTION 5 MECHATRONICS SYSTEM

Group 1 Outline 5-1
Group 2 Mode Selection System 5-3
Group 3 Automatic Deceleration System 5-5
Group 4 Travel Speed Control System 5-6
Group 5 Automatic Warming Up Function 5-7
Group 6 Engine Overheat Prevention Function 5-8
Group 7 Anti-Restart System 5-9
Group 8 Self-Diagnostic System 5-10

MidWestTech | Hyundai RD215L Crawler Excavator Service Manual | Publication RD2... Order the manual at mid-west-tech.com >

Group 9 Engine Control System 5-13
Group 10 EPPR(Electro Proportional Pressure Reducing) Valve 5-20
Group 11 Monitoring System 5-23

SECTION 6 TROUBLESHOOTING

Group 1 Before trobleshooting 6-1
Group 2 Hydraulic and Mechanical System 6-4
Group 3 Electrical System 6-24
Group 4 Mechatronics System 6-40

SECTION 7 MAINTENANCE STANDARD

Group 1 Operational Performance Test 7-1
Group 2 Major Components 7-21
Group 3 Track and Work Equipment 7-29

SECTION 8 DISASSEMBLY AND ASSEMBLY

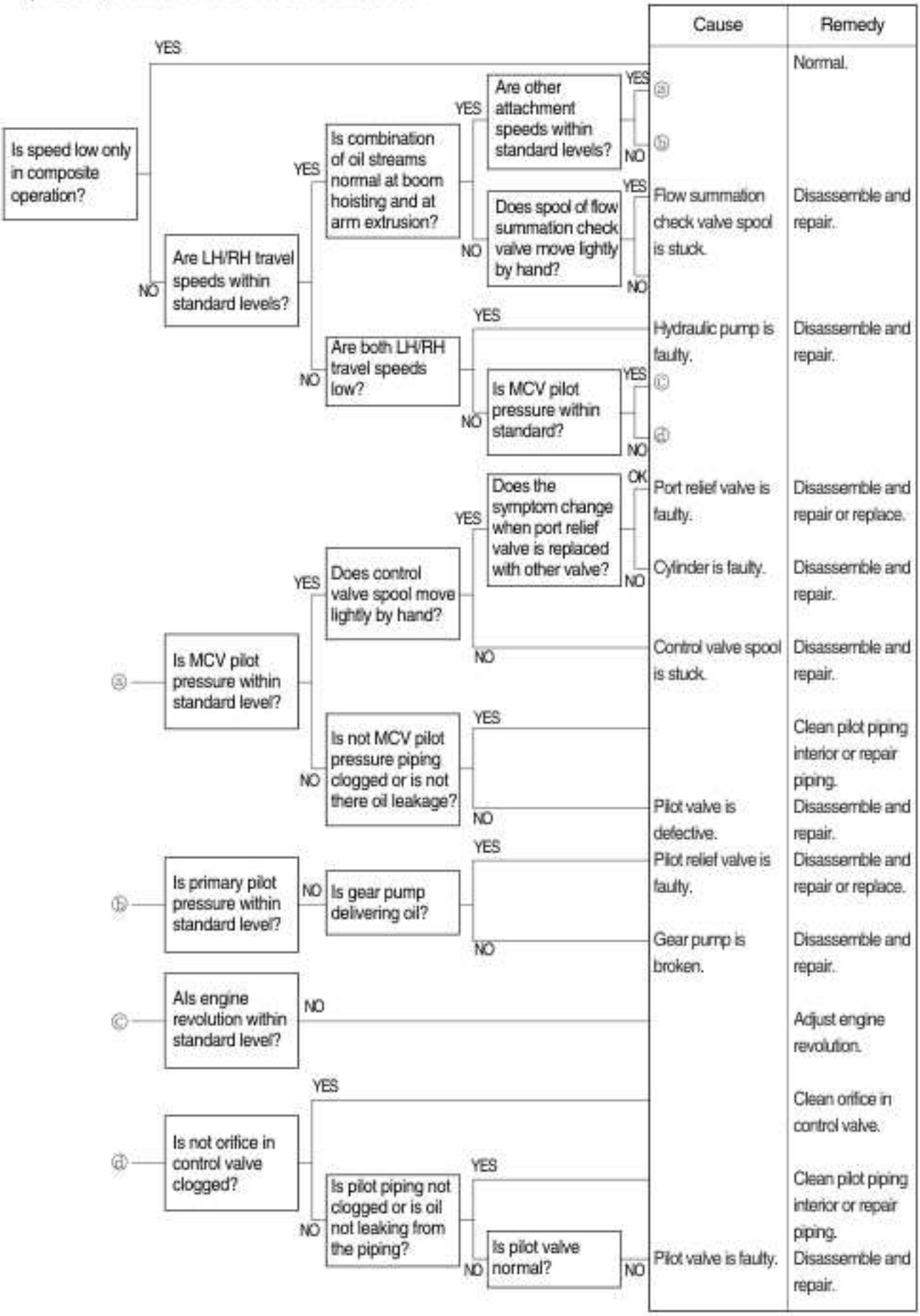
Group 1 Precaution 8-1
Group 2 Tightening Torque 8-4
Group 3 Pump Device 8-7
Group 4 Main Control Valve 8-30
Group 5 Swing Device 8-47
Group 6 Travel Device 8-72
Group 7 RCV Lever 8-104
Group 8 Turning Joint 8-119
Group 9 Boom, Arm and Bucket Cylinder 8-124
Group 10 Undercarriage 8-141
Group 11 Work Equipment 8-153

SECTION 9 COMPONENT MOUNTING TORQUE

Group 1 Introduction guide 9-1
Group 2 Engine system 9-2
Group 3 Electric system 9-4
Group 4 Hydraulic system 9-6
Group 5 Undercarriage 9-9
Group 6 Structure 9-10
Group 7 Work equipment 9-14

MidWestTech | Hyundai RD215L Crawler Excavator Service Manual | Publication RD2... Order the manual at mid-west-tech.com >

2) BOOM, ARM OR BUCKET SPEED IS LOW

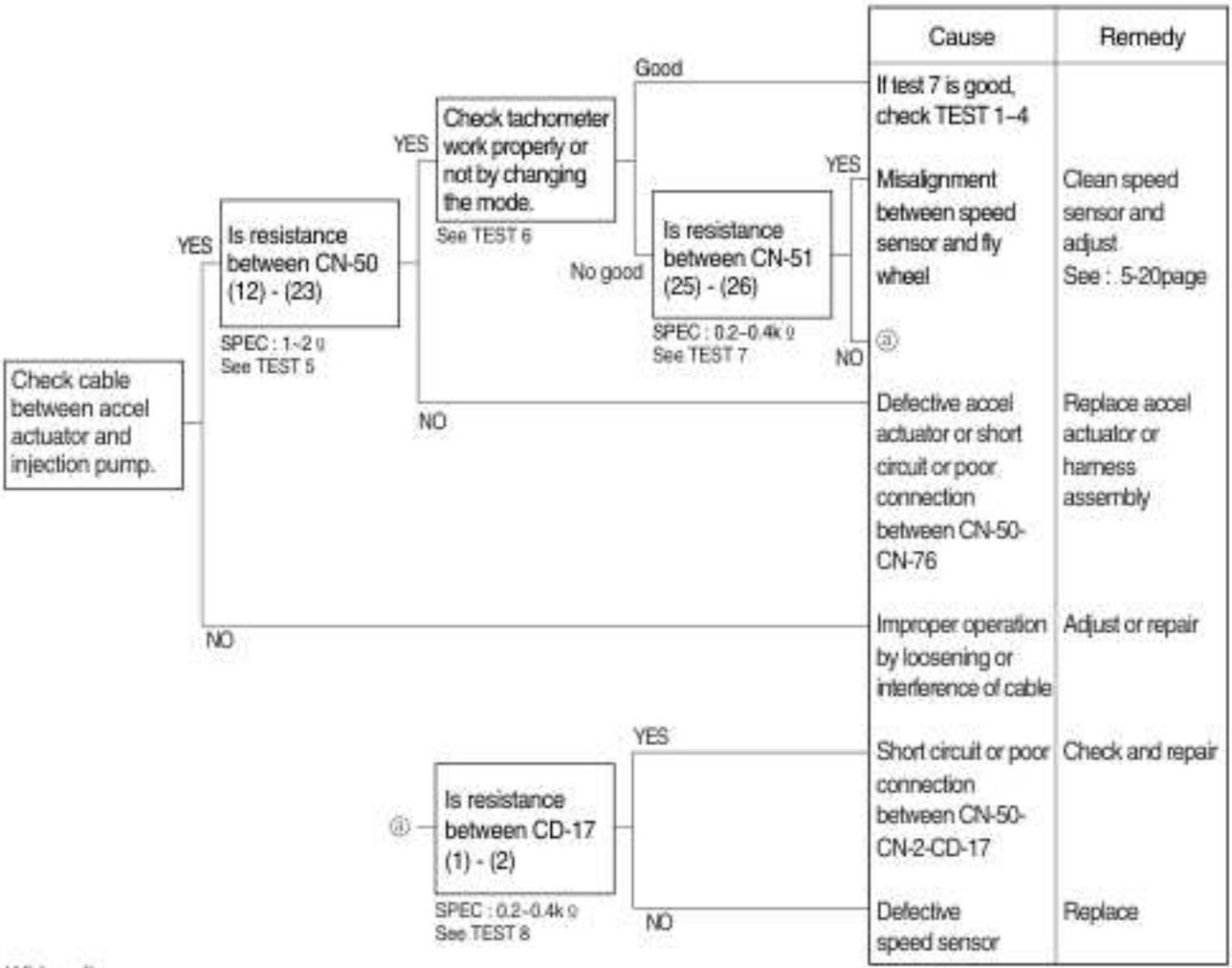


MidWestTech | Hyundai RD215L Crawler Excavator Service Manual | Publication RD2... Order the manual at mid-west-tech.com >

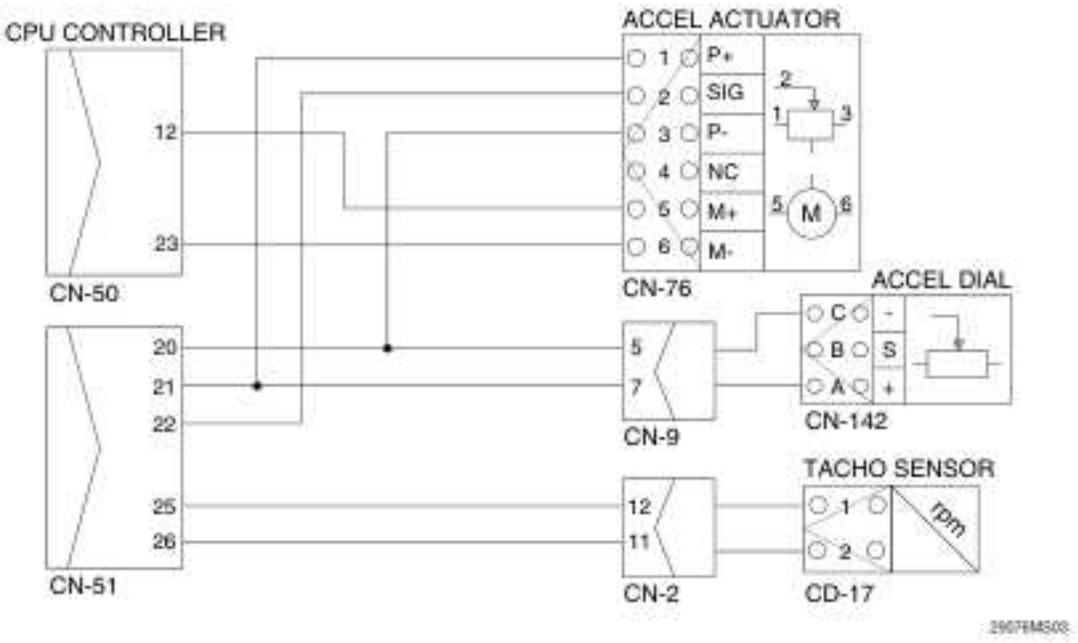
2. ENGINE SPEED IS SLOW AT ALL MODE

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

1) INSPECTION PROCEDURE

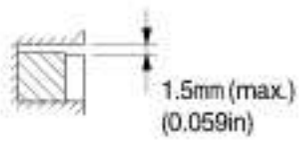
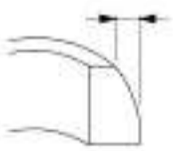


Wiring diagram



MidWestTech | Hyundai RD215L Crawler Excavator Service Manual | Publication RD2... Order the manual at mid-west-tech.com >

7. TURNING JOINT

Part name		Maintenance standards	Remedy
Body, Stem	Sliding surface with sealing sections.	Plating worn or peeled due to seizure or contamination.	Replace
	Sliding surface between body and stem other than sealing section.	· Worn abnormality or damaged more than 0.1mm (0.0039in) in depth due to seizure contamination.	Replace
		· Damaged more than 0.1mm(0.0039in) in depth.	Smooth with oilstone.
	Sliding surface with thrust plate.	· Worn more than 0.5mm(0.02in) or abnormality.	Replace
		· Worn less than 0.5mm(0.02in).	Smooth
		· Damage due to seizure or contamination remediable within wear limit (0.5mm)(0.02in).	Smooth
Cover	Sliding surface with thrust plate.	· Worn more than 0.5mm(0.02in) or abnormality.	Replace
		· Worn less than 0.5mm(0.02in).	Smooth
		· Damage due to seizure or contamination remediable within wear limit (0.5mm)(0.02in).	Replace
Seal set	-	· Extruded excessively from seal groove square ring. 	Replace
	-	· Slipper ring 1.5mm(0.059in) narrower than seal groove, or narrower than back ring. 	Replace
	-	· Worn more than 0.5mm(0.02in) – 1.5mm(MAX.) (0.059in) 	Replace

MidWestTech | Hyundai RD215L Crawler Excavator Service Manual | Publication RD2... Order the manual at mid-west-tech.com >

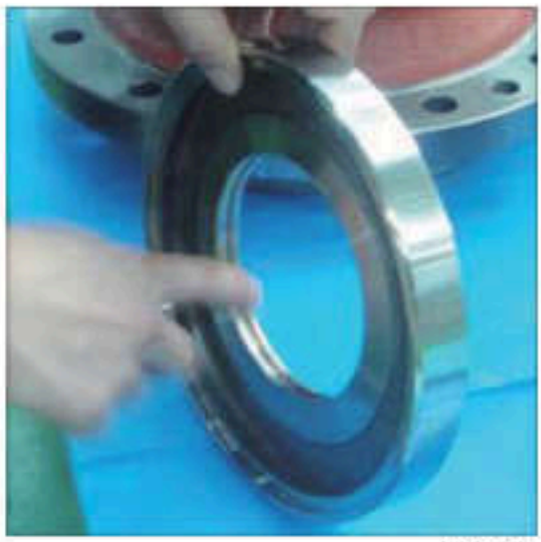
3) ASSEMBLING PINION GEAR SUB ASSY

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



(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.



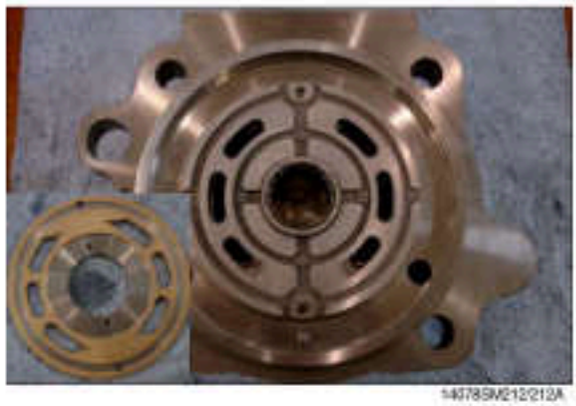
(4) Assemble taper bearing and sleeve into drive shaft using press jig.
Use special jig for pressing. Leave no space between sleeve and taper bearing.



MidWestTech | Hyundai RD215L Crawler Excavator Service Manual | Publication RD2... Order the manual at mid-west-tech.com >

(3) Disassemble rear cover assy sub

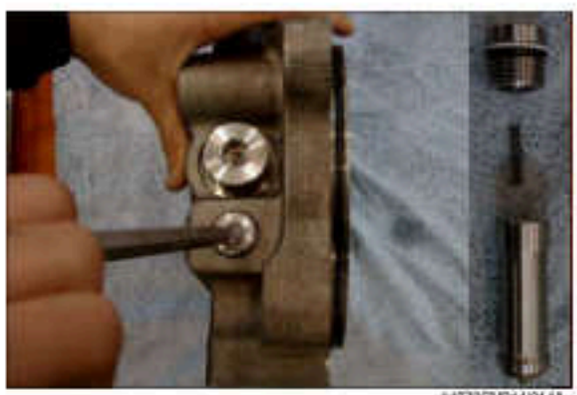
① Disassemble pin(8, 23), valve plate(24) from rear cover(21).



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)

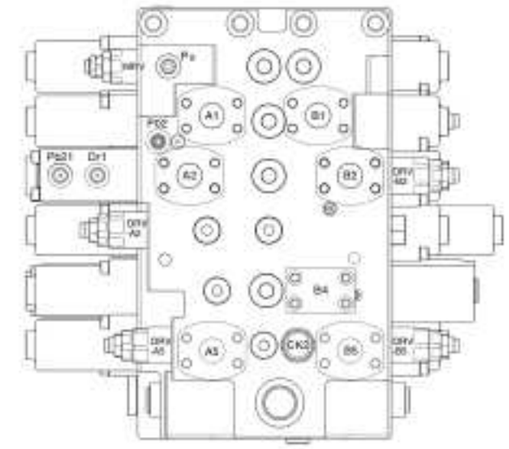


④ Disassemble make up check valve assy with a torque wrench from rear cover(21).

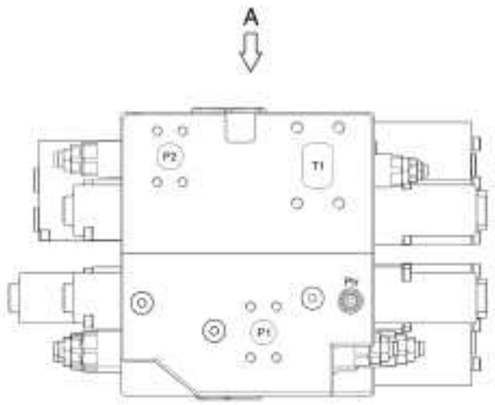


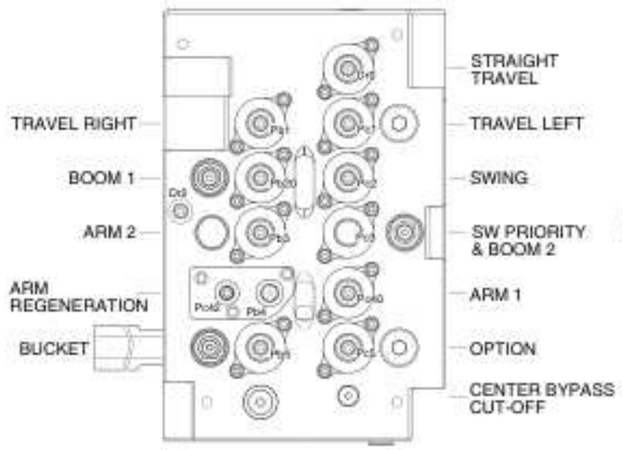
MidWestTech | Hyundai RD215L Crawler Excavator Service Manual | Publication RD2... Order the manual at mid-west-tech.com >

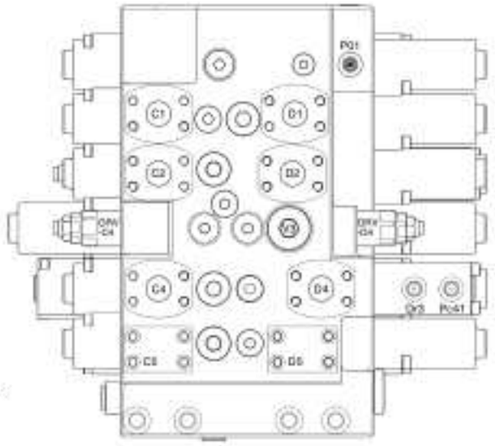
1. STRUCTURE

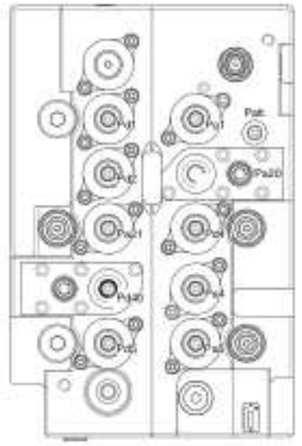


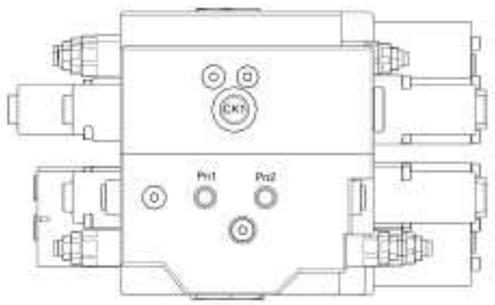
VIEW A











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)

MidWestTech | Hyundai RD215L Crawler Excavator Service Manual | Publication RD215L
Order the manual at mid-west-tech.com >