CRAWLER EXCAVATOR

SERVICE MANUAL

R215 (India)

HYUNDAI

MidWestTech | Hyundai R215 (India) Crawler Excavator Service Manual | Publication R215...

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 R215 (India) Crawler Excavator Service Manual | Publication... 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

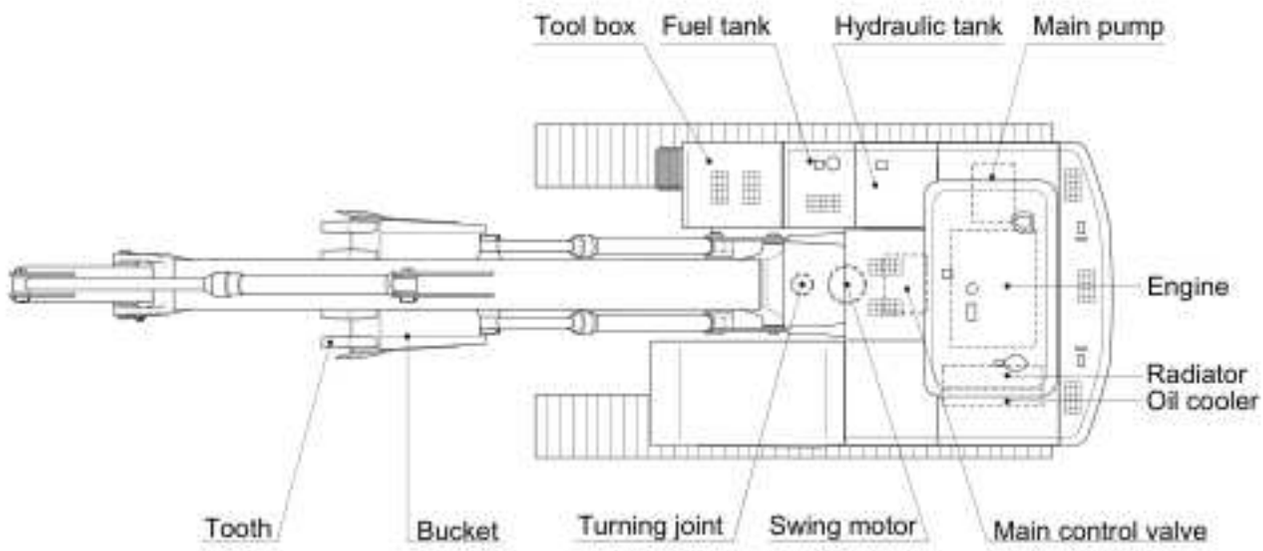
SECTION 9 COMPONENT MOUNTING TORQUE

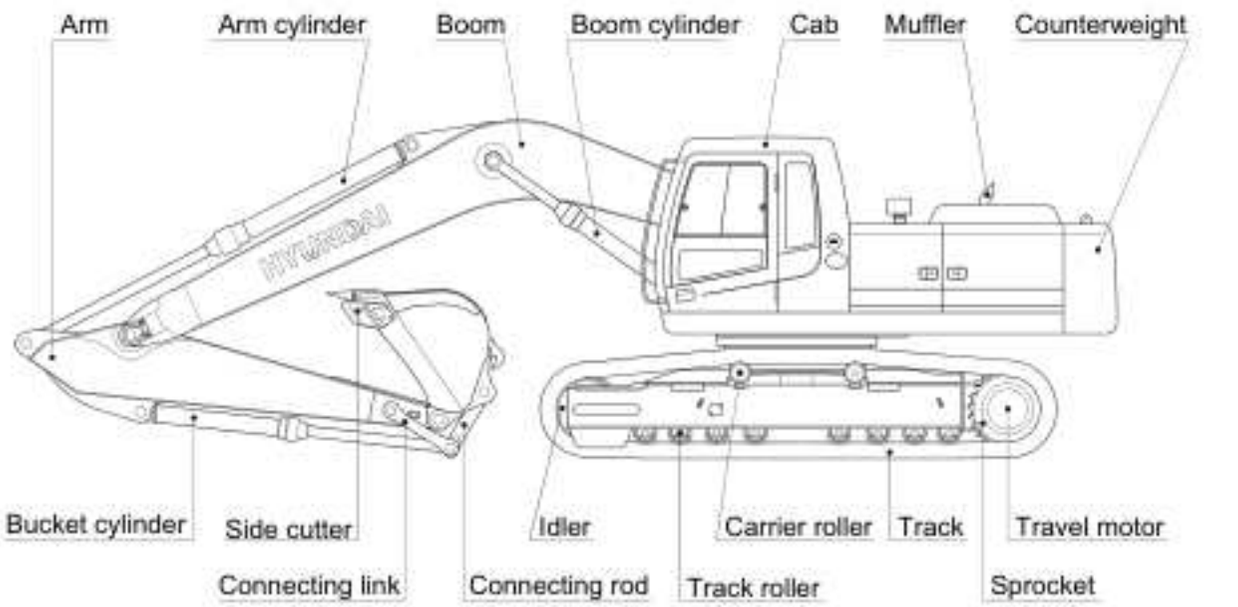
Group 1 Introduction guide 9-1
Group 2 Engine system 9-2
Group 3 Electric system 9-4
Group 4 Hydraulic system 9-6
Group 5 Undercarriage 9-9
Group 6 Structure 9-10
Group 7 Work equipment 9-14

MidWestTech | Hyundai R215 (India) Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

GROUP 2 SPECIFICATIONS

1. MAJOR COMPONENT





RD210725P01

MidWestTech | Hyundai R215 (India) Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

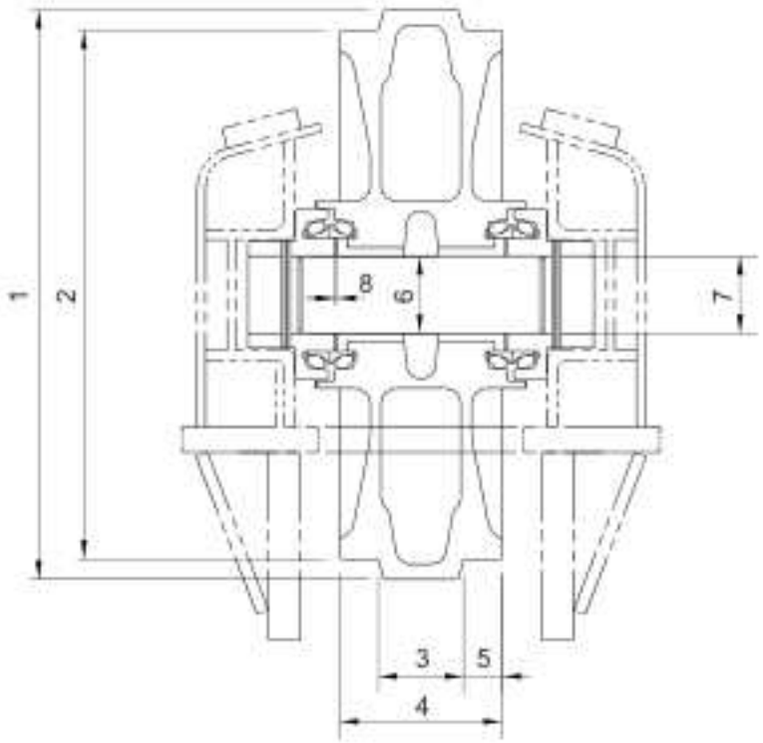
GROUP 4 CONNECTORS

1. CONNECTOR DESTINATION

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-2	KET	15	Engine rear harness	2-85262-1	368301-1
CN-3	AMP	8	Engine harness	S816-008002	S816-108002
CN-4	AMP	8	Console LH wire harness	S816-008002	S816-108002
CN-5	AMP	12	RH side harness	2-85262-1	368301-1
CN-6	AMP	12	RH side harness	S816-012002	S816-112002
CN-7	AMP	6	Console RH wire harness	S816-006002	S816-106002
CN-8	AMP	12	Console RH wire harness	S816-012002	S816-112002
CN-9	AMP	8	Console RH wire harness	S816-008002	S816-108002
CN-10	DEUTSCH	12	Cab harness	DT06-12S	DT06-12P
CN-11	DEUTSCH	8	Aircon harness	DT06-8S	DT04-08P
CN-12	DEUTSCH	2	Work lamp harness	DT06-2S-EP06	DT04-2P-E004
CN-15	KET	2	2pcs auto idle pressure	S814-002100	S814-102100
CN-17	DEUTSCH	8	Wiper harness	DT06-8S	DT04-8P
CN-19	AMP	2	Emergency MCU connector	S816-002002	-
CN-20	MOLEX	2	Horn	36825-0211	-
CN-21	AMP	6	Wiper motor	925276-0	-
CN-22	KET	2	Washer tank	MG640605	-
CN-23	KET	2	LH speaker	MG610070	-
CN-24	KET	2	RH speaker	MG610070	-
CN-25	MOLEX	2	Horn	36825-0211	-
CN-27	AMP	14	Cassette radio	173852	-
CN-28	MWP	1	Air-con compressor	MWP01F-B	-
CN-29	KET	2	Receiver dryer	MG640795	-
CN-36	DEUTSCH	3	Fuse box	21N8-20041	-
CN-45	RING TERM	-	Start motor B+	ST710264-2	-
CN-47	AMP	2	Resistor	S810-002202	S810-102202
CN-48	RING TERM	2	Hour meter	GP890469	-
CN-50	AMP	36	MCU	3441110	-
CN-51	AMP	36	MCU	3441110	-
CN-56	DEUTSCH	4	Cluster	-	DT04-4P-E004
CN-60	YAZAKI	2	Fusible link	7123-4125-50	7122-4125-50
CN-66	DEUTSCH	2	Breaker solenoid	DT06-2S-EP06	DT04-2P-E005
CN-68	DEUTSCH	2	Safety solenoid	DT06-2S-EP06	DT04-2P-E005
CN-70	DEUTSCH	2	Travel speed solenoid	DT06-2S-EP06	-
CN-74	RING-TERM	1	Alternator "1" term	S820-105000	-
CN-75	Econoseal J	2	EPPR valve	S816-002002	-
CN-76	DEUTSCH	6	DC motor	DT06-6S-EP06	-
CN-79	-	3	Fuel cut-off	S810-002201	-
CN-92	AMP	1	Emergency engine starting connector	S814-101100	S814-001100

MidWestTech | Hyundai R215 (India) Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

3) IDLER



21037M503

Unit : mm

No.	Check item	Criteria				Remedy
1	Outside diameter of protrusion	Standard size		Repair limit		Rebuild or replace
		ø 560		-		
2	Outside diameter of tread	ø 520		ø 510		
3	Width of protrusion	84		-		
4	Total width	160		-		
5	Width of tread	38		43		
6	Clearance between shaft and bushing	Standard size & tolerance		Standard clearance	Clearance limit	Replace bushing
		Shaft	Hole			
		ø 75 $^{0}_{-0.03}$	ø 75.35 $^{+0.05}_{0}$	0.35 to 0.43	2.0	
7	Clearance between shaft and support	ø 75 $^{0}_{-0.03}$	ø 75 $^{+0.07}_{+0.03}$	0.03 to 0.1	1.2	Replace
8	Side clearance of idler (Both side)	Standard clearance		Clearance limit		Replace bushing
		0.25 to 1.2		2.0		

MidWestTech | Hyundai R215 (India) Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

■ **Disassemble cylinder sub.**

9) Disassemble cylinder block assembly, piston assembly(9) and seat plate(M).





10) Disassemble ball guide(16), ring and pin(15) from cylinder block, respectively.

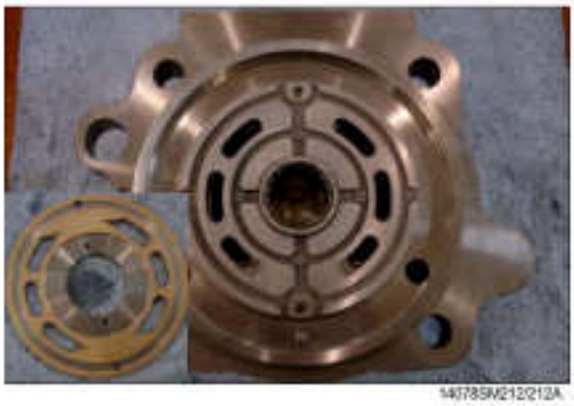




MidWestTech | Hyundai R215 (India) Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

(3) Disassemble rear cover assy sub

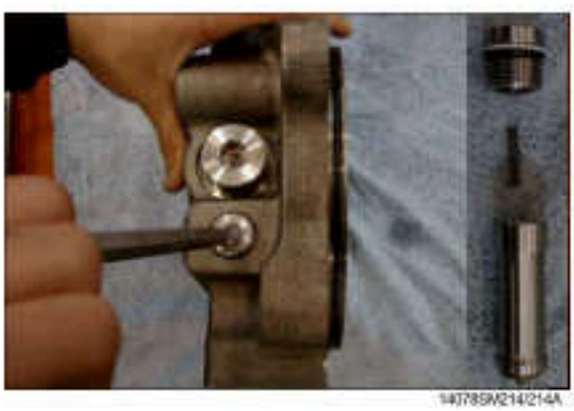
① Disassemble pin(8, 23), valve plate(24) from rear cover(21).



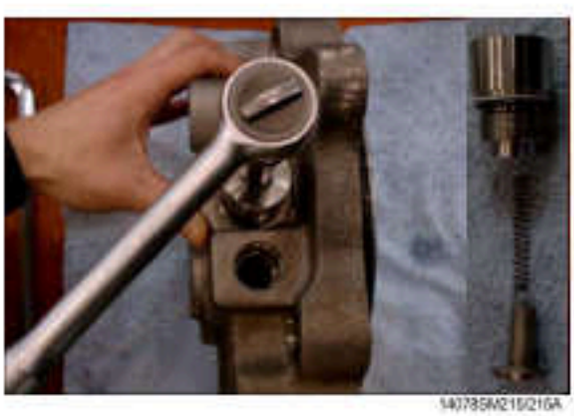
② Using a torque wrench, disassemble relief valve assy(33) 2 set from rear cover(21).



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)

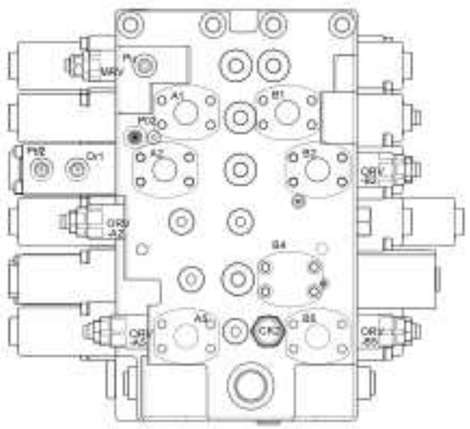


④ Disassemble make up check valve assy with a torque wrench from rear cover(21).

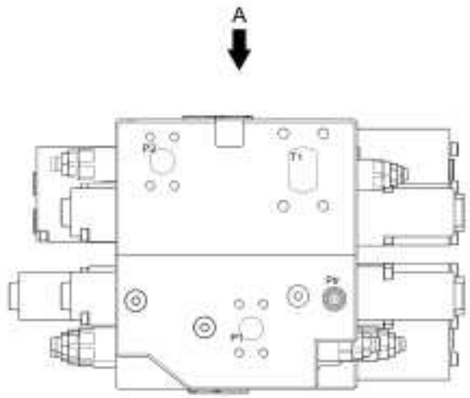


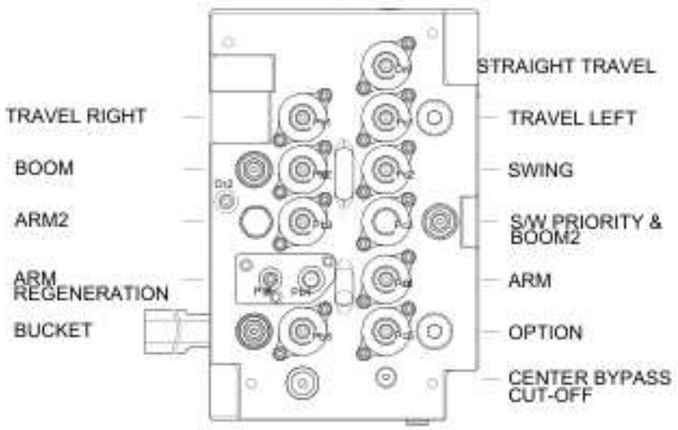
MidWestTech | Hyundai R215 (India) Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

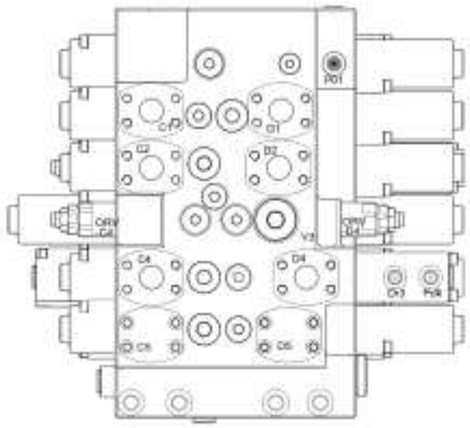
1. STRUCTURE

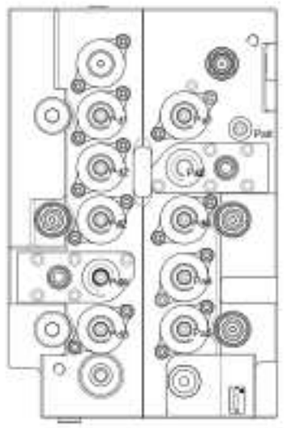


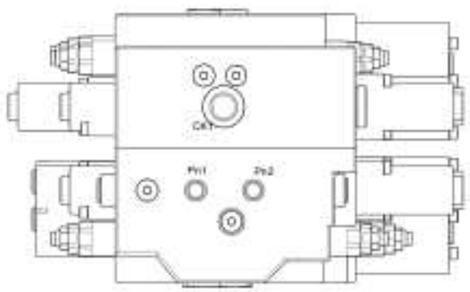
VIEW A











D21072MO01

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 R215 (India) Crawler Excavator Service Manual | Publication R215 (India)
Order the manual at mid-west-tech.com >