CRAWLER EXCAVATOR

SERVICE MANUAL

R220LC-9S

HYUNDAI

MidWestTech | Hyundai R220LC-9S Crawler Excavator Service Manual | Publication R220...

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 2-20
Group 3 Swing Device 2-54
Group 4 Travel Device 2-65
Group 5 RCV Lever 2-73
Group 6 RCV Pedal 2-80

SECTION 3 HYDRAULIC SYSTEM

Group 1 Hydraulic Circuit 3-1
Group 2 Main Circuit 3-3
Group 3 Pilot Circuit 3-6
Group 4 Single Operation 3-15
Group 5 Combined Operation 3-25

SECTION 4 ELECTRICAL SYSTEM

Group 1 Component Location 4-1
Group 2 Electric Circuit 4-3
Group 3 Electrical Component Specification 4-38
Group 4 Connectors 4-46

SECTION 5 MECHATRONICS SYSTEM

Group 1 Outline 5-1
Group 2 Mode selection System 5-5
Group 3 Automatic Deceleration System 5-11
Group 4 Power Boost System 5-13
Group 5 Travel Speed Control System 5-15
Group 6 Automatic Warming Up Function 5-17
Group 7 Engine Overheat Prevention Function 5-19
Group 8 Variable Power Control System 5-21

MidWestTech | Hyundai R220LC-9S Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

Group 9 Attachment Flow Control System 5-22
Group 10 Anti-Restart System 5-23
Group 11 Self-Diagnostic System 5-24
Group 12 Engine Control System 5-31
Group 13 EPPR (Electro Proportional Pressure Reducing) Valve 5-33
Group 14 Monitoring System 5-39
Group 15 Fuel Warmer System 5-71

SECTION 6 TROUBLESHOOTING

Group 1 Before Troubleshooting 6-1
Group 2 Hydraulic and Mechanical System 6-4
Group 3 Electrical System 6-24
Group 4 Mechatronics System 6-56

SECTION 7 MAINTENANCE STANDARD

Group 1 Operational Performance Test 7-1
Group 2 Major Components 7-23
Group 3 Track and Work Equipment 7-31

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 8-51
Group 6 Travel Device 8-76
Group 7 RCV Lever 8-108
Group 8 Turning Joint 8-122
Group 9 Boom, Arm and Bucket Cylinder 8-127
Group 10 Undercarriage 8-144
Group 11 Work Equipment 8-156

MidWestTech | Hyundai R220LC-9S Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

SECTION 9 COMPONENT MOUNTING TORQUE

Group 1 Introduction guide 9-1
Group 2 Engine system 9-2
Group 3 Electric system 9-5
Group 4 Hydraulic system 9-8
Group 5 Undercarriage 9-11
Group 6 Structure 9-13
Group 7 Work equipment 9-17

MidWestTech | Hyundai R220LC-9S Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

2) HEAVY DUTY, ROCK-HEAVY DUTY AND SLOPE FINISHING BUCKET

Heavy duty bucket	Rock-heavy duty bucket	Slope finishing bucket
		
◈ 0.74, 0.90, 1.05 m³ SAE heaped bucket	⊙ 0.87, 1.20 m³ SAE heaped bucket	■ 0.75 m³ SAE heaped bucket

Capacity		Width		Weight	Recommendation			
					5.68 m (18' 8") boom			
SAE heaped	CECE heaped	Without side cutter	With side cutter		2.0 m arm (6' 7")	2.4 m arm (7' 10")	2.92 m arm (9' 7")	3.90 m arm (12' 10")
◈0.74 m³ (0.97 yd³)	0.65 m³ (0.85 yd³)	985 mm (38.8")	-	770 kg (1700 lb)				
◈0.90 m³ (1.18 yd³)	0.80 m³ (1.05 yd³)	1070 mm (42.0")	-	810 kg (1790 lb)				
◈1.05 m³ (1.37 yd³)	0.92 m³ (1.20 yd³)	1290 mm (50.8")	-	890 kg (1960 lb)				
⊙0.87 m³ (1.14 yd³)	0.75 m³ (0.98 yd³)	1140 mm (44.9")	-	900 kg (1980 lb)				
⊙1.20 m³ (1.57 yd³)	1.00 m³ (1.31 yd³)	1410 mm (55.5")	-	1030 kg (2270 lb)				
■0.75 m³ (0.98 yd³)	0.65 m³ (0.85 yd³)	1790 mm (70.5")	-	880 kg (1940 lb)				

◈ : Heavy duty bucket ⊙: Rock-heavy duty bucket ■ : Slope finishing bucket

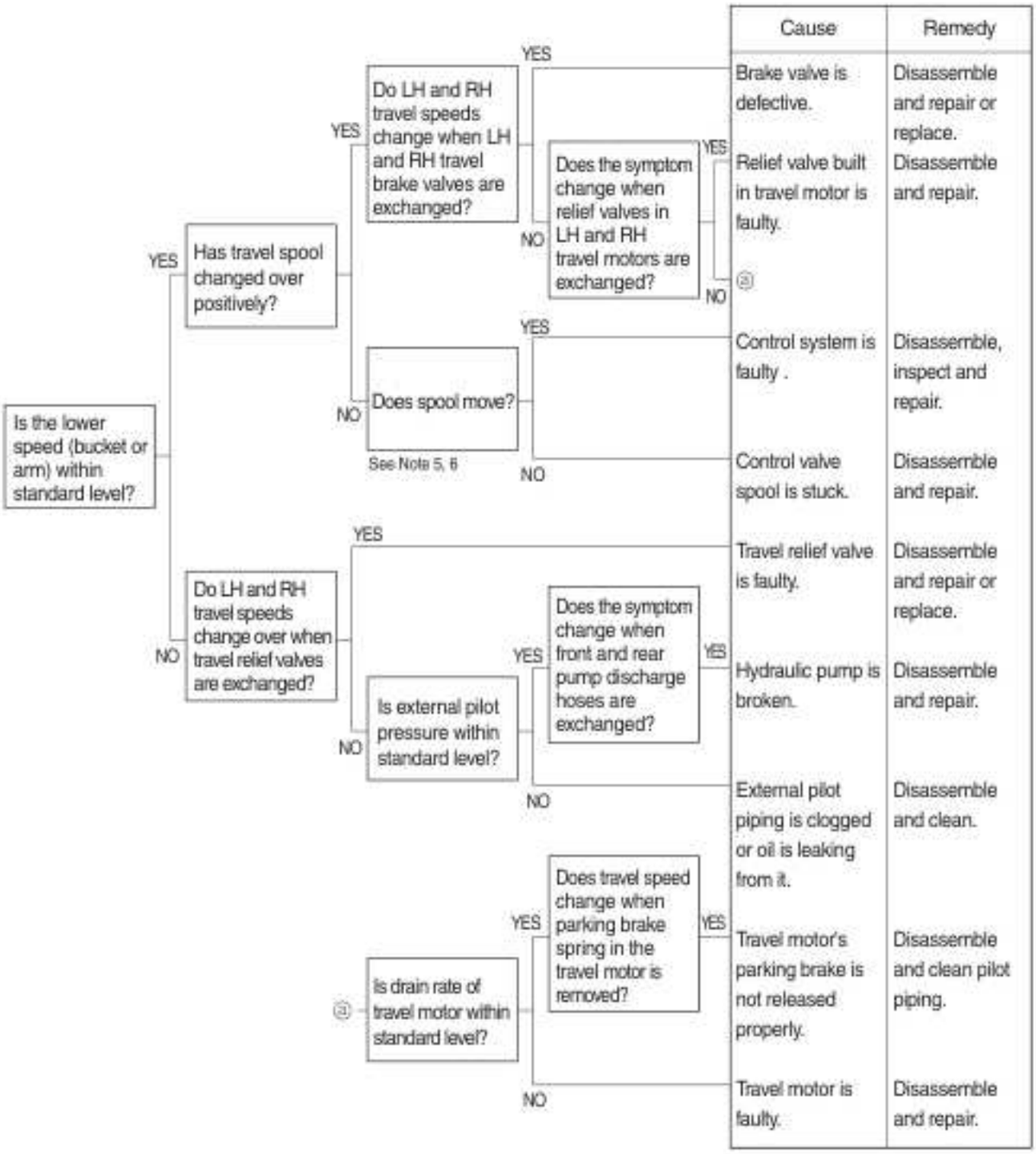
Applicable for materials with density of 2000 kg/m³ (3370 lbf/yd³) or less

Applicable for materials with density of 1600 kg/m³ (2700 lbf/yd³) or less

Applicable for materials with density of 1100 kg/m³ (1850 lbf/yd³) or less

MidWestTech | Hyundai R220LC-9S Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

2) SPEED ON ONE SIDE FALLS AND THE MACHINE CURVES

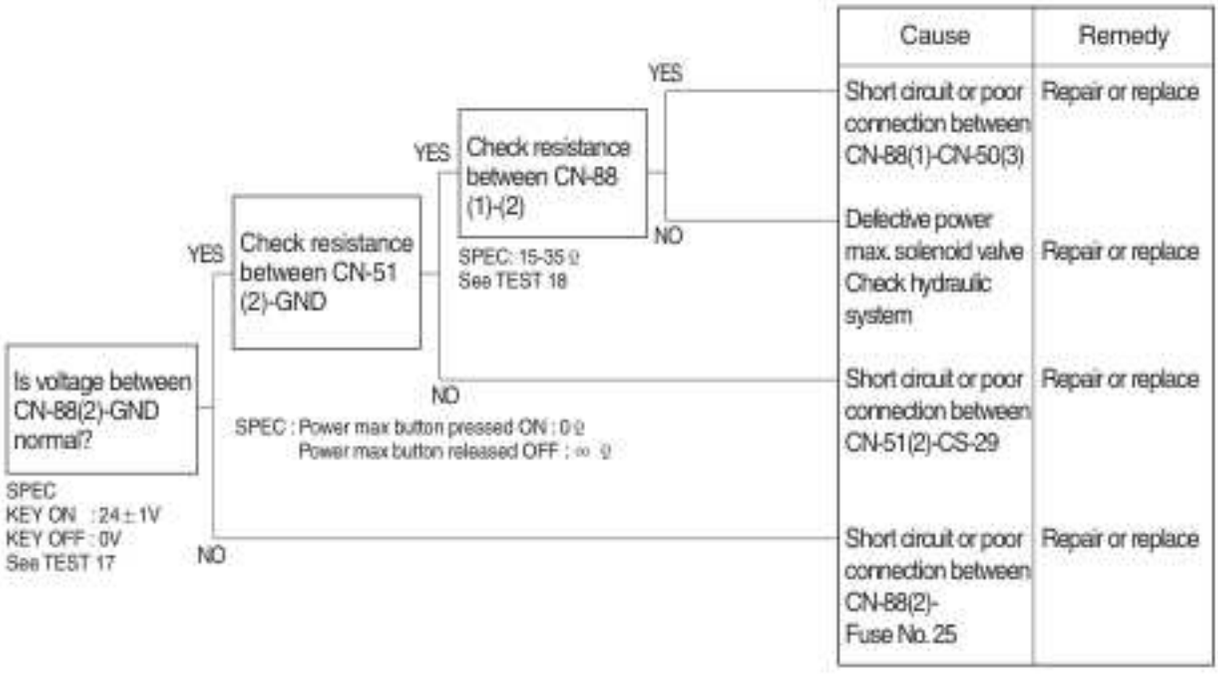


MidWestTech | Hyundai R220LC-9S Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

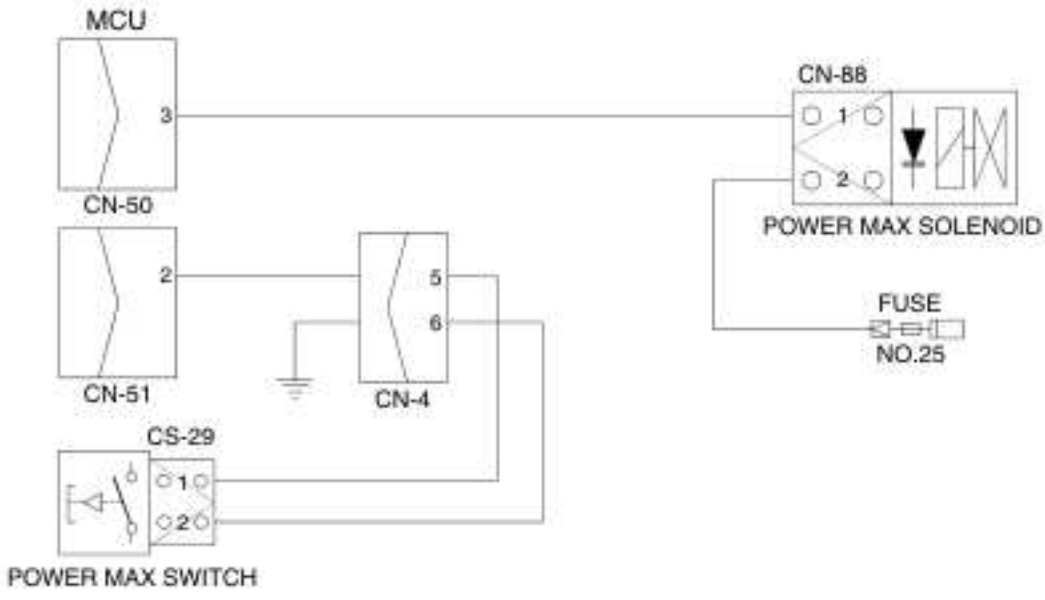
9. MALFUNCTION OF POWER MAX

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

1) INSPECTION PROCEDURE



Wiring diagram



MidWestTech | Hyundai R220LC-9S Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

3) ASSEMBLING PINION GEAR SUB ASSY

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

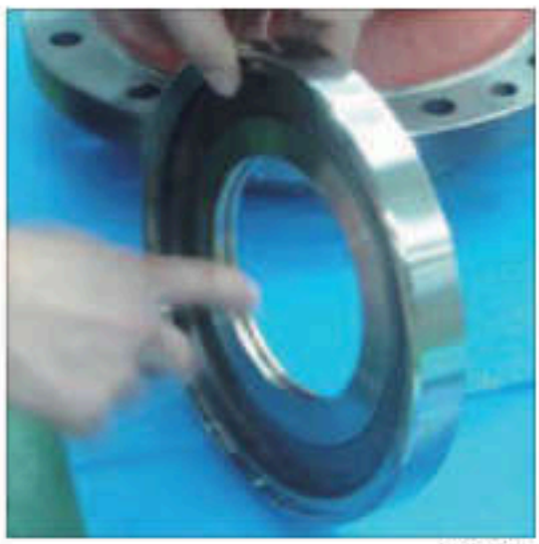


2209A83M21

(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.



2209A83M22

(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.

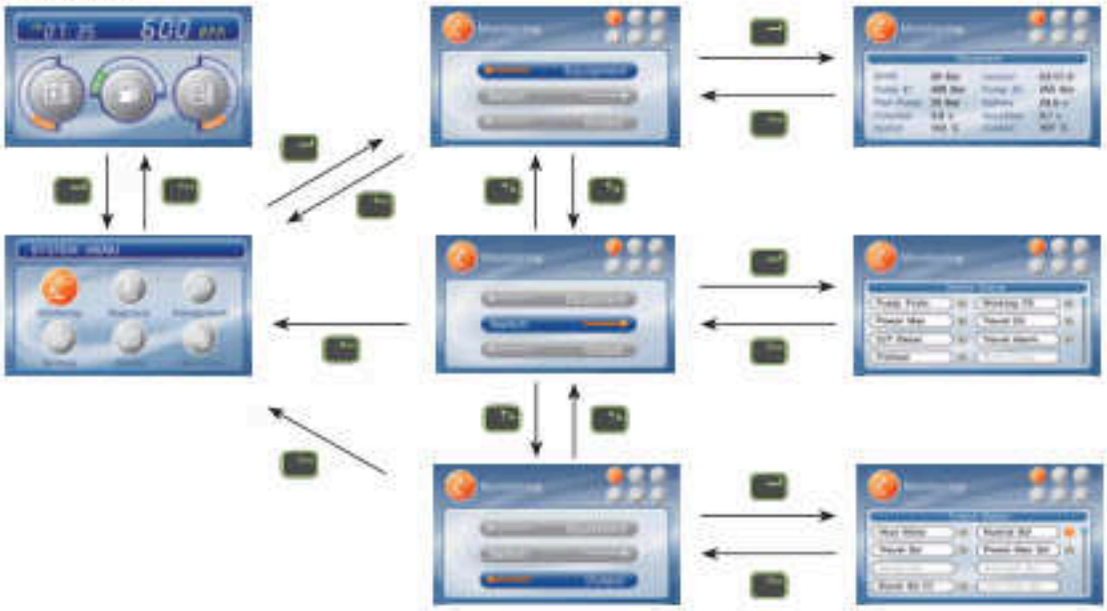


2209A83M23

MidWestTech | Hyundai R220LC-9S Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >

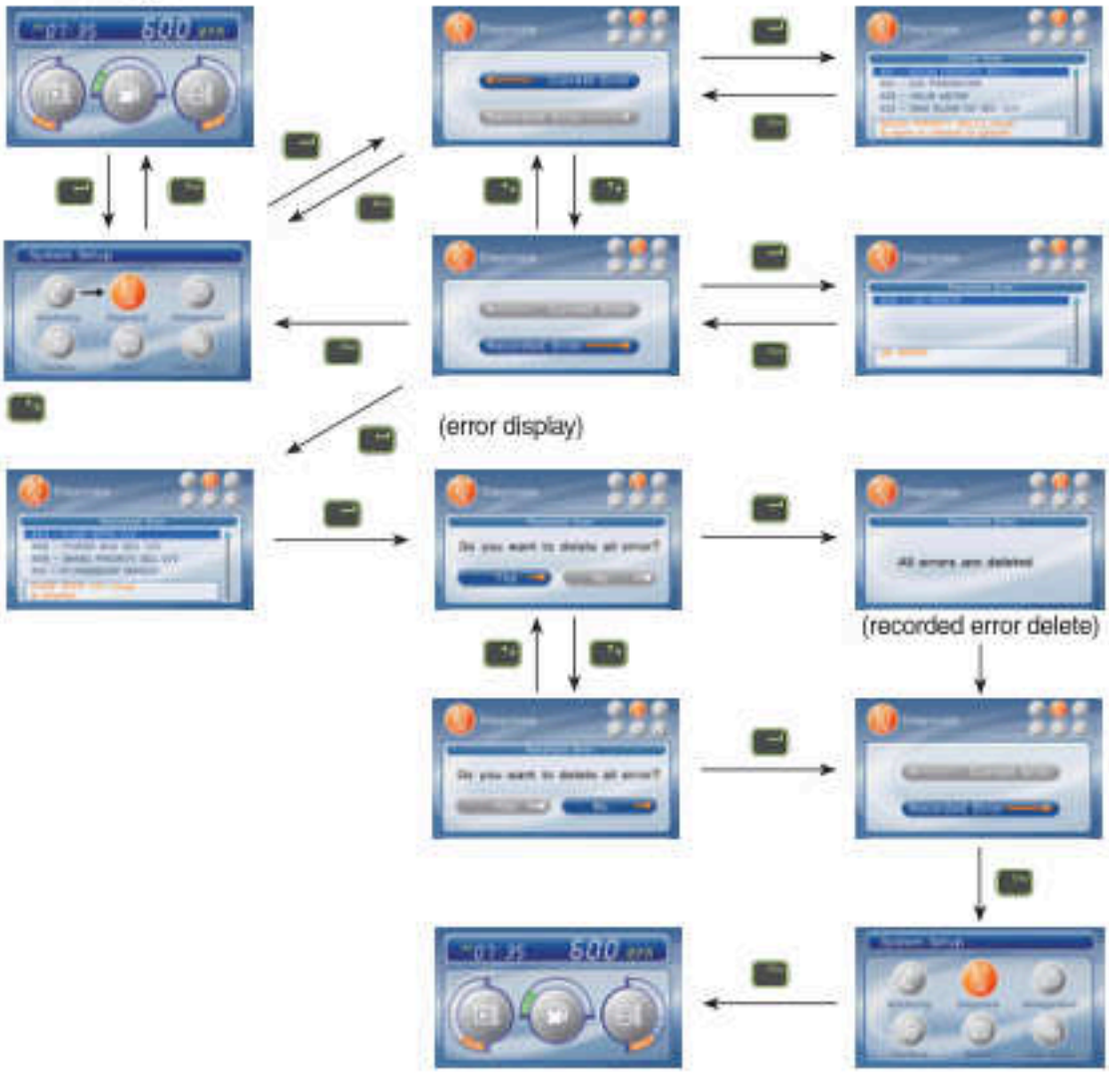
(2) Display map

① Monitoring

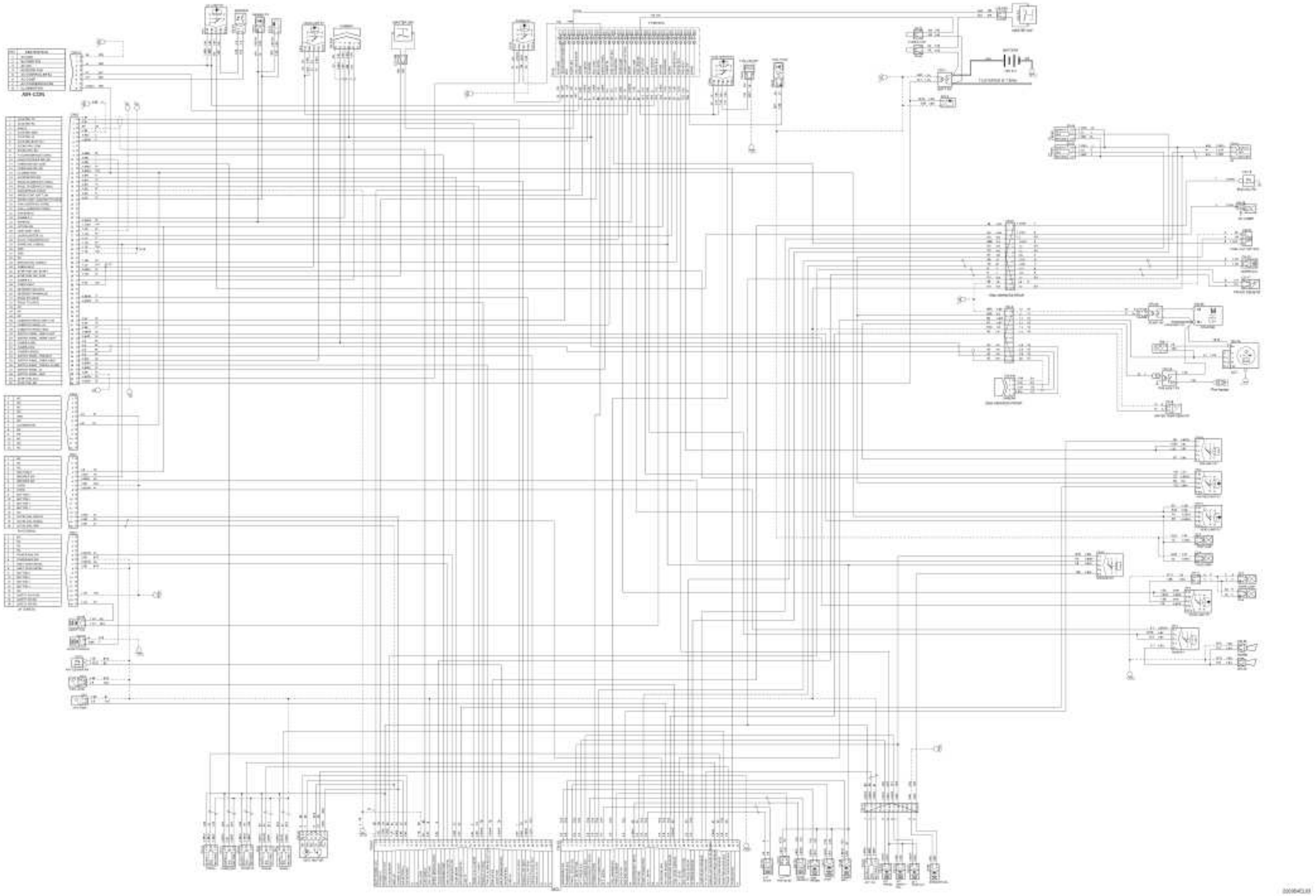


② Diagnosis

a. Protocol type 1



MidWestTech | Hyundai R220LC-9S Crawler Excavator Service Manual | Publication... Order the manual at mid-west-tech.com >



MidWestTech | Hyundai R220LC-9S Crawler Excavator Service Manual | Publication R220LC-9S

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