CRAWLER EXCAVATOR

SERVICE MANUAL

R290LC-9MH

HYUNDAI

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7) REMOTE CONTROL VALVE

Item		Specification
Type		Pressure reducing type
Operating pressure	Minimum	6.5 kgf/cm² (92 psi)
	Maximum	26 kgf/cm² (370 psi)
Single operation stroke	Lever	61 mm (2.4 in)
	Pedal	123 mm (4.84 in)

8) CYLINDER

Item		Specification
Boom cylinder	Bore dia × Rod dia × Stroke	ø 140 × ø 100 × 1465 mm
	Cushion	Extend only
Arm cylinder	Bore dia × Rod dia × Stroke	ø 150 × ø 110 × 1765 mm
	Cushion	Extend and retract

※ Discoloration of cylinder rod can occur when the friction reduction additive of lubrication oil spreads on the rod surface.

※ Discoloration does not cause any harmful effect on the cylinder performance.

9) SHOE

Item		Width	Ground pressure	Link quantity	Overall width
R290LC-9MH Tilt cab	Standard	800 mm (32")	0.47 kgf/cm² (6.68 psi)	48	3400 mm (11' 1")
	Option	900 mm (36")	0.42 kgf/cm² (5.97 psi)	48	3500 mm (11' 5")
R290LC-9MH Elevating cab	Standard	800 mm (32")	0.48 kgf/cm² (6.83 psi)	48	3400 mm (11' 1")
	Option	900 mm (36")	0.44 kgf/cm² (6.26 psi)	48	3500 mm (11' 5")

10) GRAPPLE

Item		Lifting capacity	Width	
			Max opening width	Overall length
R290LC-9MH	Standard	0.90 m³ (1.18 yd³)	2000 mm (6' 7")	2540 mm (8' 4")
	Option	1.90 m³ (2.49 yd³)	3500 mm (11' 6")	3595 mm (11' 10")

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Fault code J1939 SPN J1939 FMI	Reason	Effect (only when fault code is active)
222 108 4	Barometric Pressure Sensor Circuit - Voltage Below Normal, or Shorted to Low Source. Low signal voltage detected at barometric pressure circuit.	Engine power derate.
227 520195 3	Sensor Supply 2 Circuit - Voltage Above Normal, or Shorted to High Source. High voltage detected at sensor supply number 2 circuit.	Engine power derate.
234 190 0	Engine Crankshaft Speed/Position - Data Valid but Above Normal Operational Range - Most Severe Level. Engine speed signal indicates engine speed above engine protection limit.	Fuel injection disabled until engine speed falls below the overspeed limit.
235 111 1	Coolant Level - Data Valid but Below Normal Operational Range - Most Severe Level. Low engine coolant level detected.	Progressive power derate increasing in severity from time of alert. If Engine Protection Shutdown feature is enabled, engine will shut down 30 seconds after Red Stop Lamp starts flashing.
237 644 2	External Speed Command Input (Multiple Unit Synchronization) - Data Erratic, Intermittent, or Incorrect. Communication between multiple engines may be intermittent.	
238 520196 4	Sensor Supply 3 Circuit - Voltage Below Normal, or Shorted to Low Source. Low voltage detected on the +5 volt sensor supply circuit to the engine speed sensor.	Possible hard starting and rough running.
241 84 2	Wheel-based vehicle speed - Data erratic, intermittent, or incorrect. The ECM lost the vehicle speed signal.	Engine speed limited to ,maximum engine speed without VSS parameter value. Cruise control, gear-down protection, and road speed governor will not work.
242 84 10	Wheel-based vehicle speed sensor circuit tampering has been detected - Abnormal rate of change. Signal indicates an intermittent connection or VSS tampering.	Engine speed limited to maximum engine speed without VSS parameter value. Cruise control, gear-down protection, and road speed g+H53overnor will not work.
245 647 4	Fan control circuit - Voltage below normal, or shorted to low source. Low signal voltage detected at the fan control circuit when commanded on.	The fan may stay on continuously or not run at all.
271 1347 4	Fuel pump pressurizing assembly 1 circuit - Voltage below normal, or shorted to low source. Low signal voltage detected at the fuel pump actuator circuit.	Engine will run poorly at idle. Engine will have low power. Fuel pressure will be higher than commanded.
272 1347 3	Fuel pump pressurizing assembly 1 circuit - Voltage above normal, or shorted to high source. High signal voltage or open circuit detected at the fuel pump actuator circuit.	Engine will not run or engine will run poorly.
281 1347 7	Fuel pump pressurizing assembly 1 - Mechanical system not responding properly or out of adjustment.	Engine will not run or possible low power.
285 639 9	SAE J1939 multiplexing PGN timeout error - Abnormal update rate. The ECM expected information from a multiplexed device but did not receive it soon enough or did not receive it at all.	At least one multiplexed device will not operate properly.
286 639 13	SAE J1939 multiplexing configuration error - Out of calibration. The ECM expected information from a multiplexed device but only received a portion of the necessary information.	At least one multiplexed device will not operate properly.

※ Some error codes are not applied to this machine

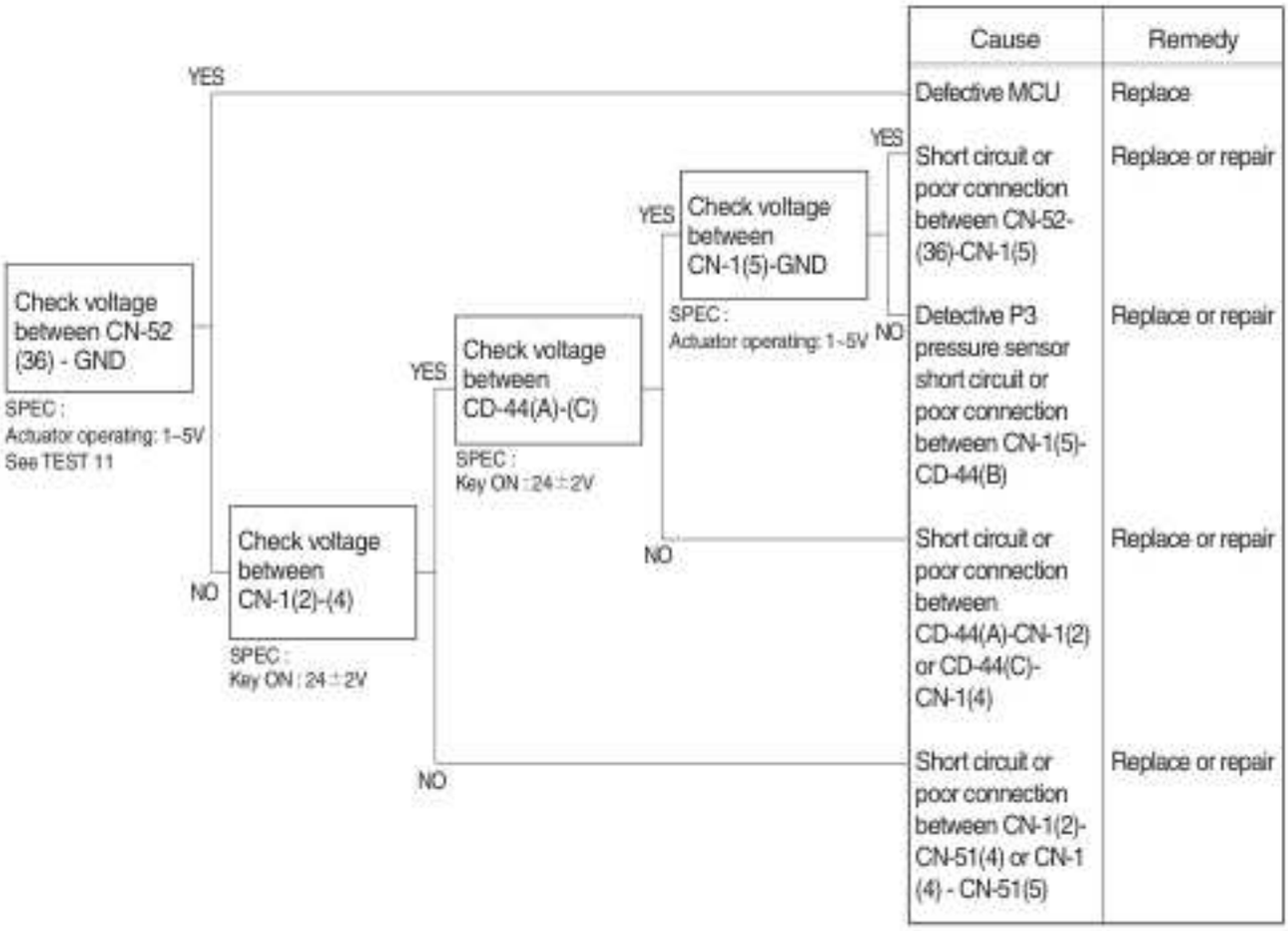
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8. MALFUNCTION OF PUMP 3 PRESSURE SENSOR

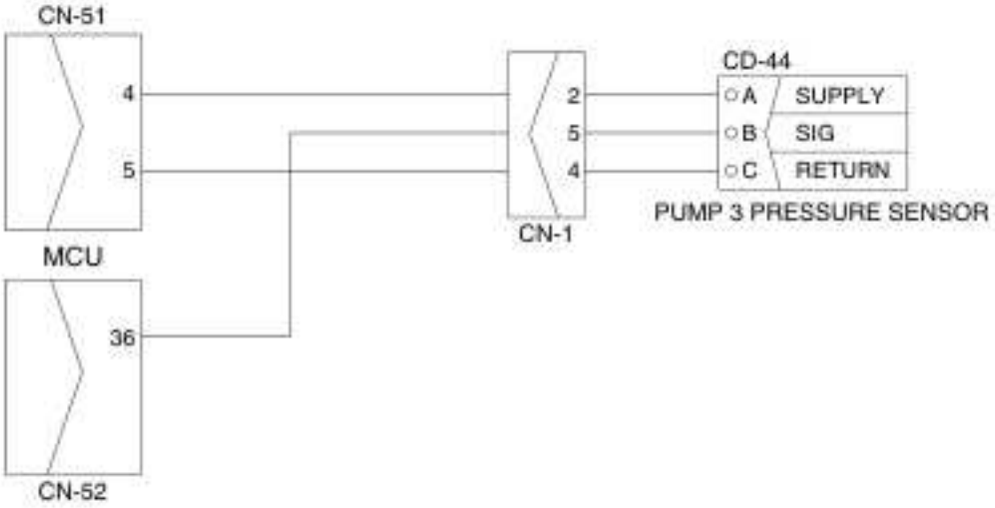
- Fault code : HCESPN 125, FMI 0~4

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

1) INSPECTION PROCEDURE



Wiring diagram



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(28)Assemble piston ring (30), piston ring 252 (30) and 278 (31) into brake piston (29).



(29)Assemble brake piston into shaft casing.

* Be careful of the direction of assembling brake piston.



(30)Assemble brake spring (32).

* Quantity : Spring-10pieces, Holes-11pieces
* Do not assemble on the top of brake piston.



(31)Insert O-ring (69), after fastening orifice screw (4) with standard torque.

· Quantity and size : (4) 2 pieces- ø 1.0
(56) 1pieces- ø 1.5
· Tightening torque : 7 kgf · m (50.63 lbf · ft)



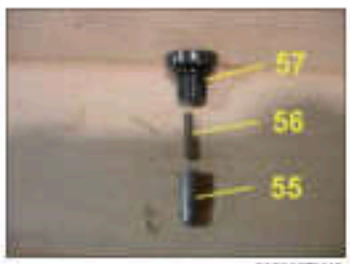
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4. REASSEMBLING

1) ASSEMBLING MOTOR

- REAR COVER ASSY

(1) Assemble check valve (55), spring (56) into rear cover (34) and then assemble plug (57) using L-wrench.



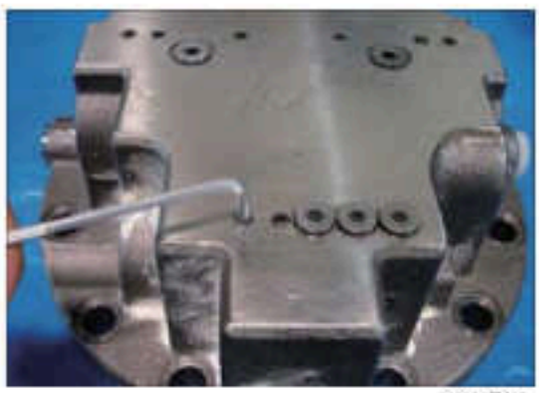
2609A8TM40


2609A8TM41

(2) Apply loctite #242 on the NPTF 1/16 plug (2) and then assemble 12-NPTF 1/16 Plug (2) into rear cover(34).



2609A8TM42


2609A8TM43

(3) Assemble spool (47), parallel pin (50), spring seat (49) and spring (51) into rear cover (34) in regular sequence and then assemble plug (48) and connector (52).


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2609A8TM45


2609A8TM46

(4) Assemble relief valve (42, 2EA) into rear cover (34).

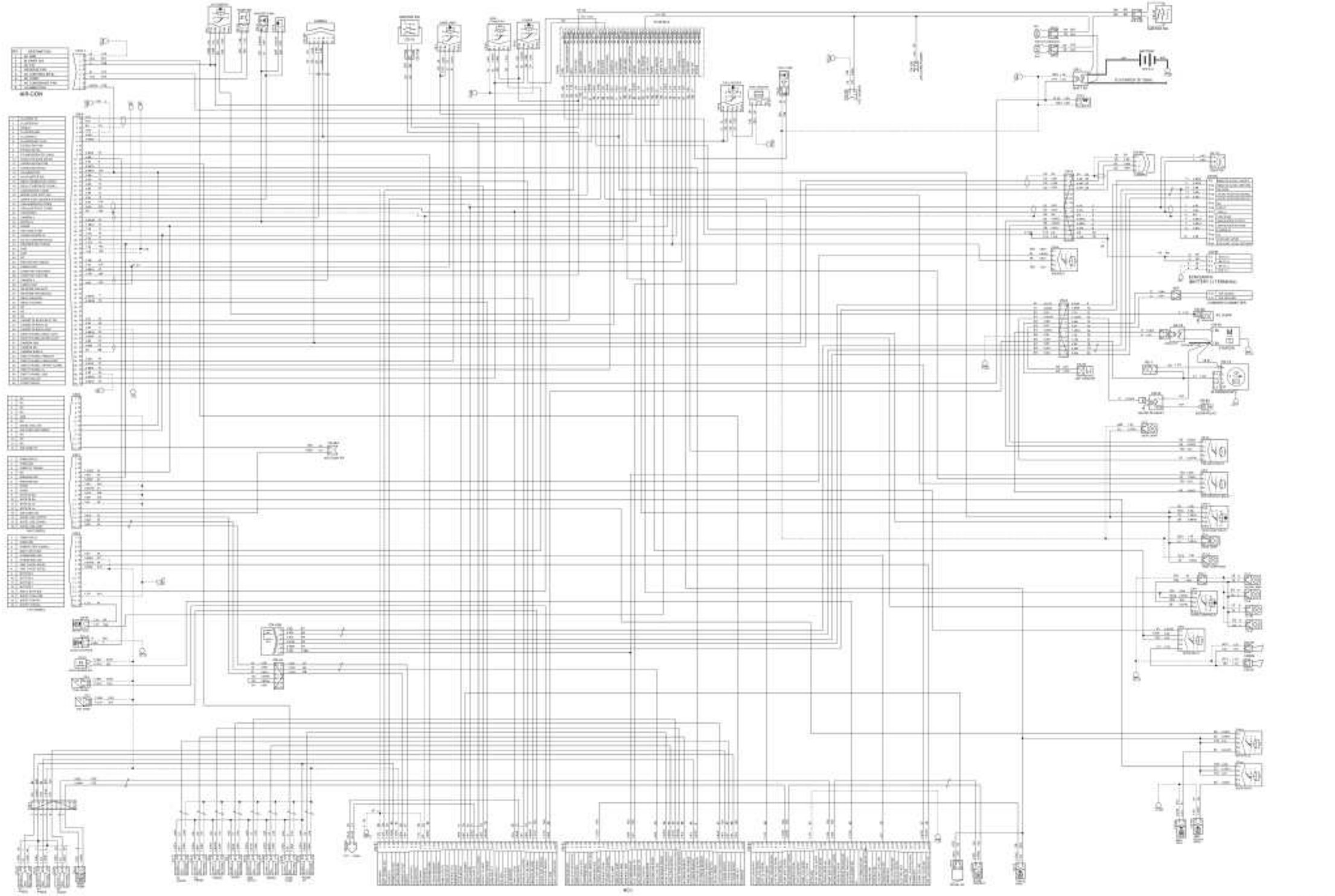


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2609A8TM48


2609A8TM49

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