CRAWLER EXCAVATOR

SERVICE MANUAL

HX220L EPFC

HYUNDAI

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10) BUCKET

Item	Capacity		Tooth quantity	Width	
	SAE heaped	CECE heaped		Without side cutter	With side cutter
HX220 L	0.80 m³ (1.05 yd³)	0.70 m³ (0.92 yd³)	5	1070 mm (42.1")	1160 mm (45.7")
	0.92 m³ (1.20 yd³)	0.80 m³ (1.05 yd³)	5	1190 mm (46.9")	1280 mm (50.4")
	1.10 m³ (1.44 yd³)	0.96 m³ (1.26 yd³)	5	1375 mm (54.1")	1465 mm (57.7")
	1.20 m³ (1.57 yd³)	1.05 m³ (1.37 yd³)	5	1390 mm (54.7")	1480 mm (58.3")
	1.34 m³ (1.75 yd³)	1.17 m³ (1.53 yd³)	6	1525 mm (60.0")	1615 mm (63.6")
	★0.52 m³ (0.68 yd³)	0.45 m³ (0.59 yd³)	5	945 mm (37.2")	1020 mm (40.2")
	◆0.90 m³ (1.18 yd³)	0.79 m³ (1.03 yd³)	5	1210 mm (47.6")	–
	◆1.05 m³ (1.37 yd³)	0.92 m³ (1.20 yd³)	5	1355 mm (53.3")	–
	⊙0.87 m³ (1.14 yd³)	0.77 m³ (1.01 yd³)	5	1195 mm (47.0")	–
	⊙1.20 m³ (1.57 yd³)	1.05 m³ (1.37 yd³)	6	1520 mm (59.8")	–

★ : Long reach bucket
◆ : Heavy duty bucket
⊙ : Rock-heavy duty bucket

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Fault code J1939 SPN J1939 FMI	Reason	Effect (only when fault code is active)
196 111 4	Coolant level sensor 1 circuit - Voltage below normal, or shorted to low source. Low signal voltage detected at engine coolant level circuit.	None on performance.
197 111 18	Coolant level - Data valid but below normal operational range - Moderately severe level. Low coolant level has been detected.	Engine power derate.
221 108 3	Barometric pressure sensor circuit - Voltage above normal, or shorted to high source. High signal voltage detected at barometric pressure circuit.	Engine power derate.
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 3510 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.	Engine power derate.
238 3511 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.	Engine may run rough, may stop running, may not start, or may be difficult to start.
239 3511 3	Sensor supply 3 circuit - Voltage above normal or shorted to high source. High voltage detected on the 5 volt sensor supply circuit to the engine speed sensor.	Engine may run rough, may stop running, may not start, or may be difficult to start.
241 84 2	Wheel-based vehicle speed - Data erratic, intermittent, or incorrect. The ECM lost the vehicle speed signal or is reading an erratic value.	Engine speed limited to ,maximum engine speed without VSS parameter value. Cruise control, gear-down protection, and road speed governor 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.
249 171 3	Ambient air temperature sensor 1 circuit - Voltage above normal or shorted to high source. High signal voltage detected at ambient air temperature circuit.	Possible reduced engine performance.
256 171 4	Ambient air temperature sensor 1 circuit - Voltage below normal or shorted to low source. Low voltage detected at ambient air temperature circuit.	Possible reduced engine performance.
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 power derate.

※ Some fault codes are not applied to this machine.

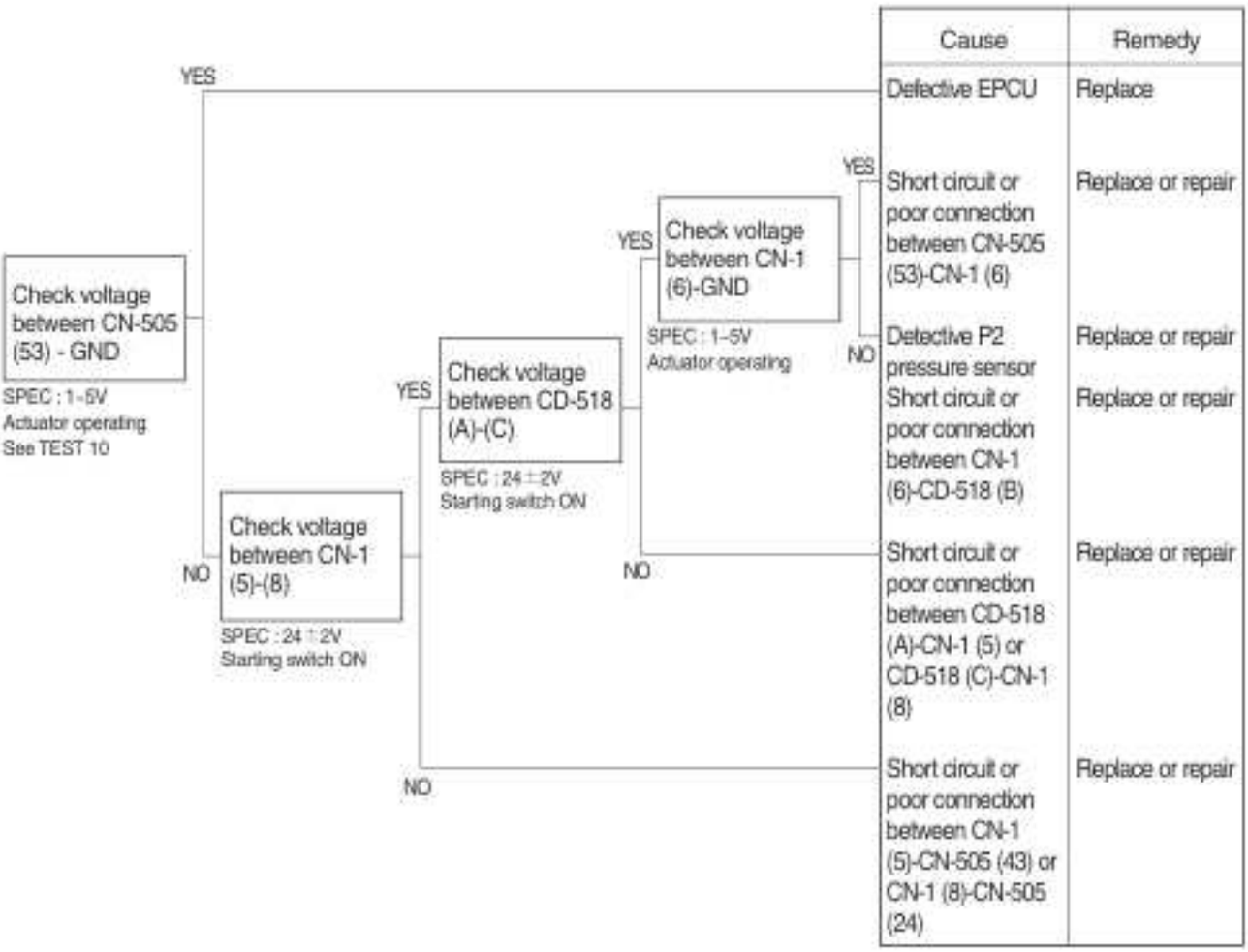
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6. MALFUNCTION OF PUMP 2 PRESSURE SENSOR

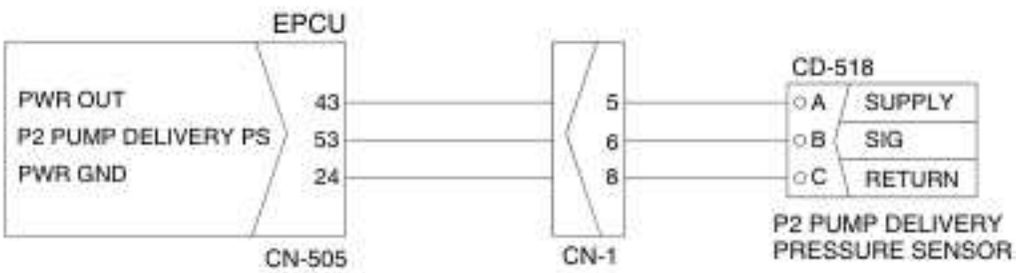
· Fault code : HCESPN 121, FMI 0~4

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

1) INSPECTION PROCEDURE



Wiring diagram



220FBMS107

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3) ASSEMBLING PINION GEAR SUB ASSY

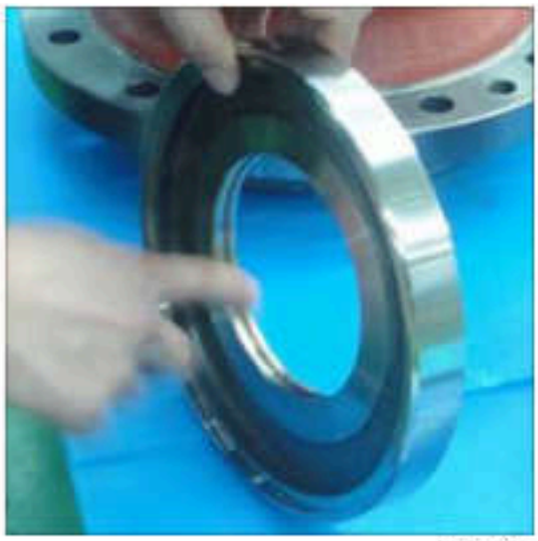
(1) Prepare drive shaft pinion gear vertical with ground.



(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.



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3) DISASSEMBLY

The figure in ( ) shown after the part name in the explanation sentence shows its number in the structure figures (8-34~37).

(1) Place control valve on working bench.

※ Disassemble it in clean place and pay attention not to damage flange faces and plate faces.



(2) Disassembling of main spools

· Travel (301), bucket (304), swing (305), option (309), arm 2 (306), boom 2 (307), swing priority (311).

① Loosen the hexagon the socket head screw (273) and remove the spring cover (201, 202) and the O-ring (261).

· Hexagon key wrench : 6 mm



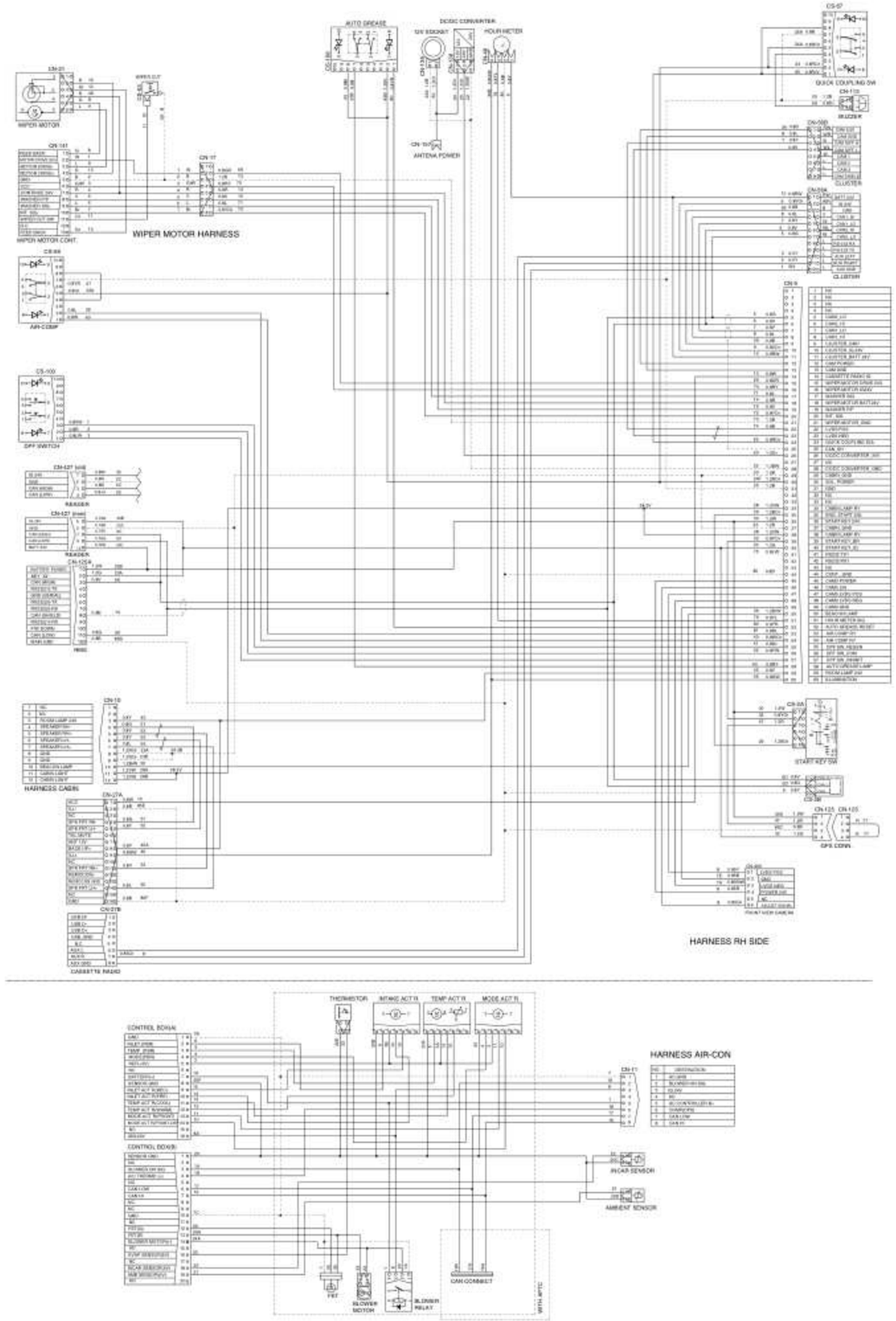
② Pull out the spool, spring, spring seats (331 or 332), stopper (335 or 339) and spacer bolt (336) in the spool assembly condition from the casing.

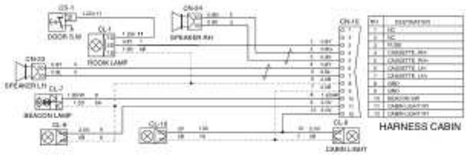
※ When pulling out the spool assembly from casing, pay attention not to damage the casing.

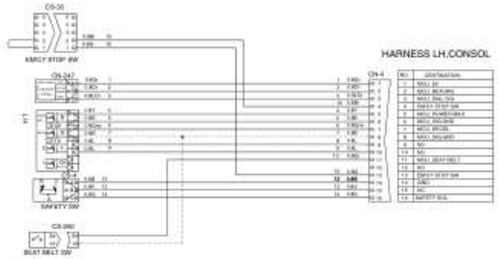


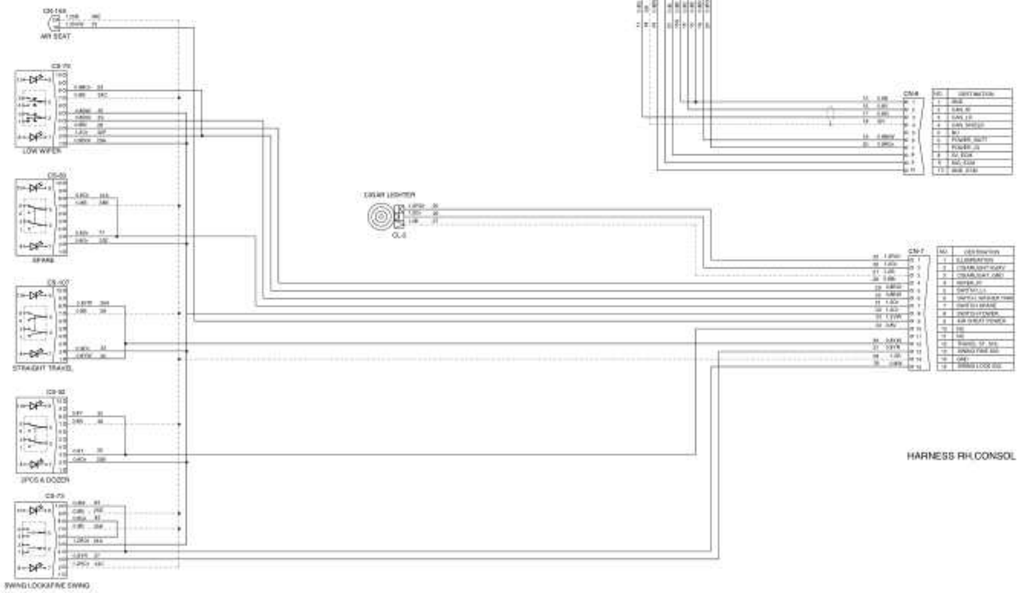
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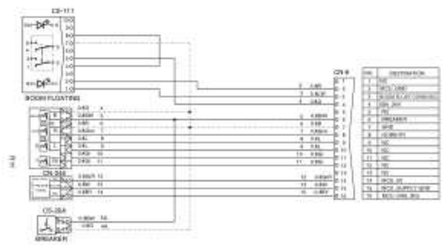
ELECTRICAL CIRCUIT (2/3)











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