CRAWLER EXCAVATOR

SERVICE MANUAL

HX220NL

HYUNDAI

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5. LIFTING CAPACITIES

1) HX220 NL

(1) 5.65 m (18' 6") boom, 2.00 m (6' 7") arm equipped with 0.87 m³ (SAE heaped) bucket, 500 mm (20") triple grouser shoe.

· : Rating over-front · : Rating over-side or 360 degree

Load point height		Load radius								At max. reach		
		3.0 m (10 ft)		4.5 m (15 ft)		6.0 m (20 ft)		7.5 m (25 ft)		Capacity		Reach
												m (ft)
7.5 m (25 ft)	kg									*4000	3810	6.61
	lb									*8820	8400	(21.7)
6.0 m (20 ft)	kg					*4420	4380			*4060	2800	7.75
	lb					*9740	9660			*8950	6170	(25.4)
4.5 m (15 ft)	kg			*5670	*5670	*4840	4230			*4200	2340	8.41
	lb			*12500	*12500	*10670	9330			*9260	5160	(27.6)
3.0 m (10 ft)	kg			*7430	6170	*5600	3990	*4830	2750	*4360	2130	8.71
	lb			*16380	13600	*12350	8800	*10650	6060	*9610	4700	(28.6)
1.5 m (5 ft)	kg			*8990	5700	*6390	3760	*5190	2640	4330	2080	8.71
	lb			*19820	12570	*14090	8290	*11440	5820	9550	4590	(28.6)
Ground Line	kg			*9720	5490	*6930	3610	5380	2570	4570	2190	8.40
	lb			*21430	12100	*15280	7960	11860	5670	10080	4830	(27.6)
-1.5 m (-5 ft)	kg	*14170	10580	*9690	5460	*7030	3560			*4930	2540	7.73
	lb	*31240	23320	*21360	12040	*15500	7850			*10870	5600	(25.4)
-3.0 m (-10 ft)	kg	*12680	10790	*8900	5570	*6390	3650			*4910	3380	6.58
	lb	*27950	23790	*19620	12280	*14090	8050			*10820	7450	(21.6)

Note
1. Lifting capacity are based on SAE J1097 and ISO 10567.
2. Lifting capacity of the HX series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
3. The load point is a hook located on the back of the bucket.
4. *indicates load limited by hydraulic capacity.

※ Lifting capacities are based upon a standard machine conditions.
Lifting capacities will vary with different work tools, ground conditions and attachments.
The difference between the weight of a work tool attachment must be subtracted.
Consult your HD Hyundai Construction Equipment dealer regarding the lifting capacities for specific work tools and attachments.

⚠ Failure to comply to the rated load can cause possible personal injury or property damage.
Make adjustments to the rated load as necessary for non-standard configurations.

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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.

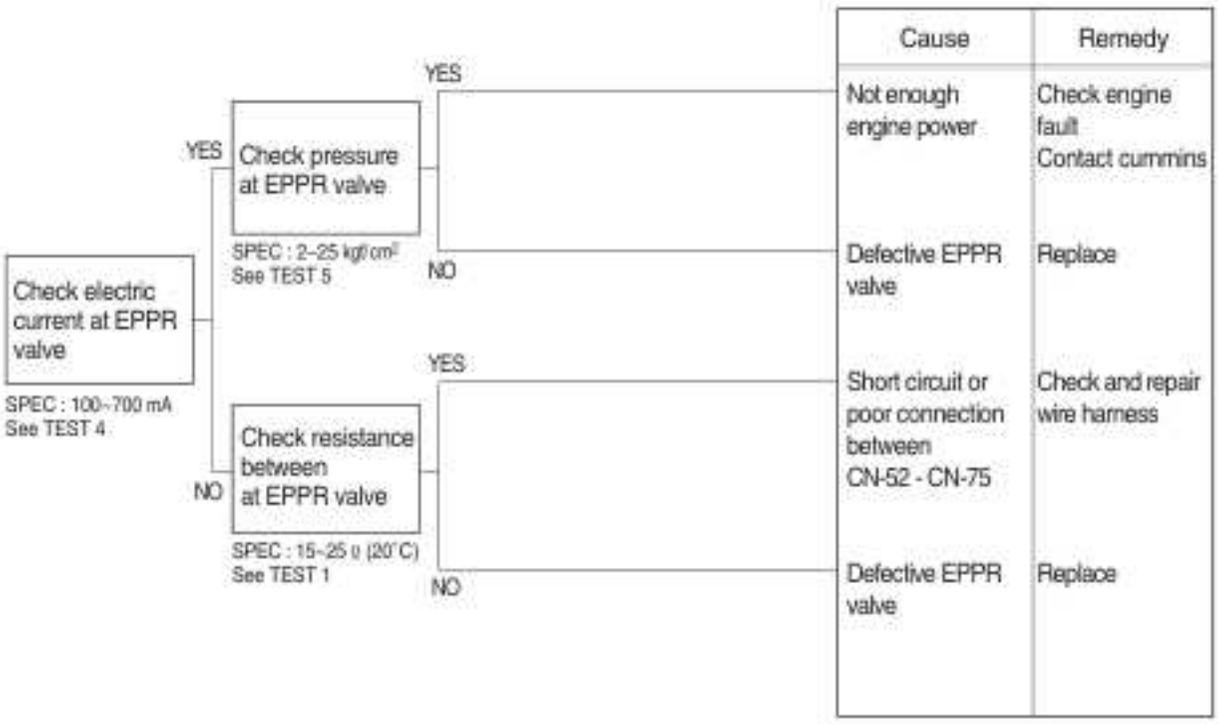
※ Some fault codes are not applied to this machine.

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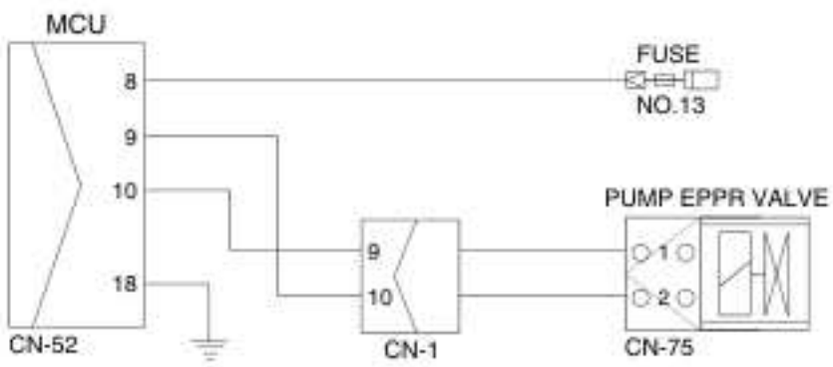
2. ENGINE STALL

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

1) INSPECTION PROCEDURE



Wiring diagram



220NLEM501

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3) ASSEMBLING PINION GEAR SUB ASSY

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

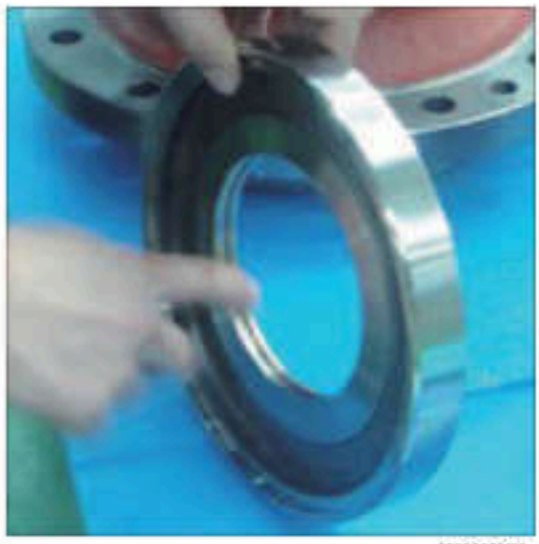


2209A83M21

(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

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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 (8-31~34).

(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 (308), arm 2 (306), boom 2 (307), swing priority (311).

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

- Hexagon key wrench : 6 mm

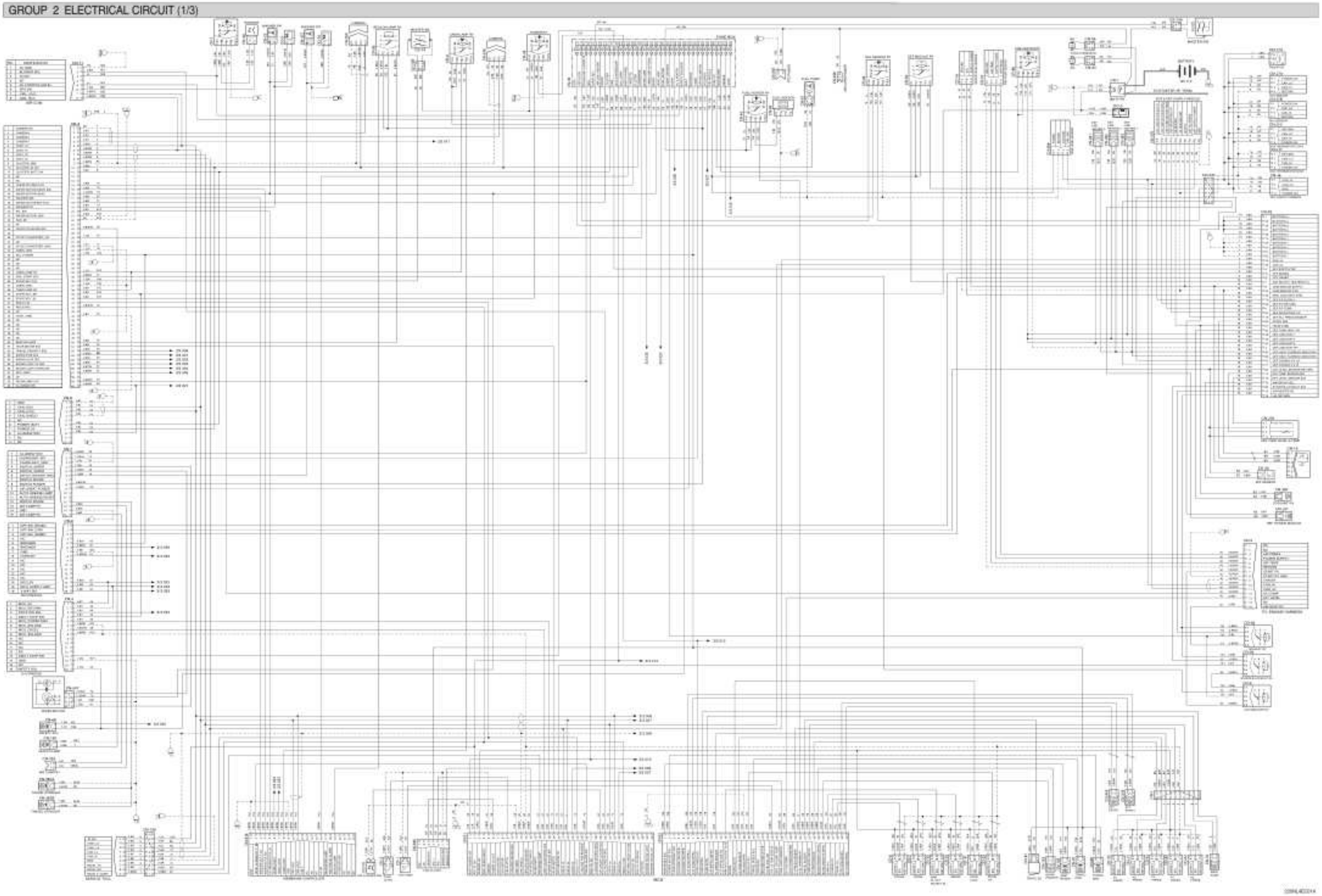


② Pull out the spool, spring, spring seats (322), stopper (335 or 339) and spacer bolt (336) in the spool assembly condition from the casing.

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



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