CRAWLER EXCAVATOR

SERVICE MANUAL

HX380L (India)

HYUNDAI

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Fault code J1939 SPN J1939 FMI	Reason	Effect (only when fault code is active)
516 3514 4	Sensor supply 6 circuit - Voltage below normal or shorted to low source. Low voltage detected on the +5 volt sensor supply circuit to the fuel rail pressure sensor.	Possible reduced engine performance.
553 157 16	Injector metering rail 1 pressure - Data valid but above normal operational range - Moderately severe level. The ECM has detected that fuel pressure is higher than commanded pressure.	Possible reduced engine performance.
555 101 16	Crankcase pressure - Data valid but above normal operational range - Moderately severe level. The crankcase breather filter requires maintenance.	None on performance.
556 101 0	Crankcase pressure - Data valid but above normal operational range - Most severe level. The crankcase breather filter requires maintenance.	None on performance.
559 157 18	Injector metering rail 1 pressure - Data valid but below normal operational range - Moderately severe level. The ECM has detected that fuel pressure is lower than commanded pressure.	Possibly hard to start or low power. Engine could possibly not start.
584 677 3	Starter relay driver circuit - Voltage above normal, or shorted to high source. Open circuit or high voltage detected at starter lockout circuit.	Either the engine will not start or the engine will not have starter lockout protection.
585 677 4	Starter relay driver circuit - Voltage below normal, or shorted to low source. Low voltage detected at starter lockout circuit.	Either the engine will not start or the engine will not have starter lockout protection.
595 103 16	Turbocharger 1 speed - Data valid but above normal operating range - Moderately severe level. High turbocharger speed has been detected by the ECM.	Possible reduced engine performance.
596 167 16	Electrical charging system voltage - Data valid but above normal operational range - Moderately severe level. High battery voltage detected by the battery voltage monitor feature.	None on performance.
597 167 18	Electrical charging system voltage - Data valid but below normal operational range - Moderately severe level. Low battery voltage detected by the battery voltage monitor feature.	None on performance.
649 1378 31	Engine oil change interval - Condition exists. Change engine oil and filter.	None on performance.
687 103 18	Turbocharger 1 speed - Data valid but below normal operational range - Moderately severe level. Low turbocharger speed detected by the ECM.	Possible reduced engine performance.
689 190 2	Engine crankshaft speed/position - Data erratic, intermittent, or incorrect. The ECM has detected an error in the engine speed signal.	Possible reduced engine performance.

※ Some fault codes are not applied to this machine.

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15. MALFUNCTION OF BOOM PRIORITY EPPR VALVE

- Fault code : HCESPN 141, FMI 5 or 6

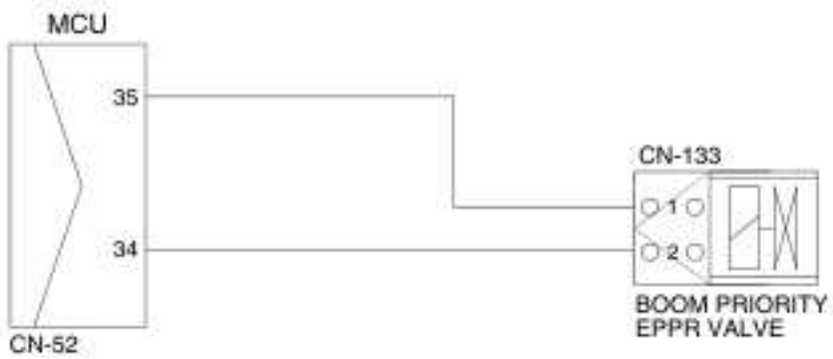
※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



Cause	Remedy
Short circuit or poor connection between CN-52(35)-CN-133 (1) or CN-52(34)-CN-133(2)	Repair or replace
Defective EPPR valve	Repair or replace

Wiring diagram



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3) REDUCTION GEAR

Part name & inspection item		Standard dimension	Recommended value for replacement	Remedy
Pitting or crack of gear		-	Pitting area rate : 10%	Replacement pitting or crack is found
Motor driving gear external spline		Overpin 43.91 (ø 5)	43.31 mm	(Z=14)
No. 1 sun gar internal spline		Overpin 30.25 (ø 5)	30.85 mm	Replacement (Z=14)
Reduction ratio i = 70.145	No. 1 sun gear	Displacement 42.22 (4teeth)	41.92 mm	Do. (Z=23)
	No. 1 planetary gear	Displacement 43.98 (4teeth)	43.68 mm	Do. (Z=26)
No. 1 carrier internal spline		Overpin 81.562 (ø 5)	82.162 mm	Do. (Z=23)
No. 2 sun gear		Displacement 31.40 (3teeth)	31.10 mm	Do. (Z=23)
No. 2 planetary gear		Displacement 43.67 (4teeth)	43.37 mm	Do. (Z=26)
No. 2 carrier internal spline		Overpin 112.24 (ø 10)	112.84 mm	Do. (Z=25)
No. 3 sun gear		Displacement 54.92 (4teeth)	54.62 mm	Do. (Z=25)
No. 3 planetary gear		Displacement 54.93 (3teeth)	54.63 mm	Do. (Z=22)
Ring gear (3rd stages)		Overpin 348.74 (ø 8.5)	349.34 mm	Do. (Z=71)
Crack and flaking of bearing inner/outer races and rollers		-	-	Replacement if crack or flaking is found.
Crack and flaking of 1st/2nd/3rd planetary gears and pins		-	-	Replacement if crack or flaking is found.

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(8) Remove carrier 2 (6), with planetary gears 2 (13), sun gear 3 (11), etc. fitted.

※ Use M10 eyebolt. In this case, thrust ring (26) is removed simultaneously.



(9) Disassembling of carrier 2 sub-assembly

① Push in spring pin (36), and remove pin 2 (16), from carrier 2.

※ Carry out the following check in advance. If any abnormality should be found, carry out disassembling.

- Is there any crevice, crack or pitting on tooth surface of planetary gear?
- When turning planetary gear lightly, is there any abnormal noise or eccentric clearance? Carry out check similarly to the above for carrier 3.



② Remove side plate (20), planetary gear 2 (13), and needle bearing (22) from carrier 2.

③ Remove thrust ring (26).



④ Remove snap ring (46), and remove carrier 2 (6) from sun gear 3 (11).

⑤ Remove thrust ring (27) from sun gear 3 (11).



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3) ASSEMBLING TRAVEL MOTOR

(1) Shaft sub assembly

① Fit bearing spacer to shaft (08) and press-fit roller bearing (09).

※ Press the roller bearing after preheating.





a. Induction heating apparatus temperature : 100˚C

b. Be careful not to damage the sliding surface for the seal on the shaft.



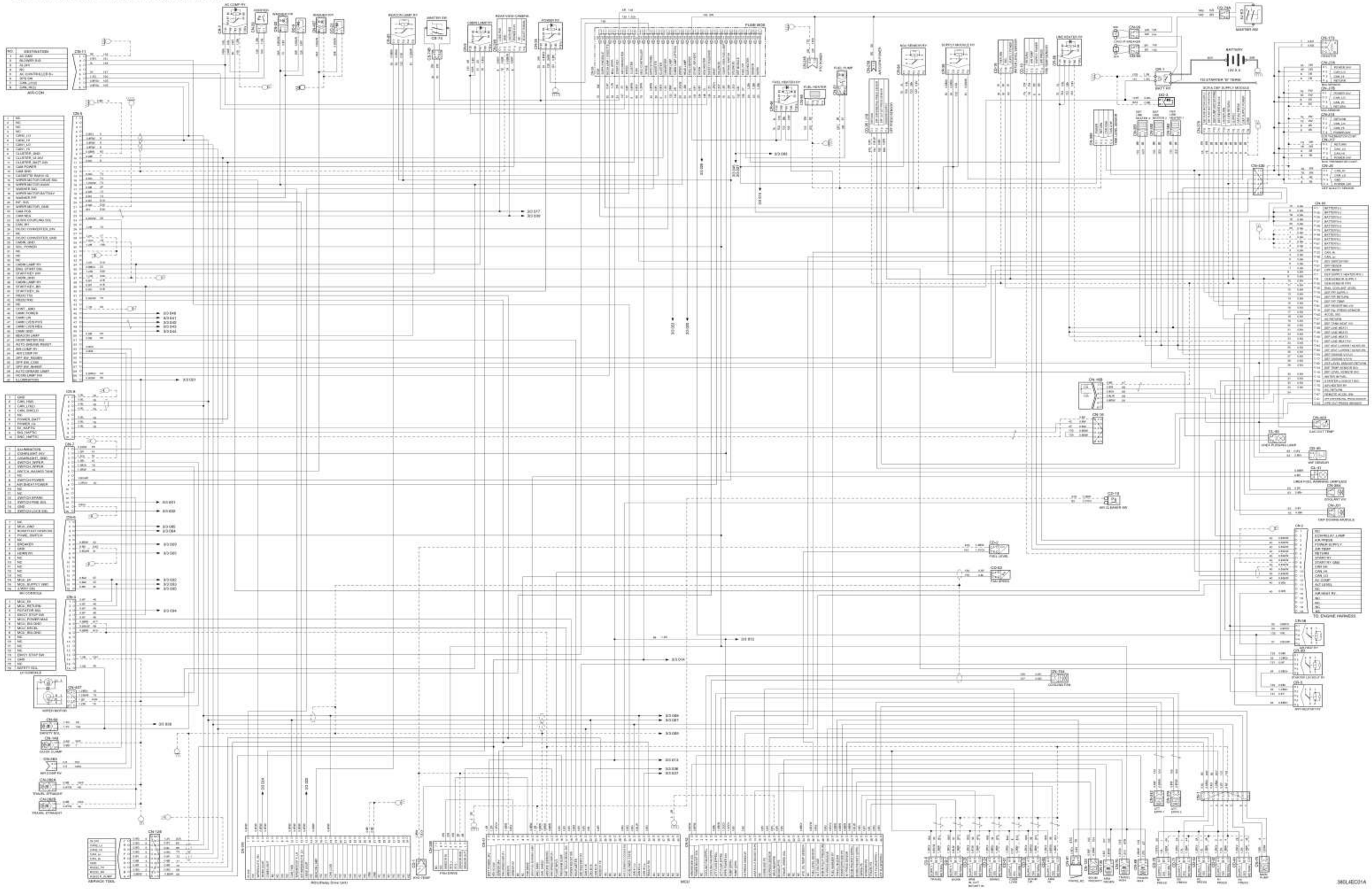
② Insert stop ring (10) with snap ring pliers.

※ Pay attention to the direction of the stop ring. (round direction is bearing direction.)



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· ELECTRICAL CIRCUIT (1/6, SERIAL NO. : -#0261)



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