WHEEL LOADER

# SERVICE MANUAL

## *HL770-9*

HYUNDAI

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# SECTION 1 GENERAL

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## 2) ENGINE FAULT CODE

| Fault code J1939 SPN J1939 FMI | Reason | Effect (only when fault code is active) |
|---|---|---|
| 111<br>629<br>12 | Engine control module critical internal failure - Bad intelligent device or component. Error internal to the ECM related to memory hardware failures or internal ECM voltage supply circuits. | Possible no noticeable performance effects, engine dying, or hard starting. |
| 115<br>612<br>2 | Engine magnetic crankshaft speed/position lost both of two signals - Data erratic, intermittent, or incorrect. The ECM has detected that the primary engine speed sensor and the backup engine speed sensor signals are reversed. | Fueling to injectors is disabled and the engine can not be started. |
| 122<br>102<br>3 | Intake manifold 1 pressure sensor circuit - Voltage above normal, or shorted to high source. High signal voltage detected at the intake manifold pressure circuit. | Engine power derate. |
| 123<br>102<br>4 | Intake manifold 1 pressure sensor circuit - Voltage below normal, or shorted to low Source. Low signal voltage or open circuit detected at the intake manifold pressure circuit. | Engine power derate. |
| 124<br>102<br>16 | Intake manifold 1 pressure - Data valid but above normal operational range - Moderately severe level. Intake manifold pressure has exceeded the maximum limit for the given engine rating. | Engine power derate. |
| 131<br>91<br>3 | Accelerator pedal or lever position sensor 1 circuit - Voltage above normal, or shorted to high source. High voltage detected at accelerator pedal position circuit. | Severe derate in power output of the engine. Limp home power only. |
| 132<br>91<br>4 | Accelerator pedal or lever position sensor 1 circuit - Voltage below normal, or shorted to low source. Low voltage detected at accelerator pedal position signal circuit. | Severe derate in power output of the engine. Limp home power only. |
| 133<br>974<br>3 | Remote accelerator pedal or lever position sensor 1 circuit - Voltage above normal, or shorted to high source. High voltage detected at remote accelerator pedal position circuit. | Remote accelerator will not operate. Remote accelerator position will be set to zero percent. |
| 134<br>974<br>4 | Remote accelerator pedal or lever position sensor 1 circuit - Voltage below normal, or shorted to low source. Low voltage detected at remote accelerator pedal position signal circuit. | Remote accelerator will not operate. Remote accelerator position will be set to zero percent. |
| 135<br>100<br>3 | Engine oil rifle pressure 1 sensor circuit - Voltage above normal, or shorted to high source. High signal voltage detected at the engine oil pressure circuit. | None on performance. No engine protection for oil pressure. |
| 141<br>100<br>4 | Engine oil rifle pressure 1 sensor circuit - Voltage below normal, or shorted to low source. Low signal voltage detected at engine oil pressure circuit. | None on performance. No engine protection for oil pressure. |
| 143<br>100<br>18 | Engine oil rifle pressure - Data valid but below normal operational range - Moderately severe level. | None on performance. |
| 144<br>110<br>3 | Engine coolant temperature 1 sensor circuit - Voltage above normal, or shorted to high source. High signal voltage or open circuit detected at engine coolant temperature circuit. | Possible white smoke. Fan will stay ON if controlled by ECM. No engine protection for engine coolant temperature. |

※ Some fault codes are not applied to this machine.



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Adjust the axial play of the output bearing = 0.3~0.5 mm (figure 280~282)

(4) Determine Dimension I, from plane face/ housing to end face/output shaft.

Dimension I e.g ..... 66.90 mm

* Special tool
Digital depth gauge 5870 200 072



Figure 280

(5) Measure Dimension II, from plane face/ housing to contact face/ball bearing.

Dimension II e.g ..... 64.20 mm

Example :

| | | |
|---|---|---|
| Dimension I ..... | | 66.90 mm |
| Dimension II ..... | | - 64.20 mm |
| Difference ..... | | = 2.70mm |
| Required axial play ..... | e.g. | - 0.40 mm |
| | | (0.3~0.5 mm) |
| Resulting shim ..... | s | = 2.30 mm |



Figure 281

(6) Install the shim.



Figure 282

(7) Install the ball bearing (figure 283) and pull it until contact by means of the output flange (figure 284).

Then remove the output flange again.

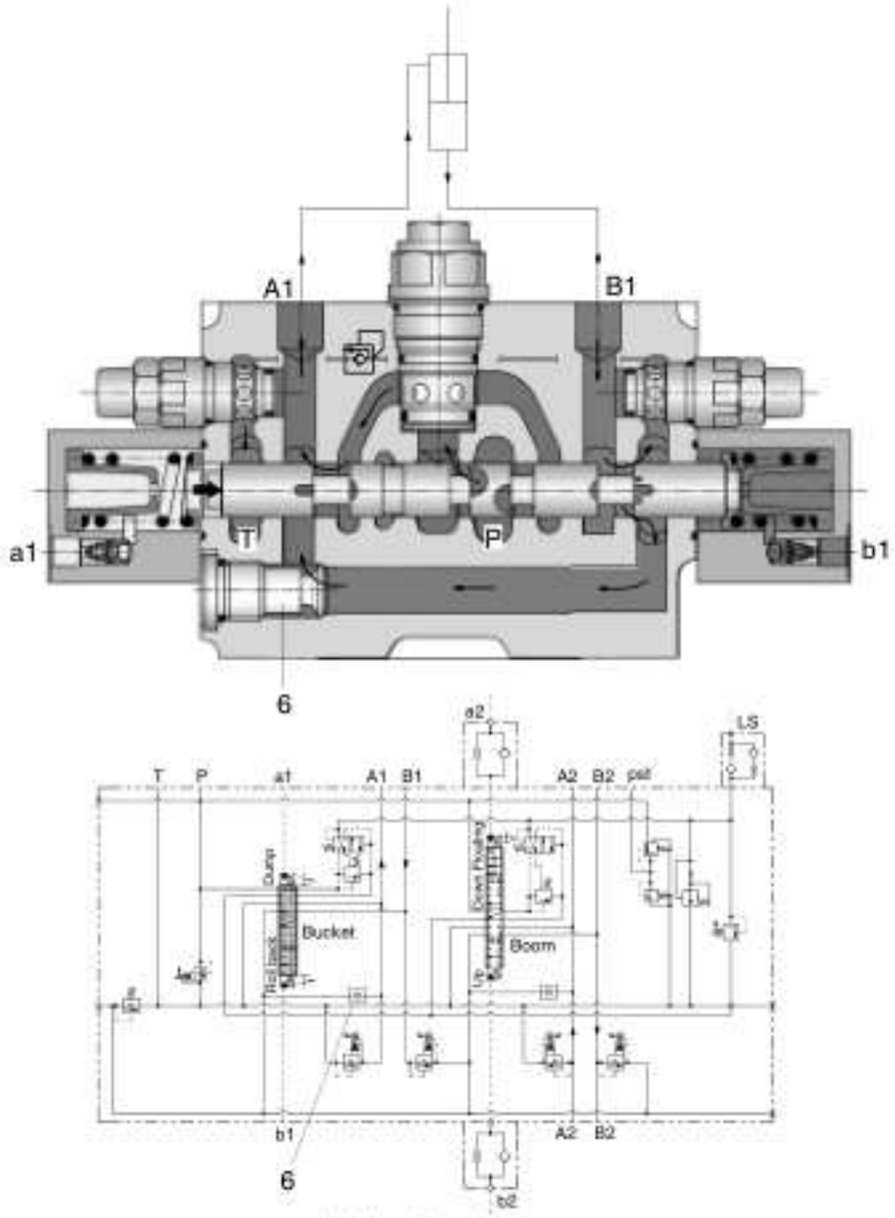


Figure 283



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(3) Bucket dump




Hydraulic circuit

76096WE57

When the pilot pressure is led to the port a1, the bucket spool moved to dump position.
Oil from the pump flows to the cylinder port A1, through the load holding valve and oil from the cylinder flows into the tank passage through the cylinder port B1.
When the dumping speed of bucket is faster, the return oil from the large chamber of bucket cylinder combines with the oil from the pump through regeneration check valve (6), and flows into the small chamber of the cylinder. This prevents cylinder cavitation by the negative pressure when the pump flow cannot match the bucket dump speed.



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## 5) DISASSEMBLY AND ASSEMBLY

### (1) Spool

① Loosen the bolt (2EA).

- Tool : Wrench 5 mm
- Tightening torque : 0.85 kgf · m (6.1 lbf · ft)



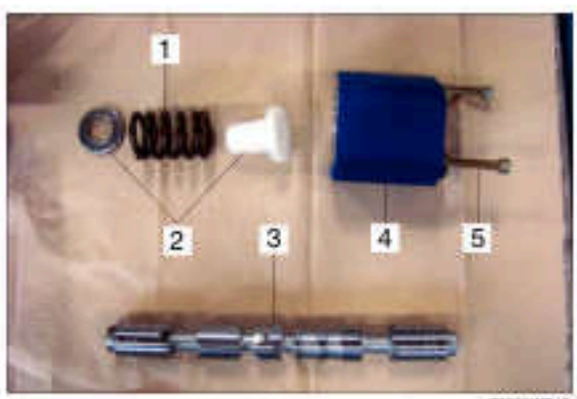
T6096WE40

② Remove the cover, spring retainer, spring and spool.



T6096WE41

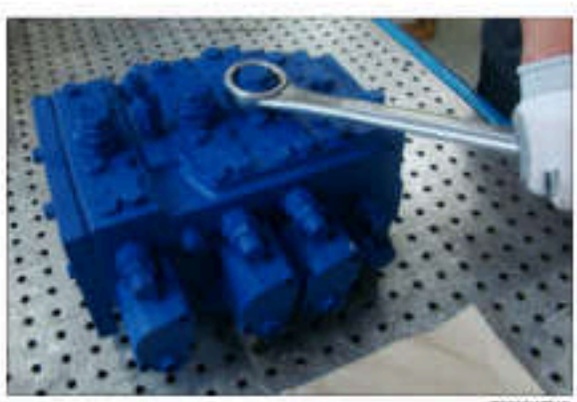
1 Spring
2 Spring ratainer
3 Spool
4 Cover
5 Bolt




T6096WE42

### (2) Compensator valve

- Tool : Spanner 42 mm



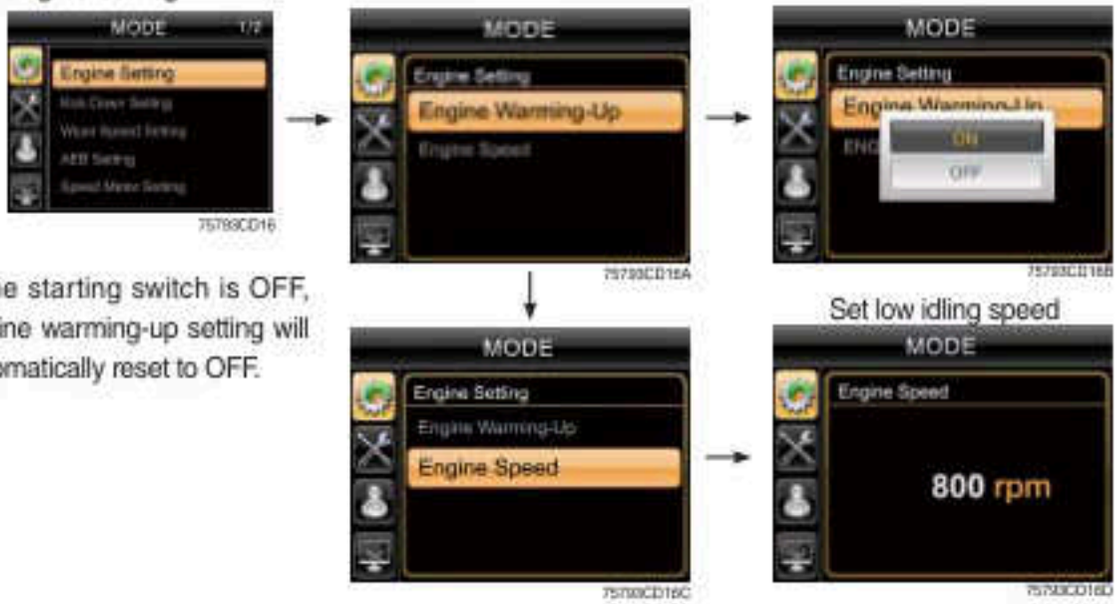
T6096WE43



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(2) Mode

① Engine setting




※ If the starting switch is OFF, engine warming-up setting will automatically reset to OFF.

② Kick down setting




- Mode 1 (down/up) : Press kick down button once, shift down and press button again, shift up.
- Mode 2 (down only) : Press kick down button every time, shift to lower gear respectively.

※ Refer to page 7-50.

③ Wiper speed setting




- Setting wipe speed 1 to 4.

④ Fan-auto mode




- Select reverse interval or reverse time.
- Set reverse interval (30~300 min) or reverse time (30~300 sec).

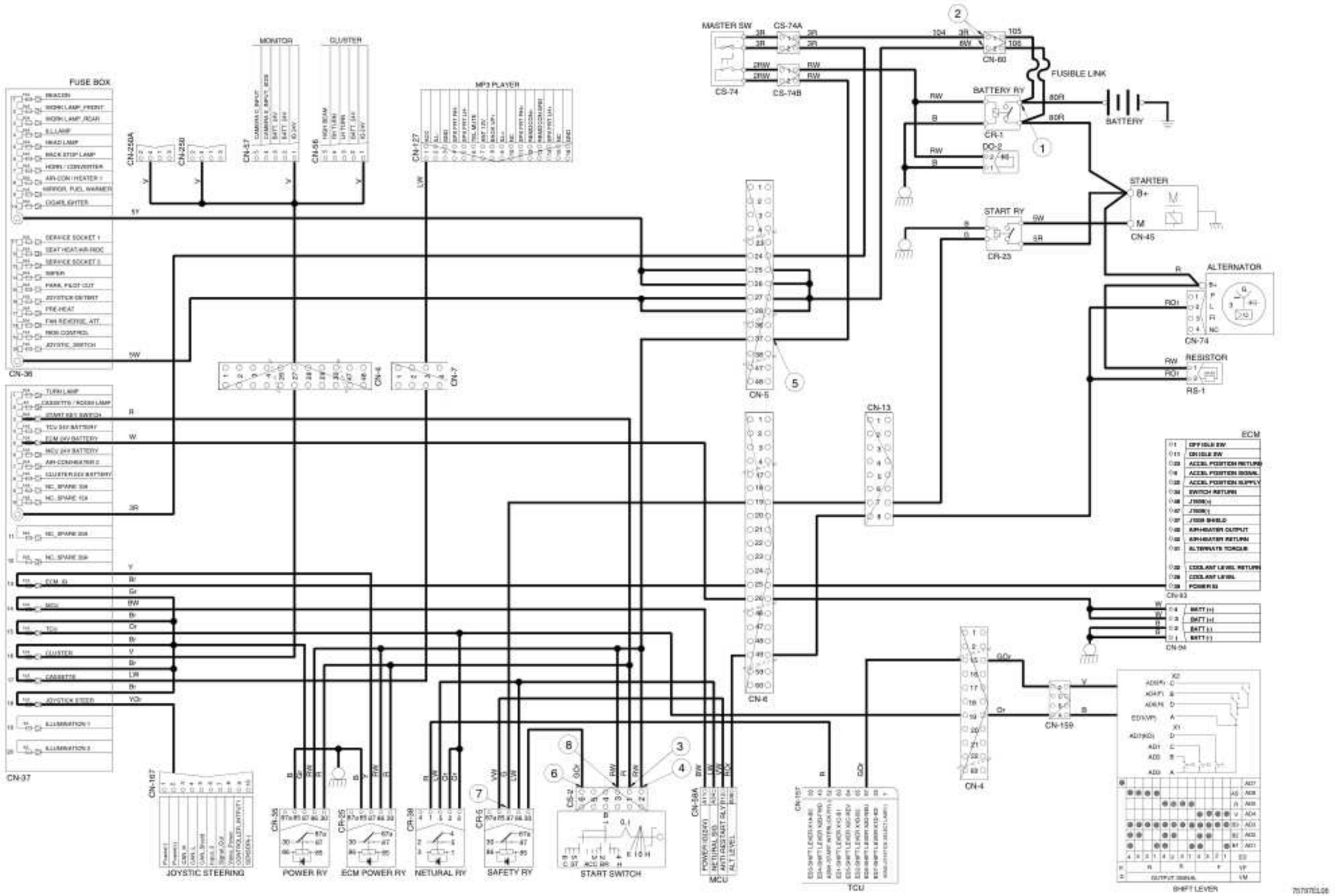
※ Default : Interval (60 min), time (120 sec)

※ Refer to page 7-46, fan control switch.



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## STARTING CIRCUIT






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