WHEEL LOADER

SERVICE MANUAL

HL757-7

HYUNDAI

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GROUP 2 FAN DRIVE CIRCUIT FOR COOLING SYSTEM

1. REQUIRED TOOL

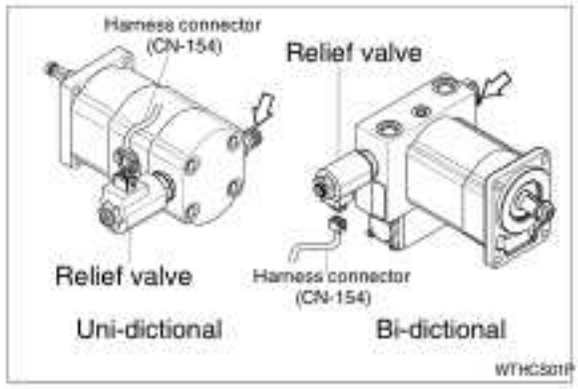
Item		Spec
Pressure gauge		250~300kgf/cm²(3550~4270psi)
rpm gauge		200~2000rpm
Tool	Wrench	13mm
	Hex. wrench	3mm

2. PRESSURE CHECK AND ADJUSTMENT

1) Specification

Cooling fan speed(rpm)	Pressure[kgf/cm²(psi)]
1300 ± 20	100~110(1420~1560)

2) Check point

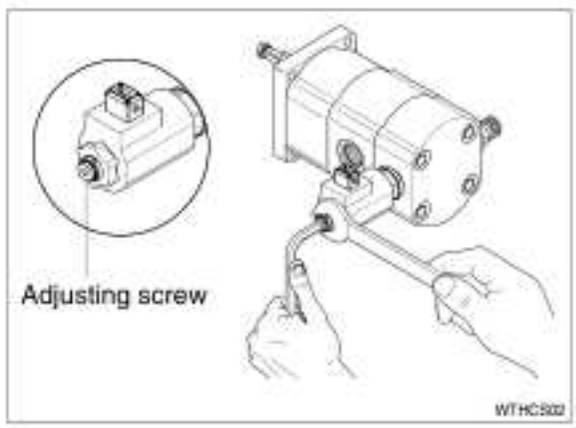


3) Pressure check

(1) Install the pressure gauge to fan drive motor. (⇨)
(2) Disconnect CN-154.
(3) Check the fan drive motor pressure at high engine rpm.
(4) Check the cooling fan speed using rpm gauge at high engine rpm.

4) Adjustment

(1) Turn the adjusting screw clockwise to increase the cooling fan rpm and relief pressure.
(2) Turn the adjusting screw counter clockwise to decrease the cooling fan rpm and relief pressure.



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(4) Engine fault code information

Fault code No.	Reason	Effect(only when fault code is active)
111	ECM internal hardware error.	Possible no effect or engine may run rough or not start.
115	No engine speed or position signal detected at pin 17 of the engine harness.	Engine power derate. Possible white smoke.
121	No engine speed or position signal detected at pin 9 of the engine harness	No engine speed and position backup for main speed/position sensor.
122	High voltage detected at the boost pressure sensor signal pin 45 of the engine harness.	Engine will derate to no-boost fueling.
123	Low voltage detected at boost pressure sensor signal pin 45 of the engine harness.	Engine will derate to no-boost fueling.
131	High voltage detected at throttle position signal pin 30 of the machine harness.	Engine idles when idle validation switch indicates idle and ramps up to a default set speed when the idle validation switch indicates off-idle.
132	Low voltage detected at throttle position signal pin 30 of the machine harness.	Engine idles when idle validation switch indicates idle and ramps up to a default set speed when the idle validation switch indicates off-idle.
133	High voltage detected at remote throttle position signal pin 9 of the machine harness.	Engine will **not** respond to remote throttle input.
134	Low voltage detected at remote throttle position signal pin 9 of the machine harness.	Engine will **not** respond to remote throttle input.
135	High voltage detected at oil pressure signal pin 33 of the engine harness.	Default value used for oil pressure. No engine protection for oil pressure.
141	Low voltage detected at oil pressure signal pin 33 of the engine harness.	Default value used for oil pressure. No engine protection for oil pressure.
143	Oil pressure signal indicates oil pressure below the low engine protection limit.	Power and/or speed derate and possible engine shutdown if engine protection shutdown feature is enabled.
144	High voltage detected at coolant temperature signal pin 23 of the engine harness.	Default value used for coolant temperature. No engine protection for coolant temperature.
145	Low voltage detected at coolant temperature signal pin 23 of the engine harness.	Default value used for coolant temperature. No engine protection for coolant temperature.
146	Coolant temperature signal indicates coolant temperature has exceeded the minimum engine protection limit.	Power derate and possible engine shutdown feature is enabled.
151	Coolant temperature signal indicates coolant temperature has exceeded the maximum engine protection limit.	Speed derate and possible engine shutdown if engine protection shutdown feature is enabled.
153	High voltage detected at intake manifold temperature signal pin 34 of the engine harness.	Default value used for intake manifold temperature. No engine protection for intake manifold temperature.
154	Low voltage detected at intake manifold temperature signal pin 34 of the engine harness.	Default value used for intake manifold temperature. No engine protection for intake manifold temperature.
155	Intake manifold air temperature signal indicates intake manifold air temperature is above the maximum engine protection limit.	Speed derate and possible engine shutdown if engine protection shutdown feature is enabled.
191	Air conditioner clutch driver signal indicates a short to ground when commanded on.	Air conditioner clutch will **not** operate.
211	Machine specific fault code has occurred.	No effect on engine performance.
221	High voltage detected at ambient air pressure signal pin 32 of the engine harness.	Engine power derate.
234	Engine speed signal indicates engine speed has exceeded the overspeed limit.	Fuel to injectors disabled until engine speed falls below the overspeed limit.
235	Coolant level signal at pin 37 of the engine harness indicates coolant level is low.	Power and/or speed derate and possible engine shutdown if engine protection shutdown feature is enabled.

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10. PILOT CONTROL VALVE PRESSURE TEST

- **SPECIFICATION**

Oil temperature	45± 5℃(113± 9℉)
Engine speed	Low idle
Begin metering	1/4" of lever travel
Pressure in detent :	
Boom float detent 1.9MPa(19bar)	
Pressure at feel position :	
Boom power down	19~22bar
Boom raise	19~22bar
Bucket rollback	19~22bar
Bucket dump	19~22bar

- **GAUGE AND TOOL**

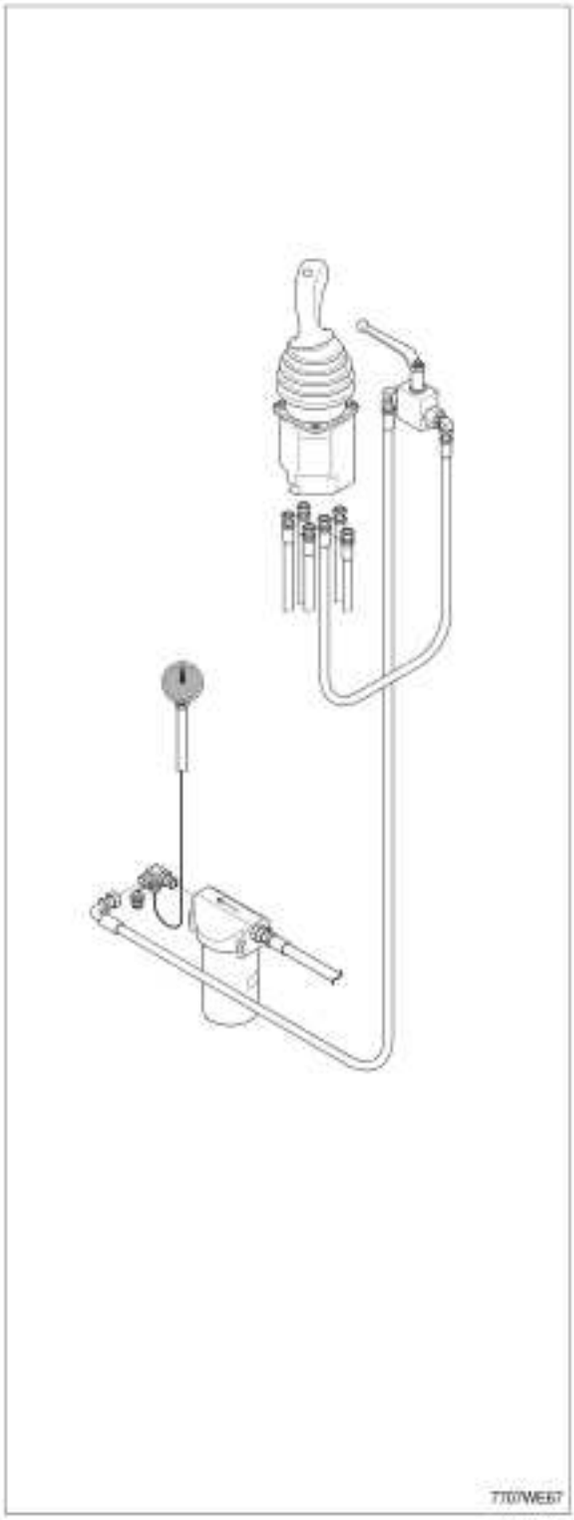
Gauge 0~7MPa(0~70bar, 0~1000psi)

As the control lever is moved from neutral, the pilot pressure will suddenly jump up to approximately 5.8bar at 1/4in. travel. The pressure should then increase smoothly to the specification at the FEEL position(Or 3/4 lever travel), and then jump up about 430psi as the lever is moved into detent.

This test will determine if adequate pilot pressure is available to move the loader control valve spools.

※ **The FEEL position is when lever is moved to feel the ramp of the detent before lever passes into detent position.**

1) Lower boom to ground.
2) Connect gauge to the pilot pressure port of function to be checked.
3) Install temperature reader(See temperature reader installation procedure in this group).
4) Heat hydraulic oil to specification(See hydraulic oil warm up procedure in this group).



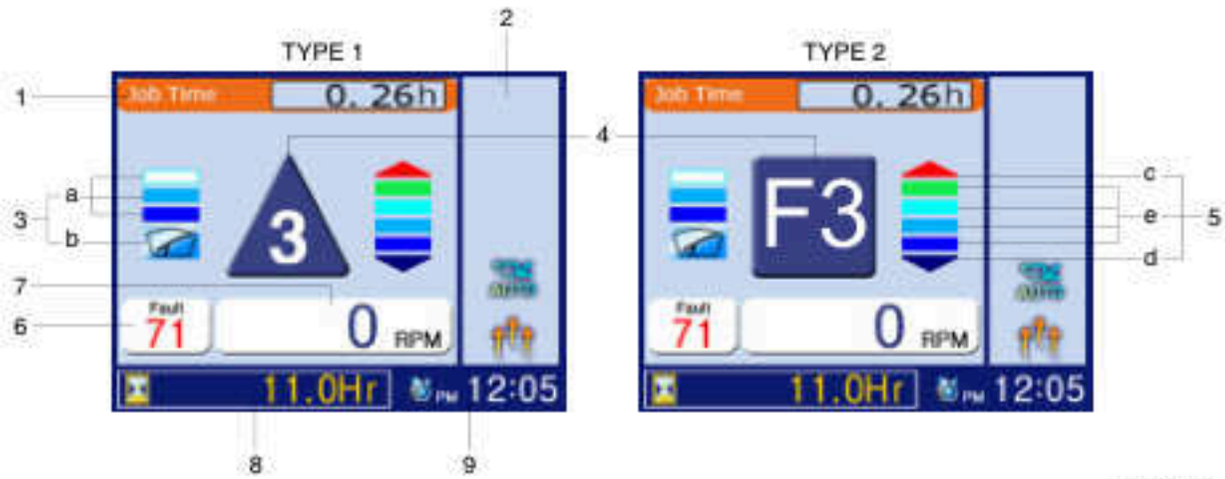
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LCD (Machine serial no. ; #1045-)



1 LCD
2 ( ) Right
Move to the next selection
3 ( ) Select(Enter)
Activate the currently chosen item
4 ( ) Escape
Return to the previous menu
5 ( ) Main, Menu
- Display menu
- Return to the main display

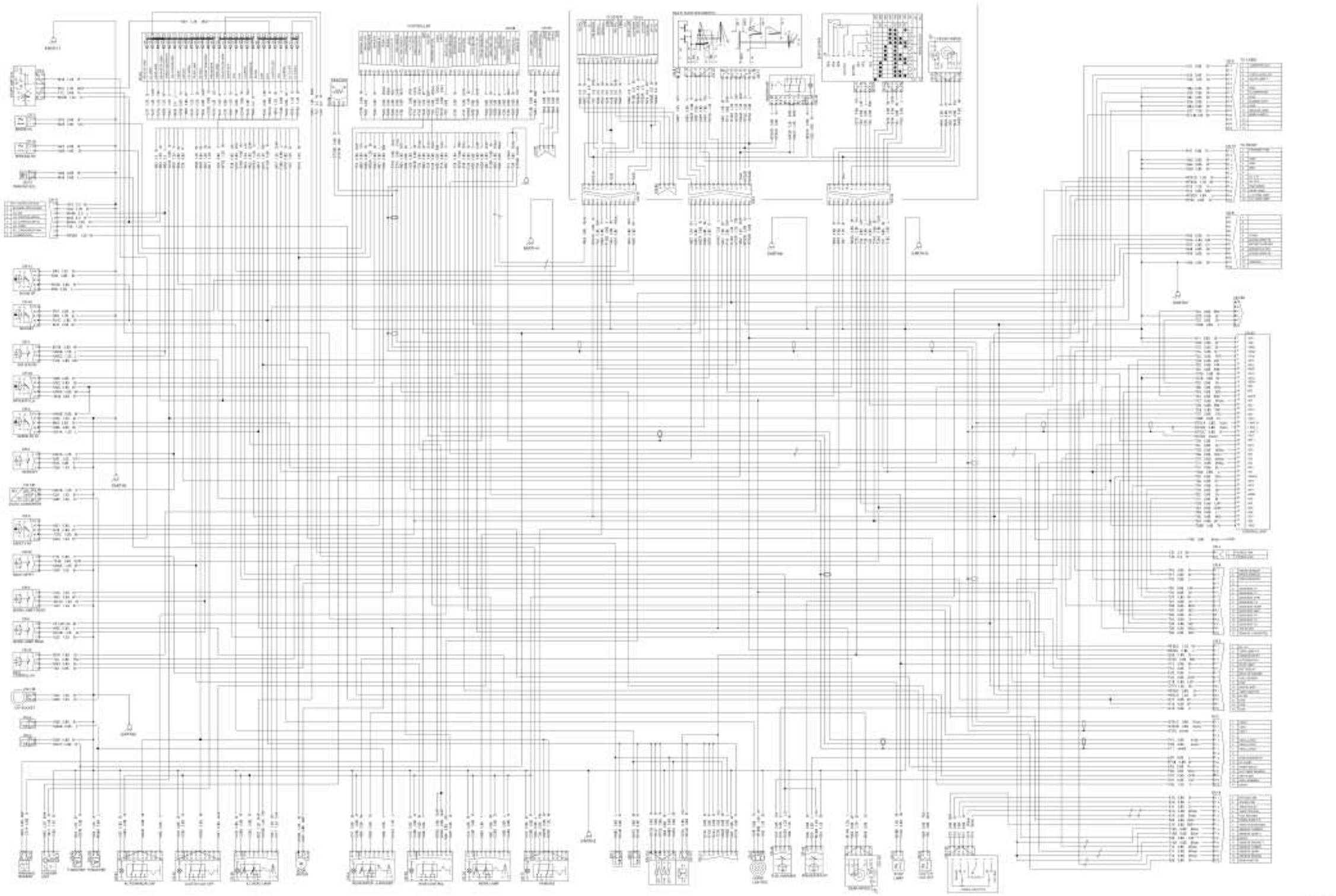
(1) Main display



No	Symbol	Meaning	Remark		
1	Job Time 1,257h	Monitoring information	Job timer, Odometer, Hydraulic temperature, Battery voltage, Coolant temperature, T/M oil temperature.		
2	AUTO	State information	Ride state(option), Warming up		
3	a	Wiper display	When operating intermittently, it shows an operating time interval		
	b		Wiper motor intermittently operating		
4	△·▽·□	Actual gear display	Forward, reverse, neutral	LCD type 1	
	F, R, N		Forward, reverse, neutral	LCD type 2	
	1, 2, 3, 4		Actual gear		
	P		Parking brake mode active		
5	c, d	Select gear display	Up and down shifting	c: Forward, d: Reverse	Automatic mode
	e		Pre-selected gear		
6	71	Fault code display	Fault code state display		
7	0 RPM	Engine rpm display	Now engine rpm state display		
8	11.0Hr	Hour meter display	Hour meter state display		
9	PM 12:05	Timer & alarm display	Now time & alarm state display		

※ Both type1 and type2 are LCD modes and they can be changed each other by operator's selection.
(Adjustment/Display, see page 7-34)

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