WHEEL LOADER

SERVICE MANUAL

HL770-7A

HYUNDAI

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2. TROUBLESHOOTING

1) TRANSMISSION

* **Diagnose malfunction charts are arranged from most probable and simplest to verify, to least likely, more difficult to verify. Remember the following steps when troubleshooting a problem :**

  Step 1. Operational check out procedure(See group 3 in section 1.)

  Step 2. Operational checks(In this group.)

  Step 3. Troubleshooting

  Step 4. Tests and/or adjustments(See group 3.)

Problem	Cause	Remedy
Transmission slippage	Low oil level.	Add oil.
	Wrong oil grade.	Change oil.
	Restricted transmission pump suction screen.	Remove and clean screen.
	Leak in transmission control valve or gasket.	Remove valve and inspect gaskets.
	Low transmission pump flow due to worn pump.	Do transmission pump flow test.
	Weak or broken pressure regulating valve spring.	Do transmission system pressure test.
Error code on display	Something wrong in transmission.	Go to transmission error code group at page 3-28~3-54.

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5. MAIN HYDRAULIC PUMP FLOW TEST

- **SPECIFICATION**

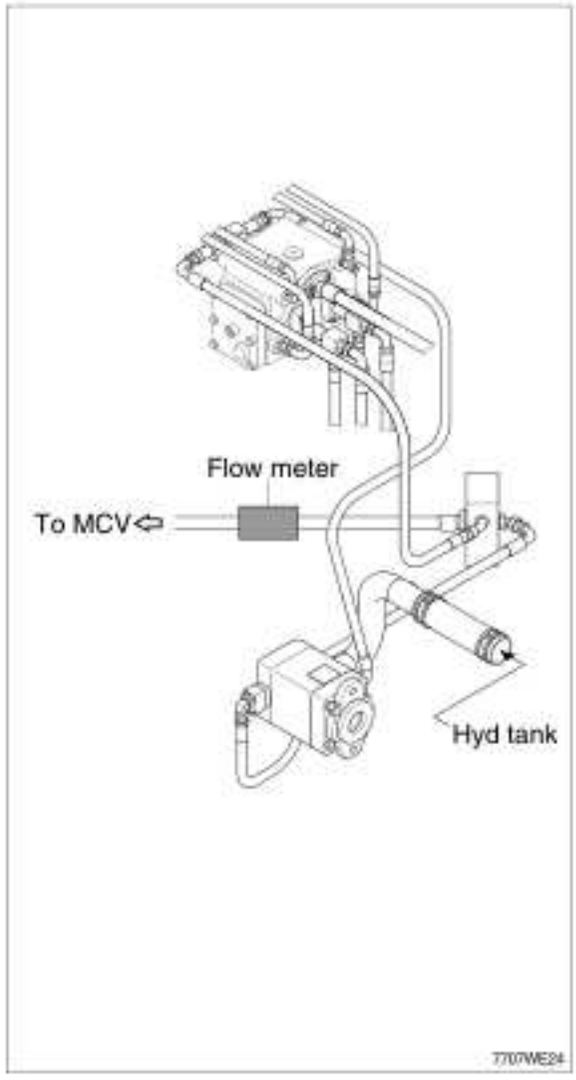
Oil temperature	45±5℃(113±9℉)
Engine speed	2000±25rpm
Test pressure	200±10bar(2845psi)
Maximum pump flow	425 ℓ /min(112gpm)

- **FLOW METER GAUGE AND TOOL**

  Gauge 0~35MPa(0~350bar, 0~5000psi)

  Temperature reader

1) Make test connections.
2) Install temperature reader.
   (See temperature reader installation procedure in this group)
3) Heat hydraulic oil to specifications.
   (See hydraulic oil warm up procedure in this group)
4) Run engine at test specifications.
5) Close flow meter loading valve to increase pressure to test specifications.
6) Read flow meter.
7) If flow is below specifications, check suction line and suction pressure for abnormality before removing pump.



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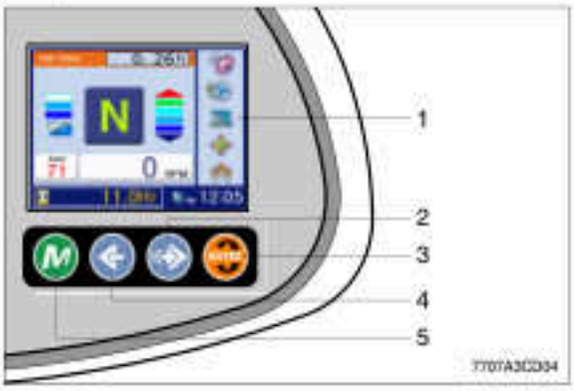
GROUP 5 CONNECTORS

1. CONNECTOR DESTINATION

Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CN-1	58	2	I/conn(Frame harness-Main harness)	S813-030200	S813-130200
CN-2	Econoseal J	12	I/conn(Main harness-Frame harness)	S816-012002	S816-112002
CN-3	AMP	15	I/conn(Frame harness-Main harness)	2-85262-1	368301-1
CN-4	AMP	15	I/conn(Main harness-Frame harness)	2-85262-1	368301-1
CN-5	AMP	15	I/conn(Frame harness-Main harness)	2-85262-1	368301-1
CN-6	AMP	15	I/conn(Main harness-Frame harness)	2-85262-1	368301-1
CN-7	AMP	15	I/conn(Main harness-Cab harness)	2-85262-1	368301-1
CN-8	Econoseal J	8	I/conn(Main harness-Cab harness)	S816-008002	S816-108002
CN-9	Econoseal J	12	I/conn(Main harness-Front harness)	S816-012002	S816-112002
CN-10	AMP	15	I/conn(Main harness-Front harness)	2-85262-1	368301-1
CN-11	DEUTSCH	8	I/conn(Main harness-Aircon harness)	DT06-8S	-
CN-12	AMP	15	I/conn(Frame harness-Engine harness)	2-85262-1	368301-1
CN-13	Econoseal J	15	I/conn(Frame harness-Engine harness)	S816-012002	S816-112002
CN-18	Econoseal J	4	I/conn(Front harness-Ride control harness)	S816-004002	S816-104002
CN-20	Molex	2	Horn	36825-0212	-
CN-21	HW090 sealed	6	Front wiper motor	6189-0133	-
CN-22	SWP	2	Front washer tank	S814-002000	-
CN-23	KET	2	Speaker(LH)	7123-1520	-
CN-24	KET	2	Speaker(RH)	7123-1520	-
CN-25	Molex	2	Horn	36825-0212	-
CN-26	250	2	Warning buzzer	S810-002202	-
CN-27	PA	9	Cassette and radio	S811-009003	-
CN-28	MWP	1	Comp(Air-con)	NMWP01F-B	-
CN-29	KET	2	Receiver drier	MG640795	-
CN-45	Ring term	-	Starter	S820-414000	-
CN-56	AMP	20	Cluster	174047-2	-
CN-58	Econoseal III	36	Controller	344111-1	-
CN-59	AMP	23	Controller	770680-1	-
CN-65	DEUTSCH	2	Back up buzzer	DT06-2S-EP06	-
CN-71	DEUTSCH	2	Parking solenoid	DT06-2S-EP06	-
CN-74	PACKARD	4	Alternator	1218-6568	-
CN-83	NMWP	2	Aircon fan	PB625-02027	-
CN-93	DEUTSCH	50	ECM	DRC26-50S-01	-
CN-94	DEUTSCH	4	ECM	DTP06-4S-E003	-

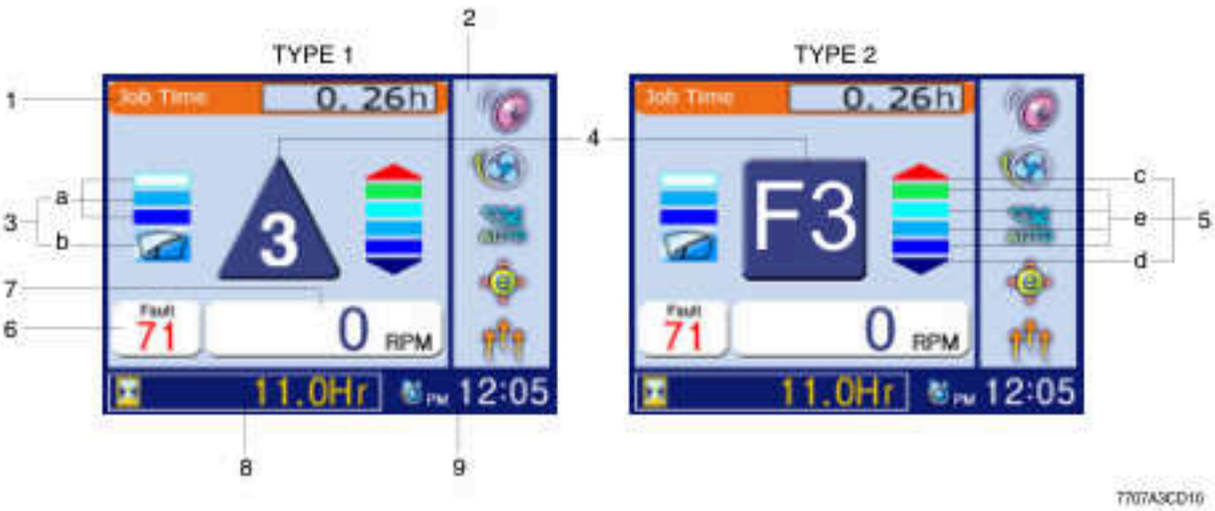
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26) LCD



1 LCD
2 ( ) Right, Buzzer stop
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

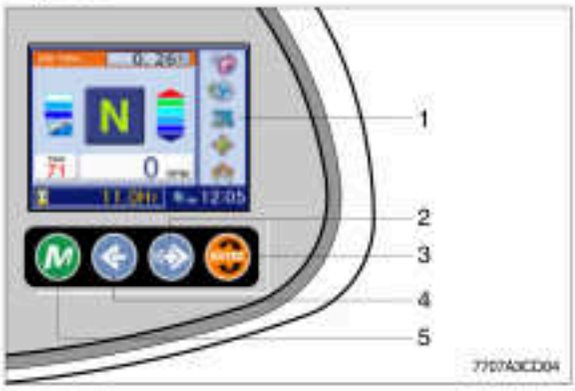


No	Symbol	Meaning	Remark	
1	Job Time 1.26h	Monitoring information	Job timer, Odometer, Hydraulic temperature, Battery voltage, Coolant temperature, T/M oil temperature.	
2		State information	Buzzer, Fan state, Ride state(option), Steering joystic(option), Warming up	
3	a	Wiper display	When operating 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 7-29)

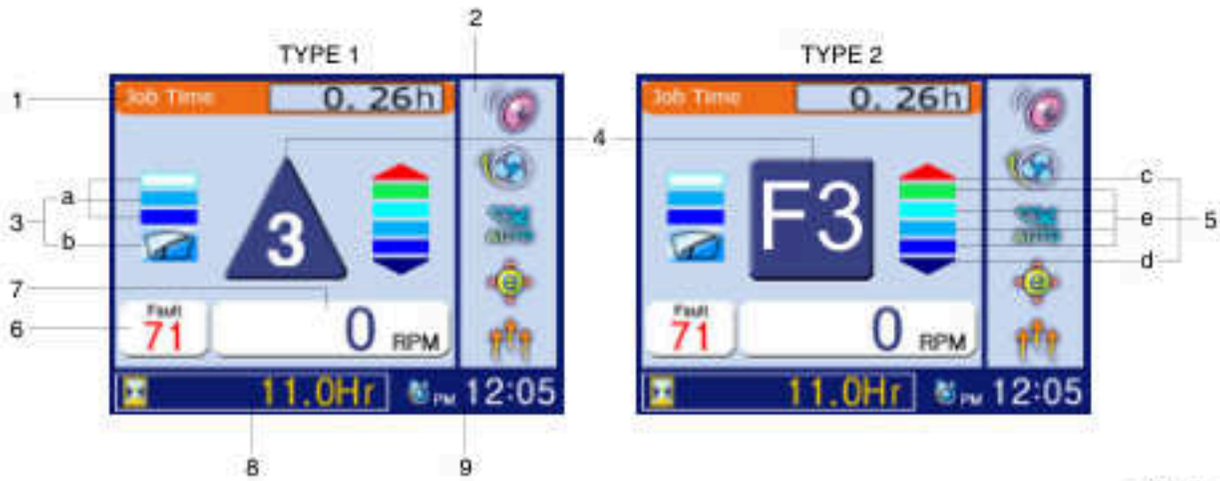
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6) LCD



1 LCD
2 ( ) Right, Buzzer stop
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

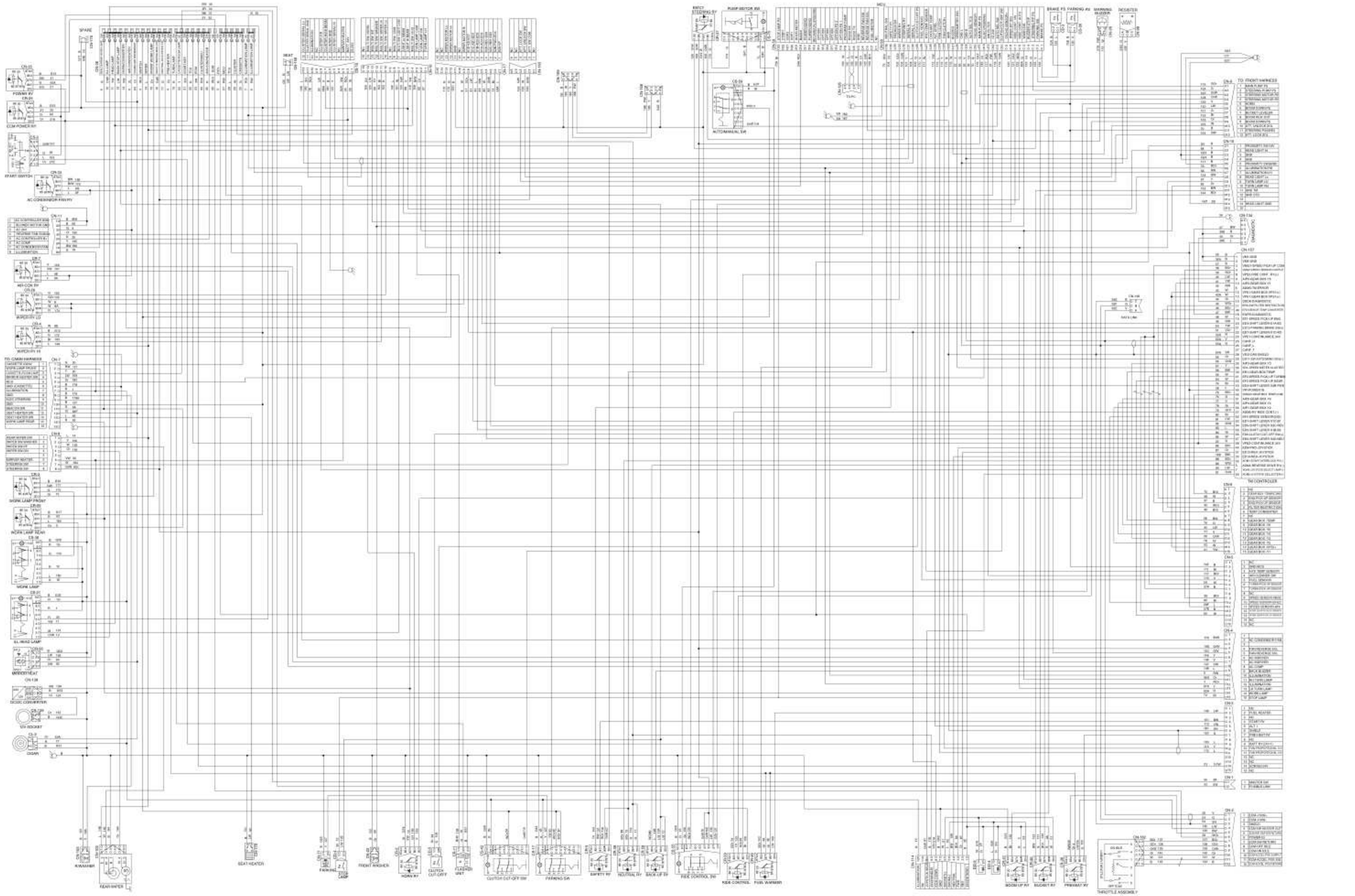
(1) Main display



No	Symbol	Meaning	Remark		
1	Job Time 1.20h	Monitoring information	Job timer, Odometer, Hydraulic temperature, Battery voltage, Coolant temperature, T/M oil temperature.		
2		State information	Buzzer, Fan state, Ride state(option), Steering joystic(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 3-18)

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