WHEEL LOADER

SERVICE MANUAL

HL740-9

HYUNDAI

MidWestTech | Hyundai HL740-9 Wheel Loader Service Manual | Publication HL740-9

Order the manual at mid-west-tech.com >

CONTENTS

SECTION 1 GENERAL

Group 1 Safety Hints 1-1
Group 2 Specifications 1-10
Group 3 Operational Checkout Record Sheet 1-25

SECTION 2 ENGINE

Group 1 Structure and Function 2-1
Group 2 Fuel Warmer System 2-7
Group 3 Engine Speed and Stall rpm 2-8
Group 4 Fan drive circuit for cooling system 2-9

SECTION 3 POWER TRAIN SYSTEM

Group 1 Structure and Function 3-1
Group 2 Operational Checks and Troubleshooting 3-61
Group 3 Test and Adjustments 3-72
Group 4 Disassembly and Assembly 3-74

SECTION 4 BRAKE SYSTEM

Group 1 Structure and Function 4-1
Group 2 Operational Checks and Troubleshooting 4-21
Group 3 Tests and Adjustments 4-28
Group 4 Disassembly and Assembly 4-31

SECTION 5 STEERING SYSTEM

Group 1 Structure and Function 5-1
Group 2 Operational Checks and Troubleshooting 5-11
Group 3 Tests and Adjustments 5-17
Group 4 Disassembly and Assembly 5-23

SECTION 6 WORK EQUIPMENT

Group 1 Structure and Function 6-1
Group 2 Operational Checks and Troubleshooting 6-42
Group 3 Tests and Adjustments 6-52
Group 4 Disassembly and Assembly 6-67

MidWestTech | Hyundai HL740-9 Wheel Loader Service Manual | Publication HL740-9 Order the manual at mid-west-tech.com >

SECTION 7 ELECTRICAL SYSTEM

Group 1 Component Location 7-1
Group 2 Electrical Circuit 7-3
Group 3 Monitoring System 7-21
Group 4 Electrical Component Specification 7-51
Group 5 Connectors 7-58
Group 6 Troubleshooting 7-78

MidWestTech | Hyundai HL740-9 Wheel Loader Service Manual | Publication HL740-9 Order the manual at mid-west-tech.com >

SECTION 1 GENERAL

Group 1 Safety Hints 1-1
Group 2 Specifications 1-10
Group 3 Operational Checkout Record Sheet 1-23

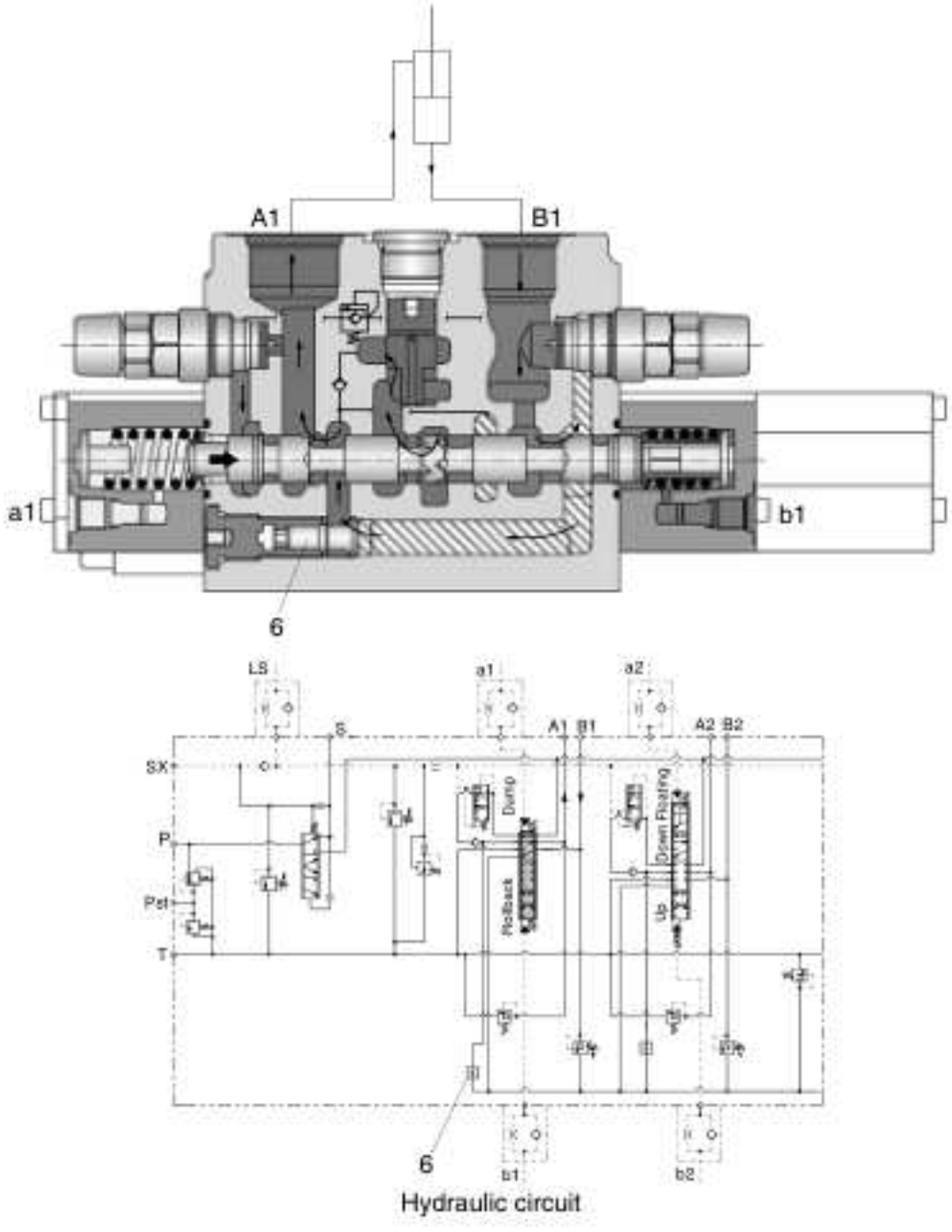
MidWestTech | Hyundai HL740-9 Wheel Loader Service Manual | Publication HL740-9 Order the manual at mid-west-tech.com >

4) TRANSMISSION FAULT CODES

Fault code (Hex)	Meaning of the fault code possible reason for fault detection	Reaction of the TCU	Possible steps to repair
11	Logical error at gear range signal TCU detected a wrong signal combination for the gear range - Cable from shift lever to TCU is broken - Cable is defective and is contacted to battery voltage or vehicle ground - Shift lever is defective	TCU shifts transmission to neutral OP-mode : Transmission shutdown	- Check the cables from TCU to shift lever - Check signal combinations of shift lever positions for gear range ※ Failure cannot be detected in systems with DW2/DW3 shift lever. Fault is taken back if TCU detects a valid signal for the position
12	Logical error at direction select signal TCU detected a wrong signal combination for the direction - Cable from shift lever to TCU is broken - Cable is defective and is contacted to battery voltage or vehicle ground - Shift lever is defective	TCU shifts transmission to neutral OP-Mode : Transmission shutdown	- Check the cables from TCU to shift lever - Check signal combinations of shift lever positions F-N-R ※ Fault is taken back if TCU detects a valid signal for the direction at the shift lever
13	Logical error at engine derating device TCU detected no reaction of engine while derating device active	After selecting neutral, TCU change to OP mode limp home	- Check engine derating device ※ This fault is reset after power up of TCU
15	Logical error at direction select signal 2 shift lever TCU detected a wrong signal combination for the direction - Cable from shift lever 2 to TCU is broken - Cable is defective and is contacted to battery voltage or vehicle ground - Shift lever is defective	TCU shifts transmission to neutral if selector active OP mode : Transmission shutdown if elector active	- Check the cables from TCU to shift lever 2 - Check signal combinations of shift lever positions F-N-R ※ Fault is taken back if TCU detects a valid neutral signal for the direction at the shift lever
16	Logical error at axle connection Feedback axle connection measured by TCU and output signal axle connection don't fit - Axle can't be connected or disconnected due to mechanical problem - One of the cables from feedback axle connection switch to TCU is broken	OP mode : Normal	- Check the cables from TCU to feedback axle connection switch - Check signals of the feedback axle connection switch
21	S.C. to battery voltage at clutch cut off input The measured voltage is too high: - Cable is defective and is contacted to battery voltage - Clutch cut off sensor has an internal defect - Connector pin is contacted to battery voltage	Clutch cut off function is disabled OP mode : Normal	- Check the cable from TCU to the sensor - Check the connectors - Check the clutch cut off sensor
22	S.C. to ground or O.C. at clutch cut off input The measured voltage is too low: - Cable is defective and is contacted to vehicle ground - Cable has no connection to TCU - Clutch cut off sensor has an internal defect - Connector pin is contacted to vehicle ground or is broken	Clutch cut off function is disabled OP mode : Normal	- Check the cable from TCU to the sensor - Check the connectors - Check the clutch cut off sensor

MidWestTech | Hyundai HL740-9 Wheel Loader Service Manual | Publication HL740-9 Order the manual at mid-west-tech.com >

(3) Bucket dump



Hydraulic circuit

74096WEST

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.

MidWestTech | Hyundai HL740-9 Wheel Loader Service Manual | Publication HL740-9 Order the manual at mid-west-tech.com >

6. LOADER SYSTEM AND PORT RELIEF VALVE PRESSURE TEST

- SPECIFICATION

Oil temperature (40~50˚C)

Relief valve	Engine speed	Relief pressure
System (M)	High	280±5 kg/cm² (3980±70 psi)
Boom raise (U) Boom down (W) Bucket rollback (R)	Low	340±10 kg/cm² (4840±140 psi)
Bucket dump (D)	Low	HL740-9/XTD-9 : 300±10 kg/cm² (4270±140 psi) HL740TM-9: 150±10 kg/cm² (2130±140 psi)

- Gauge and tool

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

M : System (main) relief valve

R : Bucket rollback relief

D : Bucket dump relief

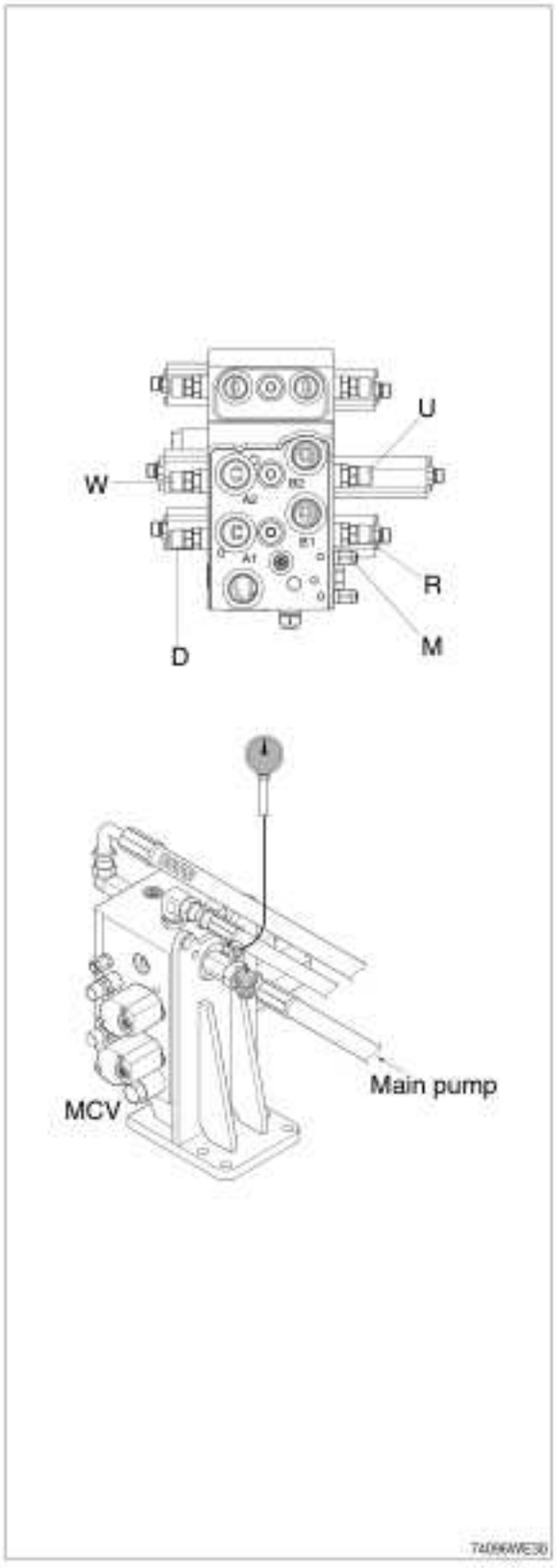
U : Boom raise relief

1) Install fitting and pressure gauge to test port in pump delivery line.

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) To check the system relief (M), run engine at high idle. Lower boom to bottomed position.
Slowly activate boom down function while watching pressure gauge. If pressure is not to specification, loosen lock nut on system relief valve (M) and adjust to specification.



MidWestTech | Hyundai HL740-9 Wheel Loader Service Manual | Publication HL740-9 Order the manual at mid-west-tech.com >

5) DISASSEMBLY AND ASSEMBLY

(1) Spool

① Loosen the bolt (2EA).

- Tool : Wrench 4 mm
- Tightening torque : 0.85 kgf · m (61 lbf · ft)



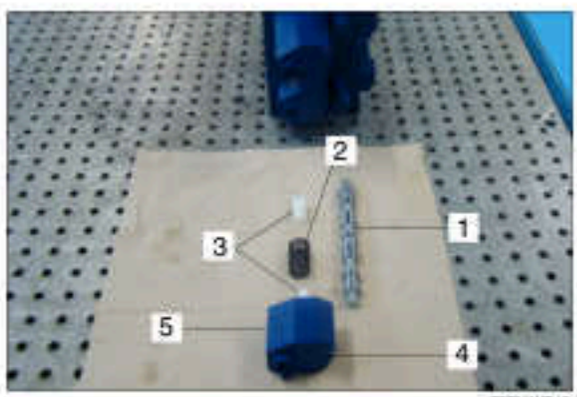
T5T96WE41

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



T5T96WE42

1 Spool
2 Spring
2 Spring ratainer
4 Bolt
5 Cover



T5T96WE43

(2) Port relief valve

- Tool : Spanner 24 mm

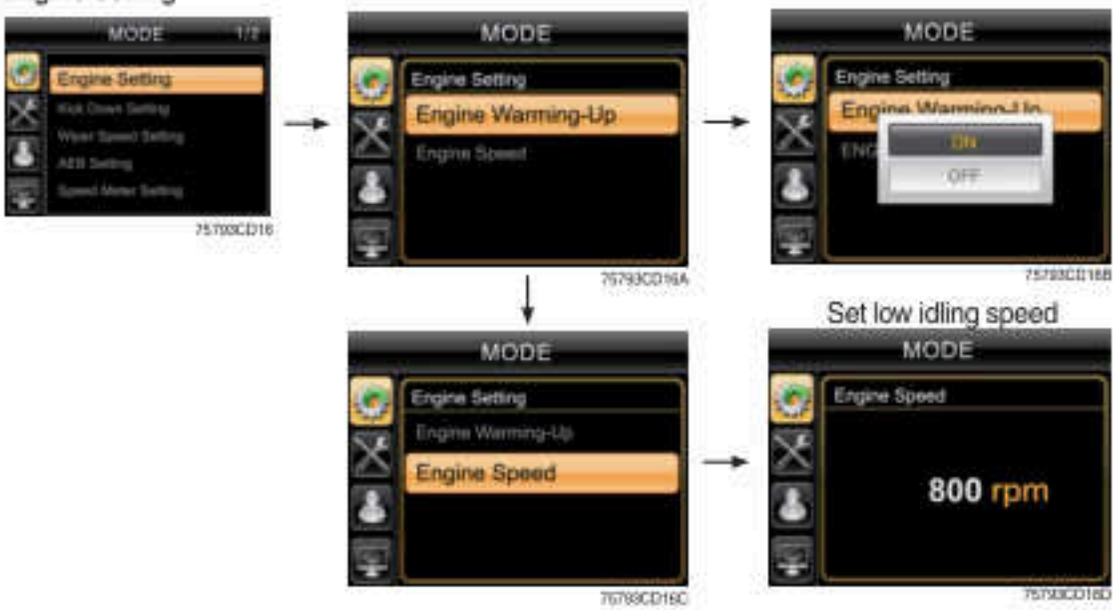


T5T96WE44

MidWestTech | Hyundai HL740-9 Wheel Loader Service Manual | Publication HL740-9 Order the manual at mid-west-tech.com >

(2) Mode

① Engine setting



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



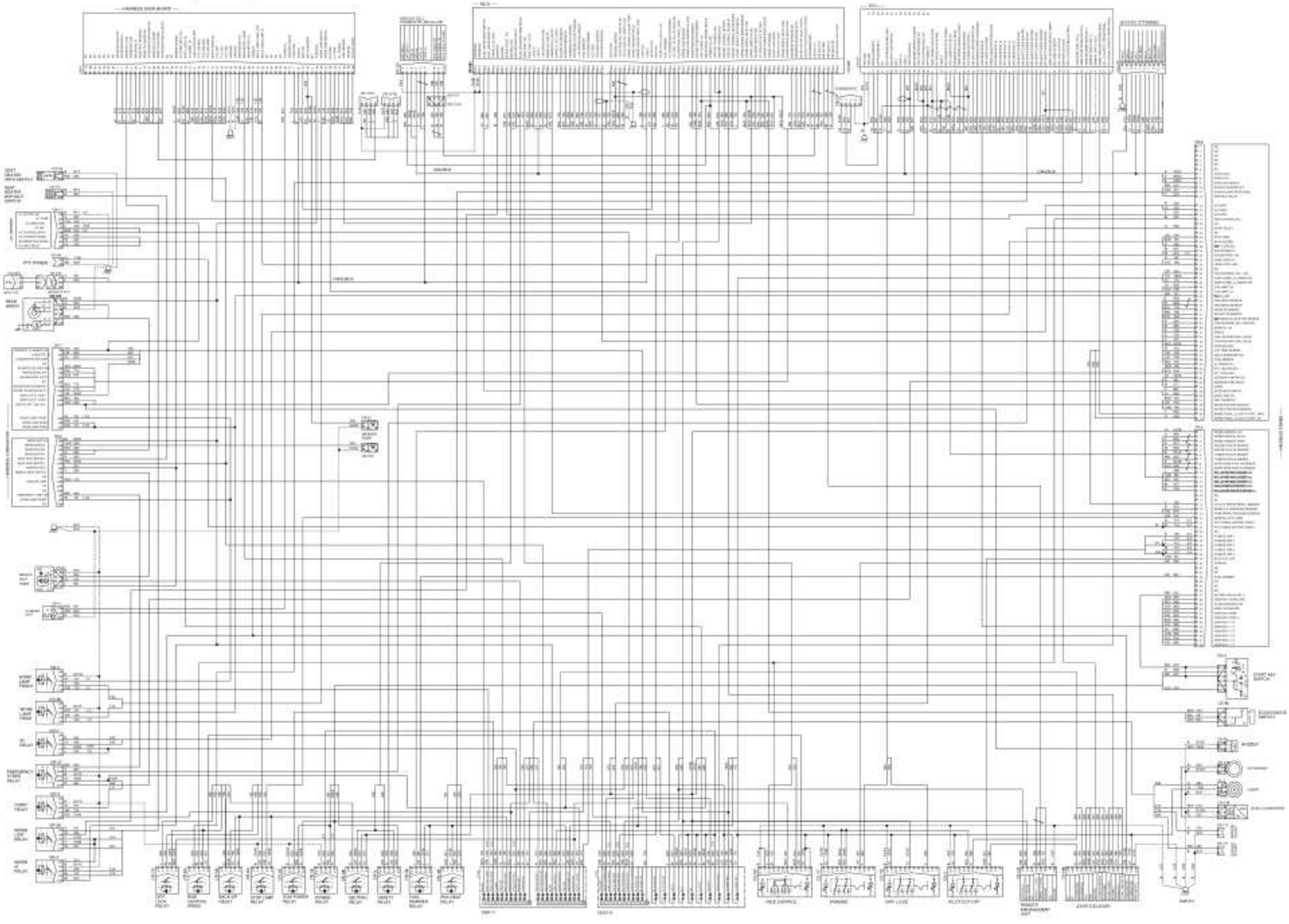
- Select reverse interval or reverse time.
- Set reverse interval (30~300 min) or reverse time (30~300 sec).

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

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

MidWestTech | Hyundai HL740-9 Wheel Loader Service Manual | Publication HL740-9 Order the manual at mid-west-tech.com >

· ELECTRICAL CIRCUIT (1/2) : Machine serial No.-#0215 (HL740-9)
Machine serial No.-#0036 (HL740TM-9)



MidWestTech | Hyundai HL740-9 Wheel Loader Service Manual | Publication HL740-9

Order the manual at mid-west-tech.com >