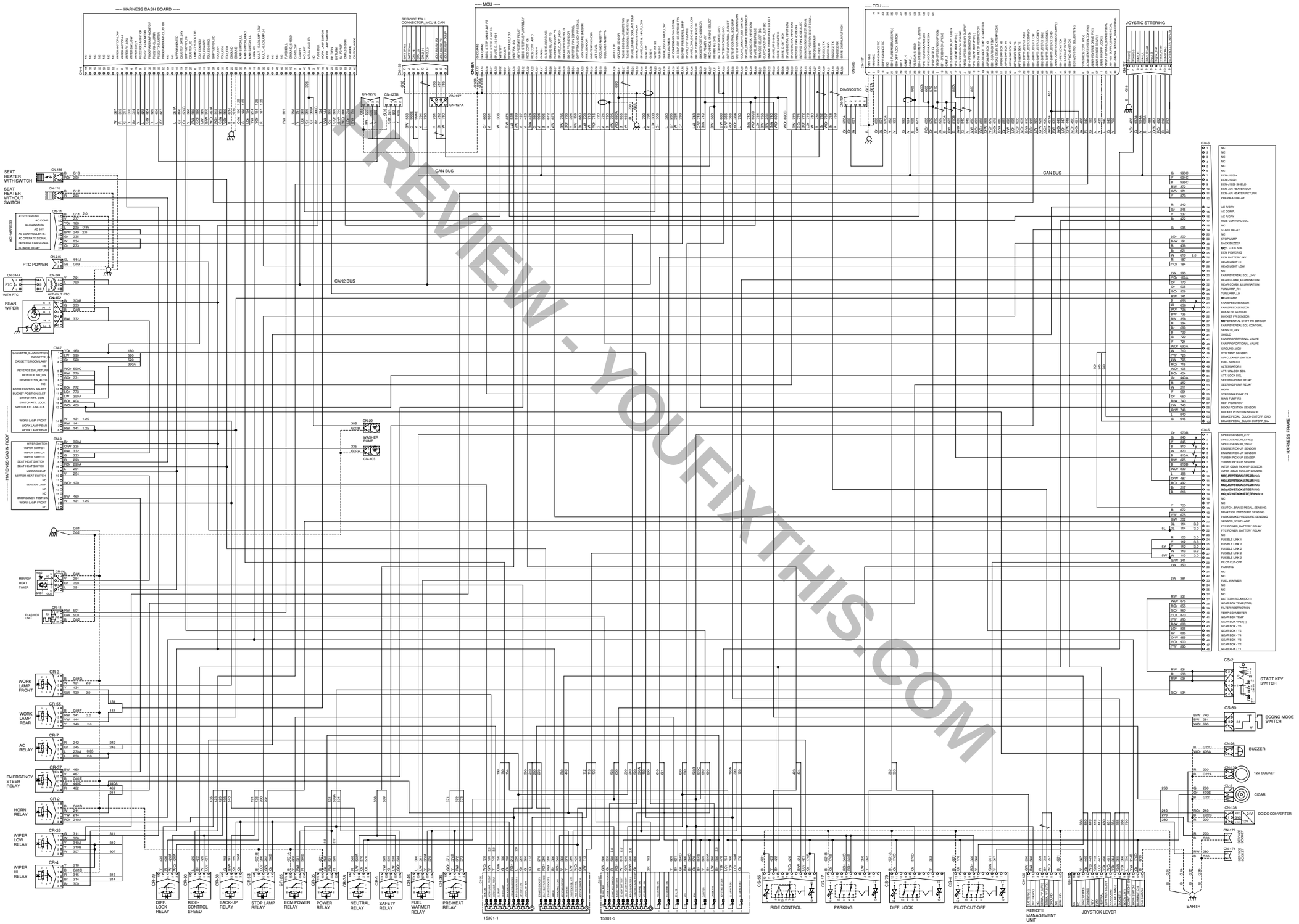
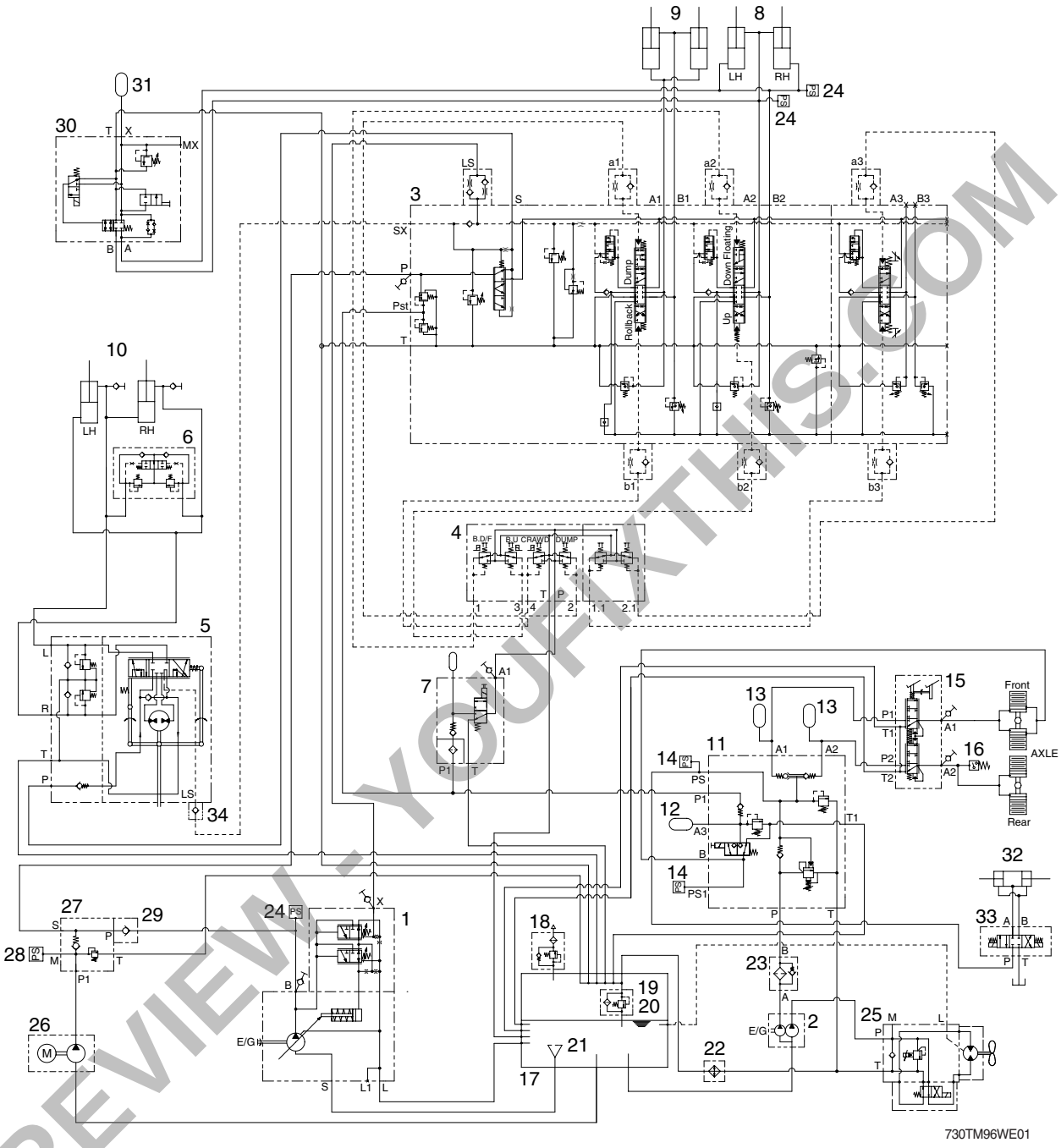


PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

HYDRAULIC CIRCUIT (HL730TM-9)



1	Main pump	13	Accumulator	25	Fan motor
2	Fan & brake pump	14	Pressure sensor	26	Pump motor (opt)
3	Main control valve	15	Brake valve	27	Check block (opt)
4	Remote control valve	16	Pressure switch	28	Pressure sensor (opt)
5	Steering unit	17	Hydraulic tank	29	Check valve (opt)
6	Cushion valve	18	Air breather	30	Ride control valve (opt)
7	Safety valve	19	Return filter	31	Accumulator (opt)
8	Boom cylinder	20	By pass valve	32	Quick coupler cylinder (opt)
9	Bucket cylinder	21	Strainer	33	Solenoid valve (opt)
10	Steering cylinder	22	Oil cooler	34	Check valve
11	Cut-off valve	23	Pressure filter		
12	Accumulator	24	Pressure sensor		

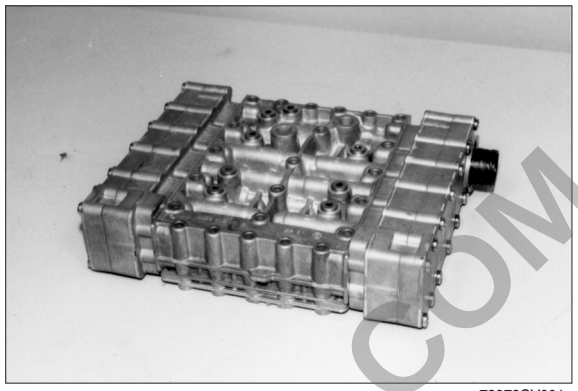
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

1. CONTROL VALVE

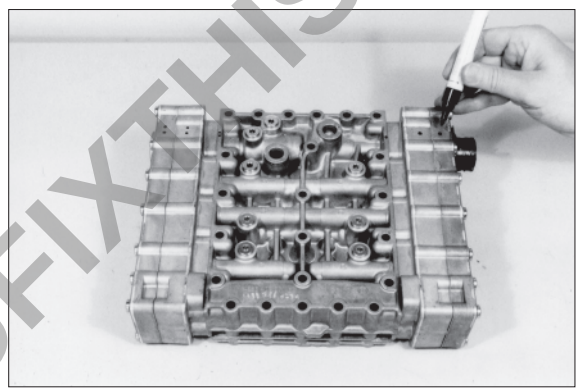
1) DISASSEMBLY

(1) Illustration on the right shows the complete control unit.



73073CV001

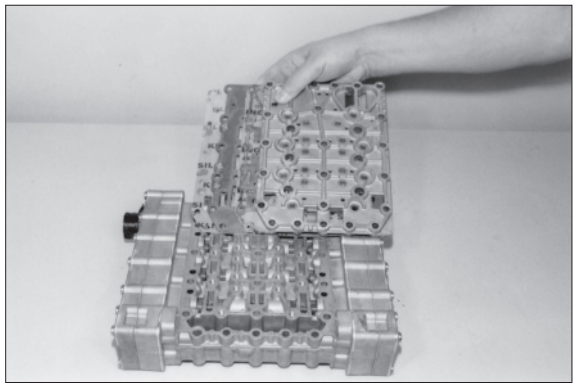
(2) Mark the installation position of the different covers, the housing and cable harness with the valve housing.



73073CV002

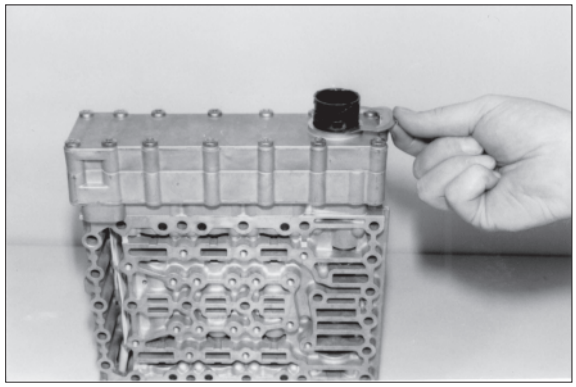
(3) Loosen socket head screws.
Separate duct plate, 1st gasket, intermediate plate and 2nd gasket from the valve housing.

※ Special tool
Box spanner 5873 042 002



73073CV003

(4) Remove retaining clip.



73073CV004

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

5. TIGHTENING TORQUE OF MAJOR COMPONENT

No.	Descriptions		Bolt size	Torque	
				kgf · m	lbf · ft
1	Engine	Engine mounting bolt, nut (rubber, 4EA)	M16×2.0	29.7 ± 4.5	215 ± 32.5
2		Engine mounting bolt (bracket)	M12×1.75	10.7 ± 1.6	77.4 ± 11.6
3		Radiator mounting bolt	M16×2.0	29.7 ± 4.5	215 ± 32.5
4		Fuel tank mounting bolt, nut	M16×2.0	29.7 ± 4.5	215 ± 32.5
5		Air cleaner mounting bolt	M 8×1.5	2.5 ± 0.5	18.1 ± 3.6
6		Muffler mounting nut	M12×1.75	10.7 ± 1.6	77.4 ± 11.6
7	Hydraulic system	Main pump housing mounting bolt	M12×1.75	12.8 ± 3.0	92.6 ± 21.7
8		Fan & brake pump housing mounting bolt	M10×1.5	6.9 ± 1.4	50 ± 10.1
9		Main control valve mounting bolt	M10×1.5	6.9 ± 1.4	50 ± 10.1
10		Steering unit mounting bolt	M10×1.5	6.9 ± 1.4	50 ± 10.1
11		Stop valve	M10×1.5	6.9 ± 1.4	50 ± 10.1
12		Cushion valve	M8×1.25	2.5 ± 0.5	18.1 ± 3.6
13		Brake valve mounting bolt	M10×1.25	6.9 ± 1.4	50 ± 10.1
14		Cut-off valve mounting bolt	M12×1.75	12.8 ± 3.0	92.6 ± 21.7
15		Remote control lever mounting bolt	M6×1.0	1.1 ± 0.2	8.0 ± 1.4
16		Safety valve	M10×1.5	6.9 ± 1.4	50 ± 10.1
17		Hydraulic oil tank mounting bolt	M16×2.0	29.7 ± 4.5	215 ± 32.5
18	Power train system	Transmission mounting bolt, nut (rubber, 4EA)	M20×2.5	57.9 ± 8.7	419 ± 63
19		Transmission mounting bolt (bracket, T/C side)	M16×2.0	18.4 ± 2.0	133 ± 14.5
20		Front axle mounting bolt, nut	M24×2.0	100 ± 15	723 ± 108
21		Rear axle support mounting bolt, nut	M24×2.0	100 ± 15	723 ± 108
22		Tire mounting nut	M22×1.5	79 ± 2.5	571 ± 18.1
23		Drive shaft joint mounting bolt, nut	3/8-24UNF	2.8 ± 0.4	20.3 ± 2.9
24	Others	Counterweight mounting bolt	M30×3.5	199 ± 30	1439 ± 216
25		Operator's seat mounting bolt	M8×1.25	3.4 ± 0.8	24.6 ± 5
26		ROPS Cab mounting bolt (4EA)	M20×2.5	58 ± 8.7	419 ± 63

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

4. FAULT CODE

1) MACHINE FAULT CODE

HCESPN	FMI	Description
101	3	Hydraulic oil temperature sensor circuit - Voltage above normal, or shorted to high source (or open circuit)
	4	Hydraulic oil temperature sensor circuit - Voltage below normal, or shorted to low source
145	5	Engine cooling fan EPPR valve circuit - Current below normal, or open circuit
	6	Engine cooling fan EPPR valve bircuit - Current above normal
172	4	Boom up lever detent solenoid circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Boom up lever detent solenoid circuit - Current above normal
173	4	Boom down lever detent solenoid circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Boom down lever detent solenoid circuit - Current above normal
174	4	Bucket lever detent solenoid circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Bucket lever detent solenoid circuit - Current above normal
181	4	Engine cooling fan reverse solenoid circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Engine cooling fan reverse solenoid circuit - Current above normal
183	4	Engine cooling fan reverse driving status signal circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Engine cooling fan reverse driving status signal circuit - Current above normal
187	4	Emergency steering pump relay circuit - Voltage below normal, or shorted to low source (or open circuit)
	6	Emergency steering pump relay circuit – Current above normal
202	0	Steering main pump pressure sensor data above normal range (or open circuit)
	1	Steering main pump pressure sensor data below normal range
	2	Steering main pump pressure sensor data error
	4	Steering main pump pressure sensor circuit - Voltage below normal, or shorted to low source
203	0	Emergency steering pump pressure sensor data above normal range (or open circuit)
	1	Emergency steering pump pressure sensor data below normal range
	2	Emergency steering pump pressure sensor data error
	4	Emergency steering pump pressure sensor circuit - Voltage below normal, or shorted to low source
204	0	Boom cylinder pressure sensor data above normal range (or open circuit)
	1	Boom cylinder pressure sensor data below normal range
	2	Boom cylinder pressure sensor data error
	4	Boom cylinder pressure sensor circuit - Voltage below normal, or shorted to low source
205	0	Bucket cylinder pressure sensor data above normal range (or open circuit)
	1	Bucket cylinder pressure sensor data below normal tange
	2	Bucket cylinder pressure sensor data error
	4	Bucket cylinder pressure sensor circuit - Voltage below normal, or shorted to low source

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

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.)

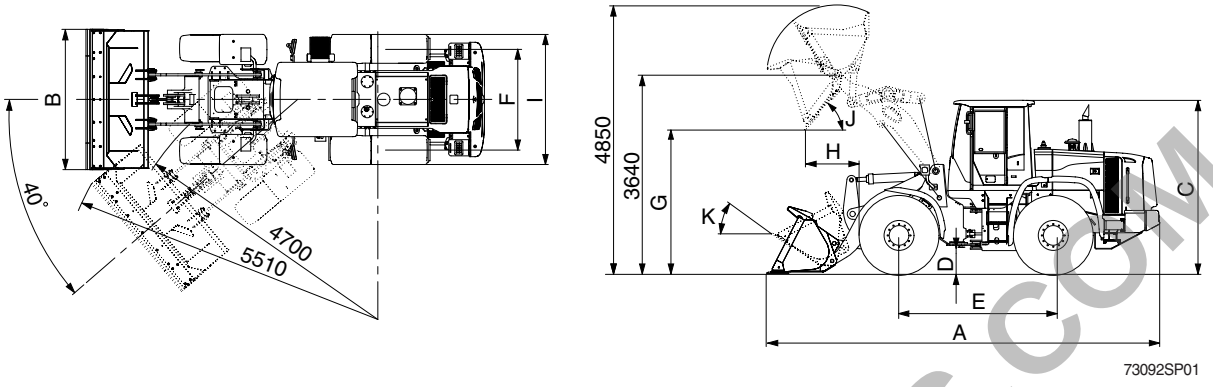
Problem	Cause	Remedy
Transmission slippage	Low oil level.	Add oil.
	Wrong oil grade.	Change oil.
	Restricted transmission pump suction screen.	Remove and clean screen.
	Leak in transmission control valve or gasket.	Remove valve and inspect gaskets.
	Low transmission pump flow due to worn pump.	Do transmission 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 3-32~3-51.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

2. SPECIFICATIONS

1) WITH BOLT-ON CUTTING EDGE TYPE BUCKET (HL730-9)



Description			Unit	Specification
Operating weight			kg (lb)	9800 (21600)
Bucket capacity		Struck	m^3 (yd^3)	1.6 (2.1)
		Heaped		1.9 (2.5)
Overall length		A	mm (ft-in)	6950 (22' 10")
Overall width		B		2450 (8' 0")
Overall height		C		3170 (10' 5")
Ground clearance		D		370 (1' 3")
Wheelbase		E		2750 (9' 0")
Tread		F		1850 (6' 0")
Dump clearance at 45°		G		2700 (8' 10")
Dump reach (full lift)		H		1040 (3' 5")
Width over tires		I		2295 (7' 6")
Dump angle		J	degree (°)	48
Roll back angle (carry position)		K		47
Cycle time		Lift (with load)	sec	5.4
		Dump (with load)		1.0
		Lower (empty)		2.8
Maximum travel speed			km/hr (mph)	37.2 (23.2)
Braking distance			m (ft-in)	12 (39' 4")
Minimum turning radius (center of outside tire)				4.7 (15' 5")
Gradeability			degree (°)	30
Travel speed	Forward	First gear	km/hr (mph)	6.1 (3.8)
		Second gear		11.2 (7.0)
		Third gear		22.2 (13.8)
		Fourth gear		37.2 (23.2)
	Reverse	First gear		6.4 (4.0)
		Second gear		11.8 (7.4)
		Third gear		23.4 (14.6)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.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 Engine Speed and Stall rpm 2-7
Group 3 Fuel Warmer System 2-8

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 6-40
Group 3 Tests and Adjustments 6-50
Group 4 Disassembly and Assembly 6-65

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Millimeters to inches

1mm = 0.03937in

	0	1	2	3	4	5	6	7	8	9
0		0.039	0.079	0.118	0.157	0.197	0.236	0.276	0.315	0.354
10	0.394	0.433	0.472	0.512	0.551	0.591	0.630	0.669	0.709	0.748
20	0.787	0.827	0.866	0.906	0.945	0.984	1.024	1.063	1.102	1.142
30	1.181	1.220	1.260	1.299	1.339	1.378	1.417	1.457	1.496	1.536
40	1.575	1.614	1.654	1.693	1.732	1.772	1.811	1.850	1.890	1.929
50	1.969	2.008	2.047	2.087	2.126	2.165	2.205	2.244	2.283	2.323
60	2.362	2.402	2.441	2.480	2.520	2.559	2.598	2.638	2.677	2.717
70	2.756	2.795	2.835	2.874	2.913	2.953	2.992	3.032	3.071	3.110
80	3.150	3.189	3.228	3.268	3.307	3.346	3.386	3.425	3.465	3.504
90	3.543	3.583	3.622	3.661	3.701	3.740	3.780	3.819	3.858	3.898

Kilogram to Pound

1kg = 2.2046lb

	0	1	2	3	4	5	6	7	8	9
0		2.20	4.41	6.61	8.82	11.02	13.23	15.43	17.64	19.84
10	22.05	24.25	26.46	28.66	30.86	33.07	35.27	37.48	39.68	41.89
20	44.09	46.30	48.50	50.71	51.91	55.12	57.32	59.5.	61.73	63.93
30	66.14	68.34	70.55	72.75	74.96	77.16	79.37	81.57	83.78	85.98
40	88.18	90.39	92.59	94.80	97.00	99.21	101.41	103.62	105.82	108.03
50	110.23	112.44	114.64	116.85	119.05	121.25	123.46	125.66	127.87	130.07
60	132.28	134.48	136.69	138.89	141.10	143.30	145.51	147.71	149.91	152.12
70	154.32	156.53	158.73	160.94	163.14	165.35	167.55	169.76	171.96	174.17
80	176.37	178.57	180.78	182.98	185.19	187.39	189.60	191.80	194.01	196.21
90	198.42	200.62	202.83	205.03	207.24	209.44	211.64	213.85	216.05	218.26

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

2) PIPE AND HOSE (FLARE type)

Thread size	Width across flat (mm)	kgf · m	lbf · ft
1/4"	19	4	28.9
3/8"	22	5	36.2
1/2"	27	9.5	68.7
3/4"	36	18	130
1"	41	21	152
1-1/4"	50	35	253

3) PIPE AND HOSE (ORFS type)

Thread size	Width across flat (mm)	kgf · m	lbf · ft
9/16-18	19	4	28.9
11/16-16	22	5	36.2
13/16-16	27	9.5	68.7
1-3/16-12	36	18	130
1-7/16-12	41	21	152
1-11/16-12	50	35	253

4) FITTING

Thread size	Width across flat (mm)	kgf · m	lbf · ft
1/4"	19	4	28.9
3/8"	22	5	36.2
1/2"	27	9.5	68.7
3/4"	36	18	130
1"	41	21	152
1-1/4"	50	35	253

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Temperature increases in the converter oil as well as overheated brakes will be the consequences to be find out later.
Neutral position of the selector switch at higher machine speeds (above stepping speed) is not admissible.
Either a suitable gear is to be shifted immediately, or the machine must be stopped at once.

(4) Independent calibration of the shifting elements (AEB)

The AEB has the task to compensate tolerances (plate clearance and pressure level) which are influencing the filling procedure of the clutches. For each clutch, the correct filling parameters are determined in one test cycle for :

- Period of the quick-filling time
- Level of the filling compensating pressure

The filling parameters are stored, together with the AEB-program and the driving program in the transmission electronics. Because the electronics will be separately supplied, the AEB-cycle must be started only after the installation of both components in the machine, thus ensuring the correct mating(Transmission and electronics).

※ It is imperative, to respect the following test conditions :
- Shifting position neutral
- Engine in idling speed
- Parking brake actuated
- Transmission in operating temperature

※ After a replacement of the transmission, the electrohydraulic control or the TCU in the machine, the AEB-cycle must be as well carried out again.

The AEB-cylcle continues for about 3 to 4 minutes. The determined filling parameters are stored in the EEProm of the electronics. In this way, the error message F6 shown on the display will be cancelled also at non-performed AEB.

(5) Pressure cut-off

In order to provide the full engine power for the hydraulic system, the control can be enlarged for the function of a pressure cut-off in the 1st and 2nd speed. In this way, the pressure in the power-shift clutches will be cut-off, and the torque transmission in the drive train will be eliminated by it. This function will be released at the actuation of a switch, arranged on the brake pedal.
For a soft restart, the pressure will be build-up via a freely programmable characteristic line.

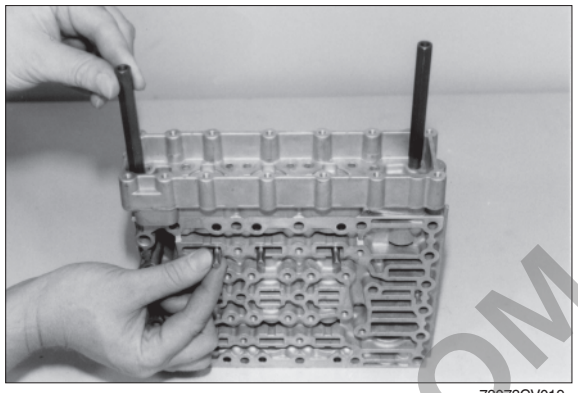
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Fault code (Hex)	Meaning of the fault code possible reason for fault detection	Reaction of the TCU	Possible steps to repair
C3	Overtemp converter output TCU measured a oil temperature at the converter output that is the allowed threshold	No reaction OP mode : Normal	· Cool down machine · Check oil level · Check temperature sensor
C4	S.C. to ground at joystick status indicator TCU detected a wrong voltage at the output pin, that looks like a S.C. to vehicle ground · Cable is defective and is contacted to vehicle ground · Joystick status indicator has an internal defect · Connector pin is contacted to vehicle ground	No reaction OP mode : Normal	· Check the cable from TCU to joystick status indicator · Check the connectors from joystick status indicator to TCU · Check the resistance* of joystick status indicator * See page 3-52
C5	S.C. to battery voltage at joystick status indicator TCU detected a wrong voltage at the output pin, that looks like a S.C. to battery voltage · Cable is defective and is contacted to battery voltage · Joystick status indicator has an internal defect · Connector pin is contacted to battery voltage	No reaction OP mode : Normal	· Check the cable from TCU to joystick status indicator · Check the connectors from joystick status indicator to TCU · Check the resistance* of joystick status indicator * See page 3-52
C6	O.C. at joystick status indicator TCU detected a wrong voltage at the output pin, that looks like a O.C. for this output pin · Cable is defective and has no connection to TCU · Joystick status indicator has an internal defect · Connector pin has no connection to TCU	No reaction OP mode : Normal	· Check the cable from TCU to joystick status indicator · Check the connectors from joystick status indicator to TCU · Check the resistance* of joystick status indicator * See page 3-52

PREVIEW - YOUFIXTHIS.COM

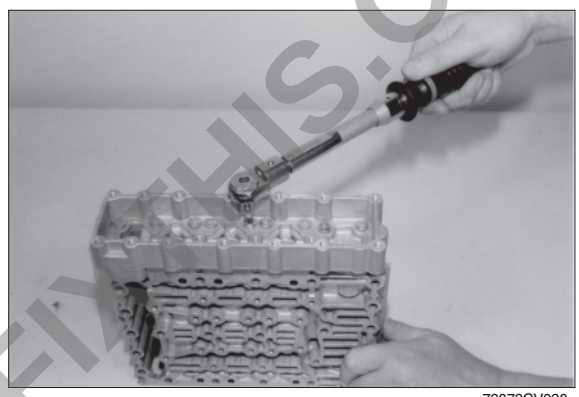
Download full manual at youfixthis.com



73073CV019

(4) Fasten housing cover by means of socket head screws.
 · Torque limit : 0.56 kgf · m (4.06 lbf · ft)

※ Special tool
 Box spanner 5873 042 002

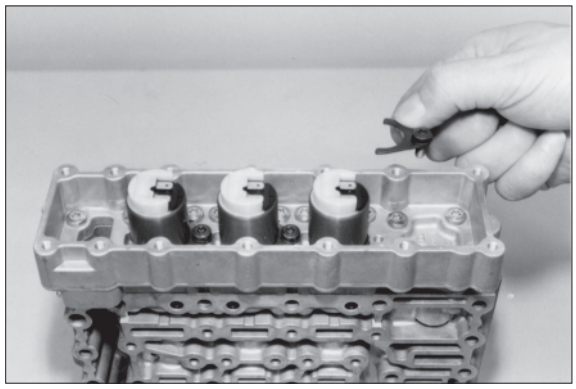


73073CV020

(5) Introduce pressure regulators and fix by means of fixing plates and socket head screws.

※ Install fixing plate, with the claw showing downward.
 Pay attention to the radial installation position of the pressure regulators, see figure.
 · Torque limit : 0.56 kgf · m (4.06 lbf · ft)

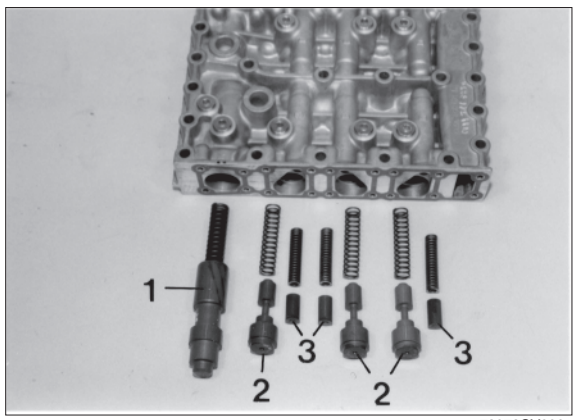
※ Special tool
 Box spanner 5873 042 002



73073CV021

Pre assemble opposite side

(6) Illustration on the right shows the following components.
 1 Main pressure valve
 2 Follow on slide
 3 Vibration damper

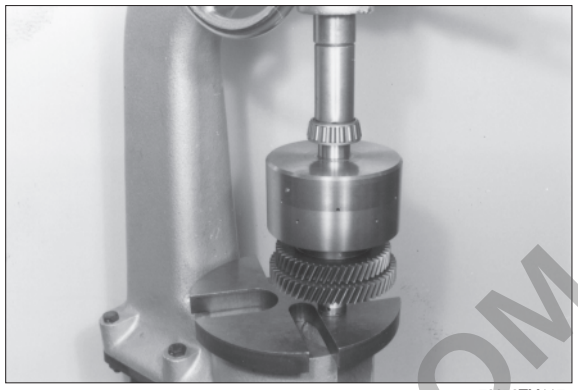


73073CV022

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

㉖ Press tapered roller bearing against shoulder.
Install opposite tapered roller bearing.



73073TM117

㉗ Check function of clutch by means of compressed air.

※ At correctly installed components, the closing, respectively opening of the clutch is clearly audible.



73073TM118

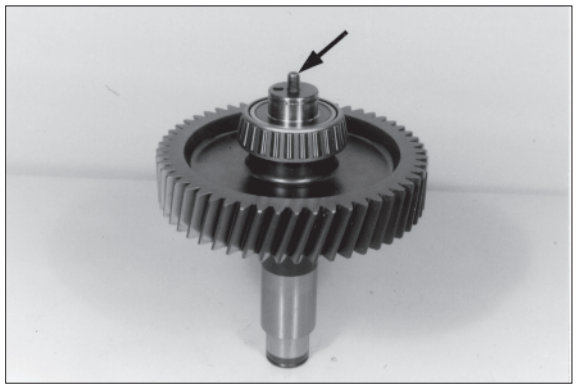
(2) Assemble K1, K2 and K3 clutch

※ The following figures describe the assemble of the K3 clutch.
The assembly of the K1 and K2 clutches has to be carried out accordingly.

① Install stud (arrow).

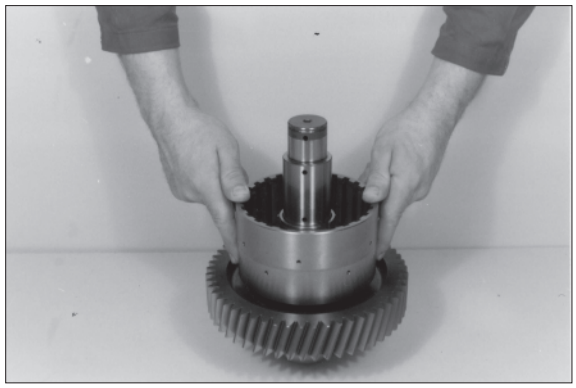
※ Use Loctite.

· Torque limit : 1.73 kgf · m (12.5 lbf · ft)



73073TM125

② Assemble plate carrier until contact is obtained.



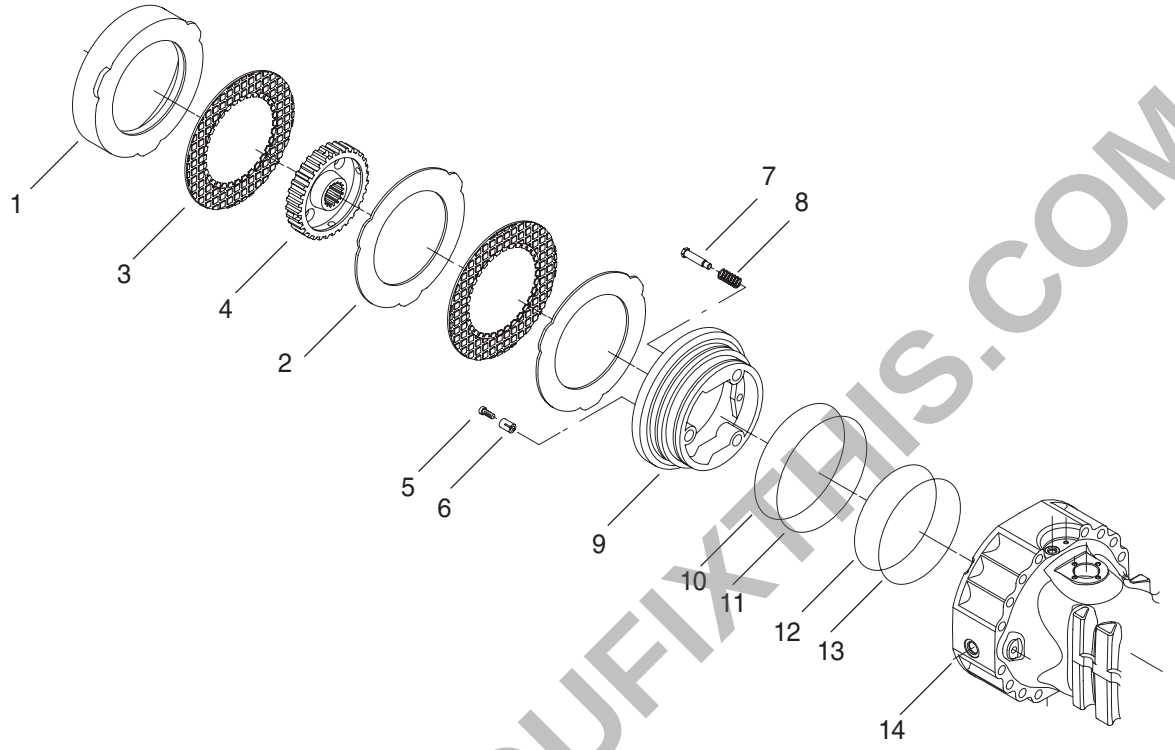
73073TM126

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

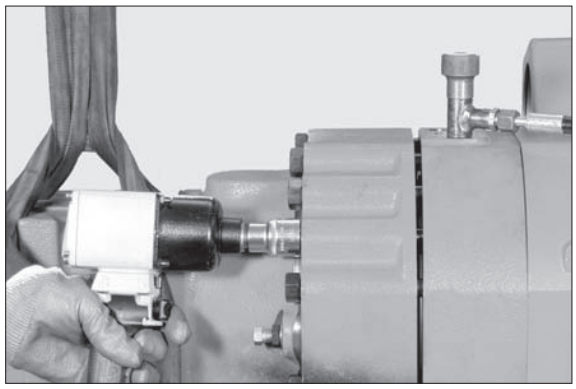
3. AXLE

1) SERVICE BRAKE DISASSEMBLY



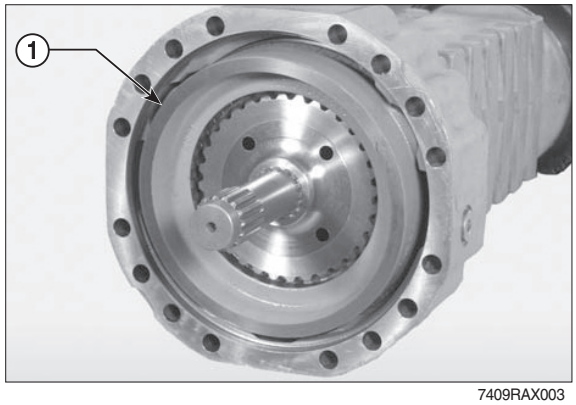
7409RAX001

(1) Sling the arm to be removed and connect it to a hoist.
Loosen and remove screws.



7409RAX002

(2) Note down their order of assembly and remove the counterwasher (1).



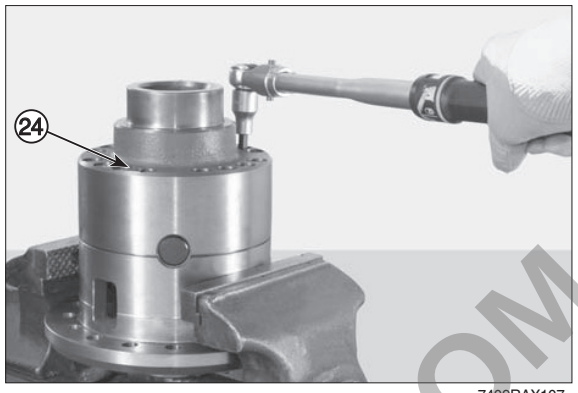
7409RAX003

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

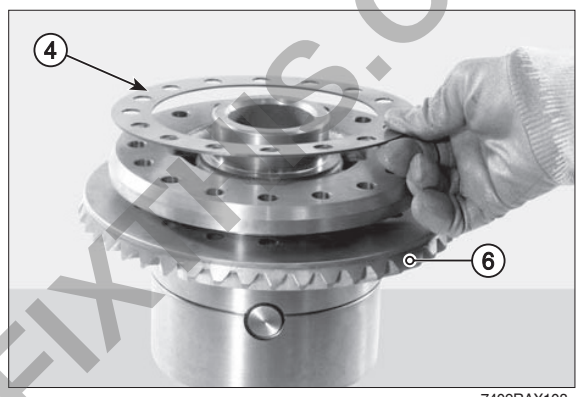
(7) Fit the complete differential unit in a vice and tighten the screws (24) holding the two half boxes together to a torque of 8.16 kgf · m (59 lbf · ft).

※ Tighten screws using the alternate and criss-cross method.



7409RAX107

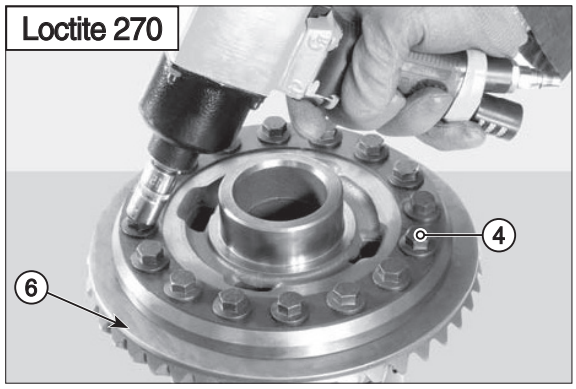
(8) Install the spacer (4) and the crown (6).



7409RAX108

(9) Mount the gear ring (6) and fasten it to the differential box with screws (4).

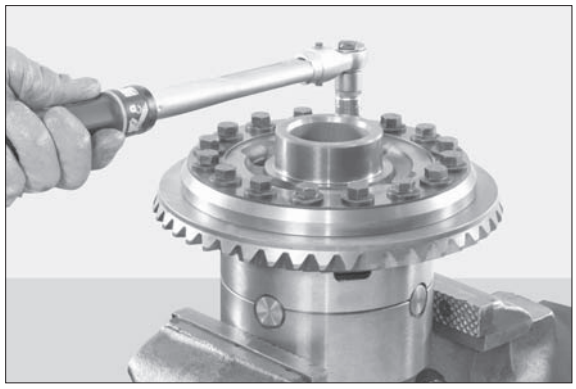
※ Use only new screws.



7409RAX109

(10) Lock the gear ring (6) by tightening the screws (4) to a torque of 15.3 kgf · m (111 lbf · ft).

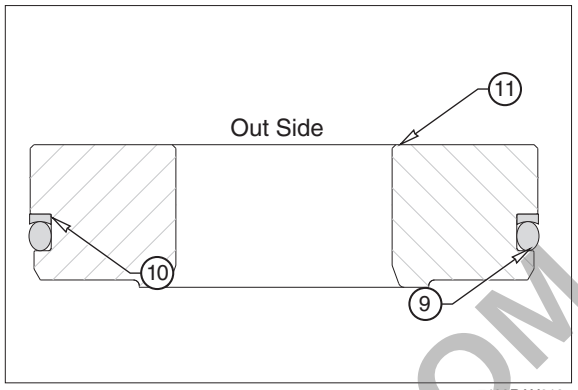
※ Use the alternate and criss-cross tightening method.


7409RAX110

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

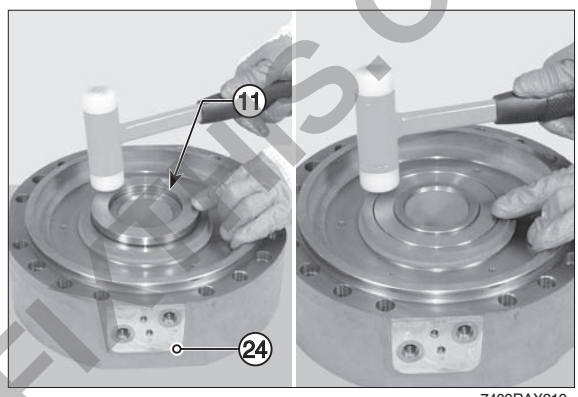
※ The O-rings always have to be assembled from the pressure facing side.



7409RAX218

(6) Using a plastic hammer, ram the piston (11) into the cylinder (24).

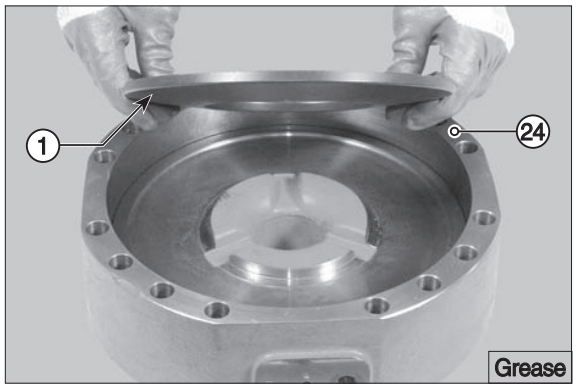
※ Lightly hammer all around the edge in an alternate sequence.



7409RAX219

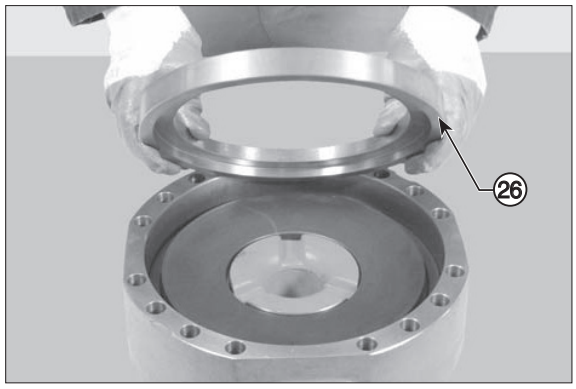
(7) Position the belleville washers (1) and engage the cylinder (24).

※ Check the sense of direction of belleville washers (1) and relative centering.



7409RAX220

(8) Install the centering device (26) in the cylinder.



7409RAX221

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

GROUP 2 OPERATIONAL CHECKS AND TROUBLESHOOTING

1. OPERATIONAL CHECKS

This procedure is designed so the mechanic can make a quick check of the system using a minimum amount of diagnostic equipment. If you need additional information, read **structure and function**, Group 1.
A location will be required which is level and has adequate space to complete the checks.

The engine and all other major components must be at operating temperature for some checks.

Locate system check in the left column and read completely, following the sequence from left to right. Read each check completely before performing.

At the end of each check, if no problem is found (OK), that check is complete or an additional check is needed. If problem is indicated (NOT OK), you will be given repair required and group location.
If verification is needed, you will be given next best source of information:

Chapter 2 : Troubleshooting
Group 3 : Tests and adjustments

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

GROUP 2 OPERATIONAL CHECKS AND TROUBLESHOOTING

This procedure is designed so the service man can make a quick check of the steering system using a minimum amount of diagnostic equipment. If you need additional information, prefer to structure and function in group 1.

A location will be required which is level and has adequate space to complete the checks.

The engine and all other major components must be at operating temperature for some checks.

Locate system check in the left column and read completely, following this sequence from left to right.
Read each check completely before performing.

At the end of each check, if no problem is found(OK), that check is complete or an additional check is needed. If problem is indicated(NOT OK), you will be given repair required and group location.

If verification is needed, you will be given next best source of information :

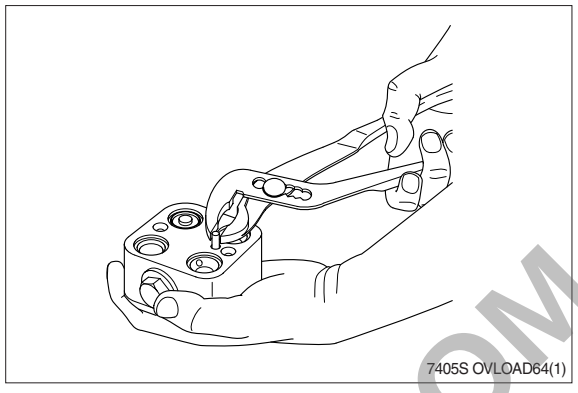
Chapter 2 : Troubleshooting
Group 3 : Tests and adjustments

PREVIEW - YOUFIXTHIS.COM

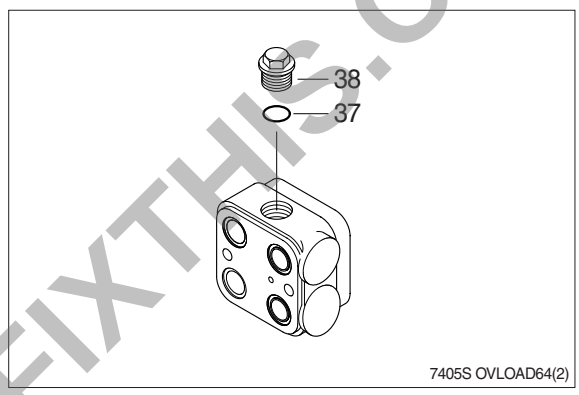
Download full manual at youfixthis.com

3) DISASSEMBLY

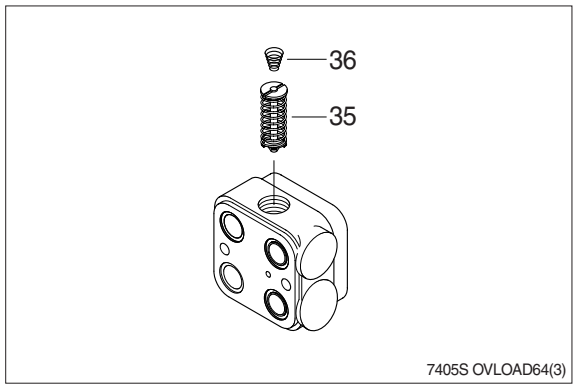
(1) Remove the rolled pin.



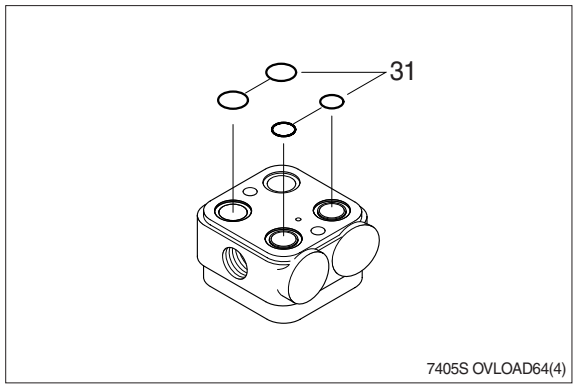
(2) Remove the plug (38) and O-ring (37).



(3) Remove the spring (36) and shock valve (35).



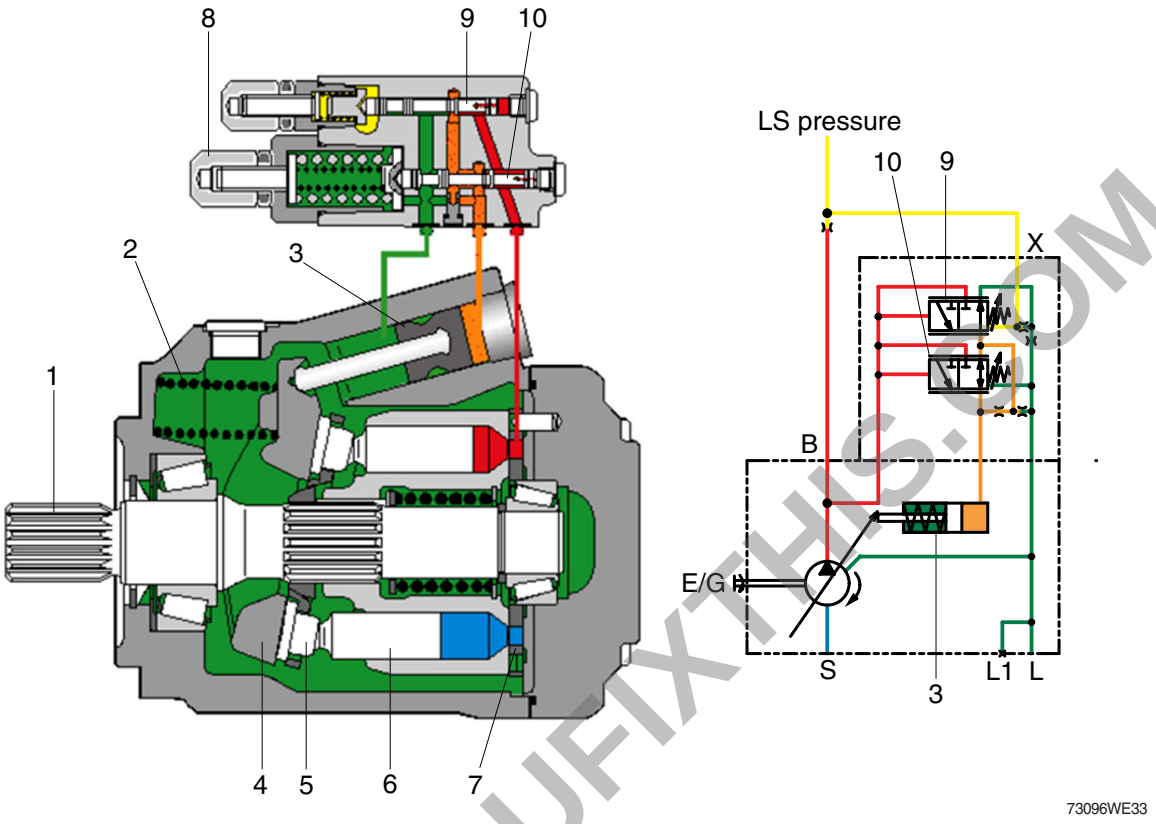
(4) Remove the O-ring set (31).



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

2) FUNCTION



1	Drive shaft	6	Cylinder
2	Counter spring	7	Control plate
3	Counter piston	8	Pressure and flow compensator valve
4	Swash plate	9	Flow compensator valve
5	Piston shoe	10	Pressure compensator valve

The main pump is variable piston pump. The main pump is flow controlled by LS signal. When the steering or loader are not being used, the pumps are at low pressure standby.

The load sensing pressure that is sensed from hydraulic systems flow to flow compensator valve (9). This spool keeps the pump output at a level that is necessary to fulfill the requirements for the system flow and for the pressure.

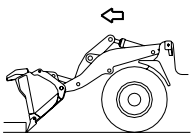
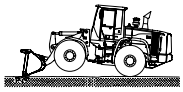
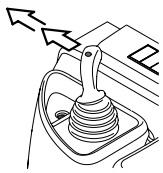
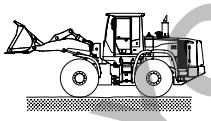
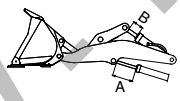
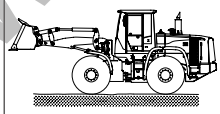
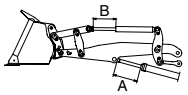
The pressure compensator valve (10) also limits maximum system pressure. The pressure compensator valve (10) prevents damage to hydraulic components from excessive pressure.

The swivel angle of the pumps is controlled by counter spring (2) and control piston (3). Counter spring (2) cause swash plate (4) to move at maximum displacement or causes swash plate (4) to upstroke and control piston (3) causes swash plate (4) to destroke the pump.

Flow compensator valve (9) and/or pressure compensator valve (10) changes pump output by regulating the pump discharge pressure that is acting on control piston (3).

PREVIEW - YOUFIXTHIS.COM

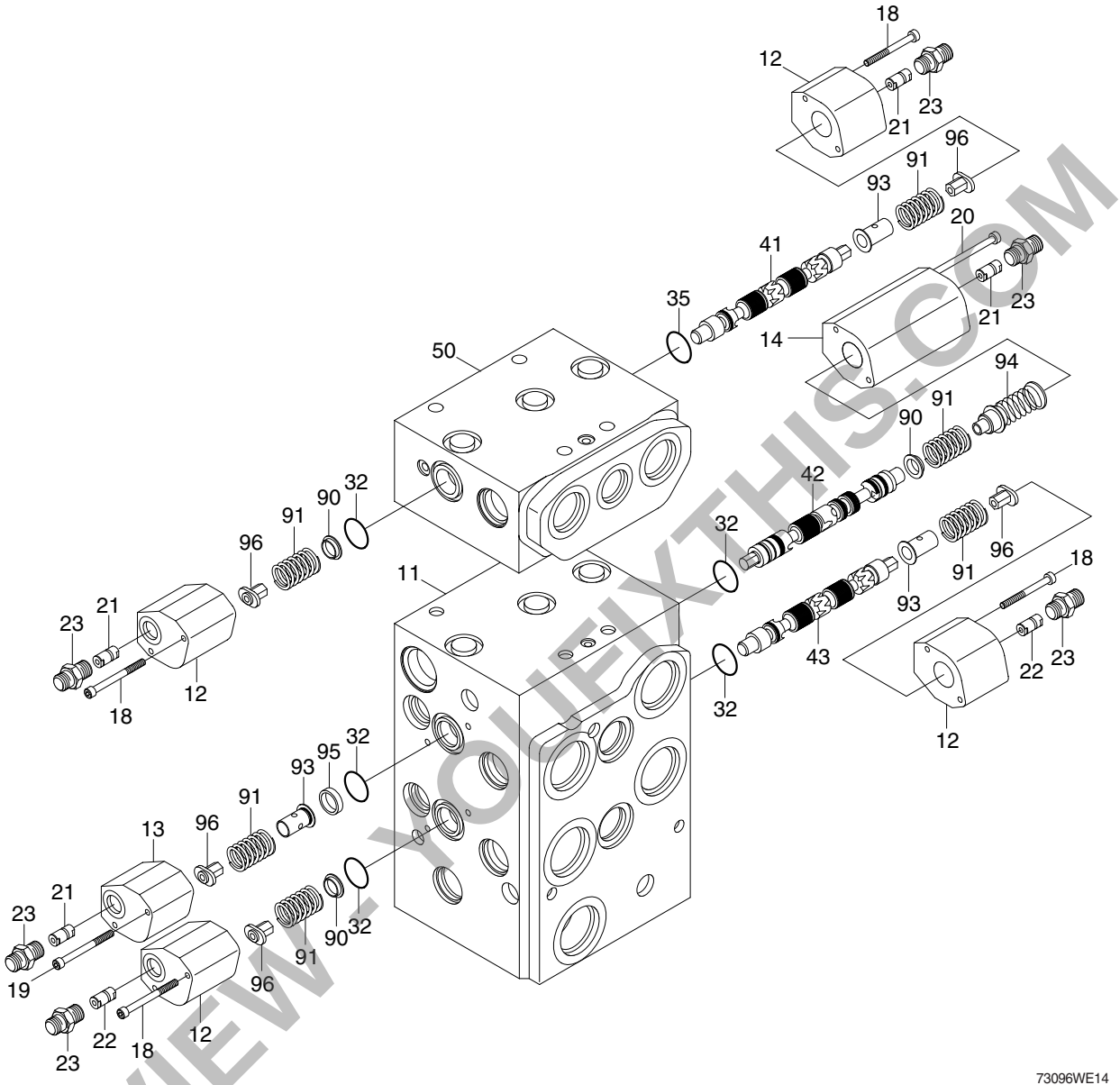
Download full manual at youfixthis.com

Item	Description	Service action
Bucket rollback circuit relief valve check	 Position bucket at a 45˚ angle against an immovable object. Engage transmission in 3rd speed forward. **LOOK** : Bucket angle must not change.	**OK** Check complete. **NOT OK** Replace boom lower check valve.
Bucket dump circuit relief valve low pressure check	 Raise front of machine which bucket at 45˚ angle. Backdrag with bucket while observing bucket angle. **LOOK** : Bucket must not rollback	**OK** Go to next check. **NOT OK** Do loader system and circuit relief valve test at page 6-56.
Pilot control valve float check Run engine at low idle.	  With the bucket partially dumped, lower boom to raise front of machine. Push control lever to the float detent position and release lever. **LOOK** : Front of machine lower to the ground and valve must remain in float position when lever is released.	**OK** Check complete. **NOT OK** Do pilot control valve pressure test in group 3.
Boom cylinder and bucket cylinder drift check Heat hydraulic oil to operating temperature.	 Set the boom and bucket horizontal, then stop the engine. Stop the engine, wait for 5 minutes, then start measuring.  Measure the amount the lift and dump cylinder rods retract during 15 minutes. (unloaded bucket) A : Retraction of boom cylinder rod B : Retraction of bucket cylinder rod  Boom cylinder must drift less than 28 mm  Bucket cylinder must drift less than 47 mm	**OK** Check complete. **NOT OK** Go to next check.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

STRUCTURE (2/2)

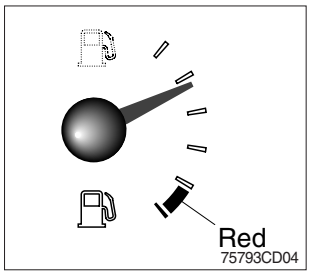


11	Housing	22	Throttle check valve	90	Spring retainer
12	Cover	23	Threaded steel pipe fitting	91	Compression spring
13	Cover	32	O-ring	93	Spring retainer
14	Cover	35	O-ring	94	Spring
18	Cylinder screw	41	Spool	95	Ring
19	Cylinder screw	42	Spool	96	Spring retainer
20	Cylinder screw	43	Spool		
21	Throttle check valve	50	Housing		

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

(2) Fuel gauge

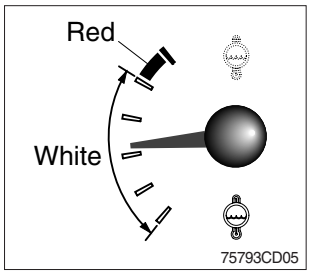


① This gauge indicates the amount of fuel in the fuel tank.

② Fill the fuel when the indicator moves red range or lamp blinks in red, refuel as soon as possible to avoid running out of fuel.

※ **If the gauge indicates below red range even though the machine is on the normal condition, check the electric device as that can be caused by the poor connection of electricity or sensor.**

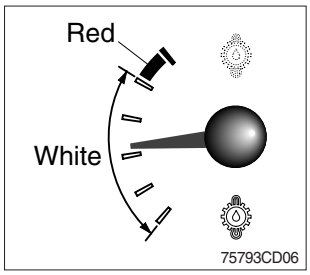
(3) Engine coolant temperature gauge



① This gauge indicates the temperature of coolant.
- White range : 40~104˚C (104~219˚F)
- Red range : Above 104˚C (219˚F)

② If the indicator is in the red range or lamp blinks in red, turn OFF the engine and check the radiator and engine.

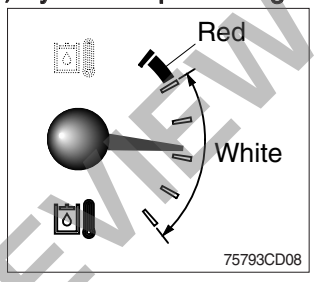
(4) Transmission oil temperature gauge



① This gauge indicates the temperature of transmission oil.
- White range : 40~107˚C (104~225˚F)
- Red range : Above 107˚C (225˚F)

② If the indicator is in the red range or lamp blinks in red, it means the transmission is overheated. Be careful that the indicator does not move into the red range.

(5) Hyd oil temperature gauge

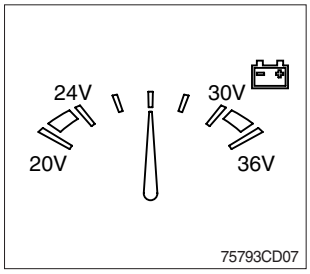


① This gauge indicates the temperature of hydraulic oil.
- White range : 40~105˚C (104~221˚F)
- Red range : Above 105˚C (221˚F)

② If the indicator is in the red range or lamp blinks in red, reduce the load on the system.

③ If the gauge stays in the red range, stop the machine and check the cause of the problem.

(6) Battery volt meter

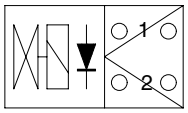
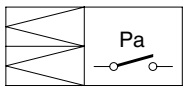
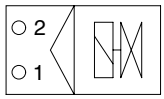
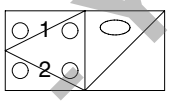
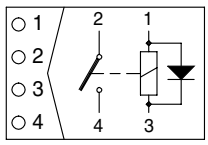
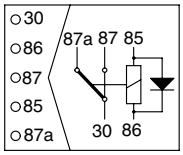


① This gauge indicates the voltage in the charging system when the engine is running.

② If the indicator is below 24V, it means that the electricity is being discharged. If the indicator is above 30V, an unusually high voltage may damage the alternator. Check the charging system in both cases.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Part name	Symbol	Specifications	Check item
Pilot cut off, parking brake, attach lock, unlock solenoid	 CN-68 CN-177 CN-71 CN-178	24V 1A	Resistance normal : 15~25 Ω
Air cleaner pressure switch	 CD-10	Max load : 6W N.O Type	Resistance ∞ Ω : normal (open)
Ride control valve / Fan solenoid	 CN-136 CN-154 CN-155	24V 1.2A	※ Check LED lamp ※ Check resistance about 24 Ω
Fuel sender	 CD-2	-	Resistance at fuel levels full level : 200 Ω 9/12 level : 500 Ω 6/12 level : 800 Ω 3/12 level : 1100 Ω empty : 1300 Ω
Relay (4pin)	 AC RY(H1)	24V 20A	Resistance at normal position about 200 Ω between pin 1-3 ∞ Ω between pin 2-4
Relay (5pin)	 CR-5 CR-35 CR-25 CR-37	24V 20A	Resistance normal : about 160 Ω (for pin 85~86) 0 Ω (for pin 30~87) ∞ Ω (for pin 30~87)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 25 of 521 pages

The full manual includes:

- All 521 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Hyundai HL730-9, HL730XTD-9, HL730TM-9 Shop Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual