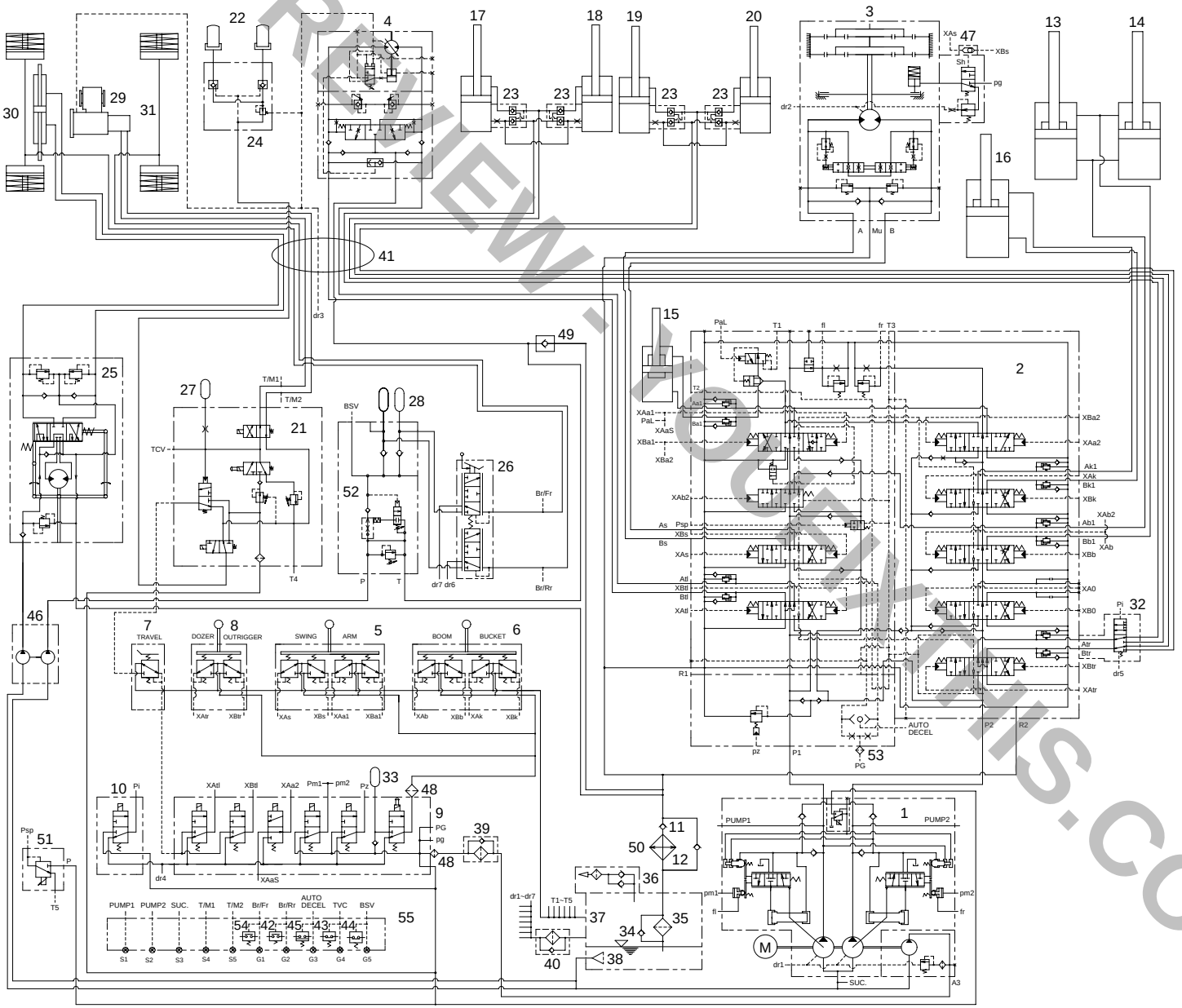
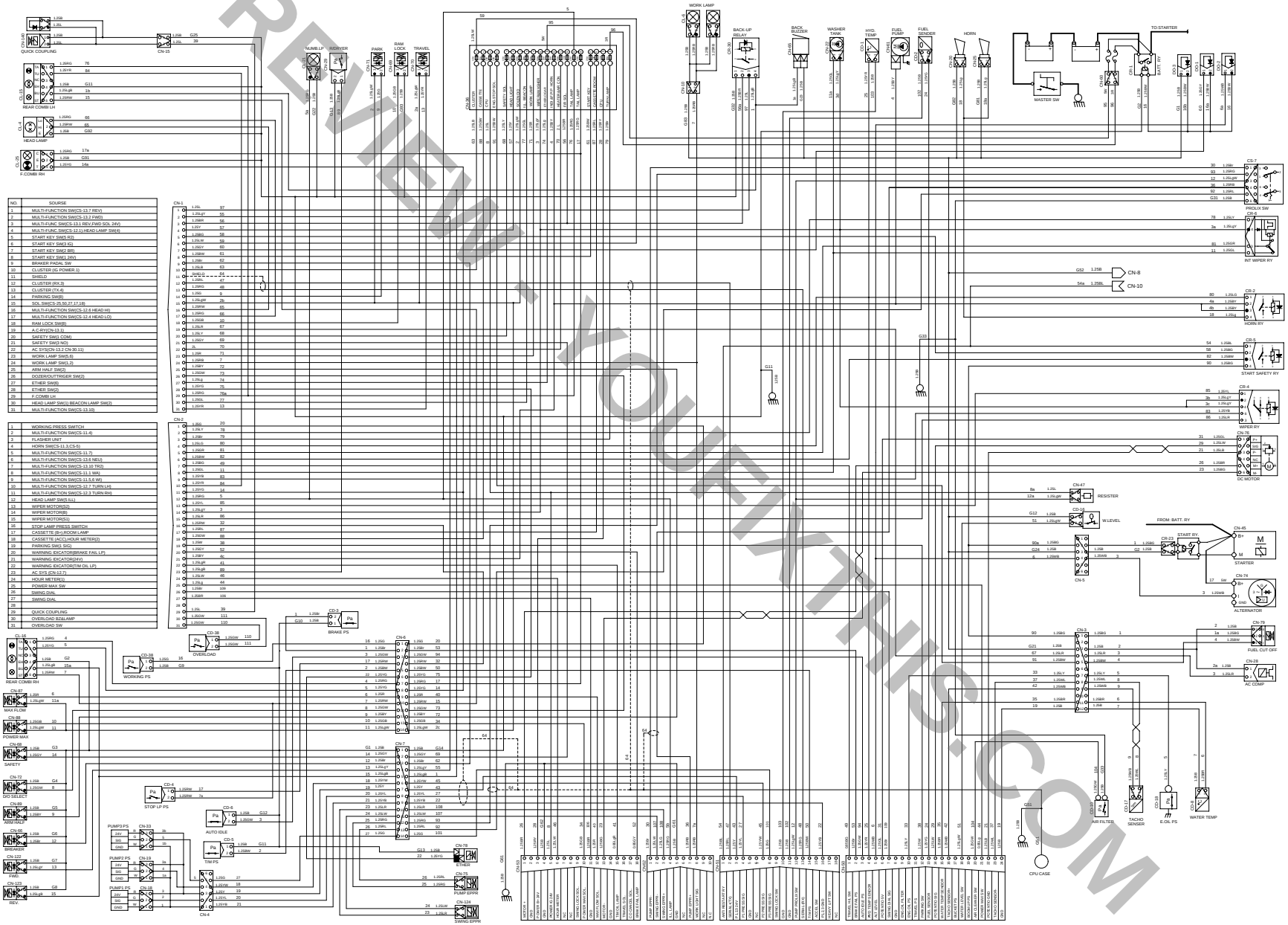
GROUP 1 HYDRAULIC CIRCUIT



1 Main pump
2 Main control valve
3 Swing motor
4 Travel motor
5 RCV lever(LH)
6 RCV lever(RH)
7 Accelerator pedal
8 Dozer and outrigger lever
9 6 solenoid valve
10 1 solenoid valve
11 Check valve
12 Check valve
13 Boom cylinder(RH)
14 Boom cylinder(LH)
15 Arm cylinder
16 Bucket cylinder
17 Outrigger cylinder(LH)
18 Outrigger cylinder(RH)
19 Dozer cylinder(LH)
20 Dozer cylinder(RH)
21 Transmission control valve
22 Oscillating cylinder
23 Pilot control valve(Double)
24 Locking valve
25 Steering valve
26 Brake valve
27 Accumulator
28 Accumulator
29 Transmission
30 Front axle
31 Rear axle
32 Selector valve
33 Accumulator
34 Bypass valve
35 Return filter
36 Air breather
37 Hydraulic tank
38 Strainer
39 Line filter
40 Spin filter
41 Turning joint
42 Pressure switch
43 Pressure switch
44 Pressure switch
45 Pressure switch
46 Gear pump
47 Shuttle valve
48 Last guard filter
49 Relief valve
50 Oil cooler
51 Reducing valve
52 Brake supply valve
53 Last guard filter
54 Pressure switch
55 Gauge block

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NO.	SOURSE
1	MULTI-FUNCTION SW(CS-13.7 REV)
2	MULTI-FUNCTION SW(CS-13.2 FWD)
3	MULTI-FUNC SW(CS-13.1 REV,FWD SOL 24V)
4	MULTI-FUNC SW(CS-12.1) HEAD LAMP SW(4)
5	START KEY SW(S #2)
6	START KEY SW(3 IG)
7	START KEY SW(2 BR)
8	START KEY SW(1 #6V)
9	BRAKER PADAL SW
10	CLUSTER (IG POWER 1)
11	SHIELD
12	CLUSTER (RX.3)
13	CLUSTER (TX.4)
14	PARKING SW(B)
15	SOL SW(CS-25,50,27,17,18)
16	MULTI-FUNCTION SW(CS-12.4 HEAD HI)
17	MULTI-FUNCTION SW(CS-12.4 HEAD LO)
18	RAM LOCK SW(B)
19	A.C.SYS(CN-13.1)
20	SAFETY SW(L.COM)
21	SAFETY SW(3 NO)
22	AC SYS(CN-13.2 CN-30.11)
23	WORK LAMP SW(5.6)
24	WORK LAMP SW(1,2)
25	ARM HALF SW(2)
26	DOZER/OUTTRIGER SW(2)
27	ETHER SW(R)
28	ETHER SW(2)
29	F.COMBI LH
30	HEAD LAMP SW(1) BEACON LAMP SW(2)
31	MULTI-FUNCTION SW(CS-13.10)

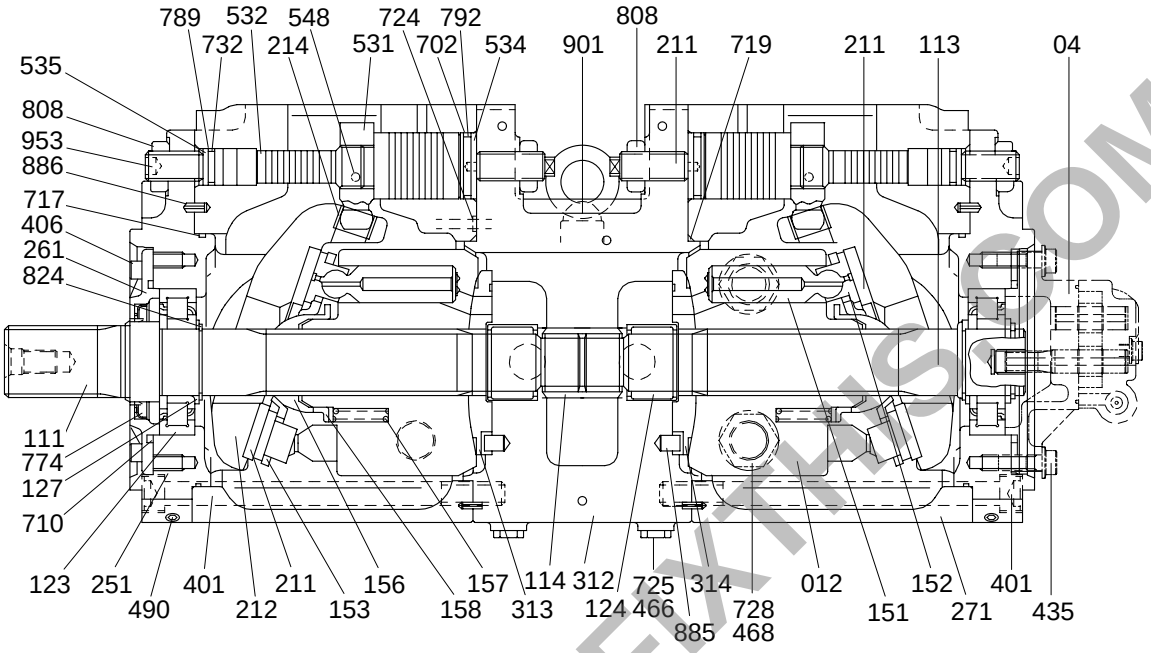
1	WORKING PRESS SWITCH
2	MULTI-FUNCTION SW(CS-11.4)
3	FLASHER UNIT
4	HORN SW(CS-11.3,CS-5)
5	MULTI-FUNCTION SW(CS-11.7)
6	MULTI-FUNCTION SW(CS-13.6 NEU)
7	MULTI-FUNCTION SW(CS-13.10 TRQ)
8	MULTI-FUNCTION SW(CS-11.1 WA)
9	MULTI-FUNCTION SW(CS-11.5,6 WI)
10	MULTI-FUNCTION SW(CS-12.7 TURN LH)
11	MULTI-FUNCTION SW(CS-12.3 TURN RH)
12	HEAD LAMP SW(5 ILL)
13	WIPER MOTOR(S2)
14	WIPER MOTOR(B)
15	WIPER MOTOR(S1)
16	STOP LAMP PRESS SWITCH
17	CASSETTE (B+),ROOM LAMP
18	CASSETTE (ACC),HOUR METER(2)
19	PARKING SW(1 SIG)
20	WARNING EXCATOR(BRAKE FAIL LP)
21	WARNING EXCATOR(24V)
22	WARNING EXCATOR(TIM OIL LP)
23	AC SYS (CN-12.7)
24	HOUR METER(1)
25	POWER MAX SW
26	SWING DIAL
27	SWING DIAL
28	
29	QUICK COUPLING
30	OVERLOAD BZ&LAMP
31	OVERLOAD SW

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1) MAIN PUMP(1/2)

The main pump consists of two piston pumps(Front & rear) and valve block.



04	Gear pump	251	Support	710	O-ring
111	Drive shaft(F)	261	Seal cover(F)	717	O-ring
113	Drive shaft(R)	271	Pump casing	724	O-ring
114	Spline coupling	312	Valve block	725	O-ring
123	Roller bearing	313	Valve plate(R)	728	O-ring
124	Needle bearing	314	Valve plate(L)	732	O-ring
127	Bearing spacer	401	Hexagon socket bolt	774	Oil seal
141	Cylinder block	406	Hexagon socket bolt	789	Back up ring
151	Piston	466	VP plug	792	Back up ring
152	Shoe	468	VP plug	806	Hexagon head nut
153	Set plate	490	Plug	808	Hexagon head nut
156	Bushing	531	Tilting pin	824	Snap ring
157	Cylinder spring	532	Servo piston	885	Pin
158	Spacer	534	Stopper(L)	886	Spring pin
211	Shoe plate	535	Stopper(S)	901	Eye bolt
212	Swash plate	548	Pin	953	Set screw
214	Bushing	702	O-ring	954	Set screw

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GROUP 2 TIGHTENING TORQUE

1. MAJOR COMPONENTS

No.	Descriptions			Bolt size	Torque	
					kgf · m	lbf · ft
1	Engine	Engine mounting bolt(Engine-Bracket)		M12 × 1.75	10.0±0.5	72.3±3.6
2		Engine mounting bolt(Bracket-Frame)		M22 × 2.5	48.0±2.0	347±14.4
3		Radiator mounting bolt, nut		M12 × 1.75	9.3±1.9	67.3±13.7
4		Coupling mounting bolt		M16 × 2.0	22.1±2.4	159±17.3
5	Hydraulic system	Main pump mounting bolt		M20 × 2.5	42.0±4.5	304±32.5
6		Main control valve mounting bolt		M12 × 1.75	12.2±1.3	88.2±9.4
7		Fuel tank mounting bolt		M20 × 2.5	46.0±5.1	333±36.9
8		Hydraulic oil tank mounting bolt		M20 × 2.5	46.0±5.1	333±36.9
9		Turning joint mounting bolt, nut		M16 × 2.0	29.6±1.3	214±23.1
10	Power train system	Swing motor mounting bolt		M20 × 2.5	57.9±8.7	419±62.9
11		Swing bearing upper mounting bolt		M20 × 2.5	57.8±6.4	418±46.3
12		Swing bearing lower mounting bolt		M20 × 2.5	57.8±6.4	418±46.3
13		Front axle mounting bolt, nut		M16 × 2.5	29.6±3.2	214±23.1
15		Rear axle mounting bolt, nut	Front	M24 × 3.0	100±10	723±72.3
16			Rear	M24 × 2.0	107±10.7	774±77.4
17		Transmission mounting bolt		M20 × 2.5	39.0±4.2	282±30.4
18		Oscillating cylinder mounting bolt		M22 × 1.5	69.4	502
19		Oscillating cylinder support bolt		M16 × 2.0	29.6±3.2	214±23
20		Wheel nut		M20 × 1.5	50.0±0.5	362±3.6
21		Front drive shaft mounting bolt, nut		M10 × 1.0	5.9±0.6	42.7±4.3
22		Rear drive shaft mounting bolt, nut		M10 × 1.0	5.9±0.6	42.7±4.3
23	Others	Counter weight mounting bolt		M30 × 3.5	199±29	1440±210
24		Cab mounting bolt, nut		M12 × 1.75	12.2±1.3	88.2±9.4
25		Operator's seat mounting bolt		M 8 × 1.25	1.17±0.1	8.5±0.7

※ For tightening torque of engine and hydraulic components, see each components disassembly and assembly.

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5. ERROR CODES TABLE

Display		Problems
Current error	Recorded error	
Err : 00	TIME Err : 00	No problem
Err : 01	TIME Err : 01	Short circuit in governor motor 2 lines
Err : 02	TIME Err : 02	Potentiometer is shorted to Vcc(5V) or battery(+)
Err : 03	TIME Err : 03	Short circuit in pump EPPR valve 2 lines
Err : 04	TIME Err : 04	Short circuit in swing EPPR valve 2 lines
Err : 05	TIME Err : 05	Short circuit in travel solenoid 2 lines
Err : 06	TIME Err : 06	Short circuit in power max solenoid 2 lines
Err : 07	TIME Err : 07	Short circuit in max flow solenoid 2 lines
Err : 08	TIME Err : 08	Short circuit in cut off cancel solenoid 2 lines
Err : 09	TIME Err : 09	Short circuit in swing lock solenoid 2 lines
Err : 10	TIME Err : 10	Short circuit in hourmeter 2 lines
Err : 12	TIME Err : 12	P1 pressure sensor is shorted to battery(+)
Err : 13	TIME Err : 13	P2 pressure sensor is shorted to battery(+)
Err : 14	TIME Err : 14	P3 pressure sensor is shorted to battery(+)
Err : 16	TIME Err : 16	Governor motor circuit is open or shorted to ground
Err : 17	TIME Err : 17	Potentiometer circuit is open or shorted to ground
Err : 18	TIME Err : 18	Pump EPPR valve circuit is open or shorted to ground
Err : 19	TIME Err : 19	Swing EPPR valve circuit is open or shorted to ground
Err : 20	TIME Err : 20	Travel solenoid circuit is open or shorted to ground
Err : 21	TIME Err : 21	Power max solenoid circuit is open or shorted to ground
Err : 22	TIME Err : 22	Max flow solenoid circuit is open or shorted to ground
Err : 23	TIME Err : 23	Cut off cancel solenoid circuit is open or shorted to ground
Err : 24	TIME Err : 24	Swing lock solenoid circuit is open or shorted to ground
Err : 25	TIME Err : 25	Hourmeter circuit is open or shorted to ground
Err : 26	TIME Err : 26	Swing speed dial circuit is open or shorted to ground
Err : 27	TIME Err : 27	P1 pressure sensor circuit is open or shorted to ground
Err : 28	TIME Err : 28	P2 pressure sensor circuit is open or shorted to ground
Err : 29	TIME Err : 29	P3 pressure sensor circuit is open or shorted to ground
Err : 32	TIME Err : 32	Battery power input circuit is open
Err : 33	TIME Err : 33	No alternator voltage input
Err : 34	TIME Err : 34	Controller input voltage is less than 18V
Err : 35	TIME Err : 35	Controller input voltage is greater than 38V
-	TIME Err : 36	Error in data receiving from cluster
Err : 37	TIME Err : 37	Engine speed sensor circuit is open or shorted to ground or sensor signal is less than 1V
Err : 38	TIME Err : 38	Anti-restart relay circuit is open or shorted to ground
Err : 39	TIME Err : 39	Governor motor does not stop at a target position
Err : 40	TIME Err : 40	There is more than 500rpm difference between target speed and actual speed
Err : 41	TIME Err : 41	Hydraulic oil temperature sensor circuit is shorted to ground
Err : 42	TIME Err : 42	Fuel level sensor circuit is shorted to ground
Err : 43	TIME Err : 43	Coolant temperature sensor circuit is shorted to ground
Err : 45	TIME Err : 45	Hydraulic oil temperature sensor circuit is open or shorted to battery(+)
Err : 46	TIME Err : 46	Fuel level sensor circuit is open or shorted to battery(+)
Err : 47	TIME Err : 47	Coolant temperature sensor circuit is open or shorted to battery(+)

※ Every machine may not have all of the above error codes. For example, machines not equipped pressure sensors will not have the error codes 12, 13, 14, 27, 28, 29.

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3) DISASSEMBLY

(1) Select place suitable to disassembling.

※ Select clean place.

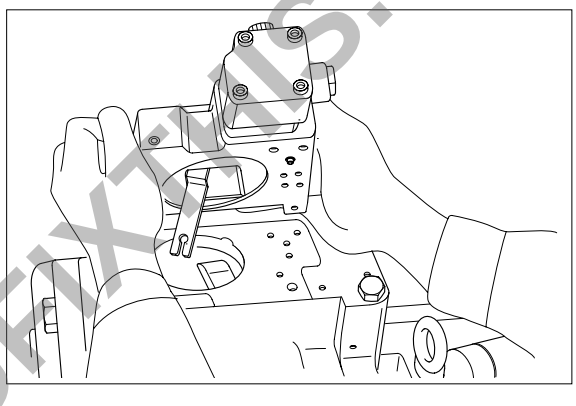
※ Spread rubber sheet, cloth or so on on overhaul workbench top to prevent parts from being damaged.

(2) Remove dust, rust, etc, from pump surfaces with cleaning oil or so on.

(3) Remove drain port plug(467) and let oil out of pump casing.(Front and rear pump)

(4) Remove hexagon socket head bolts(412, 413) and remove regulator.

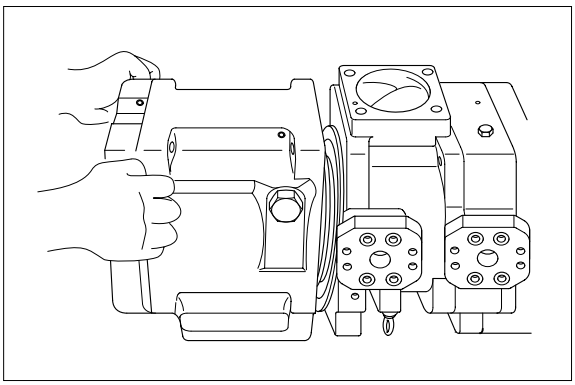
Remove flange socket head bolts(435) and remove gear pump.



(5) Loosen hexagon socket head bolts(401) which tighten swash plate support(251), pump casing(271) and valve block(312).

(6) Place pump horizontally on workbench with its regulator-fitting surface down, and separate pump casing(271) from valve block(312).

※ Before bringing this surface down, spread rubber sheet on workbench without fail to prevent this surface from being damaged.

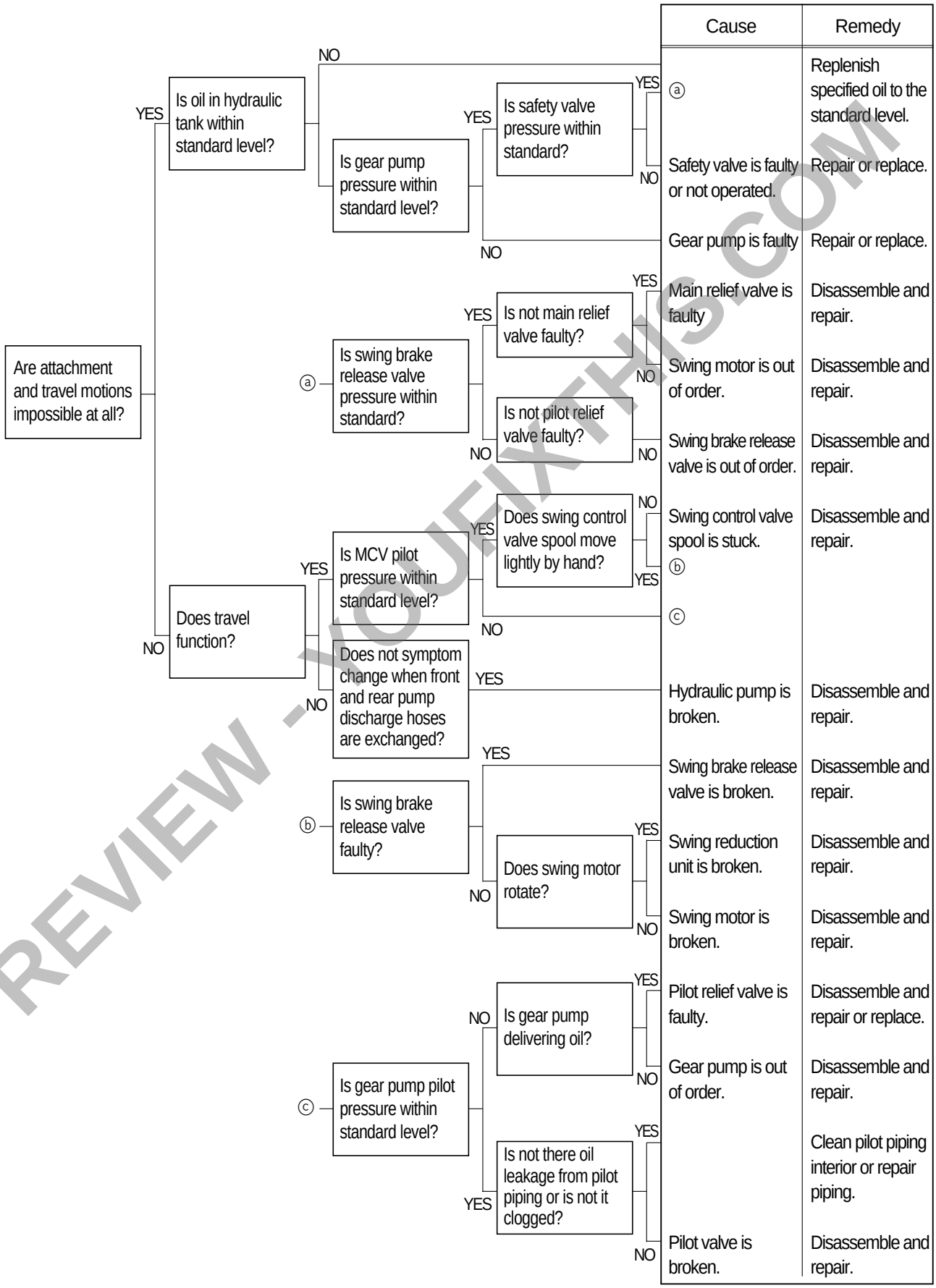


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4. SWING SYSTEM

1) BOTH LH AND RH SWING ACTIONS ARE IMPOSSIBLE



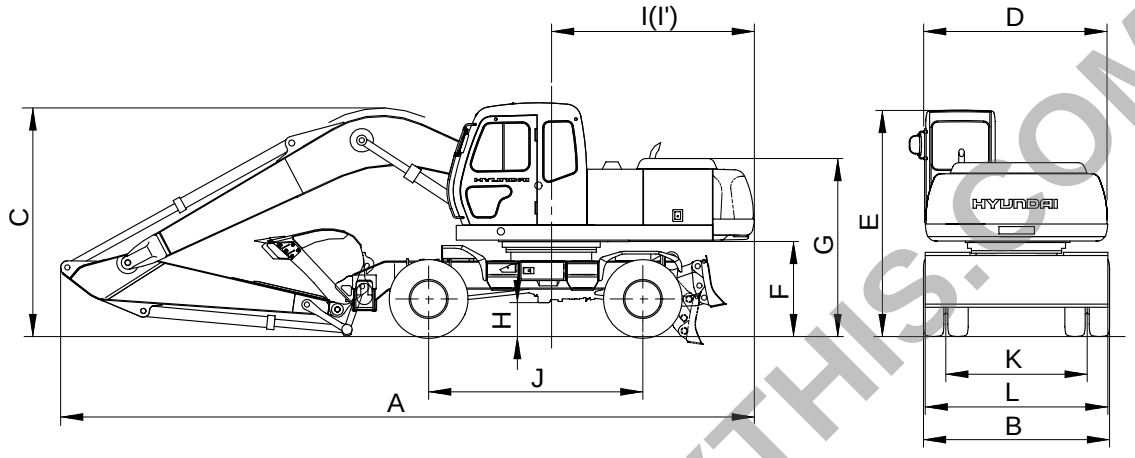
Cause	Remedy
ⓐ	Replenish specified oil to the standard level.
Safety valve is faulty or not operated.	Repair or replace.
Gear pump is faulty	Repair or replace.
Main relief valve is faulty	Disassemble and repair.
Swing motor is out of order.	Disassemble and repair.
Swing brake release valve is out of order.	Disassemble and repair.
Swing control valve spool is stuck.	Disassemble and repair.
ⓑ	
ⓒ	
Hydraulic pump is broken.	Disassemble and repair.
Swing brake release valve is broken.	Disassemble and repair.
Swing reduction unit is broken.	Disassemble and repair.
Swing motor is broken.	Disassemble and repair.
Pilot relief valve is faulty.	Disassemble and repair or replace.
Gear pump is out of order.	Disassemble and repair.
	Clean pilot piping interior or repair piping.
Pilot valve is broken.	Disassemble and repair.

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2. SPECIFICATIONS

1) 5.68m(18' 8") ONE PIECE BOOM, 2.92m(9' 7") ARM, FRONT OUTRIGGER AND REAR DOZER BLADE



Description		Unit	Specification
Operating weight		kg(lb)	20050(44200)
Bucket capacity(PCSA heaped), standard		$m^3(yd^3)$	0.87(1.14)
Overall length	A	mm(ft-in)	9370(30' 9")
Overall width	B		2660(8' 9")
Overall height	C		3470(11' 5")
Upperstructure width	D		2720(8' 11")
Cab height	E		3160(10' 4")
Ground clearance of counterweight	F		1290(4' 3")
Engine cover height	G		2540(8' 4")
Minimum ground clearance	H		345(1' 2")
Rear-end distance	I		2740(9' 0")
Rear-end swing radius	I'		2750(9' 0")
Wheel base	J		2900(9' 6")
Tread	K		2056(6' 9")
Dozer blade width	L		2660(8' 9")
Travel speed	Low	km/hr(mph)	8.3(5.2)
	High		32(19.9)
Swing speed		rpm	12.5
Gradeability		Degree(%)	29(55)

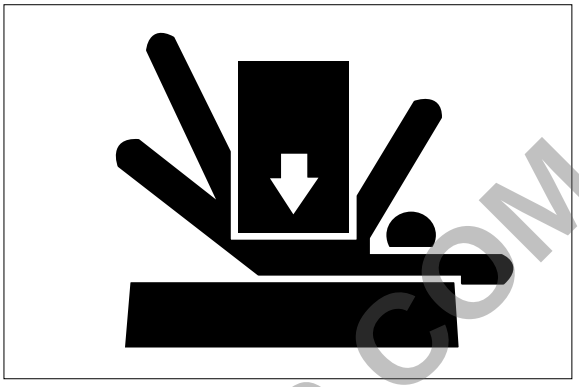
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SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment.

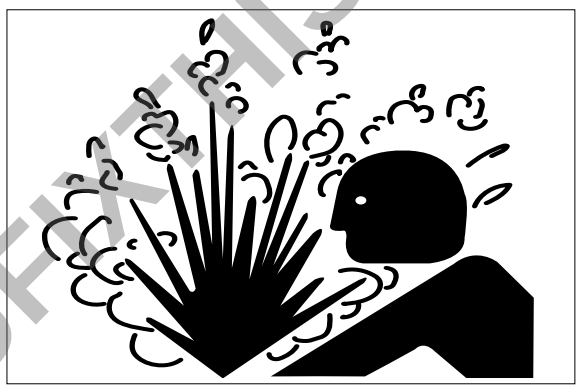
Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.



SERVICE COOLING SYSTEM SAFELY

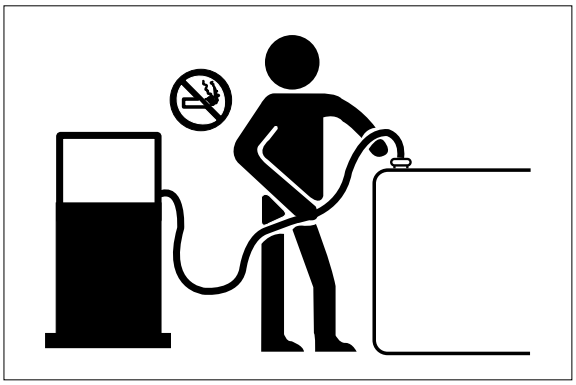
Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands.



HANDLE FLUIDS SAFELY-AVOID FIRES

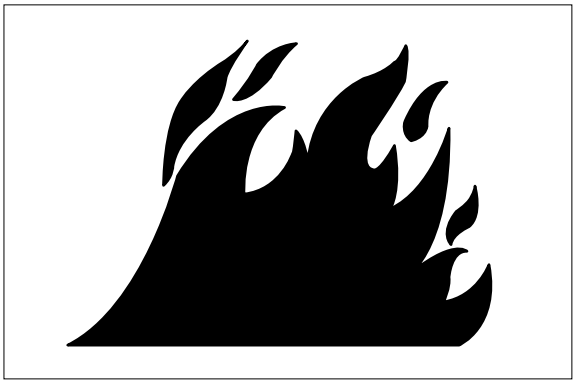
Handle fuel with care; it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks. Always stop engine before refueling machine.
Fill fuel tank outdoors.



Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

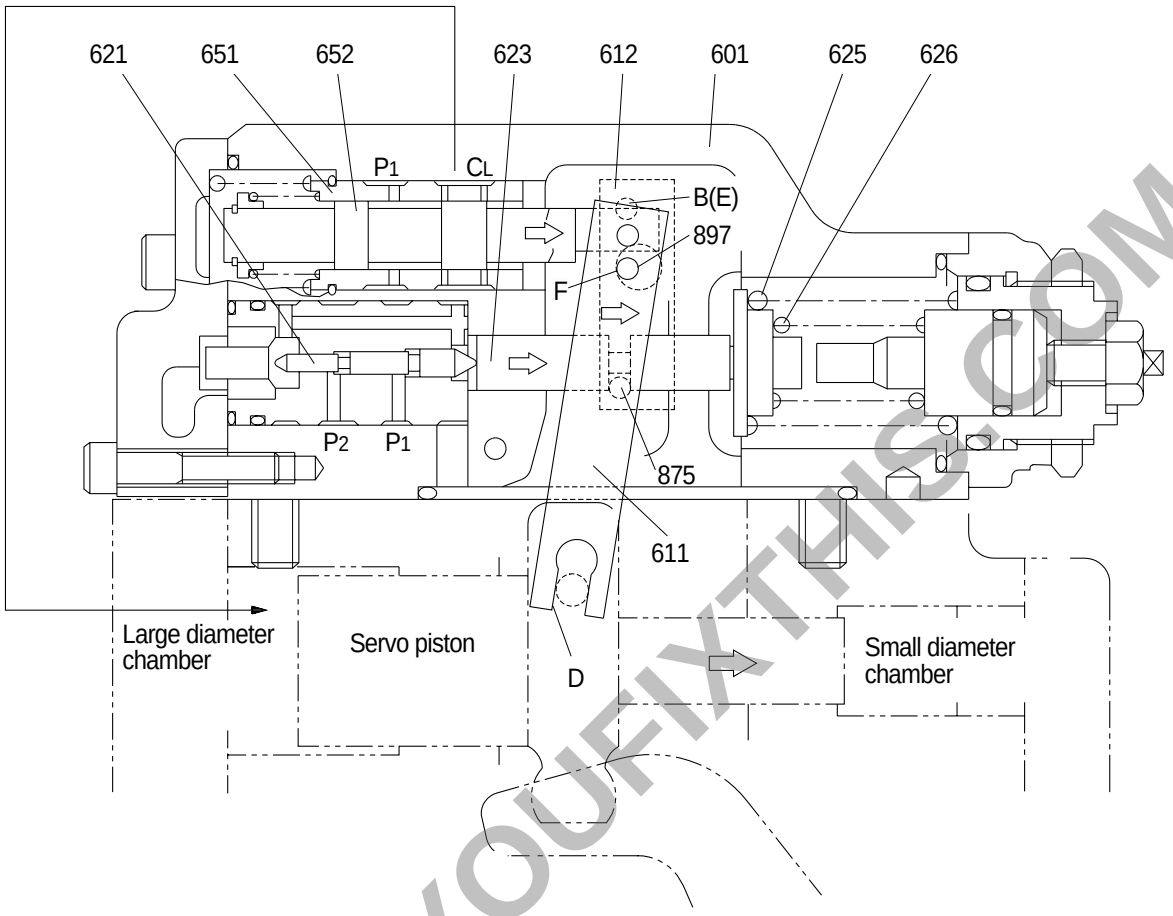
Make sure machine is clean of trash, grease, and debris.

Do not store oily rags ; they can ignite and burn spontaneously.



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① **Overload preventive function**



When the self pump delivery pressure P1 or the companion pump delivery pressure P2 rises, it acts on the stepped part of the compensating piston(621). It presses the compensating rod(623) to the right till the force of the outer spring(625) and inner spring(626) balances with the hydraulic force. The movement of the compensating rod is transmitted to lever 1(612) via pin(875).

Lever 1 rotates around the pin(875) (E) fixed to the casing(601).

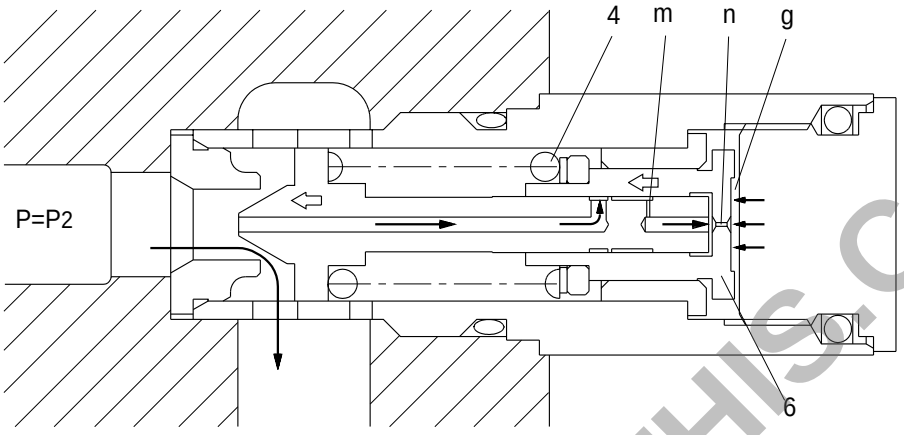
Since the large hole section(F) of lever 1 contains a protruding pin(897) fixed to the feedback lever(611), the feedback lever rotates around the fulcrum of point D as lever 1 rotates, and then the spool(652) is shifted to the right. As the spool moves, the delivery pressure P1 is admitted to the large diameter section of the servo piston via port CL, causes the servo piston move to the right, reduces the pump delivery, flow rate, and prevents the prime mover from being overloaded.

The movement of the servo piston is transmitted to the feedback lever via point D. Then the feedback lever rotates around the fulcrum of point F and the spool is shifted to the left. The spool moves till the opening between the spool(652) and sleeve(651) is closed.

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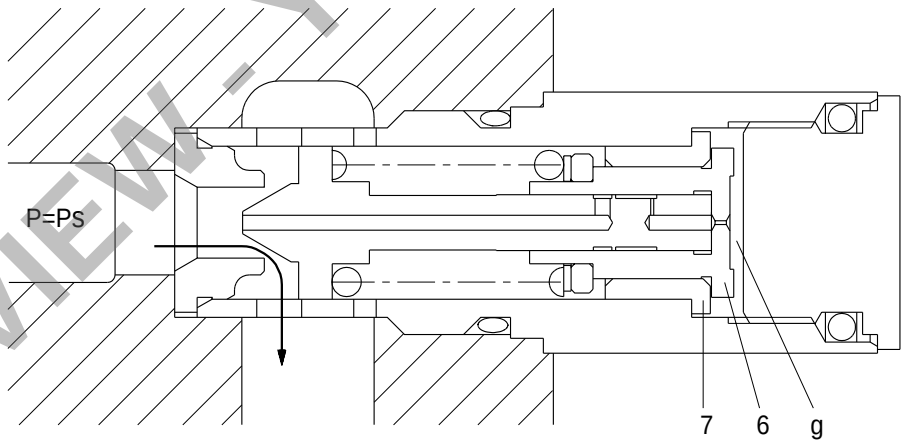
③ The oil flow chamber g via orifice m and n. When the pressure of chamber g reaches the preset force(F_{SP}) of spring(4), the piston(6) moves left and stop the piston(6) hits the bottom of bushing(7).



④ When piston(6) hits the bottom of bushing(7), it stops moving to the left any further. As the result, the pressure in chamber(g) equals(Ps).

$Ps \times A_1 = Fsp + Ps \times A_2$

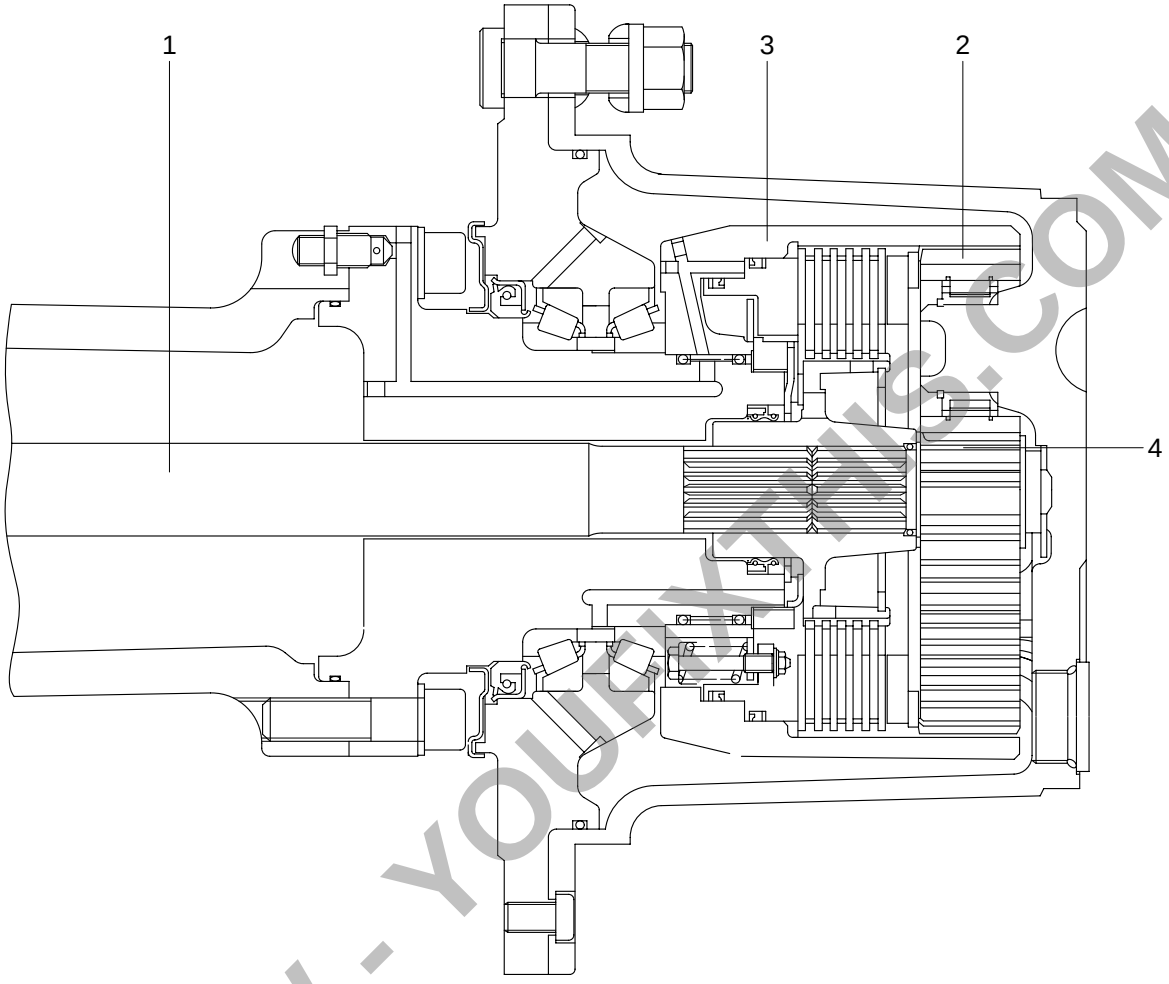
$$Ps = \frac{Fsp}{A_1 - A_2}$$



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2) REAR AXLE



1 Axle shaft 2 Planetary gear 3 Ring gear
4 Sun gear

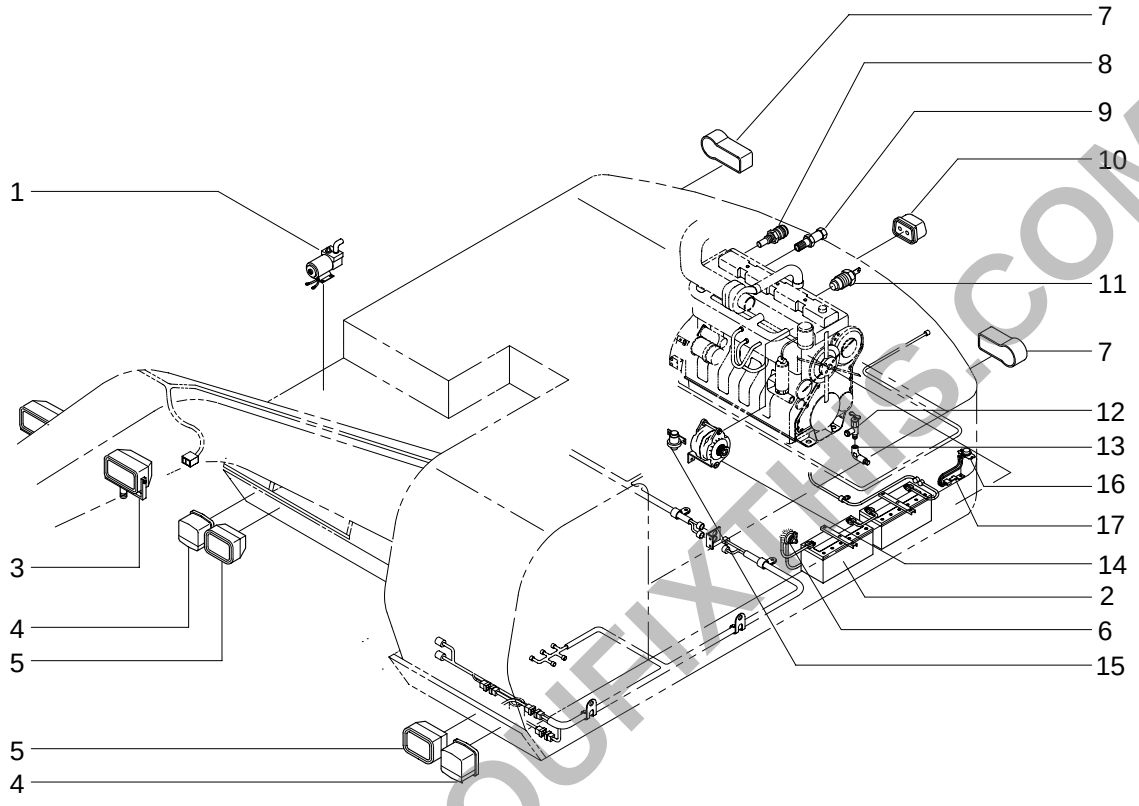
(1) To gain a large drive force, the final drive uses a planetary gear system to reduce the speed and send drive force to the tires.

(2) The power transmitted from the differential through axle shaft(1) to sun gear(4) is transmitted to planetary gear(2). The planetary gear rotates around the inside of a fixed ring gear(3) and in this way transmits rotation at a reduced speed to the planetary carrier.
This power is then sent to the wheels which are installed to the planetary carriers.

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2. LOCATION 2

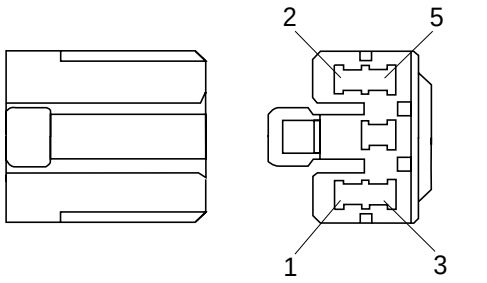
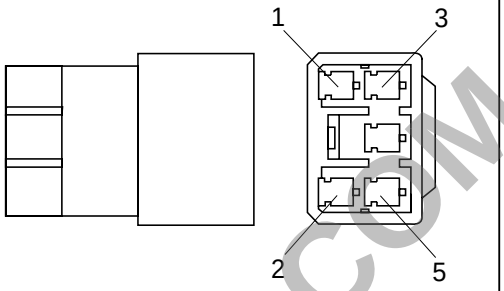
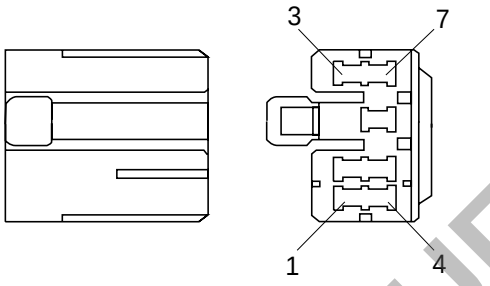
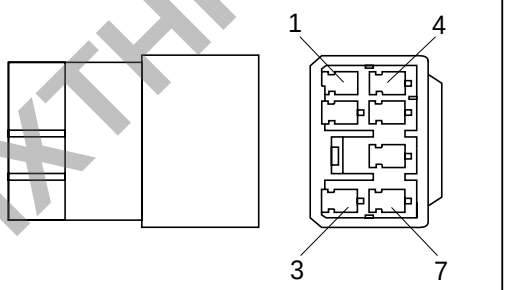
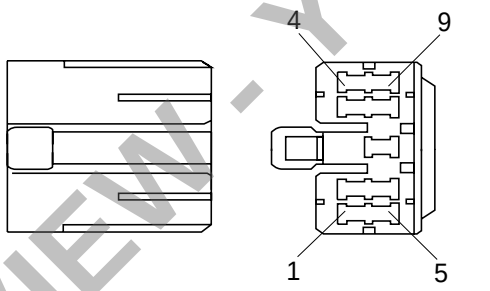
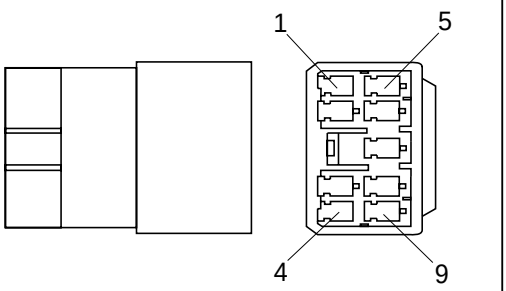
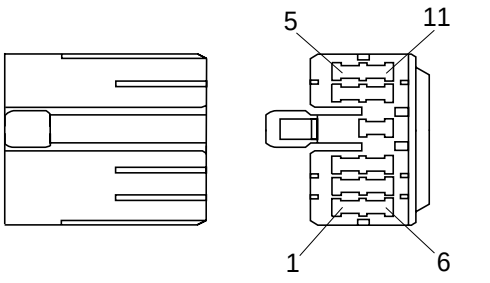
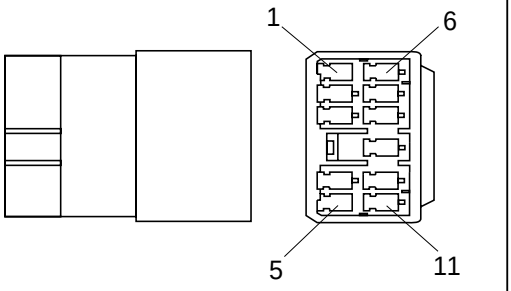


1	Fuel filter pump	7	Rear combination lamp	13	Heater adapter
2	Battery	8	Temperature sendor	14	Alternator
3	Work light	9	Engine speed sensor	15	Start relay
4	Front compination lamp	10	Number plate lamp	16	Battery relay
5	Head lamp	11	Engine oil pressure switch	17	Connector plate
6	Master switch	12	Heater valve		

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3) PA TYPE CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
5	 S811-005002	 S811-105002
7	 S811-007002	 S811-107002
9	 S811-009002	 3S811-109002
11	 S811-011002	 S811-111002

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4) ACCEL ACTUATOR CABLE SETTING PROCEDURE

(1) **Key OFF**

① Connect the ball joint of cable to engine speed lever.

② Pull the cable to high stopper and put nut **A** edge to yoke of the bracket.

※ Make throttle lever not contact to the edge of high stopper.

③ Turn nut **A** to clockwise until touching to the edge of high stopper.

④ Make 1 turn more to clockwise in condition of the nut **A** contact to the edge of high stopper.

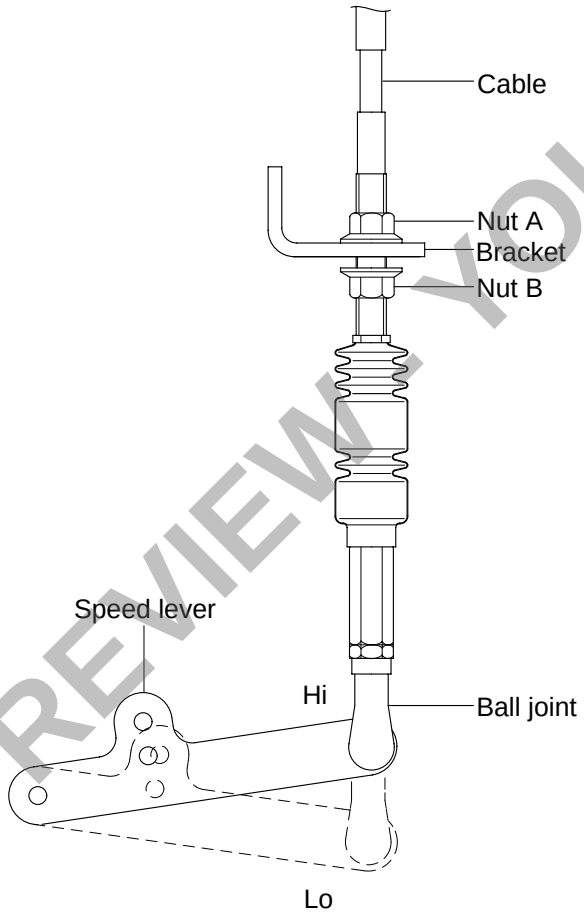
(2) **Key START**

⑤ Confirm if the engine speed on cluster is same as each mode specification.

⑥ If the engine speed displayed on cluster is highter than each mode specification, then turn the nut **A** to counter clockwise and make the engine speed same to each mode specification.

⑦ If the engine speed displayed on cluster is lower than each mode specification, then turn the nut **A** to clockwise and make the engine speed same to each mode specification.

⑧ Turn nut **B** to clockwise and fix the cable to bracket.

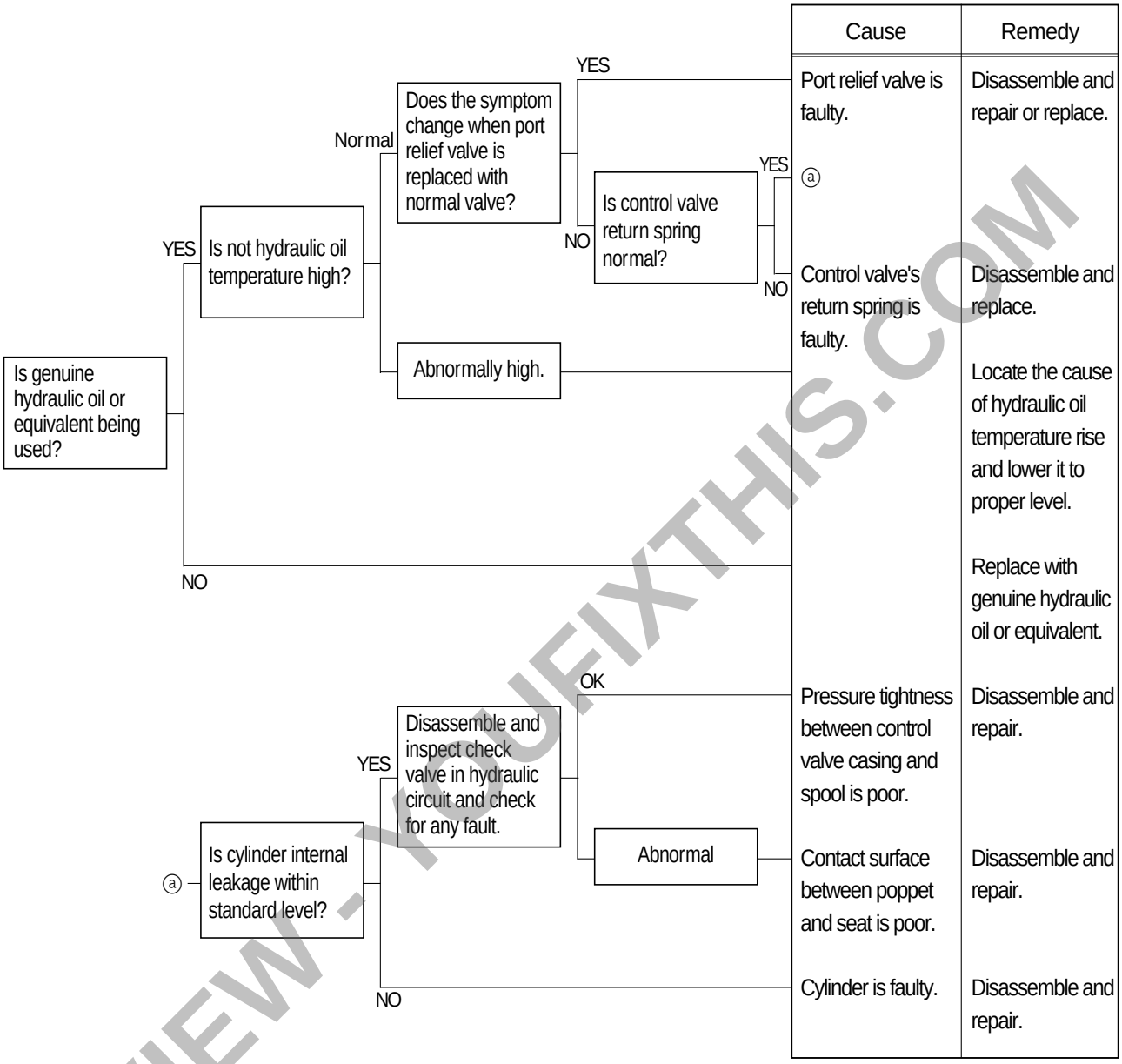


Mode	RPM
H	2240±50
S	2040±50
L	
F	1840±50
Auto decel	1200±100
Key start	950±100

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3) BOOM, ARM OR BUCKET CYLINDER EXTENDS OR CONTRACTS ITSELF AND ATTACHMENT FALLS



Cause	Remedy
Port relief valve is faulty.	Disassemble and repair or replace.
ⓐ	
Control valve's return spring is faulty.	Disassemble and replace.
	Locate the cause of hydraulic oil temperature rise and lower it to proper level.
	Replace with genuine hydraulic oil or equivalent.
Pressure tightness between control valve casing and spool is poor.	Disassemble and repair.
Contact surface between poppet and seat is poor.	Disassemble and repair.
Cylinder is faulty.	Disassemble and repair.

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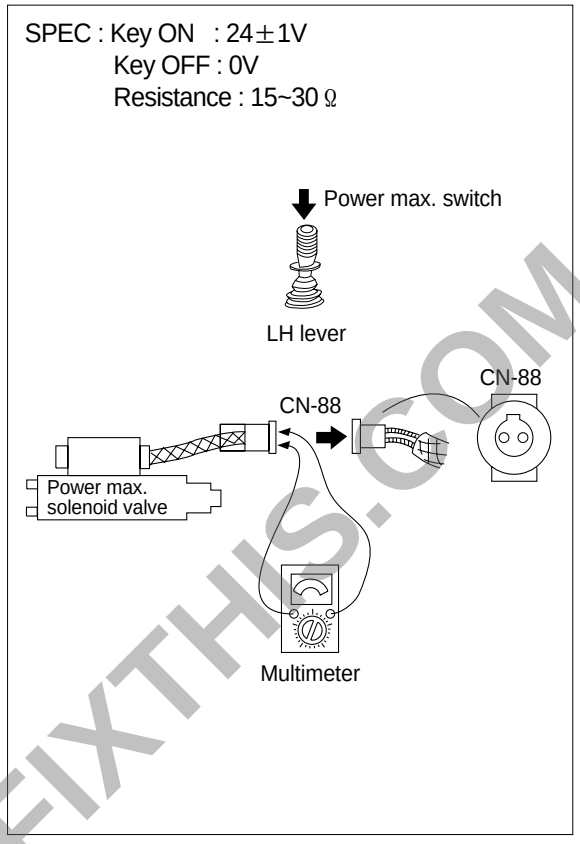
2) TEST PROCEDURE

(1) **Test 14 :** Check voltage between connector CN-88 - GND.

① Start key ON.

② Disconnect connector CN-88 from power max solenoid valve.

③ Check voltage as figure.

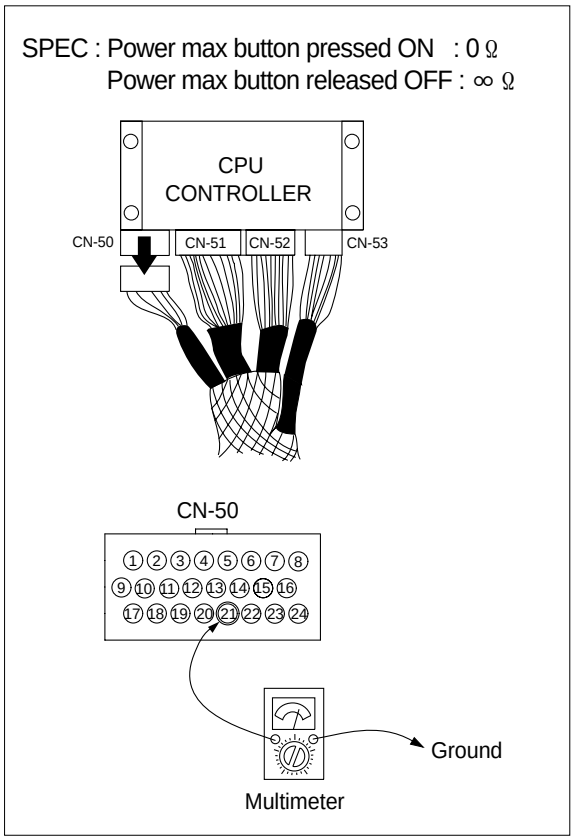


(2) **Test 15 :** Check resistance between connector CN-50(21)-GND.

① Starting key OFF.

② Remove CPU controller and disconnect connector CN-50 from CPU controller.

③ Check resistance as figure.



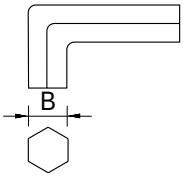
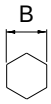
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2) TOOLS AND TIGHTENING TORQUE

(1) Tools

The tools necessary to disassemble/reassemble the pump are shown in the follow list.

Tool name & size		Part name			
Name	B	Hexagon socket head bolt	PT plug (PT thread)	PO plug (PF thread)	Hexagon socket head setscrew
Allen wrench 	4	M 5	BP-1/16	-	M 8
	5	M 6	BP-1/8	-	M10
	6	M 8	BP-1/4	PO-1/4	M12, M14
	8	M10	BP-3/8	PO-3/8	M16, M18
	14	M16, M18	BP-3/4	PO-3/4	-
Double ring spanner, socket wrench, double(Single) open end spanner 	-	Hexagon headed bolt	Hexagon nut	VP plug (PF thread)	
	19	M12	M12	VP-1/4	
	27	M18	M18	VP-1/2	
Adjustable angle wrench		Medium size, 1 set			
Screw driver		Minus type screw driver, Medium size, 2 sets			
Hammer		Plastic hammer, 1 set			
Pliers		For snap ring, TSR-160			
Steel bar		Steel bar of key material approx. $10 \times 8 \times 200$			
Torque wrench		Capable of tightening with the specified torques			

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4) ASSEMBLING

※ In this assembling section, explanation only is shown. Refer to figures shown in disassembling section and structure section.

※ Figure in ( ) shown after part name in explanation sentence shows number in structure figure.

※ **Cautions in assembling seals**

- Pay attention to keep seals free from defects in its forming and damages in its handling.
- Apply grease, hydraulic oil or so on to seals and seal-fitting sections for full lubrication.
- Do not stretch seals so much to deform them permanently.
- In fitting O-ring, pay attention not to roll it into its position. In addition, twisted O-ring cannot remove its twisting naturally with ease after being fitted, and causes oil leakage.
- Tighten fitting bolts at all sections with torque wrench to their respective tightening torques.

(1) Assembling of casing

Fit O-rings(164, 165) to Casing A(101) and Casing B(102) and tighten bolts(974, 975) to specified torques.

※ Check mating faces for dust, etc. and confirm that O-rings are fitted to O-ring grooves securely.

(2) Assembly of plug

Tighten plug(159) to specified torque.

※ Since plug(159) is applied with special coating, use new one in reassembling without fail. However, in case of emergency, PT 1/8 plug available on market can be used substitutively with seal tape turned in one turn and half on it.
In this case pay full attention not to fall piece of seal tape into casing.

※ Use of seal tape may cause malfunction of control valve. Do not use it as far as possible.

(3) Assembly of check valve

Assemble poppets(511, 515, 516, 517, 518) and spring(521, 523). Put O-rings(561) onto plugs(551, 552) and tighten the latters with their specified torques.

※ Use poppets, springs and plugs in following groups.

Poppet	Spring	Plug
511	521	551
517	521	551
515	521	551
516	523	552

Remember that
- 511 in 9 positions
- 517 in 1 positions
- 515 in 1 position
- 516 in 1 position
- 518 in 1 position

(4) Assembling of negative control relief valve

Assemble poppet(611), spring(621) and damping rod(631) to casing A(101). Put O-ring(561) onto plug(551) and tighten the latter to its specified torque.

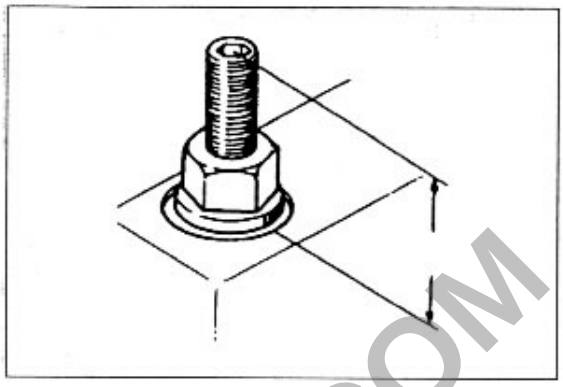
(5) Assembling of lock valve assembly

Fit O-ring(163) to lock valve assembly(252) and tighten hexagon socket head bolts with specified torque.

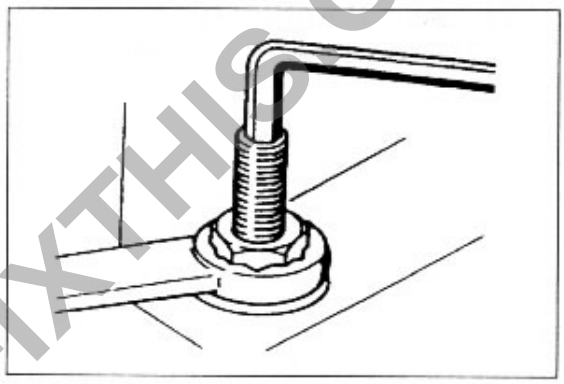
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(3) Replace seal nut.
First measure and record setting height.



(4) When tightening, counterhold setting screw, then check setting height.

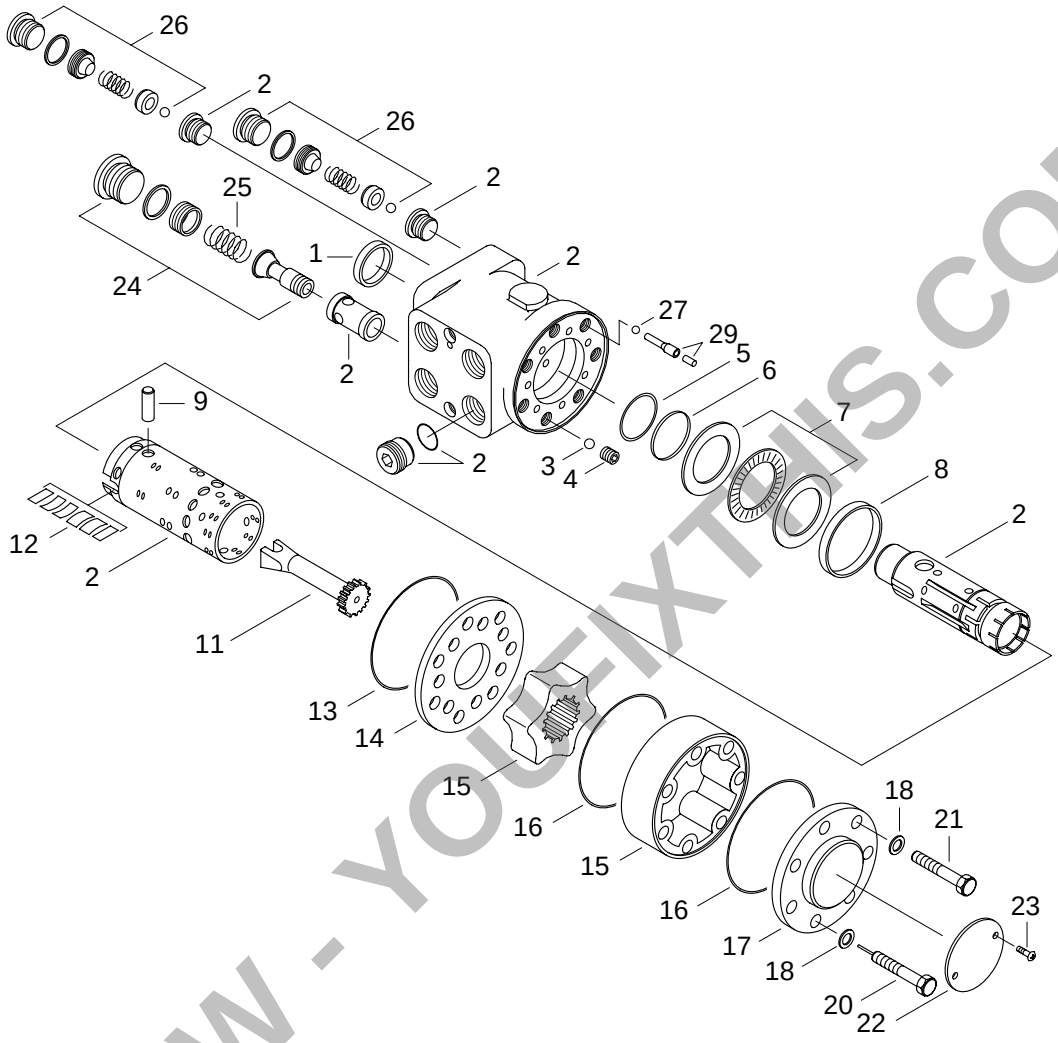


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2. STEERING VALVE

1) STRUCTURE



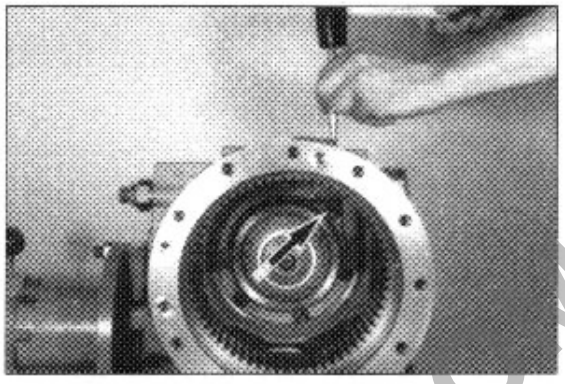
1	Dust seal ring	11	Shaft	21	Screw
2	*Housing assy	12	Spring set	22	Name plate
3	Ball	13	O-ring	23	Drive screw
4	Bushing	14	Distributor plate	24	Pressure relief valve
5	O-ring	15	Gearwheel set	25	Wire spring
6	Kin ring	16	O-ring	26	Shock valve
7	Bearing assy	17	End cover	27	Ball
8	Ring	18	Washer	29	Bushing
9	Cross pin	20	Pin screw		

* Housing, spool and sleeve(Check valve and the seats for relief and dual shock valves are loctited).

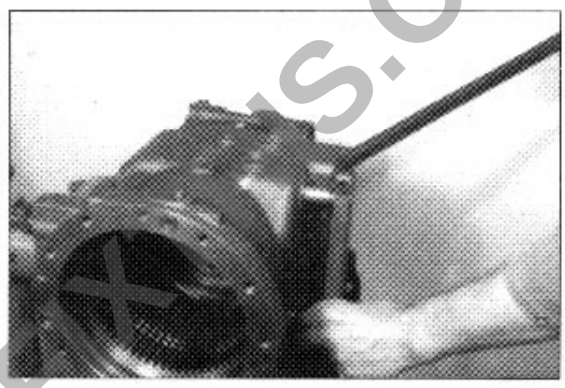
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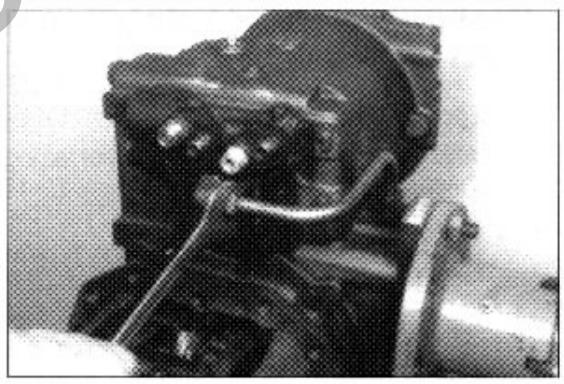
(3) Drive out roll pin(Arrow).



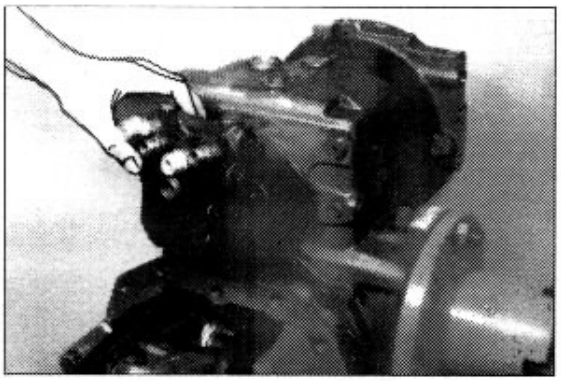
(4) Pry shift lever out of the housing bore and remove released shift fork.



(5) Remove suction line.



(6) Loosen socket head screws and separate shift lock from housing.

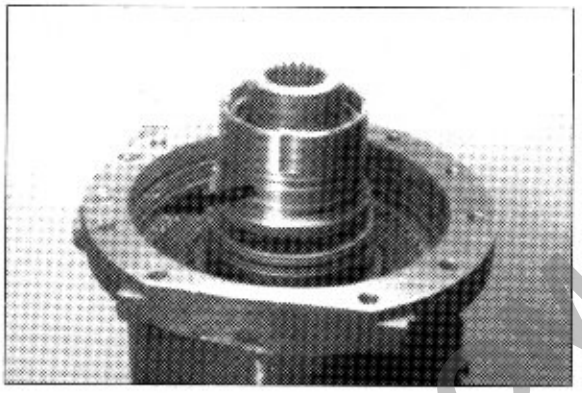


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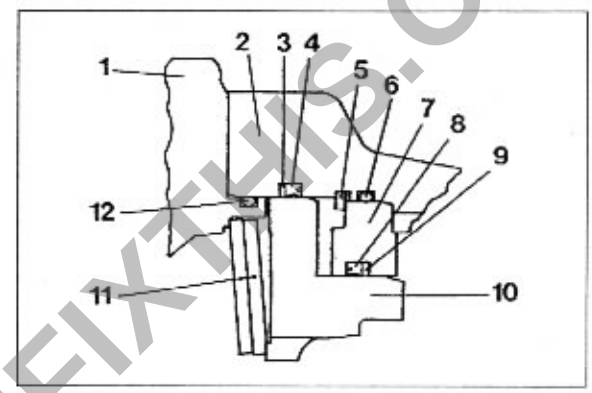
(8) Insert O-ring in the ring groove of the housing, see Arrow.

※ Expand O-ring slightly prior to the reassembly to ensure a perfect contact in the recess.



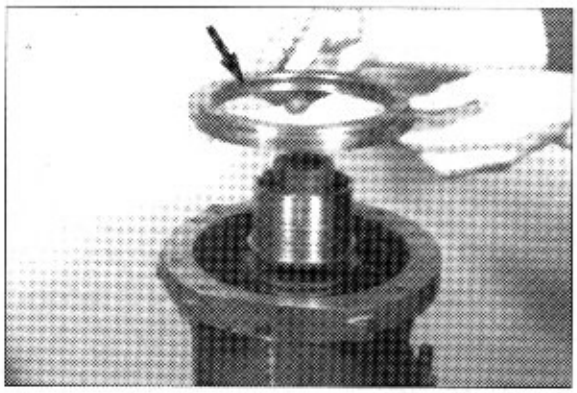
(9) The Draft on the right shows the installation position of the disk, the piston and its sealing components.

1 Drive casing
2 Clutch disk housing
3,4 Gasket(Back up and U-section ring)
5 Circlip
6 O-ring
7 Disk
8,9 Gasket(U section and back up ring)
10 Piston
11 Cup springs
12 O-ring

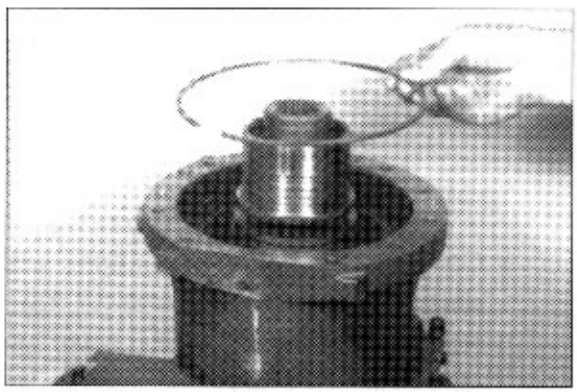


(10) Insert back-up and U-section ring in the ring groove(Arrow) and oil them
Insert disk until contact is obtained.

※ Pay attention to the installation position.



(11) Fix disk by means of snap ring.

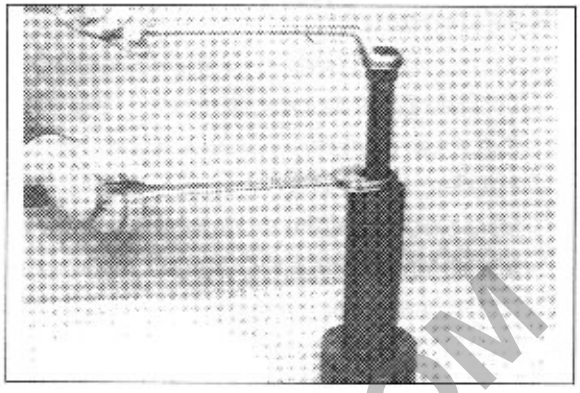


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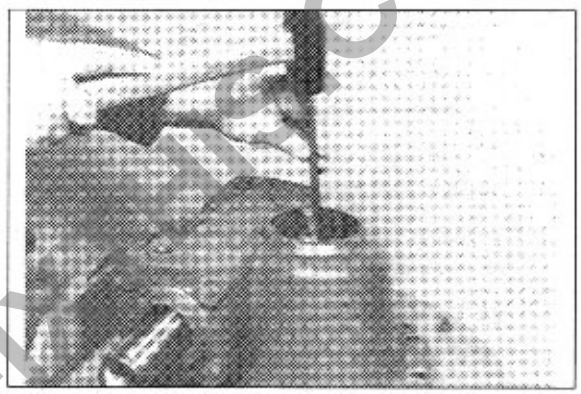
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⑤ Remove omega sleeve and pull off tapered roller bearing from the drive pinion.

Grab sleeve "Super"	5870 026 001
Basic set	5870 026 000



⑥ Drive both bearing outer races out of the axle carrier.

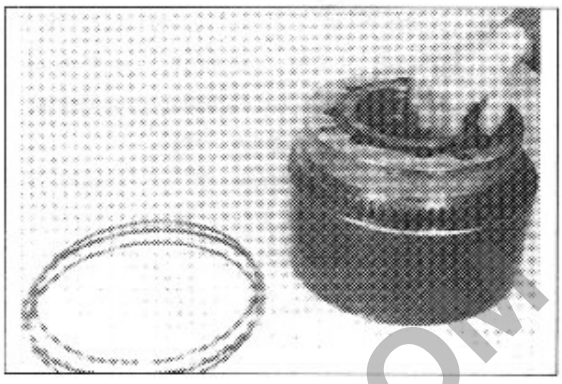


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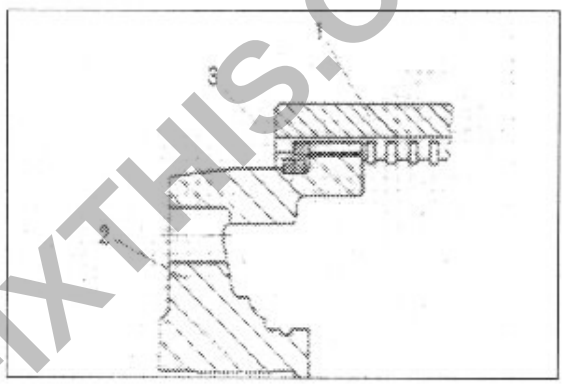
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⑲ Install preassembled internal gear carrier into the internal gear and fix it by means of snap rings(3 pieces).

※ Installation position, see draft see figure below.

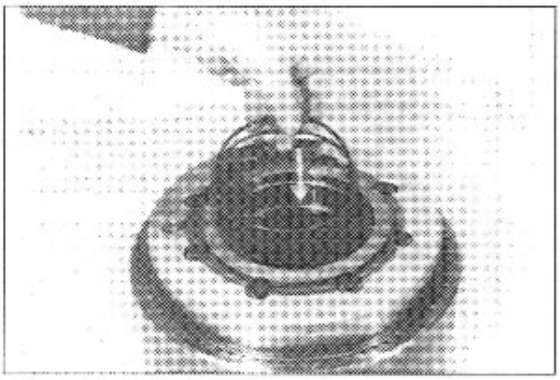


1 Internal gear
2 Ring gear carrier
3 Snap ring



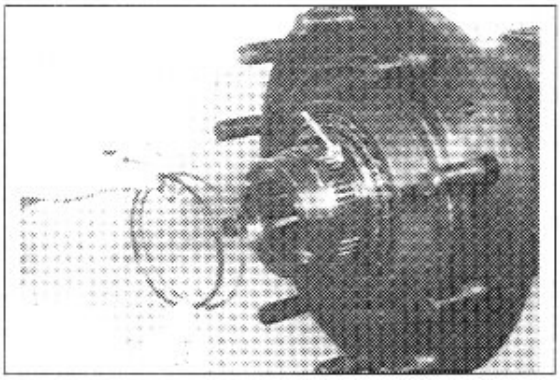
⑳ Insert retaining ring and O-ring into the recess of the internal gear carrier, see arrow.

※ Install O-ring showing towards the pressure chamber(Towards above). Lubricate retaining and O-ring(Use W10 oil).



㉑ Insert split retaining ring as well as O-ring into the annular groove of the hub carrier (See arrow) and lubricate.

※ Both ends of the retaining ring must have contact(Use assembly grease), in order to allow a correct installation of the internal gear carrier(Figure ㉒ page 8-266).



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