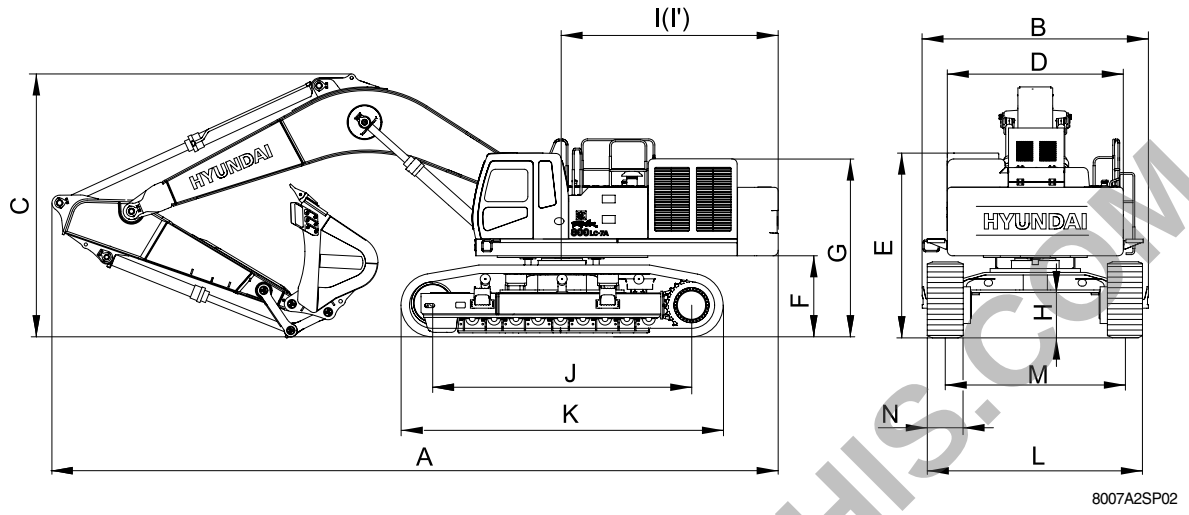
2. SPECIFICATIONS

· 7.20m(23' 7") BOOM, 2.95m(9' 8") ARM



8007A2SP02

Description		Unit	Specification
Operating weight		kg(lb)	82320(181480)
Bucket capacity(SAE heaped), standard		$m^3(yd^3)$	4.53(5.93)
Overall length	A	mm(ft-in)	13100(43' 0")
Overall width, with 700mm shoe (Transport position/Working position)	B		3675/4395(12' 1"/14' 5")
Overall height	C		5040(16' 6")
Superstructure width	D		3420(11' 3")
Overall height of cab	E		3580(11' 9")
Ground clearance of counterweight	F		1570(5' 2")
Engine cover height	G		3480(11' 5")
Minimum ground clearance	H		880(2' 11")
Rear-end distance	I		4200(13' 9")
Rear-end swing radius	I'		4315(14' 2")
Distance between tumblers	J		5030(16' 6")
Undercarriage length	K		6335(20' 9")
Undercarriage width (Transport position/Working position)	L		3480/4200(11' 5"/13' 9")
Track gauge (Transport position/Working position)	M		2780/3500(9' 1"/11' 6")
Track shoe width, standard	N		700(28")
Travel speed(Low/high)		km/hr(mph)	2.6/4.0(1.6/2.5)
Swing speed		rpm	6.3
Gradeability		Degree(%)	35(70)
Ground pressure(700mm shoe)		$kgf/cm^2(psi)$	1.07(15.22)

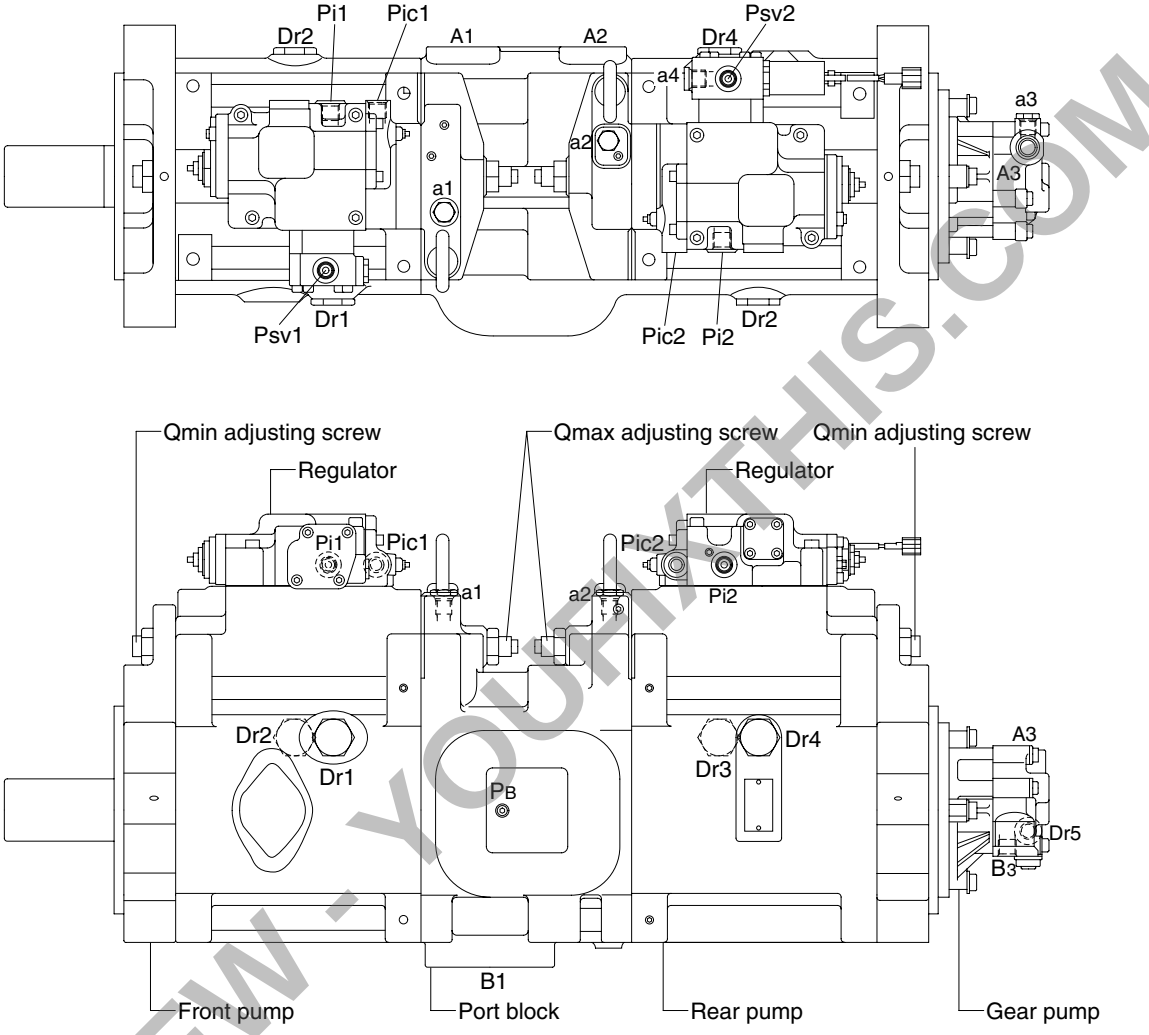
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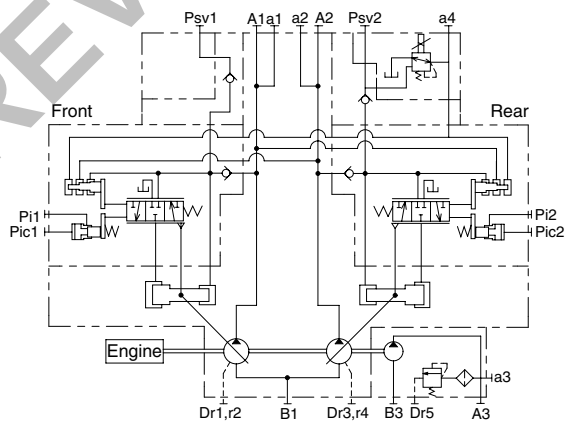
GROUP 1 PUMP DEVICE

1. STRUCTURE

The pump device consists of main pump, regulator and gear pump.



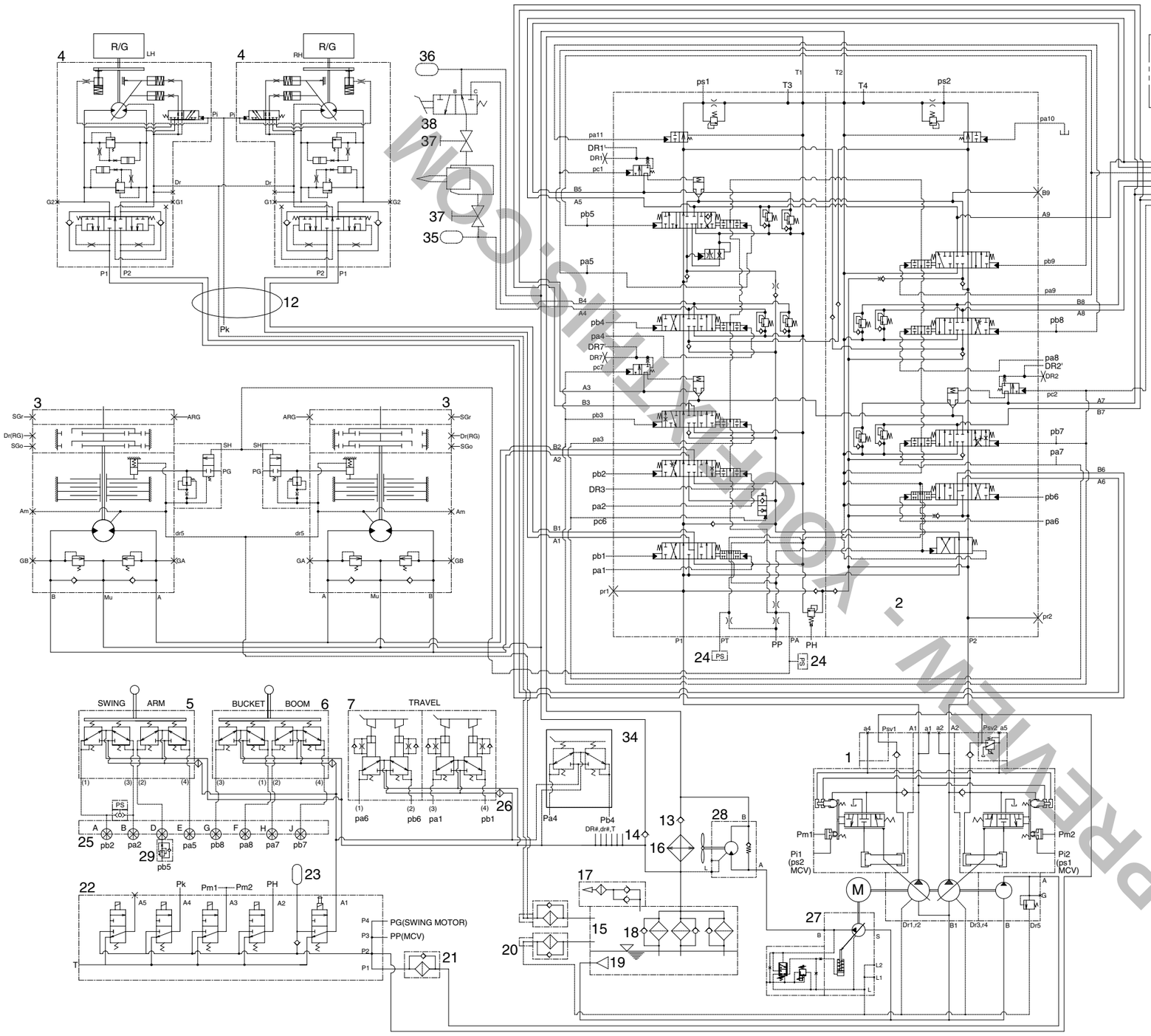
8007A2MP01



Port	Port name	Port size
A1,A2	Delivery port	SAE6000psi 1 1/4"
B1	Suction port	SAE2500psi 3 1/2"
Dr1~Dr4	Drain port	PF 3/4 - 23
Pi1,Pi2	Pilot port	PF 1/4 - 15
Pic1,Pic2	Qmax cut port	PF 1/4 - 13
Psv1, Psv2	Servo assist port	PF 1/4 - 15
a1, a2	Gauge port	PF 1/4 - 15
a3	Gauge port	PF 1/4 - 14
a4	Gauge port	PF 1/4 - 13
Pb	Gauge port	RC 1/8 - 12
A3	Gear delivery port	PF 1/2 - 19
B3	Gear suction port	PF 3/4 - 20.5
Dr5	Drain port	PF 3/8 - 15

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GROUP 1 HYDRAULIC CIRCUIT(Low noise)



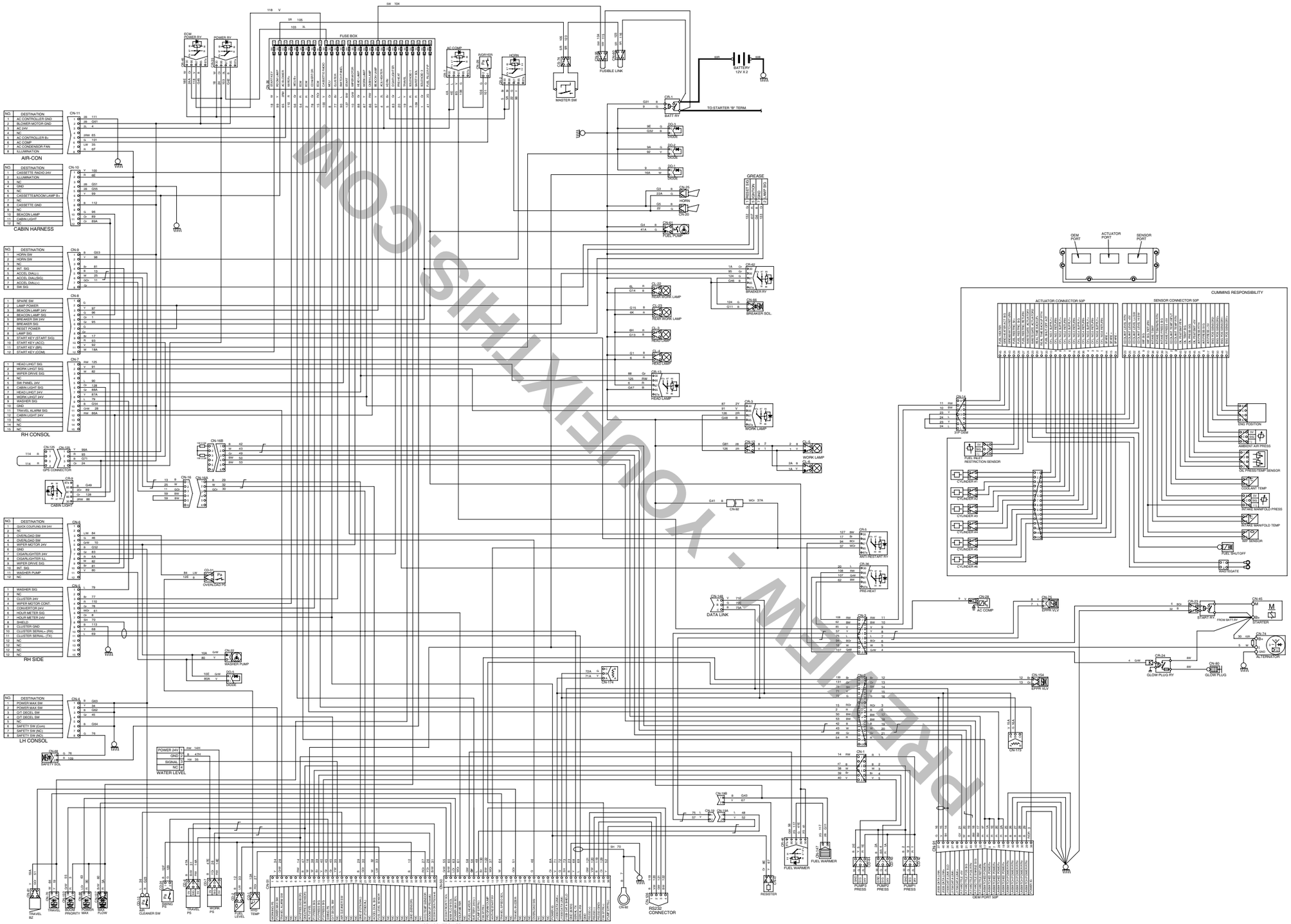
1	Main pump	20	Spin filter
2	Main control valve	21	Line filter
3	Swing motor	22	Solenoid valve
4	Travel motor	23	Accumulator
5	RCV lever(LH)	24	Pressure switch
6	RCV lever(RH)	25	Terminal
7	RCV pedal	26	Last guard filter
8	Boom cylinder(LH)	27	Fan drive pump
9	Boom cylinder(RH)	28	Fan drive motor
10	Arm cylinder	29	Shockless valve
11	Bucket cylinder	30	Safety lock valve
12	Turning joint	31	Safety lock valve
13	Check valve	32	Pressure switch
14	Check valve	33	Shutoff valve
15	Hydraulic tank	34	Single pedal
16	Oil cooler	35	Accumulator
17	Air breather	36	Accumulator
18	Return filter	37	Stop valve
19	Strainer	38	Selector valve

8007A3HC01A

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• ELECTRICAL CIRCUIT(1/2)



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8007A4EL03

5. ERROR CODES TABLE

Error code No.	Description
1	Short circuit in accel actuator system
2	Potentiometer circuit is shorted to Vcc(5V) or battery +
3	Short circuit in pump EPPR valve system
4	Short circuit in boom down EPPR valve system
5	Short circuit in travel speed solenoid system
6	Short circuit in power boost solenoid system
7	Short circuit in max flow solenoid system
10	Short circuit in hour-meter system
11	Accel dial circuit is shorted to Vcc(5V) or battery +
12	P1 pressure sensor circuit is shorted to power supply(24V) line
13	P2 pressure sensor circuit is shorted to power supply(24V) line
14	P3 pressure sensor circuit is shorted to power supply(24) line
15	Boom down pressure circuit is shorted to power supply(24V) line
16	Accel actuator circuit is open or shorted to ground
17	Potentiometer circuit is open or shorted to ground
18	Pump EPPR valve circuit is open or shorted to ground
19	Boom down EPPR valve circuit is open or shorted to ground
20	Travel speed solenoid circuit is open or shorted to ground
21	Power boost solenoid circuit is open or shorted to ground
22	Max flow solenoid circuit is open or shorted to ground
25	Hour-meter circuit is open or shorted to ground
26	Accel dial circuit is open or shorted to ground
27	P1 pressure sensor circuit is open or shorted to ground
28	P2 pressure sensor circuit is open or shorted to ground
29	P3 pressure sensor circuit is open or shorted to ground
30	Boom down pressure sensor circuit is open or shorted to ground
31	Engine preheater circuit is open or shorted to ground
32	Travel alarm buzzer circuit is open or shorted to ground
33	Alternator circuit is open or shorted to ground
34	Controller input voltage is below 18V
35	Controller input voltage is over 38V
36	Communication error with cluster
37	Engine speed sensor circuit is open or shorted to ground
38	Anti-restart relay circuit is open or shorted to ground
39	Accel actuator does not stop at a target position
40	There is more than 500rpm difference between target speed and actual speed

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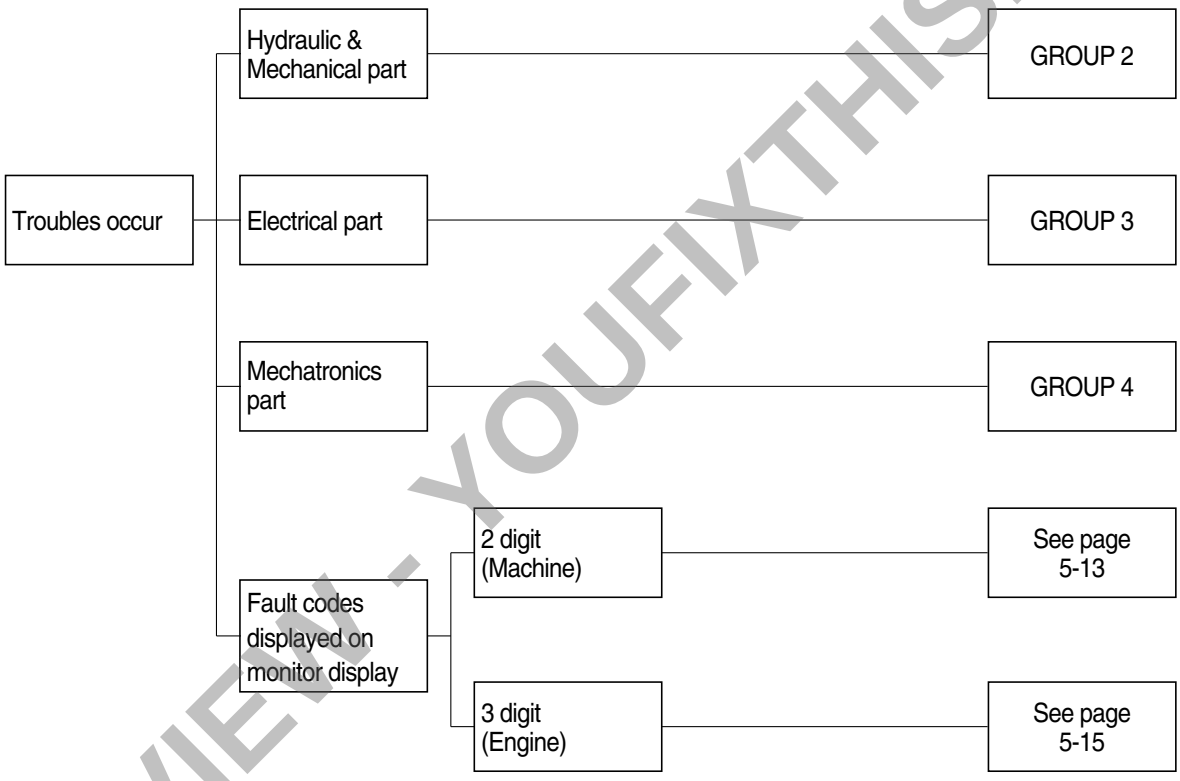
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GROUP 1 BEFORE TROUBLESHOOTING

1. INTRODUCTION

When a trouble is occurred in the machine, this section will help an operator to maintain the machine with easy.

The trouble of machine is parted Hydraulic & Mechanical system, Electrical system and Mechatronics system. At each system part, an operator can check the machine according to the troubleshooting process diagram.



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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, nut	M24 × 3.0	88.2 ± 8.8	638 ± 63.7
2		Radiator mounting bolt	M16 × 2.0	29.7 ± 4.5	215 ± 32.5
3		Coupling mounting socket bolt	M24 × 3.0	89.2 ± 2.5	645 ± 18.1
4		Main pump housing mounting bolt	M 8 × 1.25	13.4 ± 1.3	97 ± 9.4
5	Hydraulic system	Main pump mounting bolt	M24 × 3.0	80 ± 8.0	579 ± 57.9
6		Main control valve mounting nut	M20 × 2.5	45 ± 4.5	326 ± 32.5
7		Fuel tank mounting bolt	M20 × 2.5	58 ± 6.0	420 ± 43.4
8		Hydraulic oil tank mounting bolt	M20 × 2.5	58 ± 6.0	420 ± 43.4
9		Turning joint mounting bolt, nut	M16 × 2.0	29.7 ± 4.5	215 ± 32.5
10	Power train system	Swing motor mounting bolt	M24 × 3.0	100 ± 15	723 ± 109
11		Swing bearing upper part mounting bolt	M30 × 3.0	175 ± 20	1266 ± 145
12		Swing bearing lower part mounting bolt	M30 × 3.0	175 ± 20	1266 ± 145
13		Travel motor mounting bolt	M30 × 3.0	100 ± 8.0	723 ± 57.9
14		Sprocket mounting bolt	M30 × 3.5	200 ± 15	1447 ± 109
15	Under carriage	Carrier roller mounting bolt, nut	M20 × 2.5	57.9 ± 8.7	419 ± 62.9
16		Track roller mounting bolt	M27 × 3.0	135 ± 15	977 ± 109
17		Track tension body mounting bolt	M20 × 2.5	57.9 ± 6.0	419 ± 43.4
18		Track shoe mounting bolt, nut	1 1/8"-12UNF	196.2 ± 15.9	1419± 115
18		Track guard mounting bolt	M27 × 3.0	135 ± 15	977 ± 109
19	Others	Counter weight mounting bolt	M42 × 3.0	390 ± 40	2821 ± 289
20		Center frame support & lower track mounting bolt	M36 × 3.0	280 ± 30	2025 ± 21.7
21		Cab mounting bolt	M12 × 1.75	12.2 ± 1.3	88.2 ± 9.4
22		Operator's seat mounting bolt	M 8 × 1.25	2.5 ± 0.5	18.1 ± 3.6

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

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1. REMOVAL AND INSTALL

1) REMOVAL

(1) Lower the work equipment to the ground and stop the engine.

(2) Loosen the breather slowly to release the pressure inside the hydraulic tank.

⚠ **Escaping fluid under pressure can penetrate the skin causing serious injury.**

(3) Loosen the drain plug under the hydraulic tank and drain the oil from the hydraulic tank.

· Hydraulic tank quantity : 450 ℓ

(4) Remove socket bolts(5) and disconnect hose (1,2).

(5) Disconnect pilot line hoses(4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14).

(6) Remove bolts(4) and disconnect pump suction tube (3).

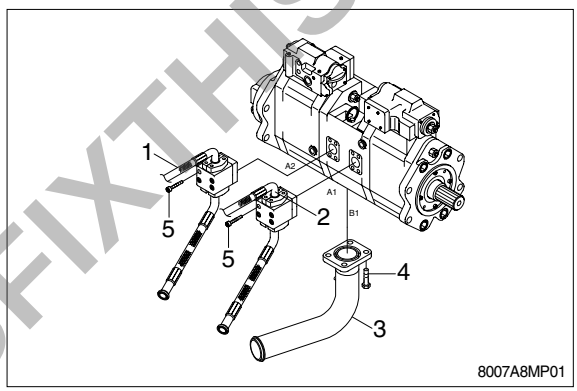
※ When pump suction tube is disconnected, the oil inside the piping will flow out, so catch it in oil pan.

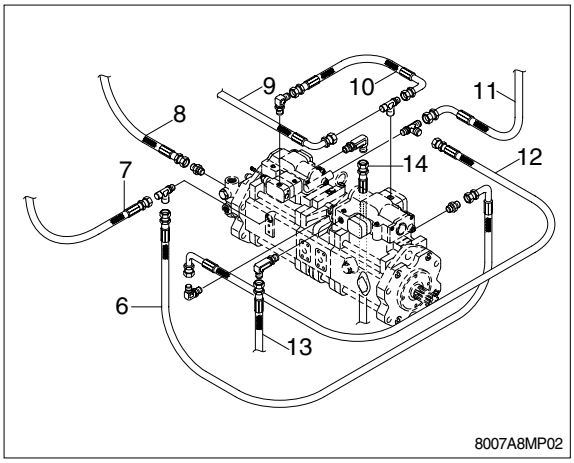
(7) Sling the pump assembly and remove the pump mounting bolts.

· Weight : 300kg(660lb)

※ Pull out the pump assembly from housing. When removing the pump assembly, check that all the hoses have been disconnected.







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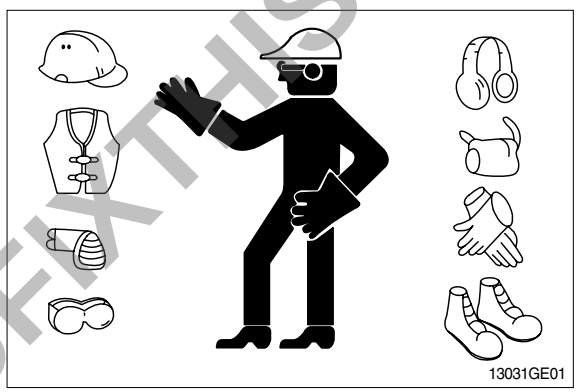
GROUP 1 SAFETY

FOLLOW SAFE PROCEDURE

Unsafe work practices are dangerous. Understand service procedure before doing work; Do not attempt shortcuts.

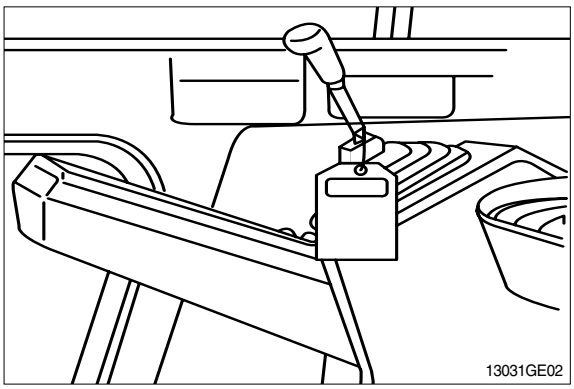
WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.



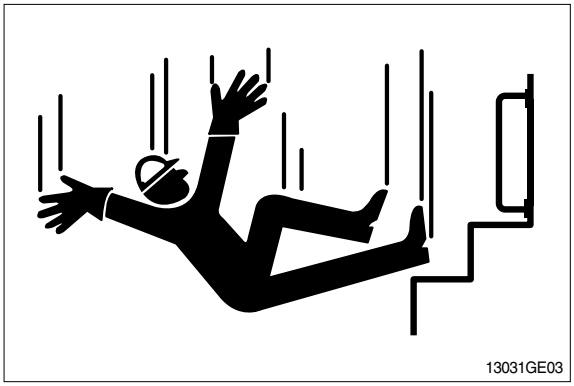
WARN OTHERS OF SERVICE WORK

Unexpected machine movement can cause serious injury.
Before performing any work on the excavator, attach a 「**Do Not Operate**」 tag on the right side control lever.



USE HANDHOLDS AND STEPS

Falling is one of the major causes of personal injury.
When you get on and off the machine, always maintain a three point contact with the steps and handrails and face the machine. Do not use any controls as handholds.
Never jump on or off the machine. Never mount or dismount a moving machine.
Be careful of slippery conditions on platforms, steps, and handrails when leaving the machine.



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2. HOW TO READ THE SERVICE MANUAL

Distribution and updating

Any additions, amendments or other changes will be sent to HYUNDAI distributors.

Get the most up-to-date information before you start any work.

Filing method

1. See the page number on the bottom of the page.
   File the pages in correct order.
2. Following examples shows how to read the page number.
   Example 1

   2 - 3
   - Item number(2. Structure and Function)
   - Consecutive page number for each item.

3. Additional pages : Additional pages are indicated by a hyphen(-) and number after the page number. File as in the example.

   10 - 4
   10 - 4 - 1 ┐
   10 - 4 - 2 ┘ Added pages
   10 - 5

Revised edition mark(①②③…)

When a manual is revised, an edition mark is recorded on the bottom outside corner of the pages.

Revisions

Revised pages are shown at the **list of revised pages** on the between the contents page and section 1 page.

Symbols

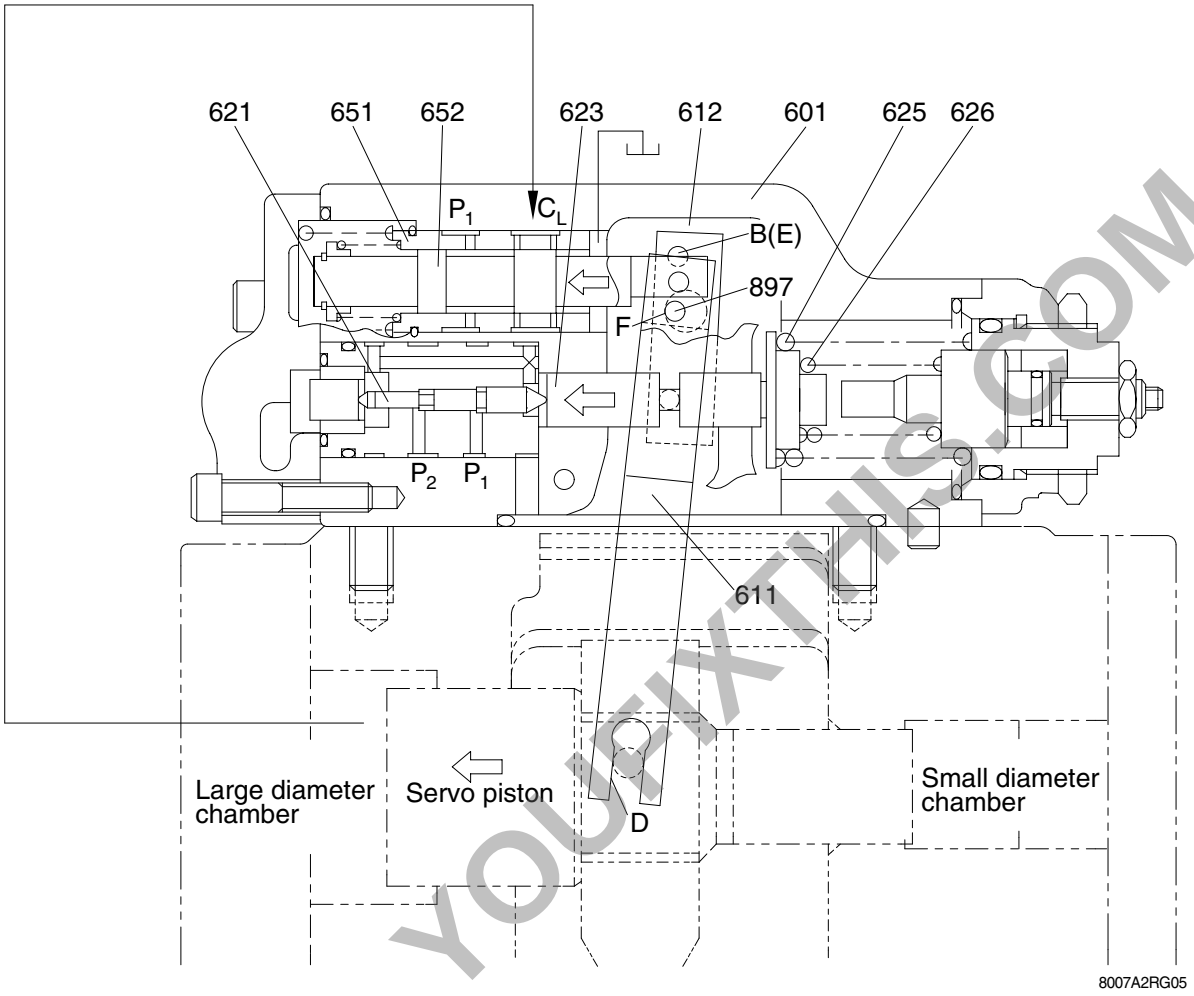
So that the shop manual can be of ample practical use, important places for safety and quality are marked with the following symbols.

Symbol	Item	Remarks
⚠	Safety	Special safety precautions are necessary when performing the work.
		Extra special safety precautions are necessary when performing the work because it is under internal pressure.
※	Caution	Special technical precautions or other precautions for preserving standards are necessary when performing the work.

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② Flow reset function



As the self pump delivery pressure P1 or the companion pump delivery pressure P2 decreases, the compensating rod(623) is pushed back by the action of the springs(625 & 626) to rotate lever 1(612) around point E. Rotating of lever 1 causes the feedback lever(611) to rotate around the fulcrum of point D and then the spool(652) to move to the left. As a result, port CL opens a way to the tank port.

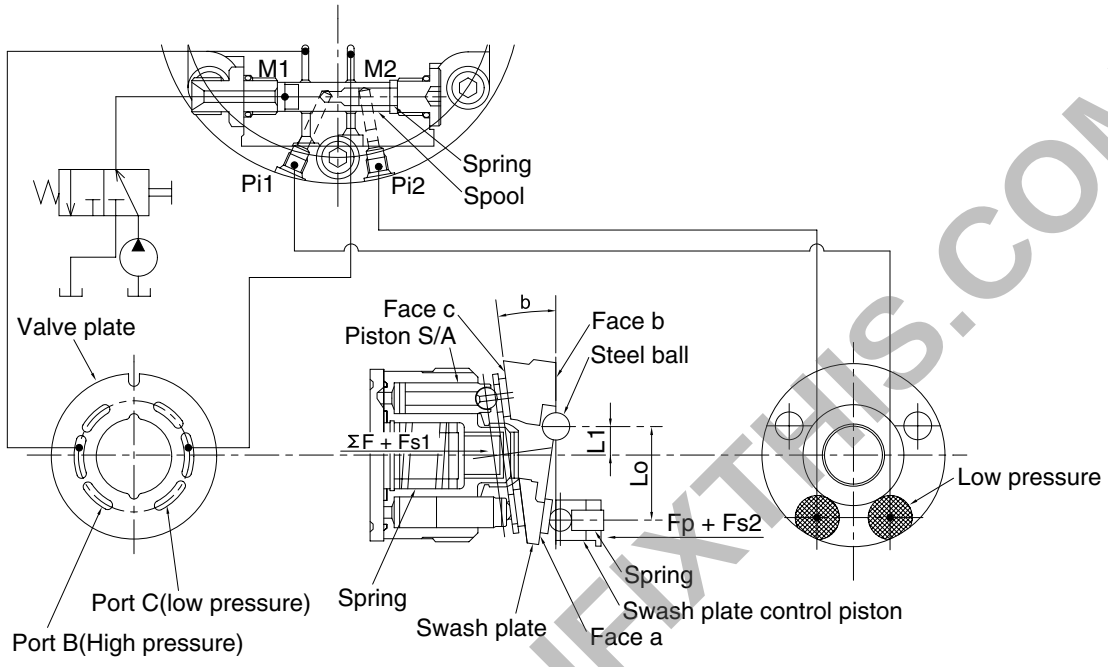
This causes the servo piston to move to the left and the pump's delivery rate to increase.

The movement of the servo piston is transmitted to the spool by the action of the feedback mechanism to move it till the opening between the spool and sleeve is closed.

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(2) When running at 2nd speed(high speed)



8007A2TM11

When control valve is set to the 2nd speed position, the pressure oil delivered by the pump is led to spool, and spool is switched to the position shown in the figure.
And the pressurized oil flows into each ports Pi1 and Pi2 through ports M1 and M2 and the motor driving pressure (P1: high pressure and P2: low pressure) is led to each swash plate control piston. Therefore the force pushing up the swash plate acts on swash plate control piston.

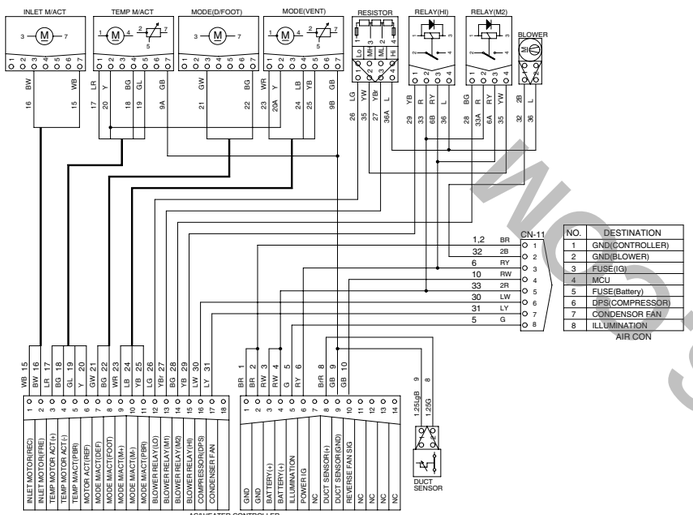
$Fp1=Ap \times P1$ $Fp2=Ap \times P2$

When steel ball is placed on the tilting center, the balance of moment acting on swash plate is in the condition of $(\Sigma F+Fs1) \times L1<(Fp+Fs2) \times Lo$ depending on the total ΣF of driving force of piston S/A.
The face "b" of swash plate stabilizes and the swash plate angle becomes "β" angle, consequently the motor speed is the 2nd speed (high speed).
While the engine is stopped, spool is returned to the 1st speed position by the force of spring since pressurized oil does not flow. When steel ball is placed on the tilting center, the balance of moment acting on swash plate is in the condition of $Fs \times L1>Fp \times Lo$, the face "a" of swash plate stabilizes and the swash plate angle becomes "α" angle, consequently the motor speed at starting is always the 1st speed.

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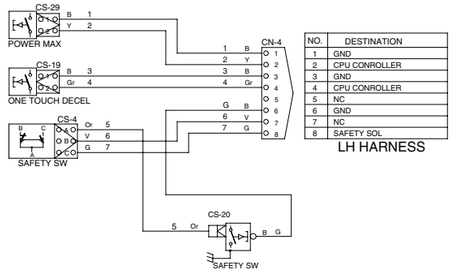
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· ELECTRICAL CIRCUIT(2/2)



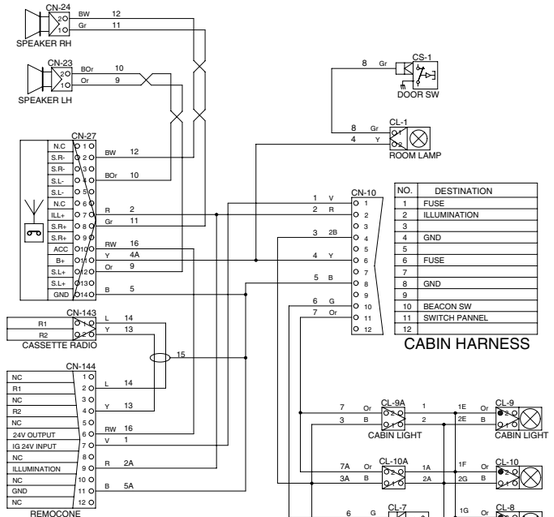
NO.	DESTINATION
1	GND(CONTROLLER)
2	GND(BLOWER)
3	FUSE(IG)
4	MCU
5	FUSE(Battery)
6	DPS(COMPRESSOR)
7	CONDENSOR FAN
8	ILLUMINATION

AIR CON



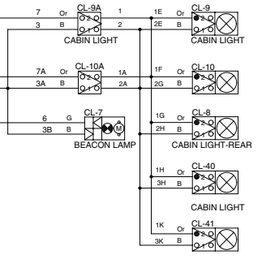
NO.	DESTINATION
1	GND
2	CPU CONROLLER
3	GND
4	CPU CONROLLER
5	NC
6	GND
7	NC
8	SAFETY SOL

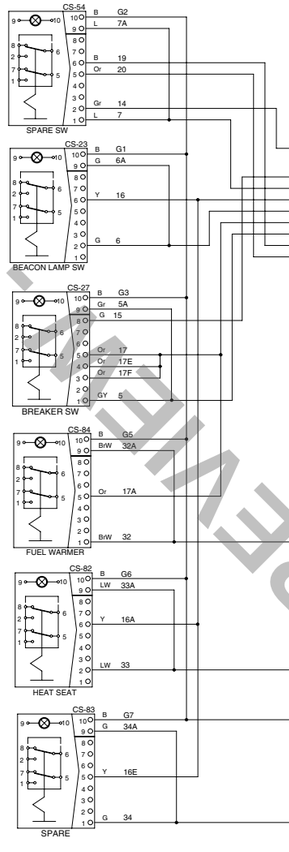
LH HARNESS

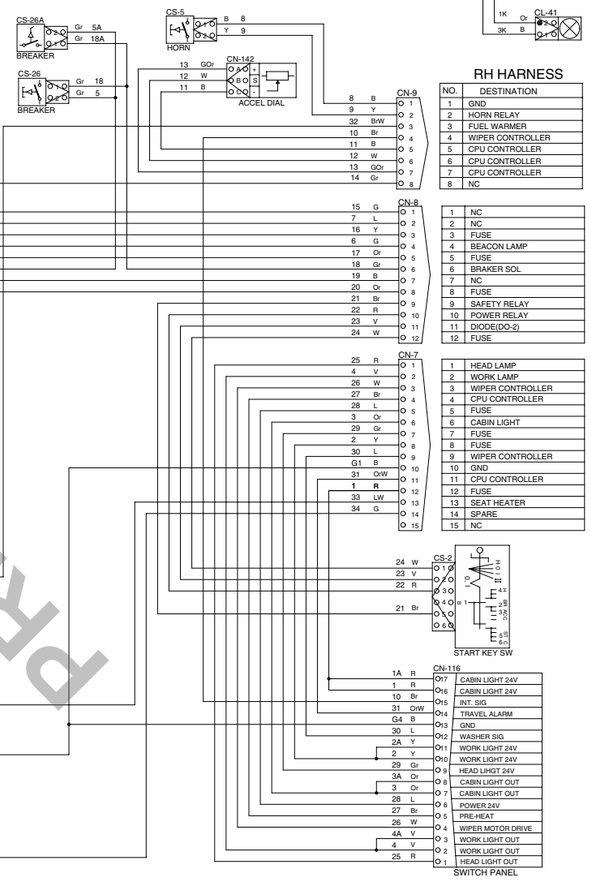


NO.	DESTINATION
1	FUSE
2	ILLUMINATION
3	
4	GND
5	
6	FUSE
7	
8	GND
9	
10	BEACON SW
11	SWITCH PANNEL
12	

CABIN HARNESS





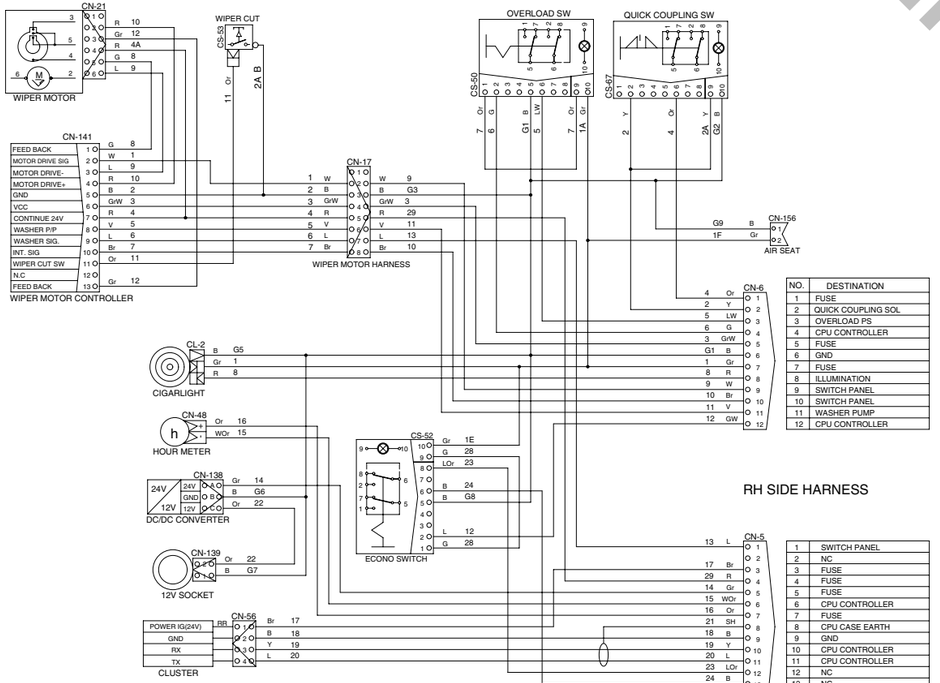


NO.	DESTINATION
1	GND
2	HORN RELAY
3	FUEL WARMER
4	WIPER CONTROLLER
5	CPU CONTROLLER
6	CPU CONTROLLER
7	CPU CONTROLLER
8	NC

RH HARNESS

1	NC
2	NC
3	FUSE
4	BEACON LAMP
5	FUSE
6	BRAKER SOL
7	NC
8	FUSE
9	SAFETY RELAY
10	POWER RELAY
11	DIODE(DO-2)
12	FUSE

1	HEAD LAMP
2	WORK LAMP
3	WIPER CONTROLLER
4	CPU CONTROLLER
5	FUSE
6	CABIN LIGHT
7	FUSE
8	FUSE
9	WIPER CONTROLLER
10	GND
11	CPU CONTROLLER
12	FUSE
13	SEAT HEATER
14	SPARE
15	NC



NO.	DESTINATION
1	FUSE
2	QUICK COUPLING SOL
3	OVERLOAD PS
4	CPU CONTROLLER
5	FUSE
6	GND
7	FUSE
8	ILLUMINATION
9	SWITCH PANEL
10	SWITCH PANEL
11	WASHER PUMP
12	CPU CONTROLLER

RH SIDE HARNESS

1	SWITCH PANEL
2	NC
3	FUSE
4	FUSE
5	FUSE
6	CPU CONTROLLER
7	FUSE
8	CPU CASE EARTH
9	GND
10	CPU CONTROLLER
11	CPU CONTROLLER
12	NC
13	NC
14	NC
15	NC

8007A4EL04

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3. USER MODE SELECTION SYSTEM

An operator can change the engine and pump power and memorize it for his preference.

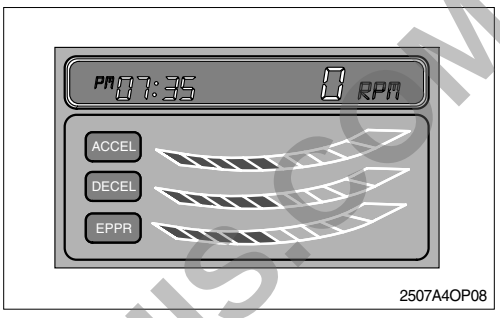
Mode	Operation
U	High idle rpm, auto decel rpm EPPR pressure can be modulated and memorized separately

HOW TO MODULATE THE MEMORY SET

1) Each memory mode has a initial set which are mid-range of max engine speed, auto decel rpm, and EPPR valve input current.

2) High idle rpm, auto decel rpm, EPPR pressure can be modulated and memorized separately in the U-mode.

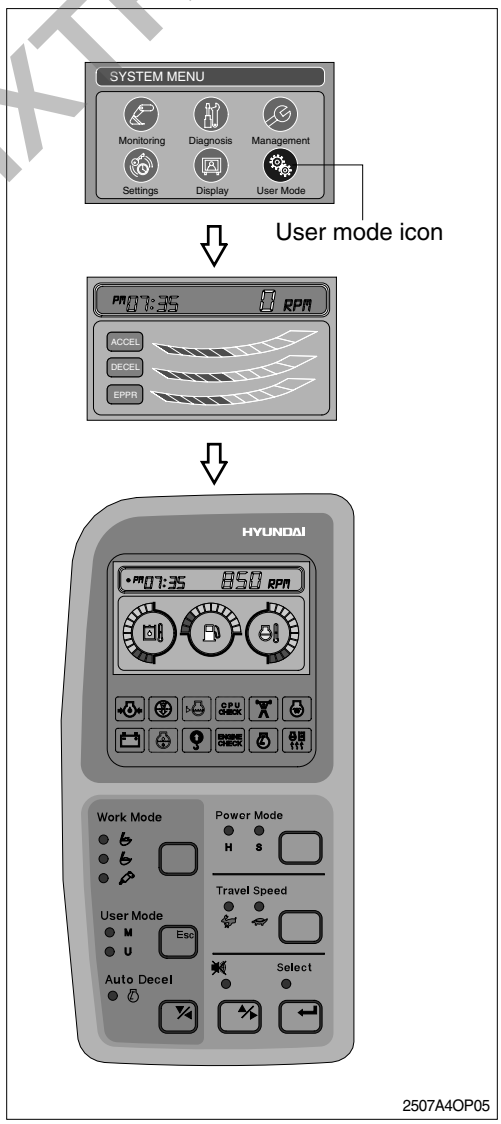
※ Refer to the page 5-35 for set of user mode.



2507A4OP08

· LCD segment vs parameter setting

Segment (▮)	ACCEL (rpm)	DECEL (rpm)	EPPR (mA)
1	1400	Low idle(800)	150
2	1450	850	200
3	1500	900	250
4	1550	950	300
5	1600	1000	350
6	1650	1050	400
7	1700	1100	450
8	1750	Decel rpm(1150)	500
9	1800	1200	550
10	1850	1250	600

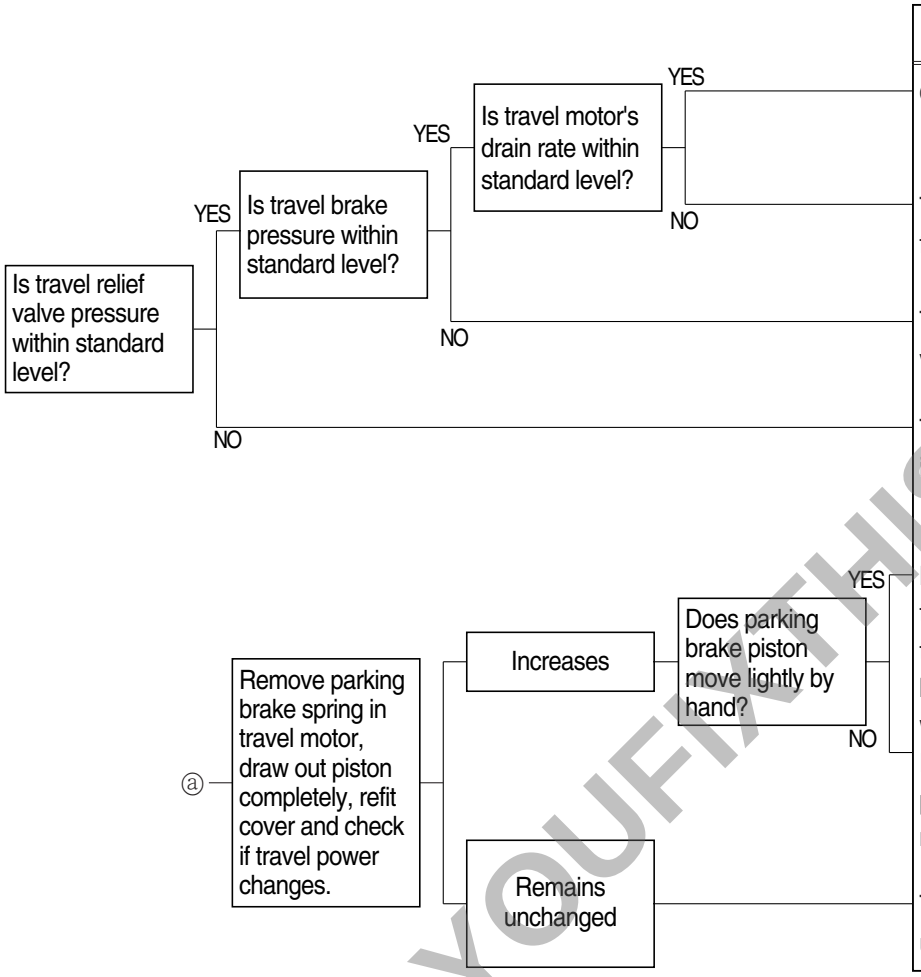


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5) TRAVEL ACTION IS POWERLESS(Travel only)



Cause	Remedy
ⓐ	
Travel motor is faulty.	Disassemble and repair.
Travel brake valve is defective.	Disassemble and repair or replace.
Travel relief valve is faulty.	Disassemble and repair or replace.
Hydraulic circuit that releases travel parking brake is clogged with dirt.	Disassemble and clean.
Parking brake piston in travel motor is stuck.	Disassemble and repair.
Travel reduction unit is defective.	Disassemble and repair.

6) MACHINE RUNS RECKLESSLY ON A SLOPE



Cause	Remedy
	Disassemble and repair or replace.

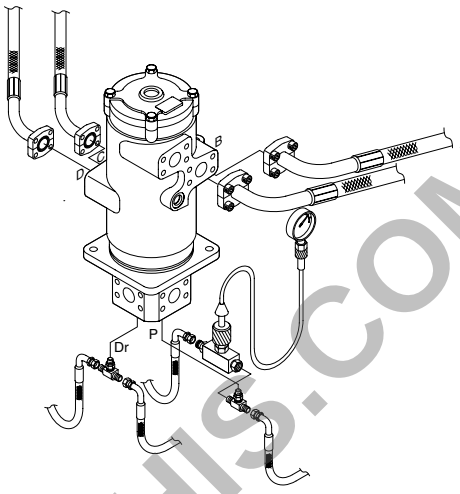
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14) FOR TRAVEL SPEED SELECTING PRESSURE

(1) Preparation

① Stop the engine.
② Remove the top cover of the hydraulic tank oil supply port with a wrench.
③ Push the pressure release button to bleed air.
④ To measure the speed selecting pressure: Install a connector and pressure gauge assembly to turning joint P port as shown.
⑤ Start the engine and check for on leakage from the adapter.
⑥ Keep the hydraulic oil temperature at 50±5℃.



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(2) Measurement

① Select the following switch positions.
Travel mode switch : 1 speed
2 speed
· Mode selector : M mode
② Measure the travel speed selecting pressure in the Hi or Lo mode.
③ Lower the bucket to the ground to raise the track off the ground. Operate the travel lever at full stroke and measure the fast speed pressure.
④ Repeat steps ② and ③ three times and calculate the average values.

(3) Evaluation

The average measured pressure should be within the following specifications.

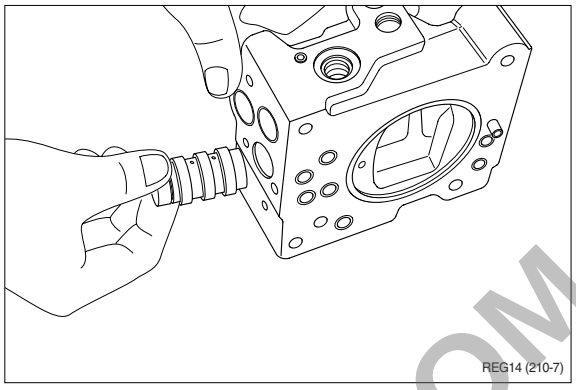
Unit : kgf / cm^2

Model	Travel speed mode	Standard	Maximum allowable	Remarks
R800LC-7A	1 Speed	0	-	
	2 Speed	33±5	-	

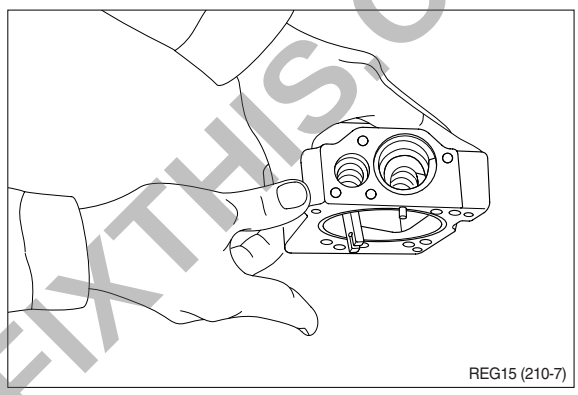
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(11) Fit set spring(655) to spool hole and put compensating piston(621) and piston case(622) into compensating hole.
Fit pilot cover(641) and tighten it with hexagonal socket head screws(436, 438).

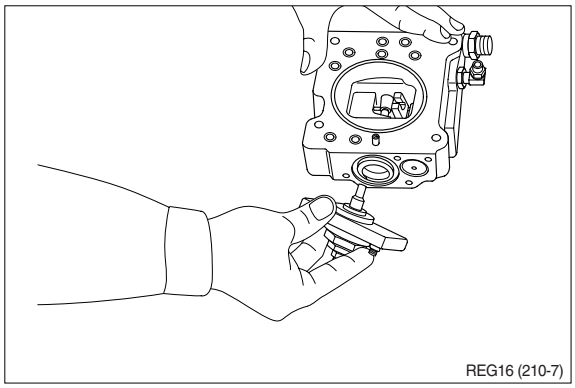

REG14 (210-7)

(12) Put spring seat(644), pilot spring(646) and adjusting ring(Q, 645) into pilot hole.
Then fix spring seat(624), inner spring (626) and outer spring(625) into compensating hole.
※ When fitting spring seat, take care not to mistake direction of spring seat.


REG15 (210-7)

(13) Install cover(C, 629) fitted with adjusting screws(628, 925), adjusting ring(C, 627), lock nut(630), hexagon nut(801) and adjusting screw(924).
Then tighten them with hexagonal socket head screws(438).

This completes assembly.


REG16 (210-7)

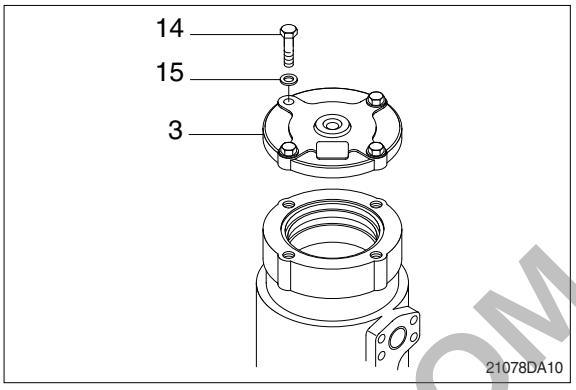
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2) DISASSEMBLY

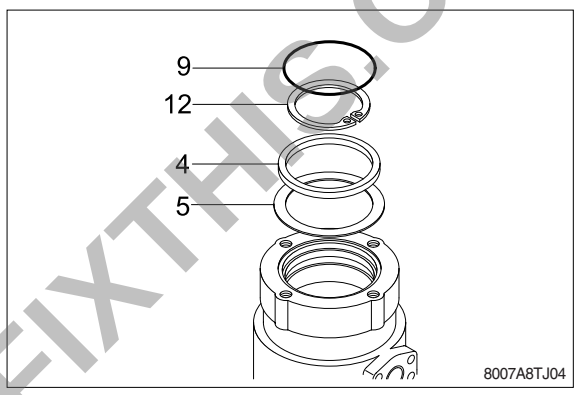
※ Before the disassembly, clean the turning joint.

(1) Remove bolts(14), washer(15) and cover(3).



(2) Remove O-ring(9).

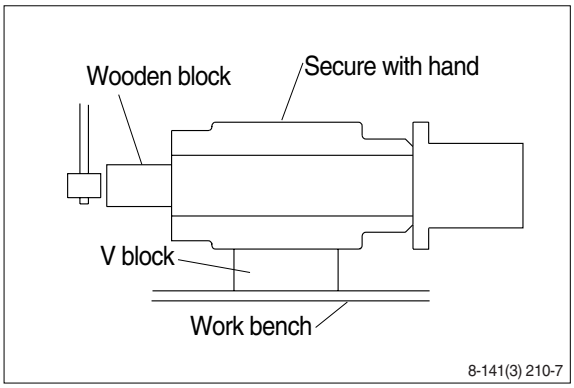
(3) Remove retainer ring(12), spacer(4) and shim(5).



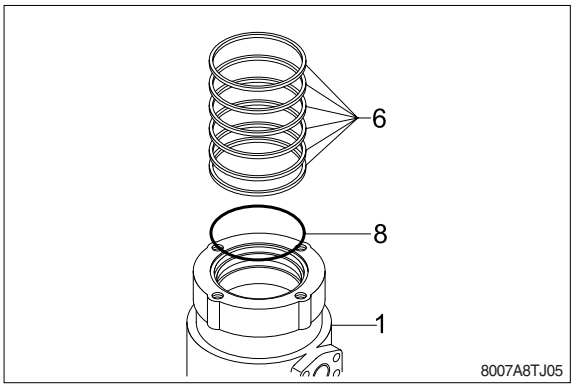
(4) Place body(1) on a V-block and by using a wood buffer at the shaft end, hit out shaft(2) to about 1/2 from the body with a hammer.

※ Take care not to damage the shaft(2) when remove body(1) or rest it sideway.

※ Put a fitting mark on body(1) and shaft(2).



(5) Remove six slipper seals(6) and O-ring(8), from body(1).



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