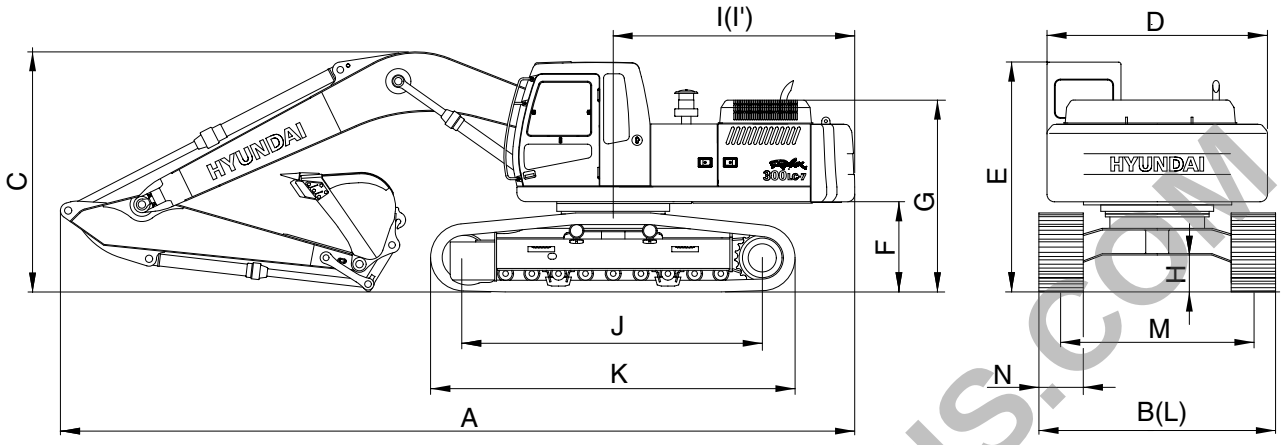
2. SPECIFICATIONS

1) 6.25m (20' 6") BOOM, 2.50m (8' 2") ARM



Description		Unit	Specification
Operating weight		kg(lb)	29600(65300)
Bucket capacity(SAE heaped), rock bucket		$m^3(yd^3)$	1.16(1.52)
Overall length	A	mm(ft-in)	10800(35' 5")
Overall width, with 600mm shoe	B		3200(10' 6")
Overall height	C		3470(11' 7")
Superstructure width	D		2980(9' 9")
Overall height of cab	E		3010(9' 11")
Ground clearance of counterweight	F		1190(3' 11")
Engine cover height	G		3190(10' 6")
Minimum ground clearance	H		500(1' 8")
Rear-end distance	I		3270(10' 9")
Rear-end swing radius	I'		3350(11' 0")
Distance between tumblers	J		4030(13' 3")
Undercarriage length	K		4940(16' 2")
Undercarriage width	L		3200(10' 6")
Track gauge	M		2600(8' 6")
Track shoe width, standard	N		600(24")
Travel speed(Low/high)		km/hr(mph)	3.1/5.4(1.9/3.4)
Swing speed		rpm	11.0
Gradeability		Degree(%)	35(70)
Ground pressure(600mm shoe)		$kgf/cm^2(psi)$	0.57(8.11)

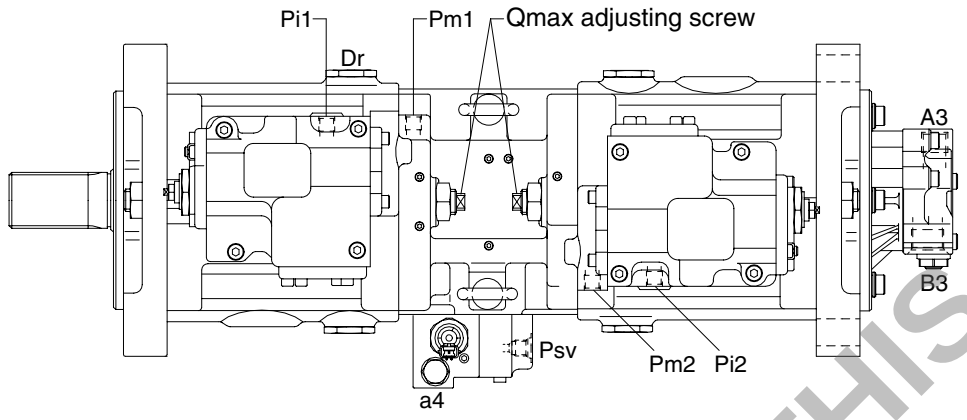
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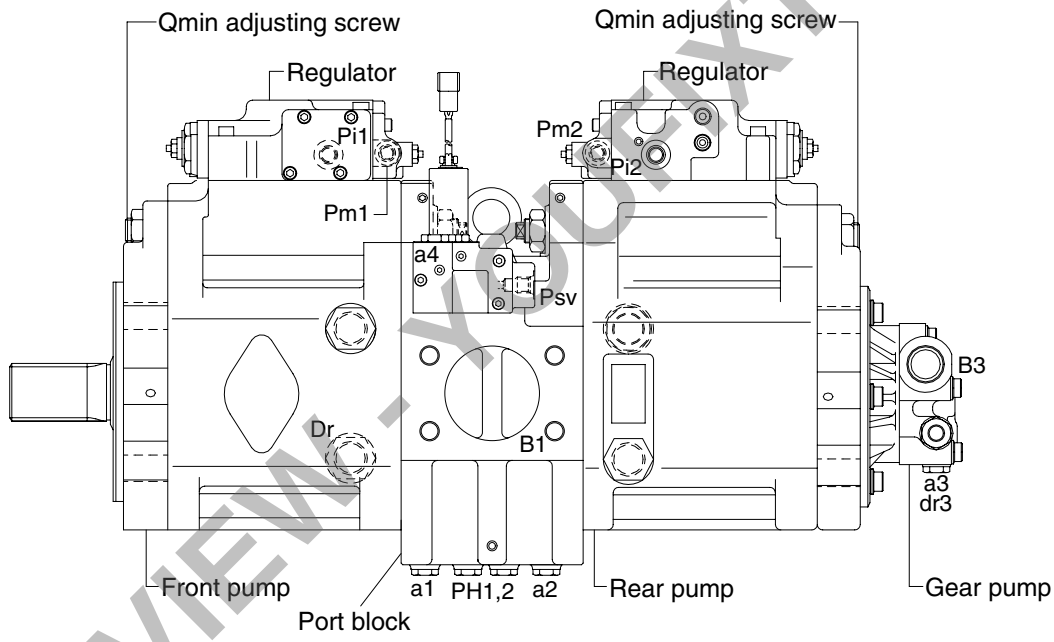
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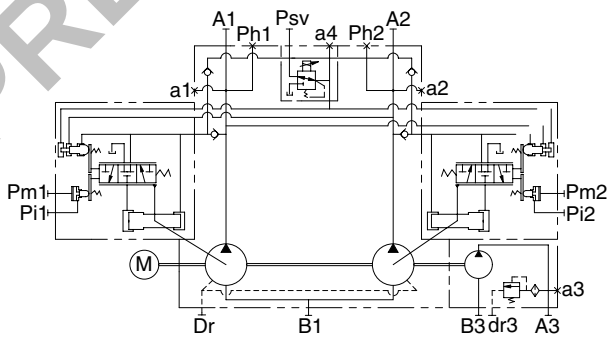
GROUP 1 PUMP DEVICE

1. STRUCTURE

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







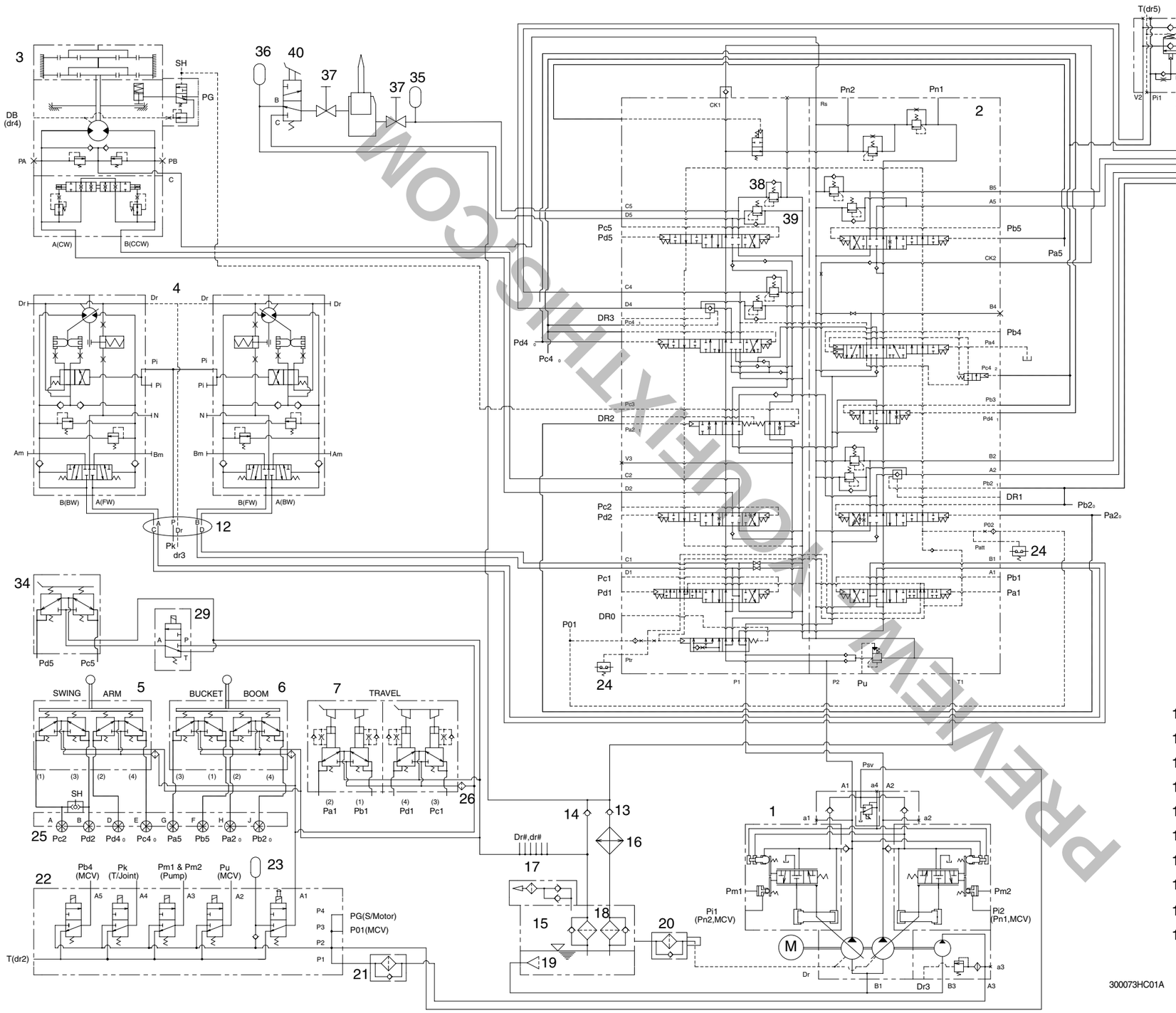
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Port	Port name	Port size
A1, 2	Delivery port	SAE6000psi 1"
B1	Suction port	SAE2500psi 2 1/2"
Dr1	Drain port	PF 3/4 - 20
Ph1, h2	Pressure sensor port	PF 3/8 - 17
Pi1, i2	Pilot port	PF 1/4 - 15
Pm1, m2	Qmax cut port	PF 1/4 - 15
Psv	Servo assist port	PF 1/4 - 15
a1, 2, 4	Gauge port	PF 1/4 - 15
a3	Gauge port	PF 1/4 - 14
A3	Gear pump delivery port	PF 1/2 - 19
B3	Gear pump suction port	PF 3/4 - 20.5
Dr3	Gear pump drain port	PF 3/8 - 15

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GROUP 1 HYDRAULIC CIRCUIT

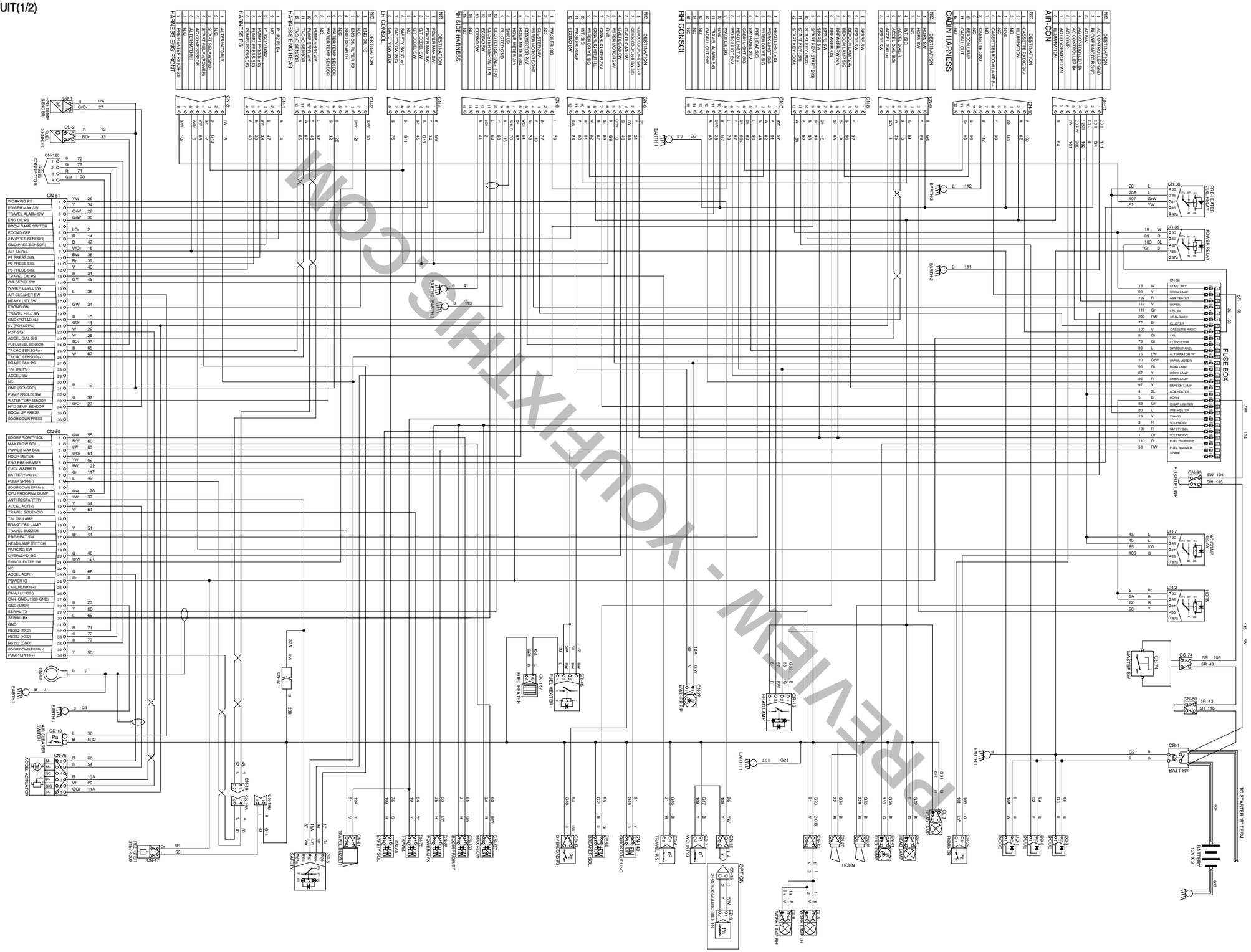


1	Main pump	20	Spin filter
2	Main control valve	21	Line filter
3	Swing motor	22	Solenoid valve
4	Travel motor	23	Accumulator
5	RCV lever(LH)	24	Pressure switch
6	RCV lever(RH)	25	Terminal
7	Rcv pedal	26	Last guard filter
8	Boom cylinder(LH)	29	Solenoid valve
9	Boom cylinder(RH)	30	Safety valve
10	Arm cylinder	31	Safety valve
11	Bucket cylinder	32	Pressure switch
12	Turning joint	33	Shut off valve
13	Check valve	34	Pedal
14	Check valve	35	Accumulator
15	Hydraulic tank	36	Accumulator
16	Oil cooler	37	Stop valve
17	Air breather	38	Port relief valve
18	Return element	39	Port relief valve
19	Strainer	40	Selector valve

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• ELECTRICAL CIRCUIT(1/2)



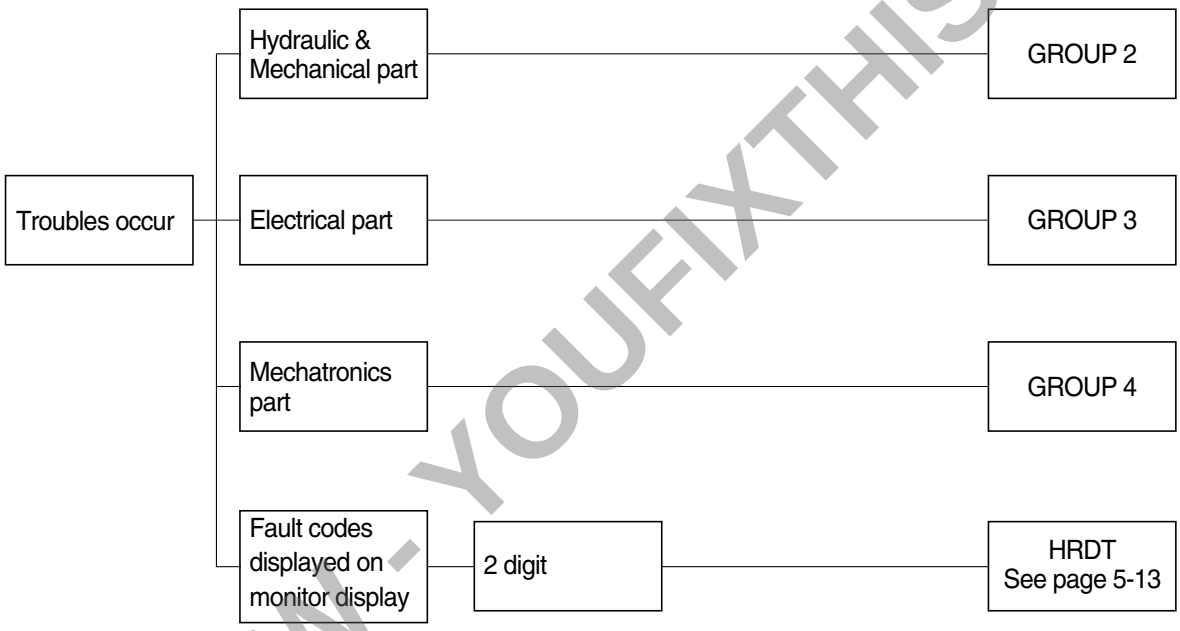
SECTION 6 TROUBLESHOOTING

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	M22 × 2.5	48 ± 2.0	347 ± 14.5
2		Radiator mounting bolt	M16 × 2.0	25.7 ± 4.0	186 ± 29
3		Coupling mounting socket bolt	M20 × 2.5	46.5 ± 2.5	336 ± 18.1
4		Main pump housing mounting bolt	M10 × 1.5	4.8 ± 0.3	35 ± 2.2
5	Hydraulic system	Main pump mounting bolt	M20 × 2.5	42 ± 4.5	304 ± 32.5
6		Main control valve mounting nut	M12 × 1.75	12.2 ± 1.3	88.2 ± 9.4
7		Fuel tank mounting bolt	M20 × 2.5	46 ± 5.0	333 ± 36
8		Hydraulic oil tank mounting bolt	M20 × 2.5	46 ± 5.0	333 ± 36
9		Turning joint mounting bolt, nut	M12 × 1.75	12.3 ± 1.3	88.9 ± 9.4
10	Power train system	Swing motor mounting bolt	M20 × 2.5	58.4 ± 6.4	422 ± 46
11		Swing bearing upper part mounting bolt	M24 × 3.0	97.8 ± 10	707 ± 72.3
12		Swing bearing lower part mounting bolt	M24 × 3.0	97.8 ± 10	707 ± 72.3
13		Travel motor mounting bolt	M24 × 3.0	84 ± 8.0	608 ± 57.9
14		Sprocket mounting bolt	M20 × 2.5	57 ± 6.0	412 ± 43.3
15	Under carriage	Upper roller mounting bolt, nut	M16 × 2.0	29.7 ± 4.4	126 ± 31.8
16		Lower roller mounting bolt, nut	M20 × 2.5	57.9 ± 8.6	419 ± 62.2
17		Track tension cylinder mounting bolt	M12 × 1.25	15 ± 0.5	108 ± 3.6
18		Track shoe mounting bolt, nut	M22 × 1.5	115 ± 5.0	831 ± 36
19		Track guard mounting bolt	M20 × 2.5	46 ± 5.0	333 ± 36
20	Others	Counterweight mounting bolt	M36 × 3.0	297 ± 33	2148 ± 239
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 engine maintenance guide and service manual.

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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 : 210 ℓ

(4) Remove bolts(13) and disconnect pipe (1,2).

(5) Disconnect pilot line hoses(4, 5, 6, 7, 8, 9).

(6) Remove bolts(12) and disconnect pump suction tube (3).

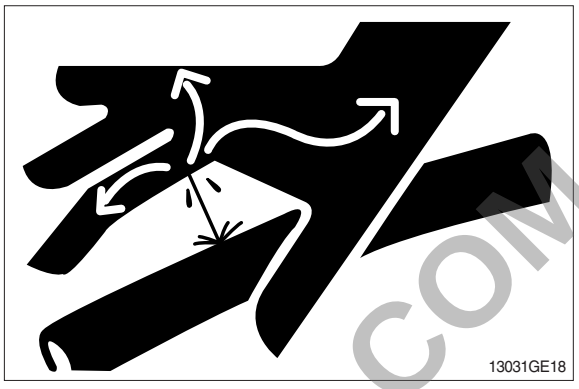
※ When pump suction tube is disconnected, the oil inside the piping will flow out, so catch it in oil pan.

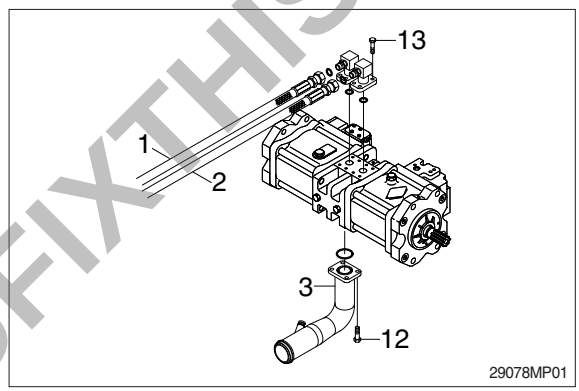
(7) Sling the pump assembly and remove the pump mounting bolts.

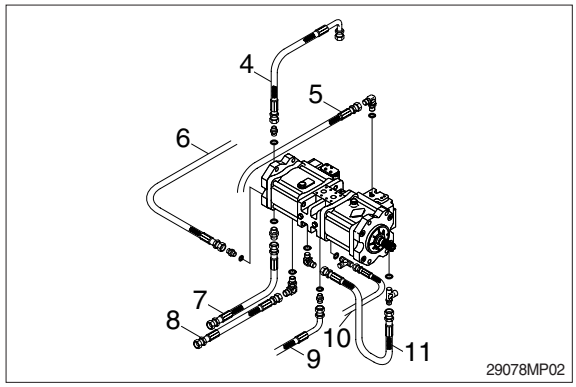
· Weight : 130kg(290lb)

Pull out the pump assembly from housing.

※ When removing the pump assembly, check that all the hoses have been disconnected.







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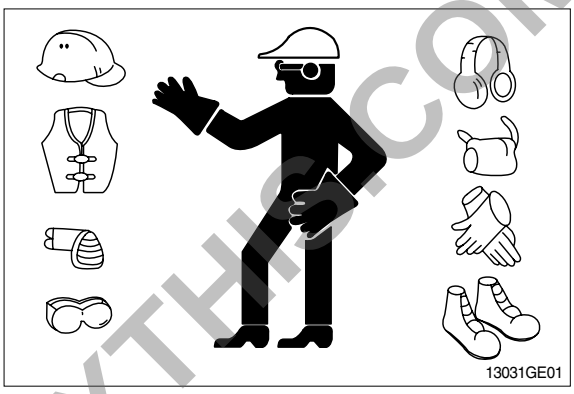
GROUP 1 SAFETY

FOLLOW SAFE PROCEDURE

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

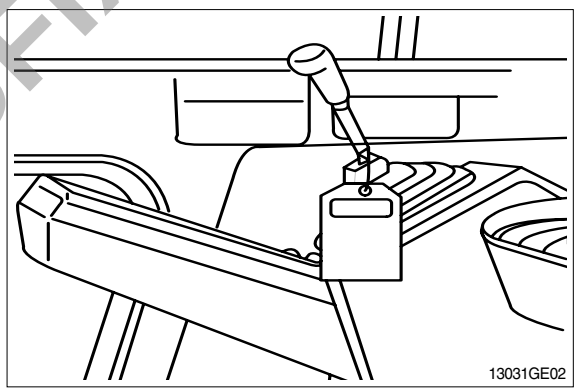
WEAR PROTECTIVE CLOTHING

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



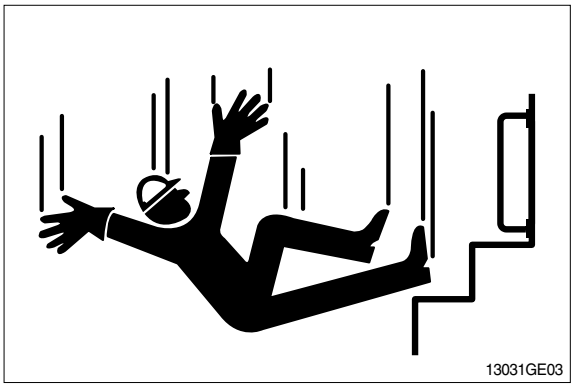
WARN OTHERS OF SERVICE WORK

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
   - 2 : Item number(2. Structure and Function)
   - 3 : 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

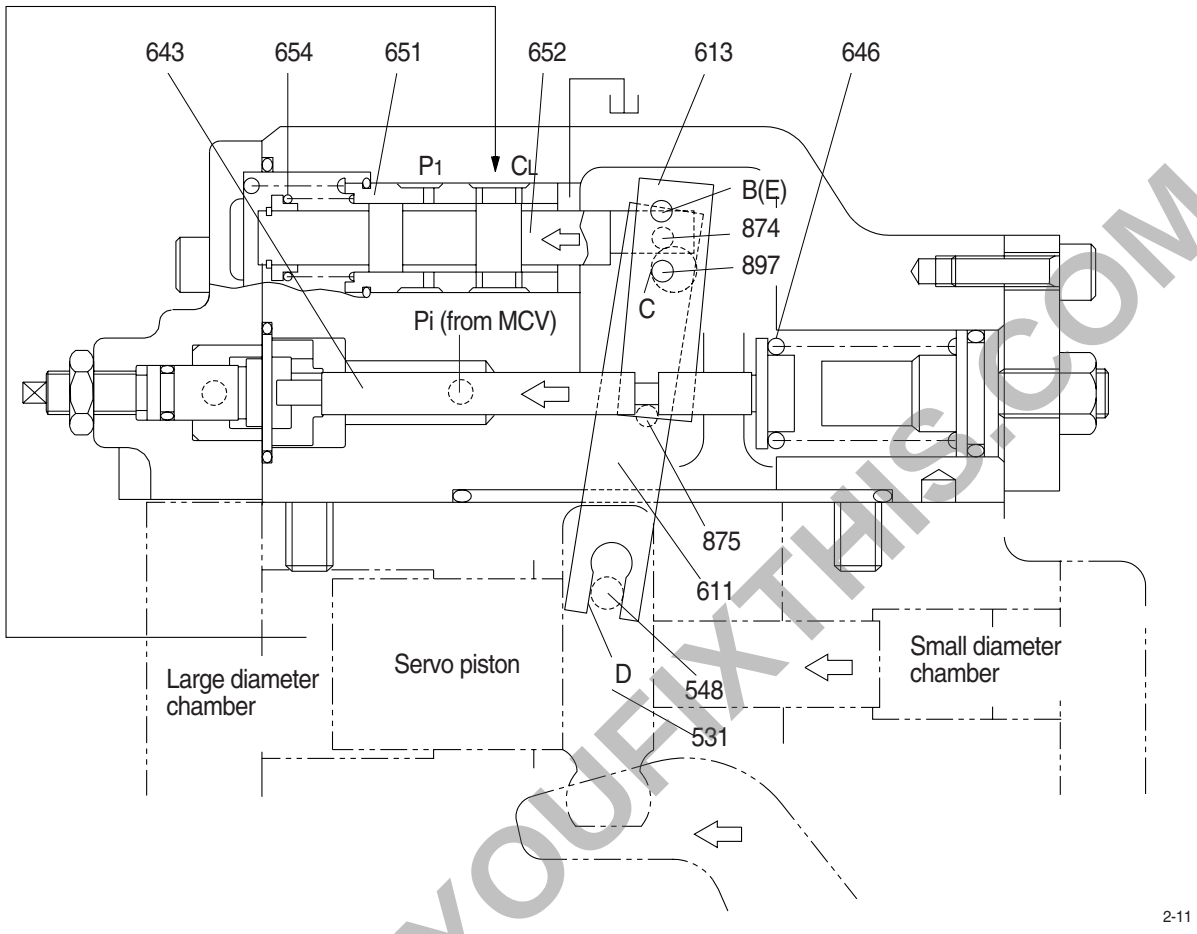
So that the shop manual can be of ample practical use, important places for safety and quality are marked with the following symbols.

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 increasing function



As the pilot pressure Pi decreases, the pilot piston(643) moves to the left by the action of the pilot spring(646) and causes lever 2(613) to rotate around the fulcrum of point B. Since the pin(897) is pressed against the large hole section(C) of lever 2 by the action of the return spring(654) via the spool(652), pin(874), and feedback lever(611), the feedback lever rotates around the fulcrum of point D as lever 2 rotates, and shifts the spool to the left. Port CL opens a way to the tank port as the spool moves. This deprives the large diameter section of the servo piston of pressure, and shifts the servo piston to the left by the discharge pressure P1 in the small diameter section, resulting in an increase in the flow rate.

As the servo piston moves, point D also moves to the left, the feedback lever rotates around the fulcrum of point C, and the spool moves to the right till the opening between the spool and sleeve is closed.

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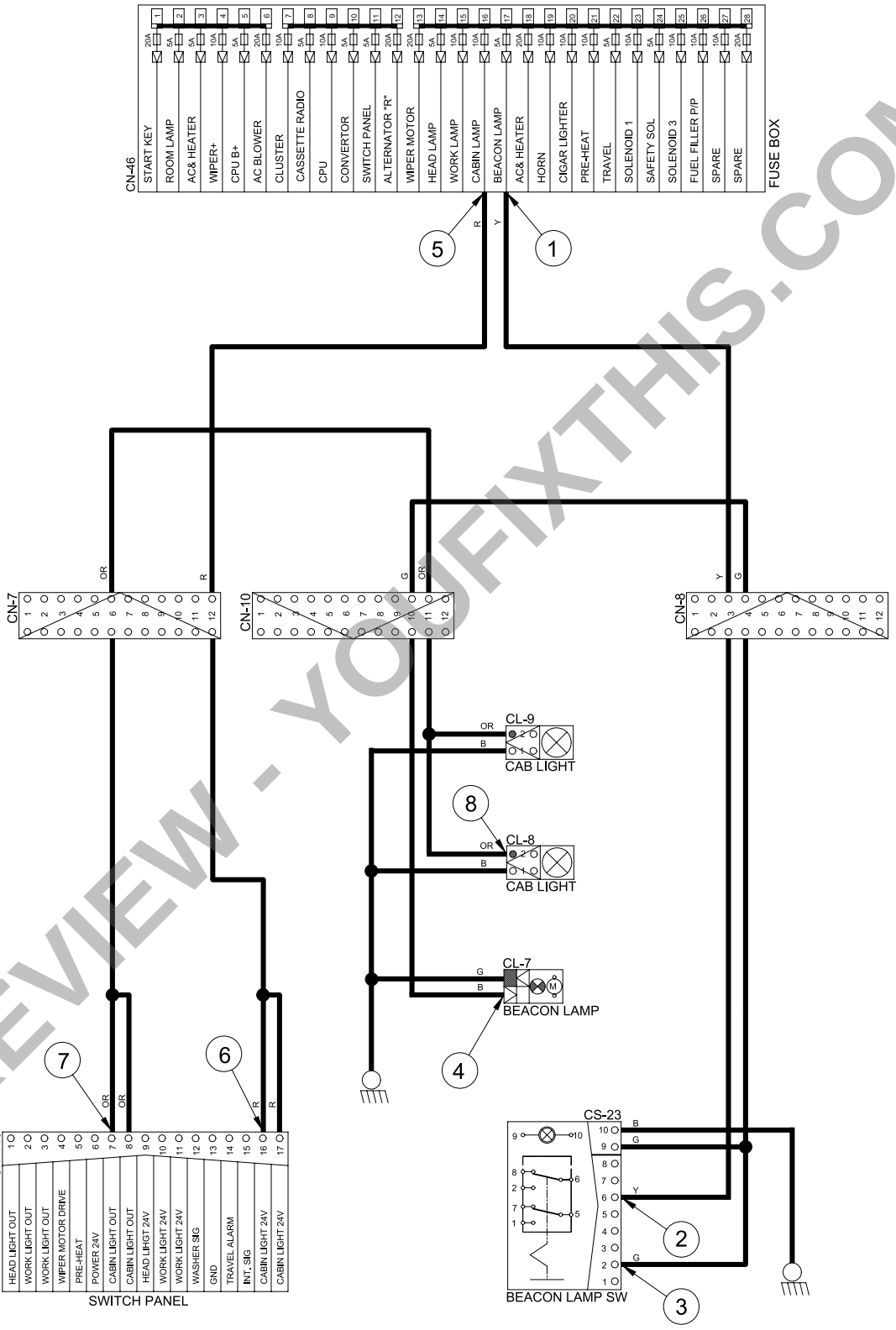
SECTION 3 HYDRAULIC SYSTEM

Group 1 Hydraulic Circuit 3-1
Group 2 Main Circuit 3-2
Group 3 Pilot Circuit 3-5
Group 4 Single Operation 3-13
Group 5 Combined Operation 3-23

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BEACON LAMP AND CAB LIGHT CIRCUIT



300074EL09

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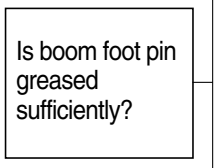
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Error code No.	Description
35	Controller input voltage is over 38V
36	Communication error with cluster
37	Engine speed sensor circuit is open or shorted to ground
38	Anti-restart relay circuit is open or shorted to ground
39	Accel actuator does not stop at a target position
40	There is more than 500rpm difference between target speed and actual speed
41	Hydraulic oil temperature sensor circuit is shorted to ground
42	Fuel level sensor circuit is shorted to ground
43	Coolant temperature sensor circuit is shorted to ground
44	Boom up pressure sensor circuit is shorted to power supply(24V) line
45	Hydraulic oil temperature sensor circuit is open or shorted to battery +
46	Fuel level sensor circuit is open or shorted to battery +
47	Coolant temperature sensor circuit is open or shorted to battery +
48	Boom up pressure sensor circuit is open or shorted to ground
49	Engine preheater circuit is shorted to battery +
51	Heavy duty work solenoid circuit is open or shorted to ground
56	Travel alarm buzzer circuit is shorted to battery +
58	Heavy duty work solenoid circuit is shorted to battery +

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6) BOOM MAKES A SQUEAKING NOISE WHEN BOOM IS OPERATED



YES

NO

Cause	Remedy
	Frictional noise occurs between the sliding faces of boom cylinder's oil seal and boom proper. ※ Frictional noise will disappear if they are kept used.
Boom foot pin has run out of grease.	Supply grease to it. ※ If seizure is in an initial stage, supply sufficient grease. If seizure is in a grown state, correct it by paper lapping or with an oil stone.

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- Bucket cylinders

  Measure the time it takes to roll in the bucket, and the time it takes to roll out the bucket. To do so, position the bucket at one stroke end, then move the control lever to the other stroke end as quickly as possible.
- Repeat each measurement 3 times and calculate the average values.

(4) Evaluation

The average measured time should meet the following specifications.

Unit : Seconds

Model	Function	Standard	Maximum allowable	Remarks
R300LC-7	Boom raise	3.2±0.4	4.0	
	Boom lower	2.7±0.4	3.4	
	Arm in	3.1±0.4	3.8	
	Arm out	3.1±0.3	3.8	
	Bucket load	2.7±0.4	3.4	
	Bucket dump	2.6±0.3	3.2	

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3) DISASSEMBLY

Since the regulator consists of small precision finished parts, disassembly and assembly are rather complicated.

For this reason, replacement of a regulator assembly is not recommended, unless there is a special reason, but in case disassembly is necessary for an unavoidable reason, read through this manual to the end before starting disassembly.

(1) Choose a place for disassembly.

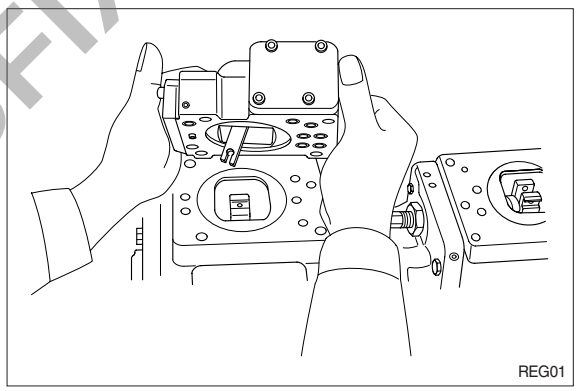
※ Choose a clean place.

※ Spread rubber sheet, cloth, or so on on top of work-bench to prevent parts from being damaged.

(2) Remove dust, rust, etc. from surfaces of regulator with clean oil.

(3) Remove hexagon socket head screw (412, 413) and remove regulator main body from pump main body.

※ Take care not to lose O-ring.

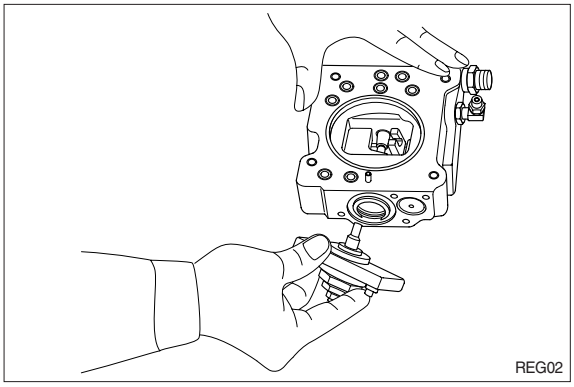

REG01

(4) Remove hexagon socket head screw (438) and remove cover(C,629).

※ Cover(C) is fitted with adjusting screw (C,QI)(628, 925), adjusting ring(C, 627), lock nut(630), hexagon nut(801) and adjusting screw(924).

Do not loosen these screws and nuts.

If they are loosened, adjusted pressure-flow setting will vary.


REG02

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2) DISASSEMBLEING TRAVEL MOTOR

(1) Fix a hydraulic motor on jig with four pieces of bolts(M16 × 60L).

※ When rotating jig up to 90° in disassembling and assembling, fix a motor making drain plug(56) faced to the bottom.



300072TM20

(2) After disassembling drain plug(56), let an oil in a case of a motor discharged.

※ Check whether manufactured chips or metal dust are added in a drain oil.



300072TM21



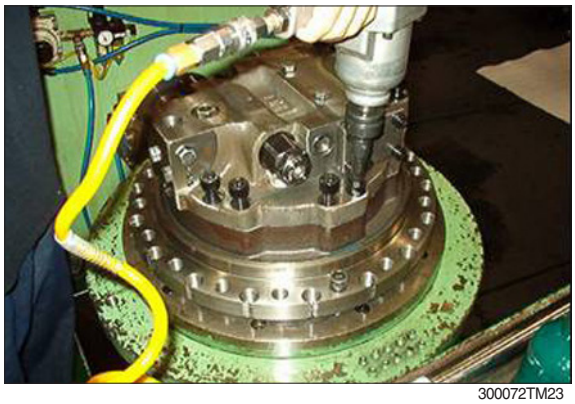
300072TM21A

(3) In order to making the out-put axis of a hydraulic motor faced upward, disassemble ring lock(74) with a plier after rotating jig up to 90° in disassembling and assembling.



300072TM22

(4) Disassemble hexgon socket bolts(70, 71) holding valve casing.



300072TM23

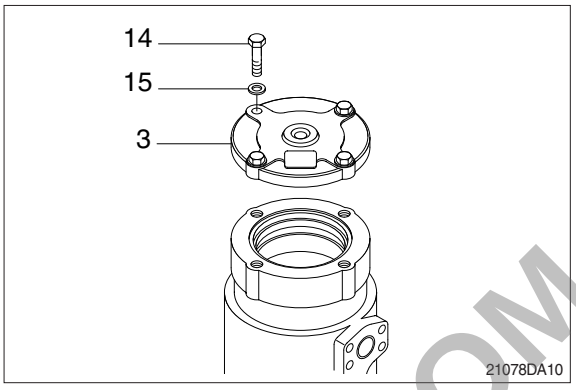
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2) DISASSEMBLY

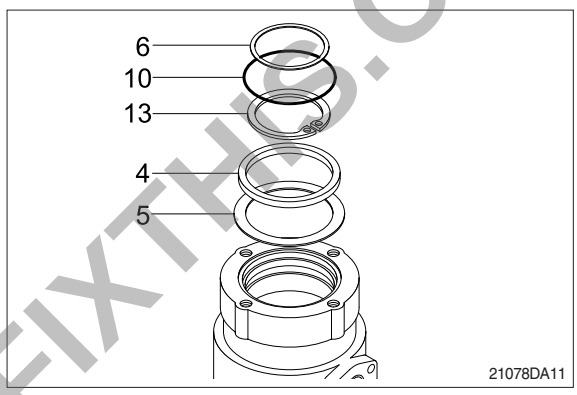
※ Before the disassembly, clean the turning joint.

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



(2) Remove shim(6) and O-ring(10).

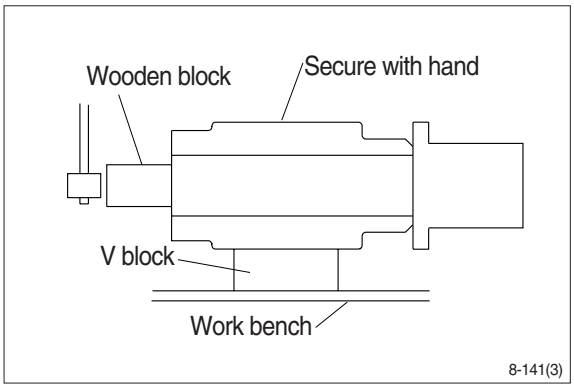
(3) Remove retainer ring(12), spacer(4) and shim(5).



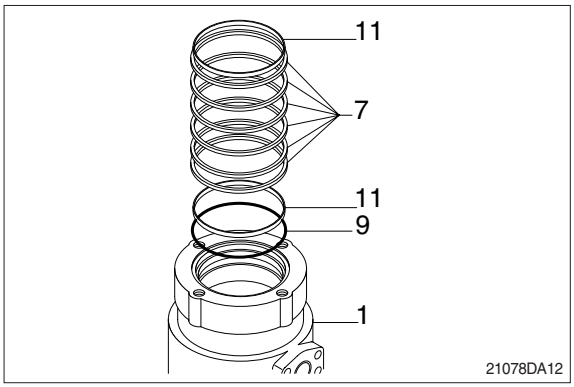
(4) Place body(1) on a V-block and by using a wood buffer at the shaft end, hit out shaft(2) to about 1/2 from the body with a hammer.

※ 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(7) and O-ring(9), two ring wear(11) from body(1).



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