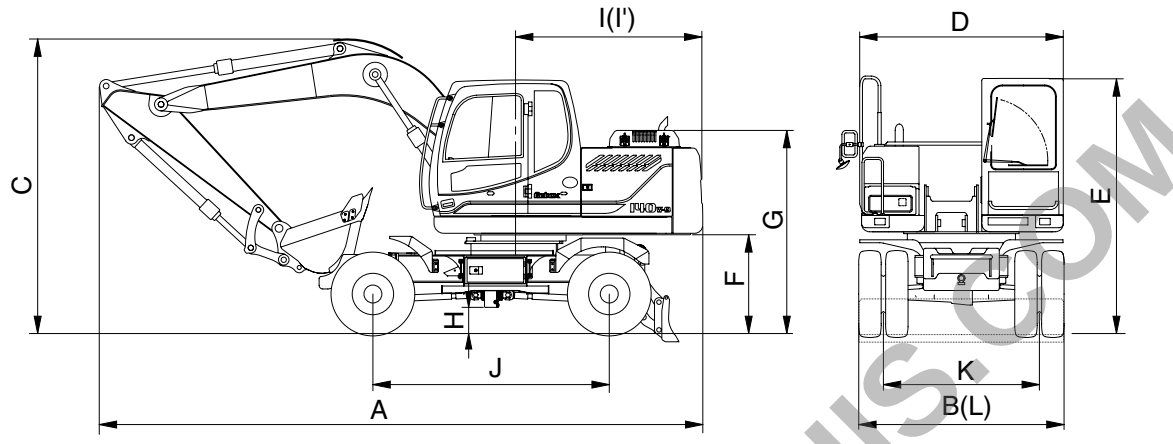
2. SPECIFICATIONS

1) 4.6 m (15' 1") ONE PIECE BOOM, 2.1 m (6' 11") ARM AND REAR DOZER BLADE



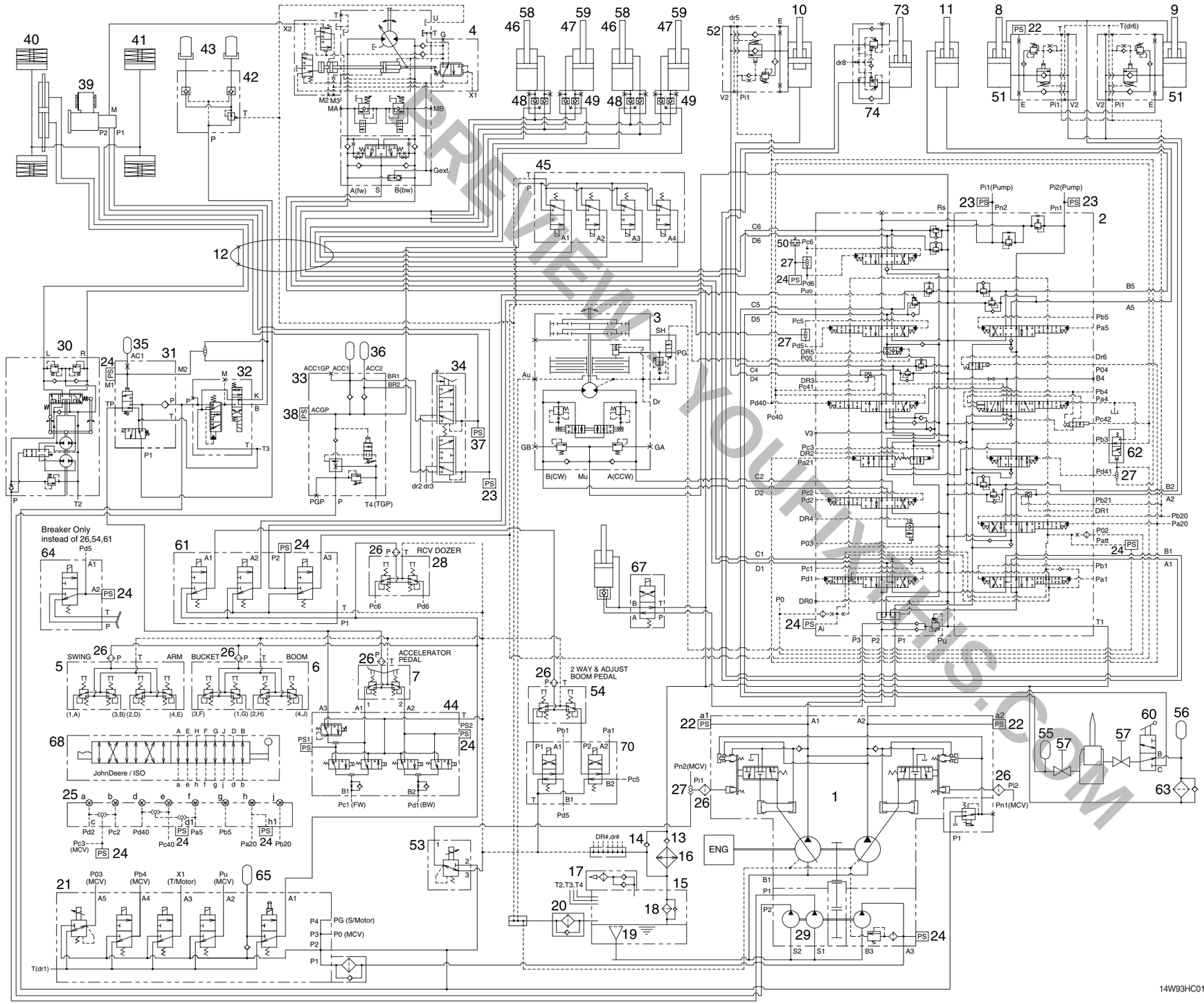
14W92SP02

Description		Unit	Specification
Operating weight		kg (lb)	13700 (30200)
Bucket capacity (SAE heaped), standard		m^3 (yd^3)	0.58 (0.76)
Overall length	A	mm (ft-in)	7760 (25' 6")
Overall width	B		2500 (8' 2")
Overall height	C		3500 (11' 6")
Upperstructure width	D		2475 (8' 1")
Cab height	E		3140 (10' 4")
Ground clearance of counterweight	F		1210 (4' 0")
Engine cover height	G		2320 (7' 7")
Minimum ground clearance	H		397 (1' 4")
Rear-end distance	I		2330 (7' 8")
Rear-end swing radius	I'		2330 (7' 8")
Wheel base	J		2600 (8' 6")
Tread	K		1929 (6' 4")
Dozer blade width	L		2490 (8' 2")
Travel speed	Low	km/hr (mph)	10 (6.2)
	High		37 (23.0)
	Creep		3.8 (2.4)
Swing speed		rpm	13.0
Gradeability		Degree (%)	35 (70)
Max traction force		kgf (lbf)	8500 (18740)

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GROUP 1 HYDRAULIC CIRCUIT



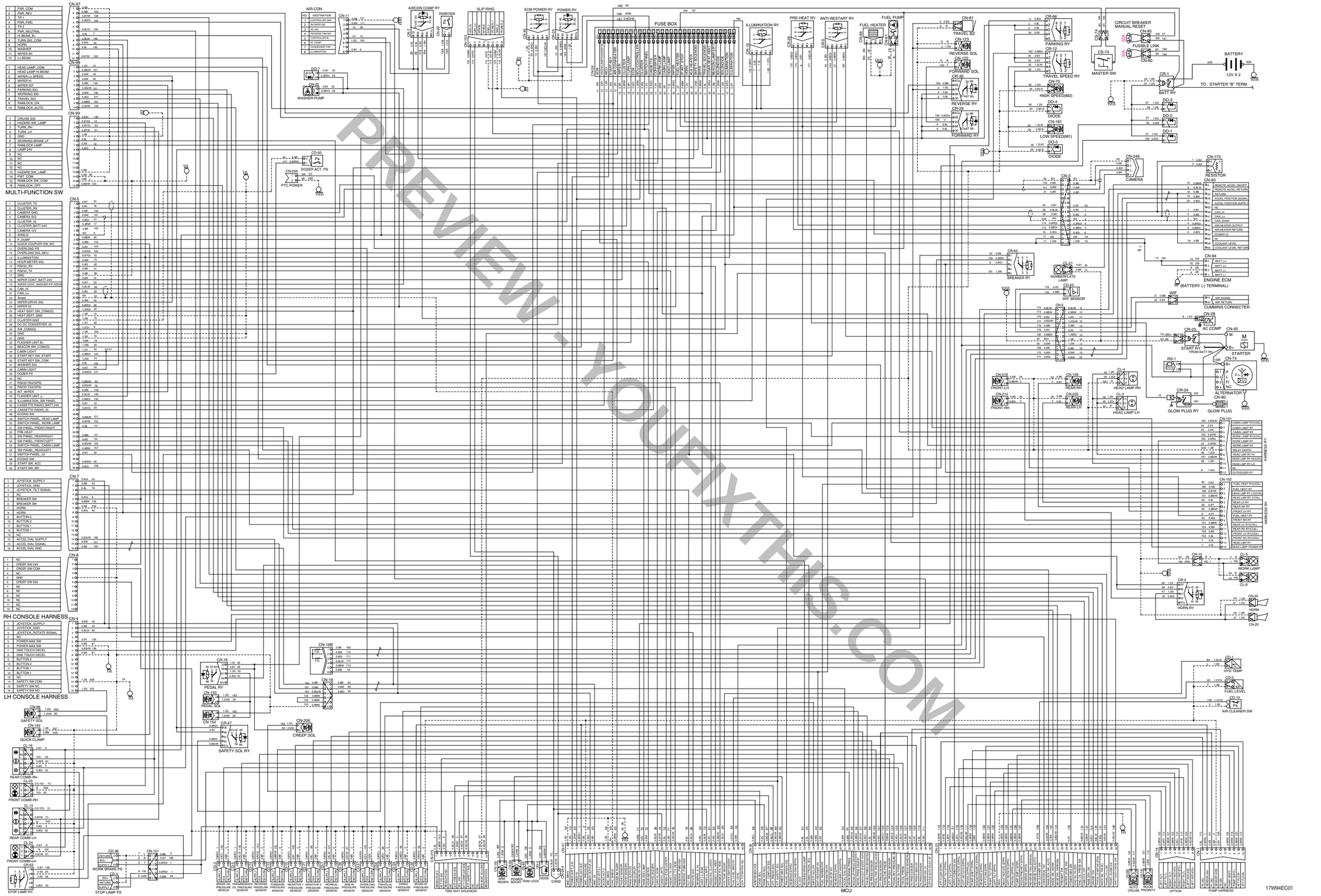
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1 Main pump
2 Main control valve
3 Swing motor
4 Travel motor
5 RCV lever(LH)
6 RCV lever(RH)
7 Accelerator pedal
8 Boom cylinder(LH)
9 Boom cylinder(RH)
10 Arm cylinder
11 Bucket cylinder
12 Turning joint
13 Check valve
14 Check valve
15 Hydraulic tank
16 Oil cooler
17 Air breather
18 Bypass valve & return element
19 Strainer assy
20 Drain filter
21 5 solenoid valve & pilot line filter
22 Pressure sensor(500k)
23 Pressure sensor(100k)
24 Pressure sensor(50k)
25 Shuttle block
26 Last guard filter
27 Shuttle valve
28 RCV dozer(option)
29 Power train pump
30 Steering valve
31 Travel control valve
32 TCV valve
33 Brake supply valve
34 Brake valve
35 Accumulator(option)
36 Accumulator(option)
37 Pressure sensor(5k)
38 Pressure sensor(200k)
39 Transmission
40 Front axle
41 Rear axle
42 Locking valve
43 Oscillating cylinder
44 5 solenoid valve(option)
45 4 solenoid valve(option)
46 Outrigger cylinder(LH, option)
47 Outrigger cylinder(RH, option)
48 Pilot check valve(LH, option)
49 Pilot check valve(RH, option)
50 Pressure switch(option)
51 Boom safety lock valve(option)
52 Arm safety lock valve(option)
53 EPPR valve(option)
54 2 way & adjust boom pedal(option)
55 Accumulator(option)
56 Accumulator(option)
57 Stop valve(option)
58 Dozer cylinder(LH, option)
59 Dozer cylinder(RH, option)
60 Breaker selector valve(option)
61 Solenoid valve(option)
62 Selector valve(option)
63 Breaker return filter(option)
64 Breaker solenoid valve(option)
65 Accumulator(option)
67 Quick clamp solenoid valve(option)
68 Pattern change valve(option)
70 Selector solenoid valve(option)
73 Adjustable boom cylinder(option)
74 Adjustable boom safety lock valve(option)

14W93HC01

GROUP 2 ELECTRICAL CIRCUIT (1/3)



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1. REMOVAL AND INSTALL

1) REMOVAL

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

(2) Operate the control levers and pedals several times to release the remaining pressure in the hydraulic piping

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

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

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

· Hydraulic tank quantity : 124 ℓ (32.8 U.S. gal)

(5) Remove socket bolts (13) and disconnect hoses (1,2).

(6) Disconnect pilot line hoses (5, 6, 7, 8, 9, 10, 11).

(7) Remove socket bolts (14) and disconnect pump suction pipe (4).

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

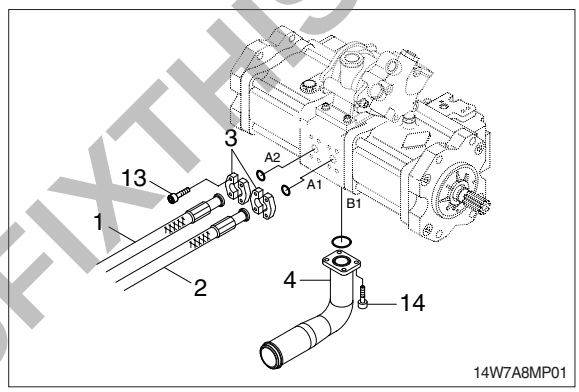
(8) Sling the pump assembly and remove the pump mounting bolts.

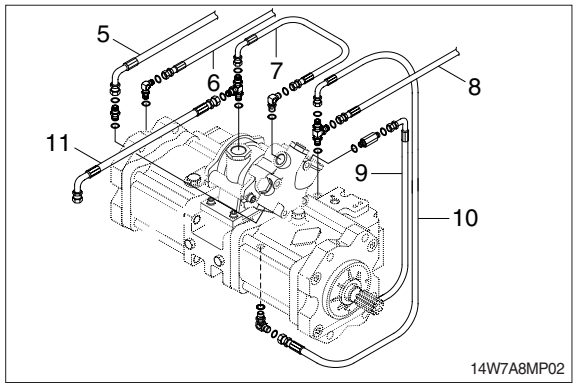
· Weight : 100 kg (220 lb)

※ 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 2 TIGHTENING TORQUE

1. MAJOR COMPONENTS

No.	Descriptions		Bolt size	Torque	
				kgf · m	lbf · ft
1	Engine	Engine mounting bolt (bracket-frame, FR)	M20 × 2.5	55±3.5	398±25.3
2		Engine mounting bolt (bracket-frame, RR)	M24 × 3.0	90±7.0	651±50.6
3		Engine mounting bolt (engine-bracket)	M12 × 1.75	10.0±1.0	72.3±7.2
4		Radiator mounting bolt, nut	M16 × 2.0	29.7±4.5	215±32.5
5		Coupling mounting bolt	M18 × 2.5	32.0±1.0	231±7.2
6	Hydraulic system	Main pump housing mounting bolt	M10 × 1.5	4.8±0.3	34.7±2.2
7		Main pump mounting bolt	M16 × 2.0	25.0±2.5	181±18.1
8		Main control valve mounting bolt	M12 × 1.75	12.2±1.3	88.2±9.4
9		Travel motor mounting bolt	M16 × 2.0	29.6±3.2	214±23.1
10		Fuel tank mounting bolt	M20 × 2.5	46±5.1	333±36.9
11		Hydraulic oil tank mounting bolt	M20 × 2.5	46±5.1	333±36.9
12		Turning joint mounting bolt, nut	M12 × 1.75	12.3±1.3	89±9.4
13	Power train system	Swing motor mounting bolt	M16 × 2.0	29.6±3.2	214±23.1
14		Swing bearing upper mounting bolt	M18 × 2.5	41.3±4.5	299±32.5
15		Swing bearing lower mounting bolt	M16 × 1.5	31.3±3.2	226±23.1
16		Real axle mounting bolt, nut	M20 × 2.5	58±6.3	419±45.5
17		Transmission bracket mounting bolt	M20 × 2.5	58.4±6.4	422±46.3
18		Transmission mounting bolt	M20 × 2.5	29.7±4.5	215±32.5
19		Oscillating cylinder mounting bolt	M22 × 1.5	83.2±9.2	602±66.5
20		Oscillating cylinder support bolt	M12 × 1.75	12.3±2.5	88.9±18.1
21		Wheel nut	M22 × 1.5	60^{+0}_{-5}	$433^{+0}_{-36.2}$
22		Front drive shaft mounting bolt, nut	M10 × 1.0	5.9±0.6	42.7±4.3
23		Rear drive shaft mounting bolt, nut	M10 × 1.0	5.9±0.6	42.7±4.3
24	Others	Counterweight mounting bolt	M27 × 3.0	140±15	1013±108
25		Cab mounting bolt, nut	M12 × 1.75	12.8±3.0	92.6±21.7
26		Operator's seat mounting bolt	M 8 × 1.25	4.05±0.8	29.3±5.8

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

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3. MACHINE ERROR CODES TABLE

Error code		Description
HCESPN	FMI	
101	3	Hydraulic oil temperature sensor circuit - Voltage above normal, or shorted to high source.
	4	Hydraulic oil temperature circuit - Voltage below normal, or shorted to low source.
105	0	Working pressure sensor data above normal range.
	1	Working pressure sensor data below normal range.
	2	Working pressure sensor data error.
	4	Working pressure sensor circuit - Voltage below normal, or shorted to Low source.
108	0	Travel oil pressure sensor data above normal range.
	1	Travel oil pressure sensor data below normal range.
	2	Travel oil pressure sensor data error.
	4	Travel oil pressure sensor circuit - Voltage below normal, or shorted to low source.
120	0	Main pump 1 (P1) pressure sensor data above normal range.
	1	Main pump 1 (P1) pressure sensor data below normal range.
	2	Main pump 1 (P1) pressure sensor data error.
	4	Main pump 1 (P1) pressure sensor circuit - Voltage below normal, or shorted to low source.
121	0	Main pump 2 (P2) pressure sensor data above normal range.
	1	Main pump 2 (P2) pressure sensor data below normal range.
	2	Main pump 2 (P2) pressure sensor data error.
	4	Main pump 2 (P2) pressure sensor circuit - Voltage below normal, or shorted to low source.
122	0	Overload pressure sensor data above normal range.
	1	Overload pressure sensor data below normal range.
	2	Overload pressure sensor data error.
	4	Overload pressure sensor circuit - Voltage below normal, or shorted to low source.
123	0	Negative 1 pressure sensor data above normal range.
	1	Negative 1 pressure sensor data below normal range.
	2	Negative 1 pressure sensor data error.
	4	Negative 1 pressure sensor circuit - Voltage below normal, or shorted to low source.
124	0	Negative 2 Pressure sensor data above normal range.
	1	Negative 2 Pressure sensor data below normal range.
	2	Negative 2 Pressure sensor data error.
	4	Negative 2 Pressure sensor circuit - Voltage below normal, or shorted to low source.
125	0	Pilot pump (P3) pressure sensor data above normal range.
	1	Pilot pump (P3) pressure sensor data below normal range.
	2	Pilot pump (P3) pressure sensor data error.
	4	Pilot pump (P3) pressure sensor circuit - Voltage below normal, or shorted to low source.
127	0	Boom up pilot pressure sensor data above normal range.
	1	Boom up pilot pressure sensor data below normal range.
	2	Boom up pilot pressure sensor data error.
	4	Boom up pilot pressure sensor circuit - Voltage below normal, or shorted to low source.
133	0	Arm in/out & bucket in pilot pressure sensor data above normal range.
	1	Arm in/out & bucket in pilot pressure sensor data below normal range.
	2	Arm in/out & bucket in pilot pressure sensor data error.
	4	Arm in/out & bucket in pilot pressure sensor circuit - Voltage below normal, or shorted to low source.

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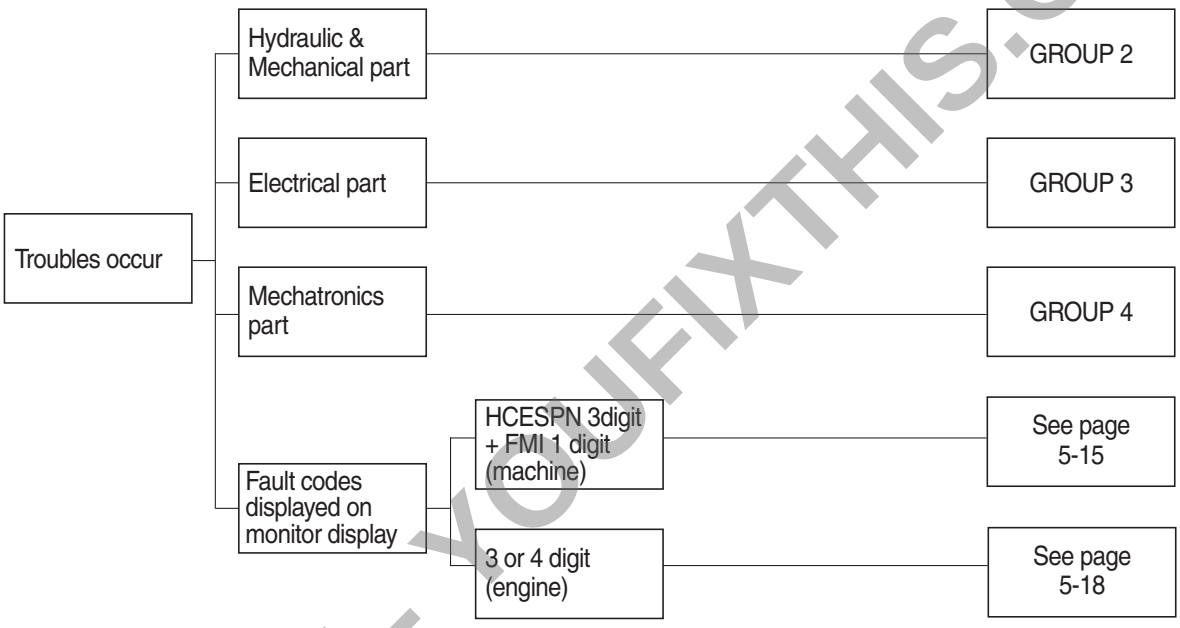
GROUP 1 BEFORE TROUBLESHOOTING

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.

※ **Before carring out troubleshooting procedure, check monitoring menu in the cluster.**



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1. STRUCTURE

This service manual has been prepared as an aid to improve the quality of repairs by giving the serviceman an accurate understanding of the product and by showing him the correct way to perform repairs and make judgements. Make sure you understand the contents of this manual and use it to full effect at every opportunity.
This service manual mainly contains the necessary technical information for operations performed in a service workshop.
For ease of understanding, the manual is divided into the following sections.

SECTION 1 GENERAL
This section explains the safety hints and gives the specification of the machine and major components.

SECTION 2 STRUCTURE AND FUNCTION
This section explains the structure and function of each component. It serves not only to give an understanding of the structure, but also serves as reference material for troubleshooting.

SECTION 3 HYDRAULIC SYSTEM
This section explains the hydraulic circuit, single and combined operation.

SECTION 4 ELECTRICAL SYSTEM
This section explains the electrical circuit, monitoring system and each component. It serves not only to give an understanding electrical system, but also serves as reference material for trouble shooting.

SECTION 5 MECHATRONICS SYSTEM
This section explains the computer aided power optimization system and each component.

SECTION 6 TROUBLESHOOTING
This section explains the troubleshooting charts correlating **problems** to **causes**.

SECTION 7 MAINTENANCE STANDARD
This section gives the judgement standards when inspecting disassembled parts.

SECTION 8 DISASSEMBLY AND ASSEMBLY
This section explains the order to be followed when removing, installing, disassembling or assembling each component, as well as precautions to be taken for these operations.

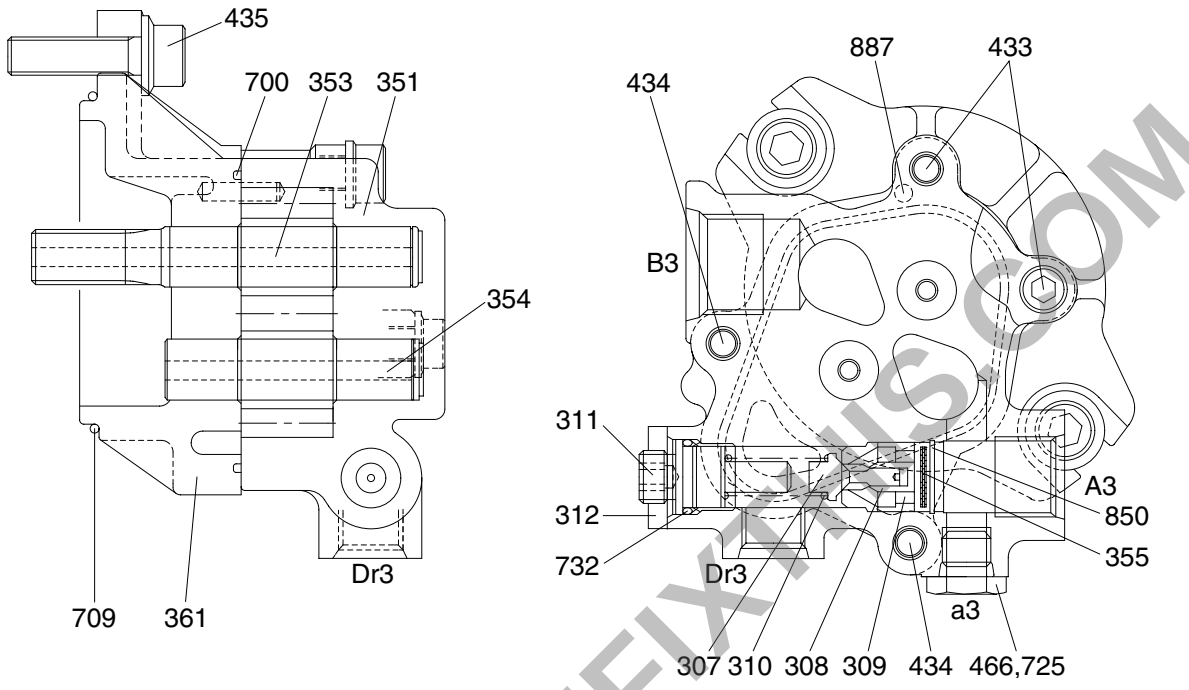
SECTION 9 COMPONENT MOUNTING TORQUE
This section shows bolt specifications and standard torque values needed when mounting components to the machine.

The specifications contained in this shop manual are subject to change at any time and without any advance notice. Contact your HYUNDAI distributor for the latest information.

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3) GEAR PUMP



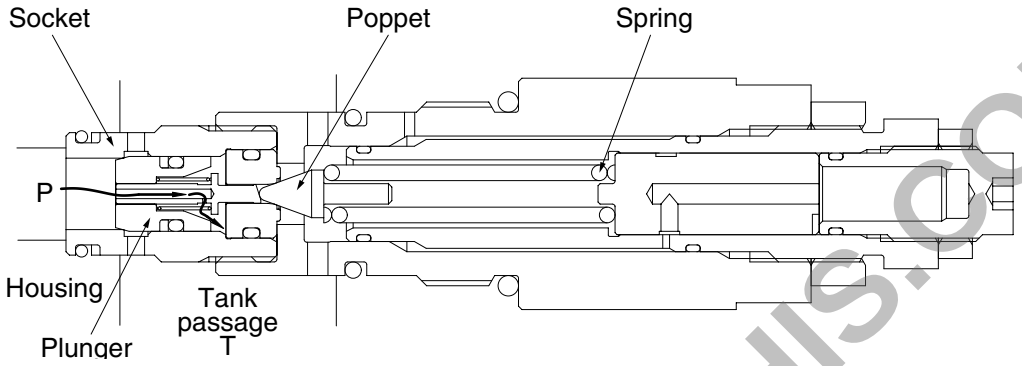
14W7A2MP06

307	Poppet	353	Drive gear	466	Plug
308	Seat	354	Driven gear	700	Ring
309	Spring seat	355	Filter	709	O-ring
310	Spring	361	Front case	725	O-ring
311	Screw	433	Flange socket	732	O-ring
312	Nut	434	Flange socket	850	Snap ring
351	Gear case	435	Flange socket	887	Pin

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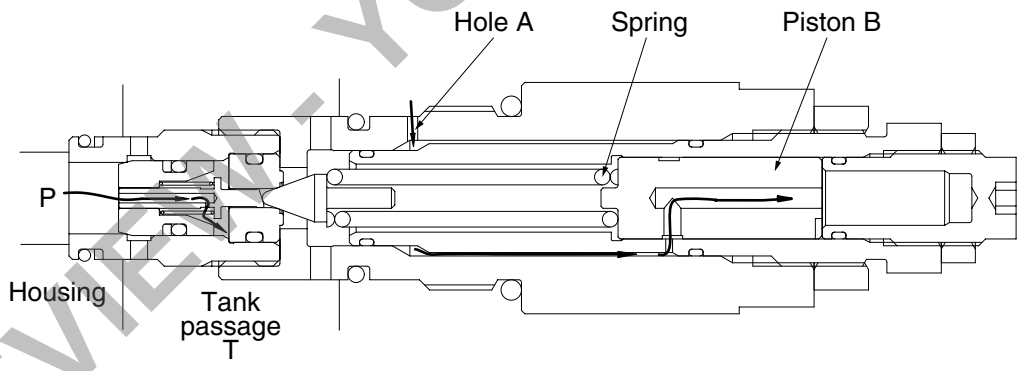
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(4) The pressure at port P becomes lower than set pressure of the spring, the poppet is seated by spring force. Then the pressure at port P becomes equal to set pressure of the spring and the plunger is seated to the socket.



14W92MC39

(5) When the power boost switch is ON, the pilot pressure enters through hole A.
It pushes the piston (B) in the left direction to increase the force of the spring and change the relief set pressure to the high pressure.

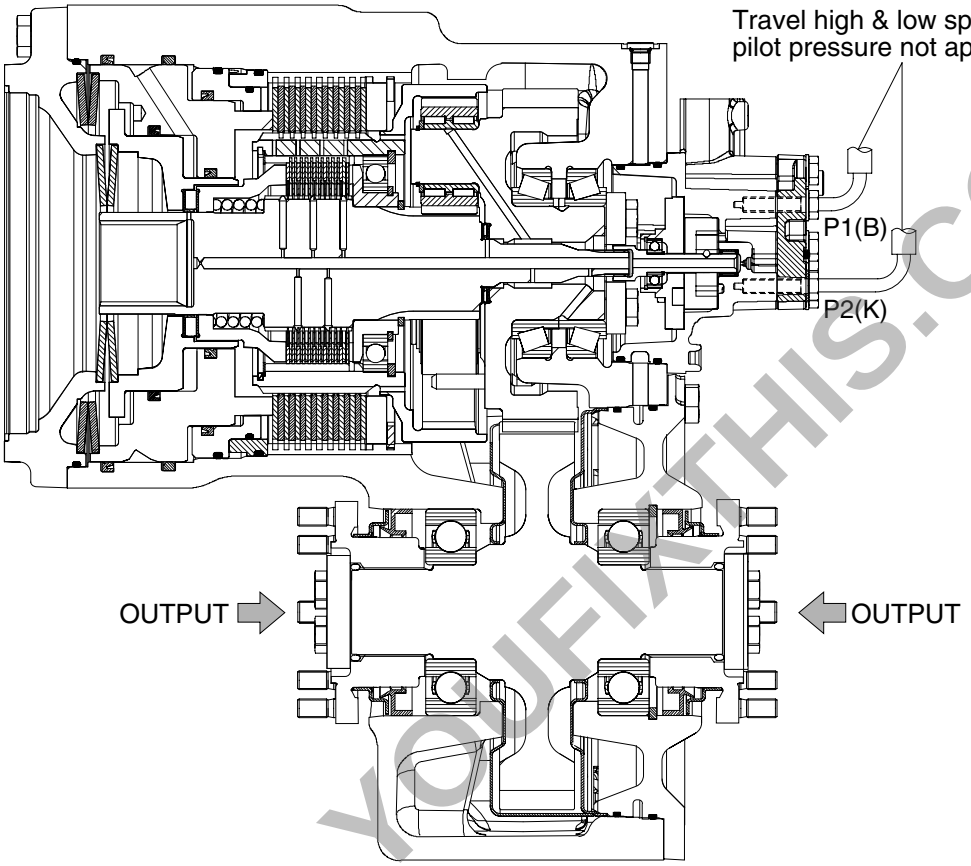


14W92MC40

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4) BRAKES



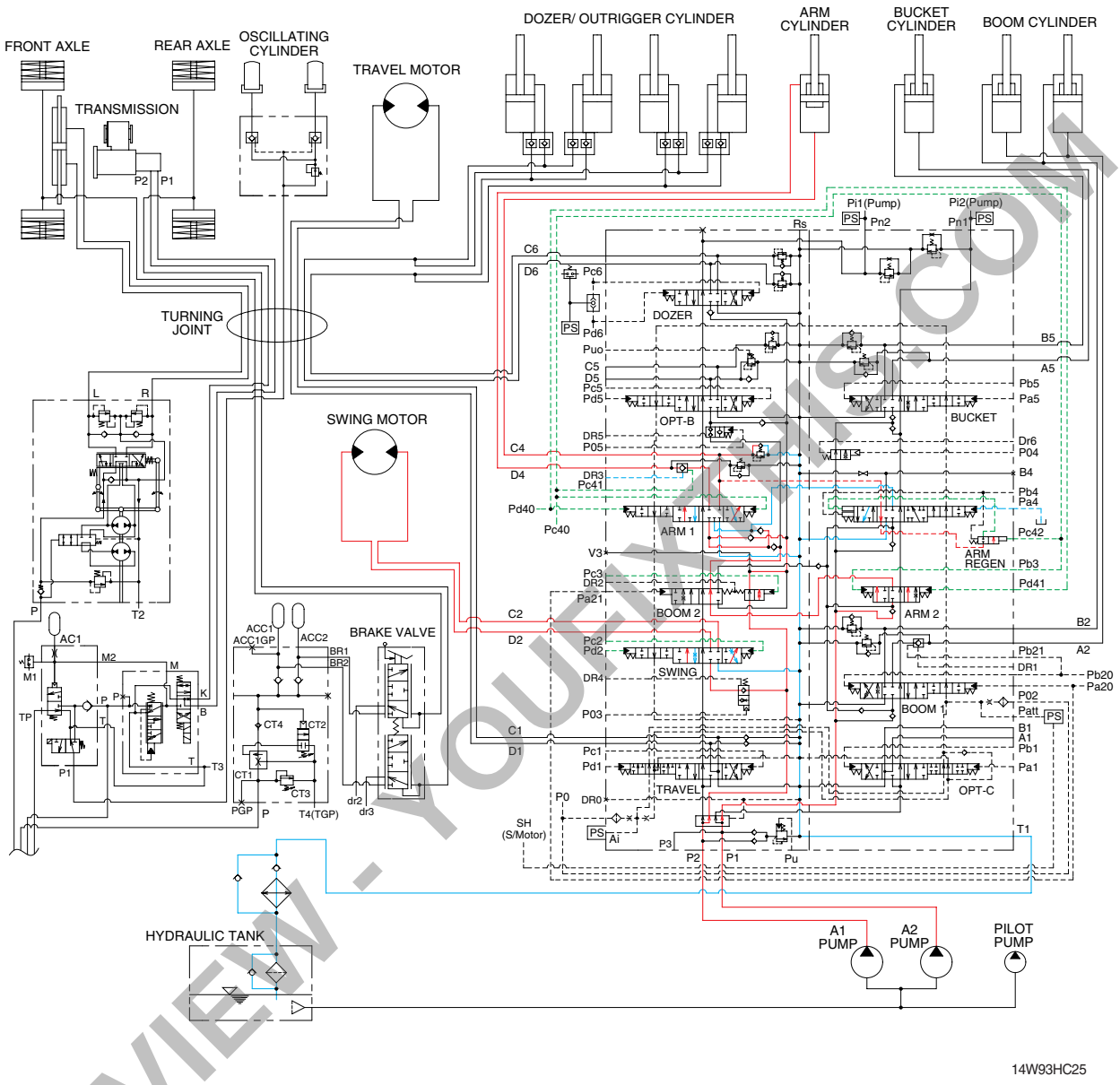
14W7A2TM06

When the travel high/low speed pilot pressure is not applied in the piston space, the piston compress against the multi disk pack due to the spring force. Thus the parking brake is engaged.

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3. COMBINED SWING AND ARM OPERATION



When the swing and arm functions are operated, simultaneously the swing spool and arm spools in the main control valve are moved to the functional position by the pilot oil pressure from the remote control valve.

The oil from the A1 pump flows into the swing motor through swing spool and the arm cylinder through arm 1 spool.

The oil from the A2 pump flows into the arm cylinder through the arm 2 spool of the right control valve.

The super structure swings and the arm is operated.

Refer to page 2-35 for the swing operation preference function.

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Connector number	Type	No. of pin	Destination	Connector part No.	
				Female	Male
CS-26A	AMP	2	Breaker pedal switch	S816-002002	S816-102002
CS-27	SWF	10	Breaker switch	SWF 593757	-
CS-29	DEUTSCH	2	Power max switch	DT06-2S-EP06	-
CS-50	SWF	12	Overload switch	SWF589790	-
CS-52	SWF	12	Econo switch	SWF 589790	-
CS-53	AMP	1	Wiper cut switch	S822-014002	-
CS-67	SWF	12	Quick clamp switch	SWF 589790	-
CS-73	SWF	12	Reverse & fan switch	SWF 589790	-
CS-74	AMP	2	Master switch	S813-030201	-
CS-79	SWF	12	Spare switch	SWF 589790	-
CS-82	SWF	12	Heated seat switch	SWF 589790	-
CS-83	SWF	12	Spare switch	SWF589790	-
CS-99	SWF	12	Spare switch	SWF 589790	-
CS-100	SWF	12	Spare switch	SWF 589790	-
CS-142	DEUTSCH	3	Accel dial switch	DT06-3S-EP06	-
· Light					
CL-1	KET	3	Room lamp	MG651032	-
CL-2	AMP	1	Cigar light	S822-014002	S822-114002
CL-3	DEUTSCH	3	Head lamp-LH	S810-003702	-
CL-4	DEUTSCH	3	Head lamp-RH	S810-003702	DT04-2P-E005
CL-5	DEUTSCH	2	Work lamp-LH	DT06-2S-EP06	DT04-2P
CL-6	DEUTSCH	2	Work lamp-RH	DT06-2S-EP06	DT04-2P
CL-7	SHUR	1	Beacon lamp	S822-014002	S822-114002
CL-8	DEUTSCH	2	Cab light-LH	DT04-2S-EP06	DT-2P-E005
CL-9	DEUTSCH	2	Cab light-RH	DT04-2S-EP06	DT04-2P-E005
CL-10	DEUTSCH	2	Cab light-RH	DT06-2S-EP06	-
CL-15	AMP	6	Rear combination lamp-LH	S814-006100	-
CL-16	AMP	6	Rear combination lamp-RH	S814-006100	-
CL-21	KET	2	Number plate lamp	S814-002100	-
CL-24	AMP	3	Front combination lamp-LH	S814-003100	-
CL-25	AMP	3	Front combination lamp-RH	S814-003100	-
· Sensor, sendor					
CD-1	AMP	2	Hydraulic oil temp sender	85202-1	-
CD-2	DEUTSCH	2	Fuel sender	DT06-2S-EP06	-
CD-3	DEUTSCH	3	Brake oil pressure sensor	DT06-3S-EP06	-
CD-4	DEUTSCH	3	Stop lamp pressure sensor	DT06-3S-EP06	-
CD-5	DEUTSCH	3	Transmission oil pressure sensor	DT06-3S-EP06	-
CD-6	DEUTSCH	3	Travel pressure sensor	S814-003100	-
CD-7	DEUTSCH	3	Working pressure sensor	S814-003100	-

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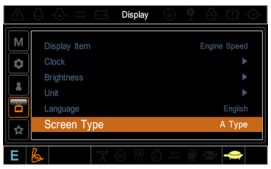
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Error code		Description
HCESPN	FMI	
340	3	Potentiometer (G/A) circuit - Voltage above normal, or shorted to high source.
	4	Potentiometer (G/A) circuit - Voltage below normal, or shorted to low source.
341	5	Governor actuator circuit - Current below normal, or open circuit.
	6	Governor actuator circuit - Current above normal.
501	0	Transmission oil pressure sensor data above normal range.
	1	Transmission oil pressure sensor data below normal range.
	2	Transmission oil pressure sensor data error.
	4	Transmission oil pressure sensor circuit - Voltage below normal, or shorted to low source.
503	0	Brake pressure sensor data above normal range.
	1	Brake pressure sensor data below normal range.
	2	Brake pressure sensor data error.
	4	Brake pressure sensor circuit - Voltage below normal, or shorted to low source.
505	0	Working brake pressure sensor data above normal range.
	1	Working brake pressure sensor data below normal range.
	2	Working brake pressure sensor data error.
	4	Working brake pressure sensor circuit - Voltage below normal, or shorted to low source.
506	3	Working brake lamp circuit - Voltage above normal, or shorted to high source.
	4	Working brake lamp circuit - Voltage below normal, or shorted to low source.
520	3	Ram lock lamp circuit - Voltage above normal, or shorted to high source.
	4	Ram lock lamp circuit - Voltage below normal, or shorted to low source.
525	5	Ram lock solenoid circuit - Current below normal, or open circuit.
	6	Ram lock solenoid circuit - Current above normal.
530	0	Travel F pilot pressure sensor data above normal range.
	1	Travel F pilot pressure sensor data below normal range.
	2	Travel F pilot pressure sensor data error.
	4	Travel F pilot pressure sensor circuit - Voltage below normal, or shorted to low source.
531	0	Travel R pilot pressure sensor data above normal range.
	1	Travel R pilot pressure sensor data below normal range.
	2	Travel R pilot pressure sensor data error.
	4	Travel R pilot pressure sensor circuit - Voltage below normal, or shorted to low source.
701	3	Hourmeter circuit - Voltage above normal, or shorted to high source.
	4	Hourmeter circuit - Voltage below normal, or shorted to low source.
705	0	MCU input voltage high.
	1	MCU input voltage low.
707	1	Alternator node I voltage low.
714	3	Acc. dial circuit - Voltage above normal, or shorted to high source.
	4	Acc. dial circuit - Voltage below normal, or shorted to low source.
715	3	Rotate signal input circuit - Voltage above normal, or shorted to high source.
	4	Rotate signal input circuit - Voltage below normal, or shorted to low source.
716	3	Tilt signal input circuit - Voltage above normal, or shorted to high source.
	4	Tilt signal input circuit - Voltage below normal, or shorted to low source.
722	3	Travel alarm (buzzer) circuit - Voltage above normal, or shorted to high source.
	4	Travel alarm (buzzer) circuit - Voltage below normal, or shorted to low source.
830	12	MCU internal memory error.
840	2	Cluster communication data error.
841	2	ECM communication data error.
843	2	Option #1 (CAN 2) communication data error.
850	2	RMCU communication data error.

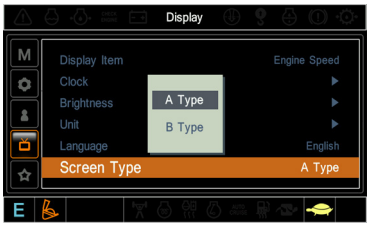
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⑥ Screen type



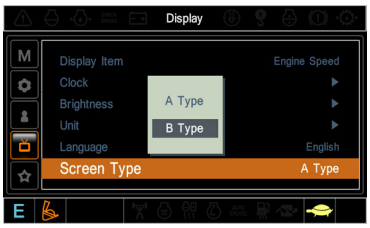
21093CD68U



A Type 21093CD68V



Standard 21093CD68W



B Type 21093CD68X



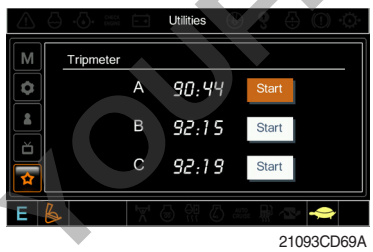
Option 21093CD68Y

(6) Utilities

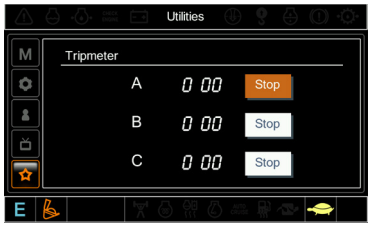
① Tripmeter



21093CD69



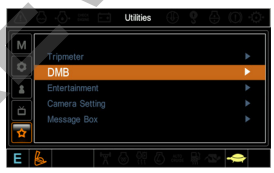
21093CD69A



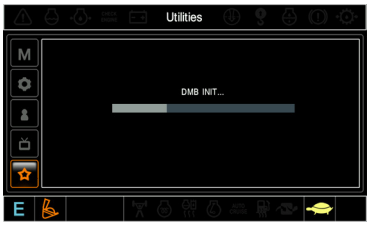
21093CD69B

- Maximum 3 kinds of tripmeters can be used at the same time.
- Each tripmeter can be turned on by choosing "Start" while it also can be turned off by choosing "Stop".
- If the tripmeter icon is activated in the operation screen, it can be controlled directly there.

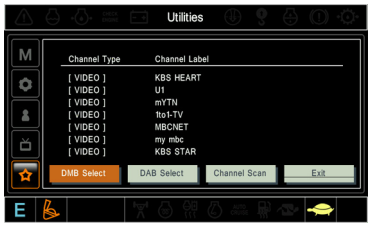
② DMB



21093CD69C



21093CD69D



21093CD69E

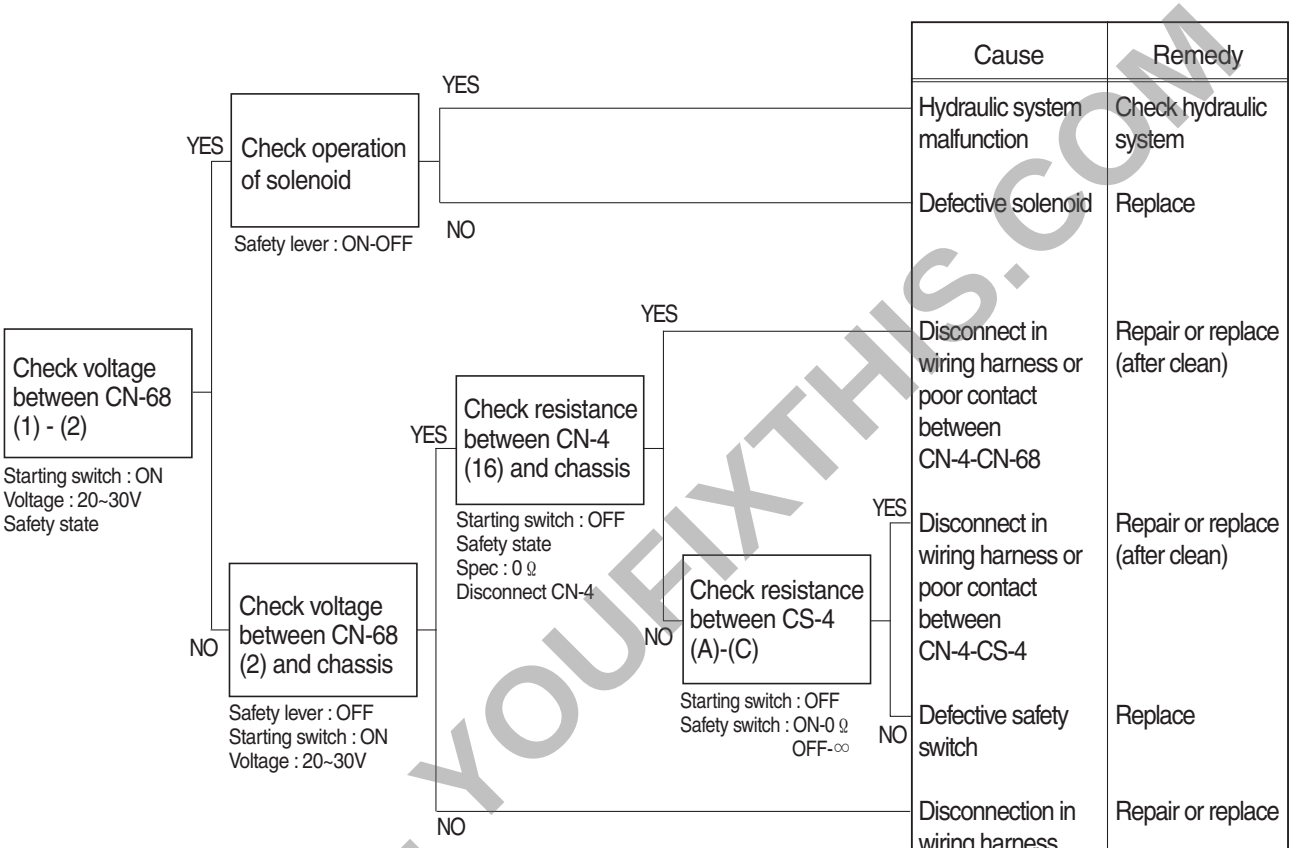
- DMB select : TV channel can be selected by this menu.
- DAB select : Audio channel can be selected by this menu.
- Channel scan : This menu can be used other region for TV/Audio.
- Exit : Exit DMB menu

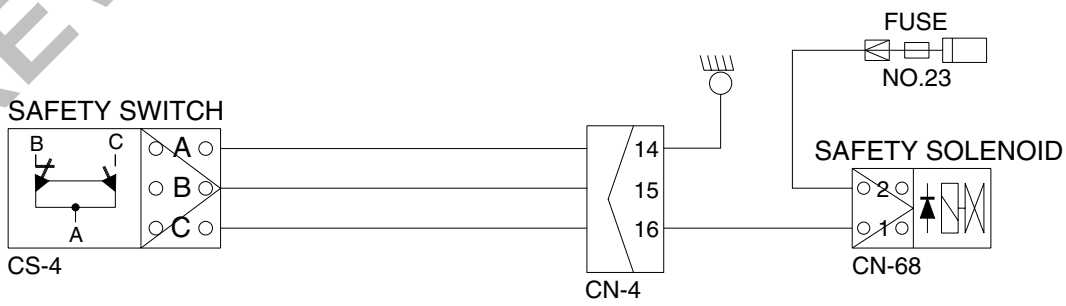
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10. WHEN SAFETY SOLENOID DOES NOT OPERATE

- Before disconnecting the connector, always turn the starting switch OFF.
- Before carrying out below procedure, check all the related connectors are properly inserted and short of fuse No.23.
- After checking, insert the disconnected connectors again immediately unless otherwise specified.





21096ES10

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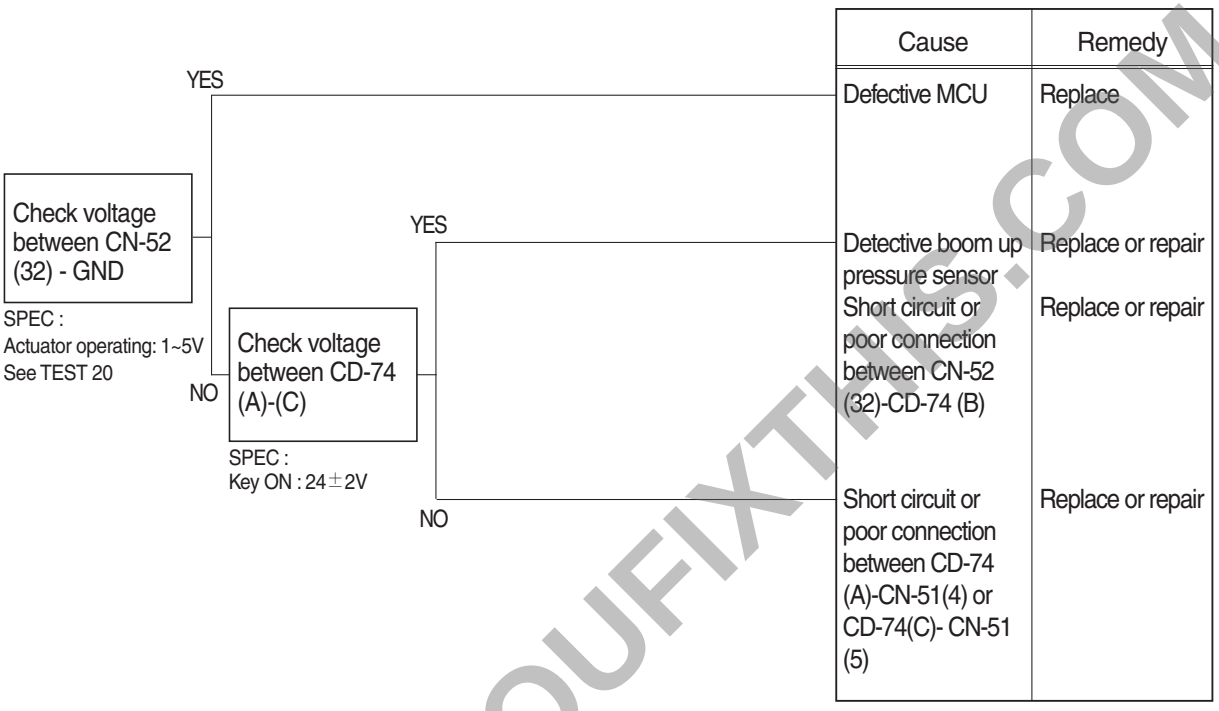
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17. MALFUNCTION OF TRAVEL REVERSE PRESSURE SENSOR

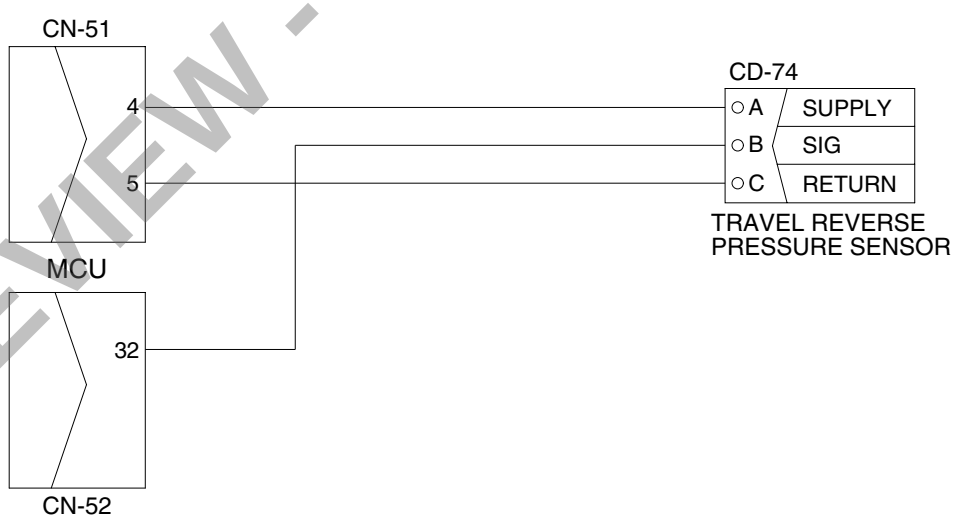
· Fault code : HCESPN 531, FMI 0~4

※ Before carrying out below procedure, check all the related connectors are properly inserted.

1) INSPECTION PROCEDURE



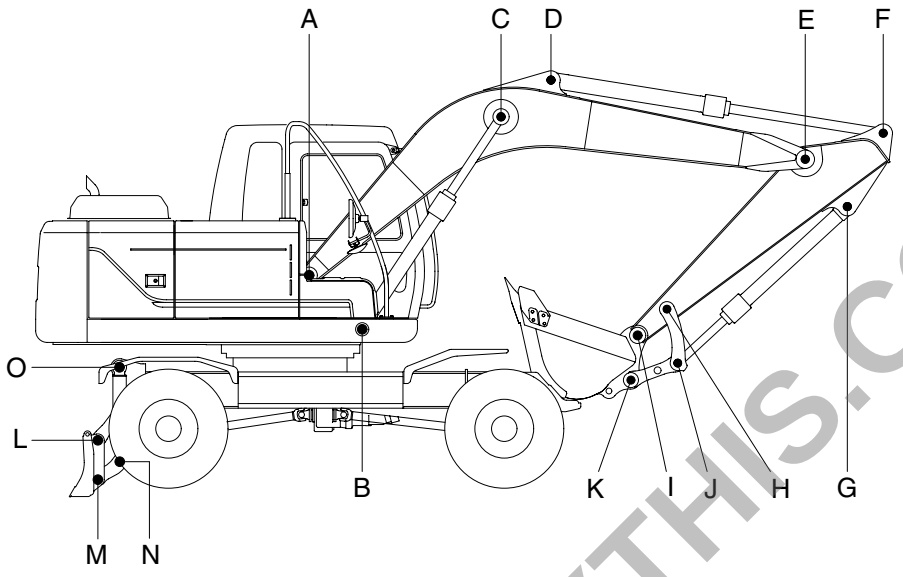
Wiring diagram



14W96MS23

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14W97MS20

Unit : mm

Mark	Measuring point (pin and bushing)	Normal value	Pin		Bushing		Remedy & Remark
			Recomm. service limit	Limit of use	Recomm. service limit	Limit of use	
A	Boom rear	70	69	68.5	70.5	71	Replace
B	Boom cylinder head	70	69	68.5	70.5	71	〃
C	Boom cylinder rod	70	69	68.5	70.5	71	〃
D	Arm cylinder head	70	69	68.5	70.5	71	〃
E	Boom front	70	69	68.5	70.5	71	〃
F	Arm cylinder rod	70	69	68.5	70.5	71	〃
G	Bucket cylinder head	70	69	68.5	70.5	71	〃
H	Arm link	65	64	63.5	65.5	66	〃
I	Bucket and arm link	65	64	63.5	65.5	66	〃
J	Bucket cylinder rod	70	69	68.5	70.5	71	〃
K	Bucket link	65	64	63.5	65.5	66	〃
L	Dozer link (B)	55	54	53.5	55.5	56	〃
M	Dozer link (A)	55	54	53.5	55.5	56	〃
N	Dozer cylinder rod	65	64	63.5	65.5	66	〃
O	Dozer cylinder head	65	64	63.5	65.5	66	〃

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3) DISASSEMBLY

(1) Disassembly of spools without holding valve

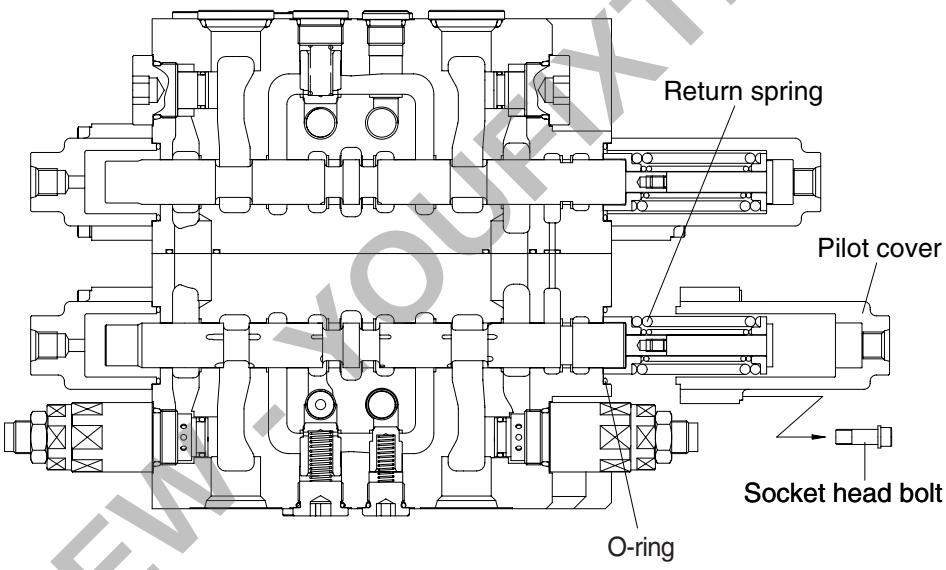
① Loosen hexagon socket head bolts with washer.
(hexagon wrench : 5 mm)

② Remove the pilot cover.

※ Pay attention not to lose the O-ring under the pilot cover.

③ Remove the spool assembly from the body by hand slightly.

※ When extracting each spool from its body, pay attention not to damage the body.
※ When extracting each spool assembly, it must be extracted from spring side only.
※ When any abnormal parts are found, replace it with completely new spool assembly.
※ When disassembled, tag the components for identification so that they can be reassembled correctly.

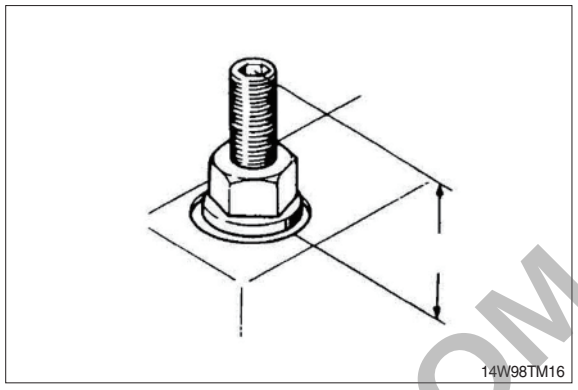


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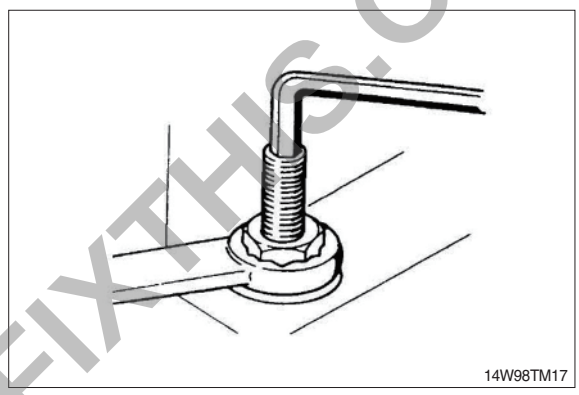
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3) SEAL NUT

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



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



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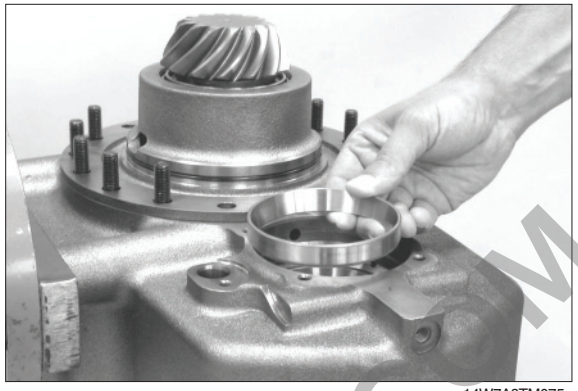
4) REASSEMBLY BRAKE / CLUTCH / PLANET CARRIER

(1) PLANET CARRIER

Install the bearing outer until contact.

※ Observe the bearing location-bearing inner ring to bearing outer ring-also see instructions for disassembly page 8-101,TM039.

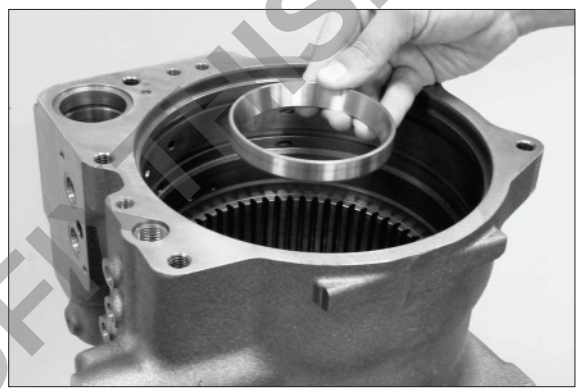
(S) Mounting tool 5870 058 051
Handle 5870 260 002


14W7A8TM075

(2) Rotate transmission by 180˚.
Install the second bearing outer ring until contact.

※ Observe the bearing location-bearing inner ring to bearing outer ring-also see instructions for disassembly page 8-101, TM039.

(S) Mounting tool 5870 058 051
Handle 5870 260 002

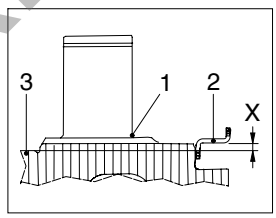

14W7A8TM076

(3) Insert the screen sheet and fasten it with countersunk screws.

※ Secure the countersunk screws with locking compound (loctite No. 243)!


14W7A8TM077

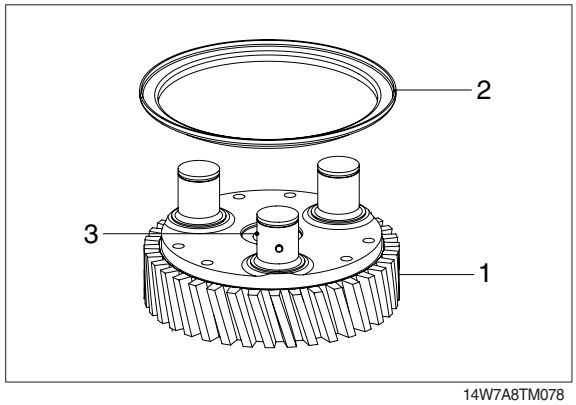
(4)



1 = Planet carrier
2 = Screen sheet
3 = Contact surface -

Axial needle cage / axial washer
X = Installation dimension → 1.5 $_{-0.5}$mm

Install the screen sheet (2) considering the installation dimension X onto the planet carrier (1).



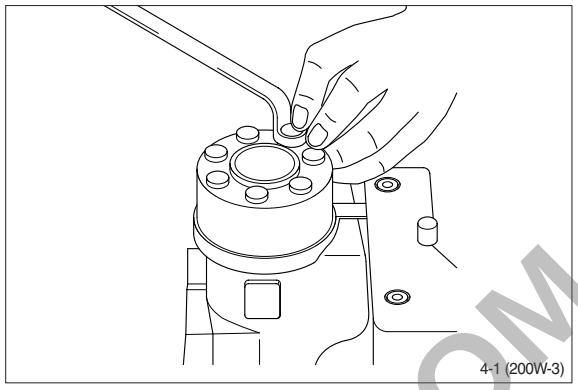
14W7A8TM078

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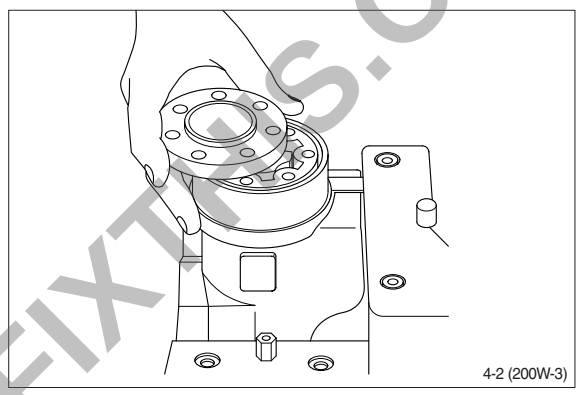
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4) DISASSEMBLY

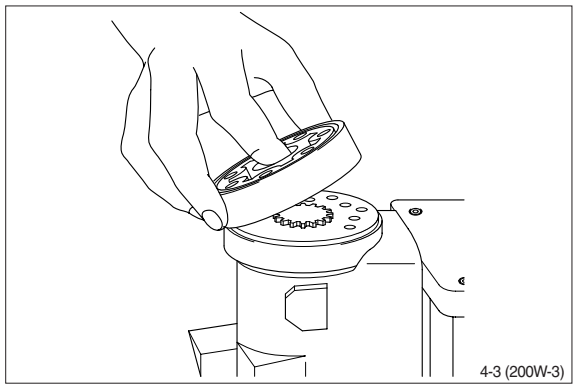
(1) Dissemble steering column from steering valve and place the steering valve in the holding tool.
Screw out the screws in the end cover (6-off plus one special screw).


4-1 (200W-3)

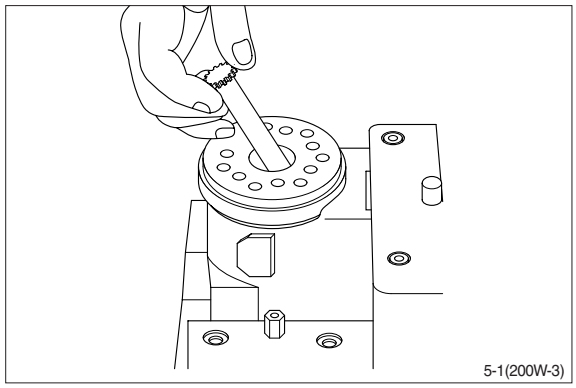
(2) Remove the end cover, sideways.


4-2 (200W-3)

(3) Lift the gearwheel set (with spacer if fitted) off the unit.
Take out the two O-rings.


4-3 (200W-3)

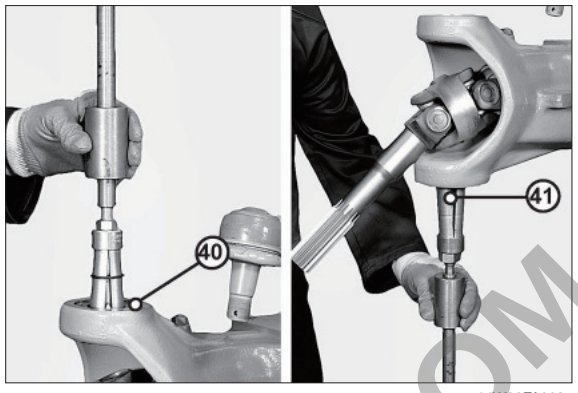
(4) Remove cardan shaft.


5-1(200W-3)

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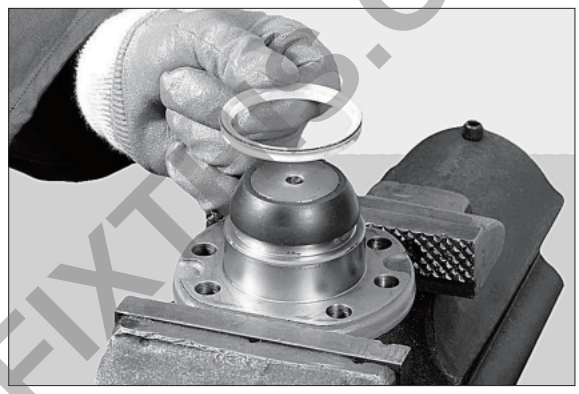
(17) Using a puller for inner parts, remove the top bush (40) and the bottom ball-bush (41).



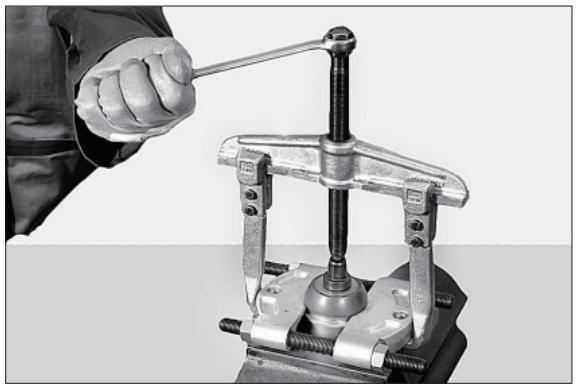
14W98FA063

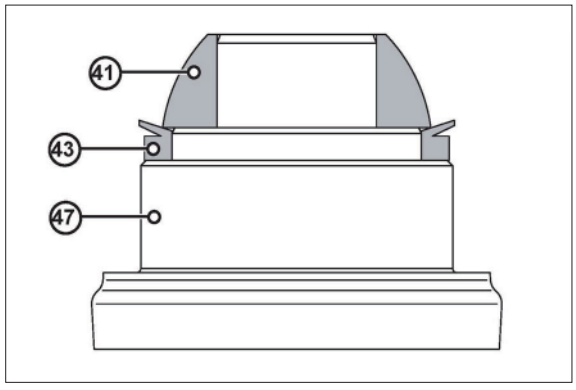
(18) Remove the articulation pins (41) and the front sealing rings (43).

※ Note down the side for assembly.


14W98FA064

(19) If the ball cover needs replacing, remove it from the bottom articulation pin.


14W98FA065

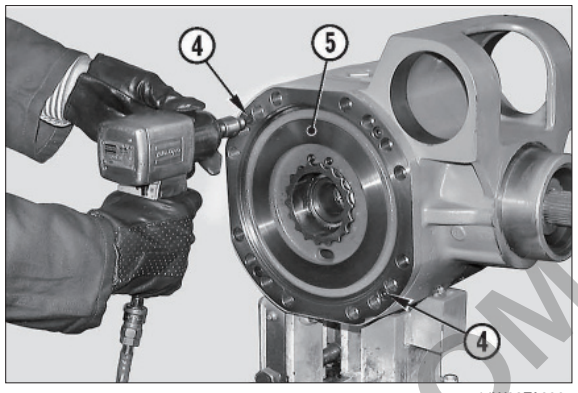


14W98FA066

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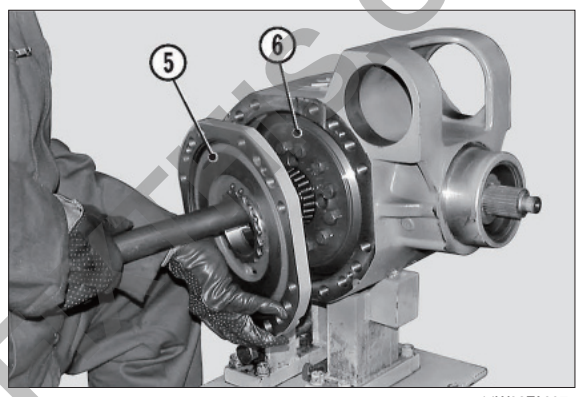
(5) Remove the fittin screws (4) from the middle cover (5).



14W98FA206

(6) Insert a screw-driver in the opposing slots then force and remove the middle cover (5) and the complete differential unit (6).

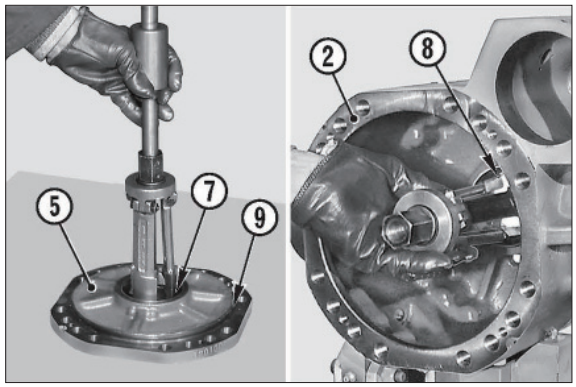
※ Support the pieces using a rod.



14W98FA207

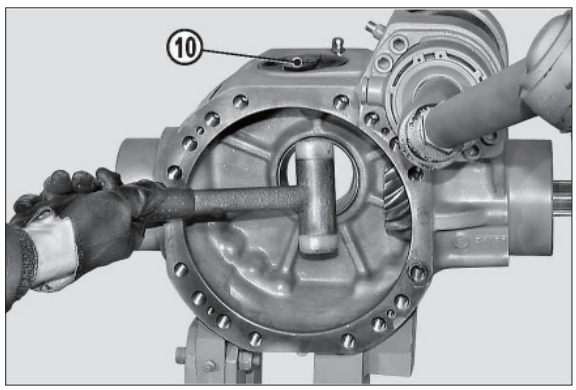
(7) If the bearing need replacing, extract the external thrust blocks of the bearing (7) and (8) from middle cover (5) and central body (2).

※ Accurately check the O-ring (9).



14W98FA208

(8) Remove the top plug (10).



14W98FA209

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1. REMOVAL AND INSTALL

1) BUCKET CYLINDER

(1) Removal

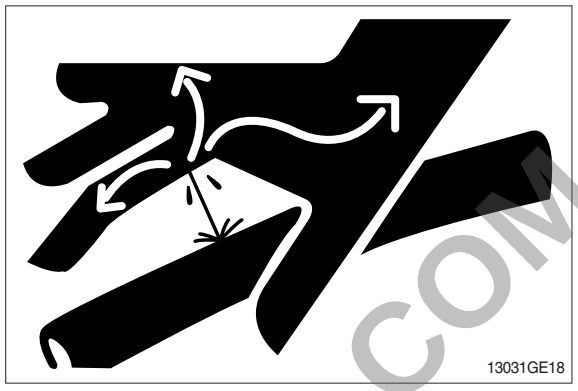
※ Expand the arm and bucket fully, lower the work equipment to the ground and stop the engine.

※ Operate the control levers and pedals several times to release the remaining pressure in the hydraulic piping.

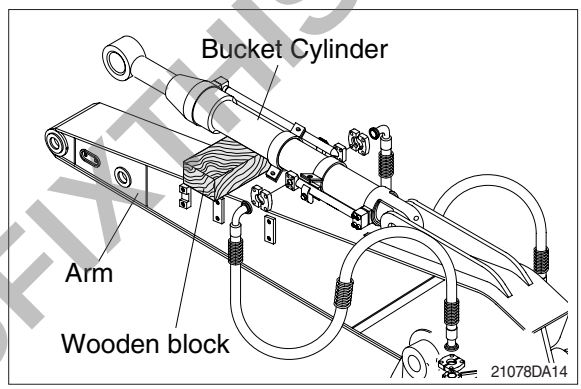
※ Loosen the breather slowly to release the pressure inside the hydraulic tank.

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

※ Fit blind plugs in the hoses after disconnecting them, to prevent dirt or dust from entering.

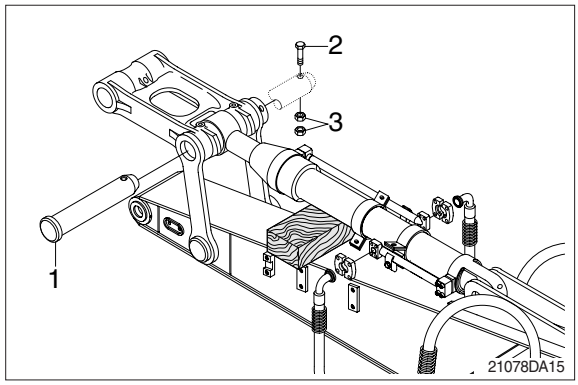


① Set block between bucket cylinder and arm.

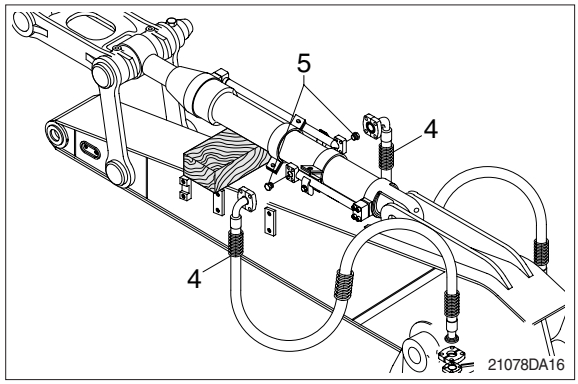


② Remove bolt (2), nut (3) and pull out pin (1).

※ Tie the rod with wire to prevent it from coming out.



③ Disconnect bucket cylinder hoses (4) and put plugs (5) on cylinder pipe.



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