b. Machine specifications

(1) EU version

		Unit	KX36-3	KX41-3S	KX41-3V
Engine					
Type			Vertical, water-cooled 4 cycle, 3 cylinders diesel		
Model			D782-BH-3	D902-BH	D902-EBH
Output power (ISO3046)		kW PS	9.3/2300 12.6/2300	11.6/2300 15.8/2300	←
Displacement		cc	778	898	←
Dimensions					
Overall length		mm	3670	3665	←
Overall width		mm	990	←	1300/994
Overall crawler width		mm	990	←	1300/994
Overall height	Canopy/cab	mm	2283/2283	←	←
Min. ground clearance		mm	167	158	←
Max. digging depth	STD. Arm	mm	-	-	-
	Long Arm	mm	2227	2370	←
Max. digging height	STD. Arm	mm	-	-	-
	Long Arm	mm	3458	3540	←
Max. digging radius	STD. Arm	mm	-	-	-
	Long Arm	mm	3782	3910	←
Max. dumping height	STD. Arm	mm	-	-	-
	Long Arm	mm	2366	2455	←
Swing angle (left/right)		deg	73/50	←	←
Travel speed	Low speed	km/h	2.2	2.4	2.2
	High speed	km/h	-	4.3	4.0
Swivel speed		rpm	9.1	←	←
Max. traction force	Low speed	kN kgf			
	High speed	kN kgf			
Performance					
Tumbler distance		mm	1090	←	1230
Tread		mm	760	←	1000
Crawler width × No. of shoe × pitch (Rubber)		mm	230 × 32 × 96	230 × 35 × 96	←
Bucket					
Capacity CECE heaped		m3	0.035	0.04	←
Width		mm	402	450	←
Dozer					
Width × height		mm	990 × 230	←	1300 x 230
Lift above GL / below GL		mm	180/193	←	201/205

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E.Maintenance intervals

a. PP (KTC, KCL, KTA) - version

No.	Check points		Intervals	Hour meter indicator									Consequently		
				50	100	150	200	250	300	350	400	450			
1	Coolant		check	Daily check											
			change										every 2 years		
2	Fuel		check	Daily check											
3	Engine oil		check	Daily check											
			change	◉					○				every 250 hrs		
4	Hydraulic oil		check	Daily check											
			change										every 1000 hrs	*1	
5	Lubrication points		-	Daily check											
6	Radiator and oil cooler		check	Daily check											
7	Engine and electrical wiring		check	Daily check									every year		
8	Fuel tank, Fuel filter		drain	○	○	○	○	○	○	○	○	○	every 50 hrs		
9	Battery condition		check	○	○	○	○	○	○	○	○	○	every 50 hrs		
10	Greasing swing bearing teeth		-	○	○	○	○	○	○	○	○	○	every 50 hrs		
11	Fan belt tension		adjust				○				○		every 200 hrs		
12	Radiator hoses and clamps		check				○				○		every 200 hrs		
			replace										every 2 years		
13	Air filter element	Outer element	clean				○				○		every 200 hrs	*2	@
			replace										every 1000 hrs	*2	
		Inner element	replace										every 1000 hrs	*2	
14	Greasing swing ball bearings		-				○				○		every 200 hrs		
15	Fuel filter element		replace								○		every 400 hrs		@
16	Engine oil filter		replace	◉					○				every 250 hrs		
17	Drive unit oil		change		◉								every 500 hrs		
18	Hydraulic return filter element		replace					◉					every 500 hrs		
19	Hydraulic suction filter element		replace										every 1000 hrs		
20	Fuel injection nozzle injection pressure		check										every 1500 hrs	*4	@
21	Front idler and track roller oil		change										every 2000 hrs		
22	Alternator and starter motor		check										every 2000 hrs		
23	Injection pump		check										every 3000 hrs	*4	@
24	Radiator system		rinse										every 2 years		
25	Fuel line and Intake air line		check				○				○		every 200 hrs		@
			replace										every 2 years	*3	

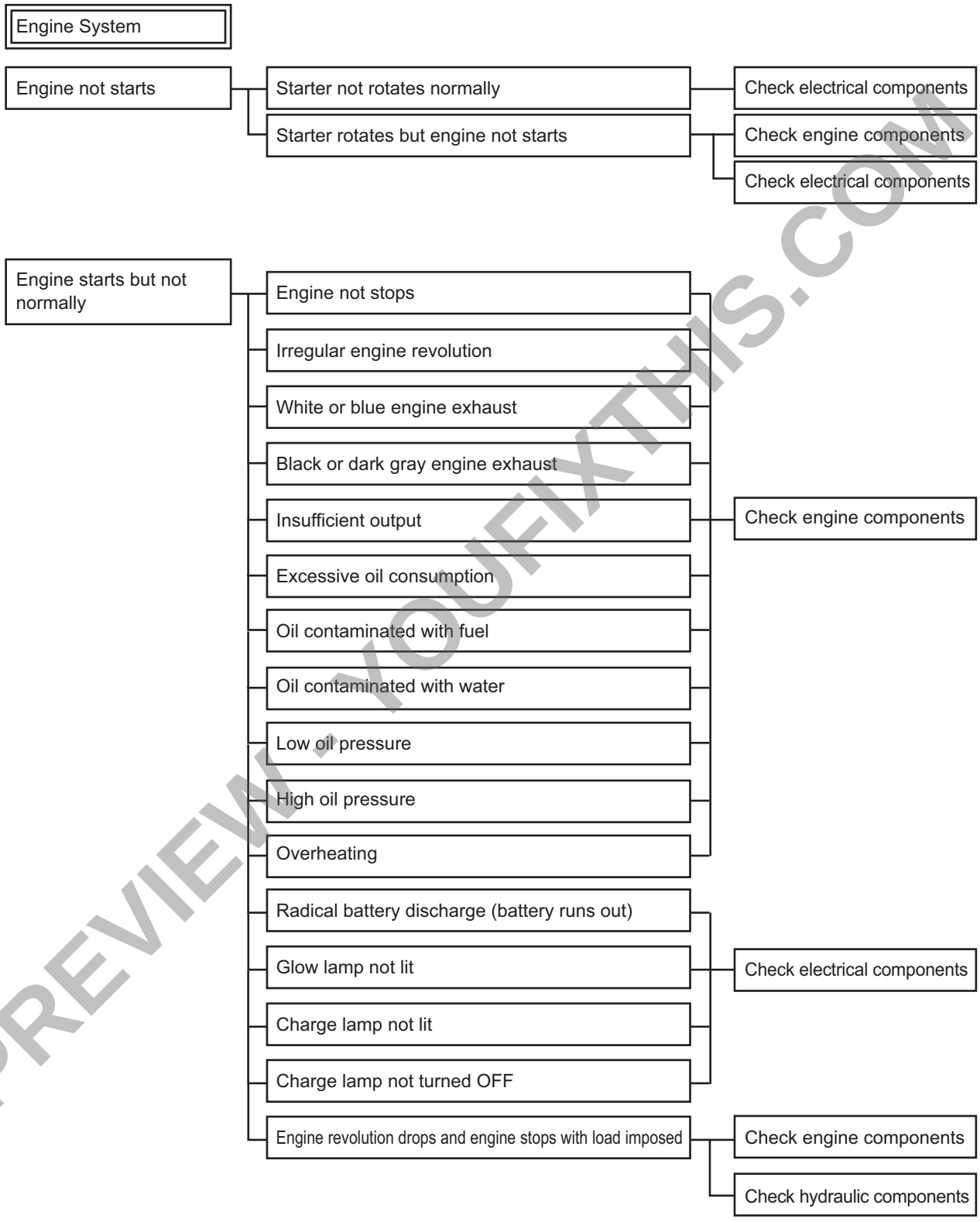
* 500 thru 1000 continued to the following table.

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A.Troubleshooting

a. Common circuit

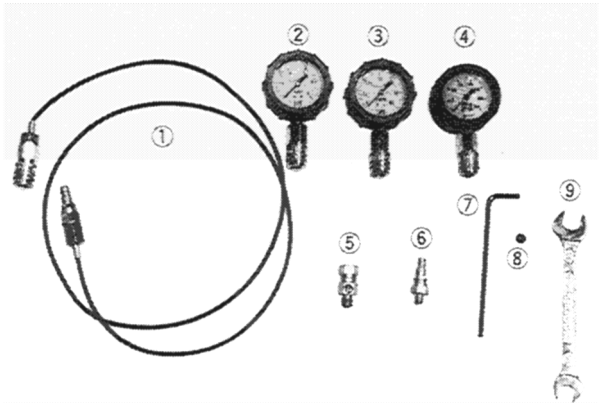


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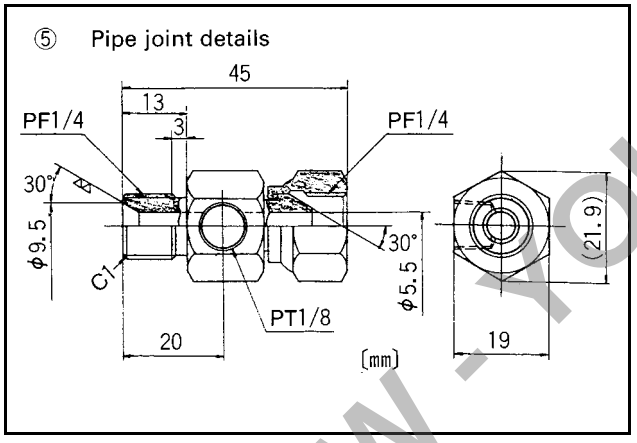
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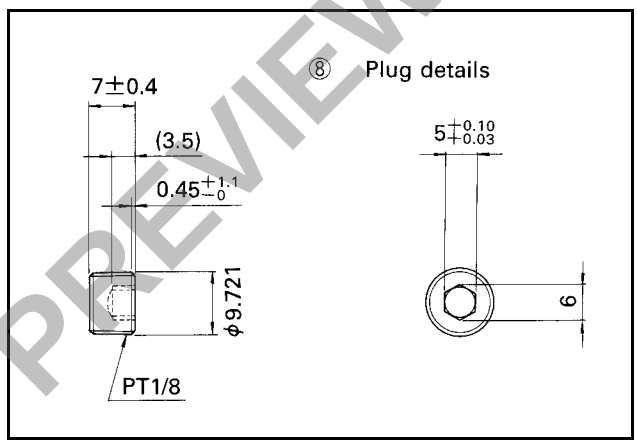
B.Testing

a. Testing Instruments & special tools



1) Gauges and special tools for pressure testing
   1. Pressure hose
   2. Pressure gauge; 2.94 MPa, 30kgf/cm^2, 427 psi
      For Secondary pilot pressure test.
   3. Pressure gauge; 5.88 MPa, 60kgf/cm^2, 853psi
      For primary pilot pressure test.
   4. Pressure gauge; 64.3 MPa, 350kgf/cm^2, 4978psi
      For main relief pressure and overload relief pressure test.
   5. Pipe joint (S, F2 - F2)
      code No.: 69181-63191
   6. Pressure test plug; PT 1/8
   7. Allen wrench; M5
   8. Plug; PT 1/8 Code No.: 68311-13381
   9. Wrench; Size 17 - 19 mm





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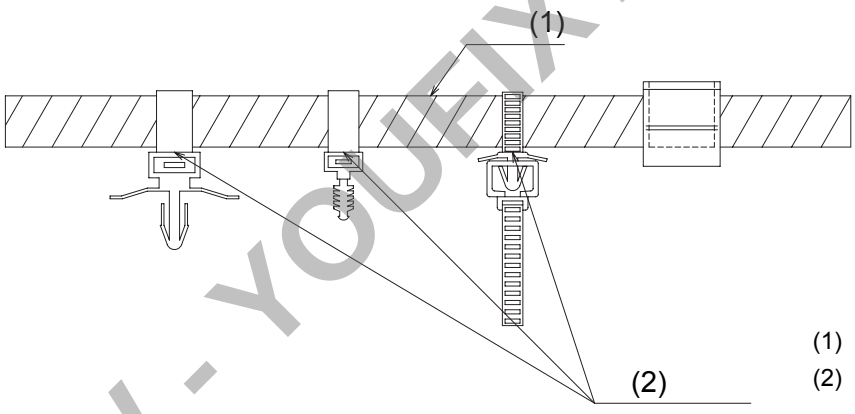
C.Wire harness installation

a. Precautions

S **(1) No contact with the peripheral parts along the route.**
Unprotected members should not to be in contact.

S **(2) Checking the routes.**
1. Fuel hose should not to be clamped together.
2. Couplers, terminals, etc. are to be connected tight enough to withstand usual pulling force.
3. Clamps are to be surely folded.

S **(3) Clamping the harness at the specified points.**
1. White-colored tapings to be clamped.
2. Clamps to be surely folded.
3. Harness-fixed clamps.
4. Anchor-shaped clamps should to be inserted deep to the stoppers.
5. Threaded clamps should to be inserted deep enough.



(1) Harness
(2) Clamp

1) The harness tapings indicate the clamping positions. Clamp at these specified points.
2) Clamp the harness tight enough not to come off nor get loose.
3) Insert the handgrip-equipped harness deep into their mating holes.
4) Do not allow the harness to come out of the corrugated slit.
5) Catch the cord clamp at the corrugated winding.

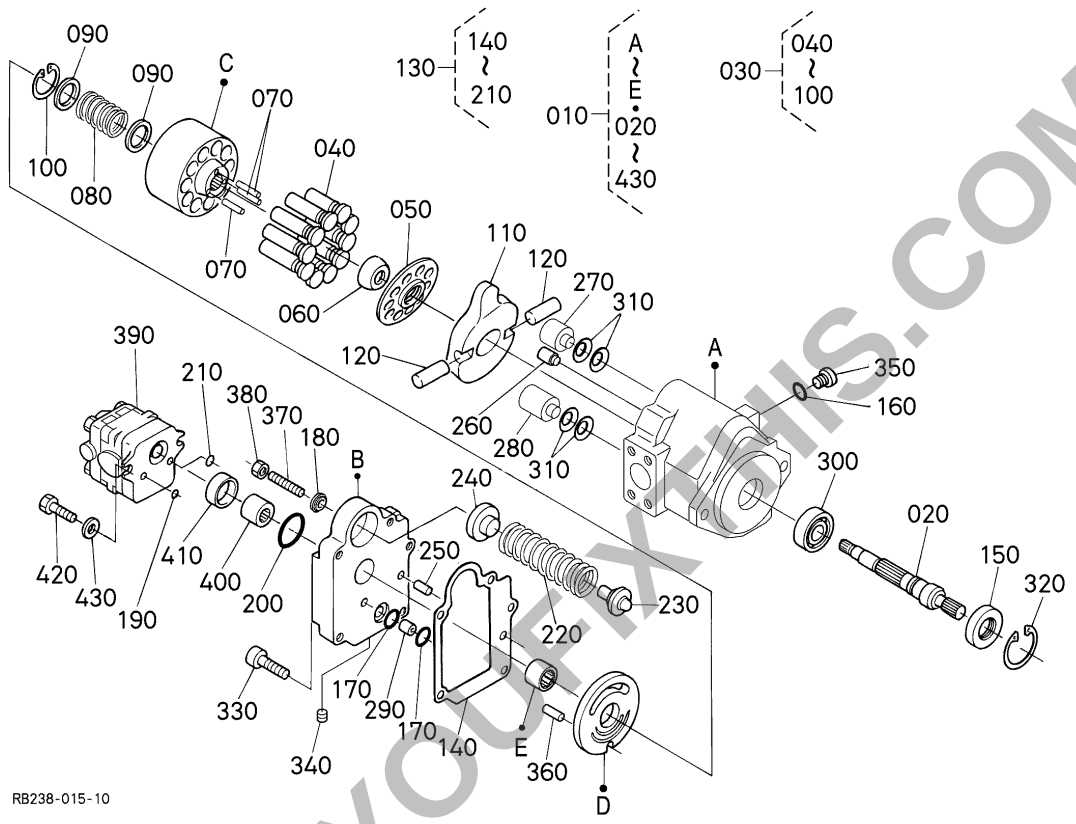
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D.Disassembling and reassembling

a. Pump

(1) Component of pump



Ref.No.	Part Name	Q'ty
010	ASSY PUMP,PISTON	1
020	SHAFT	1
030	ASSY CYLINDER	1
040	ASSY PISTON	10
050	HOLDER	1
060	HOLDER	1
070	PIN	3
080	SPRING	1
090	RETAINER	2
100	CIR CLIP,INTERNAL	1
110	PLATE	1
120	PIN	2
130	KIT SEAL	1
140	GASKET	1
150	SEAL,OIL	1
160	O RING	1
170	O RING	2
180	WASHER,SEAL	1
190	O RING	1
200	O RING	1
210	O RING	1
220	SPRING	1

Ref.No.	Part Name	Q'ty
230	HOLDER,SPRING	1
240	GUIDE,SPRING	1
250	PIN	1
260	ROD	1
270	PIN	1
280	PIN	1
290	PIN	1
300	BEARING,BALL	1
310	SPRING,PLATE	8
320	CIR CLIP,INTERNAL	1
330	BOLT,HEX-SOC-HD	4
340	PLUG	4
350	PLUG	1
360	PIN,SPRING	1
370	SCREW,SET	1
380	NUT,LOCK	1
390	ASSY PUMP,GEAR	1
400	COUPLING	1
410	COLLAR	1
420	BOLT	2
430	WASHER,PLAIN	2

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(4) Hose screw

Thread size (piping screw)	Tightening torque N·m kgf·m ft·lbf		Wrench size (reference)
	Union nut section	Taper thread section	
1/8”	7.8 ~ 11.8 N·m 0.8 ~ 1.2 kgf·m 5.8 ~ 8.7 ft·lbf	14.71 ~ 19.61 N·m 1.5 ~ 20 kgf·m 10.85 ~ 14.47 ft·lbf	17 mm 0.67 in
1/4”	24.5 ~ 29.4 2.5 ~ 3.0 18.1 ~ 21.7	36.3 ~ 44.1 3.7 ~ 4.5 26.8 ~ 32.5	19 mm 0.75 in
3/8”	49.0 ~ 53.9 5.0 ~ 5.5 36.2 ~ 39.8	49.0 ~ 68.6 5.0 ~ 7.0 36.2 ~ 50.6	22 mm 0.87 in
1/2”	58.8 ~ 63.7 6.0 ~ 6.5 43.4 ~ 47.0	83.4 ~ 88.3 8.5 ~ 9.0 61.5 ~ 65.1	27 mm 1.06 in
3/4”	117.7 ~ 127.5 12.0 ~ 13.0 86.8 ~ 94.0	127.5 ~ 147.1 13.0 ~ 15.0 94.0 ~ 108.5	36 mm 1.42 in
1”	137.3 ~ 147.1 14.0 ~ 15.0 101.3 ~ 108.5	147.1 ~ 166.7 15.0 ~ 17.0 108.5 ~ 123.0	41 mm 1.61 in

Metric Size Hose

Thread size (piping screw)	Torque N·m kgf·m ft·lbf
M12 × 1.5	20 ~ 30 2.0 ~ 3.1 14.75 ~ 22.13
M14 × 1.5	20 ~ 30 2.0 ~ 3.1 14.75 ~ 22.13
M16 × 1.5	30 ~ 50 3.1 ~ 5.1 22.13 ~ 36.9
M18 × 1.5	30 ~ 50 3.1 ~ 5.1 22.13 ~ 36.9
M22 × 1.5	40 ~ 60 4.1 ~ 6.1 29.5 ~ 44.25

(5) Joint bodies

Thread size (piping screw)	Tightening torque N·m kgf·m ft·lbf		Spanner size (reference)	Remarks Steel pipe (OD)	
	R (tapered thread)	G (straight thread)			
1/8”	19.6 ~ 29.4 N·m 2.0 ~ 3.0 kgf·m 14.5 ~ 21.7 ft·lbf	-	17 mm 0.67 in	When in steel pipe is in use.	8 mm 0.31 in
1/4”	36.3 ~ 44.1 3.7 ~ 4.5 26.8 ~ 32.5	W/O-ring *Joint Torque* 58.8 ~ 78.5 6 ~ 8 43.4 ~ 57.9	19 mm 0.75 in		12 mm 0.47 in
3/8”	39.2 ~ 49.0 4.0 ~ 5.0 28.9 ~ 36.2	W/O-ring *Joint Torque* 78.5 ~ 98.1 8 ~ 10 57.9 ~ 72.3	23 mm 0.91 in		15 mm 0.59 in
1/2”	49.0 ~ 68.6 5.0 ~ 7.0 36.2 ~ 50.6	W/O-ring *Joint Torque* 117.7 ~ 137.3 12 ~ 14 86.8 ~ 101.3	26 mm 1.02 in		16 mm 0.63 in

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I. General

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  b. Machine specifications I-S-17
  c. Lever stroke and operating force I-S-19
  d. Dimensions of Parts I-S-20

Note : PP - version = Pan Pacific - version = KTC, KCL, KTA - version

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B. Safety precautions for servicing, disassembly and reassembly

⚠ Safety precautions for servicing

Most accidents during servicing arise from carelessness. Please remember that Safety involves both the welfare of the employees and improved work efficiency.

⚠ Safety precautions for Disassembly and reassembly

Machines must be diassembled and assembled efficiently and safely.
It is very important to thoroughly understand the construction and function of the machine, to make all appropriate preparations, and start operations according to the specified working procedures.

a. Safety measures before starting work

(1) Work clothes

1. Wear specified work cap and clothed. (Under no circumstances may workers wear undershirts only.)
   Cuffs must be kept buttoned, and any tears must be mended.)
2. Wear safety shoes.
3. Do not wear cotton gloves when working on the internal section of engine, reduction gears or hydrauricunits for repair or others, or when using a hammer. Wear leather gloves, however, when hoisting wires.

(2) Inspecting equipment and tools

1. Prepare equipment (cranes, fork lifts, tool, etc.) required for servicing and inspect for any problems before starting work.
2. Hammer heads (metal parts) must be firmly secured to their handles.
3. Check hosting tools (wire ropes, hoisting chains, etc.) before use.

(3) Keep workshop in order

1. Secure appropriate space needed for disassembly to the job.
2. Secure a clean, safe place for arranging disassembled parts.
3. Store volatile substances (gasoline, light oil, thinner, oily articles, etc.) in appropriate containers at selected locations to prevent fire hazards.

b. Safety measures during work

(1) Protectors

1. Wear goggles when using chisels for chipping.
2. Use appropriate protectors during welding.
3. Wear a helmet when working with a crane or at elevated locations.

(2) Team work

1. When working with two or more people, divide the work and maintain close communication.
2. Clane work must be carried out using predetermined signals.

(3) Disassembly and assembly

1. Do not wear gloves when using hammers.
2. Use rods of the specified soft material for removing pins. Do not use a hammer as a pad.
3. Do not place fingers in holes when centering.
4. Heavy parts must be adequately supported before removingbolts.

(4) Cranes

1. In principle, use a crane for objects heavier than 44lb (20kg).
2. Crane operation and hoisting must be performed only by qualified personal.
3. Pay careful attention to the center of gravity when hoisting, and do not stand under the lifted objects.

(5) Others

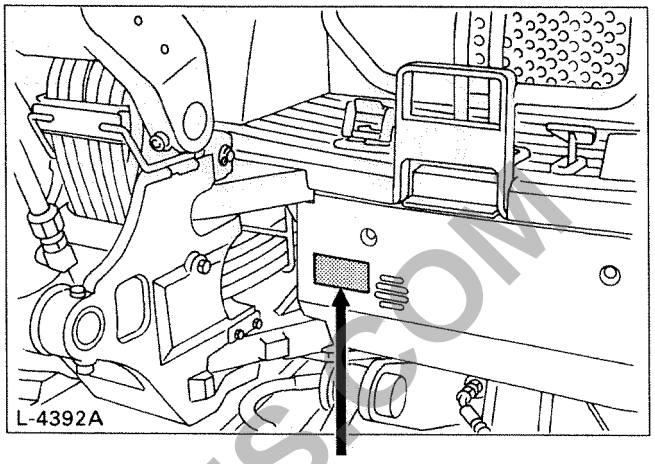
1. To work under a jacked-up carrier, be sure to place wood pieces under it.
2. When charging batteris, make sure there are no open flames in the immediate vicinity.
3. All electric tools must be grounded.
4. Before welding the machine, remove the battery.
   - When removing the battery, be sure to disconnect negative (-) cord first.
   - When mounting the battery, be sure tp connect the positive (+) cord first.

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A.Body and engine identification marks

If trouble should occur during use, or if servicing is necessary, contact the dealer who handles the machine. At that time please inform the machine model and engine type and serial numbers.



KTC, KCL, KTA version

KUBOTA Corporation

2-47, Shikitsuhigasi 1-Chome, Naniwa-ku, Osaka, 556-8601 JAPAN

MODEL	①
SERIAL No.	②
ENGINE No.	③
PRODUCT IDENTIFICATION NUMBER	④

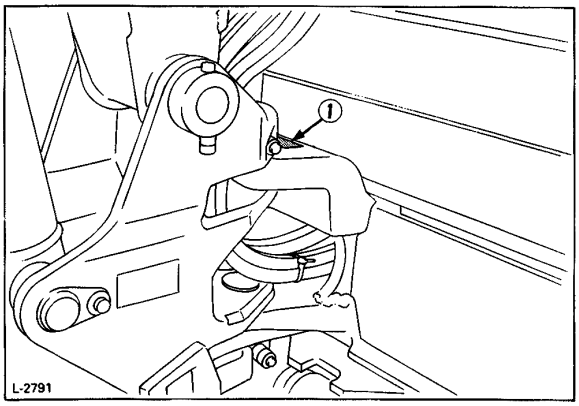
RA018-57721

Name plate : Code No. RA018-57721

No.	Items	Contents ; Example
①	Machine model	KX41-3V
②	Serial No.	20001
③	Engine No.	
④	PRODUCT IDENTIFICATION No.	>JKUK1613CO1H20001<

Example : S/N 20001

(1) Machine serial number



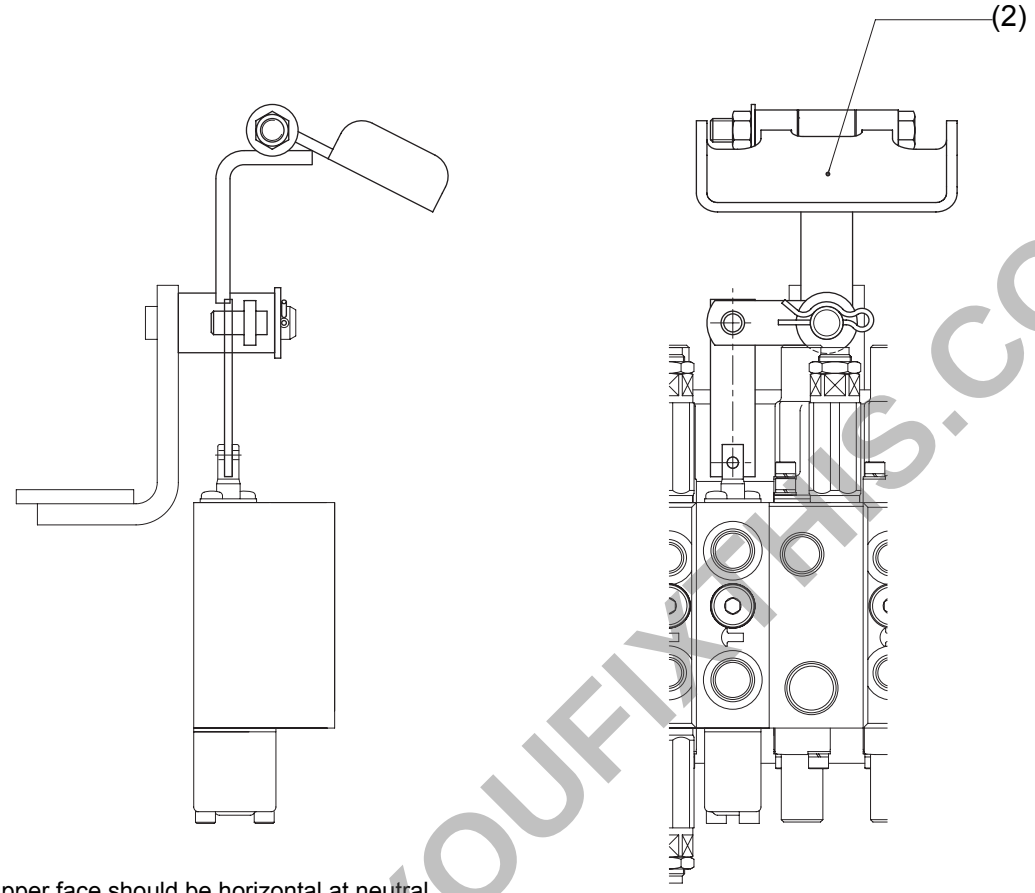
(2) Engine serial number
e.g. D1503-2L0025
"2" indicates year of 2002 and "L" indicates June.
So, 2L indicates that the engine was manufactured in June 2002.



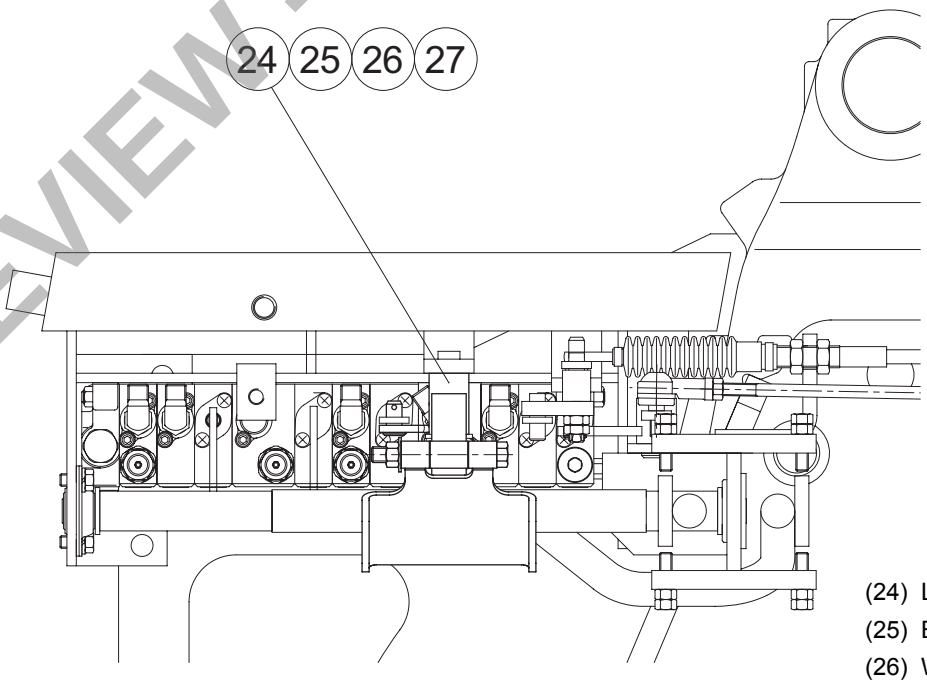
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<Service port pedal>



(2) Pedal upper face should be horizontal at neutral.



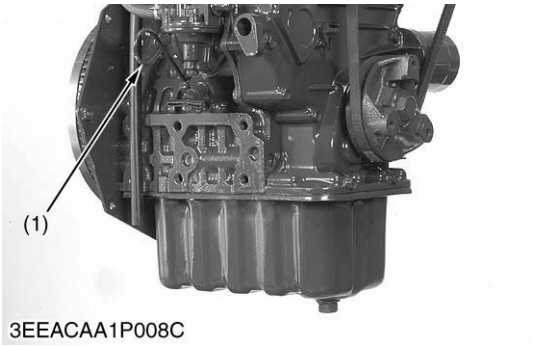
(24)	Lever (sp pedal)	1
(25)	Bush	2
(26)	Washer, plain	1
(27)	Snup pin	1

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[7] CHECK AND MAINTENANCE

(1) Daily Check Points



Checking Engine Oil Level

1. Level the engine.
2. To check the oil level, draw out the dipstick (1), wipe it clean, reinsert it, and draw it out again.
   Check to see that the oil level lies between the two notches.
3. If the level is too low, add new oil to the specified level.

■ IMPORTANT

- **When using an oil of different maker or viscosity from the previous, drain old oil. Never mix two different types of oil.**

■ NOTE

- **Be sure to inspect the engine, locating it on a horizontal place. If placed on gradients, accurately, oil quantity may not be measured.**
- **Be sure to keep the oil level between upper and lower limits of the dipstick. Too much oil may cause a drop in output or excessive blow-by gas. On the closed breather type engine in which mist is sucked through port, too much oil may caused oil hammer. While too little oil, may seize the engine's rotating and sliding parts. (The closed breather is an option.)**

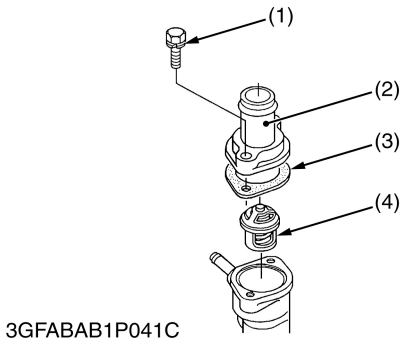
(1) Dipstick

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[2] DISASSEMBLING AND ASSEMBLING



3GFABAB1P041C

Thermostat Assembly

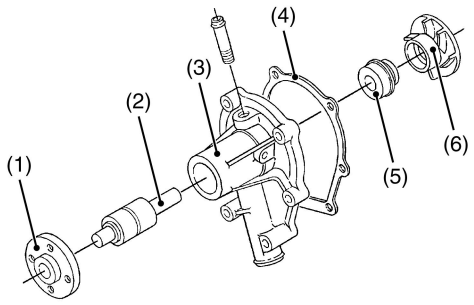
1. Remove the thermostat cover mounting screws (1), and remove the thermostat cover (2).
2. Remove the thermostat assembly (4).

(When reassembling)

- Apply a liquid gasket (Three Bond 1215 or equivalent) only at the thermostat cover side of the gasket (3).

(1) Thermostat Cover Mounting Screw
(2) Thermostat Cover
(3) Thermostat Cover Gasket
(4) Thermostat Assembly

0000001357E



3GFABAB1P042B

Water Pump Assembly

1. Loosen the alternator mounting screws, and remove the fan belt.
2. Remove the fan and fan pulley.
3. Remove the water pump assembly from the gear case cover.
4. Remove the water pump flange (1).
5. Press out the water pump shaft (2) with the impeller (6) on it.
6. Remove the impeller from the water pump shaft.
7. Remove the mechanical seal (5).

(When reassembling)

- Apply a liquid gasket (Three Bond 1215 or equivalent) to the both sides of gasket (4).
- Replace the mechanical seal with new one.

(1) Water Pump Flange
(2) Water Pump Shaft
(3) Water Pump Body
(4) Water Pump Gasket
(5) Mechanical Seal
(6) Impeller

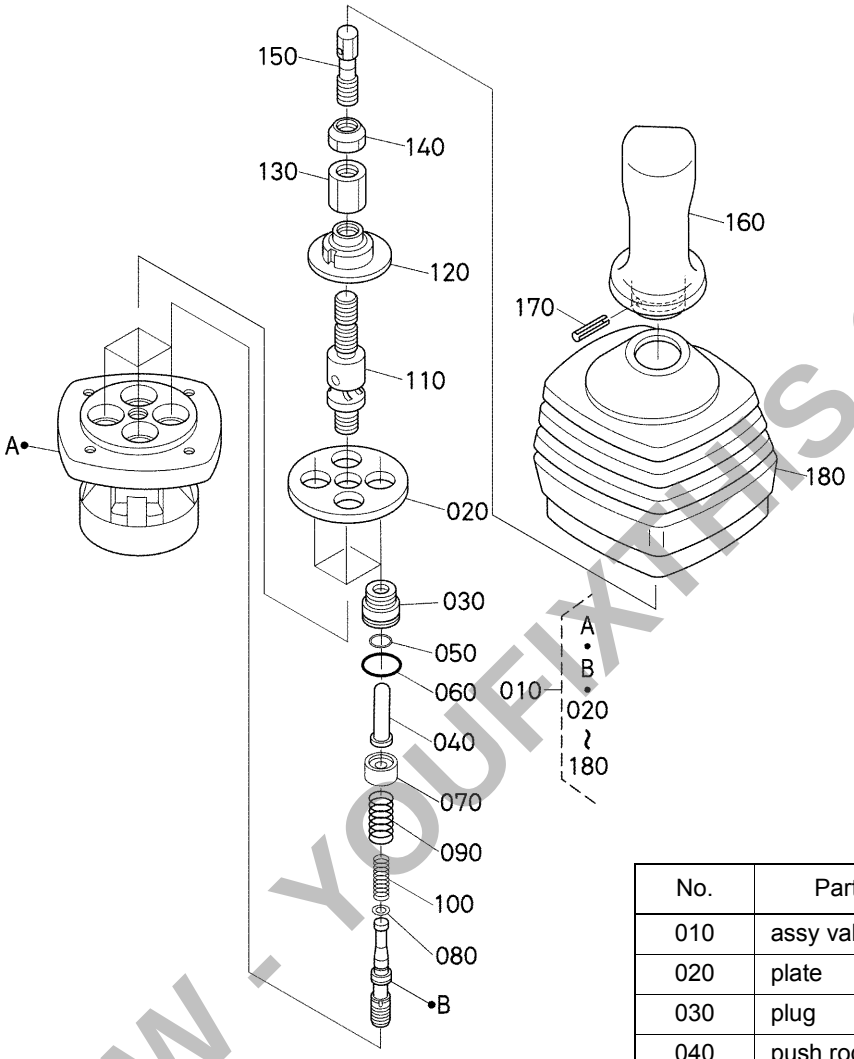
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c. Pilot valve (PP version)

(1) Components of pilot valve

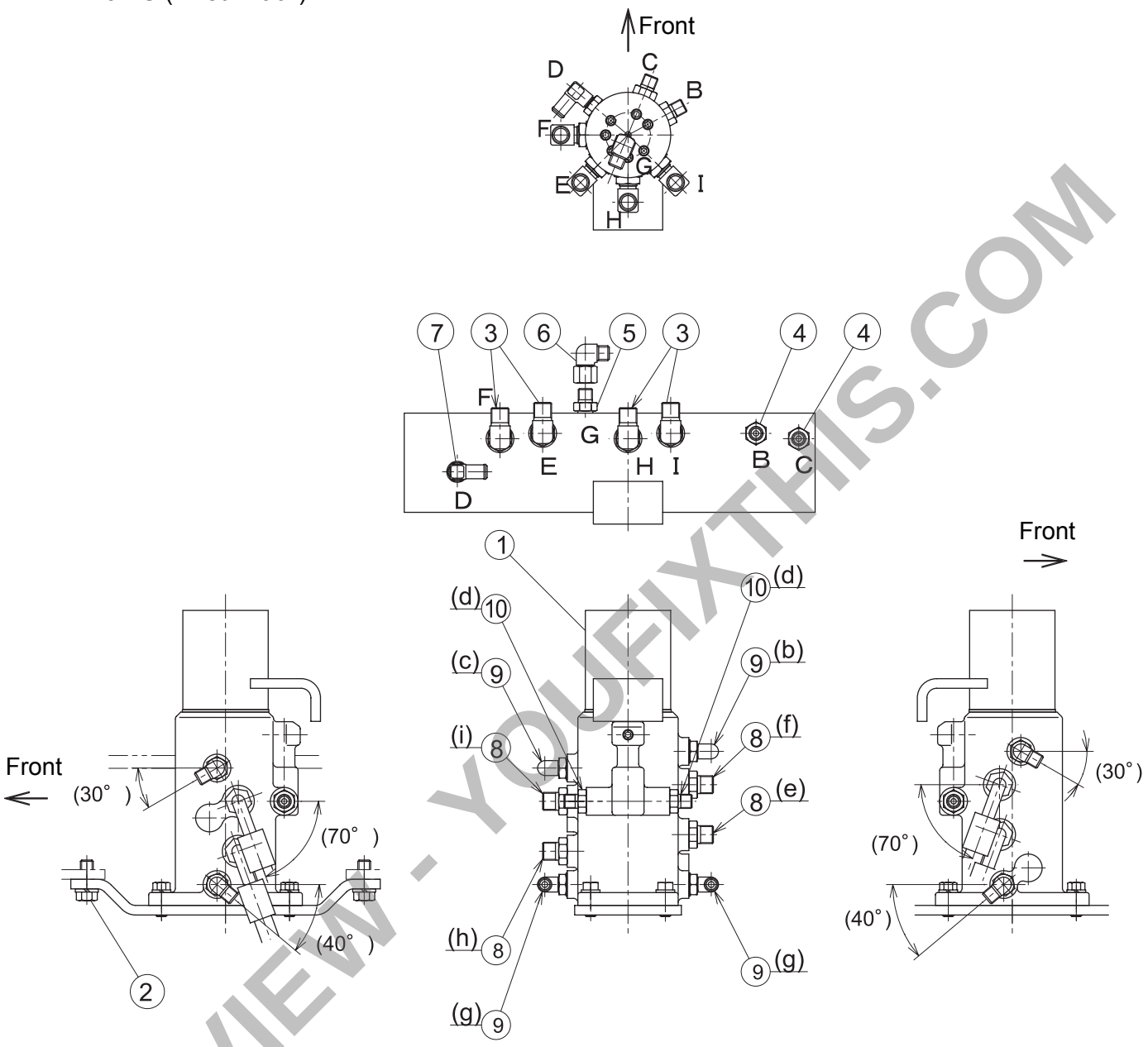


No.	Part Name	Q'ty
010	assy valve,pilot lh	1
020	plate	1
030	plug	4
040	push rod	4
050	seal	4
060	o ring	4
070	seat,spring	4
080	washer	4
090	spring	4
100	spring	4
110	joint	1
120	nut	1
130	nut,adjusting	1
140	nut,lock	1
150	lever	1
160	knob	1
170	pin,spring	1
180	boot	1

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• KX41-3 EU (Fixed Track)



No.	Part Name	Q'ty	Remarks
1	Assy, swivel joint6	1	(623)
2	Bolt	4	M12 x 1.25 7T
3	Adapter (L, G1/8-G1/4)	4	E, F, H, I
4	Adapter	2	B, C
5	Adapter	1	G
6	Elbow, pope	1	G
7	Adapter (G1/4-13)	1	D
8	Body	4	e, f, h, i
9	Joint	4	b, c, g
10	Adapter	2	d

No.	Part Name
(b)	Blade cy1 (rod)
(c)	Blade cy1 (bottom)
(d)	Running drain
(e)	Running (right) lower side port
(f)	Running (right) upper side port
(g)	Speed increase signal
(h)	Running (left) lower side port
(i)	Running (left) upper side port

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High-pressure hose List (Front)

No.	Connecting point	Application	Part No. Reference	Part Name	Q'ty	Dimension (mm)	Tape color	Hose shape	Remarks
1	CV (A8) ~ Boom CYL rod	Boom up (rod)	RB238-64162	Hydraulic hose (1/4)	1	3150	Yellow x 2	G1/4 PF2104 G1/4	
2	CV (B8) ~ Boom CYL bottom	Boom down (bottom)	RB238-64172	Hydraulic hose (1/4)	1	2940	Green x 2	G1/4 PF2104 G1/4	
3	CV (B5) ~ Intermediate joint	Arm dump (rod)	RB238-64182	Hydraulic hose (1/4)	1	550	Black x 2	G1/4 PF2104 G1/4	
4	CV (A5) ~ Intermediate joint	Arm crowd (bottom)	RB238-64192	Hydraulic hose (1/4)	1	600	Blue x 2	G1/4 PF2104 G1/4	
5	CV (B9) ~ Bucket CYL rod	Bucket dump (rod)	RB238-64211	Hydraulic hose (1/4)	1	4060	Red x 3	G1/4 PF2104 G1/4	
6	CV (A9) ~ Bucket CYL bottom	Bucket crowd (bottom)	RB238-64221	Hydraulic hose (1/4)	1	3800	White x 3	G1/4 PF2104 G1/4	
7	Intermediate joint ~ Arm CYL rod	Arm dump	RB238-64201	Hydraulic hose (1/4)	1	2260	Black x 2	G1/4 PF2104 G1/4	
8	Intermediate joint ~ Arm CYL bottom	Arm crowd	RB238-64291	Hydraulic hose (1/4)	1	2040	Blue x 2	G1/4 PF2104 G1/4	
9	CV (B4) ~ Intermediate joint	SP	RB238-64912	Hydraulic hose (3/8)	1	430	Pink x 2	G3/8 PF2106 G3/8	
10	CV (A4) ~ Intermediate joint	SP	RB238-64922	Hydraulic hose (3/8)	1	480	Brown x 2	G3/8 PF2106 G3/8	
11	Intermediate joint ~ Arm left side	SP	RB238-64932	Hydraulic hose (3/8)	1	2770	Pink x 3	G3/8 PF2106 G3/8	
12	Intermediate joint ~ Arm right side	SP	RB238-64942	Hydraulic hose (3/8)	1	2770	Brown x 3	G3/8 PF2106 G3/8	

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