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4) Inspection

Clean all the parts with clean cleaning oil and dry them by air blow. Then, place them in order on a clean piece of paper or waste cloth.

Inspect all the parts for burrs, scoring, dent, wear or any damage.

(1) Valve housing

Make sure that the machined surfaces of the housing are smooth with no nicks or burrs and that there is no dust, dent, rust, small cut pieces, small pieces of coating material or metals, or any other foreign materials that may cause leakage between the sections, in the seal grooves.

(2) Load check valves

Inspect the seat surface of the load check valve for dent or any other damage. Repair any damaged area by lapping.

Note:

a) Use fine lapping agent.

b) After repair, clean the valve by air blow so that there should be no lapping agent left in the valve.

(3) Springs for load check valves

Check the springs for permanent set, breakage and bend. Replace any damaged spring with a new one.

Reference data

Free length	Set length	Spring force
28.3 mm	19.0 mm	0.09 to 0.11 kgf

(4) Sealing between sections

Inspect the mating surfaces of the inlet, outlet, spacer and spool sections for any dust, burr or other damage. If any, make the mating surface completely smooth using fine lapping agent.

Note:

Clean the section with cleaning oil so that there should be no lapping agent left in the valve.

(5) Return springs (for all the sections)

Check the springs for permanent set, breakage and bend. Replace any damaged spring with a new one.

Reference data

Sections	Free length	Set length	Spring force
Travel (R), (L) Boom swing Blade, P.T.O.	43.2 mm	27.1 mm	7.2 to 8.8 kgf
Bucket ,Boom Arm, Swing	34.96 mm	34.5 mm	1.8 to 2.2 kgf
Parallel-flow divider	49.58 mm	34.5 mm	13.01 to 15.91 kgf

(6) Springs for anti-drift valve

Check the springs for permanent set, breakage and bend. Replace any damaged spring with a new one.

Reference data

Free length	Set length	Spring force	Remarks
18.7 mm	12.5 mm	0.54 to 0.66 kgf	For main poppet
29.45 mm	19.0 mm	1.8 to 2.2 kgf	For kick out

(7) Sliding and engaging parts (such as spools)

Check the parts for any wear and pitting. Repair any minor surface damage on the parts by lapping and remove all foreign materials from the grooves and passages on the parts so that they should move smoothly.

(8) Relief valves and anti-void valves

Check the operation of each valve. If a valve does not operate properly, replace it as a valve assembly.

(9) O-rings, seals and wipers should be replaced with new ones whenever reassembled.

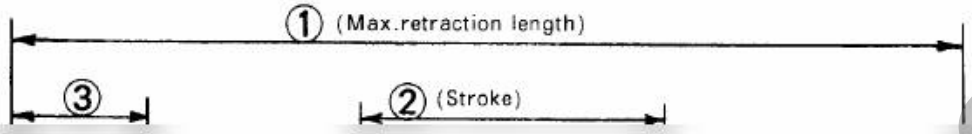
Repair of the valves for oil leak correction is limited to the replacement of seals or O-rings. Replace the entire valve if any part other than seals or O-rings is damaged.

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3-5 Hydraulic Equipment

3-5-1 Hydraulic Cylinder

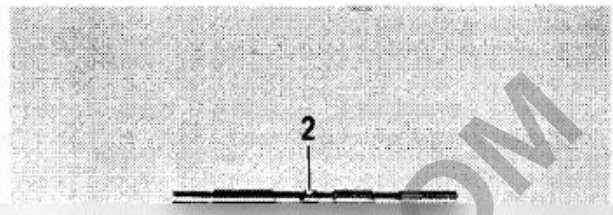


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• Parallel-flow divider [(13) - (18)]

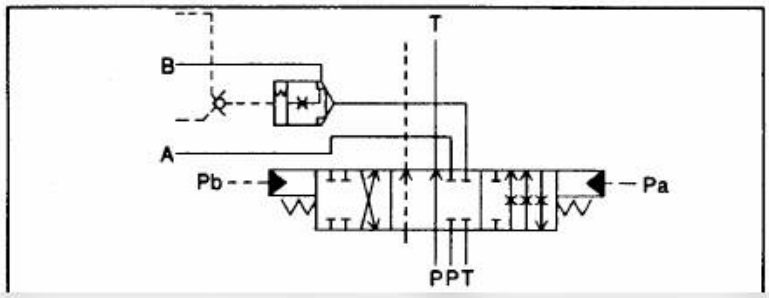
Procedure	
(13) Install spring seat **5**, spring **6** and spring seat **5** in order onto spool **2**, and install and tighten cap screw **4**. Apply adhesive (Loctite #271 or its equivalent) to the spool end threads. Tightening torque : 0.5 to 0.75 kgf-m	

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2) Boom



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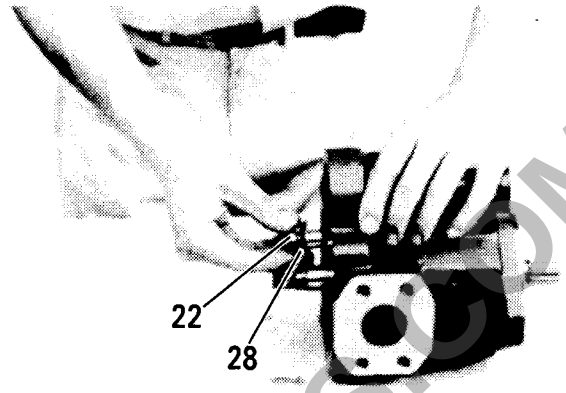
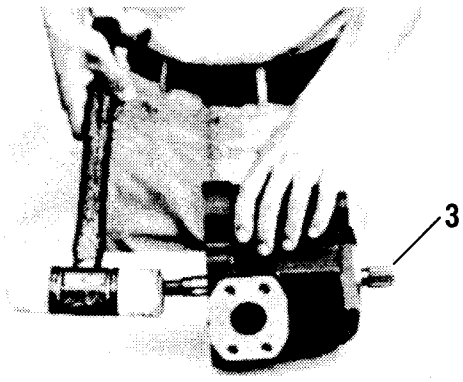
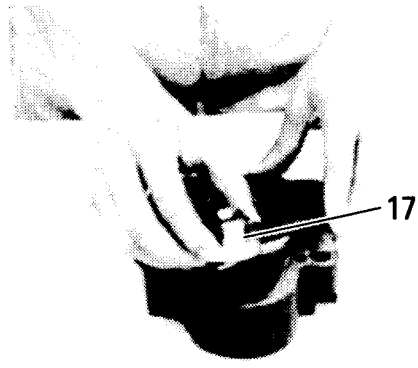
2. TECHNICAL DATA

Item			Unit	B37V
Hydraulic pilot control				
	Cut-off valve	Type		Magnetic solenoid operated
		Relief set pressure	kgf/cm²	30
Hydraulic oil tank (reservoir)				
	Oil capacity (VG46)		L	86 (Tank : 65, Others : 21)
	Suction filter	Type		EBZ element 01207525075
		Filtration area	cm²	780

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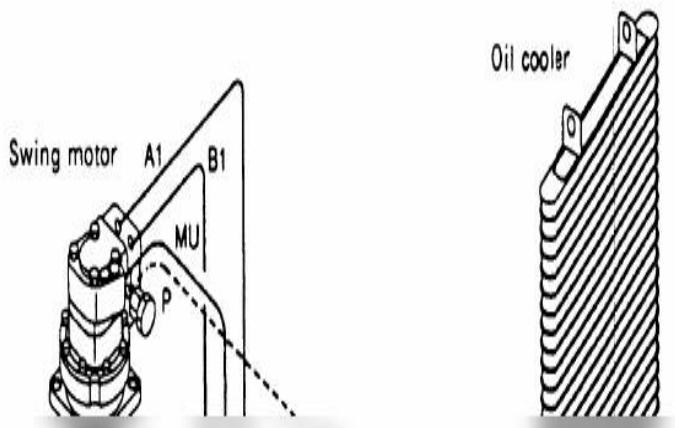
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Procedure	
(4) Remove stopper pin A **22**, two coned disc springs **28** and washer **20**, then stopper pin B **23**, two coned disc springs **28**, washer **20** and rod **19**.	
(5) Remove internal snap ring **29** on the engine side of the drive shaft from body S.	
(6) Tap drive shaft **3** on the body H installation side lightly with a plastic hammer to pull oil seal **27** and the drive shaft with ball bearing **25** out of body S.	
6. Disassembly of body H kit Take spring guide **17** out of body H.	

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5. HYDRAULIC SYSTEM

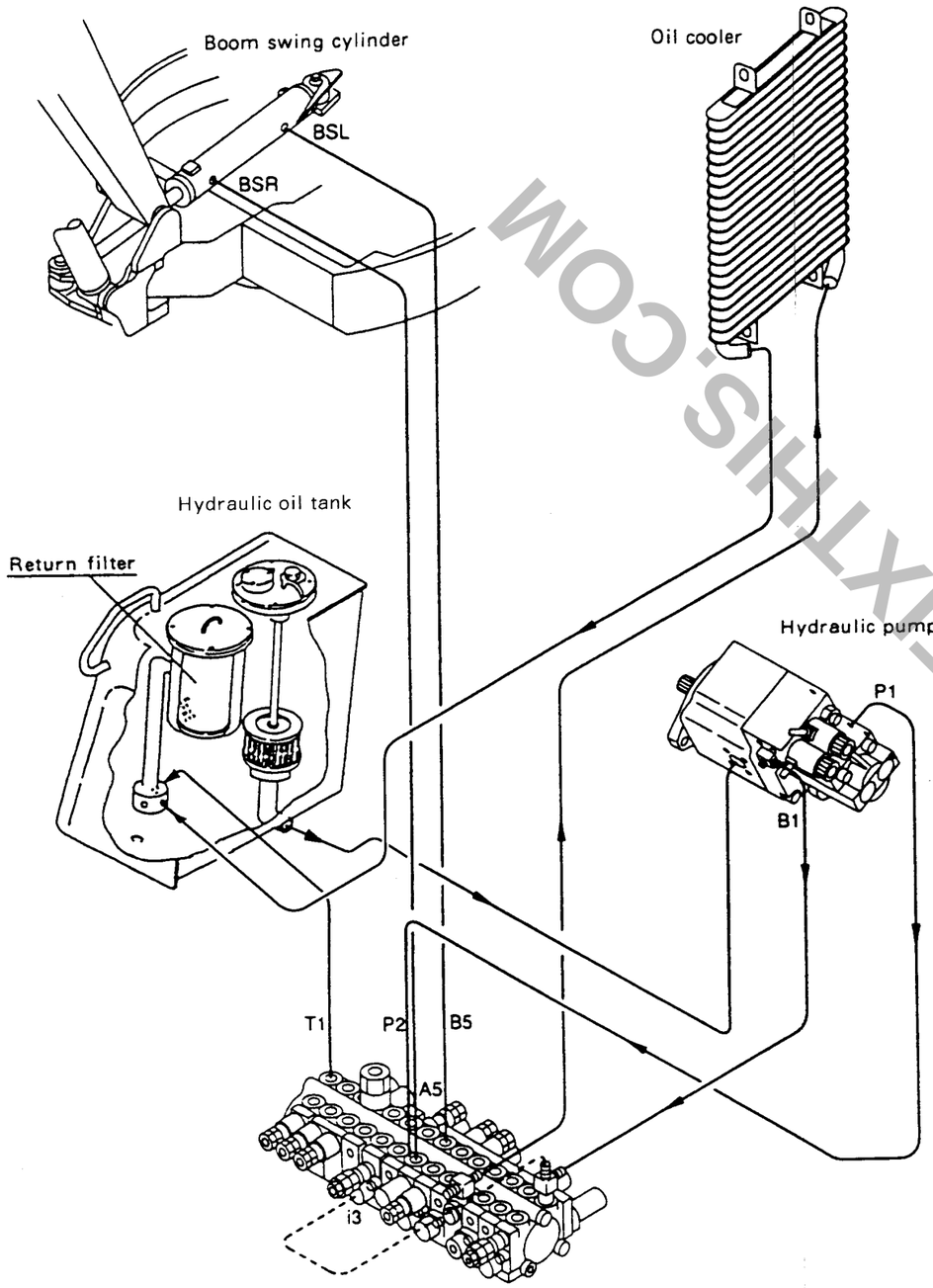


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5. HYDRAULIC SYSTEM



Control valve

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3-7 List of Tightening Torque

3-7-1 Machine

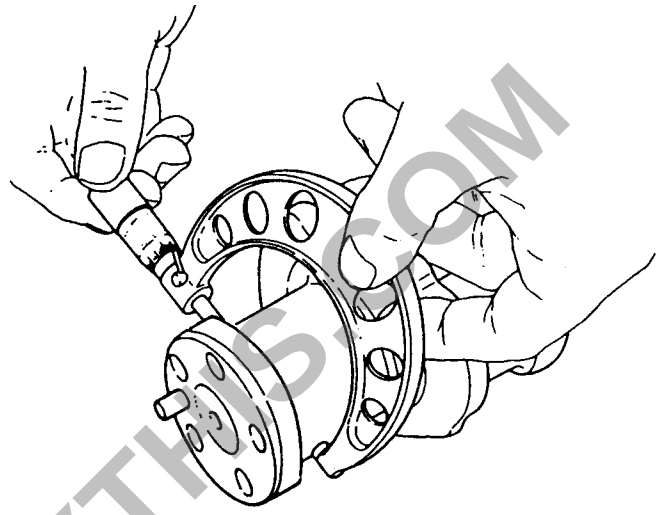
Applicable model		B37V		
Equipment No.	Tightening part	Thread size	Tightening torque (kgf-m)	Screw locking agent
Engine/Electrical equipment				
1	Engine flexible mount	M12	4.5 to 6.0	
2	Radiator flexible mount	Nut M8	1.3 to 1.7	
3	Engine × Engine mount (radiator side)	M12	11 to 13	Three Bond 1324
4	Engine × Engine mount (flywheel side)	M10	6.5 to 7.5	Three Bond 1324
5	Stopper × Engine mount	M10	4.5 to 6.0	Three Bond 1324
6	Braket. engine × Turning frame	M12	8.0 to 10.0	Three Bond 1324
7	Hose clip 70 (air cleaner side)	–	0.2 to 0.3	
8	Fuel gauge hose	–	0.3	
9	Fuel gauge unit	M5	0.2	
10	Battery fastening rod	Nut M8	Lock nut: 1.3 to 1.7 kgf-m	
11	Cooling water hose clip	–	0.3	
Driving equipment				
1	Sprocket	M12	8.0 to 10.0	Three Bond 1324
Travel equipment				
1	Plug (idler,track roller & carrier roller)	PT 1/8	0.9 to 1.0	Loctite 572
2	Idler seal cover × Track spring	M12	8.0 to 10.0	Three Bond 1324
3	Track roller tightening nut	Cap nut M16	14 to 19	Three Bond 1324
4	Nipple valve	M16	5.0	
Control equipment				
1	Lever installation	M14	7.5 to 8.5	Three Bond 1324
2	Knob installation	M4	0.2 to 0.3	Three Bond 1324
3	L-ball 8 × Link ball 8, 8L	U nut M8	1.3 to 1.7	
4	Link ball 8 (8L) × Rod	Nut M8	1.3 to 1.7	
5	L-ball 8 × Rod	Nut M8	0.8 to 1.0	
6	Valve mount × Frame	M10	2.0 to 2.6	Three Bond 1324
7	Lever lock fulcrum	Nut M12	Set lever operation load 2.5 to 3.5 kgf	
8	Rod end 14	M14	7.0 to 8.5	
Frame				
1	Swing bearing × Lower frame	M14	25	Loctite 262
2	Swing bearing × Turning frame	M14	25	Loctite 262
3	Counter weight × Turning frame	M12	11 to 13	Three Bond 1324
4	Center weight × Turning frame	M12	11 to 13	Three Bond 1324
5	Side weight × Turning frame	M12	11 to 13	Three Bond 1324

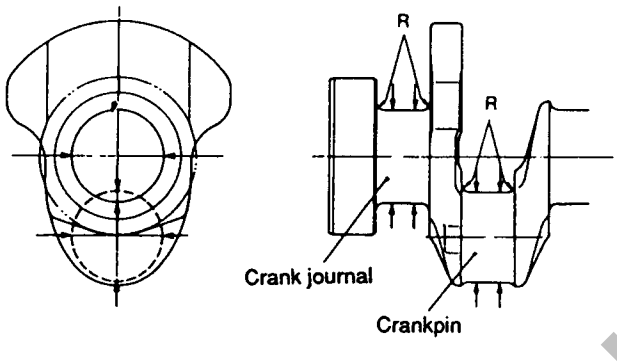
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5. Measurement of crankpin and journal

Measure the outside diameter, roundness, taper angle of the crankpin and the journal. If uneven wear or roundness exceeds the wear limit but measured outside diameter is within the limit, use the crankpin and journal after correcting them by regrinding. Replace them with new ones, if any of the limit is exceeded. An oversized crankpin metal by 0.25mm is available. (See this Chapter 4-2-5, 8.)





(Measuring position of the crankpin and crankjournal)

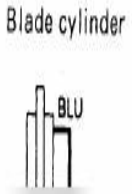
		Standard	Wear limit
Crankpin	Crankpin outside diameter	Refer to the section "3-2 Nominal and Allowance Valve"	
Crank journal	Crankshaft journal outside diameter		
	Bearing metal thickness		
	Crank journal and bushing oil clearance		

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5-3-6 Blade

The blade control lever is pushed forward to lower the blade. The oil from the gear pump P3 flows through the ports P3 and A9 of the control valve and the port D of the swivel joint to BLD of the blade cylinder to extend its cylinder rod. The return oil from BLU of the blade cylinder flows back to the hydraulic oil tank through the port C of the swivel joint



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7. Troubleshooting

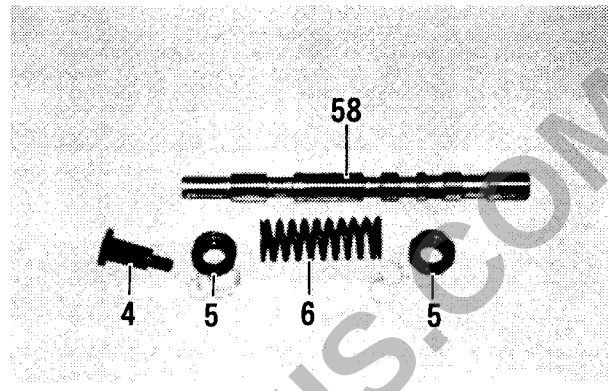
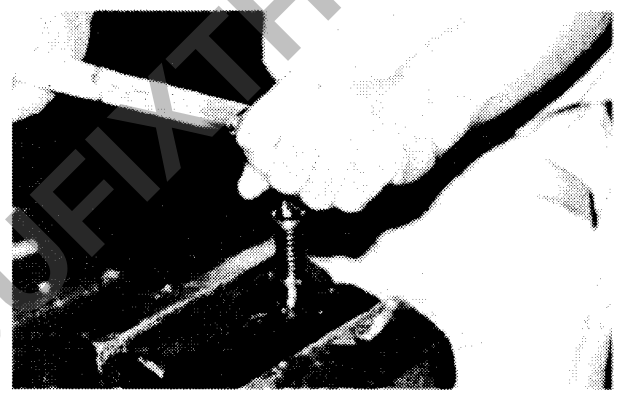
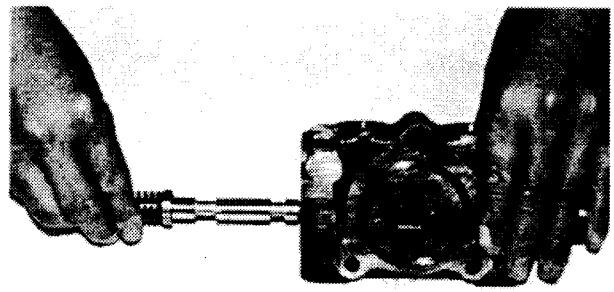
Trouble	Cause	Measure
1. Overload applied to engine	(1) Engine speed higher than specified value	Adjust engine speed to specified value.
	(2) Voltage higher than specified value	Adjust voltage to specified value.

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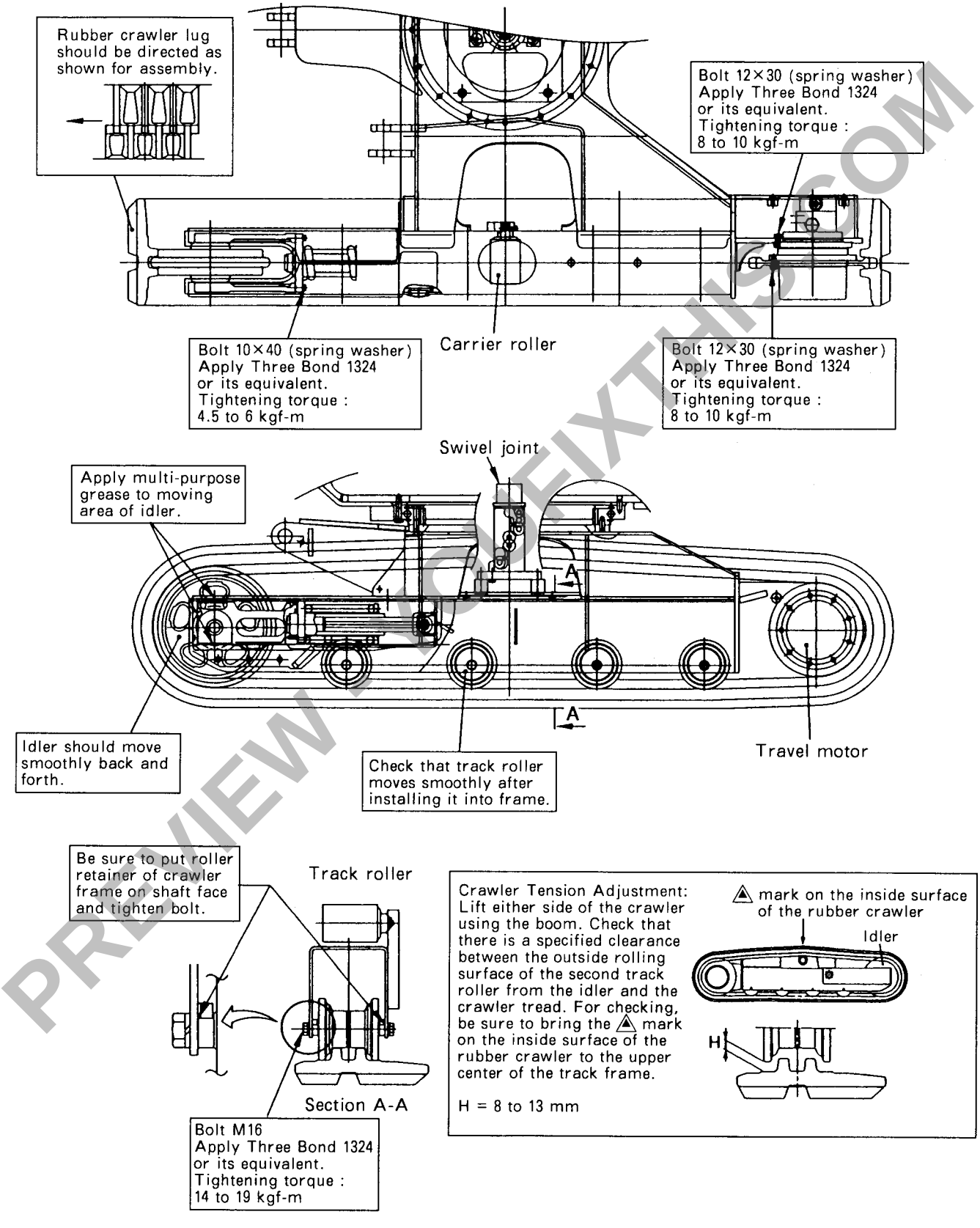
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• P1 and P2 Inlet Section [(10) - (12)]

Procedure	
(10) Install spring seat **5**, spring **6** and spring seat **5** in order onto spool **58**, and install and tighten cap screw **4**. Apply adhesive (Loctite #271 or its equivalent) to the spool end threads. Tightening torque : 0.5 to 0.75 kgf-m ***Note:*** *Use a bench vice and install wooden spool holder (refer to P6-2-27) or jaw covers to hold the spool.*	 
(11) Apply clean hydraulic oil to spool assembly and slowly install it into the valve housing. ***Note:*** *Take care not to install the spool assembly in the wrong direction.*	
(12) Install cap with O-ring onto the valve housing and fasten it with two hexagon socket head bolts. Tightening torque : 0.74 to 1.02 kgf-m	

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7-2-3 Points of Reassembly (Rubber Crawler Models)



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7-6 Cabin

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