WEBM002900

Shop Manual

KOMATSU®

PC27R-8

HYDRAULIC EXCAVATOR

SERIAL NUMBERS PC27R-8 - F30671 and up

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BLEEDING AIR FROM THE HYDRAULIC CIRCUITS

Sequence of operations or procedures for bleeding the air

	Procedures for bleeding air						
	1	2	3	4	5	6	7
	Bleeding air from pumps	Starting engine	Bleeding air from cylinders	Bleeding air from swing motor	Bleeding air from travel motor	Pressurising tank	Starting tasks
• Substitution of hydraulic oil • Cleaning tank filter	○	○	○	○ ★1	○ ★1	○	○
• Substitution filter		○				○	○
• Repair - substitution pump • Removal of suction tube	○	○	○			○	○
• Substitution - repair control valve		○	○			○	○
• Repair-Substitution cylinders • Removal of cylinders tube		○	○			○	○
• Repair - substitution swing motor • Removal of tubes from swing motor		○		○		○	○
• Repair - substitution travel motor - joint • Removal of tubes from travel motor - joint		○			○	○	○

★1: Only bleed air from the swing and travel motors if the engine oil (casing) is to be drained.

1. Bleeding air from the pump

1 - Loosen and remove the cap (1) from the pump body (2).

2 - Pour hydraulic oil through the hole until the entire casing is full.

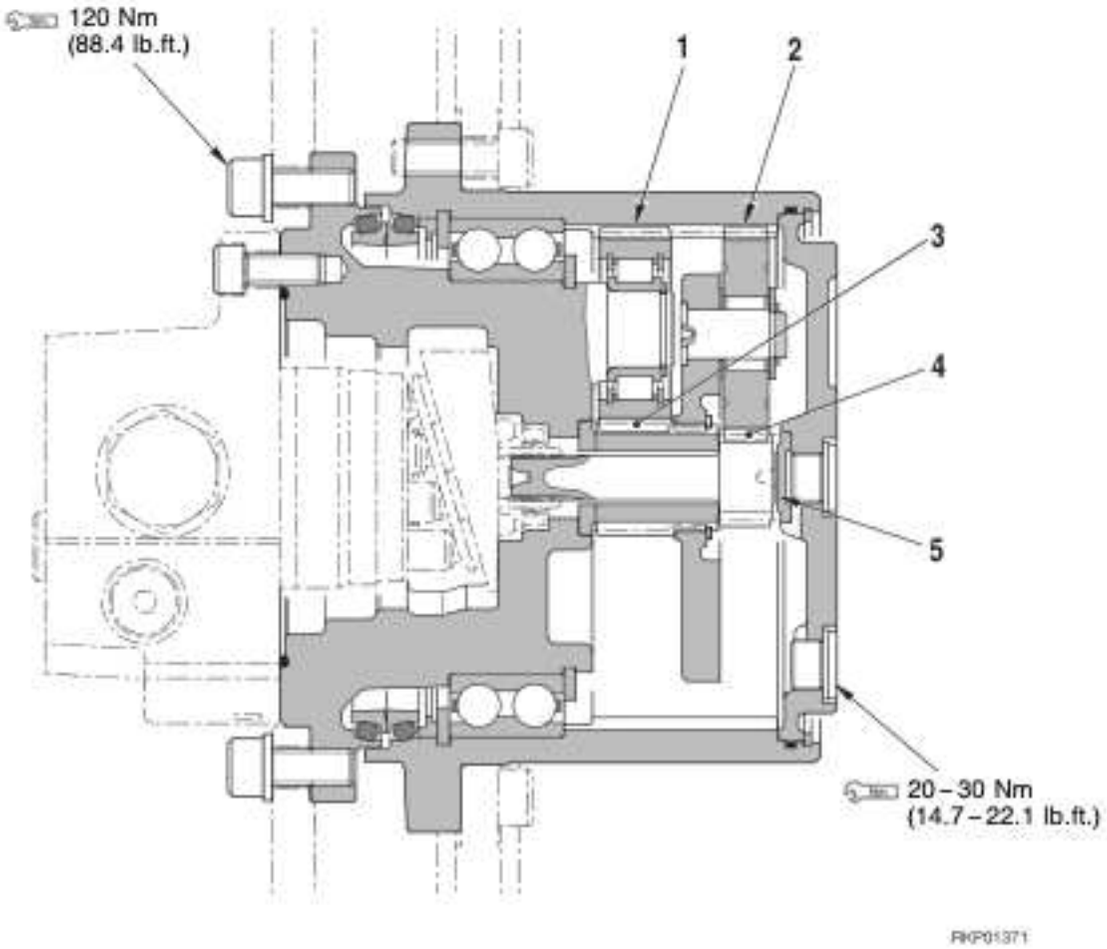
3 - Replace the cap (1).

Cap: 63.7±4.9 Nm (47±3.6 lb.ft.)

★ After filling the casing, start the engine and allow it to run at low idling for about 10 minutes before proceding to bleed the air from the circuits.



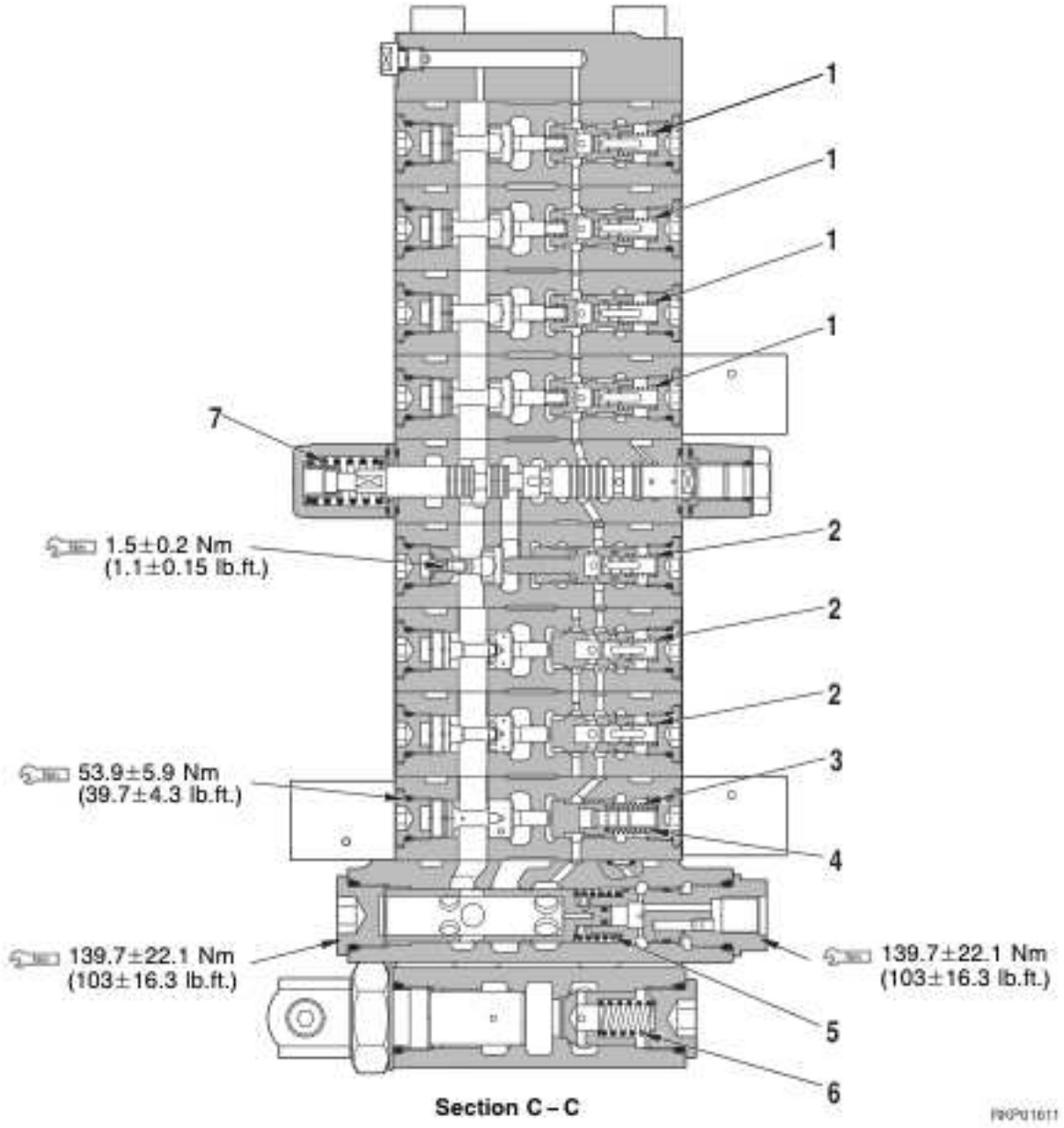
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Unit: mm (in.)

No.	Check item	Criteria		Remedy
1	Backlash between No. 2 planetary gear and housing	Standard clearance	Clearance limit	Replace
		0.15 (0.006)	0.35 (0.014)	
2	Backlash between No. 1 planetary gear and housing	0.10 (0.004)	0.35 (0.014)	
3	Backlash between No. 2 sun gear and No. 2 planetary gear	0.10 (0.004)	0.30 (0.012)	
4	Backlash between No. 1 sun gear and No. 1 planetary gear	0.10 (0.004)	0.30 (0.012)	
5	Axial play of sun gear	0.5 – 1.5 (0.0197 – 0.591)	2.5 (0.0985)	

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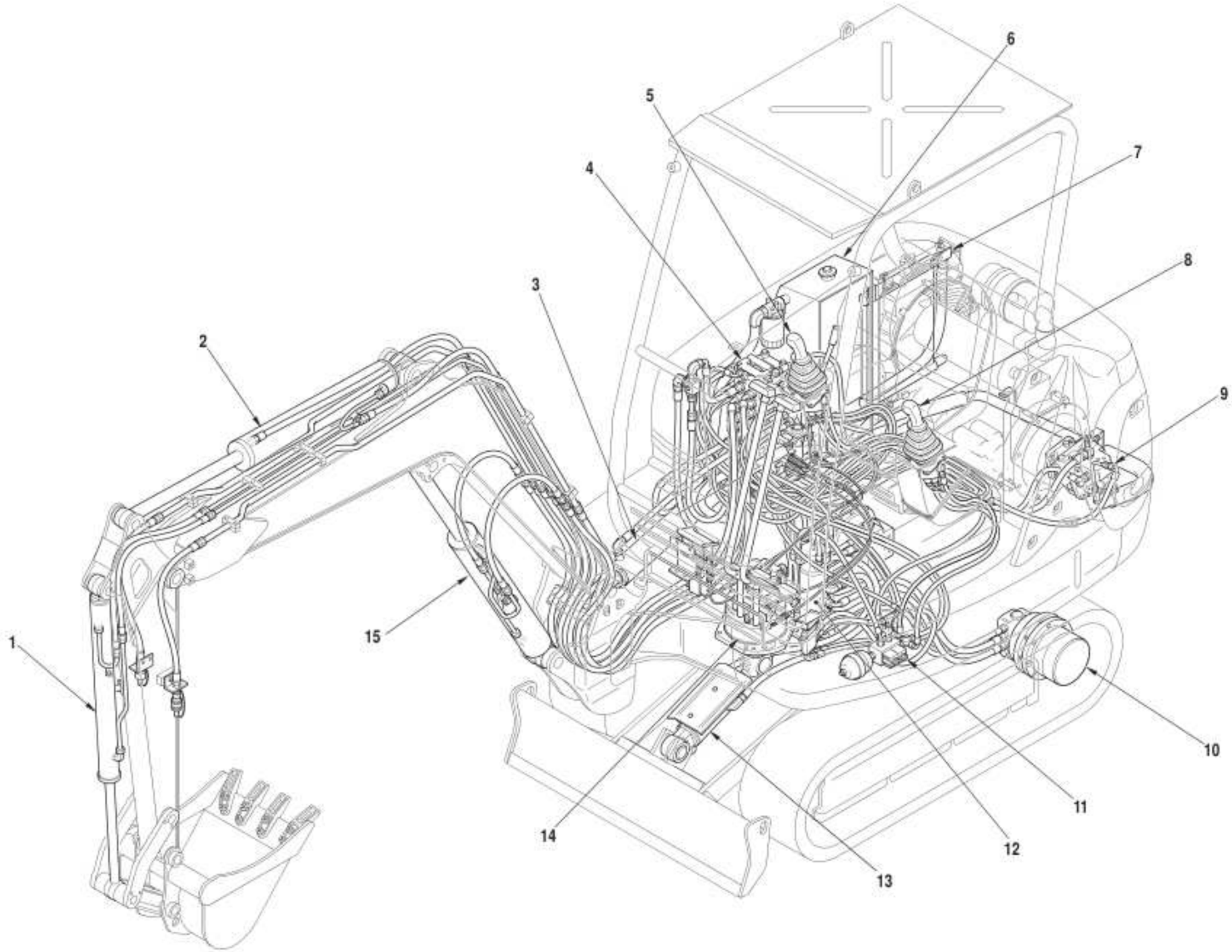
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Unit: mm (in.)

No.	Check item	Criteria					Remedy
		Standard size			Repair limit		
1	Pressure compensation valve spring	Free length x Ø.D.	Installed length	Installed load	Free length	Installed load	When damage or deformation is found, replace the spring
		16.9x8.4 (0.67x0.33)	15 (0.591)	7.64 N (0.78 kg)	—	6.11 N (0.62 kg)	
2	Pressure compensation valve spring	20x8.4 (0.79x0.33)	12 (0.473)	6.86 N (0.7 kg)	—	5.49 N (0.56 kg)	
3	Unload valve spring	28.94x11.8 (1.14x0.46)	13 (0.512)	22.5 N (2.3 kg)	—	18 N (1.84 kg)	
4	Pressure compensation valve spring	38.2x9.2 (1.51x0.36)	20 (0.788)	30.4 N (3.1 kg)	—	24.3 N (2.5 kg)	
5	Cooler check valve spring	29.1x18.7 (1.15x0.74)	18 (0.71)	82.4 N (8.4 kg)	—	65.9 N (6.7 kg)	
6	Back pressure check valve spring	27.2x13.2 (1.07x0.52)	21 (0.83)	78.8 N (8.04 kg)	—	63.0 N (6.43 kg)	
7	Spool return spring (hammer)	29x17.5 (1.14x0.69)	28.5 (1.123)	22.6 N (2.3 kg)	—	18.1 N (1.84 kg)	

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HYDRAULIC SYSTEM



1. Bucket cylinder
2. Arm cylinder
3. Boom swing cylinder
4. Control valve
5. R.H. PPC valve
6. Hydraulic tank
7. Hydraulic oil cooler
8. L.H. PPC valve
9. Hydraulic pump
10. Final drive
11. Servocontrol feed unit
12. Swivel joint
13. Blade cylinder
14. Swing motor
15. Boom cylinder

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