

# PARTS & SERVICE NEWS

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**SUBJECT:** PPC ACCUMULATOR SERVICE INFORMATION

**PURPOSE:** To provide necessary service information to the field for servicing the PPC accumulator (428-60-A1110).

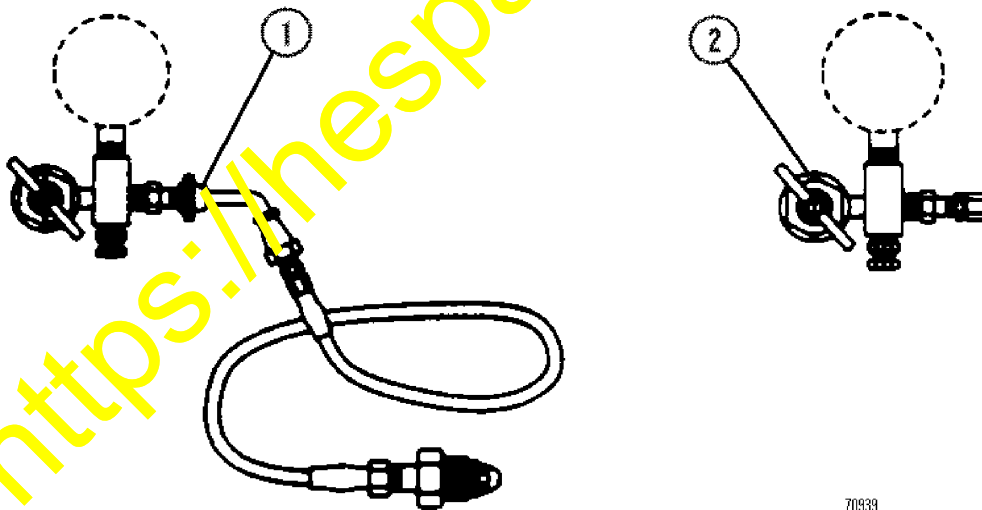
**APPLICATION:** Komatsu Wheel Loaders:  
WA800-3LC: A50001 & Up;  
WA900-3LC: A50001 & Up

**FAILURE CODE:** 6030Z9

**DESCRIPTION:**

## Charging Tools

The necessary tools for charging the accumulator are shown below. Charging assembly (2, Figure 1) consists of an adapter that includes a bleeder valve and gas chuck. Charging and gauging assembly (1) consists of gauging assembly (2), as well as a 3 m (10 ft) hose with standard right-hand thread, nitrogen fittings. The two assemblies do not come equipped with gauges. A pressure gauge will be needed to be installed on the gauging assembly for the charging process.



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FIGURE 1. ACCUMULATOR CHARGING KITS

1. Charging & Gauging Assembly (XA2392)

2. Gauging Assembly (XA2393)

*NOTE: The two charging assemblies shown above do not come equipped with gauges. A pressure gauge will be needed to be installed on the gauging assembly for the charging process.*

ACCUMULATOR (428-60-A1110) SPECIFICATIONS		
Pre-charge Pressure	Oil Capacity	Nitrogen Capacity
10 ± 0.5 kg/cm <sup>2</sup> @ 20° ± 5° C (142 ± 7 psi @ 70° ± 9° F)	3.0 Liters (182 in <sup>3</sup> )	3.2 Liters (197 in <sup>3</sup> )

**Charging Procedure**

1. Remove the pressure from the accumulator circuit.

With the engine off, slowly remove the filler cap from the hydraulic tank to release tank pressure. Next, operate the implement control levers two to three times to release the pressure in the accumulator circuit.

2. Remove gas valve guard (8, Figure 2) and valve cap (7) from the accumulator.
3. Back out the "T" handle on the charging assembly (turn completely counter-clockwise). Ensure the bleed valve on the charging assembly is closed.
4. Attach the charging assembly swivel nut to gas valve (6) and tighten to **1.15 - 1.70 kgm (11 -17 Nm)**.
5. Slowly open the nitrogen bottle and fill the accumulator. Charge the accumulator to 10 ± 0.5 kg/cm<sup>2</sup> @ 20° ± 5° C (142 ± 7 psi @ 70° ± 9° F).
6. Allow the charge to set for 10 to 15 minutes to allow the temperature to stabilize. Add nitrogen as necessary. If the proper charge is exceeded, open the bleed valve on the charging assembly until the specified pressure is attained, then close the bleed valve.
7. After charging is complete, turn the "T" handle on the charging assembly clockwise until the end of travel is reached.
8. Open the bleed valve to relieve any remaining pressure.
9. Loosen the swivel nut, and remove the charging assembly from the accumulator.
10. Install the gas cap and tighten to **1.15 - 1.70 kgm (11 -17 Nm)**.
11. Install the gas valve guard.

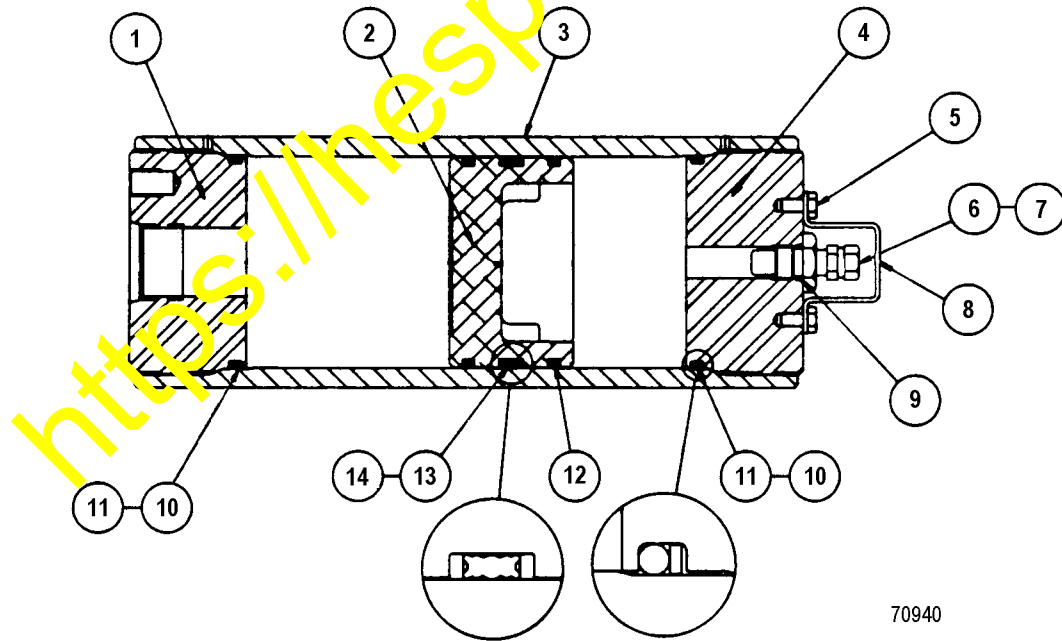


FIGURE 2. ACCUMULATOR CROSS SECTION VIEW

- |                        |                    |                   |                   |
|------------------------|--------------------|-------------------|-------------------|
| 1. Hydraulic Cap       | 5. Capscrew        | 9. O-ring         | 13. V-O-ring      |
| 2. Piston              | 6. Gas Valve       | 10. Backup Washer | 14. Backup Washer |
| 3. Accumulator Housing | 7. Valve Cap       | 11. O-Ring        |                   |
| 4. Gas Cap             | 8. Gas Valve Guard | 12. Wear Ring     |                   |

## Maintenance

A rebuild kit (XA2311) is available for servicing the accumulator. Occasional replacement of the V-O-ring seal on the piston is generally the only routine maintenance that is required, however, it is recommended that all other seals be replaced at disassembly. The contents of the accumulator rebuild kit are listed in Table 1.

Piston V-O-ring wear can be monitored by checking pre-charge pressure regularly. Pre-charge pressure will rise if oil leaks through to the gas side of the accumulator. Pre-charge pressure will drop if gas leaks through to the oil side of the accumulator. A low pre-charge could also indicate weak seals at the gas valve or end caps. Adjust pressure measurements according to differences in temperature at the time of each pressure check.

Item Number (Figure 2)	Part Number	Description	Quantity
9	XA2424	O-ring	1
10	XA2422	Backup Washer	2
11	XA2420	O-Ring	2
12	XA2425	Wear Ring (Piston)	2
13	XA2426	V-O-ring	1
14	XA2423	Backup Washer	2

## Removal

### WARNING

**With the engine off, operate the implement controls 2-3 times to release any hydraulic pressure in the accumulator circuit. Failure to relieve pressure in this circuit before maintenance may lead to serious injury.**

1. Remove gas valve guard (8, Figure 2) and valve cap (7) from the accumulator.
2. Back out the "T" handle on the charging assembly (turn completely counter-clockwise).
3. Ensure the bleed valve on the charging assembly is closed.
4. Attach the swivel nut to gas valve (6) and tighten to **1.15 - 1.70 kNm (11 - 17 Nm)**.
5. Open the bleed valve to remove the nitrogen pressure from the accumulator. Remove the charging assembly from the gas valve.
6. Remove hydraulic hose (3, Figure 3) from the bottom of the accumulator. Plug all hoses and openings to prevent possible contamination of the system.
7. Attach a lifting device to the accumulator. The weight of the accumulator is approximately 23 kg (50 lb).
8. Remove the two mounting clamps and lift the accumulator from the machine.

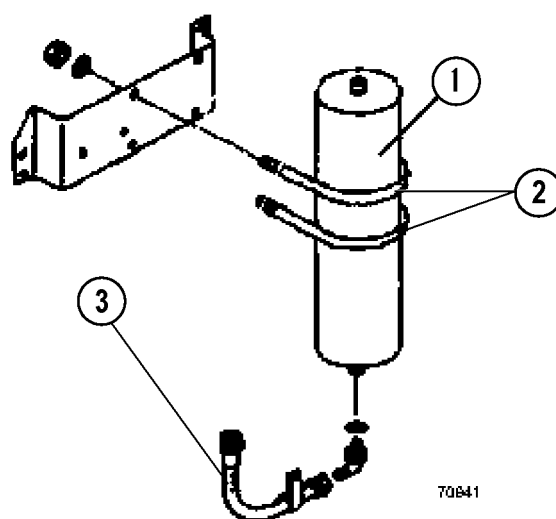


FIGURE 3. ACCUMULATOR MOUNTING

1. Accumulator
2. Mounting Clips
3. Hydraulic Hose

### Disassembly

1. Lay the accumulator on a work bench and secure with a strap or a vise.
2. Install three pins into the holes of the end caps. Use a long pry bar positioned between the pins to turn and remove each cap.
3. Use a wooden handle or a similar device to push the piston out of the accumulator bore.



***DO NOT attempt to use compressed air to force the piston out from the accumulator housing. Use a wooden handle or a similar device to push the piston from the bore.***

4. Carefully remove the seals using a small screwdriver or pick. Rotate the tool around the circumference of each seal while simultaneously working the seal from the groove.

### Cleaning and Inspection

Thoroughly clean all parts in solvent and dry with compressed air. Clean the bore of the accumulator housing with a clean, lint-free cloth soaked in solvent. The bore must be clean and free of any foreign particles.

Inspect all components for cracks, scoring, or other damage. Light scratches or scoring can be removed by using crocus cloth.



***Repairing accumulator components by welding, machining, or plating is NOT APPROVED. These procedures may weaken the housing and result in serious injury to personnel when pressurized.***

### Assembly

1. Apply clean hydraulic fluid to all internal parts during assembly.
2. Install new V-O-ring (13 - Figure 2) and backup washers (14) onto piston (2).
3. Install wear rings (12) onto both ends of the piston
4. Insert the piston slowly and squarely into the accumulator housing. The hollow side of the piston should face the gas end of the accumulator as shown in Figure 2. Use caution when inserting the piston. Do not allow any of the rings to drag on the threads. The V-O-ring will compress as it is pushed through the tapered section of the housing, however, if inserted improperly, the seal may be damaged. Always apply pressure to the piston while installing it to prevent bouncing and damage to the V-O-ring. Once the piston has been started and the V-O-ring has surpassed the tapered section of the housing, a wood block and a hammer may be used to lightly tap the piston further into the housing. The piston should be seated approximately 5 cm (2 in.) below the start of the honed portion of the bore. Once the piston is in place, cover the opening to prevent dirt intrusion.
5. Install backup washers (10) onto the end caps and then install O-rings (11). The O-rings should be positioned so they face the piston.
6. Install the end caps onto the accumulator housing. Use caution not to damage the O-rings on the threads during installation. Extreme tightness of the end caps is not necessary for proper O-ring seal. The cap should be flush with the accumulator housing or extend above the housing no more than 2.3 mm (0.094 in.).
7. Install new O-ring (9) onto gas valve (6), and install the gas valve.

## Installation

1. Attach a lifting device to the accumulator. The weight of the accumulator is approximately 23 kg (50 lb).
2. Lift accumulator (1, Figure 3) into place on the machine.
3. Install mounting clips (2) onto the accumulator.
4. Attach hydraulic hose (3).
5. Charge the accumulator per instructions in Charging Procedure.
6. Bleed the air from the PPC circuit.

Start the engine. Place the bucket control in the TILT (ROLLBACK) position. Place the boom control lever in the FLOAT position. When the cylinders reach the end of stroke, hold in that position for one minute.

Next, place the boom control lever in the RAISE position, and the bucket control lever in the DUMP position. After the cylinders reach the end of stroke, hold in that position for one minute.

The machine is now ready for service.

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