



## **GENERAL INSTALLATION INSTRUCTIONS FOR PRW AND PQ SERIES HIGH FLOW WATER PUMPS**

Thank you for purchasing a PRW or Performance Quotient® product. PRW and PQ<sup>2</sup> Series High Flow Water Pumps are engineered and manufactured by PRW Industries, Inc. to maximize efficiency for many popular engine models.

### **GENERAL INSTALLATION PROCEDURE**

**Step 1** - Cool Engine

**Step 2** - Disconnect battery

**Step 3** - Drain all coolant from the entire cooling system and engine cavity. Dispose of the coolant according to EPA regulations.

**Step 4** - Check the hoses, and radiator. If there are any signs of leakage or other problems replace or repair. This will help prevent future trouble.

**Step 5** - Remove the belts and fan. If there are any signs of wear replace.

**Step 6** - Loosen the bolts and remove the old water pump.

**Step 7** - Clean the engine block's mounting surface area by removing any gasket or sealant deposits, and any other residue.

**Step 8** - Position new gaskets on water pump housing, using sealer on both sides. Make sure the gasket matches the surface being sealed.

**Step 9** - Carefully install the new PRW water pump. Do not strike the shaft! Hand - tighten the water pump bolts into the block. Give the pump a quick spin to check for free operation.

**Step 10** - Torque the bolts to OEM specifications using a crisscross pattern. Over tightened bolts could damage the pump and void the warranty.

**Step 11** - Hand-turn the pump again to make sure that it turns freely.

**Step 12** - Inspect the radiator cap and thermostat. Replace, if they show any signs of sticking or leaking.

**Step 13** - Reconnect the hoses using new clamps and sealant. Refer to the owner's manual for any special procedures.

**Step 14** - Verify that the hoses are clear of all moving parts and that the clamps do not contact the pulleys, brackets, and/or the fan.

**Step 15** - Refill the cooling system and check for any leaks.

**Step 16** - If a pulley is to be installed, mount it square on the pumps hub. Using lock washers, torque the bolts to OEM specifications to insure against wobble-free operation.

**Step 17** - Reinstall fan and spin by hand and inspect for any wobble. Maximum wobble should be 3/32" at the outer edge if no clutch, and 0.250" with a clutch. Replace any fan clutch with excessive wobble, looseness, or loss of oil. A misaligned or defective clutch will damage the water pump. Check the fan blade tip clearances to the radiator and any shroud.

**Step 18** - Check any electric cooling fan to insure it is working properly.

**Step 19** - Reinstall the belts and adjust them using a tension gauge. Refer to OEM specifications for proper tension or adjust the belts to a deflection of  $\frac{1}{2}$ " to  $\frac{3}{4}$ ". Inspect for any defects on the automatic tensioner or idler pulley. Automatic tensioners will normally tighten with use.

**Step 20** - Reconnect battery.

**Step 21** - Start the engine and let it run until it reaches normal operating temperature. Check for any leaks and make sure it is running smoothly.

**Step 22** - Turn off the engine and re-check for leaks.

**Possible Causes for Water Pumps Damage or Premature Wear**

1. Dirty or corrosive coolant.
2. Defective, bent, or unbalanced fan.
3. Fan not squarely mounted on the shaft.
4. Defective or unbalanced clutch.
5. Cracked or bent pulleys due to improper handling or installation.
6. Loose or over tightened belts.
7. Fan shroud and radiator interference.
8. Loose or broken motor mounts.
9. Striking the bearing shaft on its end.