



## Model 23800-Series

## ENGINE COOLING PUMP

## FEATURES

Pump Body: Bronze  
 Impeller: Jabsco Neoprene Compound  
 Shaft: 316 Stainless Steel  
 Shaft Seal: Buna N Lip Seal  
 Ports: 1-1/4" Hose Barb  
 Weight: 4 lb 6 oz. (1.95kg)

## VARIATIONS AVAILABLE

MODEL NO.	DESCRIPTION
23800-0251	Half Cam
23800-0201	Full Cam

## APPLICATION

Marine Engine Cooling

23800-0251 Half Cam Model Fits:

- Volvo V-8 (350 C.I. Chevrolet Block)
- Hardin Marine
- Indmar Marine
- Kaama

23800-0201 Full Cam Model Fits:

- U.S. Marine 454
- Alaska Marine Engine 4219, 4276DT & 6414DT

## INSTALLATION

This pump is designed to mount directly inside the crank-shaft pulley on Chevrolet small block (305 & 350 C.I.) and big block (454 C.I.) engines. Other engines listed above may have the pump mounted on an adapter flange fastened to the pulley. The maximum recommended pump speed (engine speed) is 5200 RPM. The maximum recommended discharge head is 20 feet or 9 PSI. When the pump is installed so it operates at or near maximum speed, the inlet plumbing must be designed to minimize the vacuum at the pump inlet. A high speed scoop over the inlet thru-hull fitting is recommended to reduce inlet vacuum.

To install the pump on the crankshaft pulley, remove all belts that run off the pulley. Remove the bolts that secure the pulley to the vibration dampener. Note that in addition to the three 3/8" mounting bolt holes there are two pair of larger 5/8" locator hoses in the pump mounting flange. These locator holes are used to position the pump on Chevrolet engine. Either one of the other pair of locator holes aligns with the two raised positioning bosses in the crankshaft pulley. Generally, the pair of holes located in a counterclockwise direction (viewed from the end cover end of pump) from the alternate pair



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of holes is used to position the pump on the 305 and 350 cubic inch engines. Usually, the pair of locator holes located clockwise of the alternates is used to position the pump on the 454 cubic inch engine. However, there are occasional exceptions to this general rule so always ensure the pump mounting flange rests flat against the pulley prior to securing it in place. If the mounting flange does not rest flat against the pulley, reposition it aligning the alternate locator holes with the positioning bosses.

Place the pump in the center of the crankshaft pulley with the appropriate pair of locating hoses aligned with the positioning bosses in the pulley. Ensure the pulley is properly aligned with the vibration dampener and secure both the pump and pulley to the dampener with three 3/8-24 x 3/4" cap head (socket type) machine screws.

Replace all belts on the crankshaft pulley. Attach a torque arm/bracket from the torque arm boss on the pump to a convenient bolt on the engine. This torque arm must not impose a side force on the pump assembly. This could shorten bearing life in high RPM service.

Attach and double clamp the intake and discharge hoses (1-1/4"ID) to the pump ports. Be sure the hoses do not impose a side force on the pump assembly. This could shorten pump bearing life in high RPM service. Hoses should be flexible and supported by the engine (not the pump). Start the engine and run at low speeds. Check the installation for leaks or vibration.

**NOTICE:** Failure to install the pump as instructed may result in excessive vibration which can contribute to pump and/or engine damage.

## OPERATION

Do not run the pump over 5200 RPM. Be sure that the intake system is free from obstructions and the dis-

charge system has less than 20 ft. of water head. The pump may be operated in either rotational direction. Inspect the pump periodically for leaks and vibration.

## SERVICE INSTRUCTIONS

### IMPELLER/GASKET REPLACEMENT

1. Remove the six end cover screws (Key 1). Remove end cover (Key 2) and end cover gasket (Key 3).
2. Remove the impeller (Key 4) by grasping the impeller hub with a pair of pliers. If the impeller has been damaged and sections are missing, be sure that all bits of the impeller are removed from the pump housing, ports, discharge line and heat exchangers.
3. Install the new impeller by rotating the impeller into the pump bore in the direction of operation (grease the pump bore to ease installation).
4. Replace the gasket and end cover, tightening the end cover screws evenly.
5. Start engine and check for leaks and vibration.

### CAM REPLACEMENT

1. Follow steps 1 and 2 of Impeller Replacement Instructions.
2. Remove the cam screw (Key 5) from the cam and pump body.
3. Remove cam (Key 6) and clean sealant from the cam pump body.
4. Apply a thin coat of sealant to cam screw and top portion of the new cam and assemble to pump body.
5. Replace impeller, gasket and end cover to pump body.

### MAJOR SERVICE

1. Remove the complete pump assembly from the engine.
2. Follow instructions 1 and 2 of Impeller Replacement Instructions.
3. Clean debris off the pump shaft (Key 14).
4. The bearing housing (Key 15) has two access slots designed to allow removal of the retaining ring (Key 13). Remove this retaining ring completely from the retaining ring groove.
5. The subassembly, consisting of shaft (Key 14), bearing (Key 12), and bearing housing (Key 15), can now separate pump body (Key 10) and seal assembly (Key 7), by pulling the two assemblies apart by hand. The retaining ring will remain inside the bearing housing subassembly. If the assemblies will not separate by hand, lightly tap the pump body end of the pump shaft with a soft mallet (be sure not to damage the end of the pump shaft) until the pump body subassembly separates from the bearing housing subassembly. Remove bearing housing

spacer (Key 8).

6. Remove the seal and seal spacer from the pump body by pressing seal and spacer toward the end cover end of the pump body.
7. Clean all the shaft surfaces and inspect the surface behind the spline for corrosion and scratching. Replace the shaft, bearing, and bearing housing as one subassembly, if the shaft is damaged.
8. Ensure that the seal bore is free of rease and debris. Insert the seal spacer into the bore, then push the seal into the seal bore with lip pointing toward end cover side of body. Press it evenly into seal bore until it seats firmly against seal spacer.
9. Position the bearing housing spacer on the rear of the pump body.
10. Insert the shaft into the seal and slide the bearing housing/shaft assembly onto the pump body. Shaft, bearing, retaining ring and bearing housing assembly must slide onto the pump body until the retaining ring groove on the body is completely exposed through the back of the bearing housing.
11. Place the retaining ring completely into its groove.
12. Replace the impeller, gasket and end cover to the pump and assemble onto the engine. Connect hose.
13. Start engine and check for leaks and vibration.

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For technical advice or service please take your pump into your local pump service center.  
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