



Electric Water Pump for B Engine Saabs

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This document shows how the original waterpump in a Saab "B" engine can be eliminated and replaced with a reliable, efficient **Electric Water Pump**.

This site is based on a 1978 99 but applies to all 1971-on Saab 99 and 1979 -1980 Saab 900.

This modification can be completed by the backyard mechanic with ordinary tools in a few hours.

The cost of the project closely matches the cost of replacing the original pump.

The EWP is manufactured by Australian manufacturer [Davies-Craig](#) and comes with a 2-year warranty. It weighs two pounds and is very durable and well engineered.

An optional controller unit controls the pump, only running it when necessary to keep the engine cool. The pump can also be wired directly for continuous operation. This website shows how to install an EWP both ways.

Converting a B-engine to an electric water pump includes:

- Removing the original waterpump
- Sealing the cavities in the engine block where the original pump was installed by installing freeze plugs.
- Fabricating custom cooling hoses by modifying parts of the original system.
- Wiring a relay into the electrical system.
- If using the optional controller, removing the thermostat and replacing it with a temperature sensor.



Original equipment water pump assembly showing stripped drive gears.



This daily-driven 99 turbo has been running an EWP for over three years.

Got Questions? [email the author](#)

Parts List

1. **Davies-Craig EWP Electric Water Pump**
2. **Davies-Craig EWP Controller** (optional)
3. Modified **Saab 99 b-engine expansion tank hose** that runs from the expansion tank to the waterpump cover and includes a heater hose junction.
4. **Metal freeze plug** for the lower waterpump cavity in the engine block. **Dorman #555-093** is a perfect fit.
5. **Expandable (rubber) freeze plug** for the upper waterpump cavity in the engine block.
6. Two **5/8" plastic T-connectors** for the cooling system/ heater hoses. Can be found in good auto parts stores.
7. A **plastic "cap"** to seal off the small port on the original waterpump cover. **Dorman #495-100** "bypass cap" is a perfect fit.
8. Several new **hose clamps** and plastic **wire-ties**.
9. Loctite #518 Gasket Sealant.
10. A variety of replacement heater and radiator hose.



Stock 99 expansion tank hose modified by cutting off the curved end.



Freeze plug #555-093 to seal the lower waterpump cavity.



Expandable rubber freeze plug used to seal the upper waterpump cavity



A variety of radiator and heater hoses from the local auto parts store.



SAAB 99

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Installation of the EWP

The original waterpump design is a shaft with two seals that fits in a cavity in the engine block. The lower cavity is part of the oil lubrication system, the upper cavity is part of the coolant circulation system. These two parts are normally sealed off from each other when the original waterpump is in place. To allow the external electric pump to function, the original pump and impeller is removed to allow for good coolant flow through the upper cavity. The upper and lower cavities are sealed through the use of freeze plugs.

Step 1. The Alternator and Intake manifold are first removed from the engine.

Step 2. The waterpump cover is removed.

Step 3. The original waterpump is removed.

The original waterpump is removed by means of a special Saab puller. It resembles a standard gear puller. It threads onto the top of the pump shaft and seats on the water pump cover bolt holes. It may be possible to fabricate a puller.

Step 4. The waterpump cavity is cleaned.

The cavity is thoroughly cleaned. A long magnet can be used to retrieve any broken pieces of gear if the pump gears sheared.

Step 5. Install the metal freeze plug.

A small amount of Loctite 518 sealant is used when installing the plug. The plug is tapped into place using a hammer and a small block of wood. The plug will eventually seat on the lower ridge of the cavity.

Step 6. Install the expandable rubber plug.



The water pump cavity after removal of the original waterpump.

