



These instructions were prepared for installing single action aftermarket thermostats using any of our basic conversion kits.

1) Remove the hoses and 9/16" retaining nuts from the thermostat housing, and then remove the housing. It may be necessary to use a slightly sharpened common screwdriver to pry the housing away from the head.

NOTE 1: If you're installing a stand-alone thermostat spacer or an aftermarket spacer and stud kit, remove the thermostat housing studs, replace them using two manifold studs, and then proceed to step (3). Manifold studs are included in the aftermarket spacer and stud kit but they are not included with the stand-alone spacer.

2) Use the 17/32" drill bit provided in the kit to enlarge the top 1/4" of the stud holes in the housing to accommodate the shoulder nuts in the kit. If you don't have access to a vise, the housing can be secured to a work surface using a standard "C" clamp. A medium sized nail (14 or 16 penny) will help to keep the housing from rotating under the clamp while drilling. Dry-run the shoulder nuts into the holes frequently as you drill, and stop as soon as the shoulder of the nut rests on the upper surface of the housing (See photo 3 - cross-section of enlarged hole in the housing).

NOTE 2: Less than perfect quality control on the placement of the original holes in some housings may result in the outer edge of the enlarged hole being quite close to the outer edge of the housing. In all our tests, there has always been enough material around the rest of the hole to support the shoulder of the nut while tightening.

3) Clean the top of the head around the thermostat opening and base of the studs. Then install the lower gasket, the thermostat, the spacer (with the groove around the center opening facing down to locate the thermostat), and finally the second gasket on top of the spacer. It's usually preferable to use sealer (such as Permatex aviation brand or similar sealer) on the lower side of the bottom gasket and on the top of the upper gasket. In this way, the thermostat and the thermostat housing can usually be removed and replaced in the future without damaging the gaskets; i.e. the lower gasket will stay on the head and the upper gasket will come off with the housing. If using the spacer for a double acting "Volvo" or O.E.M. type thermostat, install the spacer below the thermostat with the groove facing downward.

4) Install the thermostat housing. If you're using a modified thermostat housing, use the special 11/16" shoulder nuts provided in the kits to secure the housing. If you're using a standard thermostat housing with standard manifold studs, use the regular 9/16" nuts provided in the kit.

5) Torque the shoulder nuts to approximately 30 foot-pounds and reconnect the hoses. If no torque wrench is available, you can approximate 30 foot-pounds by applying a "good amount of muscle" on a standard 3/8" ratchet. See photo 4 for a look at the finished product.

6) For single-acting thermostats to properly regulate engine temperature, it's necessary to control the flow within the bypass loop of the cooling system (this is the hose between the "T" fitting in the middle of the water jacket side plate and the thermostat housing). We recommend a combination spring loaded check valve and manual ball valve for this purpose (see product number CSOT_01_61 in our online catalog).

7) Operating procedures: In most raw water and freshwater applications it should be possible to operate with the manual ball valve fully open and allow the spring-loaded check valve to provide the backpressure necessary for the thermostat to regulate the temperature. In either system, the manual valve can be closed or partially closed to control temperature if operating conditions require. Operating conditions which may require closing of the manual valve include outside water temperature over 80 degrees, long periods at high power settings, or restrictions building up within the block and cylinder head.



photo 1
Drilling hole using bench vise

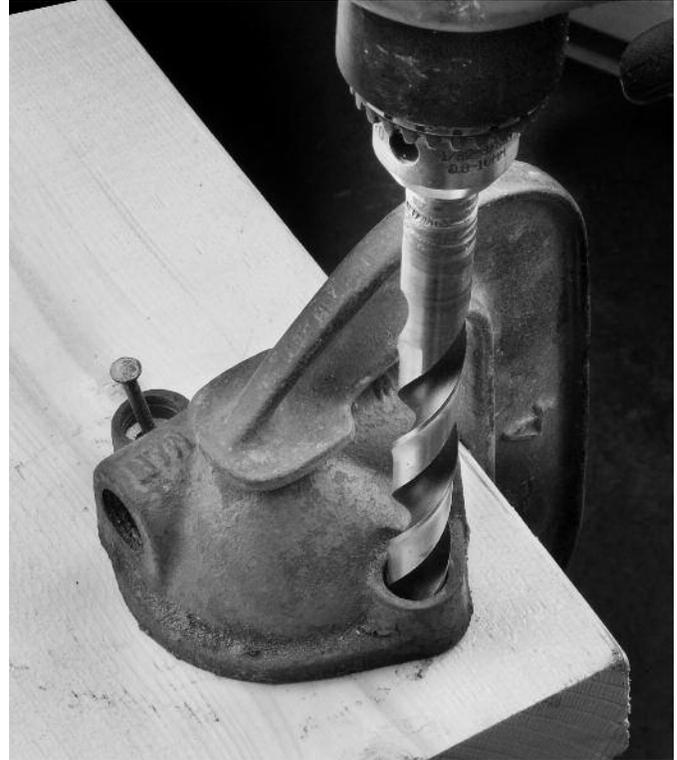


photo 2
Drilling hole using "C" clamp method



photo 3
Cutaway view of housing and shoulder nut



photo 4
Modified housing with shim and shoulder nuts in place