

# Installation Instructions Hi-Tek Cooling System

Part Numbers 70297 & 70298

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This **B&M Hi-Tek Cooling System** is designed to cool automatic transmission fluid or engine oil during sustained high speed driving, pulling heavy loads, mountain driving, racing and on RV vehicles. The cooler will guard against excessive overheating. This cooler kit can be installed in a few hours by carefully following these directions. A minimum of mechanical ability and tools are necessary for a successful installation. Read these instructions first to familiarize yourself with the parts and procedures. When installing your B&M Hi-Tek Cooling System there are some other B&M products that you may wish to consider:

- 1. B&M Transmission Temperature Gauge.** (Part No. 80212) The B&M Temperature Gauge is accurate and dependable, and an economical safeguard against transmission overheating, the leading cause of automatic transmission failure.
- 2. B&M Deep Transmission Oil Pans.** B&M offers the most complete line of deep pans. Deep pans provide for 3 to 4 quarts of additional oil capacity which significantly increases the amount of heat the oil can remove. B&M offers pans in both stamped chrome plated steel and/or cast aluminum for most popular domestic transmissions.
- 3. B&M Trick Shift Fluid:** A blend of foam inhibitors, extreme pressure agents and shift improvers give this fluid the maximum protection capa-

bility against heat and wear, while delivering the fastest possible shifts available for a fluid change. You literally "Pour in Performance." Available in plastic quart bottles and comes as a synthetic.

## INTRODUCTION

The cooling system is comprised of a plate-fin oil-to-air cooler. All channels are turbulized. The inlet-outlet fittings are 1/2" NPTF. The sensor fitting has an M16x1.5 thread. Also included is a 12V DC suction fan. As a suction fan the air is to be pulled through the oil cooler. This should be verified upon installation to ensure correct polarity to the fan. To prevent fan motor damage the maximum current draw should be protected with an in-line 15A fuse (see fig. 2). Furthermore, a bi-metal temperature switch controls the fan ON-OFF points:

ON is 80°C±3°C (176°F±5.4°F)

OFF is 60°C±3°C (140°F±5.4°F)

Check your parts list to make sure you have all the parts to your cooler system. If you do not have the parts listed, contact your B&M dealer immediately.

## INSTALLATION

**Caution:** The cooler must be installed so that it is at least 1 inch away from the radiator fan, 1/8 inch away from the radiator, 2 inches away from the hood, wheelwell or firewall and 6 inches away

from the exhaust manifold, pipe or header.

**STEP 1.** Decide on the best mounting position for your cooler. Do not attach the B&M Hi-Tek Cooling System to the chassis or frame rails that may flex during vehicle operation. This may result in leaks or oil cooler failure. Rubber isolation mounts are recommended for long service life. Remove the shipping covers from the fittings on the cooler. Note: the cooler must be properly positioned for proper function of the temperature switch (see figure 1). Improper positioning of the cooler switch may result in oil temperatures that exceed the switch ON point without activating the fan. Furthermore, if the switch, itself, is located in an area of heavy air flow, insulative material may be required to prevent excessive radiant cooling and improper switch function as well.

**Caution:** to avoid damaging the oil cooler and mating fittings use a back up wrench when tighten hose fittings. Excessive torque applied to the cooler without use of a back-up wrench will create cracks and leaks in the joints of the cooler.

Also, before installing fitting into the 1/2" cooler ports be certain to use an anti-seize compound on the threads. Installing aluminum fittings into the cooler ports without anti-seize compound will damage the threads on the cooler and the fittings.

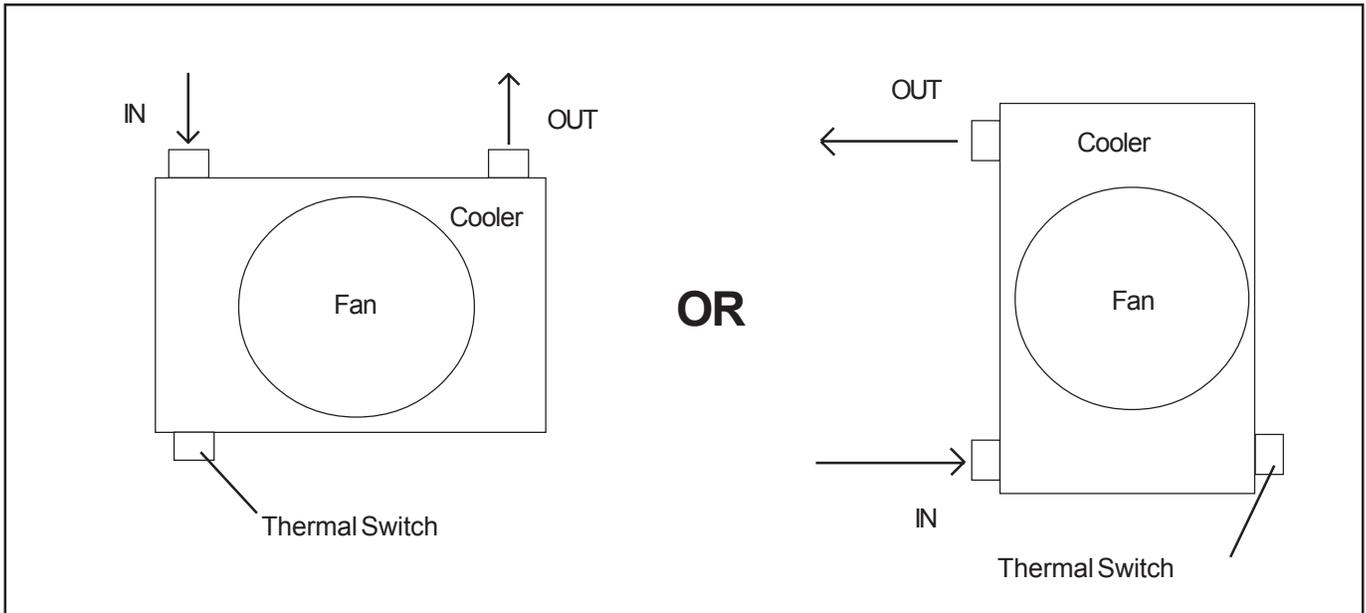


FIGURE 1

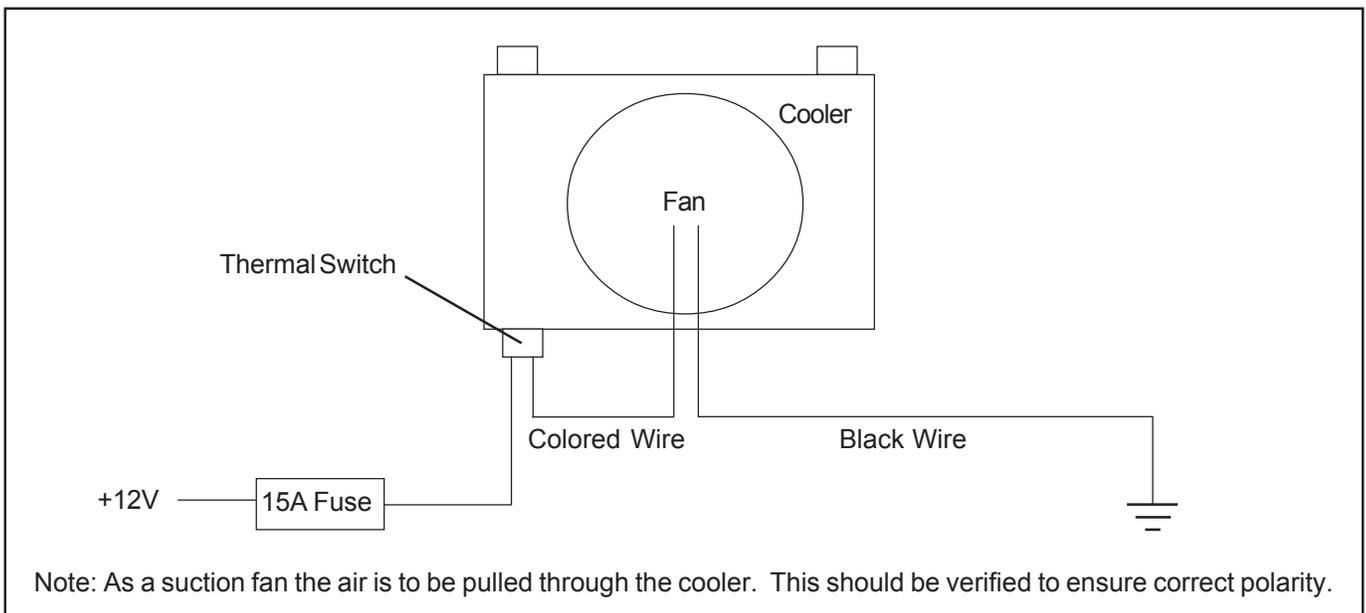


FIGURE 2

**STEP 2.** Wire the thermal switch and fan as indicated in figure 2. Verify that the fan pulls air through the cooler. If it doesn't reverse polarity.

**STEP 3.** After installation, check oil levels and fill as necessary. For engine oil, start the engine and allow it to idle for a few minutes. Turn the engine off and then after a few minutes check the oil level again and fill as required but do not over fill as this will causing foaming. For automatic transmission oil, apply the parking brake, start the engine and place the shifter in the neutral position.

The automatic transmission fluid level must be checked with the engine running and the fluid hot. Add fluid as required but do not over fill as this will cause foaming and overheating.

**STEP 4.** Check all of the hoses and fittings for leaks. Secure the hoses so that they won't be damaged by road debris or other hazards. RECHECK PERIODICALLY.

#### PARTS LIST

- 1 Hi-Tek Cooling System
- 1 Electrical Connector

#### TOOL LIST

- 1/2" tubing or open-ended wrench
- 9/16" tubing or open-ended wrench
- 5/8" tubing or open-ended wrench
- electrical fitting crimper