SUPERMIATA

Qmax Coolant Reroute

Installation Instructions

89-05 Mazda MX-5 Miata, 1.6L B6 or BP 1.8L engine

Read notes 1-8 before you begin (or you will be unhappy with your install)

1. Disconnect battery.

2. It is recommended to have a Mazda FSM (Factory Service Manual) on hand before beginning any service on your Miata. Trust us :)

3. DO NOT attempt this install on a hot engine. Let car sit at least 6 hours before beginning installation.

4. Tips to make your Qmax Reroute install easier.
a) Place entire car on jack stands so you don't have to bend over so much.
b) Remove hood. Be sure to mark position of hinges against hood to save alignment.
c) Work where there is plenty of light.
d) A Lisle 24680 funnel for bleeding will save you time. Highly recommended.

5. The installation requires tightening NPT fasteners. These are tapered thread and self sealing. The tapered thread will naturally begin to bind while rotating in and eventually stop. Do not over torque these fittings or sensors. Over torqueing can crack or split the housing.

6. Do Not apply sealant or PTFE tape to sensors that use a crush washer. The crush washer is the seal.

7. Apply supplied sealant to all NPT "tapered" threads. Assemble parts immediately after applying the Permatex 22071 sealant, while still wet and tacky. No need to let the sealant dry.

8. It is possible, with significant improvements to your cooling system, that the engine may not come fully up to ideal operating temp of 185-205°F in very cold weather. If this happens, you can block part of the radiator as is done in marine, industrial and aviation applications. Only an accurate coolant temp gauge will determine this.

This kit contains:

1x Qmax reroute housing, 7075
1x Qmax thermostat cover, 7075
1x Head coolant port block off plate, 7075
1x Coolant neck block off plate, , 7075
3x M6 x1 x 25mm BHCS, black oxide
1x M8x1.25 x 20mm, zinc (hex head)
1x1- 11/16 inch retaining ring, HO-168SS
3x 1/8 NPT plugs, SS
1x Bleed screw assy Wilwood 220-0627
1x Worm drive hose clamp, 5/8" Breeze 9416
2x Worm drive hose clamp 1.25", Breeze 9424
1x 3/8" NPT M- 5/8" hose barb, brass
1x M16 x 1.5 drain plug with gasket, zinc
1x 1.25" reinforced silicone hose, 44"
1x 195° Thermostat
1x Sealant, Permatex 22071

Installation

1. Let engine cool to ambient temperature. Drain all coolant from system. *If coolant is of unknown origin or over one year in age, discard at a state approved reclamation facility. Ethylene glycol as used in consumer anti-freeze is highly toxic. Don't send it to the nearest storm drain!

2. Remove top hose (inlet) from radiator.

3. Detach heater hose from coolant outlet on back of head. Leave other end attached to heater outlet.

4. Remove coolant outlet from rear of head. Lower fastener is a nut on a stud. The stud stays in the head and will be used for the Qmax. Fig A

5. Unscrew coolant temp sensor. NA6, unscrew fan switch. Sensor/switch may be in front water neck or rear outlet.

Fig A

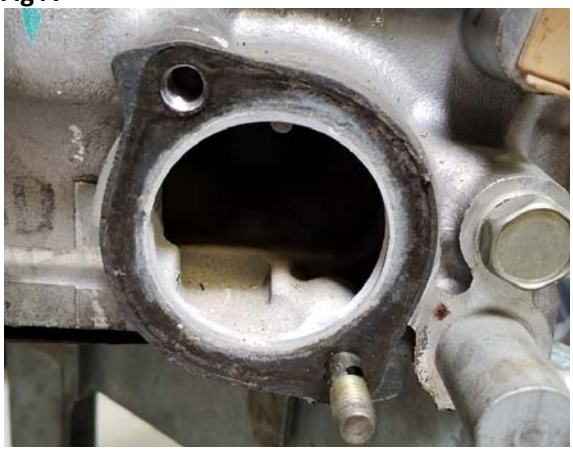
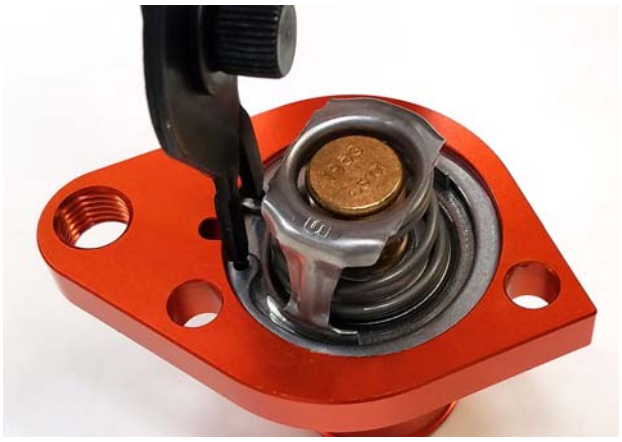


Fig B



6. Clean any remaining sealant or gasket material from mating surface of coolant outlet at back of head. Take care not to gouge the aluminum mating surface.

7. Install thermostat in housing as shown in Fig B. Use supplied snap ring to secure in place.

Fig C

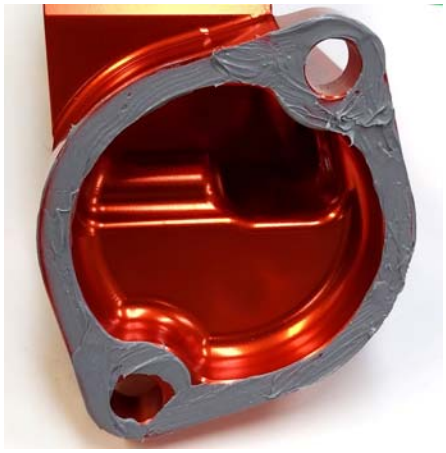
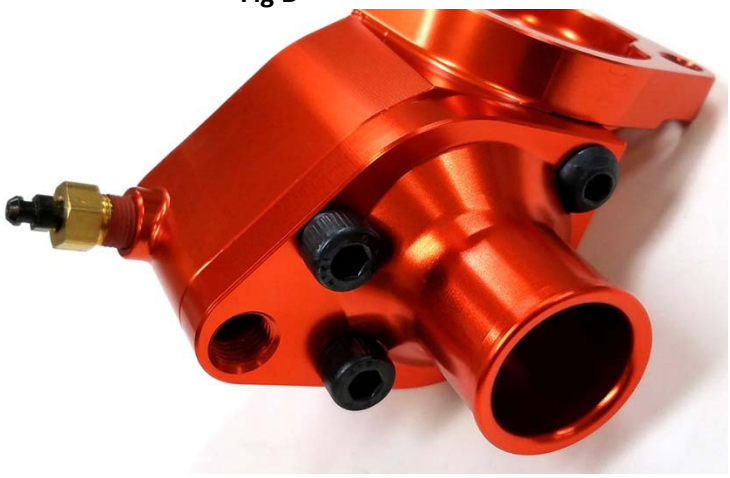


Fig D

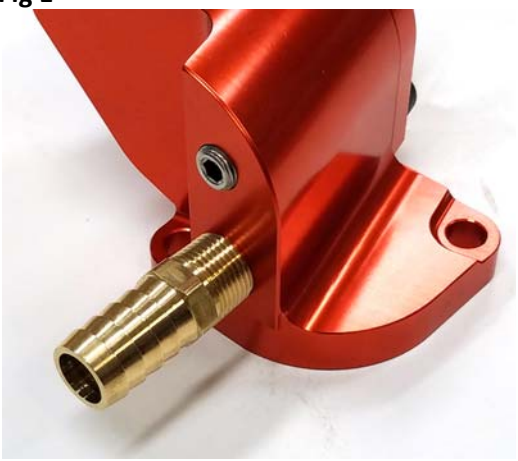


8. Using supplied sealant, apply a thin coat to main housing as shown in Fig C. Also apply to thermostat side of the main housing. You do not need to apply sealant to the thermostat housing. Just one side of that interface is sufficient.

9. Using supplied 6mm BHCS, attach thermostat cover to main housing. Torque to 8 ft-lbs. Fig D.

10. Install supplied 5/8" hose barb with at least the first 4 threads covered in a light coat of sealant or PTFE "plumbers" tape. This is a tapered NPT thread so it will naturally begin to bind as it is rotated in. Use only modest torque to avoid cracking main housing. Fig E

Fig E



11. Install bleed nipple in top of housing, Fig D. Bleed nipple has pre-applied sealant and is 1/8 NPT tapered thread. It will naturally begin to bind as you rotate it in. Use only modest torque to avoid cracking housing.

12. Use supplied 1/8 NPT plugs where a port is left unused. Apply a small amount of supplied sealant or PTFE "plumbers" tape to threads.

NOTE : If installing housing while engine is in the car, practice maneuvering it into place before applying sealant to housing. This is to avoid wiping off the sealant while negotiating in the tight space.

NOTE: If EGR pipe is interfering with Qmax housing placement loosen or temporarily remove it.

13. Apply supplied sealant to housing as shown in **Fig C**

14. Use supplied M8 bolt wth 10m hex head in upper hole to attach housing to head. Torque 10-14 ft-lbs

NOTE : Silicone hose will increase in length when the system is at operating temperature. Allow room for 1-2" in extra length when hot.

15. Install hose onto outlet without clamp to determine hose length. We ship the hose a bit too long so you can trim to fit around any fuel regulators or non-OEM intake systems. Line up with radiator inlet to estimate length. Allow for hose growth as noted above. Cut hose cleanly. Large sharp shop scissors or sharp matte knife will do.

16. Remove hose to install supplied hose clamps. Clamp should be positioned just behind raised bead on inlet/outlet nipple. Snug clamps until you can just barely see hose bulge slightly next to the clamp. Too much torque will cut the hose. It's better to have a tiny leak on first start up that you fix by adding torque than over tightening and ruining the hose.

17. Larger plate is to block off the water neck after deleting the OEM thermostat & cover. The ports in the larger plate are for OEM sensors. The spare 1/8 NPT port can be closed with included plug if not used. The smaller plate is used if you entirely remove the water neck and coolant bypass lines on your head, which requires more advanced system knowledge to customize. We recommend keeping the water neck and coolant bypass lines in place. Remove any remaining sealant or gasket material from neck. Apply sealant as shown in Fig C.

18. Fill system with desired coolant mixture.
- For street use, refer to your FSM for antifreeze to water ratio.
- For competition use, fill with distilled water, one pint of anti-freeze (corrosion inhibitor) and ½ bottle of Redline Water Wetter. The odor from a small amount of anti-freeze can alert you of leaks.

19. To cold bleed system, open bleed valve. During filling from radiator, air will be forced out the bleeder valve. This is an important step to insure there are no air pockets in the rear of the system. Once the radiator is full, tighten the bleed valve.

20. To hot bleed the system, start the engine and idle until the thermostat opens. Upper hose will suddenly get too hot to touch when the thermostat opens (<140°f). At that point, the system will push any remaining air trapped in the system through the top hose and usually cause a brief overflow out the filler neck. If you are not using a funnel, stop the engine at this point. If using the Lisle 24680 funnel, leave the engine running as coolant level drops and add coolant. Top off the radiator and reservoir to the “hot” mark. Install the cap, start engine and check for leaks.

21. Reinstall hood. You are now ready for a brief test drive.

22. Test drive briefly while watching the coolant temp gauge. After returning from your brief test drive, open the hood on a dry patch of ground. Check for leaks both visually and also for coolant odor. There should be no hint of any coolant loss.

Congratulations! You now have the coolant flow path the Mazda B series engine was originally designed to have. Pair it with our Crossflow radiator for ultimate cooling efficiency.
More info about the early Miata cooling system
Qmax video on our youtube channel

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