

Thank you for purchasing the Track Dog Racing Exhaust Heat Shield for the 2006-2015 Mazda MX-5. Our TDR Heat Shield is designed to help maintain lower temperatures in the engine compartment by isolating elevated header temperatures. The Heat Shield will install on all model years of the Mazda MX-5. Both aftermarket headers, Section 1 and factory exhaust headers Section 2 will see the benefits of reduced heat transfer in the engine compartment and cooler under hood temperatures.



The TDR Heat Shield is manufactured with 4-layers. The bottom uses heavy-grade industrial aluminum to reflect radiant heat and to balance the conducted heat across the surface. The second layer is fiberglass cloth. The ½" (12 mm) insulation is 2000 degree rated ceramic wool that helps maintain its shape as you form the Heat Shield around the exhaust manifold or header. The outer surface is an aluminized fiberglass mat that not only looks good, but also adds to the efficiency of the TDR Heat Shield by dissipating heat, resulting in lower surface temperatures.

Note: Direct contact from the header can cause the inside material of the Heat Shield to burn away. As long as the outer surface is intact, the Heat Shield integrity is still efficient at holding the heat.

TOOLS REQUIRED

The following tools may be required in your installation depending on your mounting method.

- 10 mm and 14 mm socket wrench and sockets
- Torque wrench
- Small Phillips screwdriver or pick
- Single blade hack-saw
- ¼" drill socket bit
- Electric drill
- Pliers

SECTION 1: INSTALLING ON AFTERMARKET HEADERS

The TDR Heat Shield attaches to all factory and aftermarket headers for the Mazda MX-5. Attachment is through the use of the header studs and brackets. The Heat Shield forms easily around the header and takes very little time to install.

NOTE: When forming the Heat Shield, a loose fit is better than a snug fit as air is a good insulator and increases efficiency. The small single grommet in the middle is not used in this application.

The Heat Shield is attached to the two outer studs as shown in Photos 1-1 and 1-2 using the supplied angle brackets.

1. Be sure the surfaces around the engine exhaust area are cool to the touch.
2. Remove the factory M10 nuts using a 14 mm socket on the top left (rear) and the top right (front) of the exhaust manifold as shown in Photos 1-1 and 1-2. Install the supplied angle bracket over the exhaust manifold studs and reinstall the factory M10 nuts.
3. Turn the bracket face up as shown in Photos 1-1 and 1-2. Torque the exhaust manifold nuts to factory specifications, 32-47 ft. lbs.

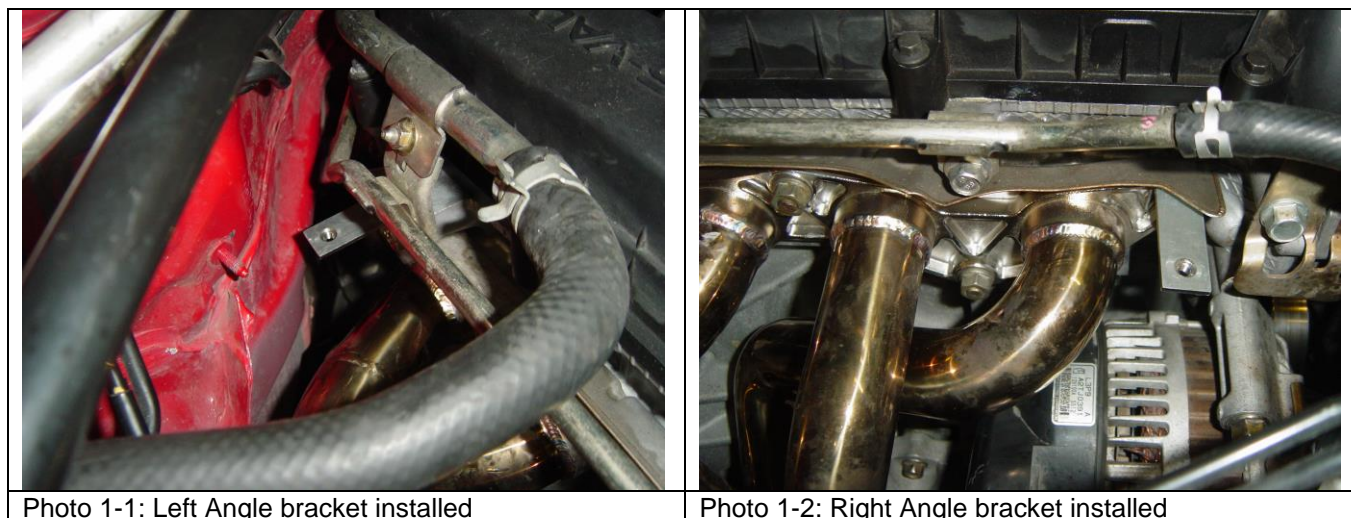


Photo 1-1: Left Angle bracket installed

Photo 1-2: Right Angle bracket installed

4. Push the thin metal flange down its entire length as shown in Photo 1-3, this will allow room for the Heat Shield to rest above it.
5. To simplify the Heat Shield installation, remove the heater hose as shown in Photo 1-4. Place a small plastic container below the heater hose that runs above the header on the left side (rear) as shown in Photo 1-4.



Photo 1-3: Thin metal flange pressed down



Photo 1-4: Container for coolant

6. Remove the spring clamp with pliers and pull the heater hose back to get it out of the way as shown in Photo 1-5. You will lose a little bit of coolant. You can pour it into the radiator overflow tank when you are finished.
7. Form the Heat Shield around the header starting with the lower left side as shown in Photo 1-6. Bring the lower left side in first, followed by the lower right side. Then you can bring the top section overlapping it.



Photo 1-5: Coolant in cup



Photo 1-6: Heat Shield between the header and the firewall.

8. The right side has the alternator down low. Form the Heat Shield between the alternator and the header.
9. The lower flap on both sides will be below the L-bracket as shown in Photo 1-7.
10. Continue forming the Heat Shield into a bonnet shape away from the header.



Photo 1-7: Lower flap under the L-bracket

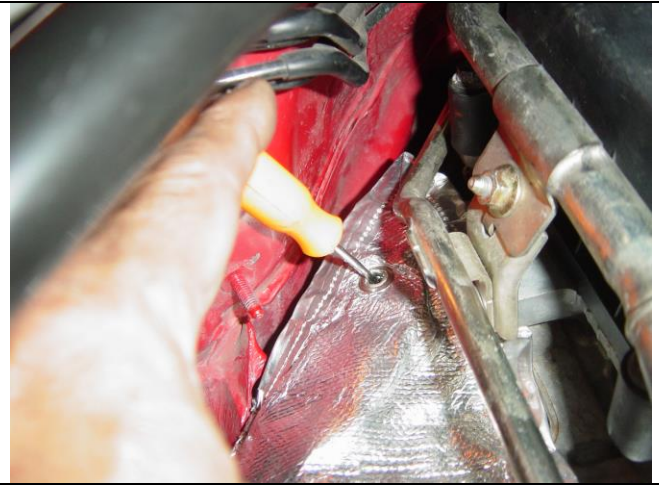


Photo 1-8: Alignment pick or screwdriver

11. Use a small screwdriver or pick and align the grommet on the Heat Shield over the threaded hole in the bracket as shown in Photo 1-8. Install the supplied M6 bolt to secure the Heat Shield in place using a 10 mm wrench. DO NOT tighten down completely until both sides have been started.
12. Form the Heat Shield on the right-side bracket area. Make sure the heat shield is resting on top of the thin flange you bent down earlier as shown in Photo 1-9. Attach the M6 x 16 mm bolt to the right (front) angle bracket through the grommet. If needed the angle brackets can be adjusted by loosening the exhaust nuts.
13. Reinstall the coolant hose as shown in Photo 1-10. The lost coolant can be poured back into the overflow reservoir.
14. When the hardware is installed, we recommend using a long object like a breaker bar and form underneath the heat shield to add additional air space.



Photo 9: Heat Shield on top side of metal header flange



Photo 10: Coolant hose reinstalled

SECTION 2: INSTALLING ON FACTORY HEADER

The TDR Heat Shield attaches to the factory header and provides additional heat retention over the metal shield.

1. Remove the coolant hose using pliers to remove the spring clamp as shown in Photos 1-4 and 1-5 from Section 1 instructions.
2. Remove the secondary metal heat shield. There are three M6 bolts. One is on the firewall and easy to get to. The other two are threaded from under as shown in Photo 2-2. The front M6 bolt can be removed using a ratcheting wrench.
3. The middle bolt is much harder to reach. Since the secondary heat shield will not be reused, we recommend using a single blade hack-saw and cut the shield off as shown in Photo 2-3. Afterwards the M6 bolt can be removed.



Photo 2-1: Factory header shield



Photo 2-2: Header shield under bolt mount



Photo 2-3: Shield cut off



Photo 2-4: Spring wire mount to be removed

4. There is a wire support bracket looks like a spiraled wire as shown in Photo 2-4. Remove the M6 bolt using a 10 mm wrench and discard.
5. The heat shield will be placed under the header flange as shown in Photo 2-5. If necessary, raise the flange for more clearance.

6. While formatting the Heat Shield around the header cover, press the heat shield towards the flange area and under the water tube as shown in Photo 2-6. Bend the heat shield around the rear of the alternator.
7. After forming the Heat Shield you will install a self-tapping screw into the factory shield. There are two methods to install the screw.

Method 1: Attach a ¼" socket to a power drill. This will thread in the supplied self-tapping screw as seen in Photo 2-7. Use the supplied washer with the screw as shown in Photo 2-8.

Method 2: If you do not have a drill socket, the second option is to drill a pilot hole using a 1/8 inch drill bit. Mark the shield through the grommet opening. Pull the heat shield back and drill the pilot hole. Afterwards use a ¼" socket wrench and thread the self-tapping screw in. Use the supplied washer with the screw as shown in Photo 2-8.

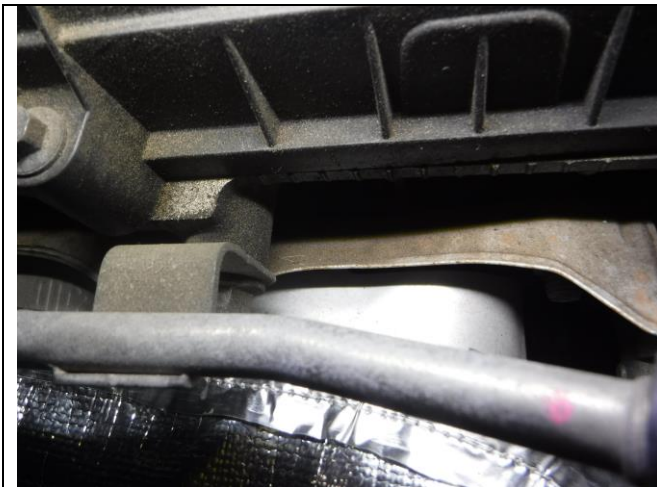


Photo 2-5: Flange bent up for heat shield clearance



Photo 2-6: Heat shield installing around header



Photo 2-7: Mounting self-tapping screw



Photo 2-8: Self-tapping screw and washer

8. When complete reinstall the heater hose as shown in Photo 2-9. Recommend reinstalling the spring clamp in the same position to prevent leakage.
9. Heat shield should look like Photo 2-10 when complete.

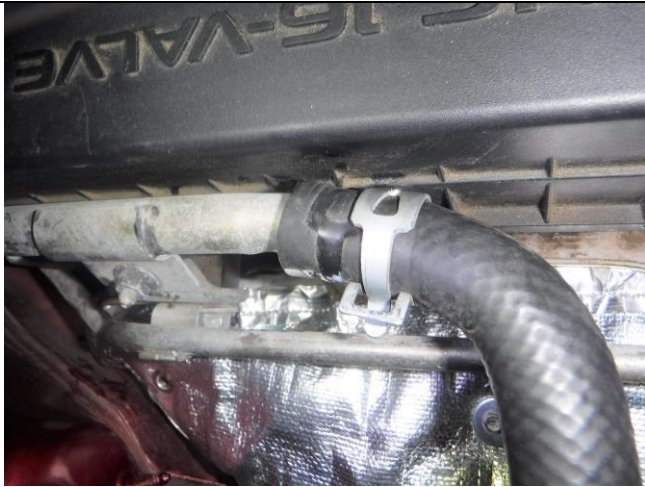


Photo 2-9: Heater hose reinstalled



Photo 2-10: Heat shield installed

The TDR Heat Shield is easy to maintain using simple water and soap if necessary. If the Heat Shield is removed you will notice that it has become a little stiffer, but it will still form back around your exhaust manifold or aftermarket header. In some cases, you may see some foil has burned off from contact with the header. However, this will not affect the performance of the Heat Shield as the ceramic wool insulation will continue to perform a heat barrier.

We hope you will be pleased with our product. If at any time you need assistance, please feel free to contact us at 214-340-9797 or email us at support@trackdogracing.com. If you have any comments or suggestions, please let us know. We also have other unique and high performance products for your Miata. Please visit us at www.trackdogracing.com.

We appreciate your business,

The Track Dog Racing Team