

Thank you for purchasing the Track Dog Racing Exhaust Heat Shield, which is designed to help maintain lower temperatures in the engine compartment by isolating elevated header temperatures. The TDR Heat Shield will install on all model years of the Mazda Miata. Both factory exhaust manifolds and aftermarket headers will see the benefits of reduced heat transfer in the engine compartment and cooler air into the intake.



The TDR Heat Shield is manufactured using heavy-grade industrial aluminum to reflect radiant heat and to balance the conducted heat across its surface. Insulation is 2000 degree rated ceramic wool that helps maintain its shape as you form the TDR Heat Shield around the exhaust manifold or header. The outer surface is an aluminized fiberglass mat that not only looks good, but adds to the efficiency of the TDR Heat Shield by dissipating heat, resulting in lower surface temperatures.

The instructions are broken into two installation options: mounting to an aftermarket header and mounting to the factory exhaust manifold. In some cases, you may combine installation methods. For supercharger applications using the factory exhaust manifold, install the TDR Heat Shield similar to the aftermarket header with the factory heat shield removed. Hardware is included for both applications.

## Section 1: Installation On Aftermarket Headers

The TDR Heat Shield attaches to all aftermarket headers for the Mazda Miata. Attachment is through the use of the header studs and/or through the use of stainless steel wire, depending on your application. The Heat Shield forms easily around the aftermarket header and takes very little time to install. 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.

On non-supercharged setups, the Heat Shield is attached to the two outer studs as seen in Photos 1-A and 1-B using the supplied stainless steel nuts. However, some header flanges are thicker than others and may require using the stainless steel wire method of attachment.

On supercharged applications (BR Performance M62 supercharger shown) attachment is through the use of the factory stud on the right side and stainless steel wire wrapped around the stud and supercharger bracket on the left side as seen in Photos 1-C and 1-E.



Photo 1-A: Right side of the Heat Shield. Fold in first, followed by the top



Photo 1-B: Left side of the Heat Shield. Fold in first, followed by the top

1. Be sure the engine is turned off and the surfaces around the engine exhaust area are cool to the touch.
2. Form the TDR Heat Shield around the header starting with the right side as shown in Photo 1-A. Bring the side in first, followed by the top section overlapping it. The Heat Shield will go between the heater hoses and the manifold. The right side heater hose has a clamp down low that will require you to push and form the Heat Shield between it and the factory shield.





Photo 1-C: Using a tool to push the grommet around the stud



Photo 1-D: Supplied nut on both sides on an aftermarket header with no supercharger

3. Push the Heat Shield grommet on the right side over the stud as seen in Photo 1-C. A screwdriver or other tool can help in pushing the lower section of the grommet.
4. Attach the supplied stainless steel nut using a 17mm wrench. Push the grommet in as far as you can over the stud so you can get an initial bite on the threads. After you get the thread started, the grommet will press in to give more threads.
5. For non-supercharged applications, form the left side similar to the right side as shown in Photo 1-B, bringing in the side first followed by the top section overlapping.



Photo 1-E: Stainless steel wire on left side behind supercharger bracket



Photo 1-F: Stainless steel wire on right side of factory manifold with shield removed

6. Make sure the Heat Shield is close to the head in the middle section as well as the sides as you apply the tie downs on each corner.
7. On supercharged applications you will use the stainless steel wire supplied since the manifold stud is being used by the supercharger brace as shown in Photo 1-E.
8. Thread the stainless steel wire behind the flange, through the grommet, and back up the other side of the manifold stud as shown in Photo 1-E. Using a pair of needle-nose pliers, twist the wire snug and trim off the excess wire.
9. If using the factory exhaust manifold, you may be required to remove the factory heat shield for clearances between the supercharger and the exhaust manifold. If so you may be required to use the stainless steel mounting method as shown in Photo 1-F. The stainless steel wire can be attached around the dip stick or around the EGR (exhaust gas recirculation) tube below the exhaust manifold and to the rear.
10. After the two sides are firmly attached, form the rest of the Heat Shield around the header. Remember: a loose fit is better than a tight fit.

## Section 2: Installation On Factory Exhaust Manifolds

The Track Dog Racing Heat Shield attaches to factory exhaust manifolds on all model years. Although aftermarket headers generate more heat, the factory exhaust manifold could use a little help as well. The Heat Shield forms easily around the factory exhaust manifold heat shield and takes little time to install.

Attachment is by a single self-tapping mounting screw fitted into the factory metal heat shield. (The 1999-2000 models have a mounting bolt near this center hole grommet opening that can be substituted for the self-tapping screw.) When forming the TDR Heat Shield, a loose fit is better than a snug fit as air is a good insulator and increases efficiency. Note: the two larger grommets are not used on the factory exhaust manifold installation.

1. Be sure the engine is turned off and the surfaces around the engine exhaust area are cool to the touch.
2. Form the Heat Shield around the factory metal shield starting with the right side as shown in Photo 2-A. Bring the side in first, followed by the top section overlapping it. The Heat Shield will go between the heater hoses and the manifold. The right side

heater hose has a clamp down low that may require you to push and form the Heat Shield between it and the factory shield.

3. Form the left side similar to the right side by bringing the side in first, followed by the top section overlapping it.



Photo 2-A: Right side of the Heat Shield. Fold in first followed by the top



Photo 2-B: The center hole is between the two valve cover bolts and a rib on the head

4. Make sure the Heat Shield is close to the head in the middle section as well as the sides before you mark your hole.
5. Once the Heat Shield is formed over the manifold, align it so the center hole above the name plate is in line between the valve cover bolts and the rib on the head as shown in Photo 2-B.
6. Using a marker or pen, mark the factory shield as shown in Photo 2-C.
7. A self-tapping screw is supplied with the TDR Heat Shield. Using a power screwdriver insert the self-tapping screw on the mark you made on the factory shield as shown in Photo 2-D. Remove the screw after the threads have been made. All remaining hardware supplied with the Heat Shield is not used.
8. A metal spacer is supplied that needs to be placed between the exhaust manifold shield and the Heat Shield to add additional air space. Insert the spacer over the tapped hole as shown in Photo 2-E.



9. Install the Heat Shield onto the factory exhaust manifold. Center the hole over the spacer and screw in the self-tapping screw as shown in Photo 2-F. Be careful not to over-tighten—a snug fit is plenty.



Photo 2-C: Mark the hole on the header shield centered with the head rib between the two valve cover bolts



Photo 2-D: Screw the self-tapping screw into the factory metal shield, then remove for reinstall

10. Form the Heat Shield around the exhaust manifold as necessary. A loose fit is better than a tight fit. Pressing the Heat Shield tight around the exhaust manifold will reduce the Heat Shield's efficiency.



Photo 2-E: Spacer between the Heat Shield and the factory exhaust manifold



Photo 2-F: Form the Heat Shield back around the factory manifold and attach the self-tapping screw



## Exhaust Heat Shield Installation Instructions

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The TDR Heat Shield is easy to maintain using simple water and soap if necessary. We hope you will be pleased with our product. If at any time you need assistance please feel free to contact us at 469-916-3200 or email us at [support@trackdogracing.com](mailto:support@trackdogracing.com).

If you have any comments or suggestions, please let us know. We also have other unique products for your Miata. Please visit us at [www.trackdogracing.com](http://www.trackdogracing.com).

We appreciate your business,

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