

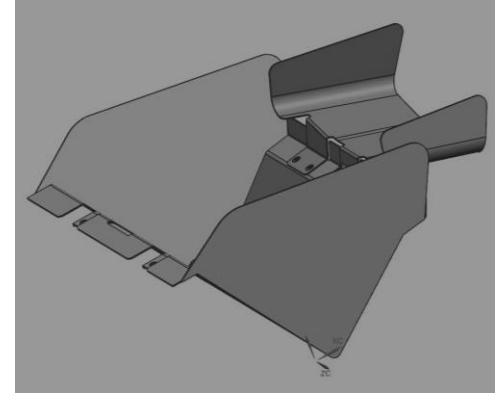


Dodge/SRT Viper Gen IV and V (2008-2017) Intake Heat Shield

Overview:

The DSE Intake Heat Shield reduces Intake Air Temperature (IAT) caused by a hot airbox assembly heating the incoming air. Ceramic coating of the shield greatly reduces airbox and tube heat soak. This reduced IAT increases power by providing cooler air to the engine and reduces pulled ignition timing by the ECU (timing is pulled starting at 77F degrees F!).

- Direct bolt on for 2008-2010 and 2013-17 Vipers, no vehicle modification required.
- Aluminum or titanium construction with black ceramic coating for thermal insulation.
- Titanium has improved thermal properties and offers ~0.15 lb. weight reduction.
- Weight of the aluminum shield is 3.72 lbs. Dynaliner kit is .44 lbs.
- Airbox thumb screws and replacement clip nuts are included.
- Adjustable upper / lower shield account for some vehicle variance, aftermarket tubes, etc.



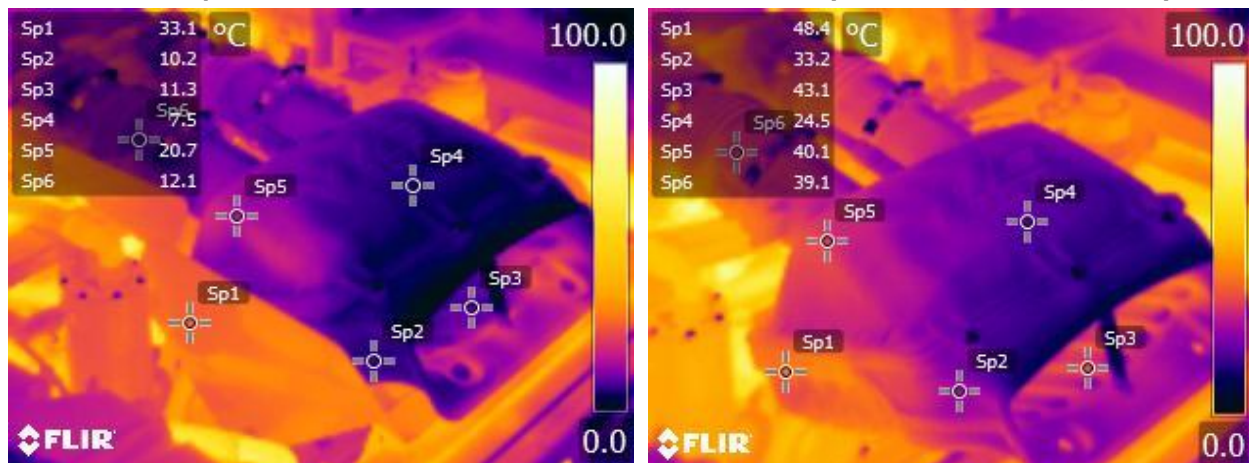
		IAT Axis (°F)																															
		-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158	167	176	185	194	203	212	221	230	239	248	257
Spark		0	0	0	0	0	0	0	0	0	0	0	0	-3	-4	-6	-8	-10	-10	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12

Ignition Timing vs. IAT on the Gen IV Viper (Reduced power begins at 86 degrees F)

Test Results:

Measurement	DSE Shield (deg F)	Stock; No Shield (deg F)	Delta Gain (deg F)
SP1 [Airbox Rear Lower Corner]	N/A	116.4	-
SP2 [Airbox Interior Floor]	49.8	110.1	-60.3
SP3 [Airbox Outer Front Side]	56.7	91.76	-35.06
SP4 [Airbox Top Center]	45.1	76.1	-31
SP5 [Airbox Rear Upper Corner]	72.7	109.2	-36.5
SP6 [Intake Tube Outer Center]	52.9	102	-49.1
SP7 [Coolant Hose Reference]	158	158	0
Ambient Air Temperature	23	23	0
Max Intake Air Temperature (Closed Hood Soak)	55.4	86	-30.6
IAT Over Ambient	32.4	63	-30.6

Airbox temperature and IAT vs ambient with and without DSE Shield (hood closed, heat soak, 0 MPH)



Thermal images with and without DSE heat shield (hood closed, heat soak, 0 MPH)

Additional test results and thermal images can be found here:

http://dougshelbyengineering.com/uploads/Feb_2015_Heat_Shield_Testing.pdf

Specifications:

Composition: 6061-T6 Aluminum (or) Grade 2 Titanium; Stainless Steel Hardware
Finishes: Black Ceramic Coating (shield); black oxide (hardware)
Compatibility: 2008-2010 SRT-10 Viper with OEM intake 2013+ Viper with OEM Intake

Package Contents:

1 x main heat shield
1 x tube heat shield
4 x stainless steel button cap screws
4 x washers
2 x airbox thumb screws
2 x clip nuts
1 x anti abrasion edging (Gen IV only)
1 x DSE airbox drain plug

Ordering Information:

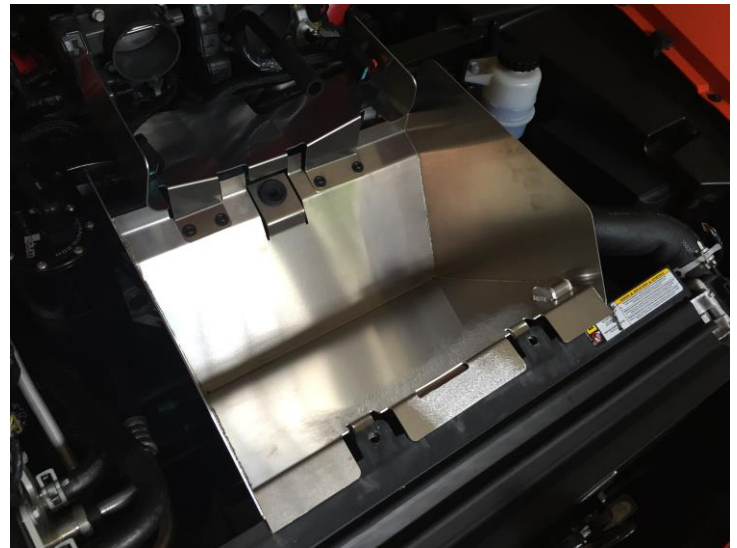
<http://dougshelbyengineering.com/Viper.html>

Thank you for your purchase!

Your business is appreciated, and customer satisfaction is our top priority! Don't hesitate to contact us via email with any questions or feedback. Word of mouth is the best form of advertising so if you are satisfied, please spread the word!

Installation Guide:

- Remove air cleaner assembly
 - o Unscrew the two plastic thumb screws that secure the airbox.
 - o Loosen the tube worm clamps around the throttle bodies to release the tubes from the throttle bodies.
 - o Unplug two mass air sensor connectors (pull out red locking tab and press tab to release connector)
 - o Disconnect crank case vent hose in the center of the airbox by pulling backward.
 - o Pull airbox up to remove the assembly from the lower center grommet, pull the tubes away from the throttle bodies to release the assembly.
- Remove grommet
 - o Remove the rubber grommet from the center mounting point
- Remove and Reuse factory nut clips
 - o Remove the two factory clip nuts from the radiator area by lifting on the center section so they can slide easily off of the radiator support. (These are the clip nuts that previously secured the front of the airbox with the thumbscrews.)
 - o Affix the nut clips to the front tabs of the heat shield (these will now secure the airbox and shield).
- Assemble the heat shield
 - o Connect upper and lower sections by installing the 4 button cap screws and washers.
 - o *Apply the supplied loctite 242 to each screw before insertion into the shield assembly.*
 - o Leave the screws slightly loose for any later adjustments as needed.



Heat shield installed (uncoated shield shown)

- Install the heat shield
 - o Lay the heat shield into place, start by angling the front side around the radiator flange. The tabs should go below the radiator, the shield lip should lay on top of the radiator (but under the plastic cover on the Gen V).
 - o Lay the backside of the shield in place, the hole in the shield should fit around the rubber grommet
 - o Reinstall the rubber grommet over the shield.
 - o Test fit the airbox assembly. Bias the upper shield to allow maximum clearance around the tubes. Remove the airbox and tighten the 4 button cap screws. Some car-to-car variance is expected, hence the adjustability.
 - o Install the airbox for the final time. Use the included aluminum thumb screws to secure the airbox and shield.
 - o On Gen IV vehicles, the "Y" in the wiring near the driver side sensor may be close to the shield. Install the anti-abrasion edging as shown by pressing it over the edge of the shield to prevent potential chafing.
 - o Tighten the clamps around the throttle bodies, reinstall the crank case vent hose, connect the sensors and push the red locking tabs in to secure.
 - o Double check everything is secure and connected before starting the vehicle.



Anti-abrasion edging installed (Gen IV Only)

Disclaimer of Liability:

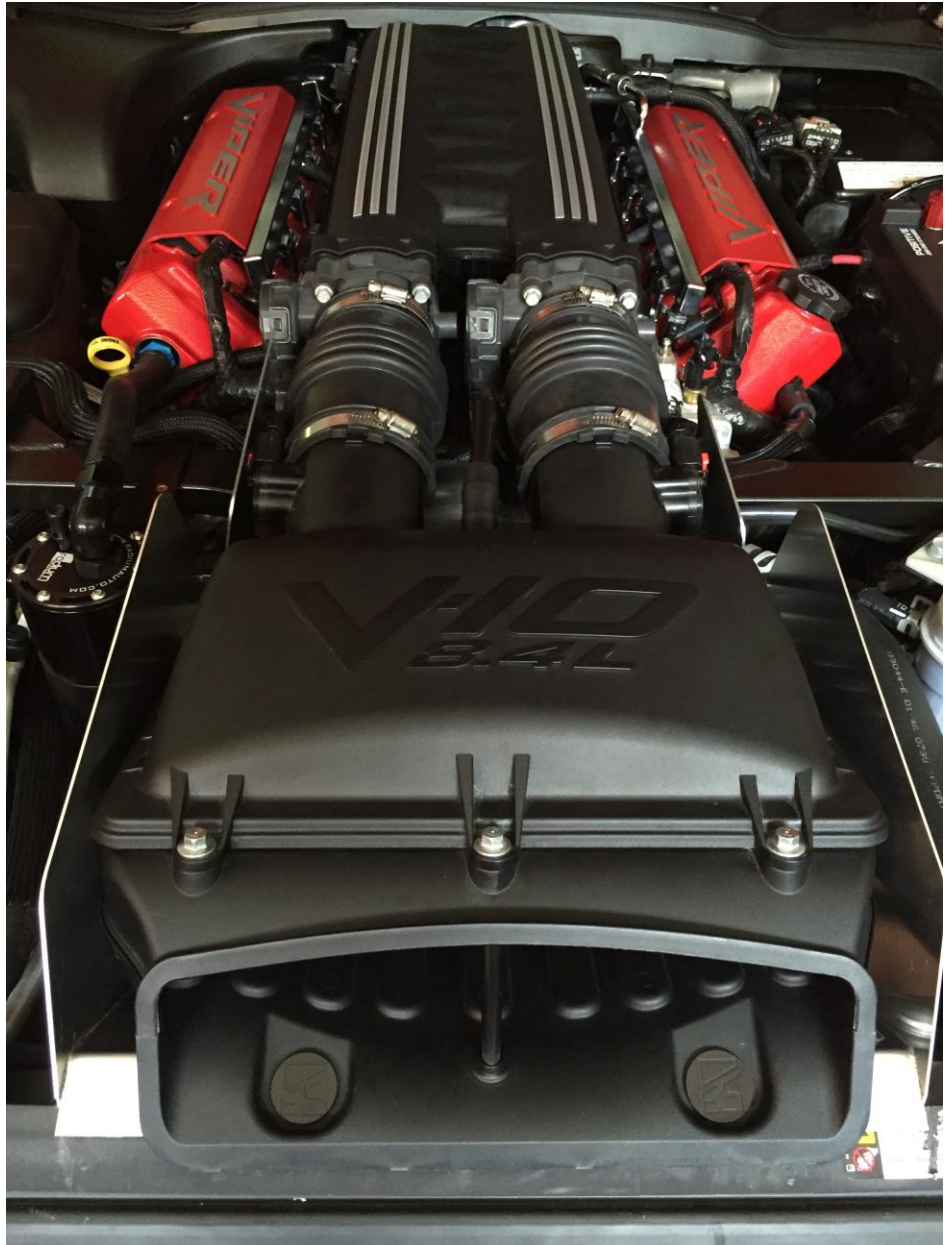
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Disclaimer of Warranty:

Seller disclaims any warranty express or implied with respect to the parts sold hereby whether as to merchantability, fitness for particular purpose, or any other matter.



Heat shield and air cleaner assembly installed (Gen IV, Uncoated Shield)

Enhancement of the shield's insulating properties:

The DSE heat shield is a great foundation for further insulation of the airbox without having to modify the OEM parts. There are many adhesive-backed insulating materials on the market. In this example, Dynamat Dynaliner was used to further improve IAT. <http://www.dynamat.com/automotive-and-transportation/car-audio/dynaliner/>

The properties of Dynaliner make it a good fit for this application:

- closed cell (no water absorption)
- designed for automotive environment (resists oil, chemicals, durable)
- 1/8" thickness (allows installation on most surfaces of the shield without interfering with fit)
- dark gray color (blends in nicely with the shield color)
- claims to have the highest heat blocking properties of any single layer synthetic foam

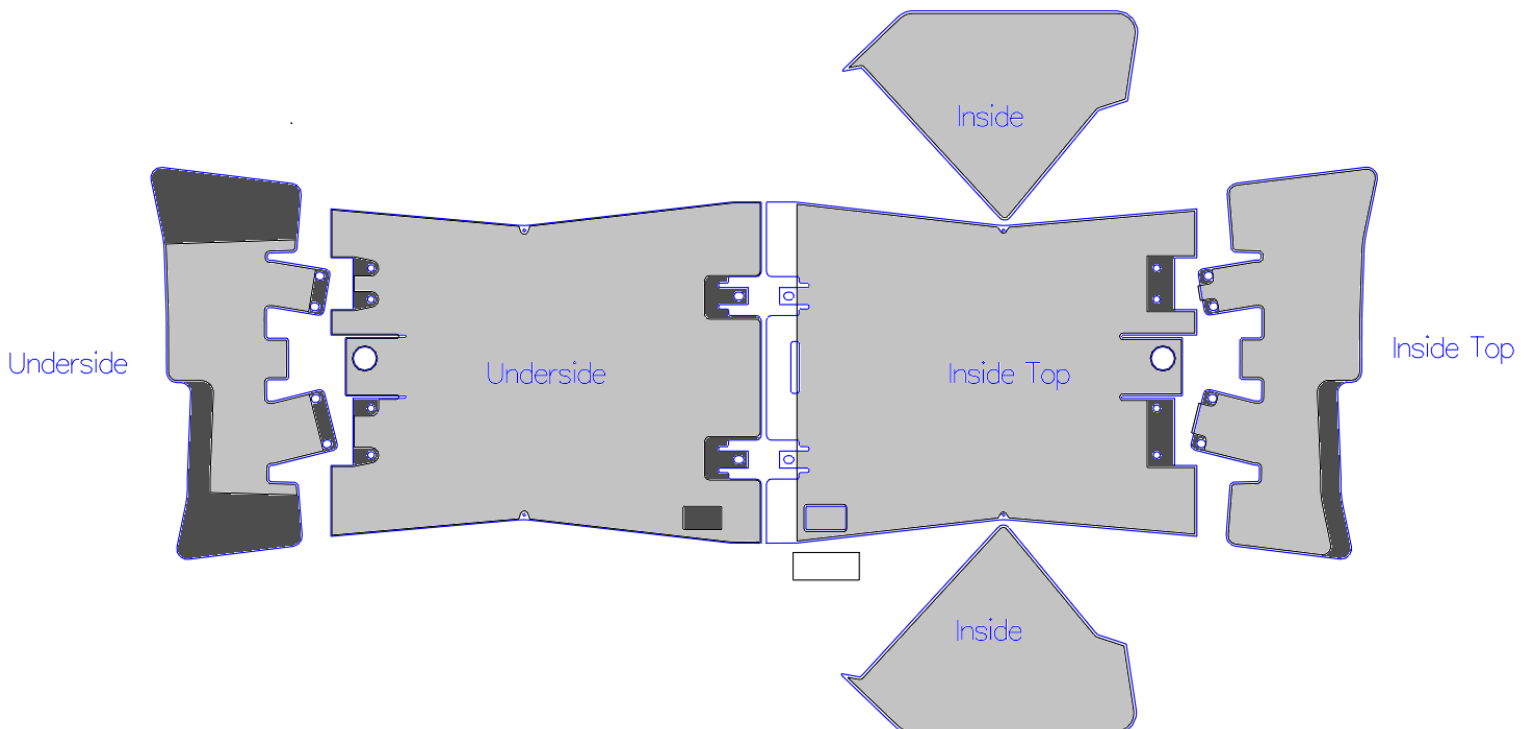
A 32" x 54" sheet of 1/8" thickness Dynaliner can be found online. This amount is good to cover most surfaces of the shield once with some to spare. In the example shown the following surfaces were covered:

- entire inside of the main shield
- bottom and inside of the tube shield
- bottom of the main shield (two layers)

The goal is to maintain the black OEM-style look on the highly visible surfaces while still improving the insulating properties of the shield. The process is as follows:

Pre-Cut Dynaliner Kit:

If you have purchased the pre-cut Dynaliner kit, review the image below to identify the correct sides for installation. Carefully overlay the Dynaliner over the shield before pulling the backing paper to familiarize yourself with the way it will lay once installed. Carefully install the Dynaliner as shown. Extra kits or extra Dynaliner can be installed as desired (on visible surfaces, etc.).



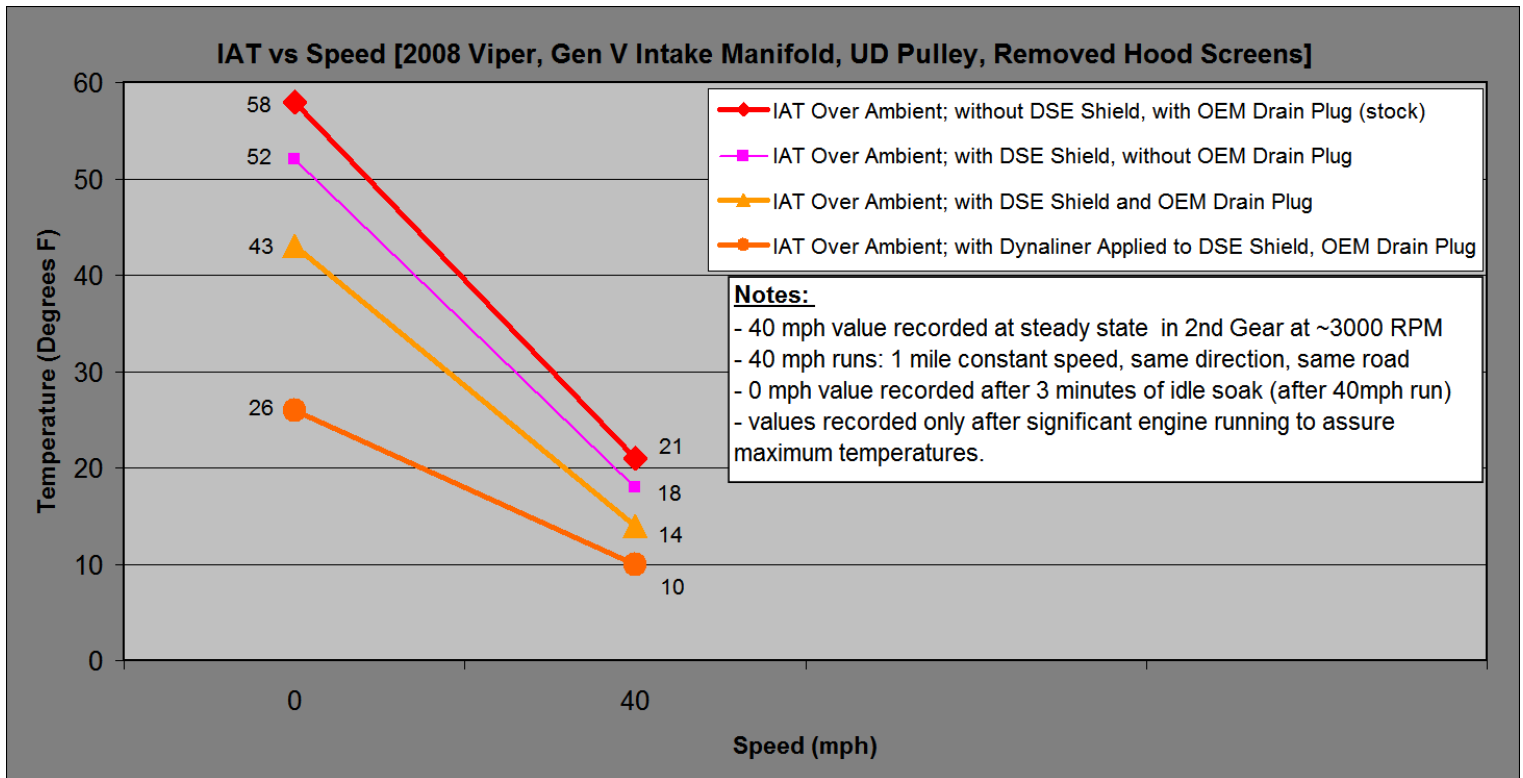
Dynaliner Reference Sheet (Uncovered Shield Shown In Dark Gray, Dynaliner Shown Light Gray)

Cutting Dynaliner to Fit:

- Trace each surface of the shield by laying it over the Dynaliner. Keep orientation in mind (which side will be sticking to the surface).
- Try to use the material in a way to avoid excess waste.
- Cut out a rough shape for each surface. Lay the Dynaliner where it will be adhered on the shield and further refine the shape.
- Cut all of the pieces to fit and lay them in place. Observe how they will lay and cut each piece to avoid any interference between them and adjacent pieces.
- Pay attention to the following critical surfaces:
 - o Adhere Only 1 layer of 1/8" Dynaliner:
 - Under the tube shield
 - Under the radiator flange
 - Inside of the main shield (Gen IV only, Gen V air boxes are raised so this clearance isn't as critical therefore two layers could be adhered to the inside bottom)
 - Inside of the tube shield
 - o Adhere no 1/8" Dynaliner:
 - Between the tube shield and main shield
 - Under the main shield / grommet area where it contacts the crossmember support
 - In the cutout / pocket of the main shield (front driver's side) that allows radiator fan clearance
 - On top of the radiator flange, especially in the center cutout section that allows air box clearance (Gen IV only, Gen V air boxes are raised so this clearance isn't as critical)
- Ensure the surface of the shield is clean and dry. Adhere the Dynaliner taking care to align before pressing it down.
- An improvement in IAT should be seen. (~4 degrees F running and ~17 degrees F soak over the bare shield)



Dynaliner Installed per Instructions



Running Test Results



Important! The air box drain plug matters!! If you do not have this plug installed, please purchase P/N 05038304AA or otherwise plug this hole for minimum IAT. Testing has shown ~4 degree F running and ~10 degree F soak higher temps without this piece.

This part has been found to be missing on many 2014+ cars.

If the OEM part cannot be found, included in every heat shield kit is the following alternative plug. The alternative can be cut as desired to drain water (recommended) or left closed for maximum reduction of IAT.

OEM P/N 05038304AA Installed



Cut here for airbox water drainage as desired. A higher cut allows for more water drainage but increased IAT. A lower cut allows for lower IAT but reduced drainage effectiveness.

DSE Alternative to OEM P/N 05038304AA
(Cut to allow water drainage from airbox)