



## R-Series® EFI Intake Manifold for 351W Ford

Thank you for purchasing Trick Flow R-Series EFI induction system for your 351W Ford.

Please follow the steps outlined in this instruction manual to ensure that the installation of your intake manifold is done correctly and that they perform according to design.

Please read all of the enclosed information before beginning any work. If you have any questions regarding installation or the written materials supplied with your new intake manifold, contact the Trick Flow technical department at 1-330-630-1555 for assistance, Monday through Friday from 9:00 am to 5:00 pm ET.

### Project Overview

- Review all paperwork included in the installation packet
- Inspect the condition and cleanliness of all components
- Verify the part numbers and quantities of each product received (see Parts Checklist below)
- Mail the warranty card to Trick Flow
- Locate recommended tools
- Purchase any additional parts needed (See Additional Parts Required section)
- Remove existing upper and lower intake
- Install the Trick Flow R-Series EFI intake manifold
- Test Drive and Enjoy!

### Parts Checklist

You should have received the parts listed here. Please verify the part numbers and quantities of each component received.

- (1) Trick Flow upper manifold (TFS-51500003-U)
- (1) Trick Flow EFI lower manifold (TFS-51500004-L)
- (1) Upper to lower manifold gasket (TFS-51522009)
- (4) 5/16" x 1 3/4" upper to lower manifold mounting studs (TFS-70000100-6)
- (4) 5/16"-24 12-point nuts (TFS-51612PTNUT)
- (2) 5/16"-18 x 6 1/2" 12-point bolts (TFS-51612PTBLT)
- (2) 3/8" NPT pipe plugs (TFS-38NPTPLUG)
- (2) Vacuum caps (TFS-EFIVCAPS)
- (1) Instruction packet (TFS-DP-9W)
- (2) 1/4" brass hose fittings (TFS-18X14VACFIT)
- (1) 3/8" brass hose fitting (TFS-18X38VACFIT)

If you are missing an item or a part was received in error, please contact Trick Flow at 1-330-630-1555, Monday through Friday from 9:00 am to 5:00 pm ET.

### Recommended Tools

- Shop Manual for your vehicle
- Basic mechanics tool set (SAE / Metric sockets and combination wrenches)
- Timing light
- Vacuum gauge
- 5/16" 12-point socket for center manifold bolts
- EFI pressure gauge
- Spring lock coupling removers: Use Ford #9D87L-9280-B for 1/2" line. You can also use a Balkamp #700-1932 kit (available from NAPA)

### Additional Parts Required

These components are required to complete the installation of your new intake manifold. Please refer to the Recommended Components chart on the Technical Specifications sheet for specific part numbers.

- Permatex Ultra Black RTV sealer
- Intake gaskets: Fel-Pro 1250 (street); Fel-Pro 1262 (race)
- Fuel resistant O-rings (only if removing fuel lines)
- Fuel injector O-rings: Balkamp 2-12085
- High flow fuel rail kit TFS-51580001
- Throttle body adapter kit (if reusing the stock 58mm throttle body): TFS-58MMADPT
- SN95 applications will also require a throttle body adapter: TFS-5150SN95

**NOTE:** The Ford Motorsports throttle body adapter does not include a vacuum port to supply the vacuum tree on the firewall.



## Removal

1. Disconnect the power supply to the fuel pump by removing the fuse or temporarily disconnecting the inertia switch. Start the engine and let it run until it stalls. This will get most of the fuel out of the fuel line.
2. Turn the engine until the #1 piston is at TDC on the compression stroke. Disconnect the negative battery cable and drain the cooling system. Make sure to use a suitable drain pan to catch the coolant.
3. Disconnect all linkages, hoses and electrical connections going to the throttle body and manifold. Remove the cover plate on the upper intake to gain access to the center mounting bolts. Loosen the center bolts and all the bolts at the base of the upper intake, and then remove the intake.
4. With the upper intake out of the way, remove the injector electrical harness and all brackets and hoses from the lower intake. Remove the distributor cap and plug wires. Mark the distributor rotor's position on the edge of the distributor, then look for a small notch on the distributor base (most OEM Ford distributors have it) that lines up with a small notch on the block. If there is not a notch there, mark the base before removing the distributor.
5. Using the spring lock coupling removers, disconnect the fuel line at the rail, then loosen the lower intake bolts and remove the lower intake. Be sure to note the position of any stud type bolts since you'll need to put them back into the original positions. The fuel rails can be removed from the lower and transferred to the Trick Flow lower on a work bench, but we highly recommend using high flow aftermarket fuel rails instead.
6. Remove the old intake gasket and end seals. If you have to scrape the gasket surfaces, make sure not to get any debris into the ports or lifter valley.
7. Clean the gasket surfaces on the cylinder heads and block end rails. Seal the oil gallery cap plug on the rear block rail with a two part epoxy. This will prevent oil from getting past the baffle on the lower intake and going directly into the cylinders.

## Installation

1. Run a ¼" bead of Permatex Ultra Black RTV sealer along the end rails. Outline the water openings at the ends of the heads with the Ultra Black to prevent leaks.
2. Place the intake manifold gaskets on the heads, making sure the sealer on the end rails overlaps all four corners of the intake manifold gaskets where they intersect.
3. On the workbench, remove the fuel rails and any sensors or fittings from the factory lower intake manifold and install them on the Trick Flow lower intake manifold. If you are reusing the OEM fuel rail, you must use the fuel line protective tubing to cover the front crossover line. Make sure the crossover line fits into the recess machined into the front of the lower intake. You may need to push the fuel rail rearward to align the mounting holes. If there are any unused holes in the Trick Flow manifold, be sure to plug them.
4. Put the Trick Flow lower intake on the block and set it down evenly. Lightly coat your original intake bolts with oil and put them in their proper holes.
5. Torque them to 12 ft.-lbs., 16 ft.-lbs., then 22 ft.-lbs. using the sequence shown in Figure 1. You must repeat the sequence until all the bolts are torqued to specification. The manifold will work its way into the proper position during this process.

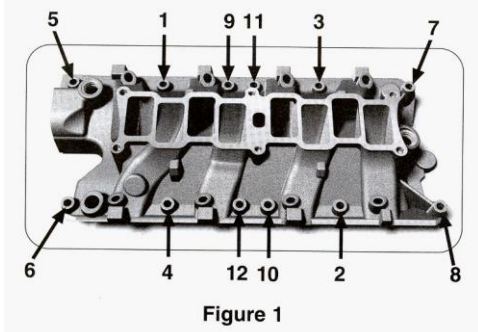


Figure 1  
TFS-DP-9W Rev. 2

**For SN95 applications using Trick Flow Valve Covers:** Install the ¼" circular spacer on the stud bolt to properly space the heater hard line. This will allow the heater hard line to clear the valve covers.

6. Reconnect the injector electrical harness and any sensor wires. SN95 applications must also grind the lower boss on the EGR flange to allow clearance when using aftermarket valve covers and cylinder heads.
7. Install the upper to lower manifold studs in the lower manifold, then set the gasket into place. Set the Trick Flow upper intake on and put the two center bolts in position. Place the nuts on the studs and torque both the nuts and the bolts in the following steps: 12 ft.-lbs., 16 ft.-lbs., 20 ft.-lbs. Be sure to tighten the fasteners in the correct sequence as shown in Figure 2.

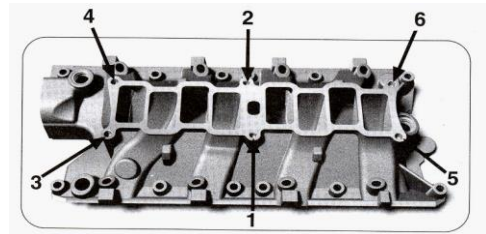


Figure 2

8. Reinstall your original throttle body/EGR plate studs in the Trick Flow manifold. Reinstall all remaining components in the reverse order of disassembly. Make sure to put the distributor back in the correct position. Adjust all control cables, fill the cooling system, and connect the negative battery cable.
9. Check for any coolant leaks or fuel leaks, then test drive the vehicle. Make tuning adjustments depending on application.

## Ultimate Bolt-On Performance® Lifetime Warranty

**Trick Flow Specialties cylinder head castings are backed by a lifetime warranty. If a cylinder head casting fails to provide the original purchaser with complete satisfaction, Trick Flow Specialties will repair or replace it free of charge — guaranteed!**

Moreover, the valves, valve guides, valve seats, valve job, valve springs, valve spring retainers, valve locks, rocker arm studs, guideplates, and valve stem seals included on assembled Trick Flow Specialties cylinder heads are warranted to the original purchaser to be free from defects in materials and workmanship for a period of two years from the date of purchase. All other Trick Flow Specialties products are warranted to be free from defects in materials and workmanship for a period of 90 days. There are no mileage limitations.

### Extent of Warranty

Customers who believe they have a defective product should return it to the dealer from which they purchased or ship it freight prepaid to Trick Flow Specialties along with proof of purchase and a complete description of the problem. If a thorough inspection indicates defects in materials or workmanship, our sole obligation is to repair or replace the product.

This warranty is only if the product is properly installed, subjected to normal use and service, did not fail due to owner negligence or misuse, and has not been altered or modified.

Trick Flow Specialties warranties do not cover any installation or removal costs.

Trick Flow Specialties is not liable for consequential damages for breach of contract of any warranty in excess of the purchase price of the product sold.

### PROPOSITION 65 WARNING

This product may contain one or more substances or chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

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