

This Instruction sheet is intended to provide assistance during installation of headers. For more detailed information and fitment recommendations for your specific application, please reference our website at www.ttiexhaust.com



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INSTALLATION INSTRUCTIONS for TTI Big Block Step Header

Part No.: **TTI440-218**


Due to the numerous engine configurations and suspension combinations, TTI cannot ensure headers and exhaust to fit all combinations, however we have done our best to accommodate both factory and aftermarket component combinations.
(e.g., Engine blocks, cylinder heads, starters, valve covers, etc.)


>>> TAKE TIME TO READ THE INSTALLATION PROCEDURES BEFORE STARTING

WARNING !!!

We strongly suggest that you use an old set of headers or a set of cast iron manifolds for first engine runs / cam break-ins to avoid coating damage. Excessive heat damage to the ceramic coating will **VOID** all warranties.

Header coating damage usually occurs during the first engine run when the exhaust temperatures exceed 1200°F. Excess exhaust temperatures are normally caused by excessively lean or excessively rich air/fuel mixtures and/or incorrect ignition timing.

 **Please take all under car safety precautions when** installing headers, including eye protection. When raising vehicle, use an appropriate lifting device and place on jack stands as a safety measure. Caution! Bumper jacks are intended for emergency use only and should not be used to support vehicle.

 **First check your Engine Location** - K-members are not all identical and the dimensions must be checked to ensure proper fit. Check your engine location prior to installation of your TTI Headers. TTI Headers were designed to fit with the engines located to the factory specifications. If the engine is not located correctly in the chassis, the headers will not fit properly. If necessary, place shims between the insulator assembly and the K-frame mounting pad to achieve the proper dimensions. Shim kits and engine mounts can be purchased from Schumacher Creative Services of Seattle, WA (206) 364-7151.

- **62-65 B-body applications:** From the center of the crankshaft to the top of the K-frame, the correct distance is 5-1/4". The engine is also offset towards the passenger-side. Measure from the center of the crankshaft to each frame rail. The difference should be 3".
- **67-76 A-body / 66-74 B-body / 70-74 E-body applications:** From the center of the crankshaft to the top of the K-frame, the correct distance is 5-1/4". The engine is also offset towards the passenger-side. Measure from the center of the crankshaft to each frame rail. The difference should be 2-1/2".

With the engine mounted in the correct location the headers will fit properly.

1. Disconnect the negative cable from the battery terminal.
2. Disconnect the plug wires and remove all of the spark plugs. Remove the cast iron manifolds and the stock exhaust pipes. If you are installing the complete TTI Exhaust System, then remove and discard your entire stock exhaust system, including hangers.
3. Raise the front of the vehicle with an appropriate lifting device and place on jack stands.
 - A-body vehicles will require the following: Unload and remove the torsion bars. Count the number of turns on the adjustment screw when unloading the torsion bars so you can return the pre-load to the same position. Also, be sure to mark the torsion bars for indexing before removal so you are able to re-install them in exactly the same position as they were.
 - Drain the engine coolant into a suitable container before removing the exhaust studs from the cylinder heads.
 - It is necessary to use the supplied header bolts to fasten the header to the cylinder heads on A-body's.

4. Disconnect the electrical cables to the starter and remove the starter motor.
 - B & E-body vehicles: The headers can be secured with the stock studs or with header bolts. If using studs the 2nd stud from the front must be shortened for the tube clearance on both sides.
 - Standard Shift Only: Disconnect and remove the Z-bar. The Z-bar will be reinstalled after the header is in place. Remove the oil stick tube.
5. Automatic Transmission / Kick-down linkage: No modification is required on models with the single section transmission throttle rod.
 - Three section Throttle Rods require modification of the swivel assembly (Bell crank & Rod) to clear the header tubes. See the Throttle Rod modification instructions on our sheet #101.
 - B & E Models with Automatic Transmission and Floor Shift, re-position the adjustable swivel and the lower rod attached to the torque shaft lever. Move them to the upper side of the torque shaft lever to clear the header collector. See the modified Torque Shaft Lever illustration on our sheet #3703.
6. Now is a good time to check the condition of your engine mounts. If they are worn or deteriorated, replace them now. When the engine is mounted correctly the headers will fit correctly. It is common on A-body installations to shim the mounts to achieve the proper engine location.

Recommendation when installing header gaskets: Use a very thin layer of High-Temp Silicone Sealer on each side of gasket.

7. Passenger-side Header: Check the sealing surface of the exhaust ports to insure they are clean. Place the supplied header gasket into position on the studs. Turn the steering wheel to the full left position. Insert the header into position from under the car. Use the original studs and nuts or the provided header bolts to secure the header to the cylinder head. Tighten the center bolts first then the end ports. Torque the bolts to 35 lbs. evenly to insure a proper seal.
 - It may be necessary to raise the engine if you are using the original studs to secure the header to the cylinder head.
8. Drivers-side Header: Remove the drivers-side engine mount bolt and raise the engine up approximately 1-1/2". Use a block of wood between the oil pan and the floor jack. Turn the steering wheel to the full right position.
 - Check the sealing surface of the exhaust ports to insure that they are clean. Place the supplied header gasket into position on the studs. Insert the header into position from under the car. Before fastening the header to the cylinder head place the starter motor into position and tighten the fasteners. Now, lower the engine back down on to the K-frame and re-install the engine mount bolt. Secure the header to the cylinder head. Use the original studs and nuts or the provided header bolts. Tighten the center bolts first then the end ports. Torque the bolts to 35 lbs. evenly to insure a proper seal. Connect the wiring to the starter. Adjust the wiring to insure that there is absolutely no contact with the header. A minimum of 3/8"+clearance is required between the header and the wiring.
 - Due to variations in the routing of brake lines, it may be necessary to re-position a brake line to achieve adequate clearance from a header tube. A minimum clearance of 1/2" from a header tube is required. Insert the oil stick tube into position. Some designs fit between the header flange and the #1 cylinder tube, some fit outside of the #1 header tube. Slight bending may be required for proper fit.
 - Re-install the clutch Z-bar at this time.
9. Attach the adapter / reducers to the header collectors with the nuts, bolts and gaskets provided. The adapter / reducers may need to be shortened for your application.
10. Re-install the spark plugs, wires and engine coolant. Re-connect the negative battery cable.

11. Now that your headers are installed, wipe down the tubes with hot soapy water or an environmentally safe Orange Cleaner Degreaser and a soft cloth to remove any grease or skin oils (finger prints) from the header tube surface. Never use abrasive cleaners.

- It is normal for Chrome plated headers to discolor almost immediately after firing-up engine.
- To insure years of service from your ceramic-coated headers it is suggested to follow our Header Maintenance & Care procedures.

12. Start the engine and check for leaks.

 **Re-torque all of the header bolts after approximately 50 miles of driving**

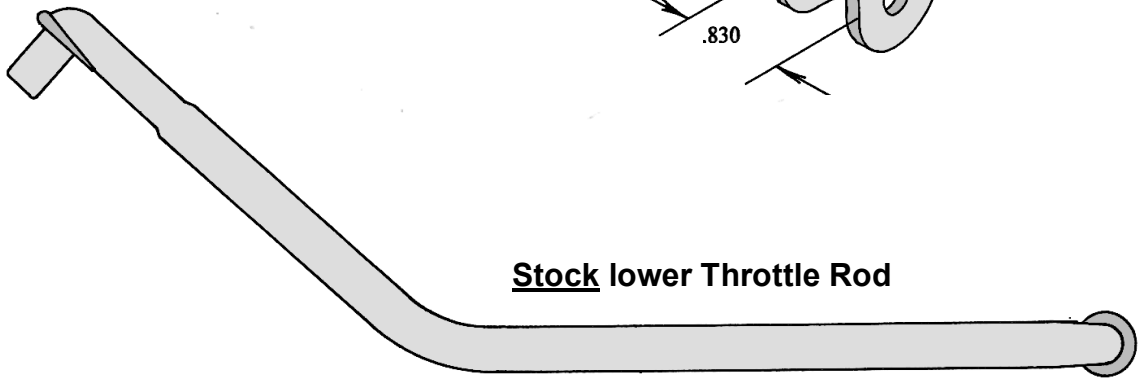
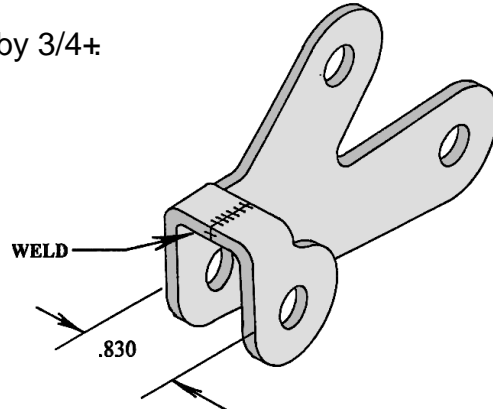
Coupled with a TTi Exhaust Systems these headers become even more efficient!

Qty.	Parts List
(2)	Header Gaskets
(12)	Header Bolts 3/8-16x1
(2)	Header Reducer Adapters (aluminized tubes with welded 3-bolt flanges)
(2)	3-bolt Collector Gaskets
(6 sets)	Reducer Adapter Hardware (3/8+bolts, nuts & washers)

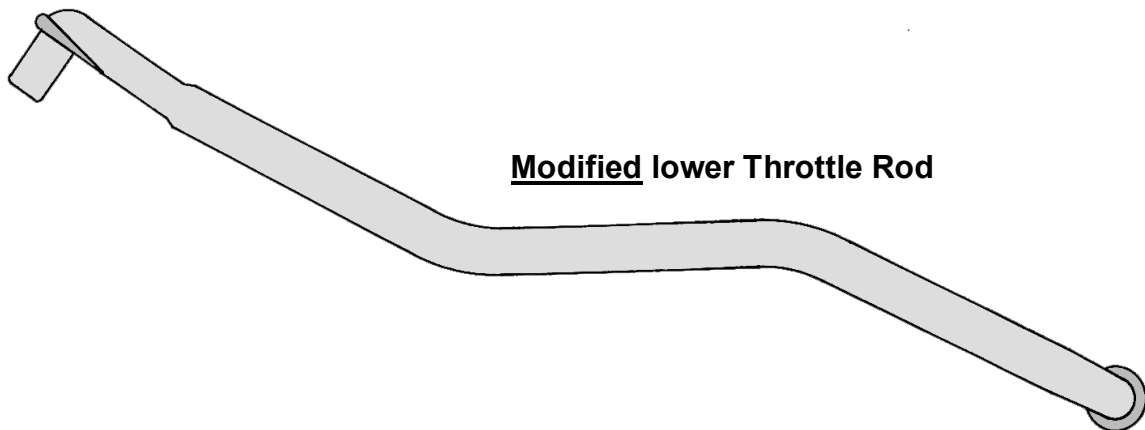
Applications with a 3-section Throttle Rod will require modification to the bellcrank and the pivot shaft when installing:

- TTI 1-3/4+Headers
- TTI 2+Headers
- TTI Exhaust Pipe part nos: A25LE, E25LE3 & E30LE3

1. The bellcrank and the pivot shaft must be shortened by 3/4+.
2. Weld the bellcrank back together as shown.
3. Re-bend the lower throttle rod as shown.



Stock lower Throttle Rod



Modified lower Throttle Rod

Automatic Transmission with Floor Shifter will require repositioning of the adjustable swivel and lower rod attached to the torque shaft lever. Move them to the upper side of the torque shaft lever to clear the header collector. Some models will require additional modification for clearance of the shifting lever. (See diagram)

The support bracket is cut through and overlapped approximately 1/4" and re-welded, making it shorter and moving the shift lever away from the collector.

