

TTI Performance Exhaust and Headers Tube Technologies, Inc. Corona, California 92880-1726 Phone (951) 371-4878

www.ttiexhaust.com

HEADER INSTALLATION

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Parts List	Sheets attached
 Driver side header Passenger side header Header gaskets 5/16"-18x1 Header bolts 	#708MC/708WA
 (2) Header reducer adapters w/ 3" 3-bolt collector flange (2) 3" 3-bolt gaskets (6 sets) 3/8" bolts, washers & nuts 	

Thank you for choosing TTi Performance Headers!

Due to the numerous engine configurations and suspension combinations, we 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.

For further product details, footnotes & fitment information, please visit our website <u>www.ttiexhaust.com</u> or call (951)371-4878.

BEFORE STARTING

READ the entire installation instructions and understand each of the steps involved with the installation. Review all modification sheets and/or diagrams.

CAUTION - Allow time for vehicle to cool down prior to the installation. Wear protective safety equipment; Eye goggles and gloves.

Use an appropriate lifting devise to raise the vehicle; Floor hoist or hydraulic floor jack with jack stands. Do not use bumper jacks!

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.

CHECK your engine location - All K-members are not identical and the dimensions must be checked to ensure proper fitment of the headers or exhaust system. If the engine is not located correctly in the chassis our products will not fit properly. If necessary place shims between the insulator assembly and the K-frame mounting pad to achieve the proper factory dimensions.

Shims: For small position adjustments, shim packs are available through Schumacher Creative Services of Seattle, WA.

From the center of the crankshaft to the top of the K-frame the correct distance is (**A**). The engine is also offset towards the passenger-side (**B**). Measure from the center of the crankshaft to each frame rail, the difference should be (**C**).

Factory Engine Location	A (inches)	B (inches)	C (inches)
63-66 A-body	4-3/4	5/8	1-1/4



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DISASSEMBLY

- 1. Disconnect the negative cable from the battery terminal.
- 2. Raise the front of the vehicle with an appropriate lifting device and place on jack stands.
- 3. Disconnect the plug wires and remove all of the spark plugs.
- 4. Remove the cast iron manifolds and the stock exhaust pipes. If you're replacing the exhaust system, remove the entire exhaust, including hangers.
- 5. Remove the oil filter.
- 6. Remove the starter motor.
- 7. On the passenger-side, remove and discard the brace between the engine and the transmission.
- 8. 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.
- 9. Use a pickle-fork to disconnect the ball joint on the tie rod at the center link and swing away.
- 10. Disconnect the center link from the pitman arm and swing the center link away. Disconnect the steering wheel shaft from the steering box. (Refer to a shop manual for the proper procedure)

Power Steering - Disconnect the power-steering hoses and remove the power-steering box. The steering wheel shaft will pass through the header when re-installed.

Manual Steering - The steering wheel shaft will pass through the header when re-installed.

- 11. Remove the torsion bar. The torsion bar will pass through the header when re-installed. (Refer to a shop manual for the proper procedure)
- 12. **Standard Transmission** Remove the Z-bar.
- 13. **Casting Ear** It will be necessary to trim the casting ear by 3/8" for header tube clearance.

DRIVER-SIDE INSTALLATION



Casting Ear – Trim by 3/8"

- 14. Remove the nut from the lower side of the engine mount rubber insulator. Using a floor jack and a block of wood under the oil pan, raise the engine up on the drivers-side approximately 1". Check the cylinder head sealing surface of the exhaust ports to insure they are clean.
- 15. Place the supplied header gasket onto position on the studs. Insert the header into position from under the car and let it hang loose by one header bolt. Before bolting to the cylinder head, place the steering box into place and attach with the (3) bolts. Lower the engine and place the header into position on the cylinder head. Use the original studs & 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 25ft. lbs. evenly to insure a proper seal.

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

16. **Re-install driver-side disassembled components** - In reverse order, re-install all of the disassembled components. Be extremely careful to re-install all nuts, bolts and pins that were removed. Install motor mount nuts.

Starter - Install the starter and connect the wiring. Adjust the wiring to insure that there is absolutely no contact with the header.



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17. **Brake Lines** - Due to variations in the routing of brake lines, it may be necessary to re-position a brake line to achieve adequate clearance from tubes. A minimum clearance of ½" from a header tube is required.

PASSENGER-SIDE INSTALLATION

- Using a pickle fork, disconnect the tie rod at the center link and swing away. Remove the torsion bar. (Refer to a shop manual for the proper procedure) The torsion bar will pass through the header when re-installed.
- 19. Check the cylinder head sealing surface of the exhaust ports to insure they are clean. Place the supplied header gasket onto position on the studs. Insert the header into position from under the car and let it hang loose on the studs.
- 20. Oil Filters An OEM 90° adapter or a remote mount oil filter must be used when installing our headers.

Place the 90° oil filter adapter onto position and attach with a $\frac{3}{4}$ " hex head bolt or a modified 1-3/16" hex bolt.

Note: Oil filter adapters are supplied with either a 3/4" or a 1-3/16" hex head mounting bolt. If your adapter came with the 1-3/16" bolt, modification will be required by machining bolt head to .175 thickness.



- 21. Use the original studs & nuts or the provided header bolts to secure the header to the cylinder head. Check for clearance between the header tubes and the 90° filter adapter hex head bolt. Tighten the center ports header bolts first, then the end ports. Torque the bolts to 25ft. lbs. evenly to insure a proper seal.
- 22. Now, install the oil filter.
- 23. **Re-install passenger-side disassembled components** In reverse order, re-install all of the disassembled components. Be extremely careful to re-install all nuts, bolts and pins that were removed.

Re-connect the negative battery cable.

24. Attach the supplied Header reducer adapters directly to the 3-bolt header collectors using the provided nuts, bolts and gaskets. (Header reducer adapters transition headers to the exhaust system)

FINAL STEPS

25. 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.

To insure years of service from your headers follow our Maintenance & Care instructions.

- 26. Start the engine and check for leaks.
- 27. Re-torque all of the header bolts after approximately 50 miles of driving.



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MAINTENANCE & CARE

Helpful hint to extend the life of your Headers and Exhaust System...

Exhaust corrosion will occur if moisture (condensation) is not cleared out of the tubes. Make sure that the vehicle is driven at least 20 to 30 minutes whenever the car is started to completely dry out all liquid / acid that is created by the combustion process in the engine. Failure to do so will cause pre-mature rotting of the tubes from the inside out.

Headers

TTi strives to offer the highest quality header coatings available on the market today. However, high performance coatings do require care and maintenance. The following tips are suggested to insure years of service of your Nickel-Chrome, Ceramic-Coated, Polished Ceramic Coated & Stainless Steel Headers.

Warning: First Engine Runs - 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. For this reason we strongly suggest that you use an old set of headers or a set of cast iron manifolds for your first engine run / cam break-in. This will insure that you will not damage the coating or void the warranty of your new TTi ceramic-coated headers.

After Header Installation and Before Engine Run - Remove grease and/or skin oils from the header tube surface. Stains & fingerprints will show when header gets hot.

- Nickel Chrome Plated Headers: Wipe down tubes with rubbing alcohol and a soft cloth, dry thoroughly.
- Ceramic Coated, Polished Ceramic Coated and Stainless Headers: Wipe the tubes down with an environmentally safe Orange Cleaner Degreaser or mild soap, warm water and a soft cloth, dry thoroughly.

When storing your car for an extended period of time, some precautions must be taken. Park the car over a large sheet of plastic or tarp. This will protect your car and headers from moisture seeping up through the floor. Wipe down and dry the headers thoroughly. Then coat the headers with WD-40 or an equivalent where the tubes are welded to the header flanges and where the tubes come in close proximity to each other (especially where the four tubes enter into the collector). These areas are prone to rusting, as the coating is unable to get between the tubes in the unexposed areas of the header. If rust occurs, it will travel into and under the coating and create a stain. When you are ready to start the car after storage, wash the WD-40 off by following the cleaning procedures.

Cleaning: Road grime / Oil / Grease / Surface deposits (surface rust) from water or other liquids

- Use an environmentally safe Orange Cleaner Degreaser, warm water and a soft cloth. Two or Three cleanings may be required. Be sure to dry thoroughly.
- Use cleaning compounds like, Nevr-Dull, Mothers or The Wax Shop and about 15-20 minutes of elbow grease.
- Stainless Steel: Nevr-Dull Wadding Polish

Polish to Revitalize Coating

- Nickel Chrome Plating: Bluing / discoloration is inevitable. You cannot remove it, although there are products that claim to do so like, Blue-Job Chrome Polish.
- Ceramic Coated / Polished Ceramic Coated: Mothers PowerMetal or Nevr-Dull.

For More Aggressive Cleaning: Stains / Baked-on Oils or Fluids / Melted-on Microfiber Towels or Plastic Grocery Bags (Yes, this happens a lot)

Try a Super-fine "0000" Steel wool pad or use an Ultra-fine Scotch-brite pad. If all else fails, spray paint! Use Krylon 1402 High Heat Spray Paint – Aluminum color. Once headers heat up, color will or should blend.

Unfortunately, you cannot bring back a "High Luster" Polish appearance (C3 & C5 - Coating Option).



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90-DAY LIMITED WARRANTY

Mfg. by Tube Technologies, Inc. (TTi)

TTi warrants all products to the original purchaser to be sold free of defects in material and workmanship for 90-days from date of purchase. In the event of an alleged defect in material or workmanship contact TTi at (951) 371-4878. Please provide a proof of purchase reference at time of call for quicker look-up. Ex: Invoice #, Packing List # or Sales Order #.

TTi does not warrant products that have been damaged caused by abuse, neglect, accident, improper installation or use on other applications other than recommended by TTi Performance Exhaust and Headers. Under no circumstances will TTi replace, repair or refund any product that has been altered in any way, mutilated or shows evidence of the use of insulating wrap products. TTi will not warranty cost of removal or re-installation of a product or will not be responsible for any shipping charges incurred. TTi will not assume responsibility for mufflers meeting individual customer's preference or the specific sound ordinances in any city, county and/or state. TTi reserves the right to make changes in design, materials and specifications or to make product changes as deemed necessary without prior notice.

Return Policy

Returned merchandise is subject to a 10% restocking fee. TTi does not refund freight. Contact TTi at (951) 371-4878 or the Authorized TTi Distributor from whom the merchandise was purchased through to receive a "Return Merchandise Authorization Number" (RMA #). Proof of purchase required! (Invoice, Packing List or Sales Order #) Return the merchandise along with a copy of your proof of purchase to: TTi Returns Dept. • 1555 Consumer Circle • Corona, CA 92880. Enclose a written reason for the return with a contact phone number and clearly write the RMA # on the outside of the box. Merchandise must be received in resalable condition. Final issuance of credit / refund is subject to receipt and inspection of merchandise by Tube Tech. Inc.

Note: Parts damaged in transit due to insufficient packaging may incur repair charges by TTi.

For general packaging guidelines to help prepare your package for safe shipping read our Packaging Guidelines & Procedures.

2-YEAR LIMITED CERAMIC COATING WARRANTY

by Engineered Applications L.L.C.

In the event of an alleged defect in the coating; peeling, chipping, flaking or rusting, complete a "Coating Warranty Return Form" and return it along with parts to: Engineered Applications. Proof of Purchase required! (Invoice or Packing List)

Final determination of warranty is subject to receipt and inspection of parts by EA. EA will not accept liability for products that have been damaged caused by abuse, neglect, accident, improper installation, shows evidence of insulating wrap products or show evidence of adverse conditions such as; High heat temperatures encountered during engine break-in.

Note: Engineered Applications sole responsibility is strictly to strip-off existing coating, recoat and return it back to you. EA will not warranty any labor related costs.