



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

www.ttiexhaust.com

Header P/N: TTi 400IB-218

HEADER INSTALLATION

Parts List	Sheets attached
(1) Driver side header	#307ZB
(1) Passenger side header	#101
(2) Header gaskets	#3703
(12) 3/8"-16x1 Header bolts	#708MC / #708WA
(2) Header reducer adapters w/ 3.5" 3-bolt collector flange	
(2) 3.5" 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 www.ttiexhaust.com 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 device 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 Locations – B/RB	A (inches)	B (inches)	C (inches)
67-76 A-body	5-1/4	1-1/4	2-1/2
62-65 B-body	5-1/4	1-1/2	3
66-74 B-body	5-1/4	1-1/4	2-1/2
70-74 E-body	5-1/4	1-1/4	2-1/2



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Page 2 of 3

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. **A-body vehicles:** 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. 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.
6. Drain the engine coolant into a suitable container before removing the exhaust studs from the cylinder heads.
7. Disconnect the electrical cables to the starter and remove the starter motor.
8. **Standard Transmission:** Disconnect and remove the Z-bar. The Z-bar will be reinstalled after the header is in place. Note: A-body applications will require a TTI modified Z-bar. [See sheet #307ZB]
9. Remove the oil stick tube.
10. **Automatic Transmission:** Applications with a three (3) section throttle rod will require modification to the swivel assembly to clear the header tubes. [See sheet #101]
No modification required on models with the single section transmission throttle rod.
11. **Automatic Trans / Floor Shift:** B & E-body applications will require repositioning the adjustable swivel and the lower rod attached to the shift lever to clear the header collector. [See sheet #3703]
12. 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.
A-body applications – It is common to shim the mounts to achieve the proper engine location.

PASSENGER-SIDE INSTALLATION

13. 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. Turn steering wheel to the full left position. Insert the header into position from under the car. Use 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.
B & E-body applications - The original studs and nuts may be used to secure the header to the cylinder head. However, the second (2nd) stud from the front must be shortened for the tube clearance on both sides. It may also be necessary to raise the engine when using the original studs. Note: A-body's must use the supplied header bolts.

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

DRIVER-SIDE INSTALLATION

14. Remove the 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 full right position.
15. 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.



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Page 3 of 3

Before fastening the header to the cylinder head, place the starter motor into position and tighten the fasteners.

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

16. Lower the engine back down on to the K-frame and re-install the engine mount bolt.
17. Now, secure the header to the cylinder head using 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.
18. Connect the wiring to the starter. Adjust the wiring to insure that there is absolutely no contact with the header tubes. A minimum of 3/8" clearance is required between the header and the wiring.
19. 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 1/2" from a header tube is required.
20. 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.
21. **Re-Install** the clutch Z-bar, the spark plugs, wires and engine coolant.
22. **Re-connect** the negative battery cable.
23. To transition headers to your exhaust system, attach the supplied **Header reducer adapters** directly to the 3-bolt header collectors using the provided nuts, bolts and gaskets.

FINAL STEPS

24. 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.

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



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Sheet #307ZB / Footnote #55

**B, RB & Hemi Z-BAR
 for A-bodies with
 Standard Trans**

For Standard Trans applications in A-body chassis with clearance issues using the stock Z-bar.

For use with TTi Headers: #TTi383440-134, TTi440-200, TTi400SR-218, TTi400IB-218, TTiHEMI625-218, TTiHEMI625-214 and TTiHEMI218A.

Note: TTi does not make a modified Z-bar for all header/vehicle applications.

TTi Modified Z-bar Part No. ZB307



Recommended Bellhousing Ball Stud Bracket
 Brewer's Performance part #BSB271
 Brewer's Performance Inc.
 Ludlow Falls, OH 45339 (937)698-4259

It will be necessary to grind-down bracket

Modified bracket

Unmodified bracket



Ground down for clearance

Check for proper operation prior to installing the headers.



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Sheet #101 / Footnote #36

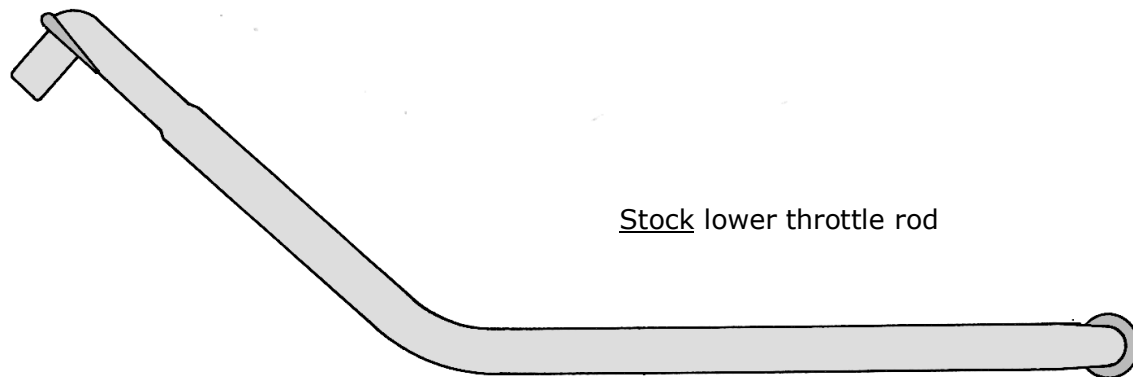
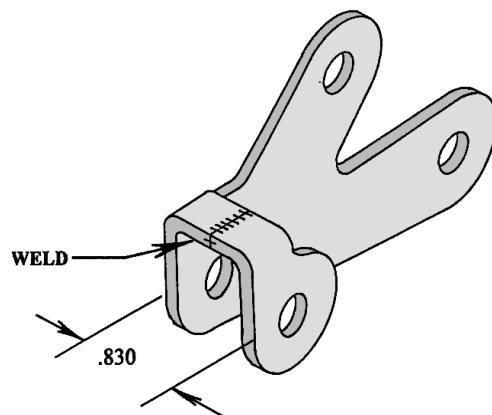
3-section throttle rod swivel assembly modification

Applications with a 3-section throttle rod may require modification to the bell-crank and the pivot shaft to clear the header tubes or exhaust pipes.

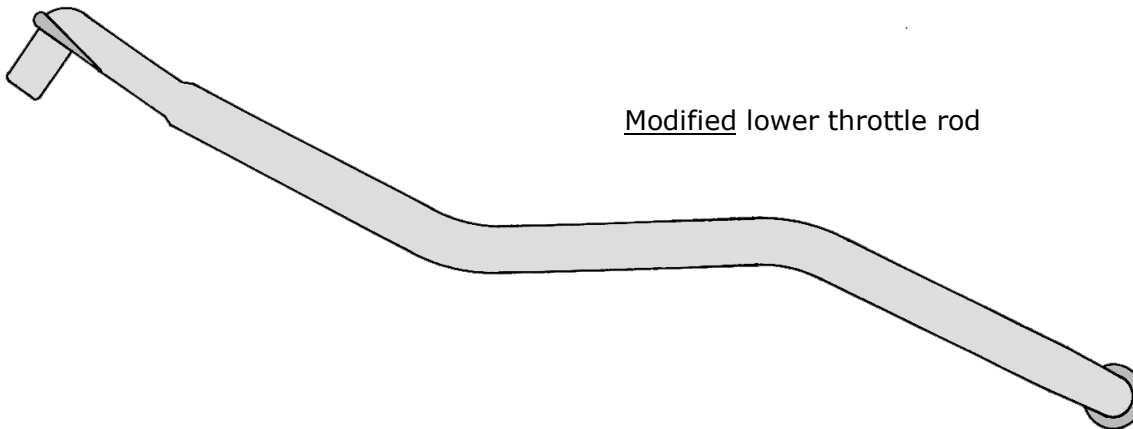
Big Block Headers: Modification may be required when installing some headers.

Exhaust-pipes (to stock manifolds): Modification will be required when installing listed pipes; A25LE, E25LE3 and E30LE3.

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



Stock lower throttle rod



Modified lower throttle rod



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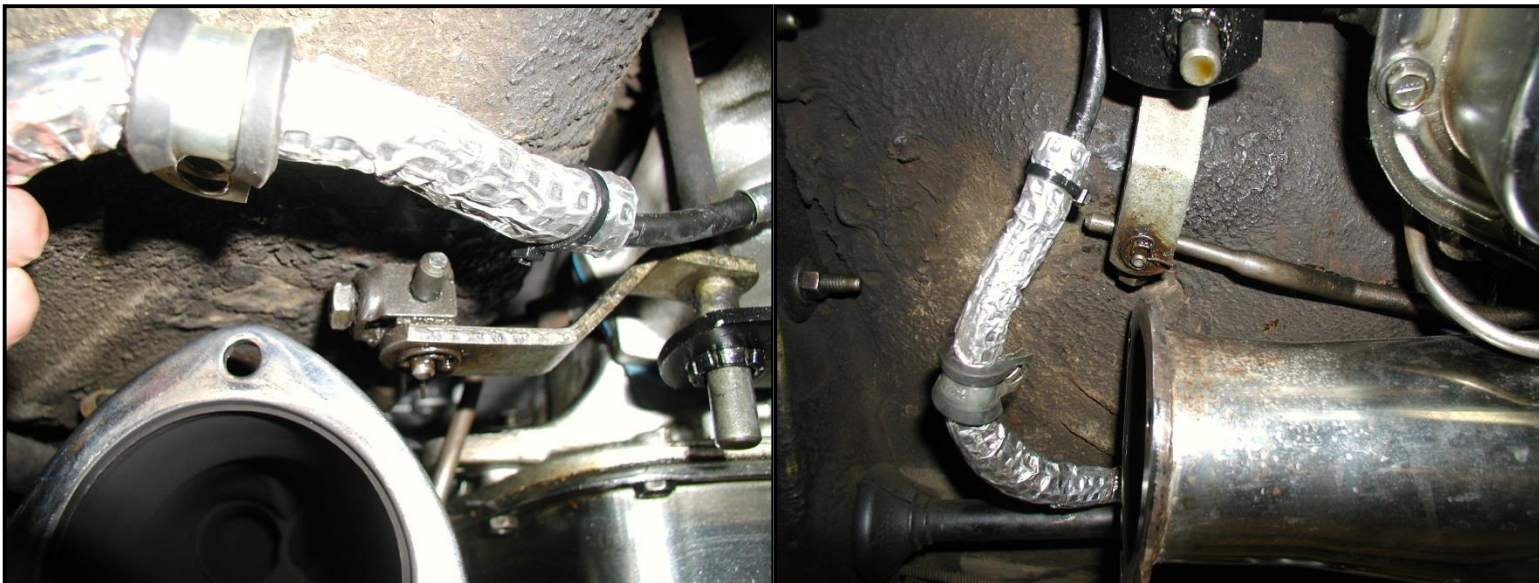
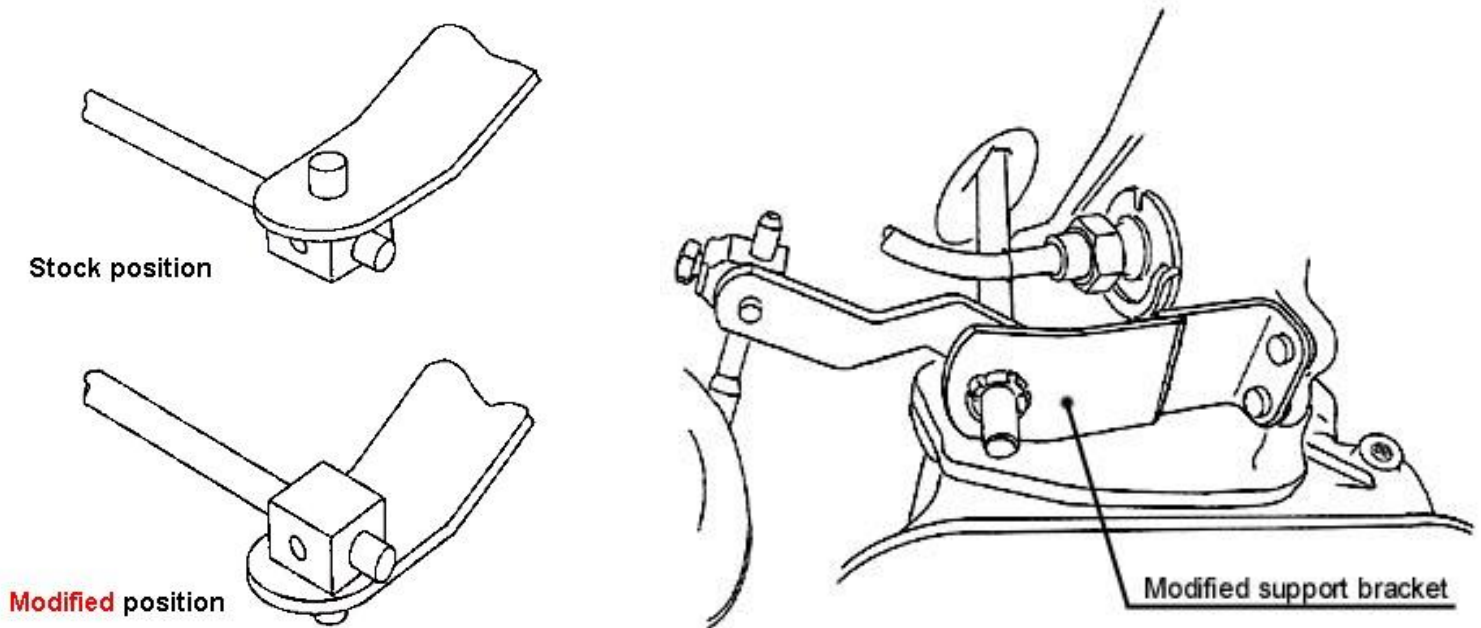
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Sheet #3703 / Footnote #23

TORQUE SHAFT LEVER REPOSITIONING Auto Trans with Floor Shift

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.





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Sheet #708MC

MAINTENANCE & CARE

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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Sheet #708WA

LIMITED WARRANTY

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.