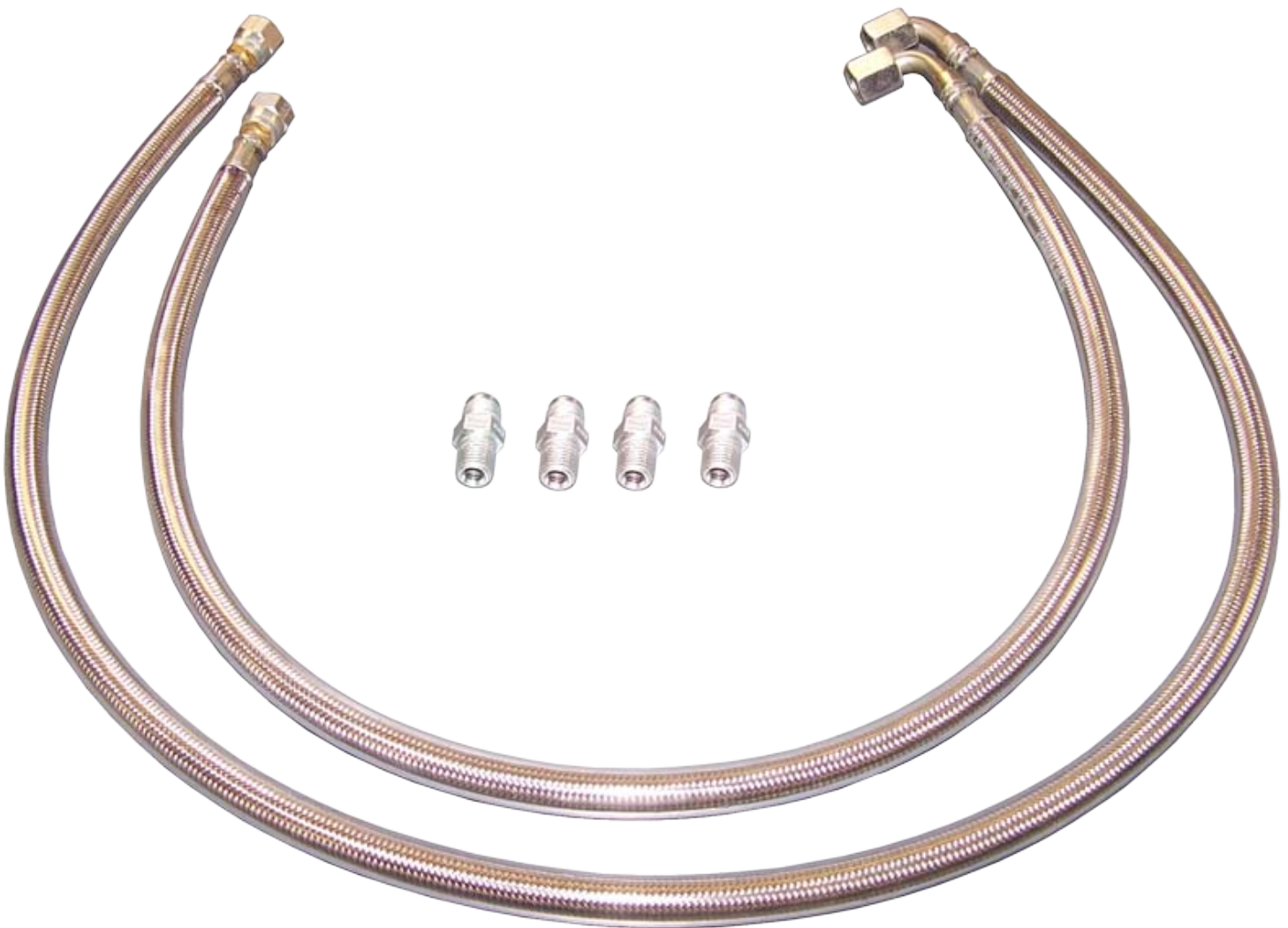




DRIVEN DIESEL COOLANT RETURN KIT



INSTALLATION INSTRUCTIONS

Necessary Tools:
Sharp ¼-18 NPT Tap
Electric or Air Drill
7/16" Drill Bit (smaller sizes recommended too)
Combination Wrench or Socket Set

NOTE: THIS INSTALLATION GUIDE ASSUMES THAT THE CYLINDER HEADS ARE ALREADY REMOVED FROM THE ENGINE FOR OTHER PURPOSES. IF YOU NEED HELP WITH THE REMOVAL OF THE CYLINDER HEADS FROM YOUR ENGINE, PLEASE CONSULT AN APPROPRIATE SERVICE MANUAL FOR YOUR VEHICLE.

PLEASE READ THIS ENTIRE INSTALLATION GUIDE AND REVIEW THE PHOTOS THOROUGHLY BEFORE BEGINNING THE INSTALLATION. WE'VE TRIED TO BE AS DETAILED AS POSSIBLE WITH OUR INSTRUCTIONS BUT IT IS ALWAYS HELPFUL TO BE AWARE OF THE NEXT STEPS WHEN DOING THIS TYPE OF WORK. USING THE PHOTOS OF THE COMPLETED INSTALLATION AT THE END OF THE DOCUMENT AS A REFERENCE THROUGHOUT THE INSTALLATION WILL ALSO HELP GUIDE YOU.

1. Please ensure that you have a clean work surface and some sort of clean towel or pad to lay the cylinder heads on. You don't want to damage the gasket surface of the head while performing this installation.
2. We find it helpful to lay the heads on the bench as they will be installed in the vehicle. This would be with the intake ports "in" and exhaust ports "out". Locate the heads with the stock fuel inlet ports (front of the head) AWAY from you. You should be looking at the rear of both heads as if you were sitting in place of the transmission.
3. Before you go any farther, if you are using an aftermarket fuel system (like our Driven Diesel Regulated Return Kit), it's HIGHLY RECOMMENDED that you install the rear fuel lines in the rear fuel ports of the heads and orient them as they would be when in the truck. You are going to be marking and drilling the cylinder heads in the upcoming steps and you need to make sure that the fittings and hoses you are about to install don't interfere with the fuel lines from your fuel system kit. See FIGURES 1a, 1b and 1c.
4. In order to gauge clearance, we recommend that you screw one of the included fittings into the straight end of one of the hoses. Using FIGURES 2a and 2b as a guide, use the assembled hose and fitting to identify where you are going to drill the cylinder head and mark the location with a scribe or felt tip marker. Pay attention to both the location of the hole AND the angle you need to drill it, you may not be drilling perpendicular to the surface of the head if a slight angle is needed to clear your fuel system components or to clear the socket or wrench needed to install the fitting. The driver side fitting may need some additional angle for the hose to clear the cylinder head casting that can be seen in FIGURE 1c.

NOTE: IT MAY BE NECESSARY TO SLIGHTLY BEND THE FUEL LINES OF YOUR AFTERMARKET FUEL SYSTEM TO MAKE THE REQUIRED CLEARANCE FOR THE COOLANT RETURN LINE TO FIT. WE HIGHLY RECOMMEND MAKING ANY FUEL LINE ADJUSTMENTS AND RE-VERIFYING CLEARANCE BEFORE DRILLING THE HEADS...MEASURE TWICE, DRILL ONCE!

5. This would be a good time to flip the head over and look at the port you're drilling into. It's always a good idea to know what's behind where you are drilling. See FIGURE 3.
6. Once you've got the heads marked for the final location for the holes, it's time to start drilling. Starting with a small bit, drill a pilot hole. Remember that these holes may not be getting drilled perpendicular to the surface you are drilling on, make sure you pay attention and drill the hole at the angle the fitting needs to be installed. Work your way up in bit size until you have drilled the final hole at 7/16".
7. Using an oiled and SHARP ¼-18 National Pipe Thread (NPT) tap, start to cut the threads of your holes. Hold the tap at the same angle as you drilled the holes, and after every full turn, back the tap off ¼ turn before tapping further. If the tap flutes get too filled up with shavings, remove the tap, clean it off, re-oil and return to tapping. Once you've tapped about 50-60% of the way down the tap, try installing the fitting. We want the fitting to screw in enough to start protruding out the bottom of the hole in the water jacket. If needed, remove the fitting and tap more until the fitting screws in far enough.

8. Once both heads are drilled and tapped, thoroughly clean the top and bottom of the head with brake clean or a similar product. You want to remove any cutting oils as well as the metal shavings from the tapping procedure.
9. Using a thread sealant of your choice (Teflon tape, Rectorseal, etc), install and tighten the pipe thread fittings in the newly tapped holes in the heads. Remember, this is tapered pipe thread, do NOT overtighten or you could crack the cylinder heads.
10. LOOSELY install the straight ends of the hoses to the newly installed fittings. The long hose gets installed on the passenger side head and the short hose on the driver side head.
11. It is helpful to prop the head up on a wood block (or similar) in the middle like we have them in FIGURE 1a for this next step.
12. Using FIGURES 8 as a guide for how the hose ends need to be oriented, route the hoses to the front of the driver side head and rotate them so the 90° fittings are “roughly” aligned with how they will be installed. This will cause the hose to rotate at the rear where you have it loosely installed. While holding the front 90° in approximately the position it will be finally installed, have a helper tighten the straight fittings where they are installed at the rear of the heads. We HIGHLY RECOMMEND using a backup wrench to hold the brass nut right behind the main fitting nut so the hose doesn’t rotate when tightening. This step is important because you can’t get to the hose ends to tighten them once the heads are installed in the truck. If you tighten the rear fitting with front fitting orientation too far off, you will have to twist the hose to get it connected and this can damage the hose.

WE ARE NOW READY TO INSTALL THE FITTINGS INTO THE THERMOSTAT HOUSING!

13. If still installed, remove the thermostat from the front cover. Insert a rag or similar in the water passage in the front cover below the thermostat. See FIGURE 4.
14. Using FIGURES 5a, 5b and 6, mark the location of the holes to be drilled in the thermostat housing. Note that in figure 6 you can see that the holes should be drilled toward the bottom of the housing, but not so low that you drill into the bottom floor of the housing.
15. Drill these holes using the same process as earlier, starting with a small pilot bit and working up to the final 7/16” size hole.
16. LOOK CLOSELY AT THE INSTALLED FITTING IN FIGURE 6. When you tap the holes in the thermostat housing, you need to do it in small increments and test fit the fitting until you reach a tapped depth that yields a FLUSH fit with a fully tightened fitting. This is important due to the fit of the thermostat, see FIGURE 7.
17. Once you’ve completed tapping the holes, clean the debris out of the thermostat housing using a shopvac or similar. Remove the rag blocking the water passage once the housing is cleaned.
18. Using a thread sealant of your choice (Teflon tape, Rectorseal, etc), install and tighten the pipe thread fittings in the newly tapped holes in the thermostat housing. Remember, this is tapered pipe thread, do NOT overtighten or you could crack the thermostat housing.
19. Once the cylinder heads are reinstalled onto the engine, route the coolant return lines up to the thermostat housing and install them as shown in FIGURE 8. FIGURES 9 and 10 show what the lines will look like on an assembled engine.

INSTALLATION OF THE DRIVEN DIESEL COOLANT RETURN LINE KIT IS COMPLETE.

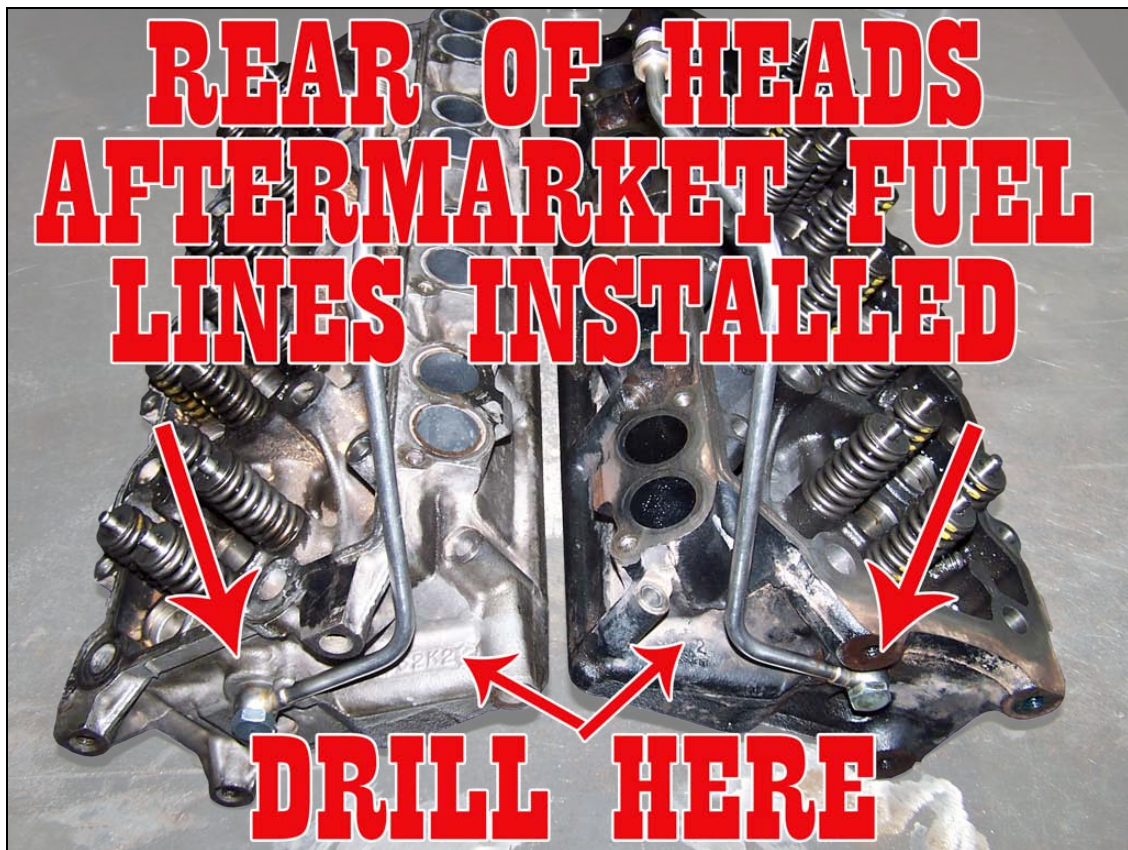


Figure 1a – Heads Positioned with Aftermarket Fuel Lines and “Drill Here” Arrows

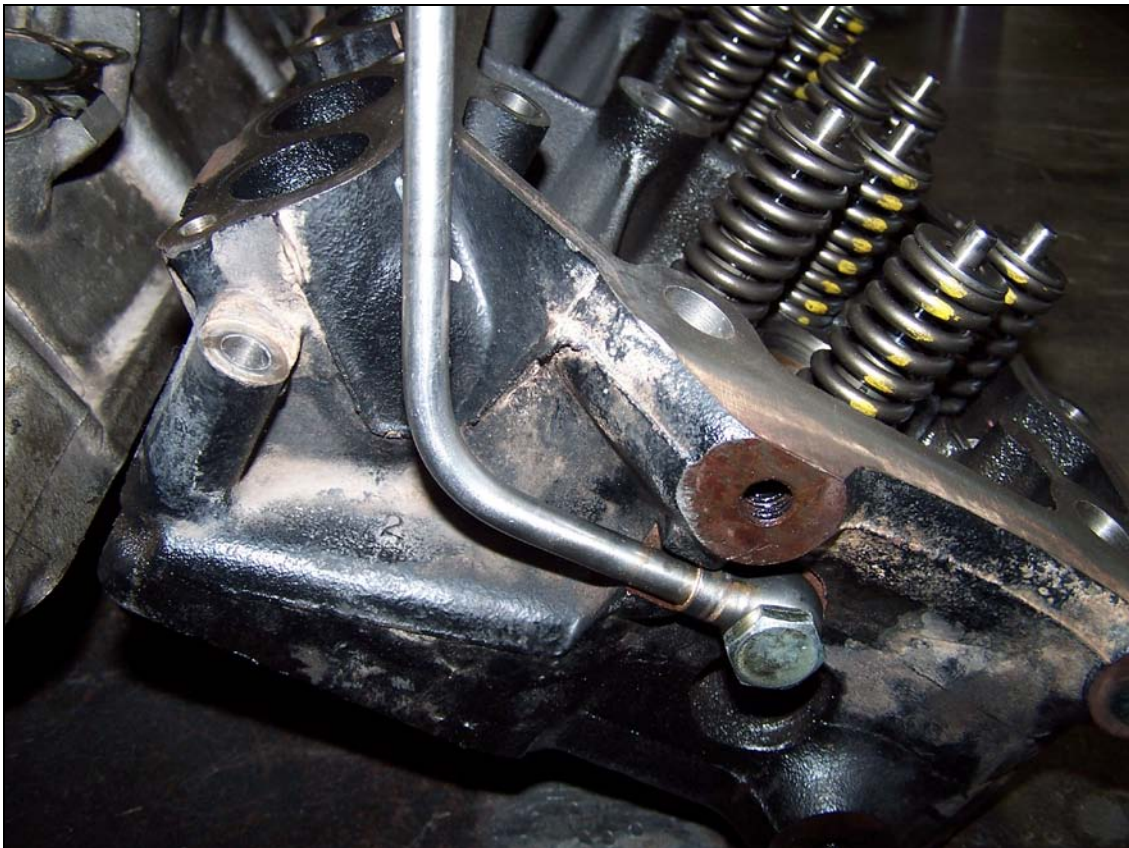


Figure 1b – Rear of Passenger Side Head with Aftermarket Fuel Line



Figure 1c – Rear of Driver Side Head with Aftermarket Fuel Line



Figure 2a – Choosing Drilling Location in Passenger Side Head



Figure 2b – Choosing Drilling Location in Driver Side Head



Figure 3 – Underside of Head with Hold Drilled (hole will not be centered in port)

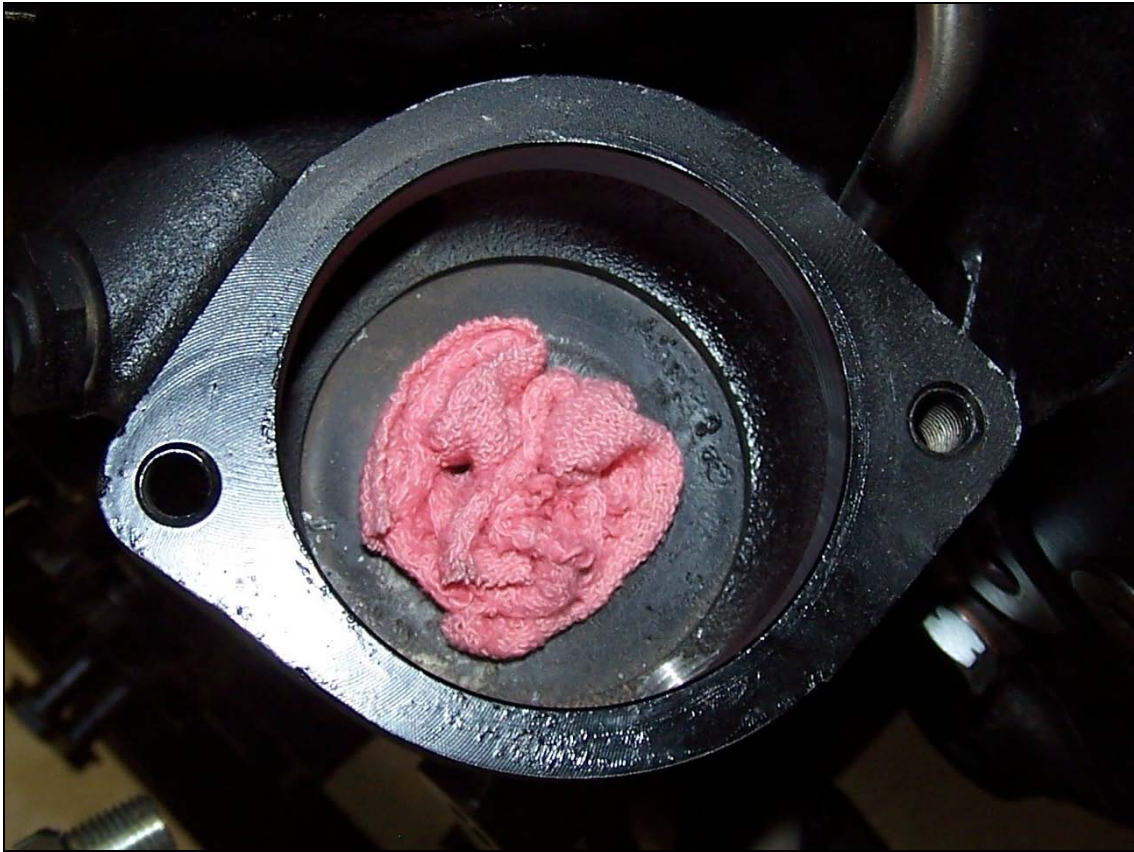


Figure 4 – Shop Rag to Prevent Debris from entering Cooling System

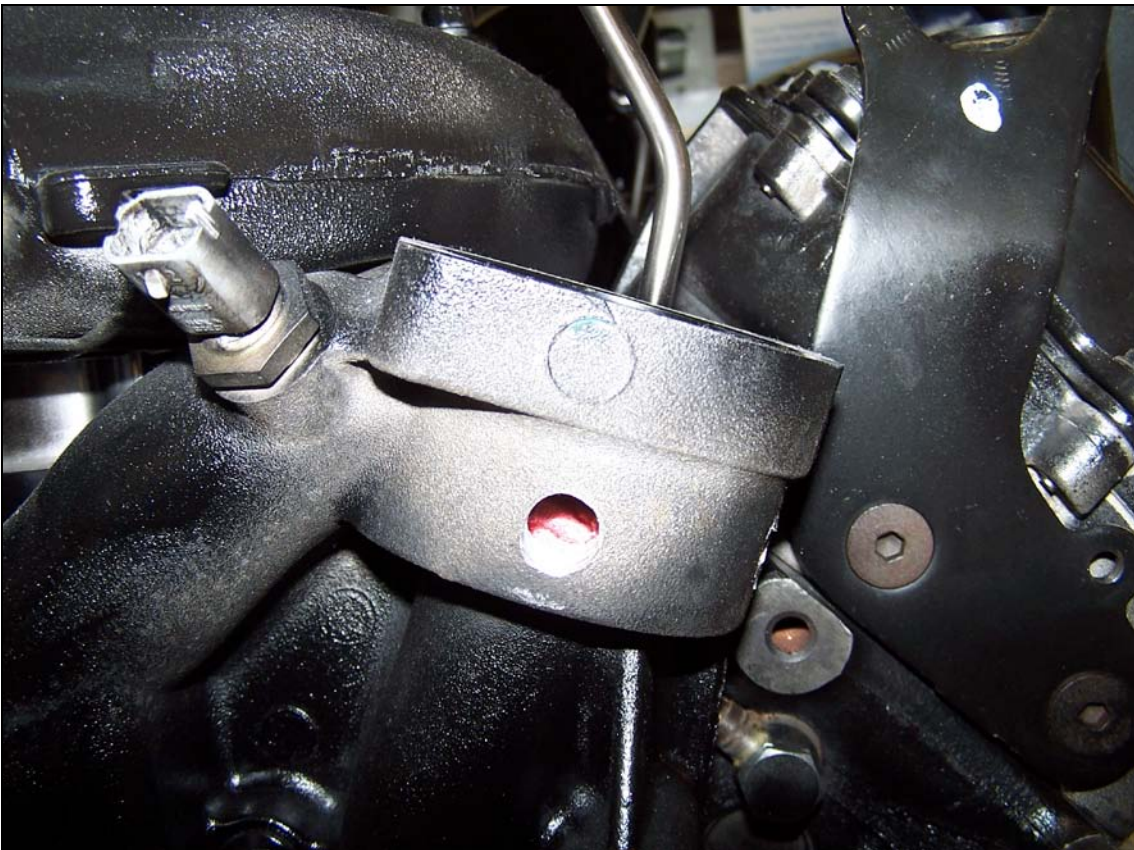


Figure 5a – Location of Holes in Thermostat Housing

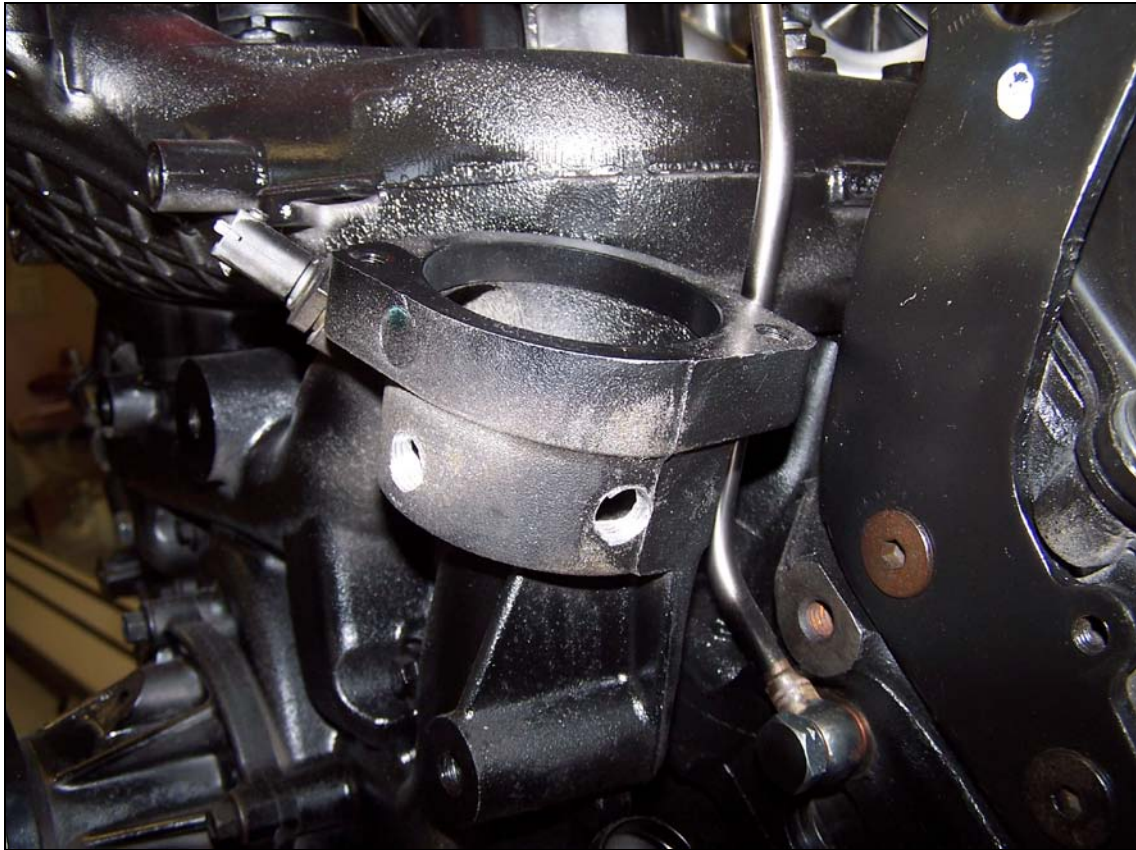


Figure 5b – Location of Holes in Thermostat Housing



Figure 6 – Fitting Installed Flush with Inside Surface



Figure 7 – Reason for Installing Flush With Inside Surface

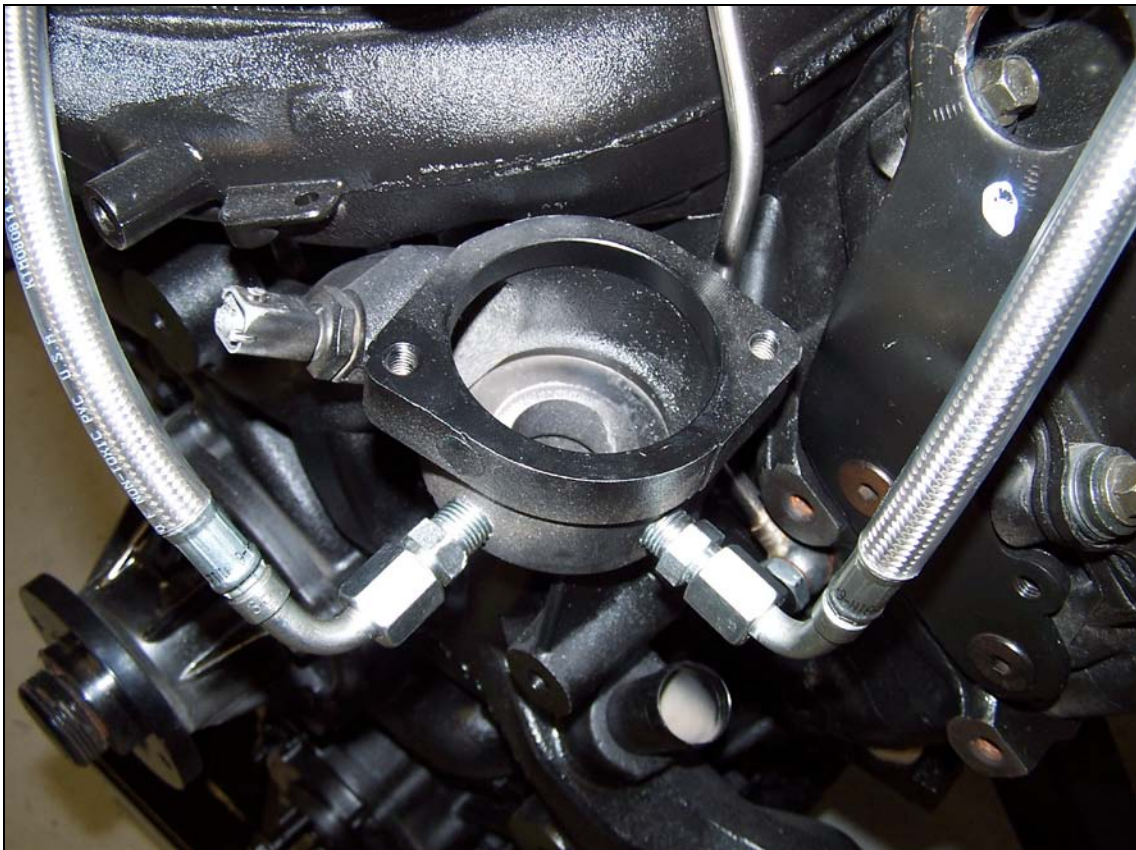


Figure 8 – Fittings and Lines Completely Installed



Figure 9 – Passenger Side Line In Assembled Engine (note minor bend in fuel line for clearance)



Figure 10 – Drivers Side Line In Assembled Engine

S DIESEL, LLC (dba STRICTLY DIESEL AND/OR DRIVEN DIESEL*) WARRANTY AND LIABILITY POLICY

MOST OF THE PRODUCTS SOLD BY S DIESEL, LLC, ARE DESIGNED TO INCREASE VEHICLE PERFORMANCE...USE AT YOUR OWN RISK!

Do not install or use any product(s) purchased from S DIESEL, LLC ("S DIESEL") until you have carefully read the following Warranty and Liability Policy (the "Warranty").

PRODUCT WARRANTY POLICY

Subject to the limitations, exclusions, and qualifications set forth below, the product or the products made and sold by S DIESEL (the "S Diesel Product" or "S Diesel Products") are warranted to Buyer as set forth in this Warranty. The installation of the S Diesel Products indicates that Buyer has read, understands and agrees to the terms and conditions of this Warranty. Any warranty on products that are made by another manufacturer which are resold by S DIESEL to Buyer is made to Buyer by the manufacturer of such products in accordance with and subject to all conditions and limitations of the manufacturer's warranty in effect on the date of the purchase by Buyer. S DIESEL makes no warranties to Buyer, express or implied, with respect to such products that are made by another manufacturer.

LIMITED WARRANTY

The S Diesel Products (except S Diesel Products specified to have different warranty terms) are warranted to be free from defects in material and workmanship, under normal use and service for a period (the "Product Warranty Period") of ninety (90) days from date of delivery to Buyer, unless S DIESEL performs the work installing the S Diesel Products, in which case the Product Warranty Period shall be extended to equal the Service Warranty Period (as defined below under "SERVICE WARRANTY POLICY"). S DIESEL's liability under this Warranty is limited to repair or replacement at its option, subject to the provisions set forth herein, of any S Diesel Products which upon examination S DIESEL are found to be defective. Buyer shall prepay cost of transportation of defective S Diesel Products to S DIESEL for inspection.

S DIESEL shall not have any responsibility under this Warranty unless (1) the defect in an S Diesel Product results in a claim arising within the Product Warranty Period, measured from the date of delivery to Buyer, (2) the S Diesel Product, if installed by an installer other than S DIESEL, was properly installed, (3) the S Diesel Product was normally maintained and not subject to misuse, negligence or accident, and (4) the S Diesel Product, system components and/or accessories were not repaired or altered in such a way that in the judgment of S DIESEL the S Diesel Product's performance or reliability was adversely affected.

EXCLUSIONS

Any of the above warranties by S DIESEL shall not apply if Buyer's vehicle is in an accident, misused, neglected, altered from the S Diesel Product's manufacturer original designs or specifications or serviced in connection with a warranty claim hereunder without prior written approval of S DIESEL.

REMEDIES EXCLUSIVE

Repair or replacement of defective S Diesel Products in accordance with the Limited Warranty above shall be Buyer's exclusive remedy for and shall constitute satisfaction of any and all liabilities of S DIESEL with respect to any defect in any S Diesel Product whether based in warranty, contract, tort, negligence, strict liability or otherwise.

DISCLAIMERS AND LIMITATIONS

THE EXPRESS WARRANTIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, CONDITIONS AND TERMS AS TO QUALITY OR FITNESS OF ALL PRODUCTS SUPPLIED BY S DIESEL TO BUYER, WHETHER WRITTEN, ORAL OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ALL SUCH OTHER WARRANTIES, CONDITIONS AND TERMS ARE HEREBY DISCLAIMED AND EXCLUDED BY S DIESEL. IN NO EVENT SHALL S DIESEL BE LIABLE FOR ANY LOSS OF ACTUAL OR ANTICIPATED PROFITS, LOSS OF ANTICIPATED BUSINESS, COST OF SUBSTITUTE PRODUCTS, LOSS OF USE OR DOWNTIME COSTS OR DELAY CLAIMS (WHETHER DIRECT OR INDIRECT) NOR FOR ANY OTHER SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR RELATING TO THIS WARRANTY OR THE SUPPLY OF S DIESEL PRODUCTS TO BUYER, WHETHER BASED IN WARRANTY, CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE. BUYER ACKNOWLEDGES THAT (A) THE PRODUCTS PURCHASED FROM S DIESEL WILL BE USED IN CONNECTION WITH ACTIVITIES, UNDER EXTREME CONDITIONS AND/OR SUBJECT TO MODIFICATIONS REQUESTED BY BUYER FOR WHICH THE PRODUCTS MAY OR MAY NOT BE SUITABLE; (B) THE WARRANTY OF SUCH PRODUCTS FOR PERFORMANCE IN CONNECTION WITH SUCH ACTIVITIES, UNDER SUCH EXTREME CONDITIONS AND/OR SUBJECT TO SUCH MODIFICATIONS REQUESTED BY BUYER IS NOT POSSIBLE; AND (C) ANY MANUFACTURER'S WARRANTY MAY BE VOIDED BY USE OF THE PRODUCTS IN CONNECTION WITH SUCH ACTIVITIES, UNDER SUCH EXTREME CONDITIONS AND/OR SUBJECT TO SUCH MODIFICATIONS REQUESTED BY BUYER. BUYER ACKNOWLEDGES THAT THE INSTALLATION OF ANY S DIESEL PRODUCTS THAT ARE NOT LEGAL FOR USE ON POLLUTION CONTROLLED MOTOR VEHICLES IS DONE SOLELY AT THE REQUEST OF BUYER AND ALL RESPONSIBILITY FOR ANY EFFECTS ON THE ORIGINAL VEHICLE MANUFACTURERS WARRANTY, ABILITY TO PASS ANY EMISSIONS INSPECTIONS OR FOR ANY FINES THAT MAY OCCUR DUE TO THE REMOVAL OF FEDERALLY MANDATED EMISSION CONTROL EQUIPMENT IS ON BUYER. No employee or representative of S Diesel has the authority to make any representation, promise or agreement which in any way varies from the terms and conditions of this Warranty. No suit or claim based on any cause of action, regardless of form, arising out of or relating to this Warranty or any of the S Diesel Products supplied by S DIESEL may be brought by Buyer or anyone claiming by, through or under Buyer against S DIESEL more than one year after the date that such cause of action arose.

IN THE EVENT BUYER DOES NOT AGREE WITH THE TERMS AND CONDITIONS OF THIS WARRANTY, BUYER MAY PROMPTLY RETURN THE PRODUCT TO S DIESEL FOR A FULL REFUND. THE PRODUCT MUST BE IN NEW, UNUSED AND RESELLABLE CONDITION, BE RECEIVED WITHIN FIFTEEN (15) DAYS OF THE ORIGINAL PURCHASE AND BE ACCOMPANIED BY A DATED PROOF OF PURCHASE (RECEIPT). PRODUCTS RETURNED IN NEW, UNUSED AND RESELLABLE CONDITION WILL NOT BE SUBJECT TO ANY RESTOCKING FEES.

THE INSTALLATION OR USE OF ANY PRODUCT PURCHASED FROM S DIESEL INDICATES THAT BUYER HAS READ, UNDERSTANDS AND AGREES TO THE TERMS AND CONDITIONS OF THIS WARRANTY.

SERVICE WARRANTY POLICY

Subject to the limitations, exclusions, and qualifications set forth below, the service or services performed by S DIESEL (the "S Diesel Service" or "S Diesel Services") are warranted to Buyer as set forth in this Warranty. Buyer's initials below indicate that Buyer has read, understands and agrees to the terms and conditions of this Warranty.

LIMITED WARRANTY

The S Diesel Services (except S Diesel Services specified to have different warranty terms) are warranted to have been performed in a workmanlike manner and to hold up under normal use and service for a period (the "Service Warranty Period") of twelve months from date the S Diesel Services are performed. S DIESEL's liability under this Warranty is limited to replication, subject to the provisions set forth herein, of any S Diesel Services which upon examination S DIESEL are found to have not been performed in a workmanlike manner.

S DIESEL shall not have any responsibility under this Warranty unless (1) the defect in an S Diesel Service results in a claim arising within the Service Warranty Period, measured from the date the S Diesel Service is performed, (2) the vehicle upon which the S Diesel Service was performed was normally maintained and not subject to misuse, negligence or accident, and (3) the vehicle upon which the S Diesel Service was performed was not repaired or altered in such a way that in the judgment of S DIESEL the S Diesel Service's durability was adversely affected.

EXCLUSIONS

Any of the above warranties by S DIESEL shall not apply if Buyer's vehicle is in an accident, misused, neglected, or serviced in connection with a warranty claim hereunder without prior written approval of S DIESEL.

REMEDIES EXCLUSIVE

Replication of unsatisfactory S Diesel Services in accordance with the Limited Warranty above shall be Buyer's exclusive remedy for and shall constitute satisfaction of any and all liabilities of S DIESEL with respect to any defect in any S Diesel Service whether based in warranty, contract, tort, negligence, strict liability or otherwise.

GENERAL PROVISIONS APPLICABLE TO BOTH PRODUCT AND SERVICE WARRANTIES

ASSIGNABILITY OF WARRANTY

This Warranty is for the exclusive benefit of Buyer and is not assignable.

WARRANTY CLAIMS PROCEDURE

Warranty claim forms can be printed from the company websites (<http://www.drivendiesel.com> (Products) and <http://www.strictlydiesel.com> (Services)). A properly completed warranty claim form and a copy of the invoice for any defective Product or Service must be received by the Seller within the earlier of 30 days after the expiration of the Warranty Period or the incident giving rise to the claim. To qualify for an adjustment under this Warranty a defective Product must be returned prepaid to the Seller for inspection and must be accompanied by a dated proof of purchase receipt. In addition, the serial number of the defective Product, if any, must match the serial number on Buyer's invoice. All Warranty claims are subject to approval by the Seller and/or the Product's manufacturer. Buyer must pay all applicable service charges and taxes. Defective Products accepted for warranty compensation become the property of the Seller. To qualify for an adjustment under this Warranty a vehicle upon which S Diesel Services have been performed must be delivered to the Seller during Seller's hours of operation for inspection and must be accompanied by a dated proof of purchase receipt.

WAIVER

Any failure of the part of S Diesel to insist on strict compliance with the Warranty Provisions shall no way constitute a waiver of such right. No claim or rights arising out of a breach of the Warranty Provisions by Buyer may be discharged in whole or in part by a waiver of the claim or right, unless the waiver is in writing signed by an authorized representative of S Diesel. S Diesel's waiver or acceptance of any breach by Buyer of any provisions of the Warranty Provisions shall not constitute a waiver of or an excuse for nonperformance as to any other provision of the Warranty Provisions nor as to any prior or subsequent breach of the same provision.

APPLICABLE LAW

The Warranty shall be governed by the laws of the State of Arizona (excluding Arizona law with respect to conflicts of law).

* Driven Diesel was formerly known as ITP Diesel, LLC and Sinister Diesel, LLC.