

# **Maxflow® Power Cooler®**

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## **Installation Instructions**



**2005-2009 Ford 4.6 Mustang GT (3 Valve)**  
**P/N: 8N301-290, 8N301-330, 8N301-360, 8N301-370, 8N301-380**



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Fax: 805 247-0669 • [www.vortechsuperchargers.com](http://www.vortechsuperchargers.com) • M-F 8:00 AM - 4:30 PM (PST)

# FOREWORD

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This manual provides information on the installation, maintenance and service of the Vortech supercharger kit expressly designed for this vehicle. All information, illustrations and specifications contained herein are based on the latest product information available at the time of this publication. Changes to the manual may be made at any time without notice. Contact Vortech Engineering for any additional information regarding this kit and any of these modifications at (805) 247-0226 8:00am-4:30pm PST.



## **Take note of the following before proceeding:**

- 1.** Proper installation of this supercharger kit requires general automotive mechanic knowledge and experience. Please browse through each step of this instruction manual prior to beginning the installation to determine if you should refer the job to a professional installer/technician. Please contact your dealer or Vortech Engineering for possible installers in your area.
- 2. This product was designed for use on stock (un-modified, OEM) vehicles. The PCM (computer), engine, transmission, drive axle ratios and tire O.D. must be stock.** If the vehicle or engine has been modified in any way, check with Vortech prior to installation and use of this product.
- 3.** Use only premium grade fuel with a minimum of 91 octane (R+M/2).
- 4.** Always listen for any sign of detonation (knocking/pinging) and discontinue hard use (no boost) until the problem is resolved.
- 5.** Vortech is not responsible for any clutch, transmission, drive-line or engine damage.

### **Exclusions from Vortech warranty coverage considerations include, but not limited to:**

- 1.** Neglect, abuse, lack of maintenance, abnormal operation or improper installation.
- 2.** Continued operation with an impaired vehicle or sub-system.
- 3.** The combined use of Vortech components with other modifications such as, but not limited to, exhaust headers, aftermarket camshafts, nitrous oxide, third party PCM programming or other such changes.

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# NOTICES

## (Read before installation is started)

Included in this kit is a smaller than originally supplied supercharger pulley. This new pulley is recommended to achieve the best performance results. Removal of the factory sealed pulley will reduce the supercharger warranty from three years to one year unless the supercharger unit (with the original pulley still attached) and new pulley are sent into Vortech for removal, installation and re-sealing. If the supercharger warranty is not a concern or if the supercharger warranty has expired, the pulley may simply be removed and replaced with the new part supplied. Hammering/prying etc. on the supercharger and/or pulley will cause damage to the parts. Light heating of the supercharger pulley with a propane torch (if the pulley is tight on the shaft) will aid removal. A return authorization number is required before the supercharger and pulley are sent into Vortech. Call the Vortech service department at (805) 247-0226 for a return authorization number. Return freight (ground) will be paid by Vortech.

This product is protected by state common law, copyright and/or patent. All legal rights therein are reserved. The design, layout, dimensions, geometry, and engineering features shown in this product are the exclusive property of Vortech Engineering, LLC. This product may not be copied or duplicated in whole or part, abstractly or fundamentally, intentionally or fortuitously, nor shall any design, dimension, or other information be incorporated into any product or apparatus without prior written consent of Vortech Engineering, LLC.



Before starting the installation, verify that the Diablosport Flash Tool contains the proper revision. Plug the tool into the vehicle's OBD II port. Locate the tool revision number in the upper right-hand corner of the main menu screen. 2005-2008 GTs & V6s should have a revision #9R01 or greater. If not, you will need to update the Diablosport Flash Tool.

**NOTE:** Before you update the flash tool, it will be necessary to return your vehicle to its factory calibration.

1. Connect the Flash tool to the vehicle's OBD II port.
2. In the main menu screen select option.
3. From the options menu using the arrow keys page down to troubleshooting and press enter.
4. From the Troubleshooting menu, page down and select Restore Factory backup.
5. Follow the directions on the screen.
6. Once the Factory Backup has been installed, unplug Flash Tool.

After the vehicle has been returned to its Factory Calibration, it will be necessary to update the Diablosport Flash Tool. This can be done in one of two ways: you can download the revision from [www.diablosport.com](http://www.diablosport.com) or, if for any reason you do not feel comfortable with doing the update, please return the Flash Tool to Vortech Engineering for the update.

If you choose to update the Flash Tool from [www.diablosport.com](http://www.diablosport.com):

- In Diablosport's home page in the upper left-hand corner find the search window.
- Type in the part number for your application and click "SEARCH".  
2005-2008 Model Years, enter "VR7140"
- If multiple results are found, click on the result that contains the desired part number in the description.
- After selecting the part number for your application, verify the supported application description is correct.
- Download the "Revision update instructions" found at the bottom of the page and follow the included instructions.

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This product may not be legal for use on public roads in all 50 states.

**VORTECH MAXFLOW POWER COOLER**  
**Installation Instructions**  
**2005-2009 Ford 4.6 Mustang GT (3-Valve)**

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**Congratulations on selecting the best performing  
and most efficient aftercooler today...  
the Vortech Maxflow Power Cooler!**

**Before beginning this installation,  
please read through this entire instruction booklet**

The Vortech Maxflow Power Cooler system was designed as a street/strip oriented aftercooler, specifically for use on 2005-2008 Ford 4.6 Mustang vehicles equipped with a Vortech supercharger producing up to approximately 580 horsepower. V-Power upgrade producing approximately 850 horsepower.

As with any power enhancing product, this system is intended for use on healthy, well-maintained engines. Vortech Engineering is not responsible for engine damage. Installation on new vehicles will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

For best performance and continued durability, please take a note of the following key points:

1. Use only premium grade fuel 91 octane or higher (R+M/2).
2. Always listen for any sign of detonation (pinging) and discontinue hard use (no boost) until problem is resolved.

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**TOOL & SUPPLY REQUIREMENTS:**

- Open End Wrenches (7/16", 9/16", 5/8", 11/16")
- 3/8" Ratchet
- 8mm, 13mm, 9/16" and 18mm Sockets
- 5/32", 3/16", 9/16" Allen Wrenches
- Flat #2 Screwdriver
- Phillips #2 Screwdriver
- Utility Knife
- Torque Wrench (in/lbs)
- Wire Cutters, Strippers and Crimpers
- Drill Motor
- 1/8", #21 Drill Bits
- Tape Measure
- Ford Springlock 3/8" Fuel Fitting Disconnect Tool
- Pipe Tape (Teflon)
- Adjustable Wrench

# Vortech Maxflow Power Cooler

Part No. 8N301-290

## 2005-2006 Ford 4.6 Mustang GT (3 Valve)

# PARTS LIST

**IMPORTANT:** Before beginning installation, verify that all parts are included in the kit.  
Report any shortages or damaged parts immediately.

PART NO.	DESCRIPTION	QTY			
008341	VORTECH CHARGE COOLER DECAL	1	7U034-016	1" GS HEATER HOSE	1.25'
2A036-361	S/C PULLEY 3.60" 6 GROOVE	1	7U038-000	3/4" HEATER HOSE	12'
5A001-025	DIABLO MAFIA, 05 MUST	1	7U038-012	HOSE, 3/4"DIA 90°, 4X12 LEGS	1
8N020-120	INSTALLATION MANUAL	1	7U038-020	HOSE, Ø3/4 'S' MOLDED RUBBER	1
4FU114-010	RAD PIPE RELOC ASY, 05 MUST GT	1	7U038-150	HOSE, 3/4"X150° MOLDED HOSE	1
4FU014-010	RADIATOR PIPE, 05 GT MUST	1	7U100-055	TIE WRAP, 7.5" NYLON	6
7R002-024	#24 SAE TYPE F SS HOSE CLAMP	2	7U375-054	3/4" VINYL CAP	1
8N101-290	WELDED CORE ASSY, 05 MUST GT	1	8D001-001	STD COMPRESS BYPASS VALVE	1
8N101-001	WELDED CORE ASSY W/ENDS ONLY	1	8F001-403	PUMP, WATER, BOSCH	1
8N003-030	COOLER DUCT, LT1, GROUND	1	8N010-160	SURGE TANK BRKT, 05 MUST GT	1
8N003-111	COOLER DUCT, 05 MUST, MACH	1	8N010-220	MTG BRKT, 05-07 MUST BOSCH PMP	1
8N104-125	SUPRT PCS, 05-08 MUST GT CLR G	1	8N055-050	PLASTIC CAP, SURGE TANK	1
4FE014-010	RADIATOR PIPE-STAINLESS	1	8N056-061	SURGE TANK INTEGRA GSR MODIFIE	1
5W001-009	16-14GA MALE SLIDE INSULATED	1	8N106-135	WATER CLR ASY, 05 MUST GEN.II	1
5W001-011	16-14 GA RING TERM .26" HOLE	1	8N006-020	WATER COOLR, FLDYN DUAL PASS	1
5W001-015	FUSE, BLADE TYPE 20 AMP	1	8N010-171	BRACKET, DRVR SIDE CLR MNT, PLT	1
5W001-022	T-TAP CONN, 14-16 AWG	1	8N010-173	BRACKET, PASS SIDE CLR MNT	1
5W001-032	1/4" PLASTIC WIRE LOOM	60"	2A017-036	SPACER, PLT.BRG.HSG., 0.186"	4
5W001-050	HARNES, FUEL INJ PLUG W/WIRES	1	7C080-030	M8 X 1.25 X 30 HXHD CL10.9	6
5W001-071	FUSE HOLDER, 16GA WIRE	1	7F008-020	NUT, M8 X 1.25	6
5W018-010	18GA STRD WIRE RED	5'	7J312-000	5/16 FLAT WASHER-SAE	12
7A250-050	1/4-20 X .50 SHCS ZINC PLTD	3	7A250-051	1/4-20 X .50 HHCS ZINC PLTD	4
7A250-051	1/4-20 X .50 HHCS ZINC PLTD	2	7J250-001	1/4 WASHER, SAE, PLTD	4
7A250-074	1/4-20 X .75 HHCS PLTD	2	8N155-080	COOLANT RES RELOC, 05-06 MUST	1
7F250-020	1/4-20 HEX NUT	2	4FU010-051	MTG BRKT A, RES RELOC 05 MUST	1
7J006-093	6MM WASHER, PLATED	5	4FU010-061	BRKT B, COOL RES RELOC 05 MUST	1
7J250-001	1/4 WASHER, SAE, PLTD	4	7A250-051	1/4-20 X .50 HHCS ZINC PLTD	4
7P156-082	5/32 TEE	1	7C060-020	M6 X 1.0 X 20MM HHCS ZN	3
7P218-156	VAC TEE, 7/32, 7/32, 5/32	1	7J006-093	6MM WASHER, PLATED	4
7P375-075	3/4" HOSE BARB UNION, BRASS	4	7J006-093	6MM WASHER, PLATED	3
7P500-026	1/2NPT X 3/4 BARB 90° BRASS	2	7P250-045	1/4 MALE NPT X 3/8 MALE BARB	1
7P500-078	1/2NPT X 3/4 HOSE FIT STRT	2	7P375-050	3/8" HOSE UNION, BRASS	1
7R002-016	#16 SAE TYPE F SS HOSE CLAMP	4	7R002-010	#10 SAE TYPE F SS HOSE CLAMP	1
7R002-024	#24 SAE TYPE F SS HOSE CLAMP	2	7R004-002	STEPLESS CLAMP, 17.0-70	3
7R002-044	#44 SAE TYPE F SS HOSE CLAMP	2	7U030-056	3/8 PCV/VAC RUBBER HOSE	2.5'
7R002-072	#72 SAE TYPE F SS HOSE CLAMP	2	8N055-080	TANK, RAD OVERFLOW, 05 MUST	1
7R003-016	ADEL CLAMP, 1.0"	1	8R101-001	PULLEY RETAINER ASSY 6 RIB	1
7R003-028	ADEL CLAMP, 2-3/8" .26 HOLE	2	2A040-011	PULLEY RETAINER S/C	1
7R007-001	NYLON RATCHET CLAMP 1-1/8"	16	7B375-110	3/8-24 X 1" GRADE 8 HXHD	1
7S275-055	ELBOW, Ø2.75 X 55° SILICONE	1	7K375-040	3/8 AN960 FLAT WASHR PLATED	1
7S450-200	SLEEVE, 4 1/2 X 2, BLUE	1	7U100-070	KEY, 3/16 SQUARE X 7/8 LONG	1
7U030-046	5/32" VACUUM LINE	5'			
7U030-065	HOSE, 3/4 X 90° RUBBER, SHORT	1			
7U034-016	1" GS HEATER HOSE	1'			



### 2007-2008 Ford 4.6 Mustang GT (3 Valve)

## PARTS LIST

**IMPORTANT:** Before beginning installation, verify that all parts are included in the kit. Report any shortages or damaged parts immediately.

PART NO.	DESCRIPTION	QTY			
008341	VORTECH CHARGE COOLER DECAL	1	7U038-150	HOSE, 3/4"X150" MOLDED HOSE	1
2A036-361	S/C PULLEY 3.60" 6 GROOVE	1	7U100-055	TIE WRAP, 7.5" NYLON	6
5A001-025	DIABLO MAFIA, 05 MUST	1	7U375-054	3/4" VINYL CAP	1
8N020-120	INSTALLATION MANUAL	1	8D001-001	STD COMPRESS BYPASS VALVE	1
8N101-290	WELDED CORE ASSY, 05 MUST GT	1	8F001-403	PUMP, WATER, BOSCH	1
8N101-001	WELDED CORE ASSY W/ENDS ONLY	1	8N010-160	SURGE TANK BRKT, 05 MUST GT	1
8N003-030	COOLER DUCT, LT1, GROUND	1	8N010-220	MTG BRKT, 05-07 MUST BOSCH PMP	1
8N003-111	COOLER DUCT, 05 MUST, MACH	1	8N055-050	PLASTIC CAP, SURGE TANK	1
8N104-125	SUPRT PCS, 05-08 MUST GT CLR G	1	8N056-061	SURGE TANK INTEGRA GSR MODIFIE	1
4FE014-010	RADIATOR PIPE-STAINLESS	1	8N106-135	WATER CLR ASY, 05 MUST GEN.II	1
5W001-009	16-14GA MALE SLIDE INSULATED	1	8N006-020	WATER COOLR, FLDYN DUAL PASS	1
5W001-011	16-14 GA RING TERM .26" HOLE	1	8N010-171	BRACKET, DRVR SIDE CLR MNT,PLT	1
5W001-015	FUSE, BLADE TYPE 20 AMP	1	8N010-173	BRACKET, PASS SIDE CLR MNT	1
5W001-022	T-TAP CONN, 14-16 AWG	1	2A017-036	SPACER, PLT.BRG.HSG., 0.186"	4
5W001-032	1/4" PLASTIC WIRE LOOM	60"	7C080-030	M8 X 1.25 X 30 HXHD CL10.9	6
5W001-050	HARNESS, FUEL INJ PLUG W/WIRES	1	7F008-020	NUT, M8 X 1.25	6
5W001-071	FUSE HOLDER, 16GA WIRE	1	7J312-000	5/16 FLAT WASHER-SAE	12
5W018-010	18GA STRD WIRE RED	5'	7A250-051	1/4-20 X .50 HHCS ZINC PLTD	4
7A250-050	1/4-20 X .50 SHCS ZINC PLTD	3	7J250-001	1/4 WASHER, SAE, PLTD	4
7A250-051	1/4-20 X .50 HHCS ZINC PLTD	2	8N155-082	COOLANT RES RELOC, 07-08 MUST	1
7A250-074	1/4-20 X .75 HHCS PLTD	2	4FU010-061	BRKT B, COOL RES RELOC 05 MUST	1
7F250-020	1/4-20 HEX NUT	2	4FU010-091	BRKT, COOL RES RELOC, 07 GT	1
7J006-093	6MM WASHER, PLATED	5	7A250-051	1/4-20 X .50 HHCS ZINC PLTD	4
7J250-001	1/4 WASHER, SAE, PLTD	4	7A250-074	1/4-20 X .75 HHCS PLTD	3
7P156-082	5/32 TEE	1	7F250-021	1/4-20 NYLOCK NUT ZINC PLATED	3
7P218-156	VAC TEE, 7/32, 7/32, 5/32	1	7J006-093	6MM WASHER, PLATED	10
7P375-075	3/4" HOSE BARB UNION, BRASS	4	7P100-076	HOSE REDUCER, 1"->3/4" PLSTC	1
7P500-026	1/2NPT X 3/4 BARB 90° BRASS	2	7P250-045	1/4 MALE NPT X 3/8 MALE BARB	1
7P500-078	1/2NPT X 3/4 HOSE FIT STRT	2	7P375-050	3/8" HOSE UNION, BRASS	1
7R002-016	#16 SAE TYPE F SS HOSE CLAMP	4	7R002-010	#10 SAE TYPE F SS HOSE CLAMP	2
7R002-024	#24 SAE TYPE F SS HOSE CLAMP	2	7R004-002	STEPLESS CLAMP, 17.0-70	3
7R002-044	#44 SAE TYPE F SS HOSE CLAMP	2	7U030-056	3/8 PCV/VAC RUBBER HOSE	2.5'
7R002-072	#72 SAE TYPE F SS HOSE CLAMP	2	7U038-000	3/4" HEATER HOSE	1'
7R003-016	ADEL CLAMP, 1.0"	1	8N055-080	TANK, RAD OVERFLOW, 05 MUST	1
7R003-028	ADEL CLAMP, 2-3/8" .26 HOLE	2	8R101-001	PULLEY RETAINER ASSY 6 RIB	1
7R007-001	NYLON RATCHET CLAMP 1-1/8"	16	2A040-011	PULLEY RETAINER S/C	1
7S275-055	ELBOW, Ø2.75 X 55° SILICONE	1	7B375-110	3/8-24 X 1" GRADE 8 HXHD	1
7S450-200	SLEEVE, 4 1/2 X 2, BLUE	1	7K375-040	3/8 AN960 FLAT WASHR PLATED	1
7U030-046	5/32" VACUUM LINE	5'	7U100-070	KEY, 3/16 SQUARE X 7/8 LONG	1
7U030-065	HOSE, 3/4 X 90° RUBBER, SHORT	1			
7U034-016	1" GS HEATER HOSE	1.1'			
7U034-016	1" GS HEATER HOSE	1.25'			
7U038-000	3/4" HEATER HOSE	12'			
7U038-012	HOSE, 3/4" DIA 90°, 4X12 LEGS	1			
7U038-020	HOSE, Ø3/4 'S' MOLDED RUBBER	1			

# Vortech V-Power Maxflow Power Cooler

Part No. 8N301-360

## 2005-2006 Ford 4.6 Mustang GT (3 Valve)

# PARTS LIST

**IMPORTANT:** Before beginning installation, verify that all parts are included in the kit. Report any shortages or damaged parts immediately.

PART NO.	DESCRIPTION	QTY			
008341	VORTECH CHARGE COOLER DECAL	1	8D204-001	RACE BYPASS VALVE-BLUE/SATIN	1
2A036-361	S/C PULLEY 3.60" 6 GROOVE	1	8F001-403	PUMP, WATER, BOSCH	1
5A001-025	DIABLO MAFIA, 05 MUST	1	8N010-160	SURGE TANK BRKT, 05 MUST GT	1
8N020-120	INSTALLATION MANUAL	1	8N010-220	MTG BRKT, 05-07 MUST BOSCH PMP	1
8N104-160	SUPPORT PCS, LG, 05+ MUST GT V	1	8N055-050	PLASTIC CAP, SURGE TANK	1
4FE014-010	RADIATOR PIPE-STAINLESS	1	8N056-061	SURGE TANK INTEGRA GSR MODIFIE	1
5W001-009	16-14GA MALE SLIDE INSULATED	1	8N106-135	WATER CLR ASY, 05 MUST GEN.II	1
5W001-011	16-14 GA RING TERM .26" HOLE	1	8N006-020	WATER COOLR, FLDYN DUAL PASS	1
5W001-015	FUSE, BLADE TYPE 20 AMP	1	8N010-171	BRACKET, DRVR SIDE CLR MNT,PLT	1
5W001-022	T-TAP CONN,14-16 AWG	1	8N010-173	BRACKET, PASS SIDE CLR MNT	1
5W001-032	1/4" PLASTIC WIRE LOOM	60"	2A017-036	SPACER,PLT,BRG,HSG,.0.186"	4
5W001-050	HARNES, FUEL INJ PLUG W/WIRES	1	7C080-030	M8 X 1.25 X 30 HXHD CL10.9	6
5W001-071	FUSE HOLDER,16GA WIRE	1	7F008-020	NUT, M8 X 1.25	6
5W018-010	18GA STRD WIRE RED	5'	7J312-000	5/16 FLAT WASHER-SAE	12
7A250-050	1/4-20 X .50 SHCS ZINC PLTD	3	7A250-051	1/4-20 X .50 HHCS ZINC PLTD	4
7A250-051	1/4-20 X .50 HHCS ZINC PLTD	2	7J250-001	1/4 WASHER, SAE, PLTD	4
7A250-074	1/4-20 X .75 HHCS PLTD	2	8N155-080	COOLANT RES RELOC, 05-06 MUST	1
7F250-020	1/4-20 HEX NUT	2	4FU010-051	MTG BRKT A, RES RELOC 05 MUST	1
7J006-093	6MM WASHER, PLATED	5	4FU010-061	BRKT B, COOL RES RELOC 05 MUST	1
7J250-001	1/4 WASHER, SAE, PLTD	4	7A250-051	1/4-20 X .50 HHCS ZINC PLTD	4
7P156-082	5/32 TEE	1	7C060-020	M6 X 1.0 X 20MM HHCS ZN	3
7P175-100	COMP BYPASS "Y", 1.75 X 1.00	1	7J006-093	6MM WASHER, PLATED	4
7P218-156	VAC TEE, 7/32,7/32,5/32	1	7J006-093	6MM WASHER, PLATED	3
7P375-075	3/4" HOSE BARB UNION, BRASS	4	7P250-045	1/4 MALE NPT X 3/8 MALE BARB	1
7P500-026	1/2NPT X 3/4 BARB 90° BRASS	3	7P375-050	3/8" HOSE UNION, BRASS	1
7P500-078	1/2NPT X 3/4 HOSE FIT STRT	1	7R002-010	#10 SAE TYPE F SS HOSE CLAMP	1
7P750-102	3/4NPT X 1" X 90° HSE FIT	1	7R004-002	STEPLESS CLAMP, 17.0-70	3
7R002-016	#16 SAE TYPE F SS HOSE CLAMP	10	7U030-056	3/8 PCV/VAC RUBBER HOSE	2.5'
7R002-024	#24 SAE TYPE F SS HOSE CLAMP	2	8N055-080	TANK, RAD OVERFLOW, 05 MUST	1
7R002-028	#28 SAE TYPE F SS HOSE CLAMP	2	8N201-200	CAC ASSY, LARGE, 05+ MUST GT	1
7R002-044	#44 SAE TYPE F SS HOSE CLAMP	1	8N003-130	CAC DUCT, 05 GT, LARGE, TBODY	1
7R002-048	#48 SAE TYPE F SS HOSE CLAMP	1	8N101-200	WELDED CAC CORE, LG, W/ENDS	1
7R002-072	#72 SAE TYPE F SS HOSE CLAMP	2	8N103-120	CAC DUCT ASY, LG, 05-08 MUST G	1
7R003-016	ADEL CLAMP, 1.0"	1	8R101-001	PULLEY RETAINER ASSY 6 RIB	1
7R003-028	ADEL CLAMP, 2-3/8" .26 HOLE	2	2A040-011	PULLEY RETAINER S/C	1
7R007-001	NYLON RATCHET CLAMP 1-1/8"	16	7B375-110	3/8-24 X 1" GRADE 8 HXHD	1
7S175-400	SLEEVE, Ø1.75" X 4", BLUE	1	7K375-040	3/8 AN960 FLAT WASHR PLATED	1
7S300-055	SLEEVE, 3" X 2.75" X 55° SILIC	1	7U100-070	KEY, 3/16 SQUARE X 7/8 LONG	1
7S450-200	SLEEVE, 4 1/2 X 2, BLUE	1			
7U030-046	5/32" VACUUM LINE	5'			
7U030-065	HOSE, 3/4 X 90° RUBBER, SHORT	1			
7U034-016	1" GS HEATER HOSE	3'			
7U038-000	3/4" HEATER HOSE	12'			
7U038-012	HOSE,3/4"DIA 90°,4X12 LEGS	2			
7U038-150	HOSE, 3/4"X150° MOLDED HOSE	1			
7U100-055	TIE WRAP, 7.5" NYLON	6			
7U375-054	3/4" VINYL CAP	1			



# Vortech V-Power Maxflow Power Cooler

Part No. 8N301-370

2007-2008 Ford 4.6 Mustang GT (3 Valve)

## PARTS LIST

**IMPORTANT:** Before beginning installation, verify that all parts are included in the kit.  
Report any shortages or damaged parts immediately.

PART NO.	DESCRIPTION	QTY			
008341	VORTECH CHARGE COOLER DECAL	1	7U038-012	HOSE, 3/4" DIA 90°, 4X12 LEGS	2
2A036-361	S/C PULLEY 3.60" 6 GROOVE	1	7U038-150	HOSE, 3/4" X 150" MOLDED HOSE	1
5A001-025	DIABLO MAFIA, 05 MUST	1	7U100-055	TIE WRAP, 7.5" NYLON	6
8N020-120	INSTALLATION MANUAL	1	7U375-054	3/4" VINYL CAP	1
8N201-200	CAC ASSY, LARGE, 05+ MUST GT	1	8D204-001	RACE BYPASS VALVE-BLUE/SATIN	1
8N003-130	CAC DUCT, 05 GT, LARGE, TBODY	1	8F001-403	PUMP, WATER, BOSCH	1
8N101-200	WELDED CAC CORE, LG, W/ENDS	1	8N010-160	SURGE TANK BRKT, 05 MUST GT	1
8N103-120	CAC DUCT ASSY, LG, 05-08 MUST G	1	8N010-220	MTG BRKT, 05-07 MUST BOSCH PMP	1
8N104-160	SUPPORT PCS, LG, 05+ MUST GT V	1	8N055-050	PLASTIC CAP, SURGE TANK	1
4FE014-010	RADIATOR PIPE-STAINLESS	1	8N056-061	SURGE TANK INTEGRA GSR MODIFIE	1
5W001-009	16-14GA MALE SLIDE INSULATED	1	8N106-135	WATER CLR ASY, 05 MUST GEN.II	1
5W001-011	16-14 GA RING TERM .26" HOLE	1	8N006-020	WATER COOLR, FLDYN DUAL PASS	1
5W001-015	FUSE, BLADE TYPE 20 AMP	1	8N010-171	BRACKET, DRVR SIDE CLR MNT, PLT	1
5W001-022	T-TAP CONN, 14-16 AWG	1	8N010-173	BRACKET, PASS SIDE CLR MNT	1
5W001-032	1/4" PLASTIC WIRE LOOM	60"	2A017-036	SPACER, PLT, BRG, HSG, .0.186"	4
5W001-050	HARNESS, FUEL INJ PLUG W/WIRES	1	7F008-020	NUT, M8 X 1.25	6
5W001-071	FUSE HOLDER, 16GA WIRE	1	7J312-000	5/16 FLAT WASHER-SAE	12
5W018-010	18GA STRD WIRE RED	5'	7A250-051	1/4-20 X .50 HHCS ZINC PLTD	4
7A250-050	1/4-20 X .50 SHCS ZINC PLTD	3	7J250-001	1/4 WASHER, SAE, PLTD	4
7A250-051	1/4-20 X .50 HHCS ZINC PLTD	2	8N155-082	COOLANT RES RELOC, 07-08 MUST	1
7A250-074	1/4-20 X .75 HHCS PLTD	2	4FU010-061	BRKT B, COOL RES RELOC 05 MUST	1
7F250-020	1/4-20 HEX NUT	2	4FU010-091	BRKT, COOL RES RELOC, 07 GT	1
7J006-093	6MM WASHER, PLATED	5	7A250-051	1/4-20 X .50 HHCS ZINC PLTD	4
7J250-001	1/4 WASHER, SAE, PLTD	4	7A250-074	1/4-20 X .75 HHCS PLTD	3
7P156-082	5/32 TEE	1	7F250-021	1/4-20 NYLOCK NUT ZINC PLATED	3
7P175-100	COMP BYPASS "Y", 1.75 X 1.00	1	7J006-093	6MM WASHER, PLATED	10
7P218-156	VAC TEE, 7/32, 7/32, 5/32	1	7P100-076	HOSE REDUCER, 1"->3/4" PLSTC	1
7P375-075	3/4" HOSE BARB UNION, BRASS	4	7P250-045	1/4 MALE NPT X 3/8 MALE BARB	1
7P500-026	1/2NPT X 3/4 BARB 90° BRASS	3	7P375-050	3/8" HOSE UNION, BRASS	1
7P500-078	1/2NPT X 3/4 HOSE FIT STRT	1	7R002-010	#10 SAE TYPE F SS HOSE CLAMP	2
7P750-102	3/4NPT X 1" X 90° HSE FIT	1	7R004-002	STEPLESS CLAMP, 17.0-70	3
7R002-016	#16 SAE TYPE F SS HOSE CLAMP	10	7U030-056	3/8 PCV/VAC RUBBER HOSE	2.5'
7R002-024	#24 SAE TYPE F SS HOSE CLAMP	2	7U038-000	3/4" HEATER HOSE	1.83'
7R002-028	#28 SAE TYPE F SS HOSE CLAMP	2	8N055-080	TANK, RAD OVERFLOW, 05 MUST	1
7R002-044	#44 SAE TYPE F SS HOSE CLAMP	1	8R101-001	PULLEY RETAINER ASSY 6 RIB	1
7R002-048	#48 SAE TYPE F SS HOSE CLAMP	1	2A040-011	PULLEY RETAINER S/C	1
7R002-072	#72 SAE TYPE F SS HOSE CLAMP	2	7B375-110	3/8-24 X 1" GRADE 8 HXHD	1
7R003-016	ADEL CLAMP, 1.0"	1	7K375-040	3/8 AN960 FLAT WASHR PLATED	1
7R003-028	ADEL CLAMP, 2-3/8" .26 HOLE	2	7U100-070	KEY, 3/16 SQUARE X 7/8 LONG	1
7R007-001	NYLON RATCHET CLAMP 1-1/8"	16			
7S175-400	SLEEVE, Ø1.75" X 4", BLUE	1			
7S300-055	SLEEVE, 3" X 2.75" X 55° SILIC	1			
7S450-200	SLEEVE, 4 1/2 X 2, BLUE	1			
7U030-046	5/32" VACUUM LINE	5'			
7U030-065	HOSE, 3/4 X 90° RUBBER, SHORT	1			
7U034-016	1" GS HEATER HOSE	3'			
7U038-000	3/4" HEATER HOSE	12'			

# Charge Air Cooler Upgrade, Large

Part No. 8N301-380

2005-2009 Ford 4.6 Mustang GT (3 Valve)

## PARTS LIST

**IMPORTANT:** Before beginning installation, verify that all parts are included in the kit.  
Report any shortages or damaged parts immediately.

PART NO.	DESCRIPTION	QTY
8N020-120	INSTALLATION MANUAL	1
8N104-170	SUPPORT PCS, LG, 05+ MUST GT V	1
7P175-100	COMP BYPASS "Y", 1.75 X 1.00	1
7P500-026	1/2NPT X 3/4 BARB 90° BRASS	1
7P750-102	3/4NPT X 1" X 90° HSE FIT	1
7R002-028	#28 SAE TYPE F SS HOSE CLAMP	2
7R002-048	#48 SAE TYPE F SS HOSE CLAMP	1
7S175-400	SLEEVE, Ø1.75" X 4", BLUE	1
7S300-055	SLEEVE, 3" X 2.75" X 55° SILIC	1
7U034-016	1" GS HEATER HOSE	3'
7U038-012	HOSE, 3/4"DIA 90°, 4X12 LEGS	2
8D204-001	RACE BYPASS VALVE-BLUE/SATIN	1
8N201-200	CAC ASSY, LARGE, 05+ MUST GT	1
8N003-130	CAC DUCT, 05 GT, LARGE, TBODY	1
8N101-200	CAC CORE, W/ TANKS, LARGE	1
8N103-120	CAC DUCT ASY, LG, 05-08 MUST G	1

## 1. PREPARATION AND REMOVAL

- A.** Disconnect the battery.
- B.** Remove the six nylon clips retaining the upper radiator core support cover. (See Fig. 1-e.)
- C.** Loosen the four hose clamps securing the supercharger discharge tube from the supercharger to the throttle body. Disconnect the by-pass valve hoses where they connect to the inlet and discharge tubes. Disconnect the by-pass valve vacuum line where it connects at the fuel rail. Set the by-pass valve aside to be reinstalled in a later step. Remove the discharge tube and set it aside. It will not be reused.
- D.** Unplug the MAF connection from the meter. Loosen the hose clamps securing the inlet ducts to the supercharger and inlet duct support bracket. Remove the inlet duct assembly and set it aside to be reinstalled in a later step.
- E.** Disconnect the oil feed and oil drain lines.

**NOTE:** Temporarily cap the oil lines to protect your engine from foreign particles.

- F.** Using a 1/2" ratchet wrench, loosen the accessory belt tensioner and remove the belt from the supercharger pulley only. Tie the belt back away from the supercharger temporarily.
- G.** Remove the five 9/16" headed screws securing the supercharger to its mounting plate.

**NOTE:** A 9/16" ratchet wrench will greatly aid in this step.

- H.** Remove the supercharger from the vehicle.

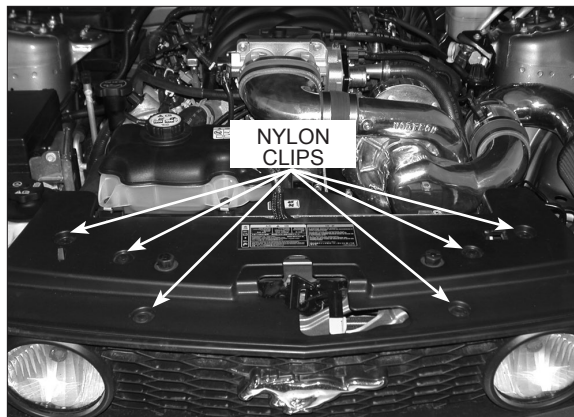


Fig. 1-e

## 1. PREPARATION AND REMOVAL, CONT'D

- I. Locate the coolant drain plug on the passenger's side of the radiator. Next drain the coolant into a clean container. This coolant will be reused in a later step.
- J. Remove the two 8mm headed bolts securing the coolant overflow reservoir to the plastic fan shroud. (See Fig. 1-f.)
- K. Disconnect the small overflow hose (running across the top of the radiator) from the overflow reservoir. (See Fig. 1-f.)
- L. Remove the large hose connected to the bottom of the overflow reservoir. The hose and overflow reservoir will not be reused. (See Fig. 1-g.)

**NOTE:** Retain only the fill cap for reuse.

- M. (2005-2006 Only) Remove the passenger's side radiator hose from the engine coolant crossover tube and set aside. (See Fig. 1-g.)

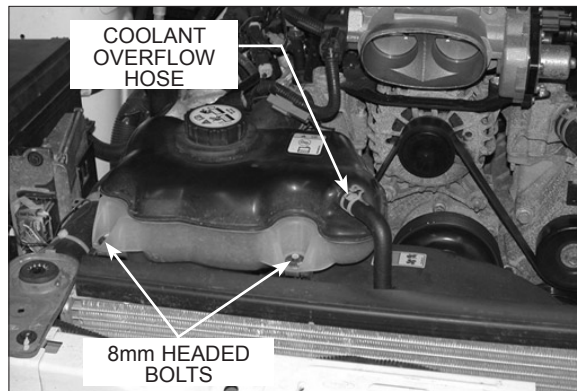


Fig. 1-f

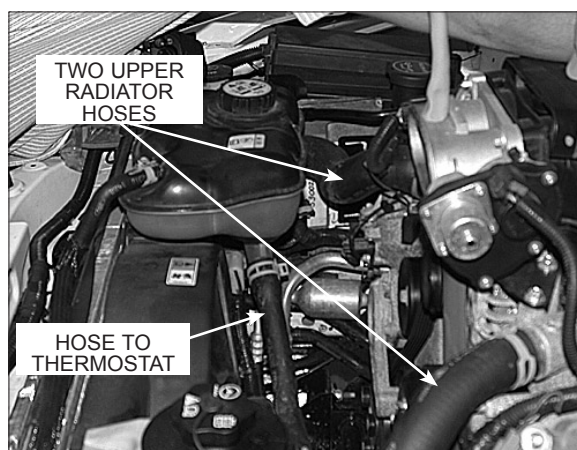


Fig. 1-g

## 2. SUPERCHARGER RECLOCKING AND REINSTALLATION

- A.** Place the supercharger on a clean flat surface with the drive pulley facing up.
- B.** Loosen and remove the six 1/4-20 cap screws and retaining plates that hold the compressor housing to the gearcase.
- C.** Carefully rotate the supercharger volute to the specified position as shown. (See Fig. 2-a.)

**NOTE:** If the compressor housing does not rotate freely relative to the gearcase, DO NOT FORCE IT. SERIOUS SUPERCHARGER DAMAGE MAY OCCUR. The machined mating surfaces are designed to prevent pressurized air from escaping and have minimal tolerances. If the housing will not move or is very tight, contact Vortech Engineering immediately at (805) 247-0226 and ask for our service department for further assistance.

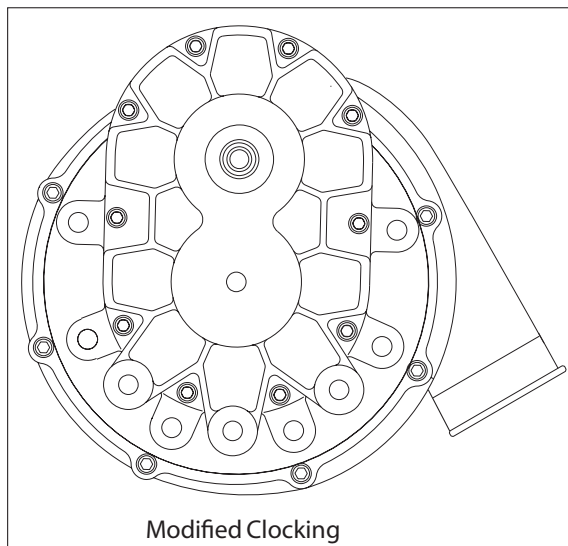


Fig. 2-a (applies to both H.O. and V-Power)

- D.** Evenly re-tighten the six cap screws, torque to 60 in/lbs (5ft/lbs).
- E.** Remove original 3.80" supercharger pulley from the supercharger and install the supplied 3.60" pulley.

**NOTE:** Included in this kit is a smaller than originally supplied supercharger pulley. This new pulley is recommended to achieve best performance results. Removal of the factory sealed pulley will reduce the supercharger warranty from three years to one year unless the supercharger unit (with the original pulley still attached) and new pulley are sent into Vortech for removal, installation and re-sealing. If supercharger warranty is not a concern or if the supercharger warranty has expired, the pulley may simply be removed and replaced with the new part supplied. Hammering/prying etc. on the supercharger and/or pulley will cause damage to the parts. Light heating of the supercharger pulley with a propane torch (if the pulley is tight on the shaft) will aid removal. A return authorization number is required before the supercharger and pulley are sent into Vortech. Call the Vortech service department at (805) 247-0226 for return authorization number. Return freight (ground) will be paid by Vortech.



## 2. SUPERCHARGER RECLOCKING AND REINSTALLATION, CONT'D

- F.** Remove the 3.5" plastic idler retainer and washer. Carefully reposition the idler and its two spacers to the lower mounting hole just below its current position. Reinstall the retainer previously removed and tighten. (See Fig. 2-c.)
- G.** Install the five 3/8-16 x 1.0" bolts and washers through the back side of the mounting plate.
- H.** Attach the supercharger assembly to the mounting plate using the previously installed hardware. A 9/16" ratcheting end wrench will greatly aid this step.
- I.** Secure the oil drain hose to the installed brass fitting in the oil pan, making sure to route in a smooth downward manner away from moving or hot objects.

**NOTE:** Any dips, "uphill" sections, kinks or restrictions may cause drainage problems and possible supercharger failure.

- J.** Attach the -4 oil feed hose to the straight -4 fitting installed in the supercharger. Secure away from moving or hot objects.
- K.** Using a 1/2" ratchet, rotate the factory spring tensioner clockwise and install the accessory drive belt. (See Fig. 2-d for proper belt routing.)

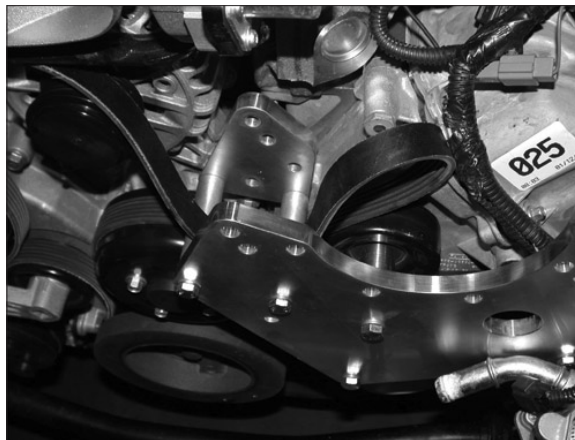


Fig. 2-b

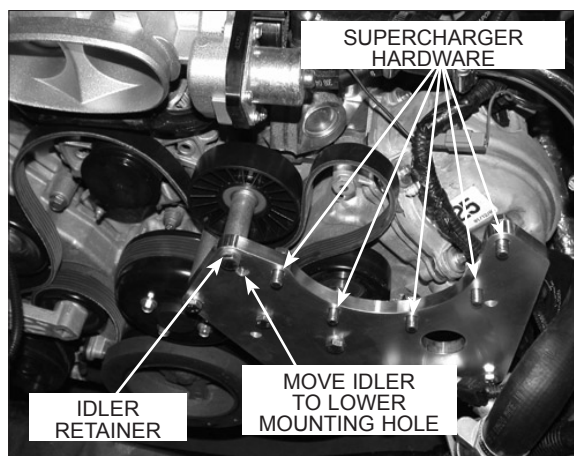


Fig. 2-c



**2. SUPERCHARGER RECLOCKING AND REINSTALLATION, CONT'D**

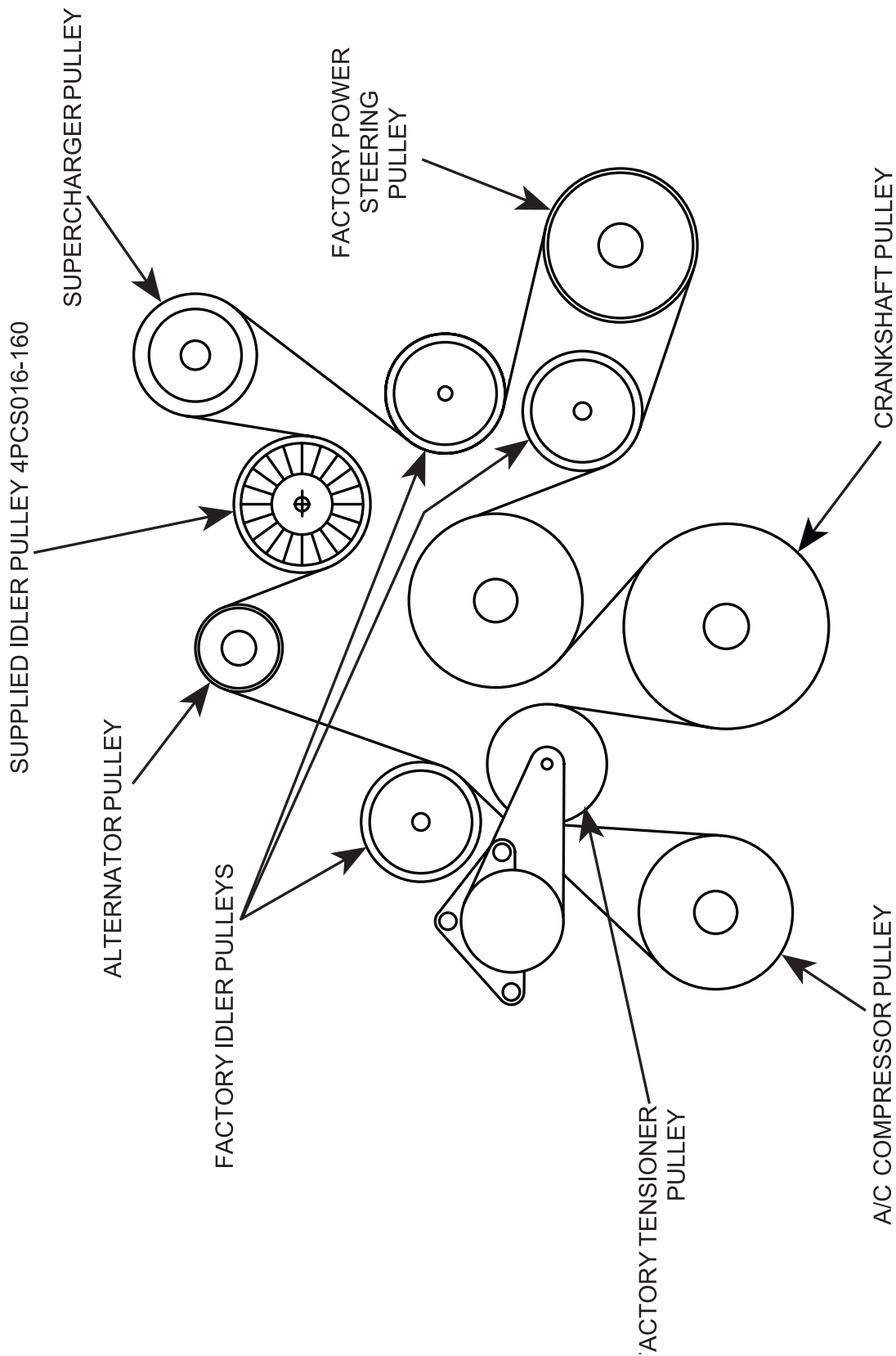


Fig. 2-d / Belt routing

### 3. CHARGE AIR COOLER INSTALLATION

#### 3A. BUMPER COVER AND SPLASH PAN

1. Raise the vehicle with a floor jack and set on jack stands.
2. Remove the seven 5.5mm headed screws retaining the lower splash panel. (See Fig. 3-a.)
3. Remove the six Phillips-head screws (3 each side) on the lower portions of the plastic inner fender liners. (See Fig. 3-b.)
4. Remove the five plastic clips retaining the front portion of the fender liner. Both sides need to be removed. (See Fig. 3-c.)
5. Remove the four 10mm nuts (2 each side) retaining the bumper cover to the fenders. (See Fig. 3-d.)

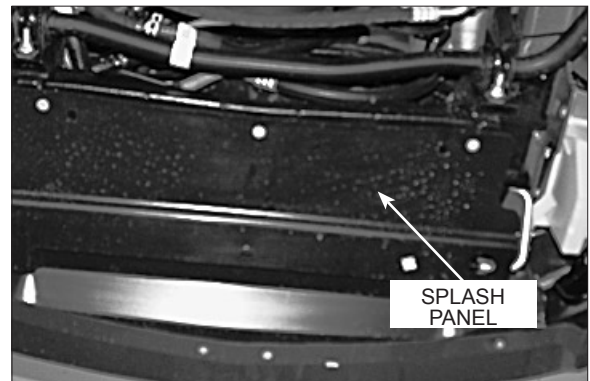


Fig. 3-a

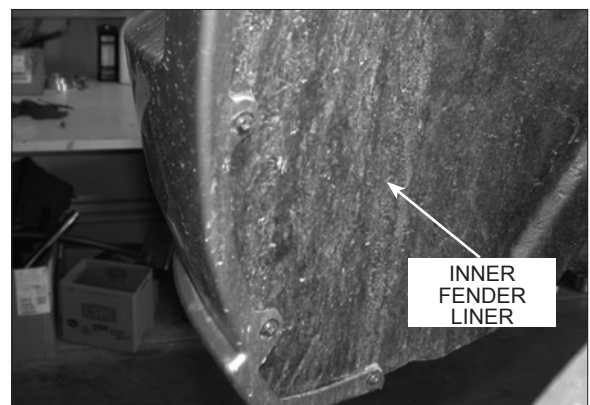


Fig. 3-b

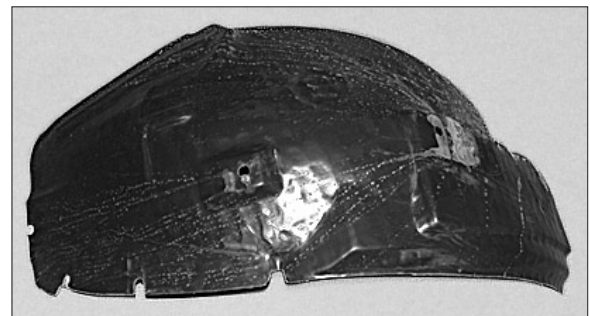


Fig. 3-c

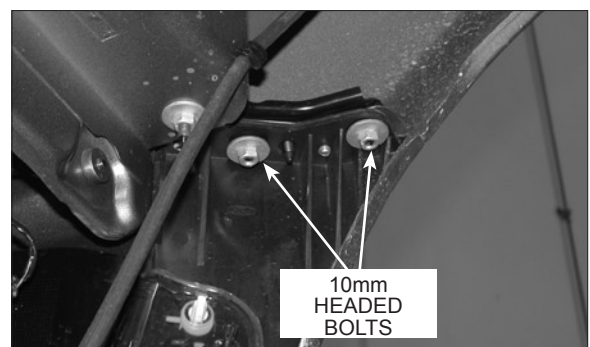


Fig. 3-d

### 3A. BUMPER COVER AND SPLASH PAN, CONT'D

6. Disconnect the connectors on the parking and the lower fog lights. (See Fig. 3-e.)
7. Remove the two 10mm headed bolts (1 each side upper portion of grill). (See Fig. 3-f.)

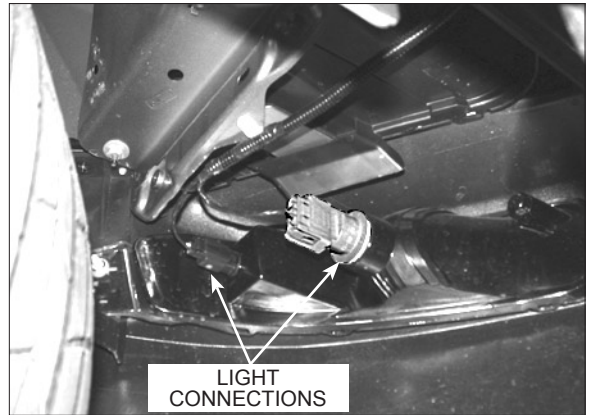


Fig. 3-e

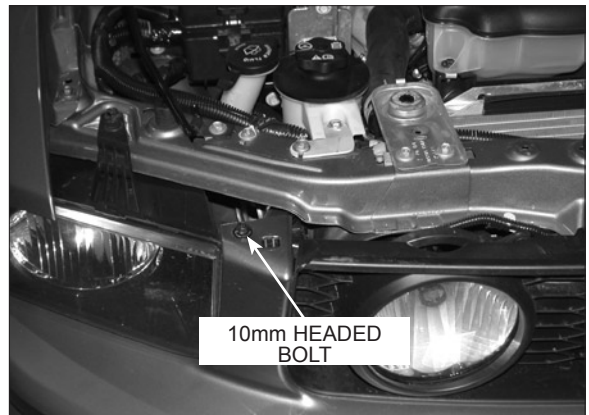


Fig. 3-f

### 3A. BUMPER COVER AND SPLASH PAN, CONT'D

8. Lift up on the tabs releasing them from the clips. (See Fig. 3-g.)
9. Pull out on the bumper cover
10. Remove the connector to the driving light in the grill (if equipped).
11. Remove the bumper cover and set aside. (See Fig. 3-h)

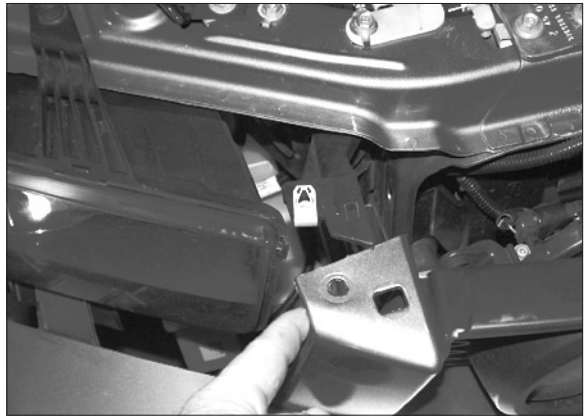


Fig. 3-g

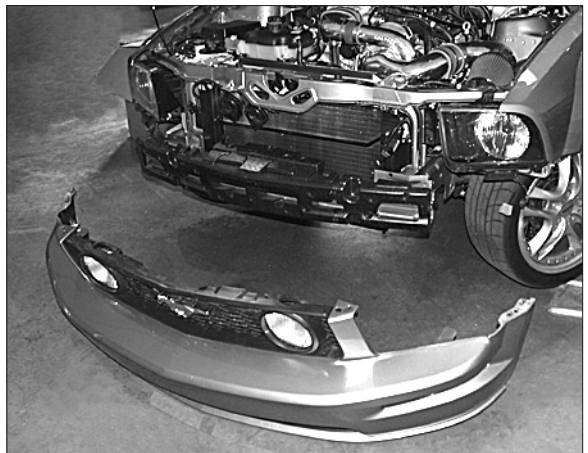


Fig. 3-h

### 3B. WATER COOLER ASSEMBLY INSTALLATION

**NOTE:** Refer to Fig. 3B-q for standard H.O. and 3B-r for V-Power throughout the following steps:

1. Locate the water cooler assembly 8N106-135.
2. Install the two mounting brackets 8N010-171 and 8N010-173 to the water cooler using the supplied 1/4-20 x 1/2" screws, washers. (See Fig. 3B-a.)

**NOTE:** Leave these screws loose for adjustment when attaching the assembly to the vehicle.

3. Remove four nylon push pins from the styrofoam bumper support and set the support and the pins aside to be reinstalled. (See Fig. 3B-b.)
4. Remove six of the eight 13mm headed inset bolts retaining the metal bumper support. (See Fig. 3B-c.)
5. Replace the bolts previously removed with the six 8mm x 1.25" x 35mm long bolts and washers provided.
6. Install the four 2A017-036 spacers (two each side) onto the bolts that will secure the water cooler. (See Fig. 3B-d.)

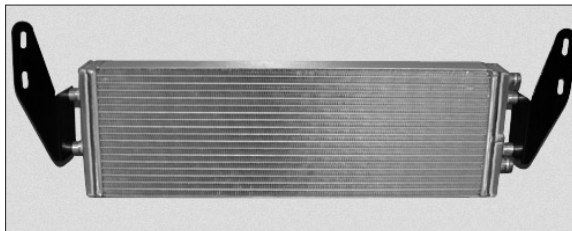


Fig. 3B-a

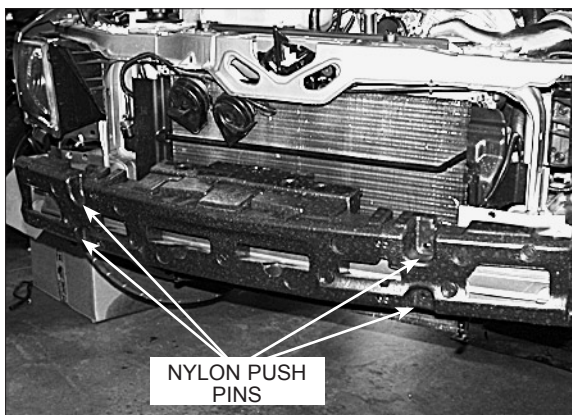


Fig. 3B-b

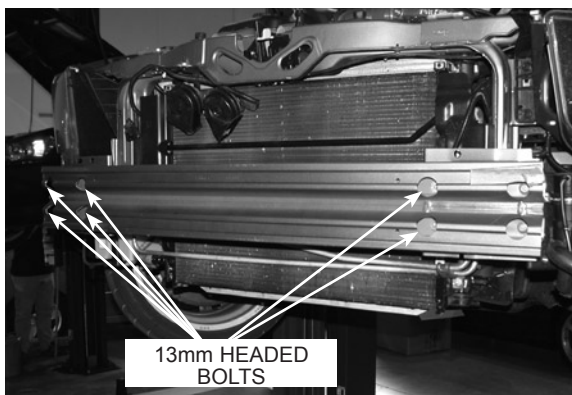


Fig. 3B-c

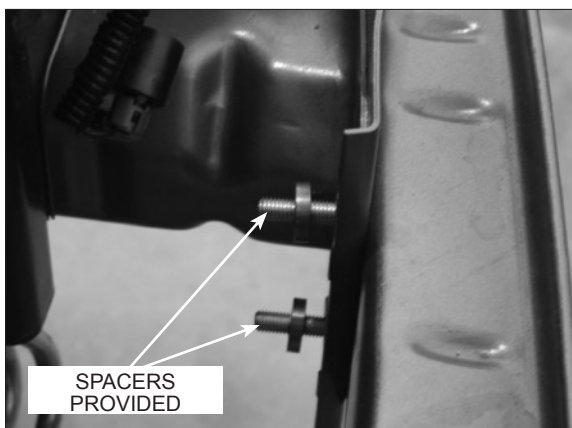


Fig. 3B-d



### 3B. WATER COOLER ASSEMBLY INSTALLATION, CONT'D

7. Attach the previously assembled water cooler to the bolts and spacers and secure with the 8mm nuts and washers provided. Tighten all cooler hardware at this time. (See Fig. 3B-e.)

**NOTE:** When installing the cooler, make sure that the water ports are configured as shown in Figs. 3B-a, 3B-q. For V-Power see 3B-r. The "top cooler port" must be the highest point on the cooler for proper air purging.

8. Attach the supplied short 90° hose (7U030-065) to the top port on the CAC cooler as shown. (See Fig. 3B-f.)
9. Install one of the supplied 3/4" hose unions into the open end of the previously installed 90° hose and secure. (See Figs. 3B-f, 3B-q.)

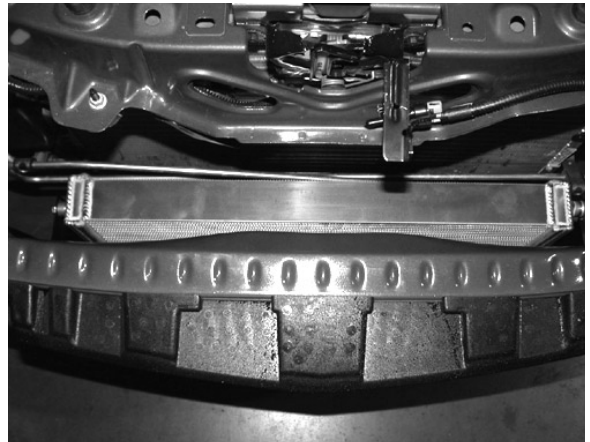


Fig. 3B-e

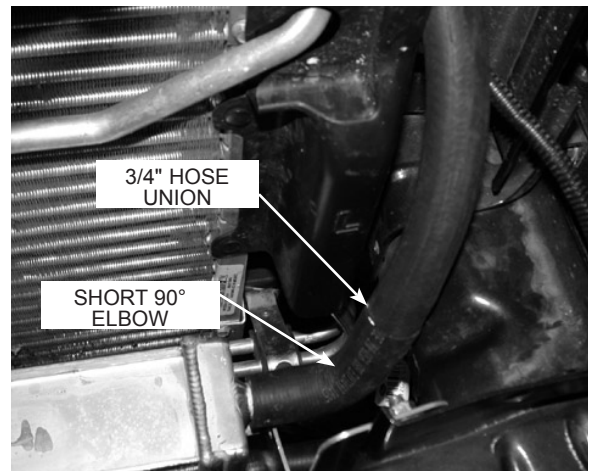


Fig. 3B-f



### 3B. WATER COOLER ASSEMBLY INSTALLATION, CONT'D

10. Locate assembly 8N104-125. Confirm that the assembly is complete.
11. Attach the provided ring terminal to the ground wire on the supplied water pump plug harness. Connect the supplied length of 16GA wire to the positive wire using the supplied butt connector. Connect the water pump harness to the water pump.
12. Locate the supplied water pump (8F001-403), two 2-3/8" adel clamps, and water pump mounting bracket. Place the adel clamps on the water pump. Using the supplied 1/4-20 hardware, secure the water pump and clamps to the mounting bracket. When installing, attach the water pump ground wire to one of the water pump mounting clamps using the previously installed ring terminal. (See Fig. 3B-g.)
13. Attach the pump assembly to the two 8mm x 35mm long bolts previously installed and secure using the 8mm nuts and washers provided. (See Fig. 3B-h.)
14. Route the positive wire up towards the driver's side valve cover.
15. Locate the ballast resistor plug. Install the supplied T-tap connector, cut the water pump positive wire (from the water pump) for best fit, attach the supplied male spayed connector and attach to the wire T-tap connector. (See Fig., 3B-i.)
16. Cut the water pump positive wire and install the inline fuse holder and fuse. Install the wire loom provided and secure away from heat and moving parts. (See Fig. 3B-i.)

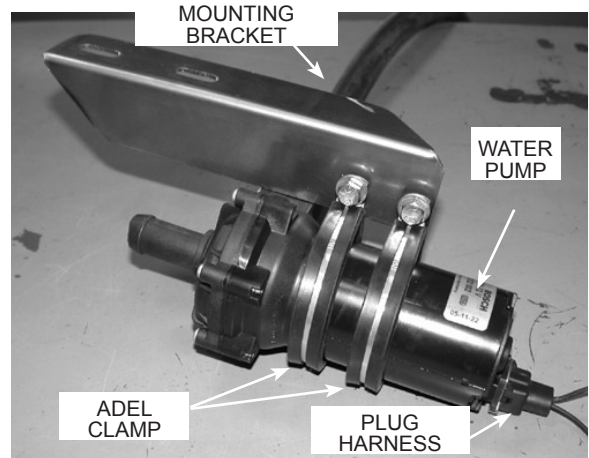


Fig. 3B-g

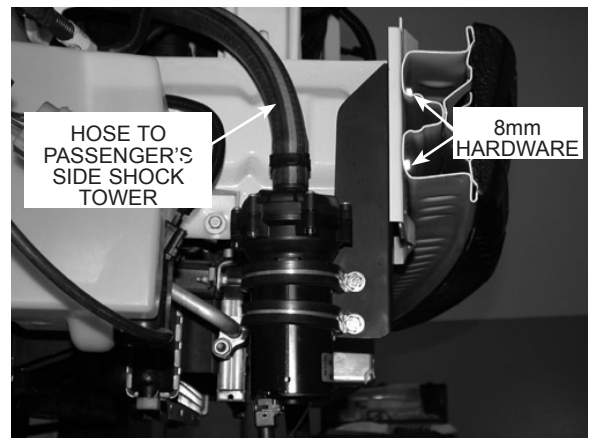


Fig. 3B-h

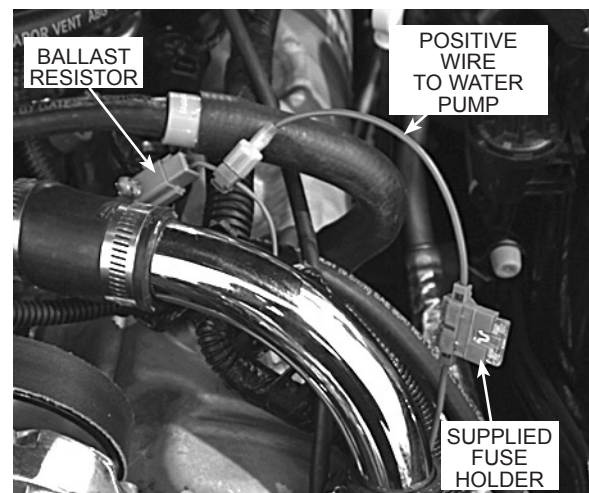


Fig. 3B-i

### 3B. WATER COOLER ASSEMBLY INSTALLATION, CONT'D

17. Locate the 3/4" x 150° molded rubber hose (7U038-150). Connect the short end of the 3/4" x 150° hose to the lower port on the previously installed water cooler. Install one of the provided 3/4" hose unions into the open end of the 150° hose. Attach a length of 3/4" hose approximately 24" between the hose union and the previously installed water pump discharge. Secure all hose connections using the nylon ratchet clamps provided. (See Fig. 3B-j.)
18. Attach a length of 3/4" hose approximately 48" long to the previously installed water pump feed port and secure. Route the open end of the installed hose toward the passenger's side shock tower. This hose will be connected in later step. (See Fig. 3B-h.)

**NOTE:** The installation of this hose section should maintain an "uphill" routing without dips or kinks.

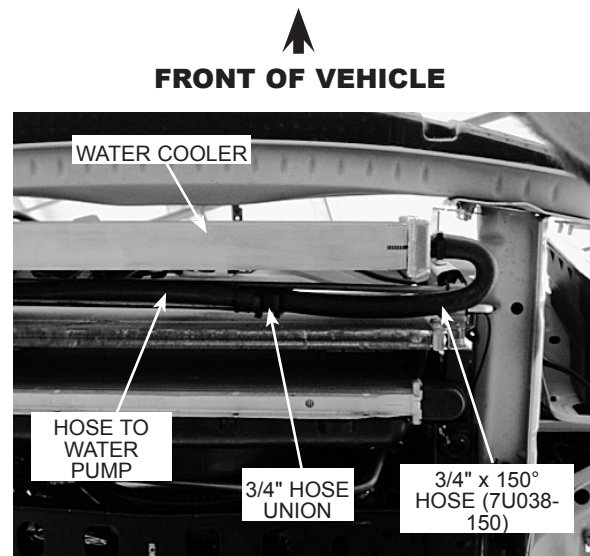


Fig. 3B-j Viewed From Below

### 3B. WATER COOLER ASSEMBLY INSTALLATION, CONT'D

19. Assemble the surge tank reservoir 8N056-060 install a 1/2"NPT x 3/4" straight barbed fitting in the bottom of the surge tank and one 1/2"NPT x 3/4" x 90° in the side. (See Fig. 3B-k.)
20. Locate and attach the surge tank mounting bracket 8N010-160. Attach the bracket with two 1/4-20 x 1/2" socket head cap screws and washers. (See Fig. 3B-l.)



Fig. 3B-k

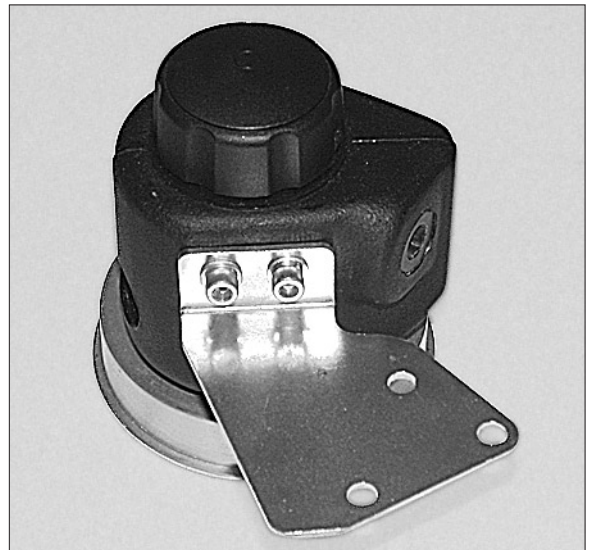


Fig. 3B-l

### 3B. WATER COOLER ASSEMBLY INSTALLATION, CONT'D

21. On the passenger's side of the engine, attached to the valve cover, is a large wire harness. The harness will have to be relocated to gain clearance for the surge tank and the radiator overflow reservoir. (See Figs. 3B-n, 3B-m.)
22. Detach the wiring harness from the retaining clips and move the harness to the shock tower. Secure the harness to the A/C line with wire ties. (See Fig. 3B-n.)
23. Remove the small clip retaining the small wiring harness to the shock tower. (See Fig. 3B-n.)
24. Attach the small harness to the large harness with wire ties.
25. To gain clearance for the coolant reservoir, the A/C line will need to be bent slightly towards the passenger's side fender. (See Fig. 3B-n.)

**NOTE:** A/C line is under high pressure. Use caution not to kink or damage the line.

#### (2005-2006 Only)

26. Remove the 10mm headed screw retaining the ground strap to the bracket on the strut tower. (See Fig. 3B-o.)



Fig. 3B-m

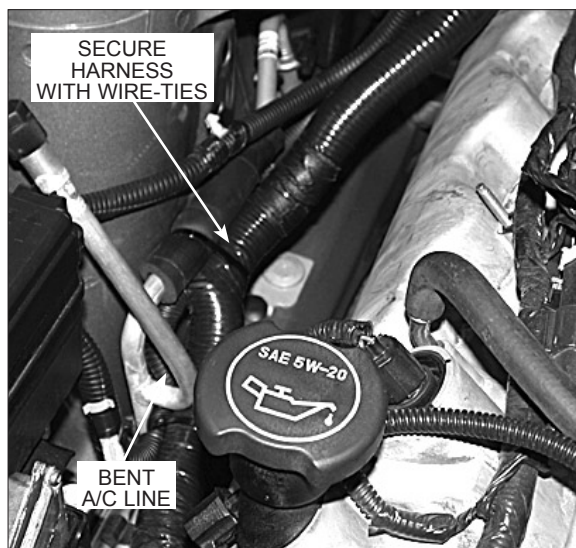


Fig. 3B-n

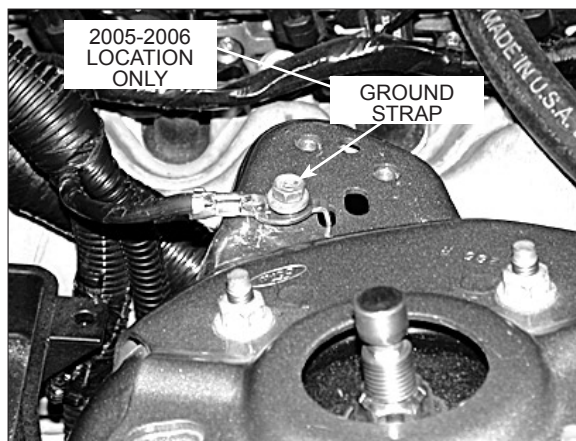


Fig. 3B-o



### 3B. WATER COOLER ASSEMBLY INSTALLATION, CONT'D

- 27.** Attach the 3/4" hose previously installed to the straight 1/2"NPT x 3/4" barb at the bottom of the surge tank reservoir. Secure with a nylon clamp. (See Fig. 3B-p.)

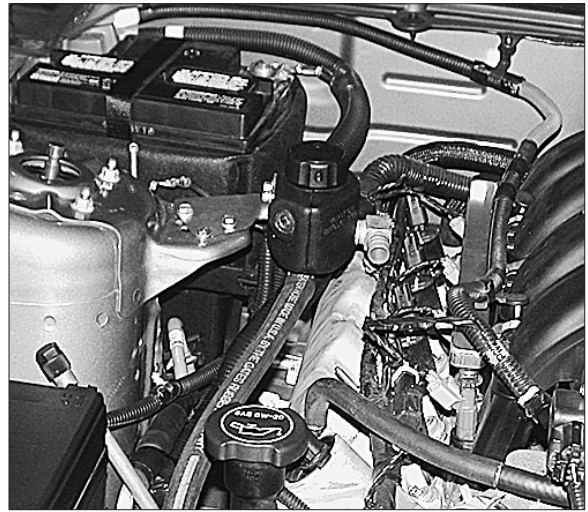


Fig. 3B-p

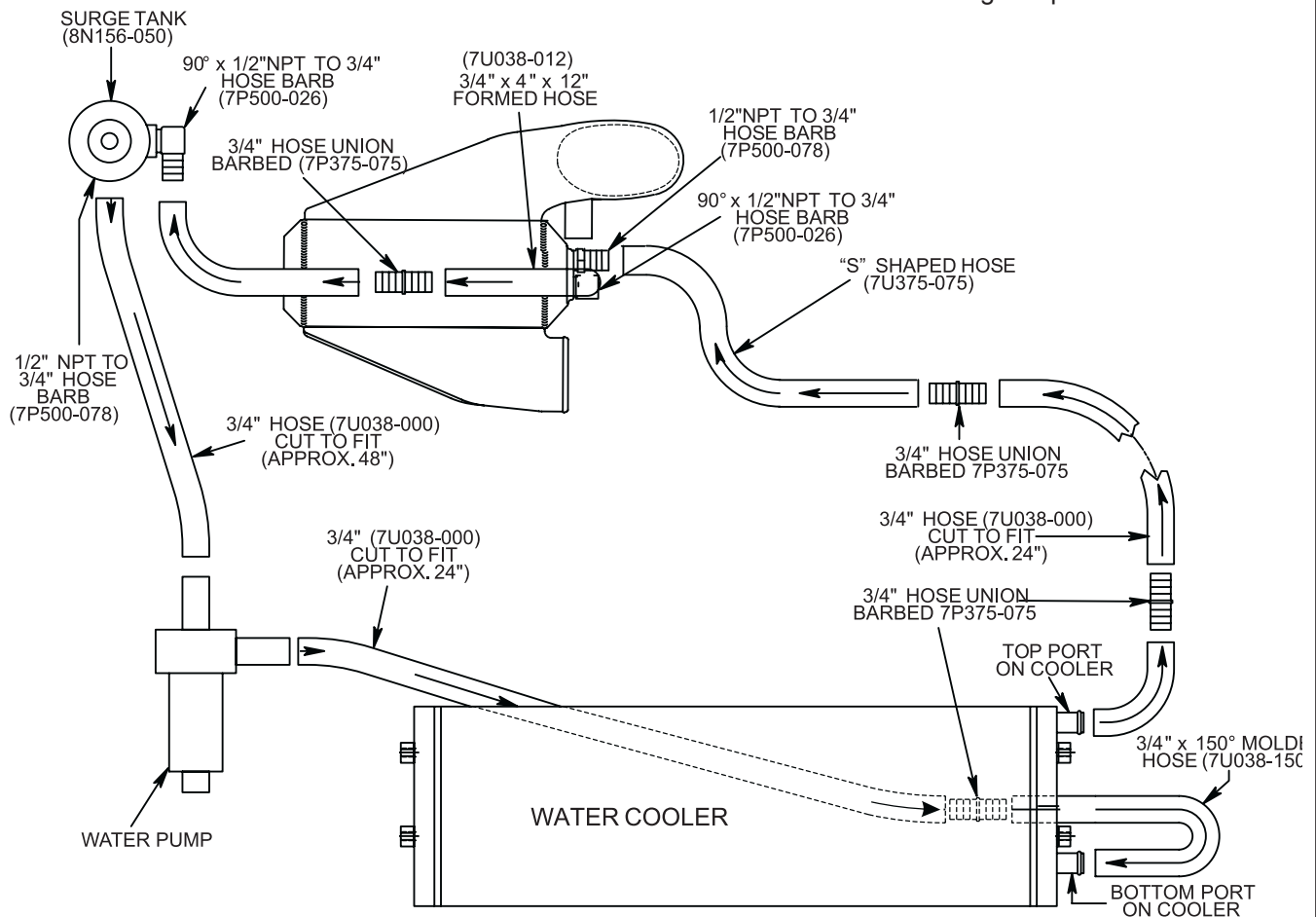


Fig. 3B-q  
(Standard H.O.)

### 3B. WATER COOLER ASSEMBLY INSTALLATION, CONT'D

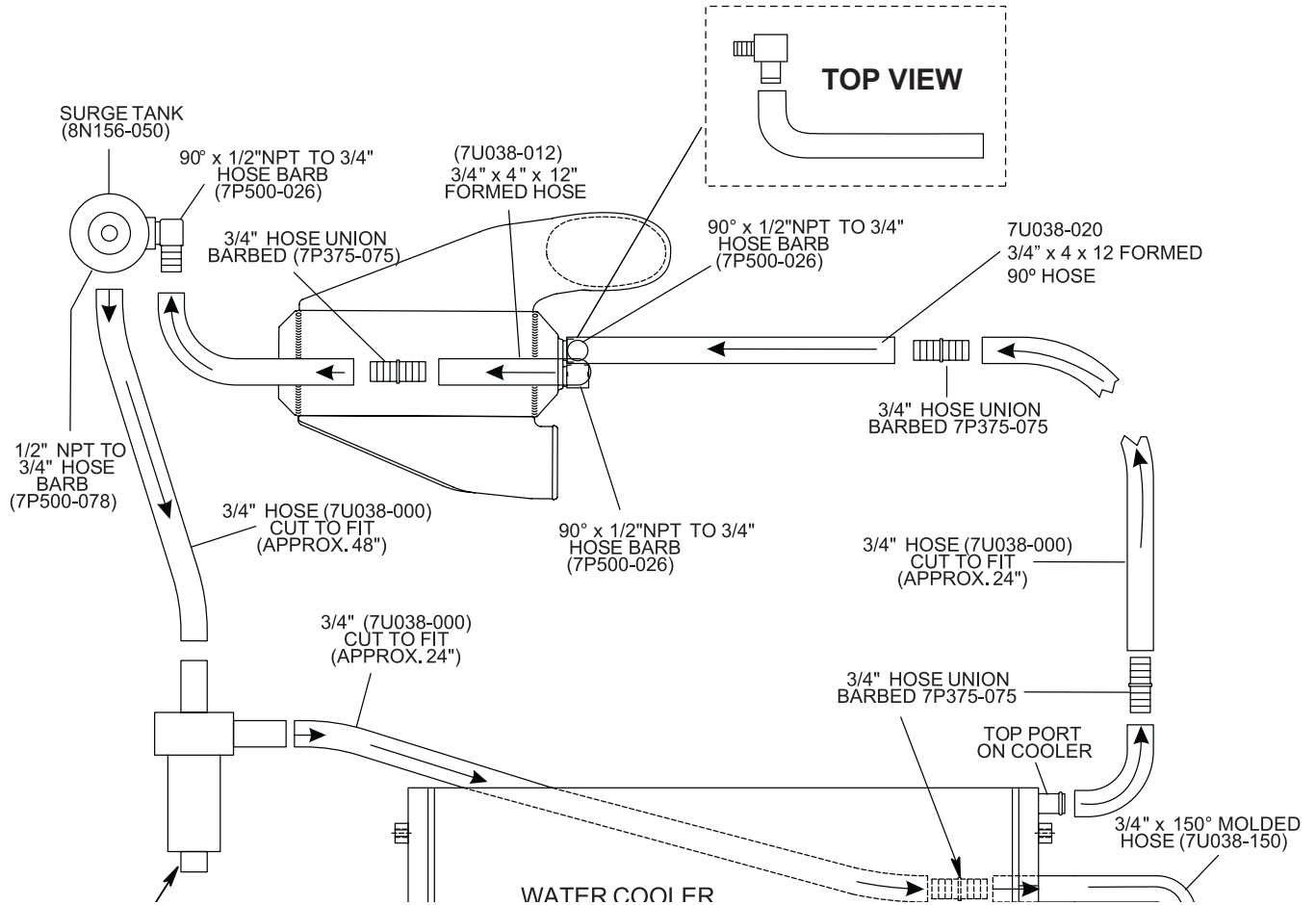


Fig. 3B-r  
(V-Power)



### 3C. ENGINE COOLANT RESERVOIR INSTALLATION (2005-2006 MODELS ONLY)

**NOTE:** For 2007-2008 models skip to Section 3.E.

1. Locate assembly 8N155-080.
2. Attach the rear reservoir mounting bracket 4FU010-051 to the reservoir with the 1/4-20 x 1/2" long bolts and washers provided. (See Fig. 3C-a.)
3. Attach bracket 4FU010-061 to the front of the reservoir with the hardware provided. (See Fig. 3C-b.)
4. Locate and install 1/4"NPT x 3/8" barbed fitting in the tapped hole just above the previously installed mounting bracket. This hole may have to be opened using the appropriate drill bit. (See Fig. 3C-c.)

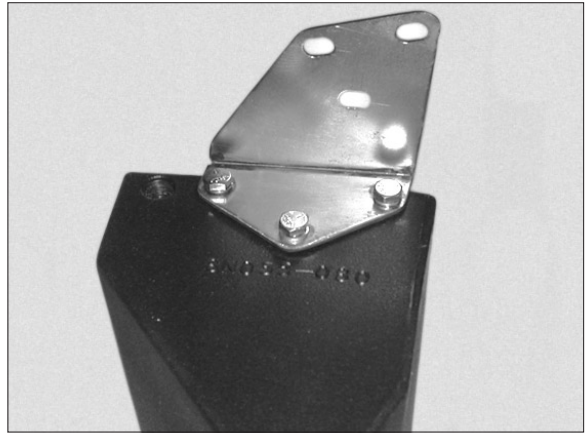


Fig. 3C-a



Fig. 3C-b

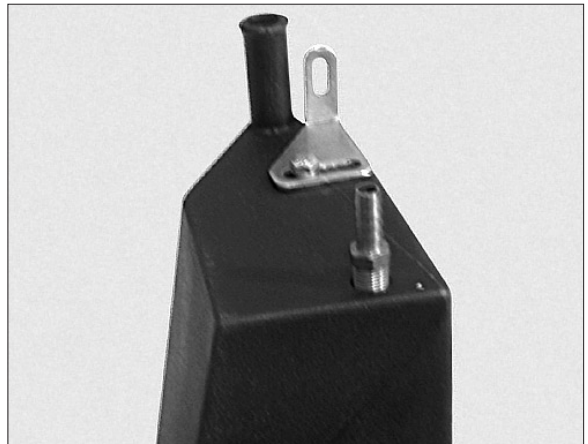


Fig. 3C-c

### 3C. ENGINE COOLANT RESERVOIR INSTALLATION (2005-2006 MODELS ONLY)

5. Remove the 10mm headed bolt that secures the back of the ECU and the power distribution box. (See Fig. 3C-d.)
6. Install the coolant reservoir. Secure the front of the reservoir with the factory fastener removed previously. (See Fig. 3C-e.)

**NOTE:** Leave this bolt loose for final adjustment in a later step.

7. Attach the rear mounting bracket with the surge tank mounting bracket to the strut tower with the 6mm x 20mm long screws and washer provided. (See Fig. 3C-f.)

**NOTE:** Reinstall the factory ground wire with one of the 6mm screws and washers.

8. Attach a length of 3/4" hose (approximately 3' long) to the 3/4" bung on the front of the coolant reservoir. Route the hose to the 3/4" outlet on the thermostat housing secure the hose with the clamps provided. (See Fig. 3C-g.)

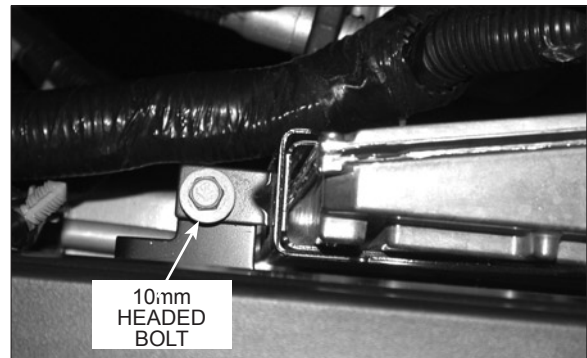


Fig. 3C-d

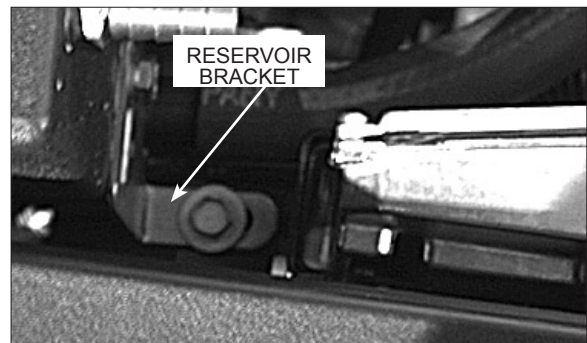


Fig. 3C-e

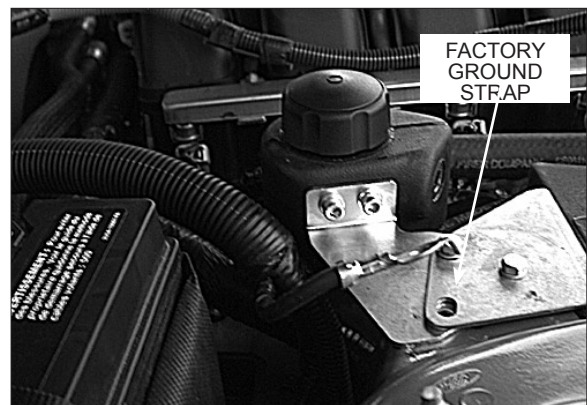


Fig. 3C-f



Fig. 3C-g

### 3C. ENGINE COOLANT RESERVOIR INSTALLATION (2005-2006 MODELS ONLY)

9. Modify the small hose removed from the factory coolant overflow reservoir. By cutting the "S" bend off the hose end. (See Fig. 3C-h.)
10. Install a 3/8" union and a #17 stepless clamp. Secure the clamp. Using a length of 3/8" (approximately 40" long) hose that is provided, secure the hose to the union with a #17 stepless clamp. (See Fig. 3C-i.)
11. Route the overflow hose across the radiator and under the radiator retaining bracket to the 1/4"NPT x 3/8" hose barb fitting in the coolant reservoir securing with a clamp. (See Fig. 3C-j.)



Fig. 3C-h



Fig. 3C-i



Fig. 3C-j



### 3D. RADIATOR HOSE MODIFICATIONS (2005-2006 MODELS ONLY)

1. Remove the passenger's side upper radiator hose. (See Fig. 8D-a.)
2. Modify the upper hose by cutting the hose just after the bend. (See Fig. 8D-b.)
3. Attach the hose to the formed stainless tube 4FU014-010 with a #24 hose clamp.
4. A section of 1-1/2"ID hose left from the coolant tube relocation will be cut to approximately 2-3/4" long and attached to the outlet of the radiator reusing the factory spring clamp to secure the hose to the outlet.
5. Install the formed coolant tube to the inlet on the engine and to the radiator. Secure with hose clamps. (See Fig. 8D-c.)



Fig. 8D-a



Fig. 8D-b



Fig. 8D-c

### 3E. ENGINE COOLANT RESERVOIR INSTALLATION (2007 - 2008 MODELS ONLY)

1. Locate assembly 8N155-082.
2. Attach the rear reservoir mounting bracket 4FU010-091 to the reservoir with the 1/4-20 x 1/2" long bolts and washers provided. (See Fig. 3E-a.)
3. Attach bracket 4FU010-061 to the front of the reservoir with the hardware provided. (See Fig. 3E-b.)
4. Locate and install 1/4"NPT x 3/8" barbed fitting in the tapped hole just above the previously installed mounting bracket. This hole may have to be opened using the appropriate drill bit. (See Fig. 3E-c.)

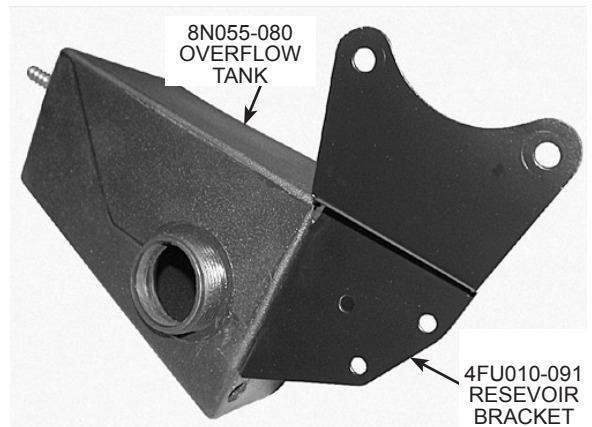


Fig. 3E-a



Fig. 3E-b

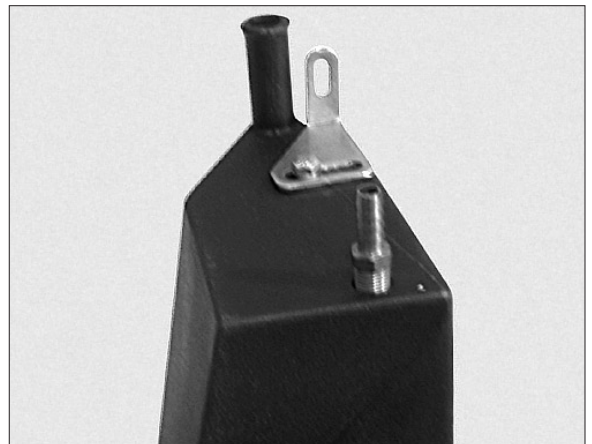


Fig. 3E-c

### 3E. ENGINE COOLANT RESERVOIR INSTALLATION (2007 - 2008 MODELS ONLY), CONT'D

5. Remove the 10mm headed bolt that secures the back of the ECU and the power distribution box. (See Fig. 3E-d.)
6. Install the coolant reservoir. Secure the front of the reservoir with the factory fastener removed previously. (See Fig. 3E-e.)

**NOTE:** Leave this bolt loose for final adjustment in a later step.

7. Attach the rear mounting bracket with the surge tank mounting bracket to the strut tower using the factory strut mounting hardware. (See Fig. 3E-f.)
8. Attach a length of 3/4" hose (approximately 22" long) to the 3/4" bung on the front of the coolant reservoir. Secure using one of the #10 hose clamps provided. Route the open end of the hose to the 1" hose previously connected to the factory coolant reservoir. Connect and secure the two hoses using the 3/4" x 1" hose union, the factory 1" spring clamp and the #10 hose clamp provided.

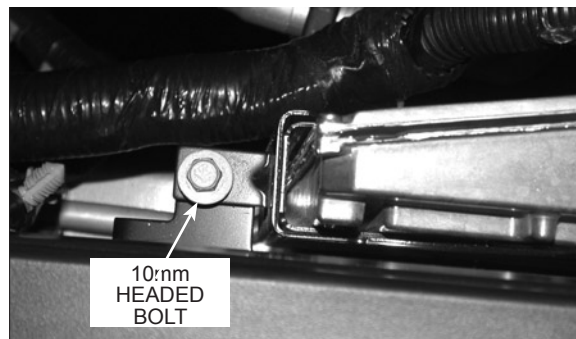


Fig. 3E-d

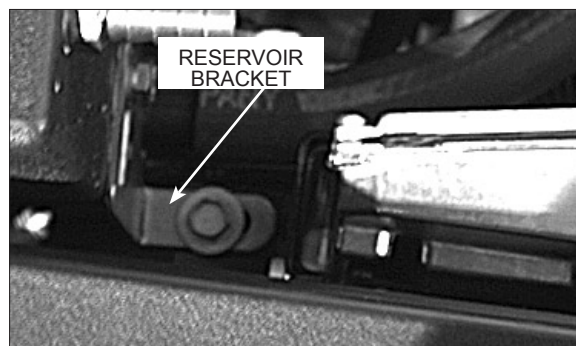


Fig. 3E-e

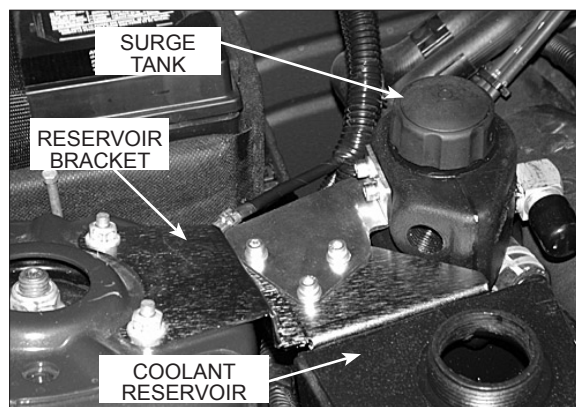


Fig. 3E-f



Fig. 3E-g



### 3E. ENGINE COOLANT RESERVOIR INSTALLATION (2007-2008 MODELS ONLY), CONT'D

9. Modify the small hose removed from the factory coolant overflow reservoir. By cutting the "S" bend off the hose end. (See Fig. 3E-h.)
10. Install a 3/8" union and a #17 stepless clamp. Secure the clamp. Using a length of 3/8" (approximately 40" long) hose that is provided, secure the hose to the union with a #17 stepless clamp. (See Fig. 3E-i.)
11. Route the overflow hose across the radiator and under the radiator retaining bracket to the 1/4"NPT x 3/8" hose barb fitting in the coolant reservoir securing with a clamp. (See Fig. 3E-j.)



Fig. 3E-h



Fig. 3E-i

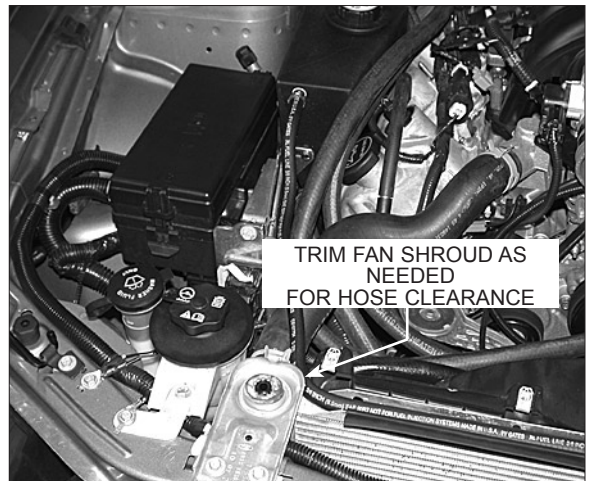


Fig. 3E-j

### 3F. COOLER CORE INSTALLATION

1. Locate the charge air cooler assembly.
2. Attach the 4.5" x 2" sleeve to the throttle body and secure with a #72 hose clamp.
3. Install the 1/2"NPT x 3/4" barb 90° and straight fittings into the charge cooler as shown. (See Fig. 3F-a.)
4. Attach the long end of the 2.75" (3.0" if installing the V-Power upgrade) silicone elbow to the cooler inlet and loosely install a #44 hose clamp. The open end of the elbow should be facing up as it will be attached to the supercharger discharge.

**NOTE:** See section 3G for bypass valve installation.

5. Lower the cooler assembly into position. Attach the open end of the previously installed 2.75" elbow to the supercharger discharge and loosely install a #44 hose clamp.
6. Attach the cooler discharge to the previously installed sleeve on the throttle body. Secure with a #72 hose clamp.
7. Tighten all cooler clamps at this time.
8. Locate the remaining 3/4" molded 90° hose. Trim approximately 5" from the long end and attach the short end to the 3/4" x 90° fitting previously installed in the cooler. Secure with the nylon ratchet clamp provided.
9. Install a 3/4" hose union into the open end of the previously installed hose. Attach a section of 3/4" hose approximately 32" long to the union. Route the open end of the hose to the surge tank. Using the remaining adel clamp and factory hardware, secure the hose to the factory coolant reservoir mounting location. (See Figs. 3F-q, 3F-b for assistance.) Secure all hose connections with the supplied nylon ratchet clamps.
10. (Standard HO only) Locate the supplied "S" shaped hose. Trim approximately 1" from the short end and attach it to the straight fitting previously installed in the cooler. Install a 3/4" hose union into the open end of the "S" hose. Attach a section of 3/4" hose approximately 24" long to the union and route to the driver's side and down to the water cooler. Trim for best fit and connect to the 3/4" hose union previously installed in the 90° short rubber hose attached to the top water port on the CAC cooler.

**NOTE:** The installation of this hose section should maintain an "uphill" routing without dips or kinks.

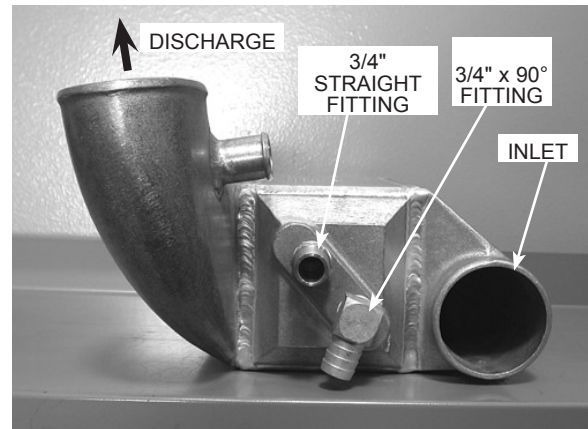


Fig. 3F-a

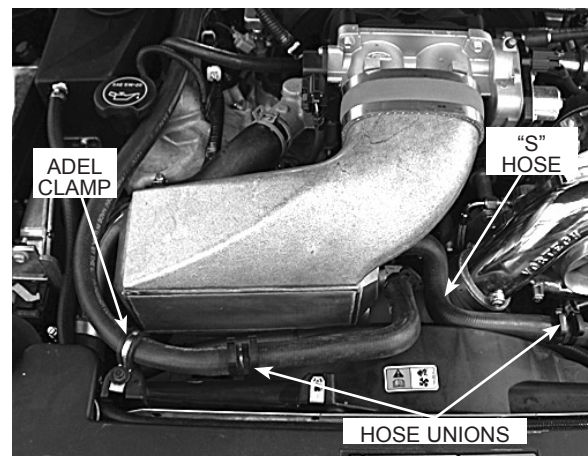


Fig. 3F-b

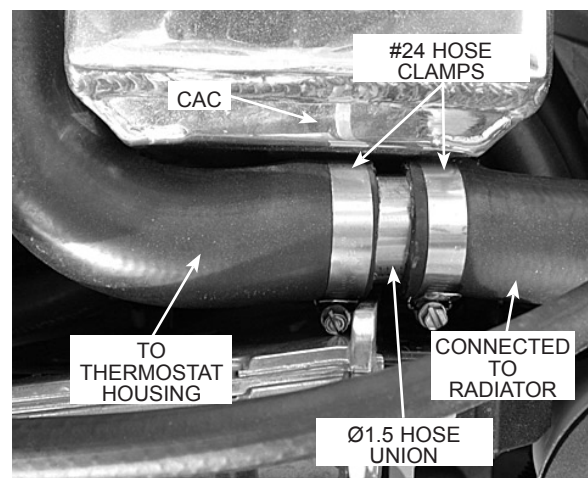


Fig. 3F-c | 2007-2009 Models Only

### **3F. COOLER CORE INSTALLATION (CONT'D)**

- 11.** At this time, verify that all hose connections are secure using the nylon ratchet clamps provided.
- 12.** (2007-2009 Models Only) To provide additional clearance for the CAC, you will need to cut the factory radiator hose approximately 4" from its connection at the radiator. Install the supplied Ø1.5" x 4" hose union and two #24 hose clamps. Adjust to allow CAC clearance and secure. (See Fig. 3F-c.)

### 3G. COMPRESSOR BYPASS VALVE ASSEMBLY INSTALLATION (V-POWER/BULLITT KITS ONLY)

1. Attach the Maxflow Race Bypass Valve to the flange located on the lower duct of the CAC using the supplied hardware and gasket.
2. Attach one end of the Ø 1.75" silicone coupler to the outlet of the bypass valve and secure with #28 hose clamp. (See Fig 3G-a)
3. Insert the Ø 1.75" side of the bypass "Y" into the open end of the Ø 1.75" silicone coupler and secure with #28 hose clamp.
4. Secure the two lengths of 1" hose cut to 16" and 17.5" to the two outlets on the bypass "Y" with #16 hose clamps (See Figure 3G-b for orientation).
5. Leave the opposite ends of the 1" hose open for future attachment to the air inlet box.
6. Attach a length of 5/32" vacuum hose to the bypass valve and route to the vacuum port of the fuel rail sensor.
7. Cut a section of the factory hose and install the vacuum TEE that is provided.
8. Attach the vacuum hose from the bypass valve to the TEE

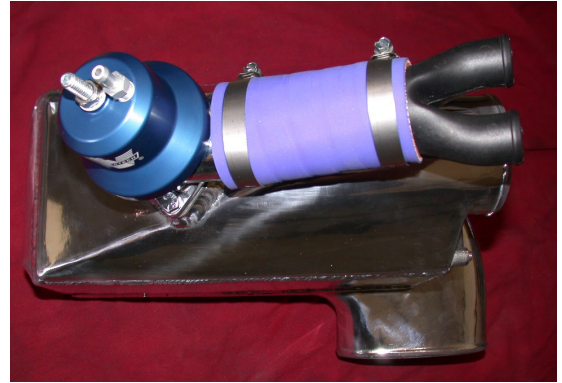


Fig. 3G-a (V-Power/Bullitt Kits Only)

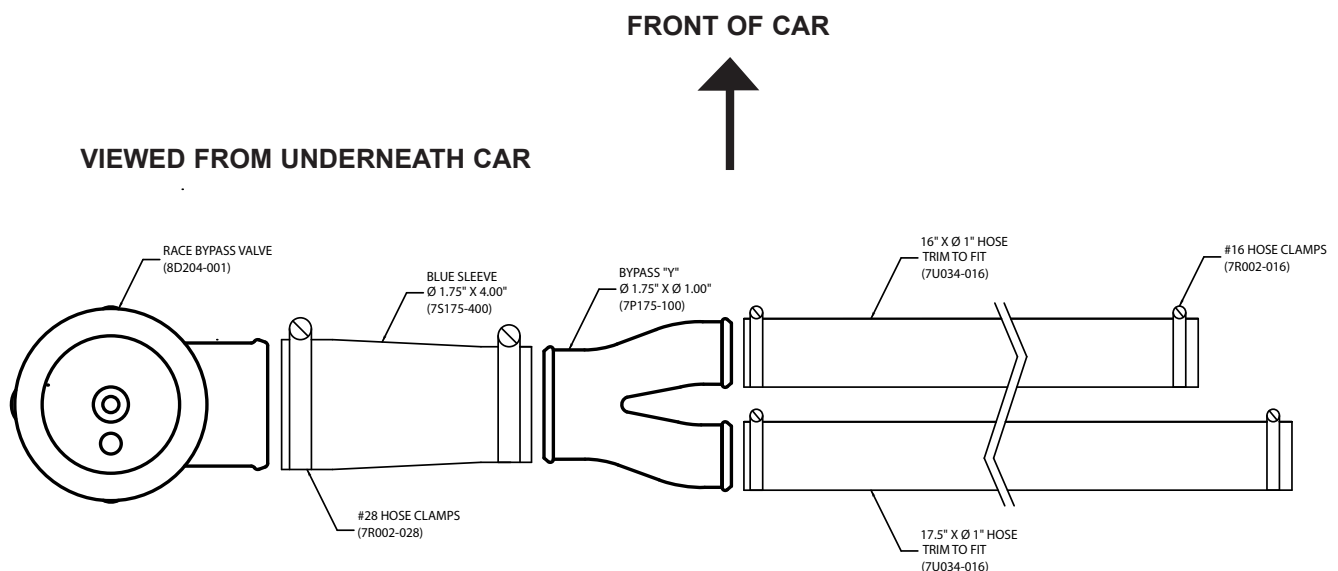


Fig. 3G-b

### 3H. COOLANT RESERVOIR FILL

1. Check to make sure all previously installed hose connections are secure.
2. Fill the engine cooling system through the Vortech supplied coolant reservoir using the factory coolant previously drained.
3. Locate the factory coolant reservoir cap removed in Section 1 and install it on the Vortech supplied reservoir.

**NOTE:** 2005-2006: Vehicles equipped with a 1/8"NPT bleed plug in the coolant cross-over tube, remove the 1/8"NPT bleed plug before filling the coolant system. Once the coolant system is filled and all trapped air purged, re-install the 1/8"NPT plug. Thread sealant should be used when re-installing.

4. CAC cooling system.
  - a. Temporarily remove the 3/4" hose attached to the 3/4" x 90° fitting on the CAC surge tank.
  - b. Cap the open end of the 3/4" x 90° fitting using the provided vinyl cap.
  - c. Fill the CAC system using a 25%/75% anti-freeze/water mix. Using a funnel, fill through the 3/4" hose removed from the surge tank fitting.
  - d. Fill the system until the coolant level reaches the surge tank.
  - e. Remove the vinyl cap from the surge tank fitting and reinstall the 3/4" hose previously removed and secure with the nylon ratchet clamp.
5. Reinstall the front bumper assembly including the foam inner bumper, all plastic splash panels and light connections in the reverse order removed.



### 3I. COMPRESSOR BYPASS VALVE ASSEMBLY INSTALLATION (HO KITS ONLY)

- A.** Assemble the bypass using a piece of 1" hose cut to 11" long and a piece cut to 13" long and four #16 hose clamps.
- B.** Attach the 11" piece of hose to the inlet of the bypass and secure with a clamp.
- C.** Secure the 13" piece to the outlet of the valve, securing it with a clamp. (See Fig. 3I-a.)
- D.** Attach the bypass assembly to the charge cooler. The 11" long piece will be attached to the charge cooler. Secure with clamps. Leave the 13" long section open for future attachment to the air inlet.
- E.** Attach a length of 5/32" vacuum hose to the bypass valve and route to the vacuum port of the fuel rail sensor.
- F.** Re-attach the vacuum hose from the bypass valve to the TEE.

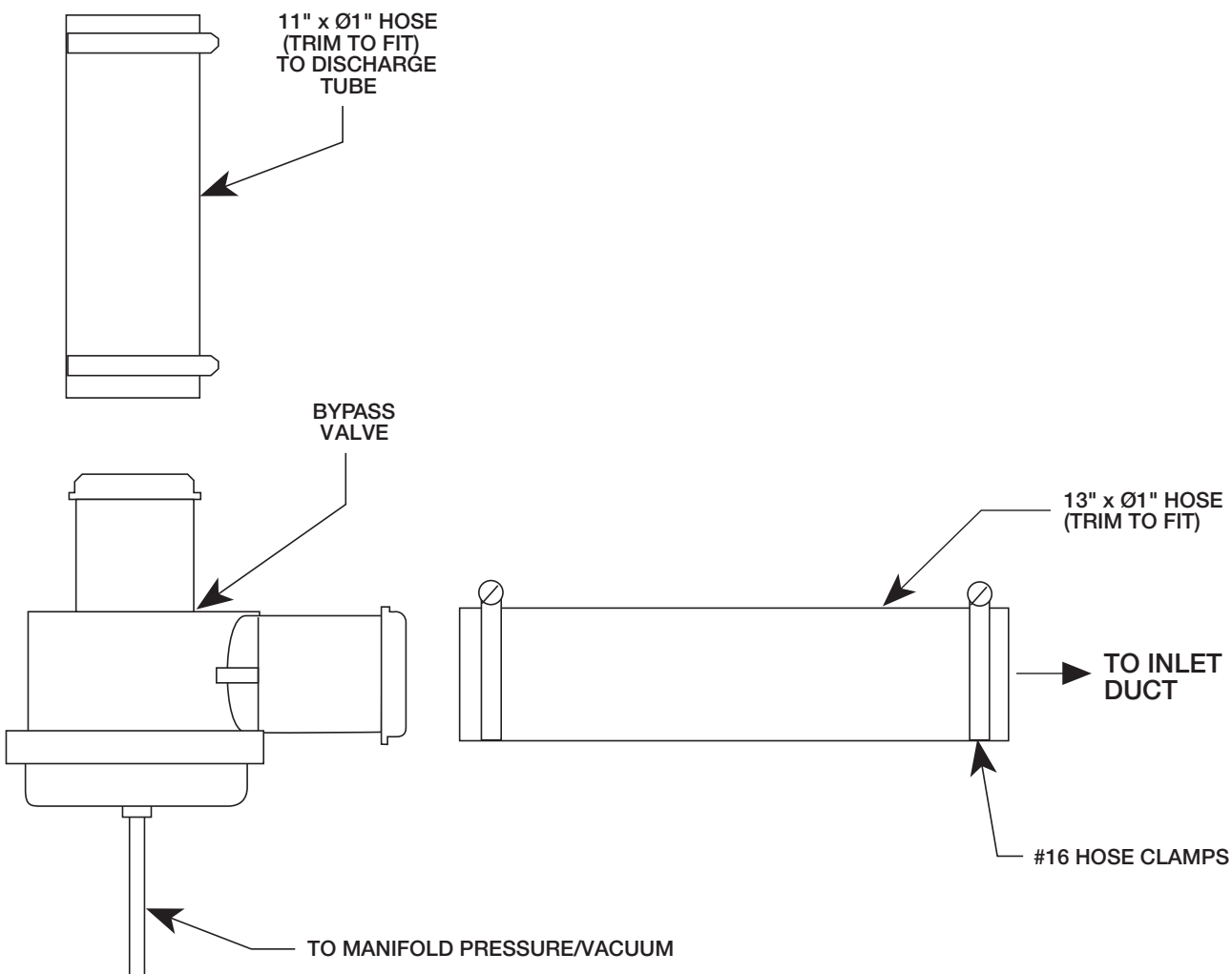


Fig. 3I-a

## 4. AIR INLET ASSEMBLY

- A.** Re-attach the 3/8" hose to the 1/4"NPT x 3/8" hose x 90° fitting installed in the inlet duct.
- B.** Attach the 1" bypass outlet hose to the 90° plastic fitting and secure the hose with a #16 hose clamp.
- C.** Re-install the duct to the inlet of the supercharger and secure in place with the clamps previously removed
- D.** Install the 180° duct and the MAF sensor with filter to the inlet duct leading to the Supercharger. (See Figs. 4-a, 4-b.) Clock the MAF exactly as shown in the figure.
- E.** Secure the rear clamp at the inlet duct union to the previously installed support bracket. (See Fig. 4-b.).



Fig. 4-a

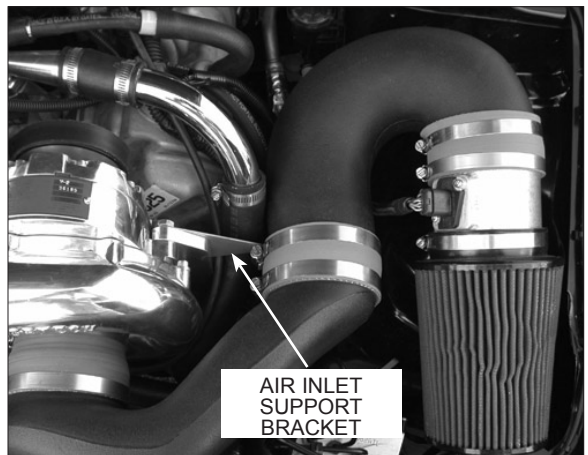


Fig. 4-b

## 4. AIR INLET ASSEMBLY, CONT'D

- F.** Attach the 3/8" hose previously connected to the passenger's side valve cover, to the 1/4"NPT x 3/8" hose x 90° fitting installed in a previous step.
- G.** Attach the 1" bypass outlet hose to the 90° plastic fitting and secure the hose with a #16 hose clamp.
- H.** Install the duct to the inlet of the supercharger and secure in place with the clamps provided.
- I.** Locate and install a 4.0" x 2.0" long sleeve to the inlet of duct 4FU012-010 and secure with two #64 clamps. (See *Fig. 4-e*.)
- J.** Remove the Factory MAF sensor element from the top portion of the air filter housing.
- K.** Install the element using the 4mm hardware provided to the supplied MAF tube. (See *Figs. 4-f, 4-g*.)

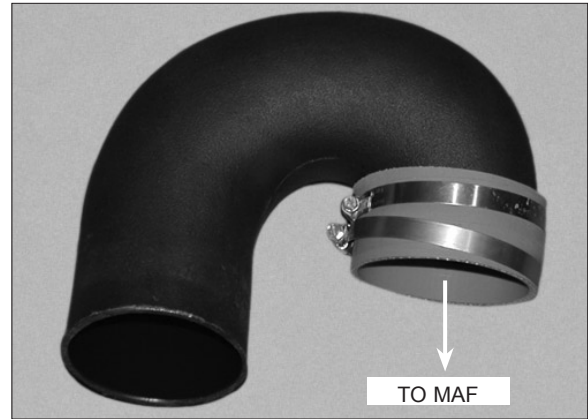


Fig. 4-e

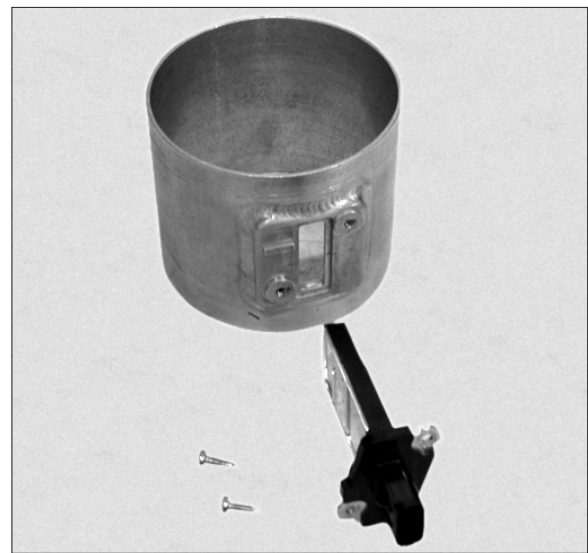


Fig. 4-f

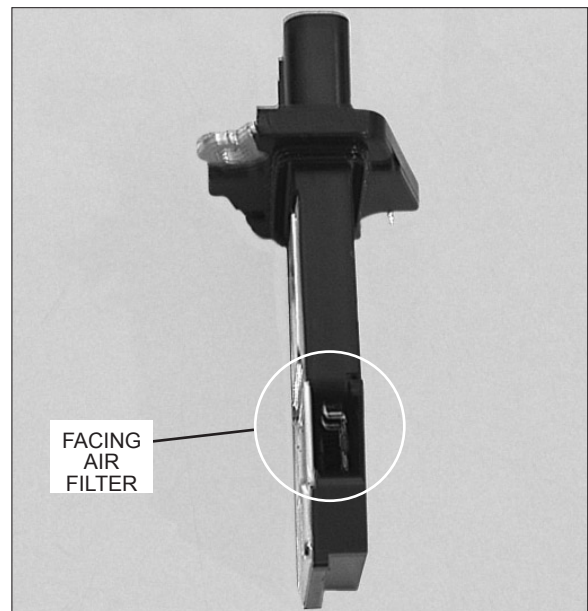


Fig. 4-g

## 5. AIR INLET ASSEMBLY (V-POWER / BULLITT KITS ONLY)

- A.** Locate assembly 4FU112-010.
- B.** Remove two of the 3/8-16 x 1" bolts securing the supercharger in place. Install the air inlet support bracket and secure with the 3/8" bolts removed from the supercharger mounting plate. (See Fig. 5-a.)
- C.** Install the Two 3/4"NPT x 1" x 90° plastic fittings to the air inlet duct. (See Fig. 5-b.)
- D.** Install the 1/4"NPT x 3/8" hose barb fitting in the location noted. (See Fig. 5-c.)
- D.2** (V-Power Only) Drill out the second 3/4" NPT location on the air inlet duct using caution not to damage the threads and install the second 3/4" NPT x 1 x 90° plastic fitting to the air inlet duct. Orient both fittings as shown in Fig 5-d2.
- E.** Attach the 4.0" x 3.5" reducer sleeve to the inlet duct. Secure the sleeves with the clamps provided. (See Fig. 5-d.)



Fig. 5-a

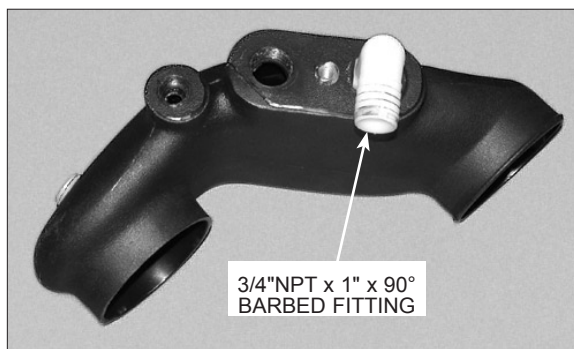


Fig. 5-b

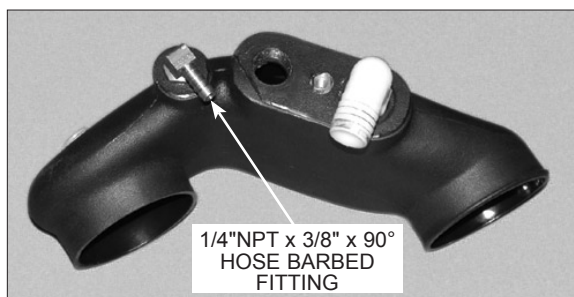


Fig. 5-c

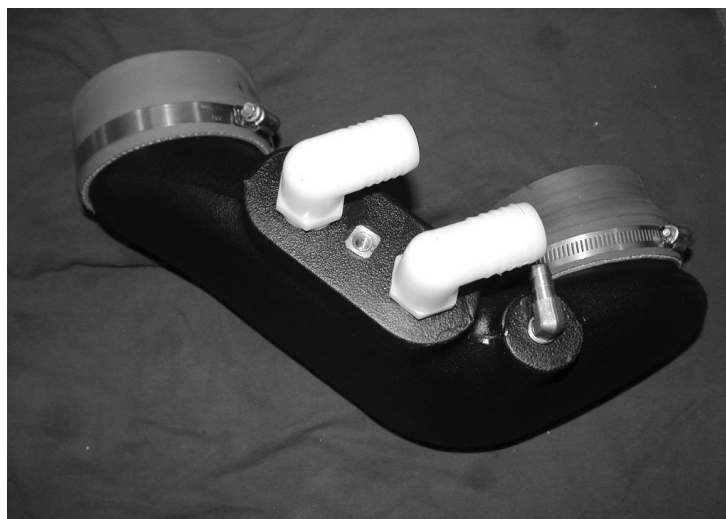


Fig. 5-d2 (V-Power Only)



Fig. 5-d

## 6. REFLASH COMPUTER

**IMPORTANT!** To ensure trouble-free programming of your vehicle's computer:

- Make sure the vehicle's battery is sufficiently charged.
- Turn off all accessories and close doors to prevent unnecessary drain on the battery.
- Do not attempt to program your vehicle while a battery charger is connected.
- Improper battery voltage will result in failure of the programming process.
- Do not disconnect the cable or turn off the ignition during programming.



**NOTE:** Before continuing, it will be necessary to return your vehicle to its factory calibration.

- A.** Reconnect the battery.
- B.** Locate the vehicle's OBD2 connector located in the lower left hand corner of the dash on the driver's side of the vehicle. (See Fig 6-a.)
- C.** Attach the OBD2 connector from the Flash tool that is provided in the kit to the vehicle's OBD2 port. (See Fig 6-b.) Make sure this connector is seated all the way in the vehicle's OBD2 port. You do not want this connector coming out during programming or damage may occur to the vehicle's ECM.
- D.** In the main menu screen, select "option".
- E.** Using the arrow keys from the options menu, page down to "**troubleshooting**" and press "enter".
- F.** From the Troubleshooting menu, page down and select "**Restore Factory Backup**".
- G.** Follow the directions on the screen.
- H.** Once the Factory Backup has been installed, unplug the Flash Tool.
- I.** Re-connect the Flash Tool to the vehicle's OBD II port.
- J.** The Reflash tool should power up and display three parameters.
  - 1.** Performance Tune
  - 2.** Diagnostics
  - 3.** Options



Fig. 6-a

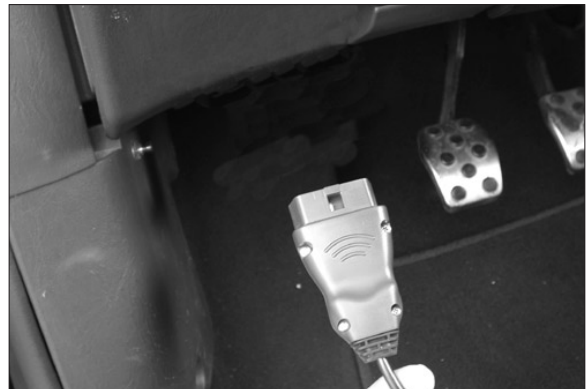


Fig. 6-b



## 6. REFLASH COMPUTER, CONT'D

- K.** Select "Performance Tune" and press the enter button in the middle of the arrow keys. (See Fig 6-c.)
- L.** Read the disclaimer entirely, then select agree and press enter.
- M.** At this point please read the screen displayed on the reflash tool. If you have any questions, either refer to the manual that is provided with the reflash tool or contact our service department for further assistance.
- N.** Turn the ignition on (do not start the vehicle). Set the parking brake and press the enter button to continue.
- O.** SELECT TUNE will be displayed at the top of the screen. Use the arrow keys to select the appropriate tune for your vehicle and press the enter button. You will have a choice of four to choose from:
  - 1.** STD OUTPUT (non charge-cooled)
  - 2.** Charge-cooled, air/water (Choose this option)
  - 3.** Charge-cooled, air/air (this option is NOT used in this application)
  - 4.** Original Backup
- P.** Continue to follow the screen and when finished unplug the reflash tool from the vehicles OBD2 port.

**NOTE:** Do not disturb the cable, or turn the ignition off during this time. If the programming is disrupted, the computer will not start or run your vehicle!



Fig. 6-c

## 7. FINAL CHECK

**WARNING:** Do not attempt to operate the vehicle until ALL components are installed and ALL operations are completed including the final check.

- A.** Check all fittings, hose and clamps for tightness and leaks. Make sure all wires and lines are properly secure with clamps or tie-wraps.
- B.** Make sure all wires and hoses are routed away from hot, moving or sharp objects.
- C.** Double check to ensure water is flowing through the system.

**NOTE:** Check to see that CAC coolant is flowing through the surge tank. If coolant is not flowing, remove the 3/4" rubber hose from the side of the surge tank and apply light suction in an attempt to pass any trapped air in the system. Reconnect the hose and recheck coolant flow.

- D.** Test drive the vehicle.
- E.** Always listen carefully for engine detonation. Discontinue heavy throttle usage if detonation is heard.

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