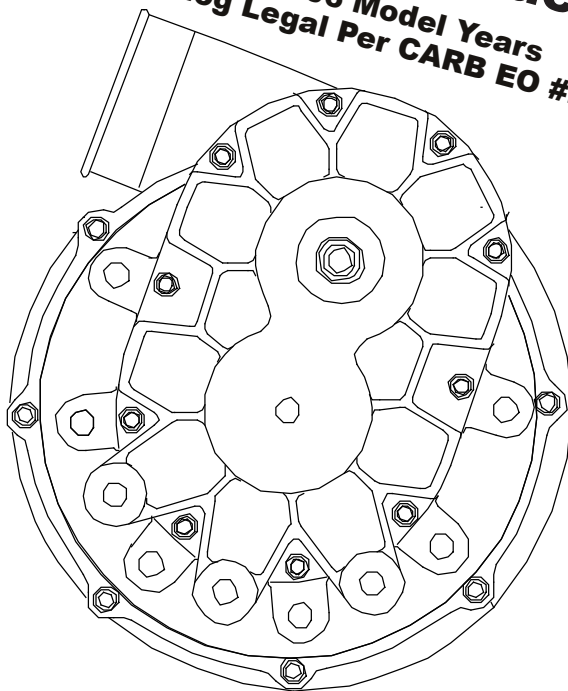


GM 4.8/5.3/6.0L Light Truck Supercharger System Installation Instructions

1999-2006 Model Years
50 State Smog Legal Per CARB EO #D-213-26



ENGINEERING, LLC

1650 PACIFIC AVENUE CHANNEL ISLANDS, CA 93033-9901 (805) 247-0226
FAX (805) 247-0669 www.vortechsuperchargers.com M-F 8:00 AM - 4:30 PM PST

FOREWORD

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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1999-2007 GM 4.8/5.3/6.0 Light Truck IMPORTANT NOTES

2002 4.8L / 2000-2002 5.3L / 2000, 2003-2004 6.0L Models

This kit requires ECM programming. The hand-held ECM programmer is not included in the kit box and must be ordered directly from Vortech by the installing customer (the charge for this unit has been included in the purchase price).

Included in this kit is a credit tag for one hand-held programmer. The programmers are made specifically for each individual vehicle with respect to the factory ECM calibration and VIN. Simply follow the instructions on the hand-held programmer credit tag.

Your ECM hand-held programmer comes with a twelve month limited warranty from the original date of purchase of your supercharger system (see the Owner's Manual for details).

2003-2005 Models: Vehicles with On-star that have aftermarket stereos will experience problems with the ability to re-program the vehicle's ECM. It is necessary to disconnect the aftermarket stereo from the factory harness *before* continuing with the programming procedure.

Vortech Engineering is not responsible for engine or ECM damage due to an improperly installed/mishandled ECM module or ECM.

2003-2007 4.8L / 2003-2004 5.3L / 2001-2002 6.0L Models

This kit requires ECM programming. The hand-held ECM programmer is included in the kit box.

The ECM hand-held programmer comes with a twelve month limited warranty from the original date of purchase of our supercharger system. (See the owner's manual for details.)

2003-2007: Vehicles with On-star that have aftermarket stereos will experience problems with the ability to re-program the vehicles's ECM. It is necessary to disconnect the aftermarket stereo from the factory harness *before* continuing with the programming procedure.

Vortech Engineering is not responsible for engine or ECM damage due to an improperly installed/mishandled ECM module or ECM.

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.

GM 1999-2006 4.8/5.3/6.0 Light Truck Installation Instructions

Congratulations on selecting the best performing and best backed automotive supercharger available today... the VORTECH® V-2® Supercharger!

Before beginning this installation, please read through this entire instruction booklet and the Street Supercharger System Owner's Manual which includes the Automotive Limited Warranties Program and the Warranty Registration form.

Vortech supercharger systems are performance improving devices. In most cases, increases in torque of 30-35% and horsepower of 35-45% can be expected with the boost levels specified by Vortech Engineering. This product is intended for use on healthy, well maintained engines. Installation on a worn-out or damaged engine is not recommended and may result in failure of the engine as well as the supercharger. **Vortech Engineering is not responsible for engine damage.**

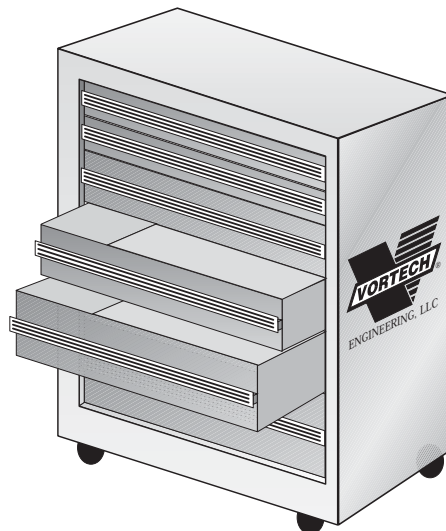
Installation on new vehicles will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

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

1. Use only premium grade fuel 91 octane or higher (R+M/2).
2. The engine must have stock compression ratio.
3. If the engine has been modified in any way, check with Vortech prior to using this product.
4. Always listen for any sign of detonation (pinging) and discontinue hard use (no boost) until problem is resolved.
5. Perform an oil and filter change upon completion of this installation and prior to test driving your vehicle. Thereafter, always use a high grade SF rated engine oil or a high quality synthetic, and change the oil and filter every 3,000 miles or less. **Never attempt to extend the oil change interval beyond 3,000 miles, regardless of oil manufacturer's claims as potential damage to the supercharger may result.**
6. Before beginning installation, replace all spark plugs that are older than 1 year or 10,000 miles with original heat range plugs as specified by the manufacturer and reset timing to factory specifications (follow the procedures indicated within the factory repair manual and/or as indicated on the factory underhood emissions tag). **Do not use platinum spark plugs unless they are original equipment.** Change spark plugs every at least 15,000 miles and spark plug wires at least every 50,000 miles.

TOOL & SUPPLY REQUIREMENTS:

- Factory Repair Manual
- 3/8" Socket and Drive Set: SAE & Metric
- 1/2" Socket and Drive Set: SAE & Metric
- 3/8" NPT Tap and Handle
- Adjustable Wrench
- Open End Wrenches: 3/8", 7/16", 1/2", 9/16"
- Center Punch and a 5/8" Tapered Punch
- Springlock 3/8" and 5/8" Fuel Fitting Disconnect Tool
- 5 Quarts SH/CF Rated Quality Engine Oil
- Oil Filter and Wrench
- Flat #2 Screwdriver
- Phillips #2 Screwdriver
- Heavy Grease
- Silicone Sealer
- Drill Motor
- 1/8", 3/16", 27/64" Drill Bits
- 1/2" Tube Bender
- 3/16" Allen Wrench
- Wire Strippers and Crimpers
- Utility Knife
- Power Steering Pulley/Puller & Installer



If your vehicle has in excess of 10,000 miles since its last spark plug change, then you will also need:

- Spark Plug Socket
- NEW Spark Plugs



1999 GM 4.8/5.3/6.0L Truck

Part No. 4GL218-030/038SQ

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	PART NO.	DESCRIPTION	QTY
2E228-300	V2SQ SC TRIM, GM TRUCK	1	7R002-064	#64 GOLDSEAL HOSE CLAMP	1
2A036-333	S/C PULLEY	1	7S275-200	2-3/4" x 2" SLEEVE	1
2A046-113	BELT, K061130-GATES	1	4GL114-010	ASSY, WATER TUBE, GM TRUCK	1
2A046-140	BELT K061140 GATES	1	4GL014-010	WATER TUBE, GM TRUCK	1
7C012-050	12mm x 1.75" x 50mm HXHD BOLT	1	7A250-050	1/4-20 x 1/2" SHCS ZINC PLTD	1
4FA016-171	DUST COVER (IDLER PULLEY)	1	7J006-093	6mm WASHER, PLATED	1
4FH016-150	IDLER PULLEY, 6-RIB 3" FLANGED	1	7R002-024	#24 GOLDSEAL HOSE CLAMP	2
2A017-462	SPACER, IDLER SMOOTH 6-RIB	1	7R003-022	ADEL CLAMP, 1-3/8"	2
7A375-224	3/8-16 x 2.25" GR5 HX	5	7U133-125	HOSE, 90° LONG LEG	1
7J375-044	3/8" SAE WASHER, PLTD	5	4GL020-020	ECM CHIP PACKAGE GM TRUCK	1
4GL011-021	MTG BRKT GM TRUCK	1	7T560-001	CUTTER, 9/16" ROTOBROACH	1
4GL130-026	OIL FEED LINE ASSY	1	7T560-002	ARBOR, ROTOBROACH	1
7P125-026	-4 TO 1/8"NPT 90° MALE	2	8F060-001	FUEL INJECTOR	8
7P525-067	.500" CRIMP FERRULES	2			
7P250-066	#4 SWIVEL x 1/4" HOSE BARB	2			
7U030-026	1/4" OIL FEED HOSE	3.17'			
7U100-055	TIE-WRAP, 6" NYLON	2			
7C060-050	6mm x 1.0 x 50mm HXHD ZINC PLT	2			
7J006-093	6mm WASHER, PLATED	2			
4GL010-020	ADAPTER, ESCALADE OIL FEED	1			
4GL010-030	GASKET, ESCALADE OIL ADAPTER	1			
4GL010-040	GASKET, 5.3 OIL ADAPTER	1			
4GL130-036	OIL DRAIN ASSY	1			
7P375-017	3/8"NPT x 1/2" BEADED HOSE BAR	1			
7P375-040	3/8" FEMALE ELBOW	1			
7P375-041	3/8"NPT HEX NIPPLE	1			
7R001-008	#8 STNLS HOSE CLAMP	2			
7R003-016	ADEL CLAMP, 7/8"	1			
7U030-036	1/2" OIL DRAIN HOSE	2.75'			
4GL112-010	AIR INTAKE ASSY	1			
4FG112-022	PLASTIC INLET DUCT 180°	1			
4GL012-010	DUCT, GM TRUCK AIR INLET	1			
4GL010-011	INLET DUCT BRKT, DS	1			
4GL010-012	INLET DUCT BRKT, PS	1			
7A250-050	1/4-20 x 1/2" SHCS ZINC PLT	2			
7J006-093	6mm WASHER, PLT	2			
7P156-082	5/32" TEE	1			
7P250-045	1/4" MALE NPT x 3/8" MALE BARB	1			
7R002-016	#16 HOSE CLAMP	4			
7R002-052	#52 GOLDSEAL HOSE CLAMP	2			
7R002-056	#56 GOLDSEAL HOSE CLAMP	3			
7S350-200	3-1/2" x 2" SLEEVE	1			
7U030-046	5/32" VACUUM LINE	1.5'			
7U030-056	3/8" PCV HOSE	2.5'			
7U034-016	1" GS HOSE	0.25'			
7U034-016	1" GS HOSE	1.5'			
7U035-001	3-1/2" FLEX HOSE	0.75'			
7U375-052	3/8" VACUUM CAP	1			
8D001-001	BYPASS VALVE	1			
7P375-050	3/8" HOSEMENDER	1			
4GL112-020	DISCH. ASSY GM TRUCK	1			
4GL012-020	DUCT, GM TRUCK DISCHARGE	1			
4GL012-030	ELBOW, GM TRUCK 3.88" - 3" 90°	1			
7R002-044	#44 GOLDSEAL HOSE CLAMP	2			
7R002-048	#48 GOLDSEAL HOSE CLAMP	1			



2000-2002 GM 4.8/5.3

Part No. 4GL218-010/018SQ

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	PART NO.	DESCRIPTION	QTY
2E228-300	V2SQ SC TRIM, GM TRUCK	1	4GL112-010	AIR INTAKE ASSY	1
2A036-333	S/C PULLEY	1	4FG112-022	PLASTIC INLET DUCT 180°	1
2A046-113	BELT, K061130-GATES	1	4GL012-010	DUCT, GM TRUCK AIR INLET	1
2A046-140	BELT K061140 GATES	1	4GL010-011	INLET DUCT BRKT, DS	1
7C012-050	12mm x 1.75" x 50mm HXHD BOLT	1	4GL010-012	INLET DUCT BRKT, PS	1
4FA016-171	DUST COVER (IDLER PULLEY)	1	7A250-050	1/4-20 x 1/2" SHCS ZINC PLT	2
4FH016-150	IDLER PULLEY, 6-RIB 3" FLANGED	1	7J006-093	6mm WASHER, PLT	2
2A017-462	SPACER, IDLER SMOOTH 6-RIB	1	7P156-082	5/32" TEE	1
7A375-224	3/8-16 x 2.25" GR5 HX	5	7P250-045	1/4" MALE NPT x 3/8" MALE BARB	1
7J375-044	3/8" SAE WASHER, PLTD	5	7R002-016	#16 HOSE CLAMP	4
4GL011-021	MTG BRKT GM TRUCK	1	7R002-052	#52 GOLDSEAL HOSE CLAMP	2
4GL130-026	OIL FEED LINE ASSY	1	7R002-056	#56 GOLDSEAL HOSE CLAMP	2
7P125-026	-4 TO 1/8" NPT 90° MALE	2	7S350-200	3-1/2" x 2" SLEEVE	1
7P525-067	.500" CRIMP FERRULES	2	7U030-046	5/32" VACUUM LINE	1.5'
7P250-066	#4 SWIVEL x 1/4" HOSE BARB	2	7U030-056	3/8" PCV HOSE	2.5'
7U030-026	1/4" OIL FEED HOSE	3.17'	7U034-016	1" GS HOSE	0.25'
7U100-055	TIE-WRAP, 6" NYLON	2	7U034-016	1" GS HOSE	1.5'
7C060-050	6mm x 1.0" x 50mm HXHD ZINC PLT	2	7U035-001	3-1/2" FLEX HOSE	0.75'
7J006-093	6mm WASHER, PLATED	2	7U375-052	3/8" VACUUM CAP	1
4GL010-020	ADAPTER, ESCALADE OIL FEED	1	8D001-001	BYPASS VALVE	1
4GL010-030	GASKET, ESCALADE OIL ADAPTER	1	7P375-050	3/8" HOSEMENDER	1
4GL010-040	GASKET, 5.3 OIL ADAPTER	1	7R005-001	T-BOLT CLAMP	1
4GL130-036	OIL DRAIN ASSY	1	4GL112-020	DISCH. ASSY GM TRUCK	1
7P375-017	3/8" NPT x 1/2" BEADED HOSE BAR	1	4GL012-020	DUCT, GM TRUCK DISCHARGE	1
7P375-040	3/8" FEMALE ELBOW	1	4GL012-030	ELBOW, GM TRUCK 3.88" - 3" 90°	1
7P375-041	3/8" NPT HEX NIPPLE	1	7R002-044	#44 GOLDSEAL HOSE CLAMP	2
7R001-008	#8 STNLS HOSE CLAMP	2	7R002-048	#48 GOLDSEAL HOSE CLAMP	1
7R003-016	ADEL CLAMP, 7/8"	1	7R002-064	#64 GOLDSEAL HOSE CLAMP	1
7U030-036	1/2" OIL DRAIN HOSE	2.75'	7S275-200	2-3/4" x 2" SLEEVE	1
4GL238-078	FMU ASSY 10:1, W/LINES	1	4GL114-010	ASSY, WATER TUBE, GM TRUCK	1
7U030-046	5/32" x 12" VACUUM LINE	1	4GL014-010	WATER TUBE, GM TRUCK	1
7P156-082	5/32" TEE	1	7A250-050	1/4-20 x 1/2" SHCS ZINC PLTD	1
6Z050-191	FMU WASHER, 8:1	1	7J006-093	6mm WASHER, PLATED	1
6Z070-030	FMU 8:1 RING SPACER	1	7R002-024	#24 GOLDSEAL HOSE CLAMP	2
6Z050-171	FMU WASHER, 12:1	1	7R003-022	ADEL CLAMP, 1-3/8"	2
4GL101-002	FUEL SYSTEM ASSY	1	7U133-070	FILLER HOSE	1
7E010-075	#12 x 3/4" SHEET METAL SCREW	2	7U133-125	HOSE, 90° LONG LEG	1
7P625-030	FTG, GM TRUCK FUEL PUMP	1	4GL020-020	ECM CHIP PACKAGE GM TRUCK	1
7P625-031	FTG, GM TRUCK FILTER	1	7T560-001	CUTTER, 9/16" ROTOBROACH	1
7R003-027	ADEL CLAMP, 1-11/16"	2	7T560-002	ARBOR, ROTOBROACH	1
7U030-050	12mm FUEL HOSE	1MTR			
7R001-008	#8 STNLS HOSE CLAMP	2			
8F001-002	155 INLINE FUEL PUMP	1			
7C010-050	10-24 x 1/2" SOC HD CAP, ZINC PL	1			
7F010-024	10-24 NYLOCK NUT	1			
7J010-001	#10 FLAT WASHER	2			
8F101-320	FUEL PMP RELAY ASSY, GM TRUCK	1			
7U100-045	O-RING, .301"	1			
5W001-014	FUSE HOLDER 10GA WIRE	1			
5W001-011	16-14GA EYELET .25" HOLE	1			
5W001-025	FEMALE SLIDE, INSULATED, MINI	1			
5W001-024	MINI ATC FUSE TAP	1			
5W001-015	FUSE, BLADE TYPE 20AMP	1			
5W001-017	3/8" RING TERMINAL 12GA.	1			
5W001-042	12-10GA 3/16" RING TERMINAL	1			
5W001-005	3/8" PLASTIC WIRE LOOM	2			
5W001-019	SOLDERLESS CONNECTOR 10-12GA	1			
5W001-044	TIE-WRAP, 4" NYLON	8			
7P375-050	3/8" HOSEMENDER	1			



2001-2003 GM 6.0L Truck

Part No. 4GL218-020/028, 4GL218-040/048SQ

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	PART NO.	DESCRIPTION	QTY
2E228-300	V2SQ SC TRIM, GM TRUCK	1	4GL112-060	DUCT INLET, ALUM	1
2A036-333	S/C PULLEY	1	4GL012-010	DUCT, GM TRUCK AIR INLET	1
2A046-113	BELT, K061130-GATES	1	4GL010-011	INLET DUCT BRKT, DS	1
2A046-140	BELT K061140 GATES	1	4GL010-012	INLET DUCT BRKT, PS	1
7C012-050	12mm x 1.75" x 50mm HXHD BOLT	1	7A250-050	1/4-20 x 1/2" SHCS ZINC PLT	2
4FA016-171	DUST COVER (IDLER PULLEY)	1	7J006-093	6mm WASHER, PLT	2
4FH016-150	IDLER PULLEY, 6-RIB 3" FLANGED	1	7P156-082	5/32" TEE	1
2A017-462	SPACER, IDLER SMOOTH 6-RIB	1	7P375-097	3/8"NPT x 3/8" MALE BARB	1
7A375-224	3/8-16 x 2.25" GR5 HX	5	7R002-016	#16 HOSE CLAMP	4
7J375-044	3/8" SAE WASHER, PLTD	5	7R002-052	#52 GOLDSEAL HOSE CLAMP	2
4GL011-021	MTG BRKT GM TRUCK	1	7R002-056	#56 GOLDSEAL HOSE CLAMP	4
4GL130-026	OIL FEED LINE ASSY	1	7S350-200	3-1/2" x 2" SLEEVE	1
7P125-026	-4 TO 1/8"NPT 90° MALE	2	7U030-046	5/32" VACUUM LINE	1.5'
7P525-067	.500" CRIMP FERRULES	2	7U030-056	3/8" PCV HOSE	2.5'
7P250-066	#4 SWIVEL x 1/4" HOSE BARB	2	7U133-045	RUBBER ELBOW	1
7U030-026	1/4" OIL FEED HOSE	3.17'	7U034-016	1" GS HOSE	1.5'
7U100-055	TIE-WRAP, 6" NYLON	2	7U035-001	3-1/2" FLEX HOSE	0.75'
7C060-050	6mm x 1.0" x 50mm HXHD ZINC PLT	2	7U375-052	3/8" VACUUM CAP	1
7J006-093	6mm WASHER, PLATED	2	8D001-001	BYPASS VALVE	1
4GL010-020	ADAPTER, ESCALADE OIL FEED	1	7P375-050	3/8" HOSEMENDER	1
4GL010-030	GASKET, ESCALADE OIL ADAPTER	1	7S350-200	3-1/2" x 2" SLEEVE	1
4GL010-040	GASKET, 5.3 OIL ADAPTER	1	7R005-001	T-BOLT CLAMP	1
4GL130-036	OIL DRAIN ASSY	1	4GL112-020	DISCH. ASSY GM TRUCK	1
7P375-017	3/8"NPT x 1/2" BEADED HOSE BAR	1	4GL012-020	DUCT, GM TRUCK DISCHARGE	1
7P375-040	3/8" FEMALE ELBOW	1	4GL012-030	ELBOW, GM TRUCK 3.88" - 3" 90°	1
7P375-041	3/8"NPT HEX NIPPLE	1	7R002-044	#44 GOLDSEAL HOSE CLAMP	2
7R001-008	#8 STNLS HOSE CLAMP	2	7R002-048	#48 GOLDSEAL HOSE CLAMP	1
7R003-016	ADEL CLAMP, 7/8"	1	7R002-064	#64 GOLDSEAL HOSE CLAMP	1
7U030-036	1/2" OIL DRAIN HOSE	2.75'	7S275-200	2-3/4" x 2" SLEEVE	1
4GL101-002	FUEL SYSTEM ASSY	1	4GL114-010	ASSY, WATER TUBE, GM TRUCK	1
7E010-075	#12 x 3/4" SHEET METAL SCREW	2	4GL014-010	WATER TUBE, GM TRUCK	1
7P625-030	FTG, GM TRUCK FUEL PUMP	1	7A250-050	1/4-20 x 1/2" SHCS ZINC PLTD	1
7P625-031	FTG, GM TRUCK FILTER	1	7J006-093	6mm WASHER, PLATED	1
7R003-027	ADEL CLAMP, 1-11/16"	2	7R002-024	#24 GOLDSEAL HOSE CLAMP	2
7U030-050	12mm FUEL HOSE	1MTR	7R003-022	ADEL CLAMP, 1-3/8"	2
7R001-008	#8 STNLS HOSE CLAMP	2	7U133-070	FILLER HOSE	1
8F001-002	155 INLINE FUEL PUMP	1	7U133-125	HOSE, 90° LONG LEG	1
7C010-050	10-24 x 1/2" SOC HD CAP, ZINC PL	1	7T560-001	CUTTER, 9/16" ROTOBROACH	1
7F010-024	10-24 NYLOCK NUT	1	7T560-002	ARBOR, ROTOBROACH	1
7J010-001	#10 FLAT WASHER	2	8F060-005	HIGH-FLOW INJECTORS	8
8F101-320	FUEL PMP RELAY ASSY, GM TRUCK	1	4GL020-020	2003 6.0L ECM CHIP PACKAGE	1
7U100-045	O-RING, .301"	1	5A003-037	01-02 6.0L DIABLO PREDATOR	1
5W001-014	FUSE HOLDER 10GA WIRE	1			
5W001-011	16-14GA EYELET .25" HOLE	1			
5W001-025	FEMALE SLIDE, INSULATED, MINI	1			
5W001-024	MINI ATC FUSE TAP	1			
5W001-015	FUSE, BLADE TYPE 20AMP	1			
5W001-017	3/8" RING TERMINAL 12GA.	1			
5W001-042	12-10GA 3/16" RING TERMINAL	1			
5W001-005	3/8" PLASTIC WIRE LOOM	2			
5W001-019	SOLDERLESS CONNECTOR 10-12GA	1			
5W001-044	TIE-WRAP, 4" NYLON	8			
7P375-050	3/8" HOSEMENDER	1			
4GL112-070	AIR INTAKE ASSY	1			



2003 GM 4.8/5.3 Truck

Part No. 4GL218-050/058SQ

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	PART NO.	DESCRIPTION	QTY
2E228-300	V2SQ SC TRIM, GM TRUCK	1			
2A036-333	S/C PULLEY	1			
2A046-113	BELT, K061130-GATES	1			
2A046-140	BELT K061140 GATES	1			
7C012-050	12mm x 1.75" x 50mm HXHD BOLT	1			
4FA016-171	DUST COVER (IDLER PULLEY)	1			
4FH016-150	IDLER PULLEY, 6-RIB 3" FLANGED	1			
2A017-462	SPACER, IDLER SMOOTH 6-RIB	1			
7A375-224	3/8-16 x 2.25" GR5 HX	5			
7J375-044	3/8" SAE WASHER, PLTD	5			
4GL011-021	MTG BRKT GM TRUCK	1			
4GL130-026	OIL FEED LINE ASSY	1			
7P125-026	-4 TO 1/8"NPT 90° MALE	2			
7P525-067	.500" CRIMP FERRULES	2			
7P250-066	#4 SWIVEL x 1/4" HOSE BARB	2			
7U030-026	1/4" OIL FEED HOSE	3.17'			
7U100-055	TIE-WRAP, 6" NYLON	2			
7C060-050	6mm x 1.0" x 50mm HXHD ZINC PLT	2			
7J006-093	6mm WASHER, PLATED	2			
4GL010-020	ADAPTER, ESCALADE OIL FEED	1			
4GL010-030	GASKET, ESCALADE OIL ADAPTER	1			
4GL010-040	GASKET, 5.3 OIL ADAPTER	1			
4GL130-036	OIL DRAIN ASSY	1			
7P375-017	3/8"NPT x 1/2" BEADED HOSE BAR	1			
7P375-040	3/8" FEMALE ELBOW	1			
7P375-041	3/8"NPT HEX NIPPLE	1			
7R001-008	#8 STNLS HOSE CLAMP	2			
7R003-016	ADEL CLAMP, 7/8"	1			
7U030-036	1/2" OIL DRAIN HOSE	2.75'			
4GL110-010	ASSY, COMPUTER RELOCATION	1			
2A017-752-02	SPACER, .750" x .894"LNG	2			
7F006-093	6mm NYLOCK NUT	2			
7C060-050	M6 x 1.0" x 50 HXHD	2			
7J006-093	6mm WASHER	4			
4GL112-010	AIR INTAKE ASSY	1			
4FG112-022	PLASTIC INLET DUCT 180°	1			
4GL012-010	DUCT, GM TRUCK AIR INLET	1			
4GL010-011	INLET DUCT BRKT, DS	1			
4GL010-012	INLET DUCT BRKT, PS	1			
7A250-050	1/4-20 x 1/2" SHCS ZINC PLT	2			
7J006-093	6mm WASHER, PLT	2			
7P156-082	5/32" TEE	1			
7P250-045	1/4" MALE NPT x 3/8" MALE BARB	1			
7R002-016	#16 HOSE CLAMP	4			
7R002-052	#52 GOLDSEAL HOSE CLAMP	2			
7R002-056	#56 GOLDSEAL HOSE CLAMP	2			
7S350-200	3-1/2" x 2 SLEEVE	1			
7U030-046	5/32" VACUUM LINE	1.5'			
7U030-056	3/8" PCV HOSE	2.5'			
7U034-016	1" GS HOSE	0.25'			
7U034-016	1" GS HOSE	1.5'			
7U035-001	3-1/2" FLEX HOSE	0.75'			
7U375-052	3/8" VACUUM CAP	1			
8D001-001	BYPASS VALVE	1			
7P375-050	3/8" HOSEMENDER	1			
7R005-001	T-BOLT CLAMP	1			
4GL112-020	DISCH. ASSY GM TRUCK	1			
4GL012-020	DUCT, GM TRUCK DISCHARGE	1			
4GL012-030	ELBOW, GM TRUCK 3.88" - 3" 90°	1			
7R002-044	#44 GOLDSEAL HOSE CLAMP	2			
7R002-048	#48 GOLDSEAL HOSE CLAMP	1			
7R002-064	#64 GOLDSEAL HOSE CLAMP	1			
7S275-200	2-3/4" x 2 SLEEVE	1			
			4GL114-010	ASSY, WATER TUBE, GM TRUCK	1
			4GL014-010	WATER TUBE, GM TRUCK	1
			7A250-050	1/4-20 x 1/2" SHCS ZINC PLTD	1
			7J006-093	6mm WASHER, PLATED	1
			7R002-024	#24 GOLDSEAL HOSE CLAMP	2
			7R003-022	ADEL CLAMP, 1-3/8"	2
			7U133-070	FILLER HOSE	1
			7U133-125	HOSE, 90° LONG LEG	1
			7T560-001	CUTTER, 9/16" ROTOBROACH	1
			7T560-002	ARBOR, ROTOBROACH	1
			8F060-005	HIGH-FLOW FUEL INJECTORS	8
			5A003-036	GM PREDATOR, 03	1



2004-2005 GM 4.8L/5.3L Truck

Part No. 4GL218-120/128SQ

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	PART NO.	DESCRIPTION	QTY
4GL011-021	MOUNTING BRACKET	1	2E228-300	V2SQ SC TRIM LS1 TRUCK	1
4GL130-026	OIL FEED ASSY, GM TRK	1	2A036-333	S/C PULLEY 3.33" 6-GRV	1
4GL010-020	ADAPTER, ESCALADE OIL FEED	1	7U100-070	KEY, 3/16" SQUARE x 7/8" LONG	1
4GL010-030	GASKET, ESCALADE OIL ADAPTER	1	2A040-011	PULLEY RETAINER S/C	1
4GL010-040	GASKET, 5.3 OIL ADAPTER	1	7B375-110	3/8-24 x 1" GRADE 8 HXHD	1
5C060-050	M6 x 1.0 x 50 HXHD ZINC PLATE	2	7K375-040	3/8"AN960 FLAT WASHER PLATED	1
7J006-093	6mm WASHER, PLATED	2	2A046-113	BELT, K061130-GATES	1
7P125-026	1/8"NPT x #4 SAE FLARE, 90°	2	7A375-224	3/8-16 x 2.25" GR5 HX	5
7P250-066	-4 45° FEM SWIVEL x 1/4" HOSE	2	7J375-044	3/8" SAE WASHER, PLTD	5
7U100-055	TIE-WRAP, 7.5" NYLON	2	7C012-050	M12 x 1.75" x 50mm HXHD BOLT	1
4GL130-036	OIL DRAIN ASSY, GM TRK	1	4FA016-171	DUST COVER (IDLER PULLEY)	1
7P375-017	3/8"NPT x 1/2" BEADED HOSE BARB	1	4FH016-150	IDLER PULLEY, 6-RIB 3" FLANGED	1
7P375-040	3/8"NPT BRASS FEM/FEM ELBOW	1	2A017-462	SPACER, IDLER SMOOTH 6-RIB	1
7P375-041	3/8"NPT HEX NIPPLE x 1.5"	1	2A046-140	BELT, GATES K061140	1
7R001-008	#8 STNLS HOSE CLAMP	2	4GL110-010	ASSY, COMPUTER RELOC '03 LS1 TR	1
7R003-016	ADEL CLAMP, 1.0"	1	2A017-752-02	SPACER, .750"OD x .894" LONG	2
7U030-036	1/2" OIL DRAIN HOSE	2.75'	9AL6061-750	Ø.750" 6061 ALUMINUM ROD	1
7T560-001	CUTTER, 9/16" ROTABROACH	1	7C060-050	M6 x 1.0" 50 HXHD ZINC PLATE	2
7T560-002	ARBOR, ROTABROACH	1	7F006-093	6mm NYLOCK NUT	2
4GL112-050	AIR INTAKE ASSY, '04 5.3L GM TRK	1	7J006-093	6mm WASHER, PLATED	4
7S350-200	Ø3.5" x 2" SLEEVE	1	8P060-005	FUEL INJECTOR, GM 8.1 MARINE	8
7R002-060	#60 HOSE CLAMP	1	5A003-034	04-05 GM PREDATOR	1
7C060-025	6mm x 25mm HXHD	2			
4GL010-011	BRKT, D-SIDE GM TRK AIR INLET	1			
4GL010-010R	BRKT, GM TRK AIR INLET	1			
4GL010-012	BRKT, P-SIDE GM TRK AIR INLET	1			
4GL012-010	DUCT, INLET, LONG GM SUV/TRK	1			
7A250-050	1/4-20 x .50" SHCS ZINC PLTD	2			
7J006-093	6mm WASHER, PLATED	2			
7P156-082	5/32 TEE	1			
7P250-045	1/4" MALE NPT x 3/8" MALE BARB	1			
7P375-050	3/8" HOSE UNION, BRASS	1			
7R002-016	#16 SAE TYPE "F" SS HOSE CLAMP	4			
7R002-052	#52 SAE TYPE "F" SS HOSE CLAMP	2			
7R002-056	#56 SAE TYPE "F" SS HOSE CLAMP	3			
7S350-300	SLEEVE, 3-1/2" x 3", BLUE	1			
7U030-046	5/32" VACUUM LINE	2.5'			
7U030-056	3/8 PCV/VAC RUBBER HOSE	3.5'			
7U034-016	1" GS HEATER HOSE	.25'			
7U035-001	3-1/2" FLEX HOSE	.75'			
7U375-052	3/8" VACUUM CAP	1			
8D001-001	BYPASS VALVE	1			
7U133-045	RUBBER ELBOW, Ø1" x 45°	1			
7U033-000	5/8" PCV HOSE	.16'			
7P375-113	PCV VALVE, VIPER, 3/8" - 1/2" BA	1			
4PGL012-017	DUCT, S/C INLET, '03 ESCALADE	1			
4GL112-020	DISCH ASSY, GM TRUCK STD	1			
4GL012-020	DUCT, DISCH 5.3 GM TRUCK	1			
4GL012-030	ELBOW, 3.88" - 3.0" x 90° GM TRK	1			
7R002-044	#44 SAE TYPE "F" SS HOSE CLAMP	2			
7R002-048	#48 SAE TYPE "F" SS HOSE CLAMP	1			
7R002-064	#64 SAE TYPE "F" SS HOSE CLAMP	1			
7S275-200	SLEEVE, Ø2.75" x 2.00", BLUE	1			
4GL114-010	WATER TUBE ASSY, GM TRUCK	1			
4GL014-018	WATER TUBE, GM TRUCK POLISHED	1			
7A250-050	1/4-20 x .50" SHCS ZINC PLTD	1			
7J006-093	6mm WASHER, PLATED	1			
7R002-024	#24 SAE TYPE "F" SS HOSE CLAMP	2			
7R003-022	ADEL CLAMP 1-3/8"	1			
7U133-125	HOSE, Ø1.25" 90° LONG LEG	1			
4GL020-010	INSTALL MANUAL GM TRUCK '99-'05	1			

1. COMPONENT REMOVAL

- A. Drain sufficient coolant to remove the upper radiator hose and clamps.
- B. Disconnect the negative battery cable at the battery.
- C. Remove all ducting between the MAF meter and the throttle body.
- D. Remove the upper fan shroud and the radiator hose. (If the vehicle has an electric fan, skip to step E.)
- E. Remove the accessory drive belt. (Keep in vehicle as a spare.)
- F. Remove the two bolts holding the alternator fusible link junction box and set aside.

NOTE: If necessary, the supercharger can be bypassed by installing the factory accessory drive belt in its original configuration.

- G. Remove the idler from the cast bracket and set aside for later use.
- H. If the vehicle is equipped with an engine cover that extends over the valve covers, it may either be removed completely or left in place and trimmed in order to clear the supercharger componentry.
- I. Remove the power steering pulley from the pump.
- J. Remove the three bolts securing the front of the power steering pump.
- K. Remove the alternator, bushings and bolts and set aside for later use. The alternator bushings can be removed by tapping the small end through the bracket with an appropriately sized socket.
- L. Remove the alternator and power steering pump mounting bracket by removing the three bolts securing it to the head and the bottom bolt securing it to the engine block.
- M. Remove the valve cover breather hose from the passenger's side of the throttle body and cap off the throttle body nipple with supplied 3/8" vacuum cap and secure with a zip-tie.
- N. Remove the oil filler neck and cap from the passenger's side valve cover. Do this by twisting in a counter-clockwise motion. Reinstall the cap directly into the valve cover.
- O. **99-03 Models:** Locate the factory PCV on the driver's side rear of the motor. Pull the PCV valve out and replace it with the supplied PCV.

2. COMPUTER RELOCATION (2003 5.3L Only)

- A. Remove the plastic cover protecting the vehicle ECM. Unsnap the ECM from the bracket securing it to the inner fender. Temporarily move the ECM to the side to aid in the bracket relocation.
- B. Remove the two screws securing both the battery tray bracket and the upper tab of the ECM bracket. Remove the final screw securing the bottom of the ECM bracket. Remove the ECM bracket from the vehicle.
- C. With a grinder, modify the plastic bracket by removing the strengthening ribs as shown in (Fig. 2-a). Slight modification of the mounting tab may be necessary for proper fit.
- D. Using a .25" drill, enlarge the two threaded holes where the ECM bracket was secured. (See Fig. 2-b.)
- E. Put the ECM bracketry back in the vehicle, placing the mounting tab underneath the original bracket. Place the battery tray mounting bracket back into its stock position. Using the supplied 6mm x 50mm screws, washers, 6mm nuts and spacers, secure the brackets using the original mounting holes that have been enlarged. Use the spacers between the ECM bracket and the inner fender mount to space the ECM bracket down. (See Fig. 2-b.)
- F. Secure the ECM to the relocated bracket and re-install the cover.



Fig. 2-a



Fig. 2-a

3. SUPERCHARGER MOUNTING BRACKET

- A. Install the original alternator bushings into the supercharger mounting bracket with the flanged portion pointed back. (See Figs. 3-a, 3-b.)
- B. Clean the driver's side head of debris.
- C. Bolt the supplied Vortech supercharger mounting bracket to the head and block using the original mounting bolts. Make sure the mounting bracket is seated directly on a machined surface on the head and that no wires are pinched.
- D. Tighten the four mounting bolts to 37 ft-lbs (50 N-m).
- E. Install the two original bolts holding the alternator fusible link junction box in the supercharger mounting bracket so that it is in the stock location.
- F. Attach the power steering pump to the Vortech bracket using the original mounting hardware. Tighten the four power steering pump bolts to 37 ft-lbs (50 N-m). (One bolt is still loosely inserted in the engine block.)
- G. Reinstall the power steering pump pulley. Make sure that it is seated flush with the end of the power steering pump shaft.
- H. Reinstall the alternator using the original hardware. (See Fig. 3-c.)
- I. Install the factory idler pulley at the location shown in Fig. 3-c. Spin the idler to verify that the rotating portion does not contact the alternator bolt.

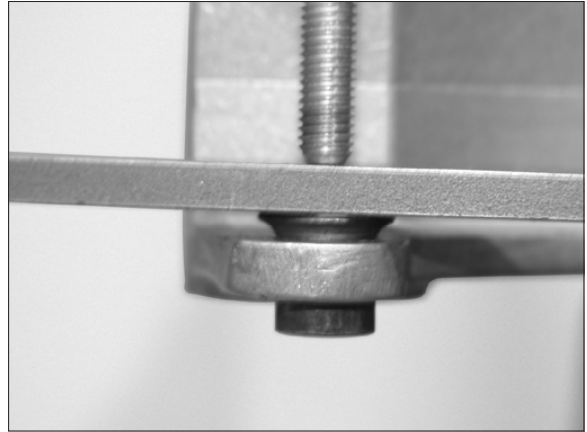


Fig. 3-a

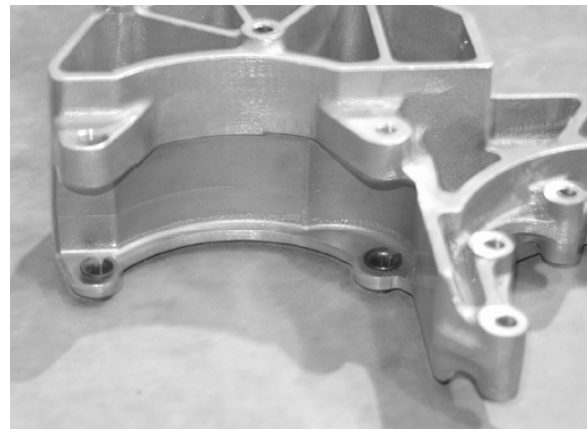


Fig. 3-b



Fig. 3-c

4. SUPERCHARGER INSTALLATION

- *A. Attach the oil drain hose to the supercharger and tighten the clamp.
- B. Loosely install the supercharger onto the Vortech bracket. Start all five 3/8-16 x 2-1/4" supercharger mounting screws with washers.
- C. Tighten the supercharger mounting screws in a rotating pattern to 18 ft-lbs (25 N-m).
- D. Install the Vortech supplied M12 x 50mm bolt, dust cover, idler pulley and spacer onto the supercharger cover as shown in Figs. 4-a, 4-b.
- E. Install the supplied supercharger/accessory drive belt per Fig. 4-b.

NOTE: Vehicles equipped with heavy-duty (130 amp) alternators require the #2A046-140 (114") belt. All others must use #2A046-113 (113") belt. Both belts are supplied in the kit.

* Applies to "engine oil-fed" units only.
V-3 applications skip this step

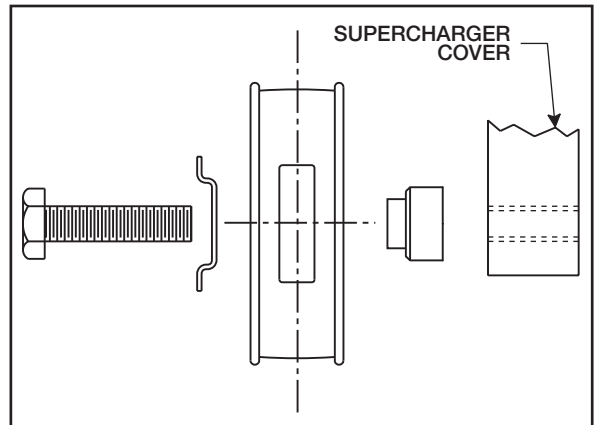


Fig. 4-a

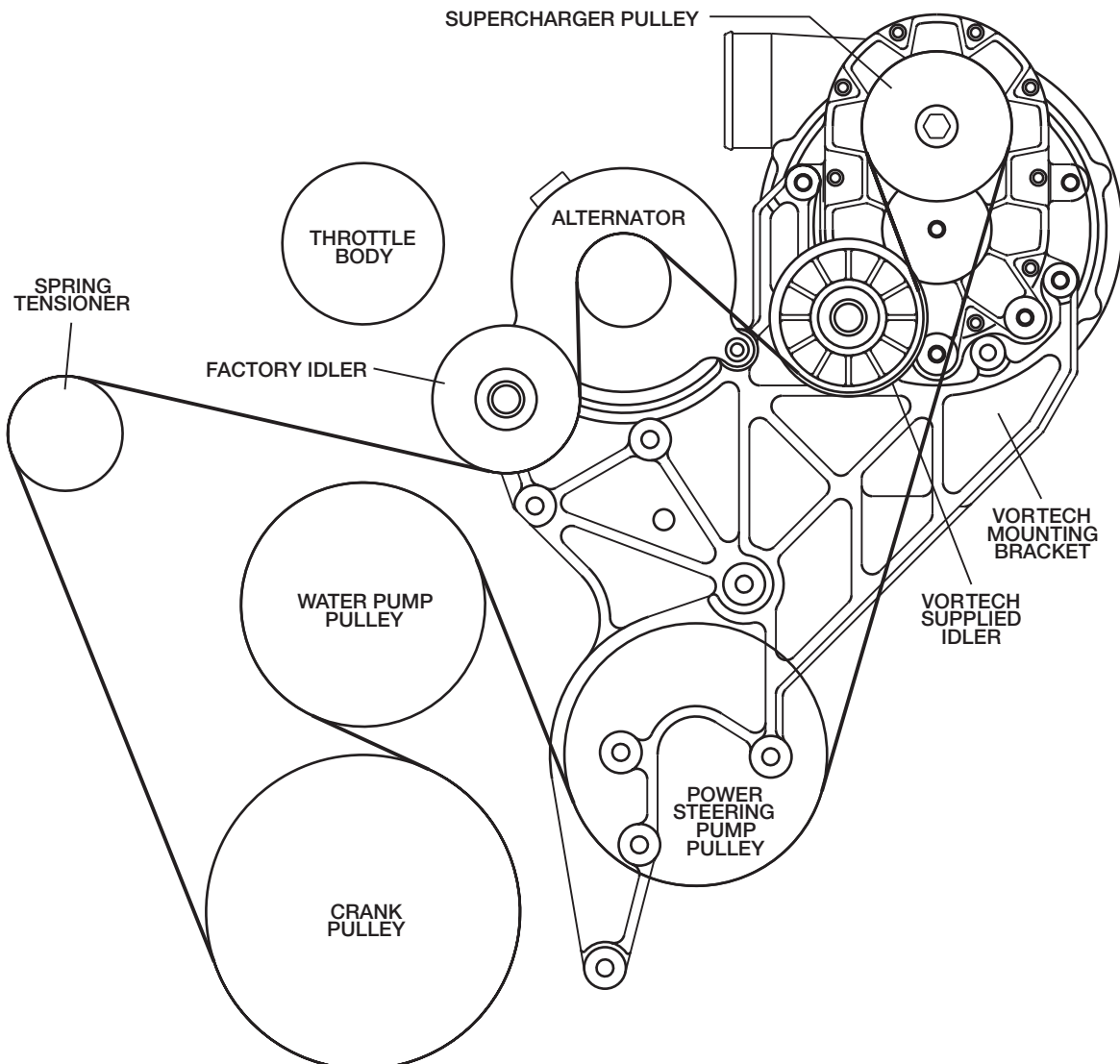


Fig. 4-b

5. OIL DRAIN LINE (ENGINE OIL-FED KITS ONLY. APPLICATIONS WITH V-3 SUPERCHARGER SKIP AHEAD TO STEP 7)

- A. To provide an oil drain for the supercharger, it is necessary to make a hole in the oil pan. Locate and centerpunch the hole per Fig. 5-a. Drill a 1/8" pilot hole at center location.
- B. Use the supplied 9/16" rotobroach to drill the hole in the oil pan. Take care to break through the pan gently and remove the cut out.
- C. Pack the flutes of a 3/8 NPT tap with grease. Tap the hole until the fitting can be started.
- D. Thoroughly clean the threaded area. Reach inside the oil pan and retrieve any stray chips. Apply a small amount of sealer to the new threads. Apply more sealer to the supplied 3/8" NPT hex nipple and secure in the hole. Make sure the seal is formed all around the fitting. Install the supplied 90° elbow and 3/8 NPT x 1/2" barb fitting pointing forward and slightly up.
- E. Route the oil drain hose from the supercharger to the barb fitting, attach and tighten the hose clamp. (See Fig. 5-a.)

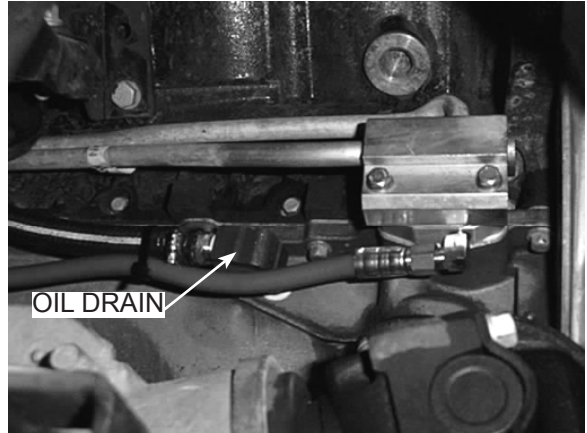


Fig. 5-a

IMPORTANT!: Oil in the supercharger is gravity drained to the oil pan. Trim the supplied oil drain hose as necessary so that it is continuously sloping down towards the oil pan. Avoid dips, kinks etc.

6. OIL FEED LINE (ENGINE OIL-FED KITS ONLY. APPLICATIONS WITH V-3 SUPERCHARGER SKIP AHEAD TO STEP 7)

- A. Remove the two screws holding the small casting or oil cooler block located directly above the oil filter. (Vehicles with oil coolers will appear the same as depicted in Fig. 6-a.)
- B. Using engine oil on the threads, install 1/8"NPT to #4 x 90° fitting into the supplied oil feed adapter.
- C. Using the adapter, the appropriate supplied gasket and the supplied longer 6mm screws, assemble the components as shown in Fig. 6-a.
- D. Install a 1/8"NPT to #4 90° fitting into the supercharger oil feed filter. Use a small amount of engine oil on the pipe threads. Pipe sealant should not be used as it can clog the filter and damage the supercharger.
- E. Route the oil feed line from the supercharger to the installed fitting. Use an adel clamp on the side of the oil pan and tie wraps to secure the oil feed and oil drain lines and protect them from kinking, abrasion and high heat areas. (See Fig. 6-a.)
- F. Drain the engine oil, install a new filter and refill the engine with fresh oil.

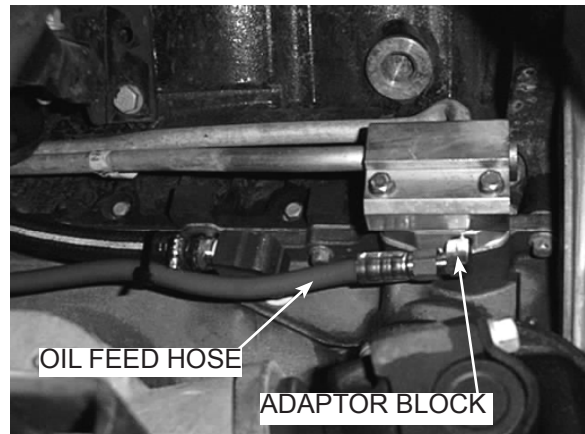


Fig. 6-a

7. FUEL INJECTOR REPLACEMENT (1999, 2003 and 2004-06 Models Only/2000-2002 models Go To Step 8)

- A. Relieve the fuel system pressure.
- B. Disconnect the eight fuel injector wiring clips and retainers from the injectors.
- C. Remove the four 10mm bolts holding down the fuel rail on the intake manifold. Lift up on the rails evenly, and remove all eight injectors.
- D. Using a small amount of clean motor oil, lightly lubricate the O-rings on both ends on the Vortech supplied fuel injectors.
- E. Install the new injectors and retainers into the fuel rails with the terminals facing outward.
- F. Carefully lower the fuel rail/injector assembly down onto the intake manifold. Check to see that each injector has been seated properly into the manifold.
- G. Tighten down the fuel rail assembly with the original bolts and attach the wiring clips to the injector terminals.

8. FUEL MANAGEMENT UNIT (FMU) INSTALLATION (2000-2002 Models Only)

- A. Mount the supplied FMU as shown in Fig. 8-a using the existing studs on the firewall as follows:

1. Remove the nuts securing the factory ground straps.
2. Install the FMU over the studs.

NOTE: Not all vehicles have the studs in the same location. Drill an additional 1/4" hole in the FMU bracket as required. See Fig. 8-a.

3. Loosely reinstall the nuts on top of the FMU bracket.

- B. Disconnect the fuel return line from the fuel rail and connect the respective lines to their snap connectors on the end of the FMU lines. (See Fig. 8-c.)

NOTE: The fuel tank return line extends from the fuel regulator to the tank. It is smaller than the fuel rail supply line.

- C. Using the supplied 5/32" vacuum line and TEE, connect the 90° fitting on top of the FMU to the manifold vacuum line connected to the fuel regulator. (See Fig. 8-c.)



Fig. 8-a



Fig. 8-b

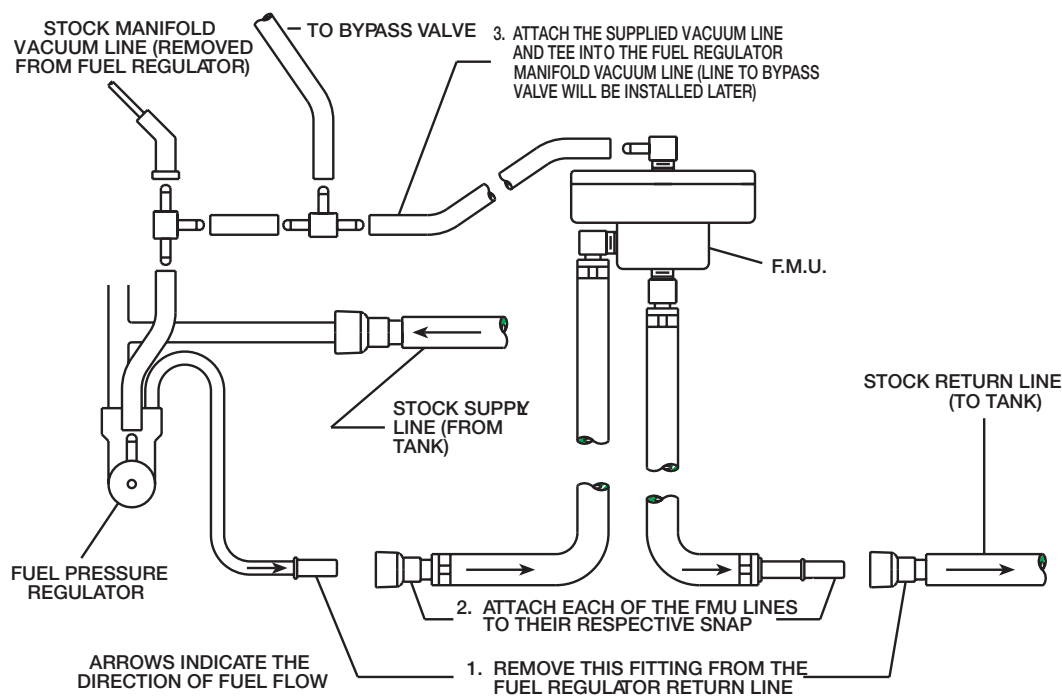


Fig. 8-c

8.1 FUEL MANAGEMENT UNIT RECALIBRATION (2000 Models, 2002 4.8L Only)

WARNING: For 2000 model year 5.3 & 6.0L and 2002 4.8L vehicles, complete Section 7 (previous step). Perform this step then proceed with Section 8 in the instruction manual

- A. Remove the six allen head screws on top of the fuel management unit (FMU). (See Fig. 8.1-a.)

WARNING: Do not remove the four screws holding the valve body. Once taken apart the valve would have to be replaced.

- B. Remove the diaphragm and 10:1 disk (2.47" O.D.) and ring from inside of the FMU.
- C1. For 2000 5.3L and 2002 4.8L trucks: Install the replacement 8:1 ring (with notched part facing down) around the four screws inside the FMU. (The 8:1 components are smaller in diameter than their 7:1 counterparts.) Place the 8:1 disk (2.22" O.D.) inside the ring on top of the piston.
- C2. For 2000 6.0L trucks: Install the replacement 12:1 disk (2.72" O.D.) into the FMU.
- D. Install the new diaphragm and carefully line up the holes to the body.
- E. Reinstall the FMU cover with the six allen head screws. Do not over-tighten the screws. The correct torque is 24 in/lb (2 ft/lb).

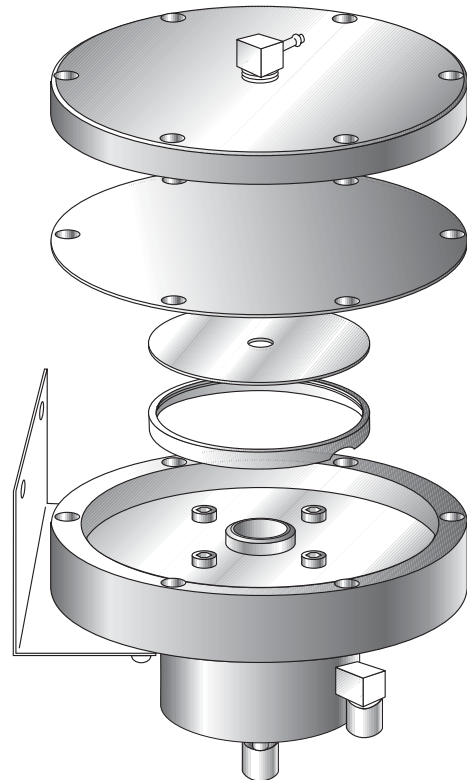


Fig. 8.1-a

9. FUEL PUMP WIRING AND INSTALLATION (All 2000-2002 Models and 2003 6.0L Models Only)

- A. Mount the supplied fuel pump relay onto the FMU bracket as shown in Fig. 9-a.
- B. Connect the red 12-gauge wire from terminal #30 to the supplied fuse holder using the supplied butt connector. Install a yellow ring terminal on the other end of the fuse holder and bolt to the fuse box power supply terminal as shown in Fig. 9-b. In order to reach the terminals, the fuse box cover must be unsnapped from the base and raised for access. (See Fig. 9-b.)
- C. Feed the yellow wire from relay terminal #85 to the fuse box (electrical center) on the driver's side of the engine bay. Route the wire to the stock fuel pump relay and connect using the supplied fuse tap. Bend the fuse tap as shown in Fig. 9-c.
- D. Run the black wire from terminal #86 on the fuel pump relay to ground.
- E. With the long red 12-gauge wire connected to the fuel pump relay terminal #87, route the free end down to the area near the fuel filter on the driver's side inner frame rail under the door. Secure as necessary to avoid heat and sharp edges.

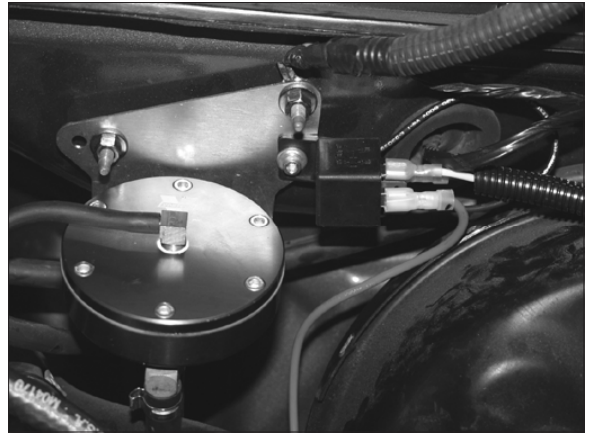


Fig. 9-a

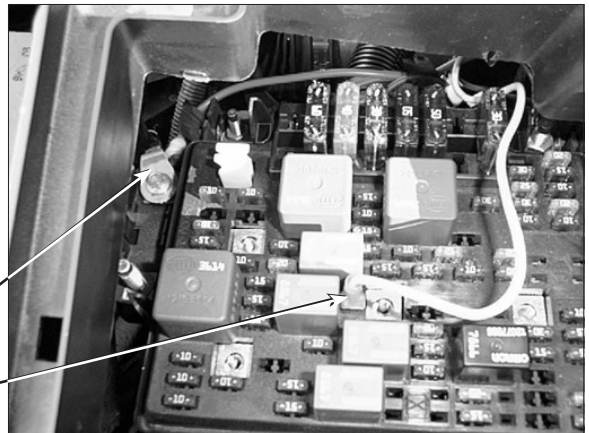


Fig. 9-b

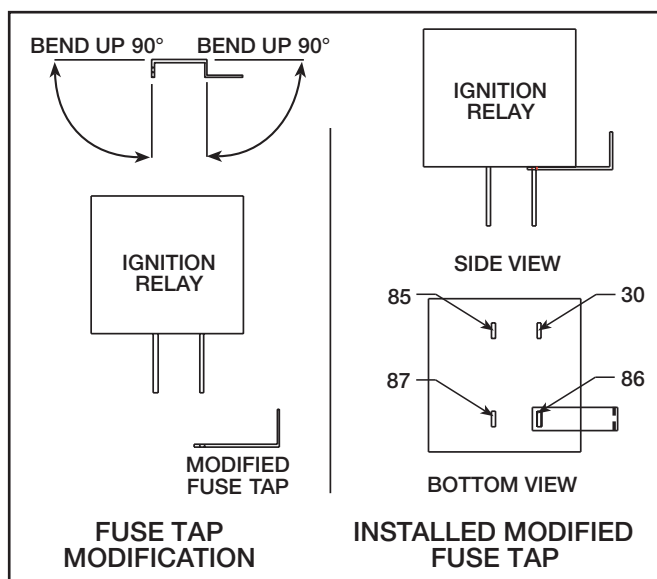


Fig. 9-c

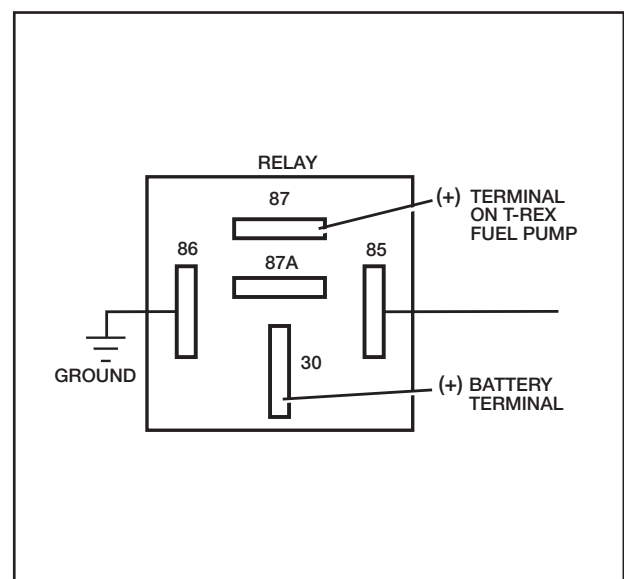


Fig. 9-d

9. FUEL PUMP WIRING AND INSTALLATION (All 2000-2002 Models and 2003 6.0L Models Only), cont'd.

- F. Remove the fuel line from the outlet (front) of the fuel filter. Remove the tube from the plastic retainer holding it so that it can be rotated freely. Some models may vary from the photo slightly. Follow the same procedure, taking care to mount the pump so that the hard line is not stressed.
- G. Making sure the O-ring is seated on the threaded end of the supplied fitting, install into the outlet (front) of the fuel filter and tighten.
- H. Making sure the O-ring is seated on the tube end of the fuel line (removed from the filter) thread the bump tube into the fitting installed on the outlet of the fuel pump and tighten.
- I. Route the free end of the hose connected to the fuel pump inlet to the fitting previously installed on the fuel filter outlet. Use the supplied hose clamp to secure the hose on the barb fitting. Try to make the bends as large as possible, so as to avoid kinking the hose. Secure the hose using the wraps and tighten all of the hose clamps.
- J. Install the supplied adel clamps onto the fuel pump and mark holes to be drilled for #12 sheet metal screws. Drill an 11/64" hole at each location. Using the supplied black 12-gauge wire with yellow ring terminal connectors, install one end under the sheet metal screw nearest the electrical terminal side of the fuel pump. Attach the other end of the ground wire to the (-) terminal of the fuel pump. Secure to the frame as shown in Fig. 9-e. Tighten both adel clamps.
- K. Attach the previously routed red wire to the positive terminal of the fuel pump using the yellow ring terminal connector.

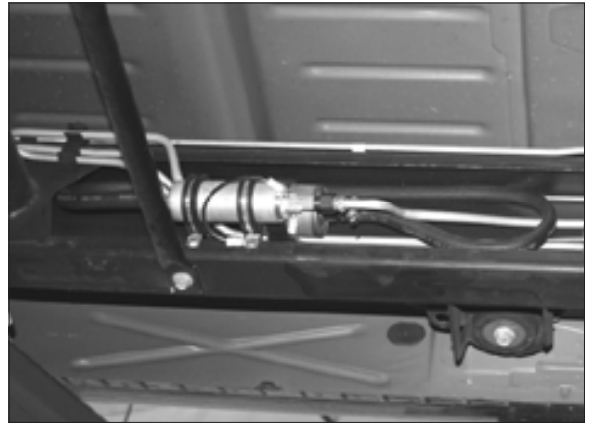


Fig. 9-e

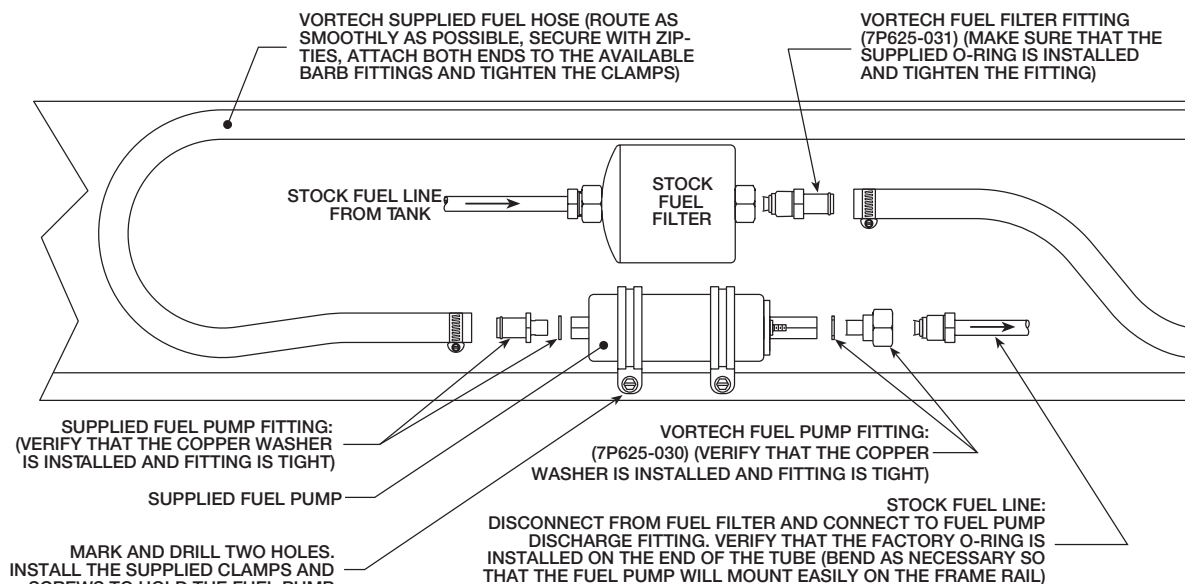


Fig. 9-f

10.A INLET DUCT INSTALLATION (99-03 Models)

- A. Install the supplied 3-1/2" x 3" sleeve onto the MAF sensor outlet.
- B. Reinstall the upper fan shroud with the exception of the top two bolts.
- C. Remove any plastic clips that are no longer used to secure the radiator hose.
- D. Slide the entry of the large plastic inlet duct (see Fig. 10-d) into the sleeve installed on the MAF. Lower the inlet duct onto the top of the radiator shroud. Reinstall the factory radiator shroud bolts through the two supplied inlet duct mounting tabs and into their original bolt holes.
- E. Insert the supplied 1/4-20 x 1/2" screws through the bracket and into each side of the inlet duct using the supplied washers. Tighten the screws. (See Fig. 10-a.)

NOTE: For 2001-2003 6.0L models, a 180° cast aluminum duct will be in place of the described plastic duct.

- F. Install the supplied 180° inlet duct onto the inlet of the supercharger after the supercharger is installed. Orient the duct so that the inlet is at the same level as the outlet of the large duct just installed. Tighten the supplied T-Bolt hose clamp on the aluminum ring around the supercharger inlet. Make sure there is sufficient clearance between the duct and the master cylinder.
- G. Install the supplied #52 hose clamps and 3-1/2" x 9" long flex hose between the two ducts just installed. (See Fig. 10-b.)
- H. Using the supplied 3/8" hose mender, connect the supplied 3/8" hose from the back of the inlet duct to the passenger side valve cover breather hose. Secure the hose so that it cannot interfere with the throttle arm or cable. (See Fig. 10-c.)
- I. Install and tighten the hose clamps on each connection. (See Fig. 10-d.)

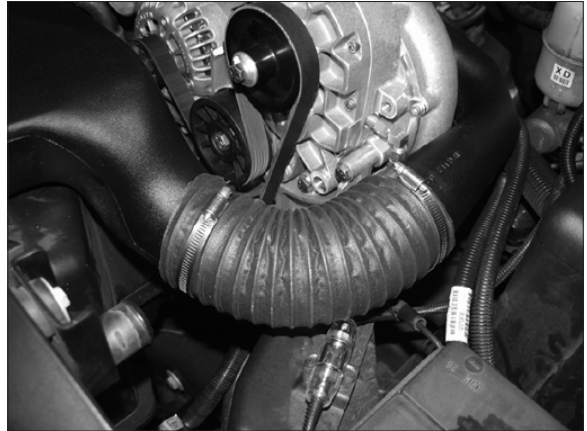
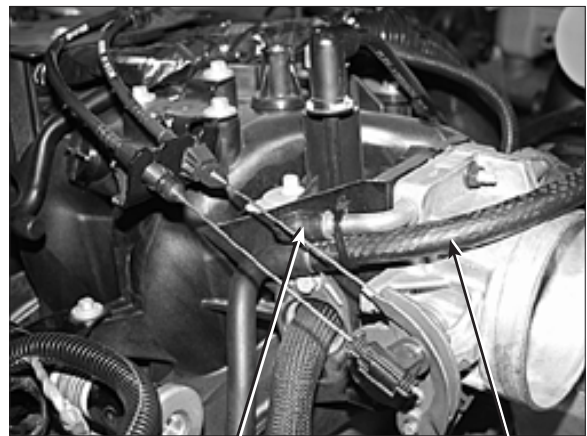


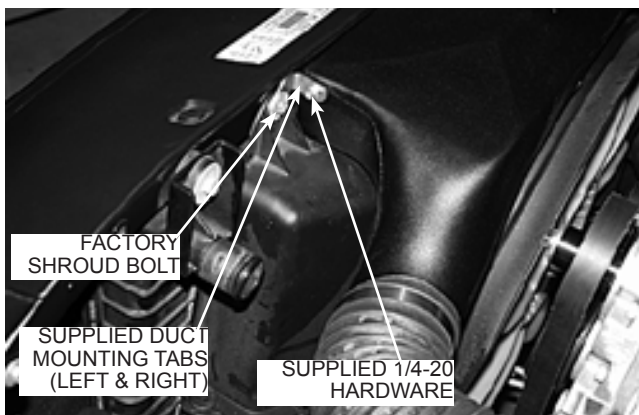
Fig. 10-b



SUPPLIED 3/8"
RUBBER CAP

SUPPLIED
3/8" HOSE

Fig. 10-c



FACTORY
SHROUD BOLT

SUPPLIED DUCT
MOUNTING TABS
(LEFT & RIGHT)

SUPPLIED 1/4-20
HARDWARE

Fig. 10-a



Fig. 10-d

10.B INLET DUCT INSTALLATION (2004 - 2006 4.8L / 5.3L Models)

- A. Install the supplied 3-1/2" x 3" sleeve onto the MAF outlet, and the 3-1/2" x 2" sleeve on the inlet of the supercharger.
- B. Reinstall the upper fan shroud with the exception of the top two bolts.

NOTE: If the vehicle is supplied with electric fans from the factory, refer to Fig. 10.b-a to modify the plastic shrouding for the Vortech supplied brackets to mount.

- C. Remove any plastic clips that are no longer used to secure the radiator hose.
- D. Slide the entry of the large plastic inlet duct (See Fig. 10.B-d) into the sleeve installed on the MAF. Lower the inlet duct onto the top of the radiator shroud. Reinstall the factory radiator shroud bolts through the two supplied inlet duct mounting tabs and into their original bolt holes.
- E. Insert the supplied 1/4-20 x 1/2" screws through the bracket and into each side of the inlet duct using the supplied washers. Tighten the screws. (See Fig 10.B-d.)
- F. Using Fig. 10.B-b, drill a 9/16" hole in the shown location. Use a 1/4"NPT tap and install the supplied 1/4" NPT x 3/8" hose barb.
- G. Install the supplied 180° inlet duct onto the inlet of the supercharger. Orient the duct so that it swoops over the side of the supercharger with the end pointing at the crossover duct.
- H. Install the supplied #52 hose clamps and 3-1/2" x 7" long flex hose between the two ducts just installed. (See Fig. 10.B-b.)
- I. Use the supplied 3/8" hose from the 3/8" fitting on the inlet duct to the passenger side valve cover breather hose. Secure the hose so that it cannot interfere with the throttle arm or cable. (See Fig 10.B-c.)
- J. Install and tighten the hose clamps on each connection. (See Fig 10.B-d.)

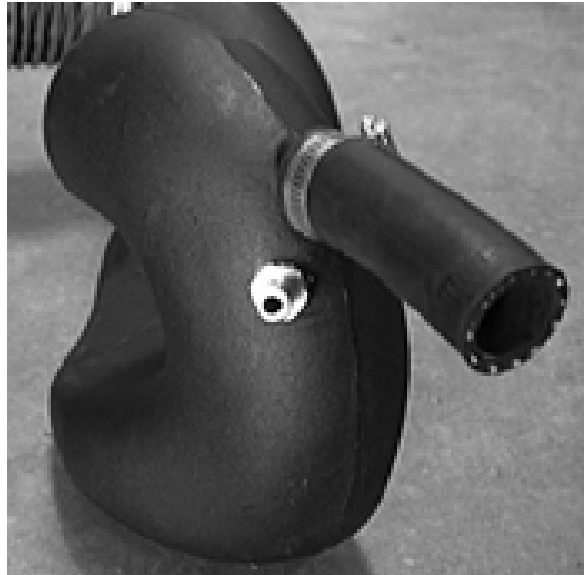


Fig. 10.B-b



Fig. 10.B-c

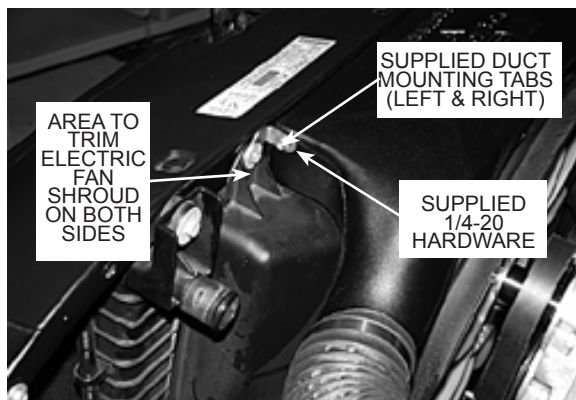


Fig. 10.B-a



Fig. 10.B-d

11 RADIATOR TUBE INSTALLATION

- A. Cut the supplied hose as shown in Fig. 11-a.
- B. Using the two original clamps and the two supplied #24 hose clamps, attach the previously trimmed hose pieces to each end of the supplied radiator tube, radiator and water pump. (See Figs. 11-a, 11-b.)
- C. Orient the radiator tube and hoses for best fit and tighten all clamps.
- D. Use the supplied adel clamp and 1/4-20 x 1/2" screw and washer to secure the radiator tube to the insert on the large plastic inlet duct. (See Fig. 11-b.)
- E. Refill the coolant reservoir.

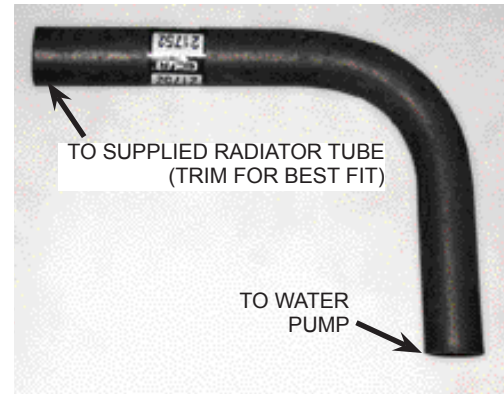


Fig. 11-a

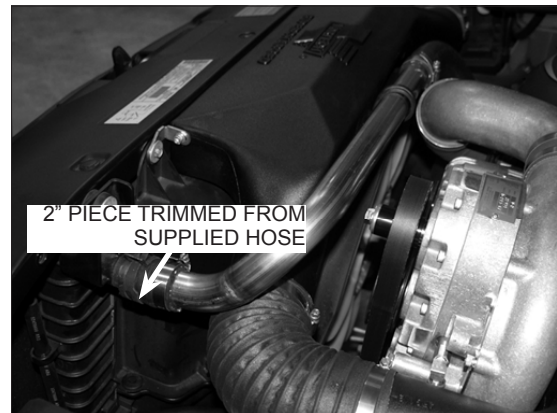


Fig. 11-b

12. DISCHARGE DUCT INSTALLATION

NOTE: This section only applies to standard output kits.

- A. Install the supplied 2-3/4" sleeve and rubber elbow onto the cast discharge duct. Put the discharge duct into position and slide the sleeves onto the supercharger and the throttle body.
- B. Install and tighten the #64, #48 and the two #44 hose clamps.



Fig. 12-a

13. SUPERCHARGER BYPASS VALVE INSTALLATION

- A. Connect a 3" length of 1" hose from the barb on the supercharger inlet duct to the outlet of the bypass valve.
- B. Using the supplied #16 hose clamps, connect the barb on the aluminum discharge duct to the inlet of the bypass valve using the supplied 1" hose. (See Fig. 13-a.)

NOTE: Some vehicles may require trimming of the engine cover to clear various components. If necessary, trim the cover to clear the bypass valve hose.

- C. Install and tighten hose clamps on each connection.
- D. Using the supplied 5/32" vacuum line and TEE fitting, connect the bypass valve pressure port to the manifold vacuum hose that is connected to the fuel pressure regulator. (See Fig. 8-c.)
- E. 2004-2005 Models: Locate the hard plastic line running to the driver's side rear of the engine. Remove the hard line from the rubber hose.
- F. 2004-2005 Models: Install the supplied 90° PCV into the rubber hose on the engine.
- G. 2004-2005 Models: Cut the hard plastic line to reach the PCV valve and connect them with the supplied length of 3/8" hose. (See Fig. 13-c.)
- H. 2004-2005 Models: Locate the capped-off manifold vacuum port on the passenger's side of the intake manifold. Using a file or hacksaw, remove the tip of the capped-off section. Using the supplied 5/32" vacuum line connect the bypass valve pressure port. (See Fig. 13-d.)



Fig. 13-a

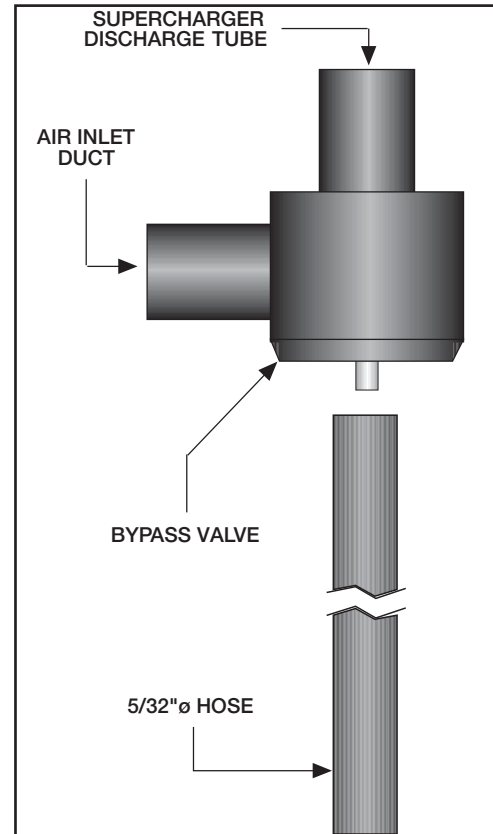


Fig. 13-b

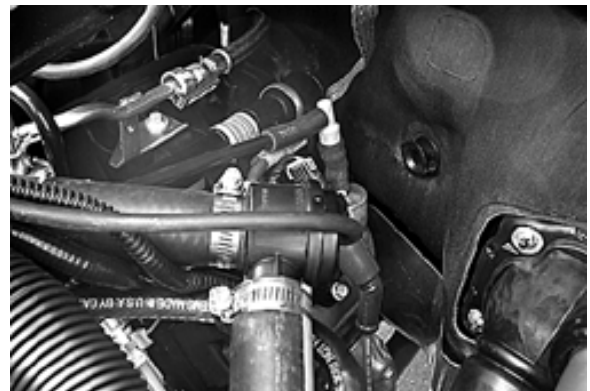


Fig. 13-c

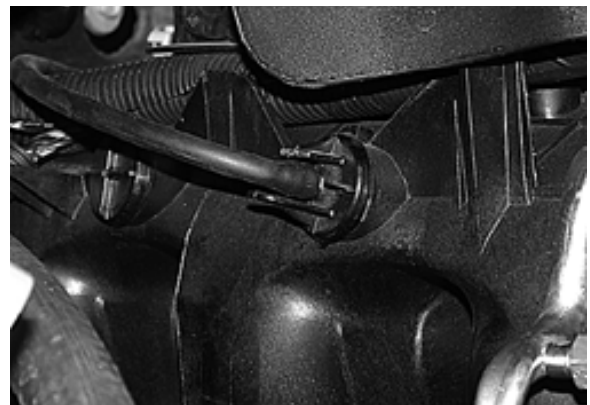


Fig. 13-d

14.A REFLASH COMPUTER, SUPERCHIPS EQUIPPED KITS

2002 4.8L / 2000-2002 5.3L / 2003 6.0L MODELS ONLY

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.
- Vehicles equipped with "On-Star", please refer to the "On-Star" notice in Section 15.

- A. Reconnect the battery.
- B. Connect the supplied cable to the 9-pin connector at the top of the hand-held unit. If present use the thumbscrews to secure the cable to the connector.
- C. Connect the other end to your ALDL connector located under the dash near the steering column. Make sure this connection is seated all the way in and that it is secure. You do not want this cable coming out of the connector during programming.

NOTE:• All vehicles equipped with On-star that have aftermarket stereos will experience problems with the ability to re-program the vehicle's ECM. It is necessary to disconnect the aftermarket stereo from the factory wiring harness before continuing with the programming procedure.

- 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!

- D. Turn the ignition key to the "on" or "run" position but do not start the vehicle.
- E. To begin programming your vehicle, you may either press the YES button or the A button. If you press the YES button on the hand-held unit, this will download the Superchips performance program already stored in the hand-held unit. If you press "A", you can alter some pre-defined options to suit your needs. These options are not permanently stored in the hand-held unit. When power is removed from the unit, the changes you made will be lost.
- F. You only need to press the YES button once to start the programming cycle. The programming process take 1 minute and 15 seconds to complete.
- G. The hand-held unit will inform you that the programming process has completed and to turn the ignition off and disconnect the cable. Only at this time should the ignition be turned off and the cable removed.
- H. Programming is now completed. Start the vehicle to ensure proper operation.

14.B REFLASH COMPUTER, DIABLO PREDATOR EQUIPPED KITS

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

- All model years up to 2002:
Locate "interior" fuse panel and remove Qty 2 SEO labeled fuses.
Locate "exterior" fuse panel and remove Qty 2 SEO labeled fuses.
- 2003-2005 model year vehicles
Locate "exterior" fuse panel and remove Qty 1 INFO, Qty 1 RADIO and Qty 1 RADIO AMP labeled fuses.
- 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: • All vehicles equipped with On-star that have aftermarket stereos will experience problems with the ability to re-program the vehicle's ECM. It is necessary to disconnect the aftermarket stereo from the factory wiring harness before continuing with the programming procedure.

- 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!

- 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.
- C. Attach the OBD2 connector from the Flash tool that is provided in the kit to the vehicle's OBD2 port. Make sure this connector is seated all the way in the vehicle's OBD2 port. You don't want this connector to disconnect during programming or damage may occur to the vehicle's ECM.
- D. The Reflash tool should power up and display three parameters.
 - Performance tune
 - Diagnostics
 - Options
- E. Select "performance tune" and press the enter button in the middle of the arrow keys.
- F. Read the disclaimer entirely, then select agree and press ENTER.
- G. 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.
- H. Turn the ignition on (do not start the ve-



Fig. 16.B-a

hicle). Set the parking brake and press the ENTER button to continue.

- I. 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.
- J. Continue to follow the screen and when finished unplug the reflash tool from the vehicle's OBD2 port.

15. **SUPERCIPS NOTICE (2002 4.8L / 2000-2002 5.3L / 2003 6.0L Only)**

Regarding all GM vehicles with "ON-STAR" and Microtuner 2001. It has come to our attention that GM vehicles equipped with "ON-STAR" communications may have trouble being programmed with a Superchips Microtuner 2001. It appears the "ON-STAR" system interrupts communications between the Microtuner 2001 unit and the vehicle's PCM. In most cases this results in the following message being displayed on the Microtuner 2001 "No response from PCM..." and after cycling the ignition the vehicle can be started right back up.

Superchips is reviewing this and to temporarily correct for this situation, it is recommended that any vehicle to be programmed that has "ON-STAR" should follow these additional steps FIRST.

1. Ensure the vehicle is off and keys are out of the ignition.

All model years up to 2002:

Locate "interior" fuse panel and remove Qty 2 SEO labeled fuses.

Locate "exterior" fuse panel and remove Qty 1 SEO labeled fuse.

NOTE: 2004 vehicles equipped with On-star that have aftermarket stereos will experience problems with the ability to re-program the vehicle's ECM. It is necessary to disconnect the aftermarket stereo from the factory wiring harness before continuing with the programming procedure.

2003-2004 Model years:

Locate "exterior" fuse panel and remove Qty 1 INFO labeled fuse.

2. Follow the instructions that came with the Microtuner.

Once programming is completed, ensure the vehicle is off and the keys are out of the ignition and install the fuses in the correct locations.

On GMC trucks, the interior fuse panel should be located to the left of the instrument panel/dash board. If the panel faces the door, open the door to gain full access.

On GMC trucks, the exterior fuse panel should be located under the hood on the right hand side of the vehicle. It will be labeled Fuse Panel or similar.

16. FINAL ASSEMBLY AND CHECK

- A. Reconnect the battery.
- B. If your vehicle has gone over 10,000 miles since its last spark plug change, you will need to change the spark plugs now before test driving the vehicle.
- C. Check all fittings, nuts, bolts and clamps for tightness. Pay particular attention to oil and fuel lines around moving parts, sharp edges and exhaust system parts. Make sure all wires and lines are properly secured with clamps or tie wraps. (See Fig. 16-a.)
- D. Check all fluid levels, making sure that your tank(s) is/are filled with 91 octane or higher fuel before commencing test drive.
- E. Start engine and allow to idle a few minutes, then shut off.
- F. Recheck to be sure no hoses, wires, etc. are near exhaust headers or moving parts and check for any sign of fluid leakage. Recheck all fluid levels.
- G. PLEASE TAKE SPECIAL NOTE: Operating the vehicle without ALL the subassemblies completely and properly installed may cause FAILURE OF MAJOR COMPONENTS.
- H. Test drive the vehicle.
- I. Read the STREET SUPERCHARGER SYSTEM OWNER'S MANUAL AND RETURN THE WARRANTY REGISTRATION FORM within thirty (30) days of purchasing your supercharger system to qualify for the 3 year limited warranty.



Fig. 16.A-a

16. FINAL ASSEMBLY AND CHECK, CONT'D

For internally lubricated V3 units only

This supercharger has been factory pre-filled with special Vortech synthetic lubricant. Oil does not need to be added to a brand new unit; however a fluid level check should be performed.

Prior to operating the supercharger on the vehicle and after installation onto the vehicle:

Remove the factory installed flat-head brass shipping plug (not the dipstick) from the top of the supercharger case. Replace the sealed shipping plug with the supplied "vented" plug. Do not operate the supercharger without it. Check the supercharger fluid level.

Fluid level checking procedure:

1. Ensure that the .06" copper sealing washer is located on the dipstick base.
2. Thread the clean dipstick into the supercharger unit it seats.
3. Once the dipstick has seated, remove the dipstick from the unit. Fluid should register in the crosshatched area on the dipstick.
4. DO NOT OVERFILL!!! Drain excess fluid the unit if it is above the maximum level on the dipstick.

Check the fluid level using the dipstick at least every 2,500 miles.

Initial supercharger fluid change must be performed at 2,500 miles. The supercharger fluid must be changed at least every 7,500 miles.

Drain the fluid, refill the unit with 4 oz. of Vortech V3 lubricating fluid and then confirm proper oil level using the dipstick. DO NOT OVERFILL!!!

WARNING: Use of any other fluid other than the special Vortech lubricant will void the warranty and may cause component failure.



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