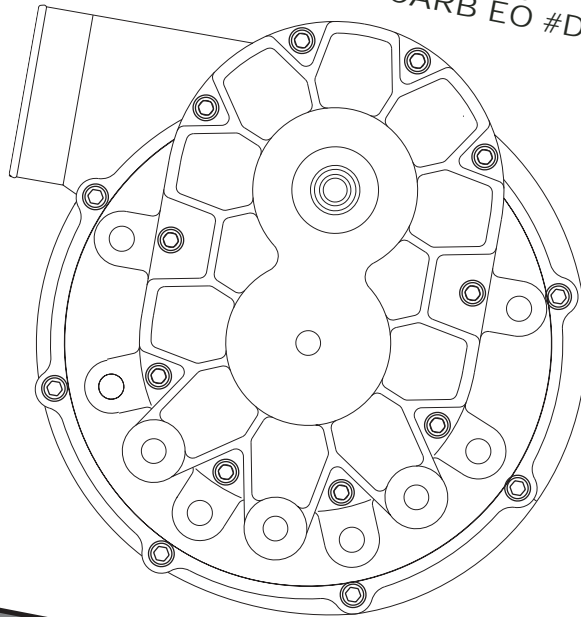


Ford 4.6/5.4 2V
F-150/F-250
Expedition/Navigator
Supercharger System
Installation Instructions

1997-2003 Model Years
50 State Smog Legal per CARB EO #D-213-20



ENGINEERING, LLC

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FAX (805) 247-0669 • www.vortechsuperchargers.com • M-F 8:00 AM - 4:30 PM PST

P/N: 4FM020-010
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20OCT03 v3.1 4.6/5.4Exped/Nav(4FM v3.1)

FOREWORD

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 call Vortech Engineering for installers in your area.

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Table Of Contents

FOREWORD	ii
TABLE OF CONTENTS	iii
DISCLAIMER	iv
NOTICE	v
TOOL & SUPPLY REQUIREMENTS	vi
PARTS LIST - 1997-2001 FORD 4.6L 2V F-150/F-250	vii
PARTS LIST - 1997-2001 FORD 5.4L 2V F-150/F-250	viii
1. COMPONENT REMOVAL AND PREPARATION	1
2. OIL FEED LINE INSTALLATION	2
3. OIL DRAIN	3
4. CRANKSHAFT PULLEY/SUPERCHARGER DRIVE PULLEY	5
5. FUEL PUMP	6
6. FUEL PUMP RELAY	7
7. WIRE PREPARATION (4.6 Models only)	8
8A. MAIN MOUNTING PLATE ASSEMBLY AND MOUNTING (4.6 Models only)	9
8B. MAIN MOUNTING BRACKET ASSEMBLY AND MOUNTING (5.4 Models only)	10
9. EGR CONTROL MOUNTING AND MAIN MOUNTING PLATE SUPPORT (4.6 Models only)	12
10. FUEL MANAGEMENT UNIT (FMU)	13
11. IDLER AIR CONTROL RESONATOR AND CRANKCASE VENT HOSE REROUTING	14
12. SUPERCHARGING MOUNTING	14
13. MASS AIR FLOW SENSOR REMOVAL, MOUNTING AND ASSEMBLY	17
14. AIR INLET/BYPASS ASSEMBLY	17
15. DISCHARGE	19
16. FINAL CHECK	19

SUPERCHARGED F-150/F-250/EXPEDITION/NAVIGATOR DISCLAIMER

Towing, racing performance driving, hard accelerations, and other heavy/severe duty driving activities place extra demands on a vehicle's transmission. If you use or plan to use your supercharged '97 or later Ford F-150, F-250, Expedition under any of these special driving circumstances, Vortech suggests that you evaluate the purchase of a transmission shift improver product.* In simple terms, a transmission shift improver product is designed to improve the performance and durability of your vehicle's transmission.

Several companies make these shift improver products including TransGo Performance. Please contact TransGo Performance or one of the other product companies directly should you wish to obtain more information about their shift improver products.

TransGo Performance
2621 Merced Avenue
El Monte, CA 91733
(626) 443-4953 phone
(626) 443-1079 fax

NOTE: *This listing is provided solely for informational purposes. VORTECH has made no evaluation of the quality or functionality of these products and DOES NOT MAKE ANY RECOMMENDATION, ENDORSEMENT, NOR PROVIDE ANY WARRANTY ON ANY OF THESE SHIFT IMPROVER PRODUCTS.*

* Only applies to vehicles equipped with automatic transmissions.

IMPORTANT NOTES

1999-2003 Models

This kit requires ECM modification and the installation of a Vortech/Superchips ECM Module. The ECM must be sent directly to Vortech by the installing customer (the charge for this service with module installation has been included in the purchase price).

- Included in this kit is a prepaid next-day air shipping box and a credit tag for one (1) Vortech/Superchips ECM Module.
- The modules are made specifically for each individual vehicle with respect to the factory ECM calibration.
- Simply contact the Vortech Service Department at (805) 247-0226 to request a Return Authorization Number (See ECM Module Credit Tag for more details).
 - Mail to Vortech the enclosed "ECM Module Credit Tag" (send original tag - no photocopies will be accepted) and ECM in the supplied box.
 - Turnaround time will be 1-2 days (each application varies). Vortech will give an estimate at the time of your order.

Your Vortech/Superchips ECM Module comes with a twelve (12) month limited warranty from the original date of purchase of your supercharger system (see Owner's Manual for details).

NOTE: 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.

1997-2003
FORD 4.6L, 5.4L 2V F-150/F-250/EXPEDITION/NAVIGATOR
Installation Instructions
CARB EO #D-213-20

*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 Limited Warranty Program and the Warranty Registration form and return envelope.

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.**

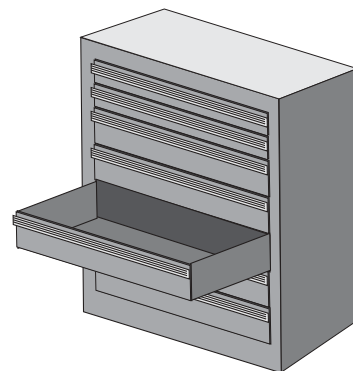
Installation on new vehicles will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

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 20,000 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 40,000 miles and spark plug wires at least every 60,000 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" Extension 3"
- 1/2" Extension 3"
- 3/8" NPT Tap and Handle
- Adjustable Wrench
- Harmonic Balancer Puller
- Harmonic Balancer Installer
- Open End Wrenches: 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4"
10mm, 13-18mm, 18mm tappet (thin) wrench
- 3 lb. Hammer
- 1-1/16" Oil Sending Unit Socket (Snap-on #A119A)
- Center Punch and a 5/8" Tapered Punch
- Ford Springlock 3/8" Fuel Fitting Disconnect Tool
- 6 Quarts SH/CF Rated Quality Engine Oil
- Oil Filter and Wrench
- Flat #2 Screwdriver
- Phillips #2 Screwdriver
- Heavy Grease
- Silicone Sealer
- Drill Motor
- "R", 1/8", 3/16", 11/32" Drill Bits
- 3/16", 8mm Allen Wrenches
- Wire Strippers and Crimpers
- Utility Knife
- 1/8" NPT Tap (for 4WD models equipped with oil coolers)





PARTS LIST

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

Part Number	Description	Quantity	Part Number	Description	Quantity
2E228-160	SUPERCHARGER ASSEMBLY	1	8F203-265	FUEL PUMP ASSEMBLY	1
2E128-230	V-2 Supercharger	1	5W001-001	Wire Tap	1
2A036-361	3.60 Supercharger Drive Pulley	1	5W001-011	16-14 Ga. Eyelets	2
7U100-070	3/16" x 3/16" x 7/8" Key	1	7E010-050	#12 x 1/2" Sheet Metal Screw	1
2A040-011	Pulley Retainer	1	7P312-003	5/16" Female Fuel Connector	1
7B375-125	3/8-24 x 1-1/4" HXHD Bolt	1	7R004-003	14.5 Stepless Clamps	2
7K375-040	3/8" AN960 Flat Washer	1	7U100-044	4" Tie Wraps	3
			7U100-055	6" Tie Wraps	4
4FM111-034	MAIN MOUNTING BRACKET ASSEMBLY	1	7U031-018	5/16" x 11" High Pressure Fuel Hose	1
4FM011-033	Mounting Plate Assembly	1	8F101-200	T-Rex Wiring Assembly	1
7A375-251	3/8-16 x 2-1/2" Flat SHCS	5	5W001-014	Fuse Holder	1
7C100-085	10mm x 1.50 x 85mm HXHD Bolts	3	5W001-015	20A Blade Type Fuse	1
7K437-001	7/16" AN Washers	3	5W001-010	16-14 Ga Female Slides	3
8C080-020	8mm x 1.25 x 20mm HXHD Bolt	1	7U030-050	12mm x 16" Fuel Hose	1
7K312-001	5/16" AN Washer	1	8F001-002	155 Inline Fuel Pump	1
4FM010-130	Bracket Support Strut	1	7R003-024	1-1/2" Adel Clamp	1
7A375-100	3/8-16 x 1" HXHD Bolt	1	7R001-008	#8 Hose Clamps	2
7F375-017	3/8-16 Nylock Nut	1	7E010-075	#12 x 3/4" Sheet Metal HXHD Bolt	1
7K375-040	3/8" AN960 Flat Washer	1	7P500-004	1/2" Fuel Fitting Adapter	1
7R003-008	1/2" Adel Clamp	1			
5W018-010	6" 18 Ga. Std. Red Wire	1	4FM112-010	AIR INLET ASSEMBLY	1
5W001-007	3/16" x 6" Heat shrink Tube	1	4FM010-050	MAF Bracket Assembly	1
7C080-085	8mm Shoulder Bolts	4	8H040-045	3-3/4" Flanged Air Filter	1
			7R002-056	#56 Hose Clamps	4
4FM110-040	COIL/EGR/POWER STEERING ASSEMBLY	1	7S350-200	3-1/2" x 2" Sleeves	2
4FM010-040	Coil Mounting Bracket	1	7U035-000	3-1/2" x 15" Flex Hose	1
7C010-150	10-24 x 1-1/2" SH Bolts	4	7U100-052	7/16" Rubber Grommet	1
7F010-024	10-24 Nylock Nuts	8	7U038-000	3/4" x 24" Heater Hose	1
7J010-001	#10 Flat Washers	12	7P500-026	1/2" NPT x 3/4" -90° Hose Barb	1
7A250-075	1/4-20 x 3/4" SH Cap Screws	4	7P375-052	3/8" NPT x 5/8" 90° Hose Barb	1
7F250-021	1/4-20 Nylock Nuts	4	4FA012-012	90° Intake Elbow	1
7J250-001	1/4" SAE Washers	4	4FA012-013	90° Intake Elbow w/Boss	1
4FM010-030	EGR Bracket	1	7A250-075	1/4-20 x 3/4" SH Cap Screws	4
7C010-050	10-24 x 1/2" SH Cap Screws	4	7F250-021	1/4-20 Nylock Nuts	4
			7J250-001	1/4" SAE Washers	4
4FM111-032	SUPERCHARGER DRIVE ASSEMBLY	1	7U100-055	6" Tie Wraps	6
4FM011-032	Belt Tensioner	1	7A312-150	5/16-18 x 1-1/2" HXHD Cap Screws	2
2A046-725	Belt	1	7J312-001	5/16" Fender Washers	2
7J012-092	12mm Flat Washers	3	7J312-000	5/16" SAE Flat Washers	2
7C012-020	12mm x 1.75 X 20mm Bolts	5	7F312-017	5/16-18 Nylock Nuts	2
7C012-022	12mm x 1.75 X 20mm Thin Head Bolt	1	7U030-065	3/4" x 90° Hose	1
4FA016-150	Smooth Pulley Tensioners	2	7U133-024	5/8" Molded Elbow Hose	1
4GF016-160	Ribbed Idler Pulley	1	7P750-102	3/4" NPT x 1" 90° Hose Fitting	1
4FK116-021	Idler Pulley Assembly	1	7R002-052	#52 Hose Clamps	2
7C100-085	10mm x 1.50 x 85mm HXHD Bolt	1			
7K437-001	7/16" AN Washer	1	4FM238-068	FMU (with lines)	1
2A017-021	Spacer	1	6Z110-114	8:1 Fuel Management Unit	1
4FM016-011	Balancer	1	4FA145-010	Male Fuel Line	1
7C080-026	8mm x 1.25 x 25mm SH Bolts	3	4FA145-020	Female Fuel Line	1
7K312-001	5/16" AN Washers	3	7U030-046	5/32" x 18" Vacuum Line	1
7C120-065	12mm x 1.5 x 65mm HXHD Bolt	1	7P156-082	5/32" Tee	1
7J438-071	7/16" USS Washer	1	7U100-055	6" Tie Wraps	4
4FM016-012	Crank Pulley	1			
			4FM130-036	OIL DRAIN ASSEMBLY	1
4FM112-020	DISCHARGE ASSEMBLY	1	7U030-036	1/2" x 32" Oil Drain Hose	1
4FM012-020	Discharge Tube	1	7R001-008	#8 Stainless Hose Clamps	2
7S300-200	3" x 2" Sleeve	1	7P375-042	Male Connector	1
7S275-200	2-3/4" x 2" Sleeve	1	4FH100-010	Oil Drain Tube Nut Assy.	1
7R002-044	#44 Hose Clamps	2			
7R002-048	#48 Hose Clamps	2	4FM130-026	OIL FEED ASSEMBLY	1
7R002-016	#16 Hose Clamps	4	7U030-026	1/4" x 36" Oil Feed Hose	1
8D001-001	Bypass Valve	1	7P525-067	.525 Crimp Ferrules	2
7U034-016	1" x 7" Heater Hose	1	7P250-066	-4 Swivel x 1/4" Hose Barb Fittings	2
7U034-016	1" x 5" Heater Hose	1	7P125-026	1/8" NPT x #4 -90° Fitting	1
7U030-046	5/32" x 12" Vacuum Line	1	7U100-055	6" Tie Wraps	4
7P156-082	5/32" Tee	1	7P250-082	1/4" NPT x -4 -90° Fitting	1
7S275-300	2-3/4" x 3" Sleeve	1	7P250-122	1/4" Pipe Thread Tee	1
7P375-106	PCV Valve	1	7P250-123	1/4" NPT x 1-1/2" Nipple	1
			7P250-034	1/4 NPT Strt. Tee	1
			7U030-026	1/4" x 62" Oil Feed Hose	1
			7P125-103	1/8" NPT x 45" #4 Ftg.	1



PARTS LIST

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

Part Number	Description	Quantity	Part Number	Description	Quantity
2E228-170	SUPERCHARGER ASSEMBLY	1	4FM112-040	AIR INLET ASSEMBLY	1
2E128-220	V-2 Supercharger	1	4FM010-050	MAF Bracket Assembly	1
2A038-333	3.33 8 Rib Pulley	1	8H040-045	3-3/4" Flanged Air Filter	1
7U100-070	3/16" x 3/16" x 7/8" Key	1	7R002-056	#56 Hose Clamps	4
2A040-011	Pulley Retainer	1	7S350-200	3-1/2" x 2" Sleeves	2
7B375-125	3/8-24 x 1-1/4" HXHD Bolt	1	7U035-000	3-1/2" x 15" Flex Hose	1
7K375-040	3/8" AN960 Flat Washer	1	7U100-052	7/16" Rubber Grommet	1
			7U038-000	3/4" x 24" Heater Hose	1
4FM111-054	MAIN MOUNTING BRACKET ASSEMBLY	1	7P500-026	1/2" NPT x 3/4" -90° Hose Barb	1
4FA016-170	Idler Smooth	1	7P375-052	3/8" NPT x 5/8" -90° Hose Barb	1
4FA016-171	Dust Shields	2	4FA012-012	90° Intake Elbow	1
4FM010-140	Bracket Support	1	4FA012-013	90° Intake Elbow w/Boss	1
4FM010-150	Bracket Support #2 5.4	1	7A250-075	1/4-20 x 3/4" SH Cap Screws	4
4FM011-021	Mounting Bracket Mach.	1	7F250-021	1/4-20 Nylock Nuts	4
4FM016-031	Idlers Grooved	2	7J250-001	1/4" SAE Washers	4
4FM017-010	Spacer Short Bracket Support #2	1	7U100-055	6" Tie Wraps	6
4FM017-020	Spacer Long Bracket Support #2	1	7A312-150	5/16-18 x 1-1/2" HXHD Cap Screws	2
7A250-075	1/4-20 x 3/4" S.H.C.S.	6	7J312-001	5/16" Fender Washers	2
7A250-100	1/4-20 x 1" Flat Allen	1	7J312-000	5/16" SAE Flat Washers	2
7A375-175	3/8-16 x 1.75" Hex Head	2	7F312-017	5/16-18 Nylock Nuts	2
7A375-250	3/8-16 x 2.5" Hex Head	3	7U030-065	3/4" x 90° Hose	1
7A437-150	7/16-14 x 1.5" Bolt Hex Head	3	7U133-024	5/8" Molded Elbow Hose	1
7C010-080	10mm x 1.5 x 80mm S.H.C.S.	3	7P750-102	3/4" NPT x 1" 90° Hose Fitting	1
7C060-016	M6 x 1.00 x 16 HXHD Bolt	1	7R002-052	#52 Hose Clamps	2
7F250-021	1/4-20 Nylock Nut	3			
7J006-093	6mm Washer	1	4FM112-030	5.4 DISCHARGE ASSEMBLY	1
7J250-001	1/4 SAE Washer Plated	1	4FM012-030	Discharge Tube 5.4 (Only)	1
7J438-091	9/16 SAE Washers Plated	2	7P156-082	5/32" TEE	1
7K375-040	3/8" AN 960 Flat Washer	5	7R002-016	#16 Hose Clamps	4
7J010-002	10mm Washer	3	7R002-044	#44 Hose Clamps	2
5W001-012	Solderless Connector	4	7R002-048	#48 Hose Clamps	2
5W001-006	3/8" Heat Shrink Tubing 12"	1	7S275-200	2-3/4" x 2" Sleeve	1
7C140-030	14mm x 2.0 x 30mm HXHD	1	7S300-200	3" x 2" Sleeve	1
5W018-070	18 GA Wire Green 12"	1	7U030-046	5/32" x 12" Vacuum Line	1
5W018-030	18 GA Wire Grey 12"	1	7U034-016	1" x 9" Heater Hose	1
7P375-050	3/8 Hose Mender	1	7U034-016	1" x 2.5" Heater Hose	1
7R001-004	#4 Hose Clamp	4	8D001-001	Bypass Valve	1
7U032-016	3/8" Hose Hi-Pressure 18"	1	7P375-106	PCV Valve	1
4FM010-160	Power Steering Bracket	1			
			4FM130-026	OIL FEED ASSEMBLY	1
4FM111-062	SUPERCHARGER DRIVE ASSEMBLY	1	7U030-026	1/4" x 36" Oil Feed Hose	1
2A048-802	Belt 8 rib x 80.14"	1	7P525-067	.525 Crimp Ferrules	2
4FA016-170	Idler Smooth	1	7P250-066	-4 Swivel x 1/4" Hose Barb Fittings	2
4FA016-171	Dust Shields	1	7P125-026	1/8" NPT x #4 -90° Fitting	1
4FM011-052	Spring Tensioner Long Ford	1	7U100-055	6" Tie Wraps	4
4FM016-011	Balancer	1	7P250-082	1/4" NPT x -4 -90° Fitting	1
4FM016-041	Crank Pulley 8 Rib	1	7P250-122	1/4" Pipe Thread TEE	1
7A375-324	3/8-16 x 3.25" HXHD Bolt	1	7P250-123	1/4" NPT x 1-1/2" Nipple	1
7C010-045	10mm x 1.5 x 45mm Hex Head	1	7U030-026	1/4" x 62" Oil Feed Hose	1
7C080-026	8mm x 1.25 x 25mm SH Bolts	3	7P250-034	1/4" NPT Strt. TEE	1
7C120-065	12mm x 1.5 x 65mm HXHD Bolt	1	7P125-103	1/8" NPT x 45" #4 Fitting	1
7J438-071	7/16" USS Washer	1			
7K312-001	5/16" AN Washers	3	4FM130-036	OIL DRAIN ASSEMBLY	1
7K375-040	3/8" AN 960 Flat Washer	1	7U030-036	1/2" x 32" Oil Drain Hose	1
			7R001-008	#8 Stainless Hose Clamps	2
8F203-265	FUEL PUMP ASSEMBLY	1	7P375-042	Male Connector	1
5W001-001	Wire Tap	1	4FH100-010	Oil Drain Tube Nut Assy.	1
5W001-011	16-14 Ga. Eyelets	2	5A101-016	MAF CLAMP ASSEMBLY	1
7E010-050	#12 x 1/2" Sheet Metal Screw	1			
7P312-003	5/16" Female Fuel Connector	1			
7R004-003	14.5 Stepless Clamps	2			
7U100-044	4" Tie Wraps	3			
7U100-055	6" Tie Wraps	4			
7U031-018	5/16" x 11" High Pressure Fuel Hose	1			
8F101-200	T-Rex Wiring Assembly	1			
5W001-014	Fuse Holder	1			
5W001-015	20A Blade Type Fuse	1			
5W001-010	16-14 Ga Female Slides	3			
7U030-050	12mm x 16" Fuel Hose	1			
8F001-002	155 Inline Fuel Pump	1			
7R003-024	1-1/2" Adel Clamp	1			
7R001-008	#8 Hose Clamps	2			
7E010-075	#12 x 3/4" Sheet Metal HXHD Bolt	1			
7P500-004	1/2" Fuel Fitting Adapter	1			
4FM238-068	FMU (with lines)	1			
6Z110-114	8:1 Fuel Management Unit	1			
4FA145-010	Male Fuel Line	1			
4FA145-020	Female Fuel Line	1			
7U030-046	5/32" x 18" Vacuum Line	1			
7P156-082	5/32" TEE	1			
7U100-055	6" Tie Wraps	4			

1. COMPONENT REMOVAL AND PREPARATION

A. Disconnect the negative battery cable.

NOTE: 1999-2003 Models Only

1. Remove the passenger side front kick panel from the interior of the vehicle. Remove the sound deadening material (if any) that is covering the ECM. Remove the plastic ECM hold-down bracket.
2. From the engine side of the firewall (in the engine compartment), use a 10mm socket or wrench and remove the harness and plug from the ECM (as you loosen the bolt, the connector will slowly release). Remove the ECM from the vehicle.
3. Contact the Vortech Service Department for a Return Authorization Number. Send both ECM and supplied credit tag to Vortech using the enclosed shipping box.

B. Remove the throttle body/throttle linkage cover.

C. Detach the crankcase ventilation tube from the driver's side valve cover and the air inlet.

D. Remove the idle air control resonator and air filter cover.

E. Unplug the intake air temperature sensor (IAT) and the mass air flow (MAF) sensor.

F. Detach all remaining components of the air inlet assembly and set aside.

*G. From the left side coil, unplug the radio ignition interference capacitor, remove the spark plug wires and coil plug.

*H. Remove the cam trigger plug, unbolt the coil and remove the coil bracket.

*I. Separate the EGR pressure transducer and the EGR vacuum regulator solenoid from their bracket, unbolt the bracket from the intake manifold and set aside.

J. Unbolt the power steering fluid reservoir from its bracket. Separate the throttle cables from the retainer bracket. Remove the main bracket from the waterneck and the head and set aside.

K. Remove the plastic wire harness holder mounted on the upper row of valve cover bolts on the driver's side.

L. Remove the accessory drive belt and set aside.

***4.6 MODELS ONLY**

2. OIL FEED LINE INSTALLATION

- A. Unplug the connector on the oil pressure sending unit. Remove the sending unit from the engine block. (The unit is located on the left front side of the engine, just above the oil pan.)
- B. Thread the supplied 1/4" NPT fittings into the block as shown. Reinstall the sending unit and connector.

4WD applications only (without oil cooler)

- Remove the remote oil filter hose assembly from the two studs on the engine block. Disconnect the factory oil sending unit connector and remove the sending unit.
- Following the graphic for 4WD applications, attach the supplied 1/4" NPT straight TEE and 90° fitting into the hole previously occupied by the oil sending unit. Attach the oil sending unit into the remaining 1/4" NPT opening in the TEE.
- Reconnect the oil filter hose assembly to the original location on the engine block. Make sure the gasket is in its proper location. Replace gasket if needed.
- Reattached connector to sending unit.

4WD applications only (equipped with factory oil cooler)

- Remove the oil filter from the filter base located behind the front bumper of the vehicle.
- Remove the oil filter base mounting bracket from the frame. Remove the oil filter mounting base from the bracket.
- Mark the base in the same location as shown in the photo. Center punch the previously marked spot on the base (make sure that the spot is marked on the center port of the filter base). Drill with an 'R' size drill bit and thread with a 1/8" NPT tap.
- Thoroughly clean and blow dry the filter base taking care to remove any chips or burrs.

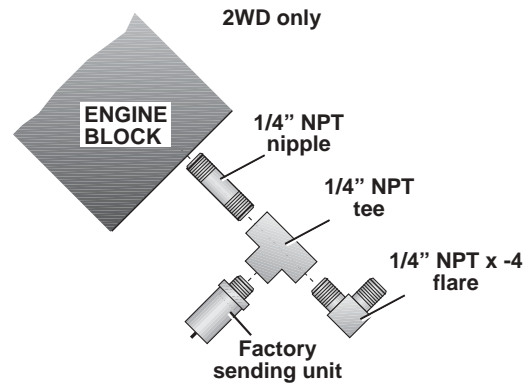


Fig. 2-a

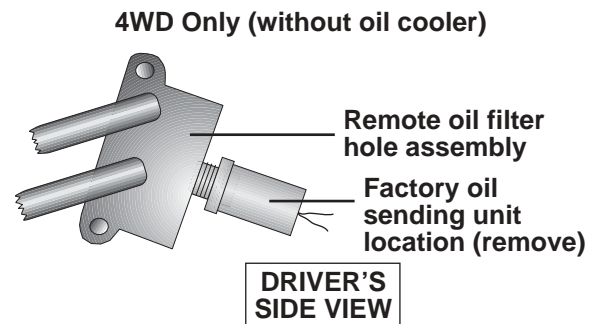


Fig. 2-b

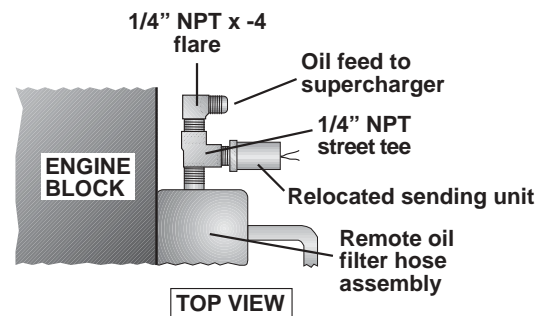


Fig. 2-c

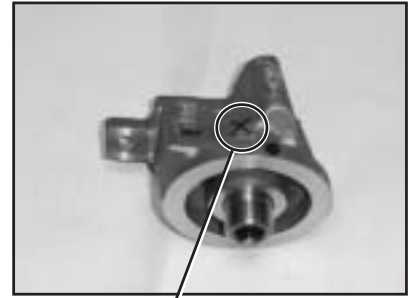
2. OIL FEED LINE INSTALLATION, cont'd.

- Using a light amount of oil on the threads for lubrication, thread the 1/8" NPT x 45° x #4 fitting into the threaded hole. Teflon tape, paste or other sealant is not recommended as it might loosen and cause blockage of the oil feed orifice, resulting in supercharger failure. Rotate the fitting so that when it is tight, it will face the front of the vehicle.
- Reassemble the oil filter base and bracket and secure onto the vehicle. Reinstall oil filter.

WARNING: Use engine oil on the pipe threads, Teflon tape, or sealant is not recommended as it might loosen and cause blockage of the oil feed orifice resulting in supercharger failure.

- C. Temporarily cap off the flare fitting to prevent dirt from entering the oil feed, it will be connected to the supercharger at a later time.

4WD (equipped with factory oil cooler)

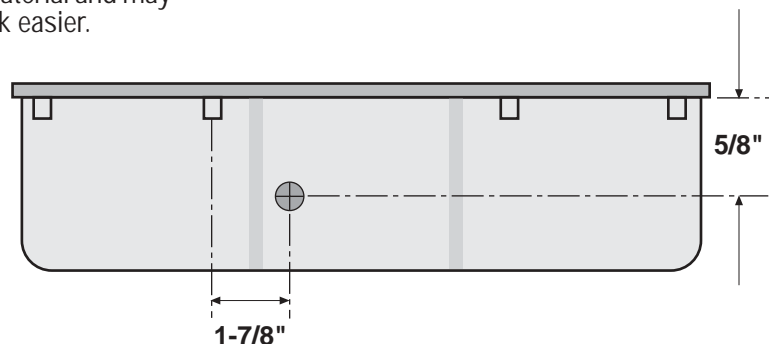


Center Punch location (x)

Fig. 2-d

3. OIL DRAIN

- A. To provide a proper oil drain for the supercharger it is necessary to make a hole in the oil pan. The best way to provide this hole is to punch the hole rather than drill it.
- B. Locate the appropriate area for the through hole as shown in the following illustration, remove the paint around the hole area. (Transmission cooler lines may need slight bending to achieve oil drain tube and fitting clearance).
- C. Use a small center punch to perforate the pan, expand the hole to approximately 9/16" diameter. Most punches are made from a hexagonal material and may be placed in a socket to make this task easier.
- D. Tap the hole with a 3/8" NPT pipe tap approximately 1/4" deep. Pack the pipe tap flutes with heavy grease to hold the chips and use a small magnet to check for any stray chips.



OIL PAN
FRONT VIEW

Fig. 3-a

3. OIL DRAIN, cont'd.

NOTE: *This method of rolling over the lip of the hole and tapping works very well if carefully done and should cause no problem.*

- E. Thoroughly clean the threaded area. Apply a small amount of silicone sealer to the new threads. Apply more sealer to the 3/8" NPT x 1/2" inverted flare fitting and secure in hole. Make sure a seal is formed all around the fitting.
- F. Thread the tube nut and 1/2" x 90° aluminum tube into the inverted flare fitting by hand. Do not tighten until after the supercharger drain hose has been connected.
- G. Drain the engine oil and change the oil filter.
- H. Temporarily cap off the oil drain fitting to keep out debris until the drain hose is attached to the supercharger at a later time.
- I. Refill engine with 5W/30 synthetic or conventional SH/CF rated motor oil.



FRONT VIEW

Fig. 3-b

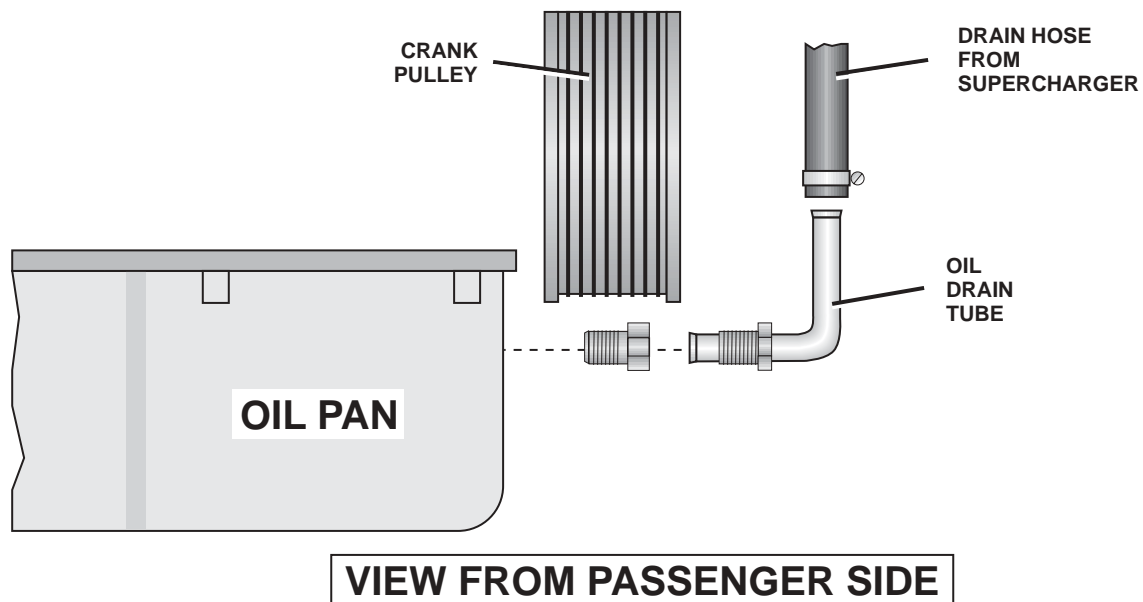


Fig. 3-c

4. CRANKSHAFT PULLEY/SUPERCHARGER DRIVE PULLEY

NOTE: This process can be done with the fan shroud and radiator in place providing your balancer puller is equipped with a 5" or shorter forcing screw. Removing the fan shroud and the radiator will allow easier access to the crank pulley and the front of the engine.

- A. Remove the rubber inspection plug on the left rear of the block to make the flexplate accessible. Using an 18mm socket and a 1/2" drive ratchet, rotate the engine until a flexplate nut is visible. Place a 14mm deep socket and extension on the flexplate nut and rotate the engine counterclockwise until the socket engages with the top of the access hole. This will block the movement of the crankshaft allowing the bolt to be loosened. This operation may require the assistance of another person. Remove the center balancer bolt.
- B. Install the harmonic balancer puller. Evenly start three puller bolts (not supplied - 8mm x 1.25 on the 4.6L and 10mm x 1.50 on the 5.4L). Engage the forcing screw against the pivot and check alignment.

NOTE: When using the harmonic balancer puller pay special attention to alignment of the forcing screw and pivot, improper alignment can result in damage to the crankshaft.

- C. After ensuring the puller is properly aligned on the face of the crank, slowly tighten the forcing screw until the harmonic balancer has been removed.

NOTE: The factory uses a small amount of silicone to seal the crankshaft keyway. Thoroughly clean the silicone residue off of the crankshaft prior to installing the Vortech harmonic balancer.

- D. With a dab of silicone on the keyway of the new harmonic balancer, guide it on the crankshaft and feel for alignment of the woodruff key and the harmonic balancer keyway. After the harmonic balancer has been aligned on the crankshaft, use your harmonic balancer installation tool to install the new harmonic balancer. Slowly tighten until the harmonic balancer is seated on the crankshaft.

NOTE: The use of blue Loctite is recommended for all harmonic balancer and crank pulley bolts.

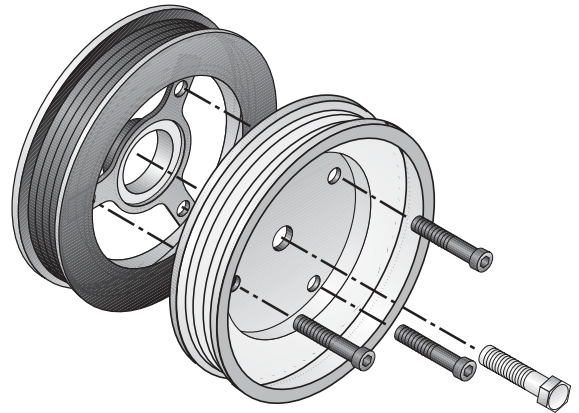


Fig. 4-a

4. CRANKSHAFT PULLEY/SUPERCHARGER DRIVE PULLEY, cont'd.

- E. Remove the installation tool and place the supercharger drive pulley on the front of the harmonic balancer. Feeling for alignment, start the 12mm x 1.50 x 65mm center bolt with thick factory washer and rotate the supercharger drive pulley until the three bolt holes are aligned. Start the three 8mm x 1.25 x 25mm cap screws with washers, tighten all evenly beginning with the center bolt (some applications may need two washers under each 8mm bolt head for thru-bolt clearance to the engine front cover. Inspect behind balancer when tightening). Torque the 12mm bolt to 80 ft/lbs and the 8mm bolts to 25 ft/lbs.
- F. Reinstall the inspection cover.

5. FUEL PUMP

- A. Release any pressure from the fuel tank by momentarily loosening the filler cap.
- B. Disconnect the line from the tank to the fuel filter by carefully removing the white retaining clip or by using a 3/8" springlock disconnect tool, if equipped.
- C. Connect the fuel pump inlet adapter fitting to the existing fuel line coming from the fuel tank. Attach the supplied 1/2" inlet hose to the adapter and pump inlet.

NOTE: Due to the various fuel tank configurations and frame rail lengths it will be necessary to find a good mounting location near the fuel filter. Do NOT mount the fuel pump close to exhaust heat or to the bottom of the cab. The inside or the outside of the frame rail will work well. Prior to securing the fuel pump ensure the fuel lines will not be kinked or pinched and are protected from sharp edges.

- D. Connect the fuel pump outlet to the filter inlet.
- E. With the fuel pump in a position that allows the lines to be routed loosely, secure the fuel pump with the #12 hex screw.
- F. Secure the pump inlet hose using the supplied #8 clamps. Trim hose length if necessary. Ensure that NO kinks or sharp bends are allowed on pump inlet hose or failure may result.
- G. Attach the negative pump terminal to a clean ground. Scrape the vehicle undercoat down to bare metal.

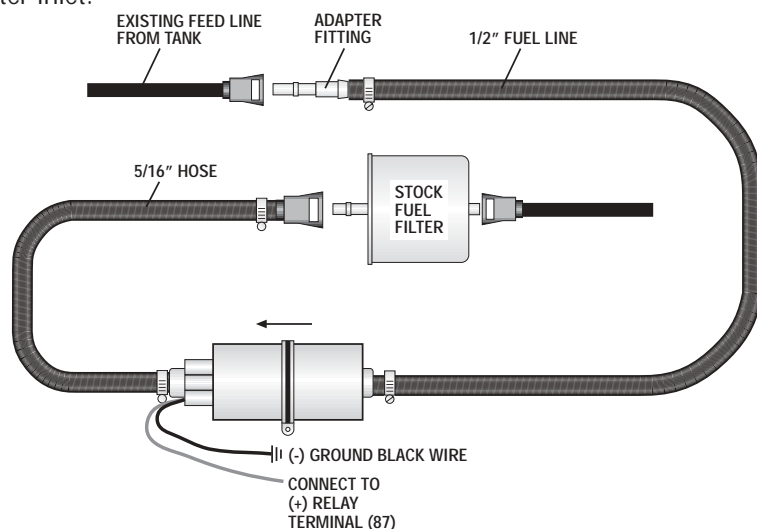


Fig. 5-a

6. FUEL PUMP RELAY

- A. Remove the power distribution box from its mounting bracket. Remove the bottom cover and the side panel exposing the main power lugs, the bottom of the fuses and relays.
- B. Looking at the underside of the power distribution box, locate the fuel pump relay (should be labeled #4). Directly beneath the fuel pump relay, locate the green wire with yellow stripe.
- C. With the help of an assistant and a test light, check the green/yellow wire for key-on power, this wire should show power for approximately two to four seconds with the key in the accessory on position.
- D. From relay terminal #85 route the yellow wire into the bottom of the power distribution box. Tap into the green/yellow wire with the provided wire tap. Double check the wire with a test light to ensure a good connection has been made.
- E. From terminal #30 route the heavy red wire to one of the main power lugs at the side of the power distribution box. With the supplied male and female solderless connectors, install the fuse holder and 20 amp fuse in this wire and check with a test light to ensure a good connection has been made. Close the bottom and side covers and return the power distribution box to its original position.
- F. Mark and drill a 1/8" hole above the power distribution box on the driver's side inner fenderwell, secure with the #12 x 3/4" sheet metal screw and washer provided.
- G. Connect the short black wire from relay terminal #86 to a secure ground free from paint.
- H. From terminal #87, route and connect the long red wire to the (+) side of the fuel pump. Secure with provided tie wraps.



Fig. 6-a

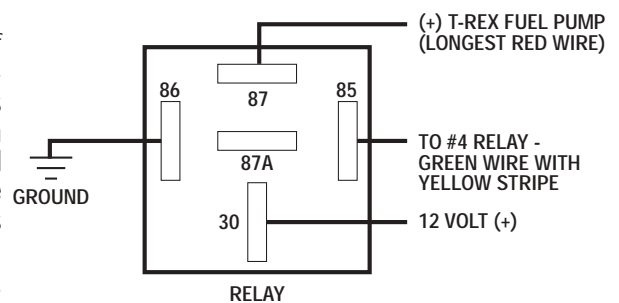


Fig. 6-b

NOTE: Double check that all wires are connected to their proper relay lug.

7. WIRE PREPARATION (4.6 models only)

- A. To accommodate the installation of the supercharger and the relocation of the coil, it will be necessary to modify the coil and cam trigger loom, extend the radio ignition interference wire and relocate the spark plug wire clips.
- B. Remove the 90° plastic wire support from the cam sensor plug, this will allow the wire to be routed tightly against the face of the main mounting plate at a later time.
- C. Carefully remove approximately 6" of wire wrap from the loom containing the coil, cam position sensor and the radio ignition interference capacitor wire. Separate the wires and rewrap them individually using black electrical tape and the provided wire wrap.
- D. Cut the radio ignition interference wire approximately 4" from the plug and strip approximately 3/4" of insulation off of the wire. Slip the two 2" pieces of shrink tube over the exposed wire ends. Solder in the 6" length of red 16 gauge wire.
- E. To allow the relocation of the coil, it is necessary to remove all spark plug wire retaining clips between the alternator and coil as they will be reinstalled after the coil has been moved to its new location.

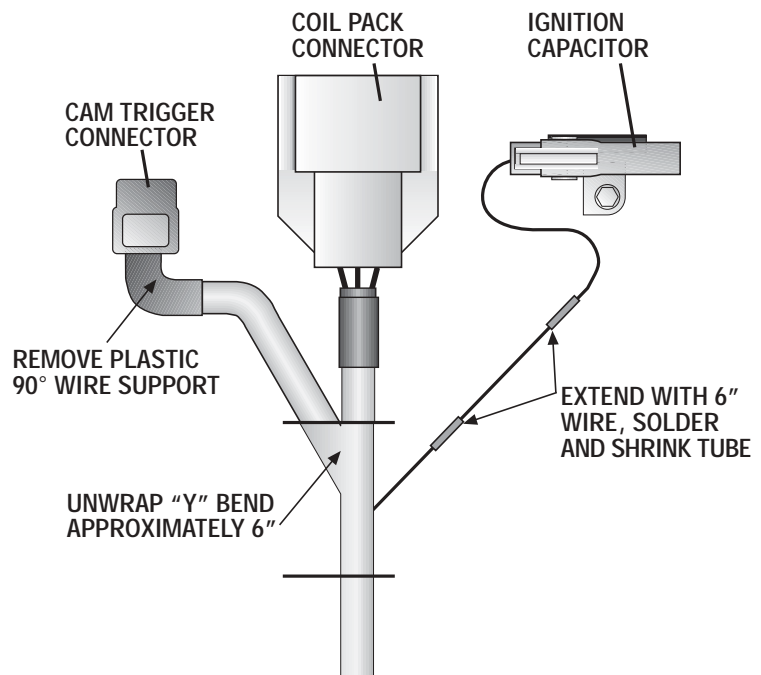


Fig. 7-a

8A. MAIN MOUNTING PLATE ASSEMBLY AND MOUNTING (4.6L models only)

- A. Attach the supplied power steering reservoir/coil bracket to the main mounting plate using the 1/4-20 x 3/4" bolts, nuts and washers (see photo).
- B. Using the supplied 10-24 x 2" bolts and washers, secure the coil and the radio ignition interference capacitor to the power steering reservoir/coil bracket.
- C. To prepare the mounting location for the main mounting plate, remove the three factory stud/bolts previously used to hold the factory coil bracket to the engine front cover.
- D. Remove the front cover bolt located near the lower driver's side of the alternator mounting flange. In this location, install the supplied 2.25" idler pulley and idler spacer using the 10mm x 1.50 x 85mm bolt and washer. Torque to 40 in/lbs.

NOTE: In a limited number of 4.6L engines, the main bracket holes and single idler pulley hole are 8mm instead of 10mm. Four 8mm shoulder bolts have been supplied for these models.

- E. Reinstall the accessory belt.

NOTE: The use of blue Loctite is recommended for all idler bolts.

- F. With the main mounting plate positioned on the front cover, start the supplied 8mm-1.25 x 25mm bolt and the three 10mm -1.50 x 85mm bolts with washers into the front cover. Torque all bolts evenly.
- G. Install the large smooth idler on the inner most idler stand and the ribbed idler on the outer stand of the Vortech mounting plate. Secure both with the 12mm - 1.75 x 20mm bolts and dust shields provided. Torque to 45 ft/lbs.
- H. Install the cam position sensor plug and secure the wire to the face of the main mounting plate with the provided adel clamp. Use the lower coil bracket bolt to secure clamp.



Fig. 8A-a



Fig. 8A-b

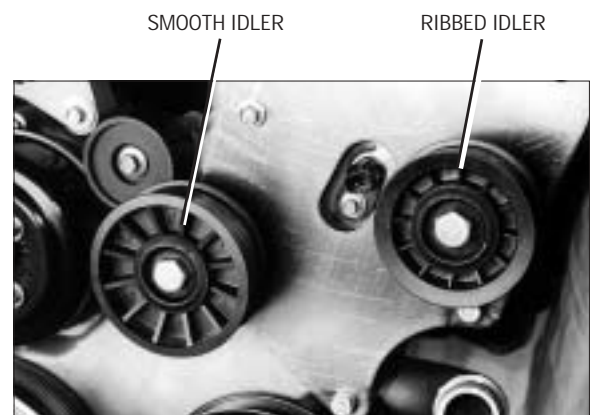


Fig. 8A-c

8A. MAIN MOUNTING PLATE ASSEMBLY AND MOUNTING (4.6L models only) cont'd.

- I. Move the power steering reservoir into the appropriate location on the new power steering reservoir/coil mounting bracket and secure with the provided 1/4" hardware.
- J. Secure the power steering reservoir lines away from the steering shaft with the tie wraps provided.
- K. Reattach the plug wires to the coil and secure with the previously removed clips.



Fig. 8A-d

8B. MAIN MOUNTING BRACKET ASSEMBLY AND MOUNTING (5.4L models only)

- A. To prepare the mounting location for the main mounting plate, remove the three 10mm factory stud/bolts located on the driver side engine front cover.
- B. Reinstall the accessory belt.

NOTE: The use of blue Loctite is recommended for all idler bolts.

- C. Cut and extend the cam sensor wires using the supplied 18GA wires and solderless connectors. Using tie wraps secure the cam sensor wire as shown in the photo.
- D. Install the large support bracket onto the engine block using the 14mm x 2.0 x 35mm bolts, washers, and spacers. **NOTE: The most forward mounting boss should use the 14mm x 2.0 x 30mm and the smaller of the two spacers.** (Do not tighten the bolts until the upper part of the support bracket has been mounted.)
- E. With the main mounting bracket positioned on the front cover, (ensure that the cam sensor wire is not being pinched by the mounting bracket) start the three supplied 10mm x 1.5 x 80mm bolts with washers. Torque all bolts evenly.
- F. Secure the upper portion of the bracket to the previously installed support bracket using the supplied 1/4" hardware.
- G. Using the supplied 7/16-14 x 1.5" bolts and dust shields, secure the three (3) idlers to the main mounting bracket in the configuration shown on page 15.



Fig. 8B-a



Fig. 8B-b

8B. MAIN MOUNTING BRACKET ASSEMBLY AND MOUNTING (5.4L models only), cont'd.

- H. Install the supplied support strap between the back of the main mounting bracket and the boss on top of the thermostat housing. Secure both ends using the supplied 6mm bolt and washer and the 1/4-20 x 1" flat allen bolt, washer and lock nut.
- I. Attach the supplied power steering reservoir bracket to the main mounting bracket using the 1/4-20 bolt and washers (see photo).
- J. Trim 4" off of the top end of the stock 5/8" supply hose connecting the reservoir to the pump and reattach.
- K. Extend the stock power steering return hose using the supplied 3/8" line and hose mender. Secure with the two supplied #4 hose clamps.
- L. Mount the power steering reservoir onto the new power steering reservoir bracket and attach with the provided 1/4" hardware. Using tie wraps, secure the power steering lines away from the steering shaft.



Fig. 8B-c

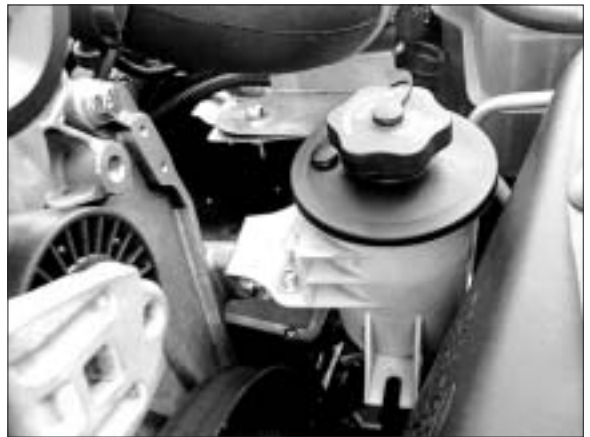


Fig. 8B-d

9. EGR CONTROL MOUNTING AND MAIN MOUNTING PLATE SUPPORT (4.6L models only)

- A. Using the #10-24 x 1/2" bolts, nuts and washers, re-mount the EGR controls onto the Vortech mounting bracket.
- B. Directly beneath the EGR bracket, locate the 6mm bolt securing the fuel rail. Remove the bolt.
- C. Install the supplied support strap between the intake manifold and the main mounting plate. Secure both ends using the factory 6mm fuel rail bolt and the supplied 3/8-16 x 1" hexhead bolt, nut and washer. Make sure that the strap is not sandwiched in between the fuel rail and the manifold. The support must be attached underneath the bolt, and on top of the rail tab. Improper assembly may cause fuel leakage.
- D. With the two factory 6mm bolts previously used to mount the EGR controls, remount the new EGR assembly in the original location on the intake manifold and secure. Reconnect all factory hoses and connectors.

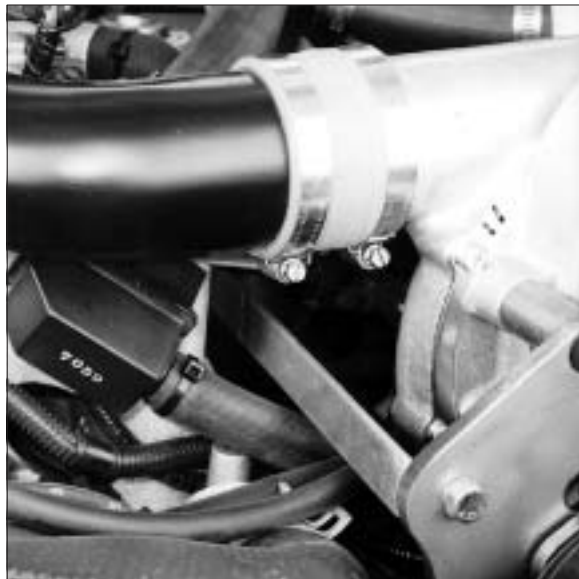


Fig. 9-a

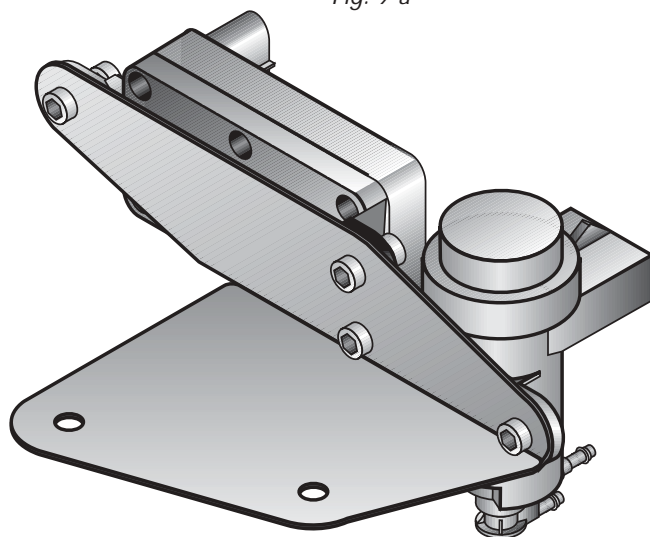


Fig. 9-b

10. FUEL MANAGEMENT UNIT (FMU)

- A. Using a spring lock disconnect tool, disconnect the fuel return line at the fuel rail.
- B. Connect the FMU inlet hose to the fuel rail. Route the fuel line to the 90° brass fitting on the FMU.
- C. Position FMU against the upper firewall directly under the plastic wire harness cover as shown. Mark and drill two #30 holes on the firewall to mount the FMU. Secure with the #8 sheet metal screws provided.
- D. Connect the FMU outlet hose to the fuel line that returns to the tank. Route the fuel line to the straight brass fitting on the FMU.
- E. Secure the fuel lines away from abrasion and exhaust



Fig. 10-a

- heat with the provided tie wraps.
- F. Tap into the factory fuel regulator vacuum line with the supplied 5/32" hose and TEE. Route the new hose to the fitting on top of the FMU (see drawing).

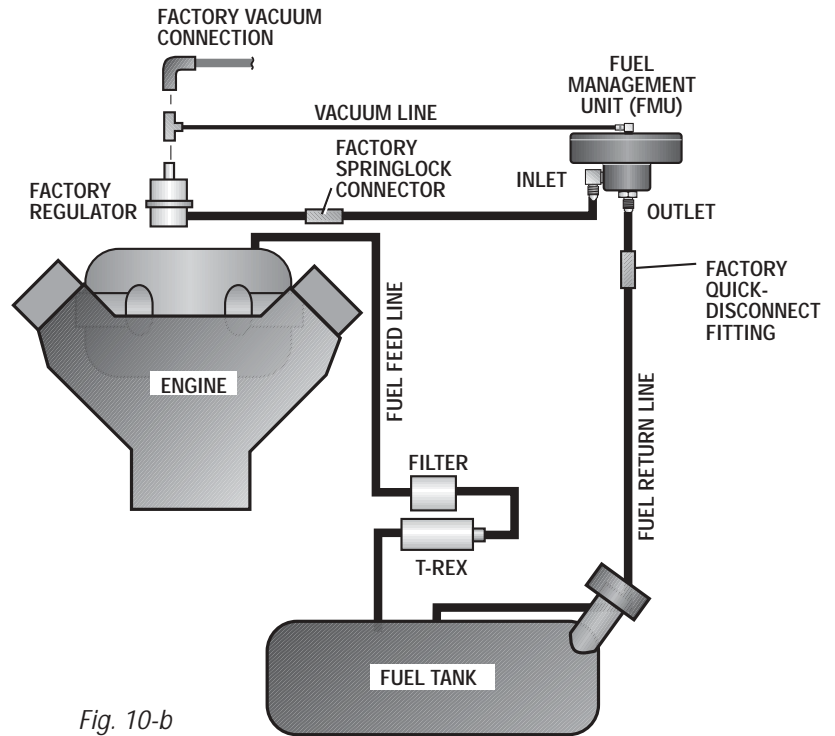


Fig. 10-b

10.1 FUEL MANAGEMENT UNIT RECALIBRATION (2003 5.4L Only)

- A. Remove the six allen-head screws on top of the fuel management unit (FMU). (See Fig. 7/1-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 7:1 disk (2.038" O.D.) and ring from inside of the FMU.
- C. Install the replacement 8:1 ring (with notched part facing down) around the four screws inside the FMU. (The 8:1 components are larger in diameter than their 7:1 counterparts.) Place the 8:1 disk (2.22" O.D.) inside the ring on top of the piston.
- 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 overtighten the screws. The correct torque is 24 in/lb (2 ft/lb.).

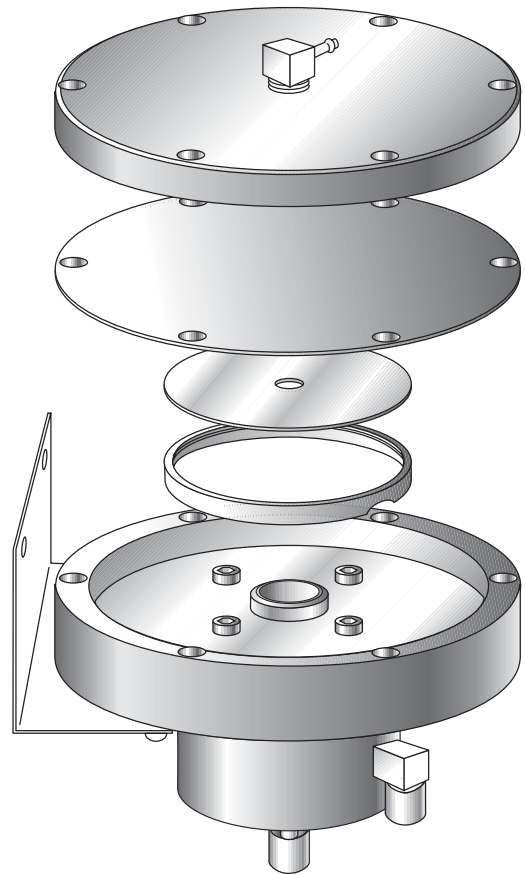


Fig. 10-c

11. IDLE AIR CONTROL RESONATOR AND CRANKCASE VENT HOSE REROUTING

- * A. Attach the supplied 3/4" x 90° rubber elbow to the idle control motor near the throttle body. (See Fig. 11-a.) Insert the factory idle control resonator into the elbow and locate underneath the discharge tube.
- B. Connect the supplied 3/4" x 28" hose to the idle control resonator and route the remaining end to the new air inlet location. See step 14.
- C. Remove the 90° rubber elbow from the factory valve cover vent on the left side of the engine. Attach the short leg of the supplied 5/8" x 90° x 24" hose to the valve cover and route the long straight end over to the brass fitting on the supercharger inlet elbow. Trim hose length, if necessary. See step 14.



Fig. 11-a

***4.6L ONLY**

12. SUPERCHARGER MOUNTING

- A. Attach the oil drain hose to the oil drain fitting on the bottom of the supercharger and secure with the provided #8 hose clamp.
- * B. Guide the oil drain hose over the driver's side valve cover while placing the supercharger in the appropriate location. (See Fig. 12-a.)

NOTE: The oil drain line must be routed in a downward sloping fashion with no kinks or restrictions.

- C. With the oil drain hose properly routed downward, start the five 3/8-16 x 2-1/2" counter sink bolts and tighten evenly.

5.4L ONLY - Once the oil drain hose has been properly routed downward, use the five 3/8-16 bolts and washers, start and tighten evenly.

- D. Route the oil drain hose around the side of the power steering pump and to the oil drain fitting on the oil pan.

NOTE: Do NOT use any type of sealant on the oil feed fittings. It may become dislodged and clog the oil feed orifice, causing premature failure of the supercharger.

- E. Using a few drops of engine oil on the fitting threads, install the 1/8" NPT x -4 x 90° fitting into the supercharger oil feed. Rotate the fitting toward the front of the vehicle. Use a 1/2" wrench to hold the supercharger oil feed while tightening the brass 90° fitting.
- F. Two oil feed hoses have been supplied. The 36" long hose is for use on the 2WD models that are not equipped with an engine oil cooler. The 62" hose is for use on 4WD oil cooler equipped models. Connect the proper length oil feed line to the vehicle and secure both ends. Make sure that no dirt or debris enters the oil hose while routing to the feed fittings.



Fig. 12-a

***4.6L ONLY**

12. SUPERCHARGER MOUNTING, cont'd.

- G. Secure the oil feed line and oil drain line away from heat and abrasion with the provided tie wraps.
- *H. Mount the belt tensioner plate onto the face of the supercharger with the three 12mm x 1.75 x 20mm bolts and washers. The thin head bolt must be installed nearest the idler pulley pilot.
5.4L ONLY - Mount the automatic tensioner to the mounting bracket using the 3/8-16 x 3.25" bolt and washer.
- I. Route the supplied supercharger drive belt around the supercharger crank pulley, the inner and outer idlers and to the supercharger.
- *J. Install the smooth tensioner pulley to the tensioner plate pilot using the 12mm x 1.75 x 20mm bolt provided.
- *K. With a 1/2" drive breaker bar and a 3" extension, rotate the tensioner plate to tighten the belt. Tighten the three 12mm fasteners. Use thin 18mm wrench to tighten the bolt head nearest to the idler pulley.

***NOTE:** The supercharger drive belt should have approximately 1" of deflection and will need to be retightened between 250 to 400 miles.

- L. *5.4L ONLY* - Using a 1/2" drive breaker bar, rotate the tensioner clockwise and align belt. Release tensioner to tighten belt.
- M. Connect the oil drain hose down to the oil pan tube previously installed. Trim hose length if necessary and secure with a #8 clamp. Make sure drain hose runs downhill continuously with no kinks or dips. Support fitting in oil pan with a wrench while tightening the drain tube fitting. Make sure the tube is angled up, but maintaining clearance from the drive belt (see photo in step 3).

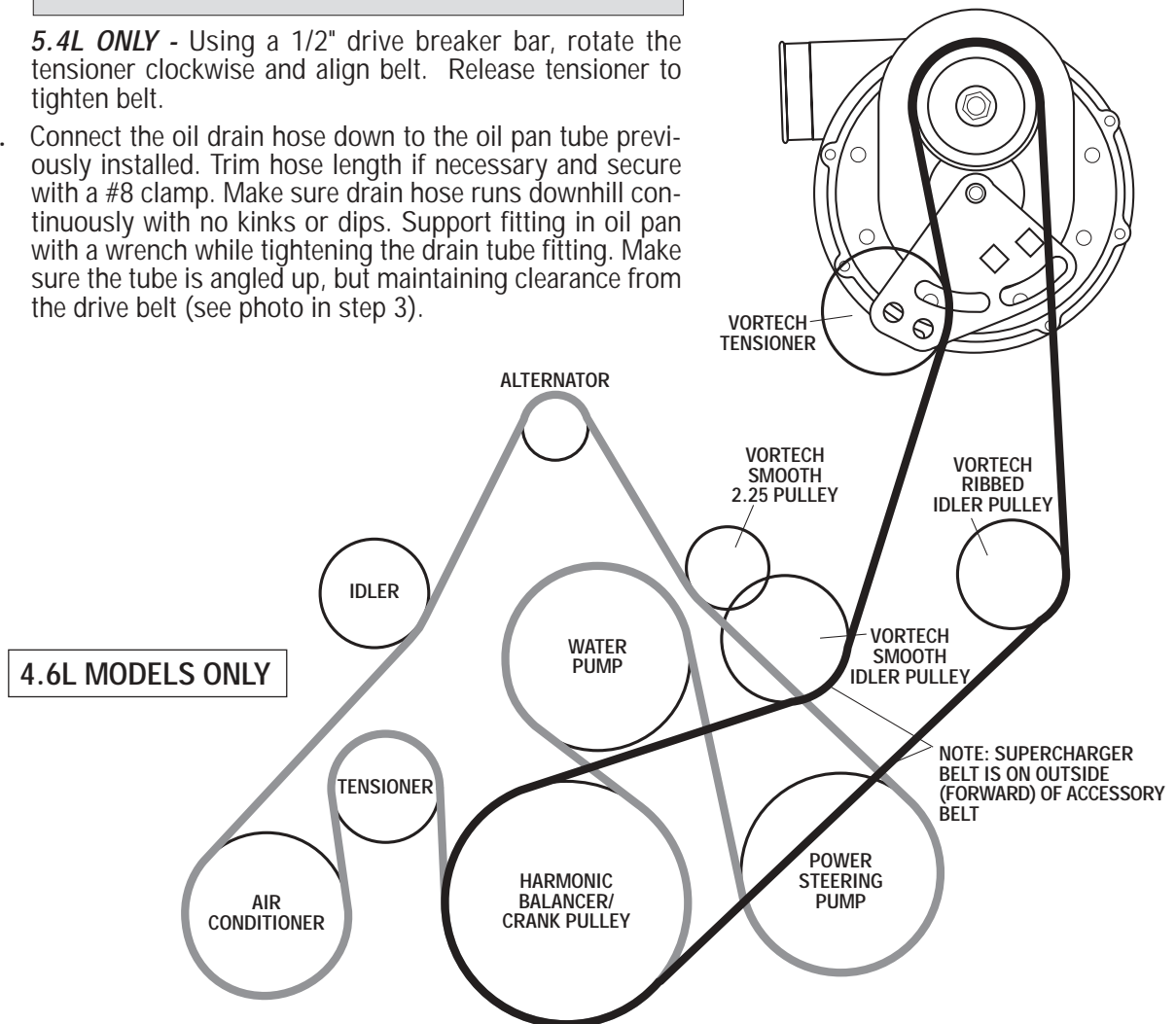


Fig. 12-c

*4.6L ONLY

12. SUPERCHARGER MOUNTING, cont'd.

5.4L MODELS ONLY

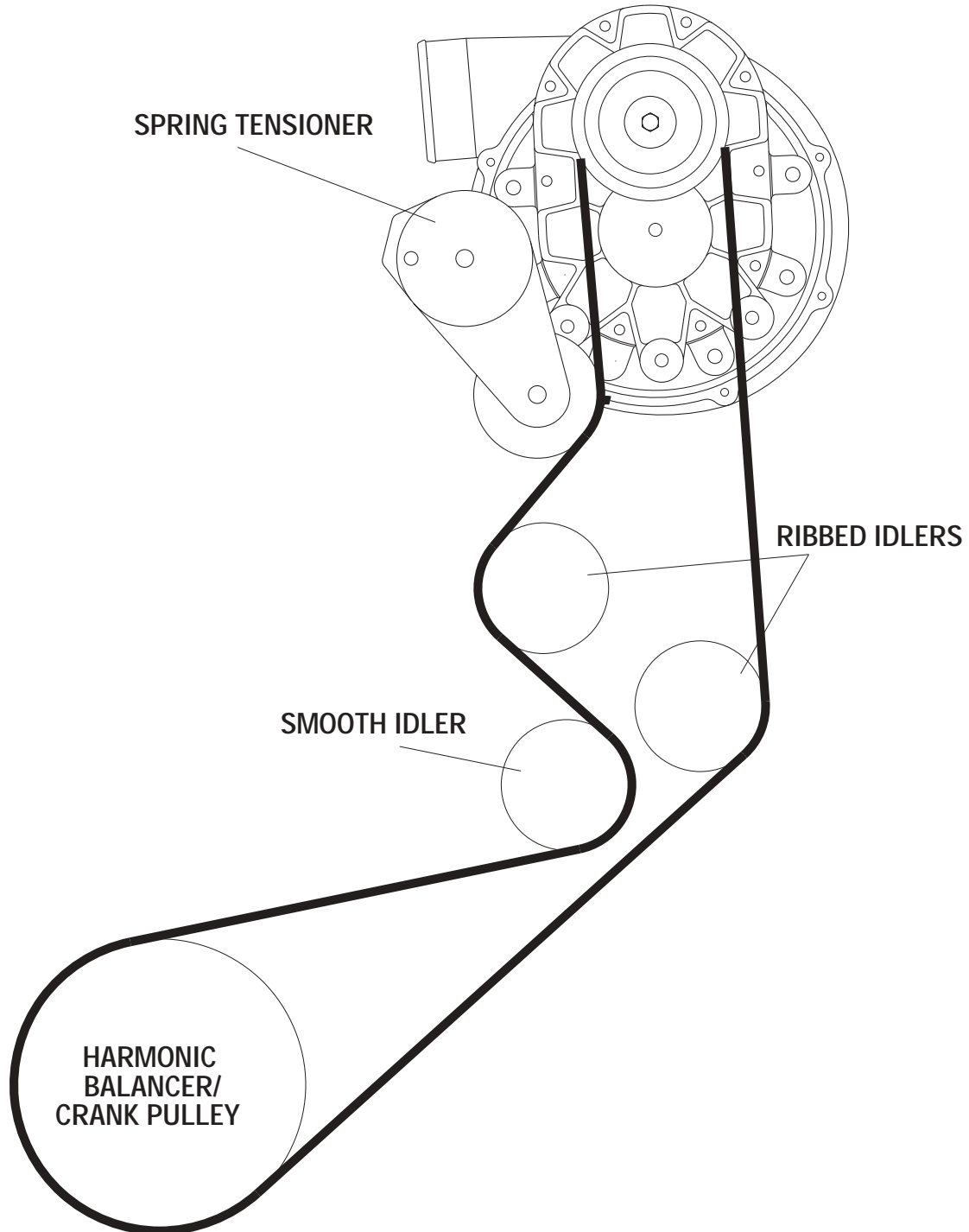


Fig. 12-d

13. MASS AIR FLOW SENSOR REMOVAL, MOUNTING AND ASSEMBLY

- A. Separate the mass air flow sensor from the air inlet canister.
- B. Assemble the mass air sensor and the mass air sensor mounting bracket with the 1/4-20 x 3/4" bolts, nuts and washers. Mount the air filter to the bracket and secure the #60 clamp.
- C. Using the factory air inlet filter canister mounting location, secure the mass air bracket with the 5/16-18 x 1-1/2" bolts, nuts and washers; use the large 5/16 fender washers on the bottom of the factory rubber grommets.
- D. Connect the 90° plastic elbow equipped with the 3/4" barb 90°, to the 3-1/2 silicone sleeve. Secure with the #56 hose clamps.
- E. 5.4 Models only - Wire/Install the supplied MAF Voltage Limiter Assembly. Use the instruction sheet supplied in the MAF Voltage Limiter Assembly.

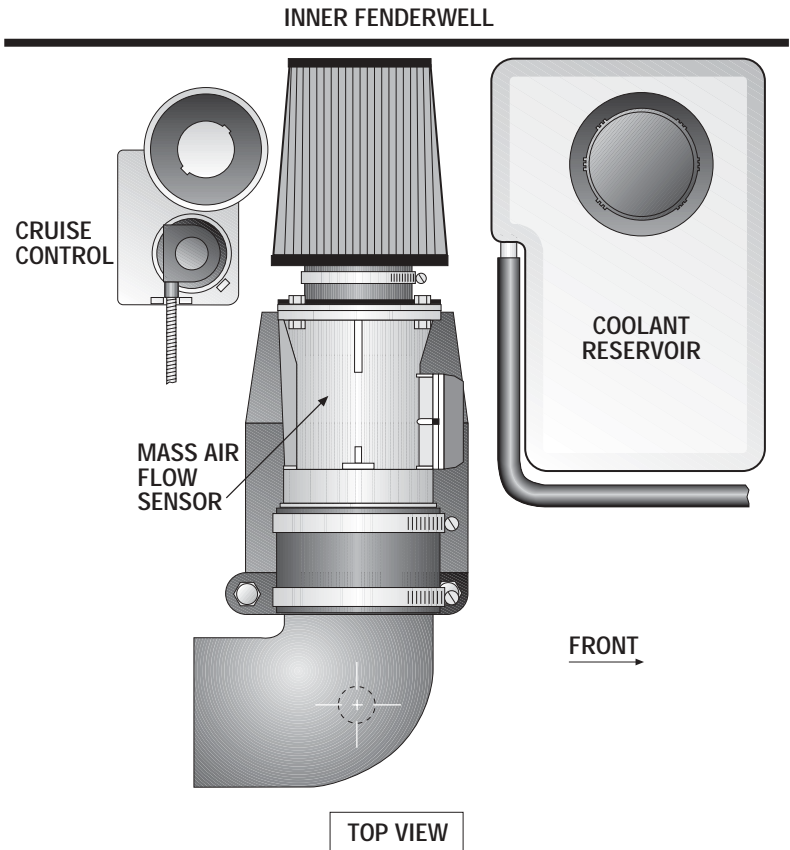


Fig. 13-a

14. AIR INLET/BYPASS ASSEMBLY

- A. Place the 3-1/2" silicone sleeve and the #56 hose clamps onto the supercharger inlet. Install the 90° plastic inlet elbow. Secure the #56 hose clamps. Insert the factory air temperature sensor into the rubber grommet located on the inlet elbow and attach the connector.
- B. Attach the supplied 1" x 5" hose 1" x 9" hose -4.6L, 5.4L and #16 hose clamp to the 1" plastic 90° fitting installed on the inlet elbow. Secure clamp.

AIR TEMPERATURE
SENSOR



Fig. 14-a

14. AIR INLET/BYPASS ASSEMBLY, cont'd.

- C. Install the bypass valve and #16 hose clamp on the end of the 1" x 5" hose - 4.6L, 1" x 9" hose - 5.4L. On the 4.6L, bypass nipple should be pointing toward the driver's seat. On the 5.4L, bypass nipple should be pointing downward.
- D. Using the supplied 5/32" TEE and hose, splice the bypass nipple into the previously installed vacuum hose attached to the FMU lid.
- E. Place the 1" x 7"-4.6L, 1" x 2.5" - 5.4L piece of hose and #16 hose clamps on the bypass valve. The hose will be connected to the discharge in the next step.
- F. Connect the two 90° plastic elbows with the 3-1/2" flex hose and secure with #56 hose clamps.
- G. Install the idle air and crankcase vent hoses to the air inlet elbow.

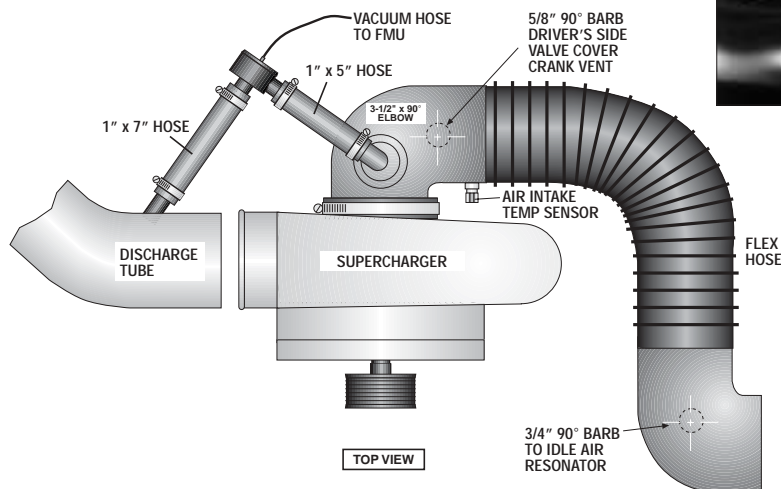


Fig. 14-b



4.6L model shown

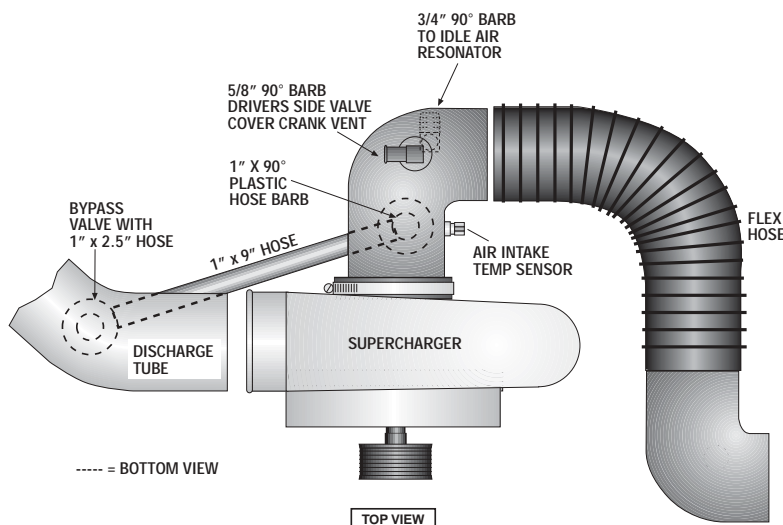
Fig. 14-c



4.6L MODELS ONLY

(see photo above)

Fig. 14-d



5.4L MODELS ONLY

Fig. 14-e

15. DISCHARGE

- A. Install the 3" silicone sleeve and the #48 hose clamps on the throttle body.
- B. Slide the 2-3/4" silicone sleeve and the #44 hose clamps onto the discharge tube.
- C. Install the discharge tube on the throttle body side. Rotate the supercharger side into position and center the silicone sleeve. Secure with #48 and #44 hose clamps.
- D. Connect the 1" bypass hose to the bung on the back-side of the discharge tube and secure using a #16 hose clamp.
- E. Inspect all ducts and hoses to ensure they are secure and that all hose clamps are properly tightened.
- F. Remove the factory PCV valve from the right side valve cover and install the supplied PCV in its place.

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

16. FINAL CHECK

NOTE: 99-03 Models Only - Once the ECM is received back from Vortech with the ECM module installed, reinstall the ECM into the vehicle. In some cases, the extra height of the ECM module will not allow the use of the factory hold-down bracket. Reconnect the factory harness and reinstall the factory kick panel.

- A. Reconnect the battery.
- B. If your vehicle has gone over 20,000 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.
- D. Check all fluid levels, making sure that your tank(s) is/are filled with 92 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 that no hoses, wires, etc. are near exhaust headers or moving parts and for signs of any fluid leakage.
- G. **PLEASE TAKE SPECIAL NOTE:** Operating the vehicle without ALL the subassemblies completely and prop-

erly installed may cause **FAILURE OF MAJOR COMPONENTS.**

- H. Test drive the vehicle.
- I. The supercharger belt stretches initially and will require adjustment in 250 to 400 miles.
- J. 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.



Fig. 16-a

***4.6L ONLY**



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