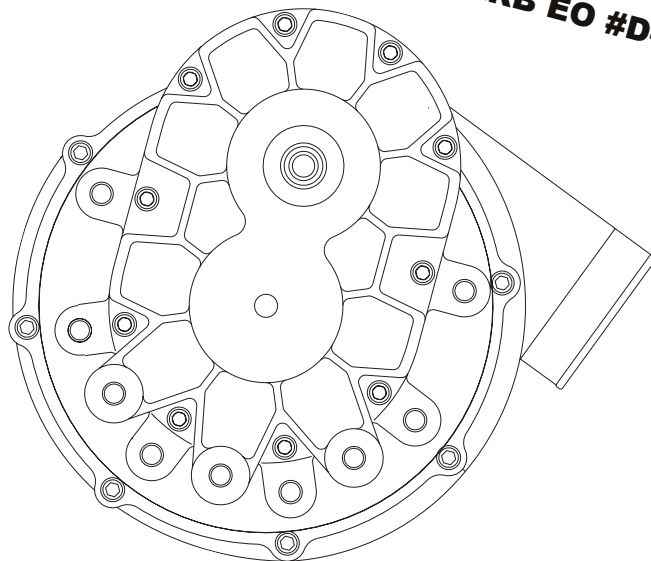


**Ford 4.6L DOHC
Mustang Cobra
Supercharger System
Installation Instructions**
1996-1998 MODEL YEARS
50 State Smog Legal per CARB EO #D-213-17



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

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.



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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Table Of Contents

FOREWARD	ii
TABLE OF CONTENTS	iii
ELECTRONIC CONTROL MODULE	iv
NOTICES	v
TOOL & SUPPLY REQUIREMENTS	vi
PARTS LIST - 1996-1997 4.6L DOHC MUSTANG	vii
PARTS LIST - 1998 4.6L DOHC MUSTANG	viii
PARTS LIST - 1996-1997 4.6L DOHC MUSTANG (V-3)	ix
PARTS LIST - 1998 4.6L DOHC MUSTANG (V-3)	x
1. PREPARATION/REMOVAL	1
2. OIL DRAIN	2
3. OIL FEED	3
4. FUEL MANAGEMENT UNIT	3
5. T-REX FUEL PUMP INSTALLATION (96-97 MODELS ONLY)	5
FUEL PUMP INSTALLATION (98 MODELS ONLY)	7
6. AIR CONDITIONING LINE MODIFICATION	9
7. MAIN BRACKET ASSEMBLY/DRIVE BELT	10
8. RADIATOR HOSE/WATER TUBE	14
9. AIR PUMP RELOCATION	17
10. AIR INLET	17
11. SUPERCHARGER DISCHARGE/COIL MOUNT	19
12. FINAL CHECK	20

1996-1998 FORD 4.6L DOHC MUSTANG IMPORTANT NOTES

ELECTRONIC CONTROL MODULE

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.*

1996-1998 4.6 DOHC Mustang Cobra

IMPORTANT

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 possible installers in your area.

OFF-HIGHWAY USE

When driving vehicle on non-public roads (off-road applications such as racing/high rpm) Vortech strongly recommends replacing the factory platinum plugs with NGK #4177 or Autolite #764 and reducing the spark plug gap down to .032".

1997-1998 MODELS

Mustang Cobras produced after 11/1/96 utilize a water pump pulley that employs a lip on both the front and rear edges (earlier units use a lip only on the rear). The front lip on the pulley may cause interference with the Vortech supercharger mounting bracket. For proper clearance, the "1996 style" pulley (Ford P/N F3LY-8509-A) MUST be installed before mounting the supercharger to the engine. This pulley is available from your Ford dealer or Vortech Distributor (Vortech P/N 4FK016-081).

NOTICE

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.

1996-1998 **FORD 4.6L DOHC COBRA MUSTANG**

Installation Instructions

50 State Smog Legal, as per CARB EO #D-213-17

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.

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.**

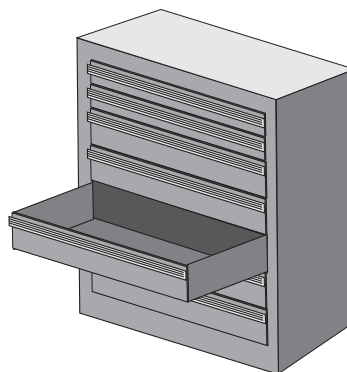
Installation on new vehicles will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

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

1. Use only premium grade fuel 92 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. Any knocking (detonation) that occurs will cause engine damage. Sustained knocking will lead to engine failure. Vortech Engineering is not responsible for engine damage or failure.
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 at least every 3,000 miles. **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. **Do not use platinum spark plugs unless they are original equipment.** Change spark plugs at least 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" NPT Tap and Handle
- Adjustable Wrench
- Open End Wrenches: 3/8", 7/16", 1/2", 9/16", 15/16"
- 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
- 1/8", 3/16", 11/32" Drill Bits
- 1/2" Tube Bender
- 3/16" Allen Wrench
- Wire Strippers and Crimpers
- Utility Knife





1996-1997 4.6L DOHC Mustang

Part No. 4FK218-010/018SQ

PARTS LIST

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

PART NUMBER	DESCRIPTION	QUANTITY	PART NUMBER	DESCRIPTION	QUANTITY
2E228-150	SUPERCHARGER ASSEMBLY	1	4FH130-026	OIL FEED ASSEMBLY	1
2E129-050	V-2 SQ SUPERCHARGER	1	7U030-026	1/4" x 26" OIL FEED HOSE	1
2A036-361	3.60" SUPERCHARGER PULLEY	1	7P525-067	.525" CRIMP FERRULES	2
8R101-001	6-RIB PULLEY RETAINER ASSEMBLY	1	7P250-066	-4 SWIVEL x 1/4" HOSE BARB FITTING	2
4FK111-031	MOUNTING BRACKET ASSEMBLY	1	7P125-103	1/8"NPT -4 x 45° MALE ELBOW	1
7A375-178	3/8-16 x 1-3/4" HXHD BOLT	3	7P250-082	1/4"NPT x -4 90° FITTING	1
7K375-040	3/8"AN960 FLAT WASHERS	5	4FH130-036	OIL DRAIN ASSEMBLY	1
7K312-001	5/16"AN WASHERS	9	7U030-036	1/2" x 14" OIL DRAIN HOSE	1
2A046-113	BELT	1	7R001-008	#8 STAINLESS HOSE CLAMPS	2
4FK011-031	MOUNTING BRACKET	1	7P375-042	MALE CONNECTOR	1
7J312-875	5/16" CUSTOM WASHER	1	7P500-020	TUBE NUT	1
7C080-065	8mm x 1.25" x 65 SH BOLT	1	4FK238-068	FMU (WITH LINES)	1
4FK116-021	IDLER PULLEY ASSEMBLY	1	6Z110-114	8:1 FUEL MANAGEMENT UNIT	1
2A017-025	IDLER PULLEY SPACER	1	4FK145-010	MALE FUEL LINE	1
7C080-016	8mm x 1.25" x 16 HXHD BOLT	1	4FH145-020	FEMALE FUEL LINE	1
4FK010-010	AIR VALVE SUPPORT	1	7U030-046	5/32" x 60" VACUUM LINE	1
7C080-140	8mm x 1.25" x 140 HXHD BOLTS	2	7P156-082	5/32" TEE	1
7C080-070	8mm x 1.25" x 70 HXHD BOLTS	2	8F202-265	T-REX ASSEMBLY	1
7U313-133	M8 x 1.25" 4V ALTERNATOR STUD	1	4FA020-030	T-REX TEMPLATE	1
7F008-020	M8 x 1.25" NUT	1	5W001-001	WIRE TAP	1
7A375-225	3/8-16 x 2-1/4" HXHD BOLTS	2	5W001-011	16-14GA EYELETS	3
7C010-050	10-24 x 1/2" SHCS	4	7E010-050	#12 x 1/2" SHEET METAL SCREW	1
7J010-001	#10 FLAT WASHERS	4	7F008-032	8-32 HEX LOCK NUTS	8
7C080-025	8mm x 1.25" x 25 BOLT	2	7J008-001	#8 FLAT WASHERS	8
7A312-075	5/16-18 x .75" BOLT	1	7P312-001	FUEL FITTING ADAPTER	1
4FK112-010	AIR INTAKE ASSEMBLY	1	7P312-003	5/16" FEMALE FUEL CONNECTOR	1
4FA012-012	90° INTAKE ELBOW	1	7R004-003	14.5 STEPLESS CLAMPS	2
4FH110-050	MAF METER BRACKET ASSEMBLY	1	7R004-002	17.0 STEPLESS CLAMPS	2
7R002-056	#56 HOSE CLAMPS	4	7U100-044	4" TIE-WRAPS	6
7S350-200	3-1/2" x 2" SLEEVE	2	7U100-055	6" TIE-WRAPS	6
7U035-000	3-1/2" x 12" FLEX HOSE	1	7U031-018	5/16" x 17-1/2" HIGH PRESSURE FUEL HOSE	1
7R002-052	#52 HOSE CLAMPS	2	7U032-016	3/8" x 23" FUEL HOSE	1
8H040-090	AIR FILTER	1	7U314-001	#8 LORD MOUNTS	4
7A250-075	1/4-20 x 3/4" SHCS	4	7U375-135	ADHESIVE MOUNTING PADS	4
7F250-021	1/4-20 NYLOCK NUTS	4	8F002-265	T-REX FUEL PUMP	1
7J250-001	1/4"SAE WASHERS	4	8F101-200	T-REX WIRING ASSEMBLY	1
7P750-102	90° 3/4"NPT x 1" HOSE FITTING	1	008340	T-REX FUEL PUMP DECAL	1
7U038-000	3/4" x 40" HOSE	1	5W001-014	FUSE HOLDER	1
7U100-052	7/16" RUBBER GROMMET	1	5W001-015	20A BLADE TYPE FUSE	1
4FK012-040	AIR INLET ELBOW	1	5W001-019	12-10GA. SOLDERLESS CONNECTOR	1
7U030-065	3/4" x 5/8" x 90° HOSE	1	5W001-005	3/8" x 8" PLASTIC WIRE LOOM	1
7U133-048	5/8" MOLDED ELBOW HOSE	1	7S625-000	8" MYLAR FIRE SLEEVE	1
7U100-056	90° VENT TUBE	1	5W001-010	16-14GA FEMALE SLIDE	1
7R001-008	#8 HOSE CLAMP	1	5W001-002	FUSE TAP	1
7U100-055	6" NYLON TIE-WRAPS	10	4FK110-010	AIR PUMP RELOCATION	1
4FK112-020	DISCHARGE ASSEMBLY	1	4FK010-020	AIR PUMP BRACKET	1
7S275-300	2-3/4" x 3" SLEEVE	1	7C010-075	10-24 x 3/4" SHCS	2
7R002-044	#44 HOSE CLAMPS	2	7F010-024	10-24 NYLOCK NUTS	2
7R002-016	#16 HOSE CLAMPS	4	7J010-001	#10 FLAT WASHERS	2
8D001-001	BYPASS VALVE	1	7A250-200	1/4-20 x 2" SHCS	3
7U034-016	1" x 8.5" HOSE	1	7J250-001	1/4"SAE WASHERS	6
7U034-016	1" x 9" HOSE	1	7F250-021	1/4-20 NYLOCK NUTS	3
7U030-046	5/32" x 48" VACUUM LINE	1	7U133-060	3/4" x 90° HOSE	1
7P156-082	5/32" TEE	1	7S050-600	1/2" x 6" HIGH-HEAT HOSE	1
4FK012-020	DISCHARGE TUBE "A"	1	7R001-008	#8 HOSE CLAMPS	2
4FK012-030	DISCHARGE TUBE "B"	1	7U100-055	6" NYLON TIE-WRAPS	6
7S300-200	3" x 2" SLEEVE	1	4FK114-010	COOLANT PIPE ASSEMBLY	1
7R002-048	#48 HOSE CLAMPS	2	4FK014-010	U-BEND ASSEMBLY	1
7S450-200	4-1/2" x 2" SLEEVE	1	4FK014-020	L-BEND ASSEMBLY	1
7R002-072	#72 HOSE CLAMPS	2	7U100-046	O-RINGS	2
7P750-102	3/4"NPT x 1" x 90° HOSE FITTING	1	4FE014-010	RADIATOR PIPE	1
4FK020-020	IGNITION CHIP COUPON	1	7U133-050	1-1/2" x 90° HOSE	1
			7R002-020	#20 HOSE CLAMPS	3
			7R002-024	#24 HOSE CLAMPS	3
			7P375-016	3/8" PIPE PLUG	1



1998 4.6L DOHC Mustang

Part No. 4FK218-080/088SQ

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
2E228-150	SUPERCHARGER ASSEMBLY	1	4FH130-026	OIL FEED ASSEMBLY	1
2E129-050	V-2 SQ SUPERCHARGER	1	7U030-026	1/4" x 26" OIL FEED HOSE	1
2A036-361	3.60" SUPERCHARGER PULLEY	1	7P525-067	.525" CRIMP FERRULES	2
8R101-001	6-RIB PULLEY RETAINER ASSEMBLY	1	7P250-066	-4 SWIVEL x 1/4" HOSE BARB FITTING	2
4FK111-031	MOUNTING BRACKET ASSEMBLY	1	7P125-103	1/8"NPT -4 x 45° MALE ELBOW	1
7A375-178	3/8-16 x 1-3/4" HXHD BOLT	3	7P250-082	1/4"NPT x -4 90° FITTING	1
7K375-040	3/8"AN960 FLAT WASHERS	5	4FH130-036	OIL DRAIN ASSEMBLY	1
7K312-001	5/16"AN WASHERS	9	7U030-036	1/2" x 14" OIL DRAIN HOSE	1
2A046-113	BELT	1	7R001-008	#8 STAINLESS HOSE CLAMPS	2
4FK011-031	MOUNTING BRACKET	1	7P375-042	MALE CONNECTOR	1
7J312-875	5/16" CUSTOM WASHER	1	7P500-020	TUBE NUT	1
7C080-065	8mm x 1.25" x 65 SH BOLT	1	4FK238-068	FMU (WITH LINES)	1
4FK116-021	IDLER PULLEY ASSEMBLY	1	6Z110-114	8:1 FUEL MANAGEMENT UNIT	1
2A017-025	IDLER PULLEY SPACER	1	4FK145-010	MALE FUEL LINE	1
7C080-016	8mm x 1.25" x 16 HXHD BOLT	1	4FH145-020	FEMALE FUEL LINE	1
4FK010-010	AIR VALVE SUPPORT	1	7U030-046	5/32" x 60" VACUUM LINE	1
7C080-140	8mm x 1.25" x 140 HXHD BOLTS	2	7P156-082	5/32" TEE	1
7C080-070	8mm x 1.25" x 70 HXHD BOLTS	2	4FF101-002	FUEL PUMP ASSEMBLY	1
7U313-133	M8 x 1.25" 4V ALTERNATOR STUD	1	8F001-002	155 INLINE FUEL PUMP	1
7F008-020	M8 x 1.25" NUT	1	8F101-200	T-REX WIRING ASSY.	1
7A375-225	3/8-16 x 2-1/4" HXHD BOLTS	2	5W001-010	16-14 GAUGE FEMALE SLIDE, INSULATED	3
7C010-050	10-24 x 1/2" SHCS	4	7R004-003	14.5 STEPLESS CLAMPS	2
7J010-001	#10 FLAT WASHERS	4	7R001-004	#4 HOSE CLAMPS	2
7C080-025	8mm x 1.25" x 25 BOLT	2	7U030-050	12mm FUEL HOSE (2.41')	1
7A312-075	5/16-18 x .75" BOLT	1	7U031-018	5/16" FUEL HOSE (2')	1
4FK112-010	AIR INTAKE ASSEMBLY	1	7R003-024	ADEL CLAMP, 1-1/2"ID	1
4FA012-012	90° INTAKE ELBOW	1	7E010-075	#12 x 3/4" SHEET METAL, HEX ONLY	2
4FH110-050	MAF METER BRACKET ASSEMBLY	1	7P312-003	5/16" FEMALE FUEL CONNECTOR	1
7R002-056	#56 HOSE CLAMPS	4	7P500-004	1/2" FUEL ADAPTER FITTING	1
7S350-200	3-1/2" x 2" SLEEVE	2	7C008-032	#8-32 HEXLOCK NUT	1
7U035-000	3-1/2" x 12" FLEX HOSE	1	7J008-001	#8 FLAT WASHER	1
7R002-052	#52 HOSE CLAMPS	2	5W001-001	WIRE TAP	1
8H040-090	AIR FILTER	1	7U100-055	TIE-WRAP, 6" NYLON	5
7A250-075	1/4-20 x 3/4" SHCS	4	5W001-002	FUSE TAP	1
7F250-021	1/4-20 NYLOCK NUTS	4	5W001-015	BLADE TYPE FUSE, 20AMP	1
7J250-001	1/4"SAE WASHERS	4	5W001-014	#10 FUSE HOLDER	1
7P750-102	90° 3/4"NPT x 1" HOSE FITTING	1	5W001-019	SOLDERLESS CONNECTOR, 12-10 GAUGE	1
7U038-000	3/4" x 40" HOSE	1	5W001-011	16-14 GAUGE EYELET, .25" BOLT	1
7U100-052	7/16" RUBBER GROMMET	1	7U375-135	MOUNTING PAD	5
4FK012-040	AIR INLET ELBOW	1	7U100-044	TIE-WRAP	5
7U030-065	3/4" x 5/8" x 90° HOSE	1	7S625-000	FIRE SLEEVE	1'
7U133-048	5/8" MOLDED ELBOW HOSE	1	4FK110-010	AIR PUMP RELOCATION	1
7U100-056	90° VENT TUBE	1	4FK010-020	AIR PUMP BRACKET	1
7R001-008	#8 HOSE CLAMP	1	7C010-075	10-24 x 3/4" SHCS	2
7U100-055	6" NYLON TIE-WRAP	10	7F010-024	10-24 NYLOCK NUTS	2
4FK112-020	DISCHARGE ASSEMBLY	1	7J010-001	#10 FLAT WASHERS	2
7S275-300	2-3/4" x 3" SLEEVE	1	7A250-200	1/4-20 x 2" SHCS	3
7R002-044	#44 HOSE CLAMPS	2	7J250-001	1/4"SAE WASHERS	6
7R002-016	#16 HOSE CLAMPS	4	7F250-021	1/4-20 NYLOCK NUTS	3
8D001-001	BYPASS VALVE	1	7U133-060	3/4" x 90° HOSE	1
7U034-016	1" x 8.5" HOSE	1	7S050-600	1/2" x 6" HIGH-HEAT HOSE	1
7U034-016	1" x 9" HOSE	1	7R001-008	#8 HOSE CLAMPS	2
7U030-046	5/32" x 48" VACUUM LINE	1	7U100-055	6" NYLON TIE-WRAP	6
7P156-082	5/32" TEE	1	4FK114-010	COOLANT PIPE ASSEMBLY	1
4FK012-020	DISCHARGE TUBE "A"	1	4FK014-010	U-BEND ASSEMBLY	1
4FK012-030	DISCHARGE TUBE "B"	1	4FK014-020	L-BEND ASSEMBLY	1
7S300-200	3" x 2" SLEEVE	1	7U100-046	O-RINGS	2
7R002-048	#48 HOSE CLAMPS	2	4FE014-010	RADIATOR PIPE	1
7S450-200	4-1/2" x 2" SLEEVE	1	7U133-050	1-1/2" x 90° HOSE	1
7R002-072	#72 HOSE CLAMPS	2	7R002-020	#20 HOSE CLAMPS	3
7P750-102	3/4"NPT x 1" x 90° HOSE FITTING	1	7R002-024	#24 HOSE CLAMPS	3
4FK020-020	IGNITION CHIP COUPON	1	7P375-016	3/8" PIPE PLUG	1



1996-1997 4.6L DOHC Mustang, V-3

Part No. 4FK218-010L/018L

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
2F339-090	V-3 SUPERCHARGER ASSEMBLY	1	4FK238-068	FMU (WITH LINES)	1
4FK111-031	MOUNTING BRACKET ASSEMBLY	1	6Z110-114	8:1 FUEL MANAGEMENT UNIT	1
7A375-178	3/8-16 x 1-3/4" HXHD BOLT	3	4FK145-010	MALE FUEL LINE	1
7K375-040	3/8"AN960 FLAT WASHERS	5	4FH145-020	FEMALE FUEL LINE	1
7K312-001	5/16"AN WASHERS	9	7U030-046	5/32" x 60" VACUUM LINE	1
2A046-113	BELT	1	7P156-082	5/32" TEE	1
4FK011-031	MOUNTING BRACKET	1	8F202-265	T-REX ASSEMBLY	1
7J312-875	5/16" CUSTOM WASHER	1	4FA020-030	T-REX TEMPLATE	1
7C080-065	8mm x 1.25" x 65 SH BOLT	1	5W001-001	WIRE TAP	1
4FK116-021	IDLER PULLEY ASSEMBLY	1	5W001-011	16-14GA EYELETS	3
2A017-025	IDLER PULLEY SPACER	1	7E010-050	#12 x 1/2" SHEET METAL SCREW	1
7C080-016	8mm x 1.25" x 16 HXHD BOLT	1	7F008-032	8-32 HEX LOCK NUTS	8
4FK010-010	AIR VALVE SUPPORT	1	7J008-001	#8 FLAT WASHERS	8
7C080-140	8mm x 1.25" x 140 HXHD BOLTS	2	7P312-001	FUEL FITTING ADAPTER	1
7C080-070	8mm x 1.25" x 70 HXHD BOLTS	2	7P312-003	5/16" FEMALE FUEL CONNECTOR	1
7U313-133	M8 x 1.25" 4V ALTERNATOR STUD	1	7R004-003	14.5 STEPLESS CLAMPS	2
7F008-020	M8 x 1.25" NUT	1	7R004-002	17.0 STEPLESS CLAMPS	2
7A375-225	3/8-16 x 2-1/4" HXHD BOLTS	2	7U100-044	4" TIE-WRAPPS	6
7C010-050	10-24 x 1/2" SHCS	4	7U100-055	6" TIE-WRAPPS	6
7J010-001	#10 FLAT WASHERS	4	7U031-018	5/16" x 17-1/2" HIGH PRESSURE FUEL HOSE	1
7C080-025	8mm x 1.25" x 25 BOLT	2	7U032-016	3/8" x 23" FUEL HOSE	1
7A312-075	5/16-18 x .75" BOLT	1	7U314-001	#8 LORD MOUNTS	4
4FK112-010	AIR INTAKE ASSEMBLY	1	7U375-135	ADHESIVE MOUNTING PADS	4
4FA012-012	90° INTAKE ELBOW	1	8F002-265	T-REX FUEL PUMP	1
4FH110-050	MAF METER BRACKET ASSEMBLY	1	8F101-200	T-REX WIRING ASSEMBLY	1
7R002-056	#56 HOSE CLAMPS	4	008340	T-REX FUEL PUMP DECAL	1
7S350-200	3-1/2" x 2" SLEEVE	2	5W001-014	FUSE HOLDER	1
7U035-000	3-1/2" x 12" FLEX HOSE	1	5W001-015	20A BLADE TYPE FUSE	1
7R002-052	#52 HOSE CLAMPS	2	5W001-019	12-10GA. SOLDERLESS CONNECTOR	1
8H040-090	AIR FILTER	1	5W001-005	3/8" x 8" PLASTIC WIRE LOOM	1
7A250-075	1/4-20 x 3/4" SHCS	4	7S625-000	8" MYLAR FIRE SLEEVE	1
7F250-021	1/4-20 NYLOCK NUTS	4	5W001-010	16-14GA FEMALE SLIDE	1
7J250-001	1/4"SAE WASHERS	4	5W001-002	FUSE TAP	1
7P750-102	90° 3/4"NPT x 1" HOSE FITTING	1	4FK110-010	AIR PUMP RELOCATION	1
7U038-000	3/4" x 40" HOSE	1	4FK010-020	AIR PUMP BRACKET	1
7U100-052	7/16" RUBBER GROMMET	1	7C010-075	10-24 x 3/4" SHCS	2
4FK012-040	AIR INLET ELBOW	1	7F010-024	10-24 NYLOCK NUTS	2
7U030-065	3/4" x 5/8" x 90° HOSE	1	7J010-001	#10 FLAT WASHERS	2
7U133-048	5/8" MOLDED ELBOW HOSE	1	7A250-200	1/4-20 x 2" SHCS	3
7U100-056	90° VENT TUBE	1	7J250-001	1/4"SAE WASHERS	6
7R001-008	#8 HOSE CLAMP	1	7F250-021	1/4-20 NYLOCK NUTS	3
7U100-055	6" NYLON TIE-WRAPPS	10	7U133-060	3/4" x 90° HOSE	1
4FK112-020	DISCHARGE ASSEMBLY	1	7S050-600	1/2" x 6" HIGH-HEAT HOSE	1
7S275-300	2-3/4" x 3" SLEEVE	1	7R001-008	#8 HOSE CLAMPS	2
7R002-044	#44 HOSE CLAMPS	2	7U100-055	6" NYLON TIE-WRAPPS	6
7R002-016	#16 HOSE CLAMPS	4	4FK114-010	COOLANT PIPE ASSEMBLY	1
8D001-001	BYPASS VALVE	1	4FK014-010	U-BEND ASSEMBLY	1
7U034-016	1" x 8.5" HOSE	1	4FK014-020	L-BEND ASSEMBLY	1
7U034-016	1" x 9" HOSE	1	7U100-046	O-RINGS	2
7U030-046	5/32" x 48" VACUUM LINE	1	4FE014-010	RADIATOR PIPE	1
7P156-082	5/32" TEE	1	7U133-050	1-1/2" x 90° HOSE	1
4FK012-020	DISCHARGE TUBE "A"	1	7R002-020	#20 HOSE CLAMPS	3
4FK012-030	DISCHARGE TUBE "B"	1	7R002-024	#24 HOSE CLAMPS	3
7S300-200	3" x 2" SLEEVE	1	7P375-016	3/8" PIPE PLUG	1
7R002-048	#48 HOSE CLAMPS	2	009035	OIL LUBE PACKAGE	1
7S450-200	4-1/2" x 2" SLEEVE	1			
7R002-072	#72 HOSE CLAMPS	2			
7P750-102	3/4"NPT x 1" x 90° HOSE FITTING	1			
4FK020-020	IGNITION CHIP COUPON	1			



ENGINEERING, LLC

1998 4.6L DOHC Mustang, V-3

Part No. 4FK218-080L/088L

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
2F339-090	V-3 SUPERCHARGER ASSEMBLY	1	4FK238-068	FMU (WITH LINES)	1
4FK111-031	MOUNTING BRACKET ASSEMBLY	1	6Z110-114	8:1 FUEL MANAGEMENT UNIT	1
7A375-178	3/8-16 x 1-3/4" HXHD BOLT	3	4FK145-010	MALE FUEL LINE	1
7K375-040	3/8" AN960 FLAT WASHERS	5	4FH145-020	FEMALE FUEL LINE	1
7K312-001	5/16" AN WASHERS	9	7U030-046	5/32" x 60" VACUUM LINE	1
2A046-113	BELT	1	7P156-082	5/32" TEE	1
4FK011-031	MOUNTING BRACKET	1	4FF101-002	FUEL PUMP ASSEMBLY	1
7J312-875	5/16" CUSTOM WASHER	1	8F001-002	155 INLINE FUEL PUMP	1
7C080-065	8mm x 1.25" x 65 SH BOLT	1	8F101-200	T-REX WIRING ASSY.	1
4FK116-021	IDLER PULLEY ASSEMBLY	1	5W001-010	16-14 GAUGE FEMALE SLIDE, INSULATED	3
2A017-025	IDLER PULLEY SPACER	1	7R004-003	14.5 STEPLESS CLAMPS	2
7C080-016	8mm x 1.25" x 16 HXHD BOLT	1	7R001-004	#4 HOSE CLAMPS	2
4FK010-010	AIR VALVE SUPPORT	1	7U030-050	12mm FUEL HOSE (2.41')	1
7C080-140	8mm x 1.25" x 140 HXHD BOLTS	2	7U031-018	5/16" FUEL HOSE (2')	1
7C080-070	8mm x 1.25" x 70 HXHD BOLTS	2	7R003-024	ADEL CLAMP, 1-1/2" ID	1
7U313-133	M8 x 1.25" 4V ALTERNATOR STUD	1	7E010-075	#12 x 3/4" SHEET METAL, HEX ONLY	2
7F008-020	M8 x 1.25" NUT	1	7P312-003	5/16" FEMALE FUEL CONNECTOR	1
7A375-225	3/8-16 x 2-1/4" HXHD BOLTS	2	7P500-004	1/2" FUEL ADAPTER FITTING	1
7C010-050	10-24 x 1/2" SHCS	4	7C008-032	#8-32 HEX LOCK NUT	1
7J010-001	#10 FLAT WASHERS	4	7J008-001	#8 FLAT WASHER	1
7C080-025	8mm x 1.25" x 25 BOLT	2	5W001-001	WIRE TAP	1
7A312-075	5/16-18 x .75" BOLT	1	7U100-055	TIE-WRAP, 6" NYLON	5
4FK112-010	AIR INTAKE ASSEMBLY	1	5W001-002	FUSE TAP	1
4FA012-012	90° INTAKE ELBOW	1	5W001-015	BLADE TYPE FUSE, 20AMP	1
4FH110-050	MAF METER BRACKET ASSEMBLY	1	5W001-014	#10 FUSE HOLDER	1
7R002-056	#56 HOSE CLAMPS	4	5W001-019	SOLDERLESS CONNECTOR, 12-10 GAUGE	1
7S350-200	3-1/2" x 2" SLEEVE	2	5W001-011	16-14 GAUGE EYELET, .25" BOLT	1
7U035-000	3-1/2" x 12" FLEX HOSE	1	7U375-135	MOUNTING PAD	5
7R002-052	#52 HOSE CLAMPS	2	7U100-044	TIE-WRAP	5
8H040-090	AIR FILTER	1	7S625-000	FIRE SLEEVE	1'
7A250-075	1/4-20 x 3/4" SHCS	4	4FK110-010	AIR PUMP RELOCATION	1
7F250-021	1/4-20 NYLOCK NUTS	4	4FK010-020	AIR PUMP BRACKET	1
7J250-001	1/4" SAE WASHERS	4	7C010-075	10-24 x 3/4" SHCS	2
7P750-102	90° 3/4"NPT x 1" HOSE FITTING	1	7F010-024	10-24 NYLOCK NUTS	2
7U038-000	3/4" x 40" HOSE	1	7J010-001	#10 FLAT WASHERS	2
7U100-052	7/16" RUBBER GROMMET	1	7A250-200	1/4-20 x 2" SHCS	3
4FK012-040	AIR INLET ELBOW	1	7J250-001	1/4" SAE WASHERS	6
7U030-065	3/4" x 5/8" x 90° HOSE	1	7F250-021	1/4-20 NYLOCK NUTS	3
7U133-048	5/8" MOLDED ELBOW HOSE	1	7U133-060	3/4" x 90° HOSE	1
7U100-056	90° VENT TUBE	1	7S050-600	1/2" x 6" HIGH-HEAT HOSE	1
7R001-008	#8 HOSE CLAMP	1	7R001-008	#8 HOSE CLAMPS	2
7U100-055	6" NYLON TIE-WRAP	10	7U100-055	6" NYLON TIE-WRAP	6
4FK112-020	DISCHARGE ASSEMBLY	1	4FK114-010	COOLANT PIPE ASSEMBLY	1
7S275-300	2-3/4" x 3" SLEEVE	1	4FK014-010	U-BEND ASSEMBLY	1
7R002-044	#44 HOSE CLAMPS	2	4FK014-020	L-BEND ASSEMBLY	1
7R002-016	#16 HOSE CLAMPS	4	7U100-046	O-RINGS	2
8D001-001	BYPASS VALVE	1	4FE014-010	RADIATOR PIPE	1
7U034-016	1" x 8.5" HOSE	1	7U133-050	1-1/2" x 90° HOSE	1
7U034-016	1" x 9" HOSE	1	7R002-020	#20 HOSE CLAMPS	3
7U030-046	5/32" x 48" VACUUM LINE	1	7R002-024	#24 HOSE CLAMPS	3
7P156-082	5/32" TEE	1	7P375-016	3/8" PIPE PLUG	1
4FK012-020	DISCHARGE TUBE "A"	1	009035	OIL LUBE PACKAGE	1
4FK012-030	DISCHARGE TUBE "B"	1			
7S300-200	3" x 2" SLEEVE	1			
7R002-048	#48 HOSE CLAMPS	2			
7S450-200	4-1/2" x 2" SLEEVE	1			
7R002-072	#72 HOSE CLAMPS	2			
7P750-102	3/4"NPT x 1" x 90° HOSE FITTING	1			
4FK020-020	IGNITION CHIP COUPON	1			

1. PREPARATION/REMOVAL

- A. Disconnect the negative battery cable.
- B. Remove the accessory drive belt.
- C. Remove the plastic radiator cover and fasteners located above the core support.
- D. Remove the “question mark” shaped crankcase vent hose with attached fittings from between the passenger side valve cover and the air inlet. Separate the plastic 5/8” to 3/4” adapter from the hose and set aside for later use. Remove the plastic tube running from the air inlet duct to the idle air motor resonator and discard (the plastic tube must be cut to separate it from the resonator). Leave the resonator and U-shaped rubber hose (connected to the upper intake) in their factory location.
- E. Remove all components that lead to the throttle body including the rubber air inlet duct, mass air flow (MAF) sensor, air filter assembly and intake air temperature (IAT) sensor. Separate the MAF and IAT sensors from the intake assembly and set aside.
- F. Drain approximately one gallon of coolant from the radiator. Remove the upper and lower radiator hoses from the steel water tube junction located around the alternator. Disconnect both of the water temperature sensor connectors located on the water tube.
- G. Remove the spark plug wire retaining bracket and hardware located on top of the alternator. Remove the steel water tube and retaining nuts from the engine block.
- H. Remove the two coolant temperature sensors from the factory water tube and set aside.

NOTE: *Although not necessary, temporarily removing the strut tower brace allows easier removal/installation of throttle body ducting. Replace the brace when supercharger and final inlet and discharge ducting have been installed.*

NOTE: ECM REMOVAL:

- 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. *Using a 10mm socket or wrench, 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.*

2. OIL DRAIN (ENGINE OIL-FED APPLICATIONS ONLY. APPLICATIONS WITH V-3 SUPERCHARGERS SKIP AHEAD TO STEP 4)

- A. To provide an oil drain for the supercharger, it is necessary to make a hole in the oil pan. Locate and mark hole per diagram. The drain hole must be punched rather than drilled. (See Fig. 2-a.)
- B. Remove the paint around the hole area.
- C. Use a small center punch to perforate the pan and expand hole. Switch to a larger diameter punch and expand the hole further to approximately 9/16" diameter. Most punches are made from hexagon material and may be placed in a socket with an extension to make this procedure easier.
- D. Tap the hole with a 3/8" NPT tap approximately 1/4" deep. Pack the flutes of the tap with heavy grease to hold chips. Use a small magnet to check for any stray chips.

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

- E. Thoroughly clean the threaded area. Apply a small amount of silicone sealer to the new threads. Apply more sealer to the male portion of 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. (See Figs. 2-b, 2-c.)
- G. Drain the engine oil and change the filter.
- H. Temporarily cap off the oil drain fitting to keep out debris until drain hose is attached at a later time.
- I. Refill engine with 5W/30 synthetic or conventional SH/CF rated motor oil.

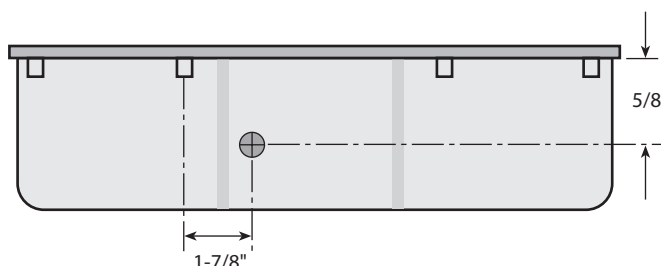


Fig. 2-a
Front of Oil Pan

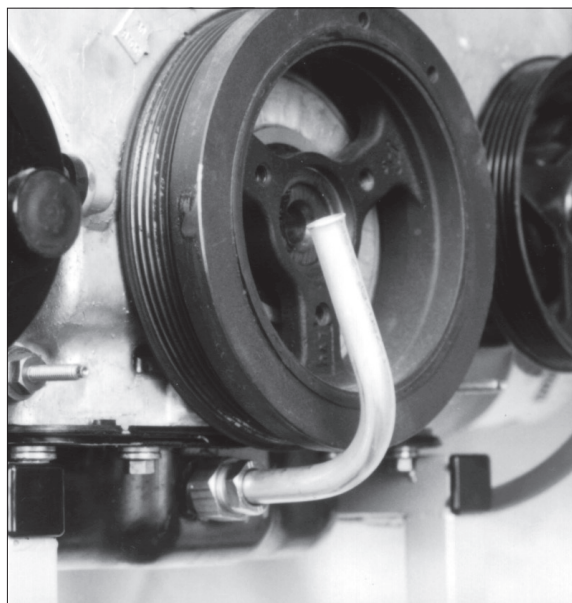


Fig. 2-b

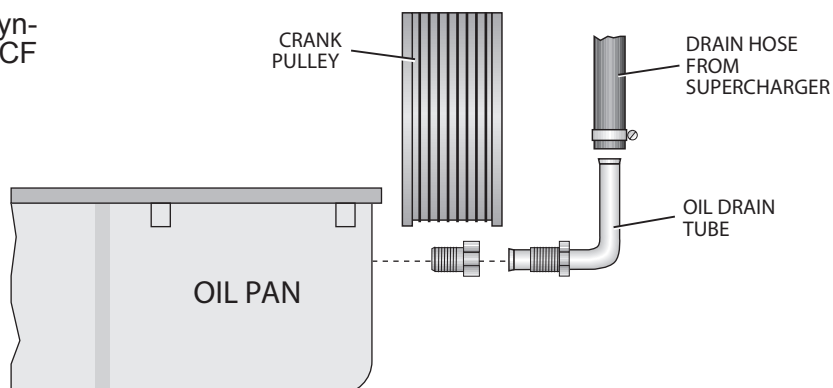
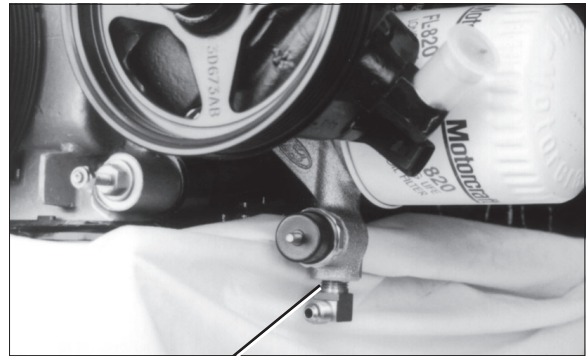


Fig. 2-c
View From Passenger's Side

3. OIL FEED (ENGINE OIL-FED APPLICATIONS ONLY. APPLICATIONS WITH V-3 SUPERCHARGERS SKIP AHEAD TO STEP 4)

- A. Remove the 1/4" NPT socket head plug located perpendicular to and directly beneath the factory oil pressure sending unit. This is found on the engine's left side below the oil filter.
- B. Thread the supplied 1/4" NPT #4 flare x 90° fitting into the pressure sending unit mount using engine oil on the pipe threads (see Fig. 3-a). Teflon tape or other sealants are not recommended as it might loosen and cause blockage of the oil feed orifice, resulting in supercharger failure. Rotate the fitting so that the flare points toward the front of the vehicle.
- C. Temporarily cap off the flare fitting to prevent dirt from entering. The oil feed will be connected at a later time.



1/4" NPT x 90° FITTING

Fig. 3-a

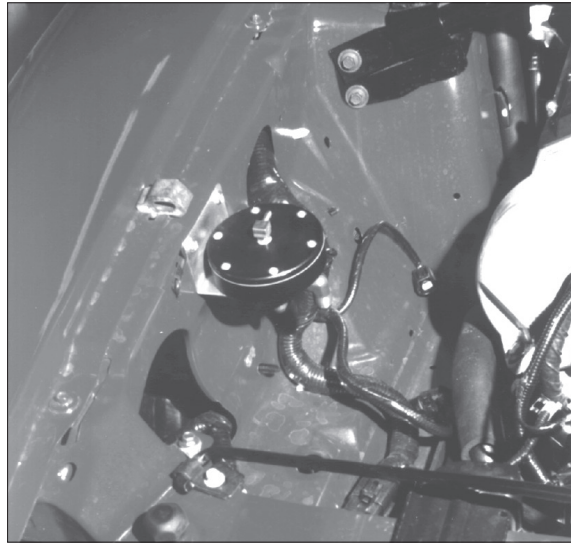
4. FUEL MANAGEMENT UNIT

- A. Position the FMU onto the passenger's side inner fender and secure with the supplied sheet metal screws (see Fig. 4-a on page 4).

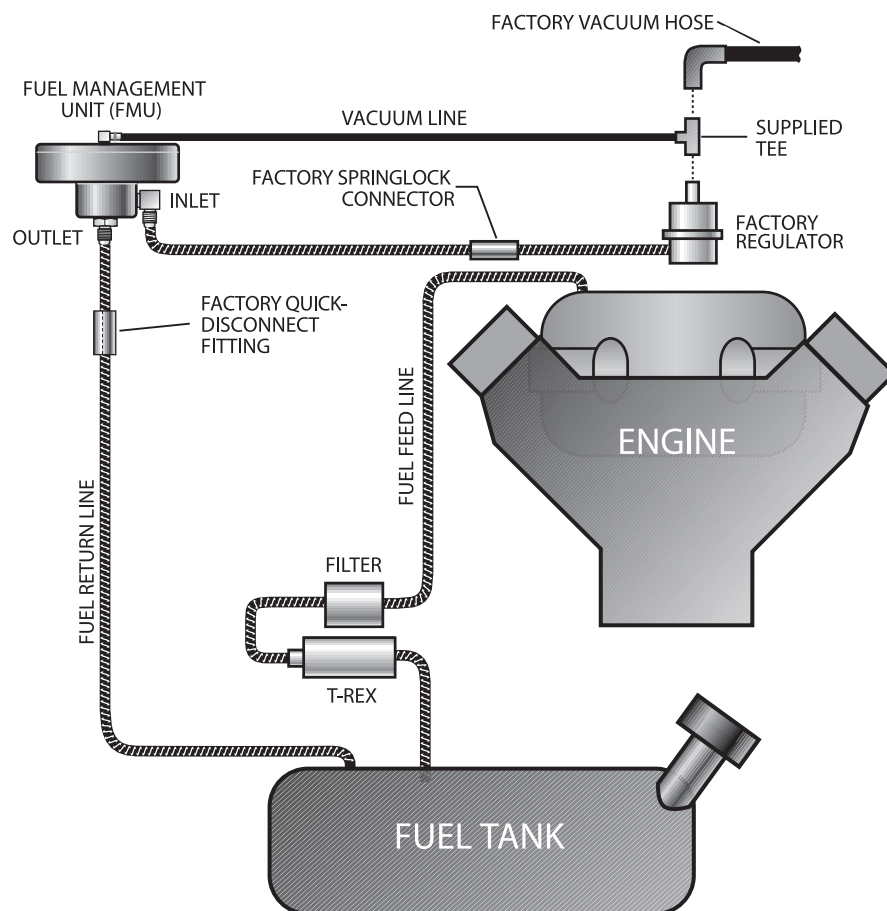
NOTE: If a Vortech Power Cooler is being installed at the same time as the supercharger system, refer to the Power Cooler Installation Manual for the proper FMU mounting location.

- B. Disconnect and discard the factory rubber fuel return line running from the fuel rail (**NOTE: the return line DOES NOT have a pressure test fitting on it**) to the steel return line (the smaller of the two) located behind the right side shock tower using a spring lock disconnect tool.
- C. Connect the FMU inlet hose (the hose that goes to the 90° fitting on the side of the FMU) to the return side of the factory fuel regulator on the fuel rail. (See Fig. 4-b on page 4.)
- D. Connect the FMU outlet hose (attaches to the center fitting on the bottom of the unit) to the steel return line running to the tank. Make sure hose end is securely "snapped" onto factory fuel return line.
- E. Secure the fuel lines away from abrasion and exhaust heat with the tie wraps provided.
- F. Attach the supplied length of 5/32" vacuum hose to the fitting on top of the FMU. Connect the opposite end of the hose to the factory fuel regulator vacuum connection using the 5/32" TEE provided. Trim hose length as necessary.

4. FUEL MANAGEMENT UNIT, cont'd.



*Fig. 4-a
FMU Installed on Passenger's Side Fender
(non-aftercooled installations only)*



*Fig. 4-b
FMU Hookup Diagram*

5. T-REX FUEL PUMP INSTALLATION (1996-97 models only)

- A. Remove spare tire, etc. from trunk.
- B. Trim “cut-out” from the template provided in the kit and place over spare tire hold-down. Center-punch and drill the four 3/16” holes in the trunk floor.
- C. Jack up the rear of the car and support with jack stands.
- D. Mount the T-Rex fuel pump to the underside of the tire well with the rubber mounts, adel clamps and fasteners provided. (See *Fig. 5-a* on page 6.)
- E. Remove the female hose end connected to the fuel filter inlet.
- F. Insert the T-Rex inlet hose assembly into the female supply hose fitting by gently pushing the fittings together and making sure they are locked.
- G. Fasten the extended feed line clear of the filter by looping the two 11” cable ties through the front slot on the fuel filter mount, being careful not to kink the line.
- H. Plug the female connector located on the T-Rex discharge line onto the fuel filter inlet making sure the hose assembly clears all exhaust tubing and sharp objects.
- I. Position the reflective sleeve on the pump discharge line so that it receives maximum protection from the tailpipe.
- J. Mark and drill a 1/8” hole and mount the relay inside the trunk in position as shown in the tem-

NOTE: Use extreme caution when routing fuel lines. Make sure fuel lines are located away from hot exhaust pipes and sharp edges on vehicle underbody.

- K. From relay terminal #85, tap the yellow wire into the stock fuel pump harness in the trunk near the right tail light. Tap into the purple wire with the supplied scotch lock. (On some model years, wire may be brownish-green.)
- L. Connect the short red wire on relay terminal #8 to the (+) terminal on the fuel pump.
- M. Connect the longer black wire from the (-) terminal on the fuel pump to a clean ground.
- N. Connect the short black wire to a clean ground from relay terminal #86 (relay screw mount works well).
- O. Route the remaining long red wire from relay terminal #30 up to the fuse panel located under the dash. Using a solderless connector, connect the supplied fuse holder and fuse to the end of the wire. Crimp the fuse wire to the supplied female slide and fuse tap. Attach fuse tap and wire to fuse #17.

5. T-REX FUEL PUMP INSTALLATION cont'd. (1996-1997 models only)

NOTE: Make sure everything is secure and away from all moving parts or exhaust pipes. Make sure no wires will rub on sharp edges. After you have activated the pump, check for any leaks and correct if necessary.

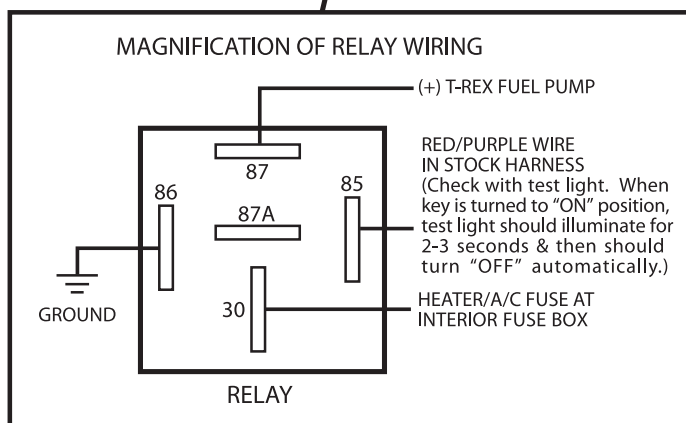
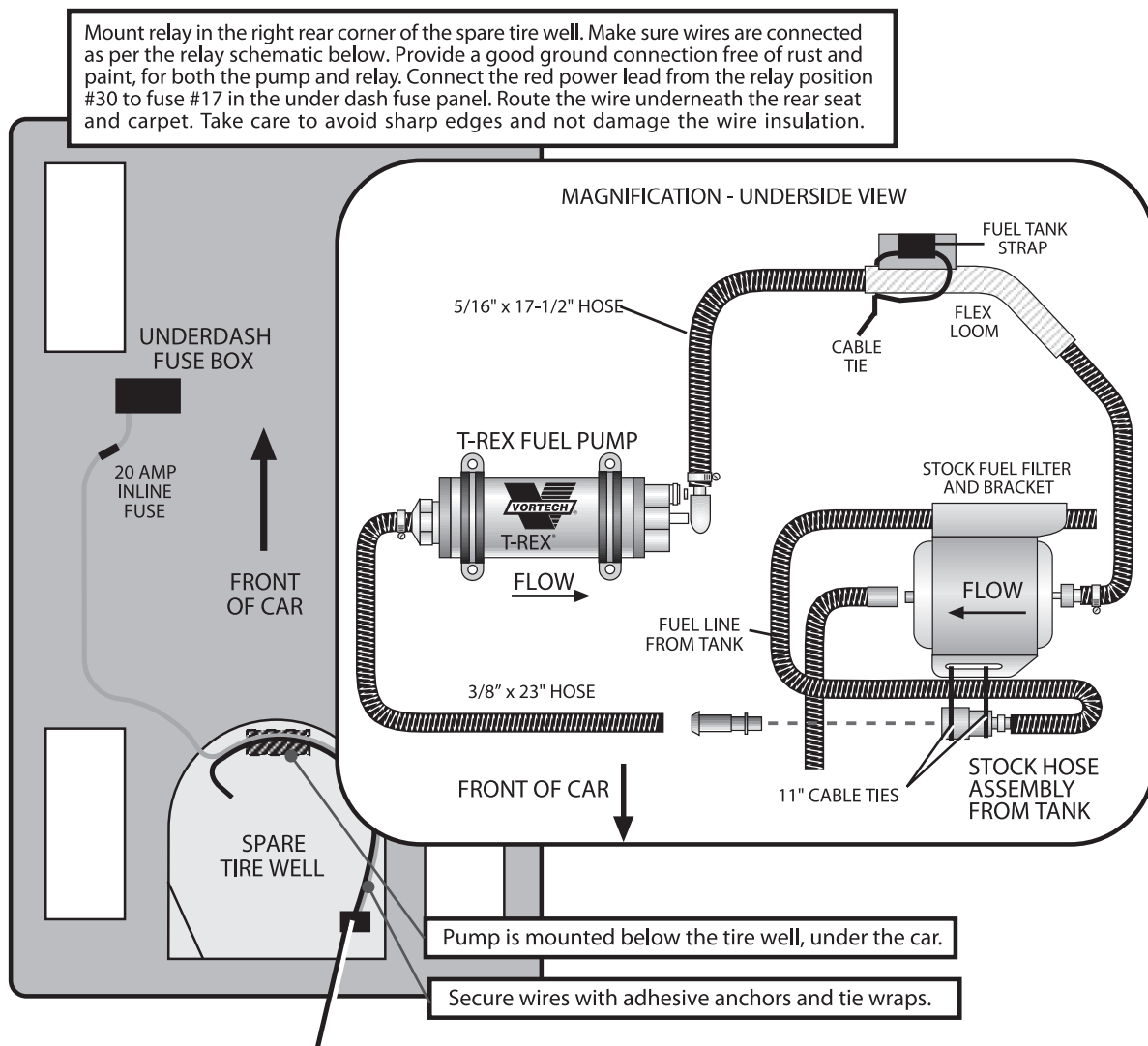


Fig. 5-a

5. T-REX FUEL PUMP INSTALLATION (1998 models only)

- A. Remove the spare tire, etc. from the trunk.
- B. Jack up the rear of the car and support with jack stands.
- C. Mount the fuel pump to the underside of the spare tire well with the adel clamp and #8 fasteners provided. (See *Fig. 5-b* on this page and *Fig. 5-c* on page 8.)
- D. Remove the factory female hose end connected to the fuel filter inlet.
- E. Insert the supplied 1/2" fuel pump inlet hose adapter fitting into the factory female supply hose fitting by gently pushing the fittings together and making sure they are locked.
- F. Attach the supplied 1/2" fuel hose to the pump inlet and the inlet hose adapter fitting. Use the supplied #4 clamps to secure both ends. Cut hose length, if necessary.
- G. Fasten the extended pump inlet line clear of the filter by looping the two 11" cable ties through the front slot on the fuel filter mount, being careful not to kink the line.
- H. Plug the female connector located on the pump discharge line onto the fuel filter inlet making sure the hose assembly clears all exhaust tubing and sharp objects.
- I. Mark and drill a 1/8" hole and mount the relay inside the trunk in position as shown in the template. Use the sheet metal screw provided.
- J. From relay terminal #85, tap the yellow wire into the stock fuel pump harness in the trunk near the right tail light. Tap into the purple wire with the supplied scotch lock. (On some model years, wire may be brownish-green.)
- K. Connect the short red wire on relay terminal #8 to the (+) terminal on the fuel pump.
- L. Connect the longer black wire from the (-) terminal on the fuel pump to a clean ground.
- M. Connect the short black wire to a clean ground from relay terminal #86 (relay screw mount works well).
- N. Route the remaining long red wire from relay terminal #30 up to the fuse panel located under the dash. Using a solderless connector, connect the supplied fuse holder and fuse to the end of the wire. Crimp the fuse wire to the supplied female slide and fuse tap. Attach fuse tap and wire to fuse # 17.



Fig. 5-b

NOTE: Use extreme caution when routing fuel lines. Make sure fuel lines are located away from hot exhaust pipes and sharp edges on the vehicle's underbody.

5. T-REX FUEL PUMP INSTALLATION, cont'd. (1998 models only)

Mount relay in the right rear corner of the spare tire well. Make sure wires are connected as per the relay schematic below. Provide a good ground connection free of rust and paint, for both the pump and relay. Connect the red power lead from the relay position #30 to fuse #17 in the under dash fuse panel. Route the wire underneath the rear seat and carpet. Take care to avoid sharp edges and not damage the wire insulation.

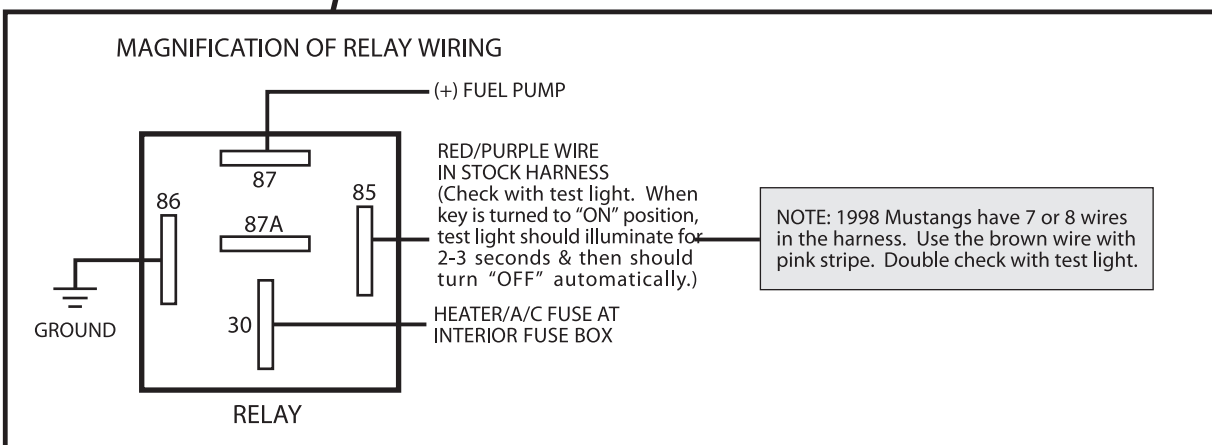
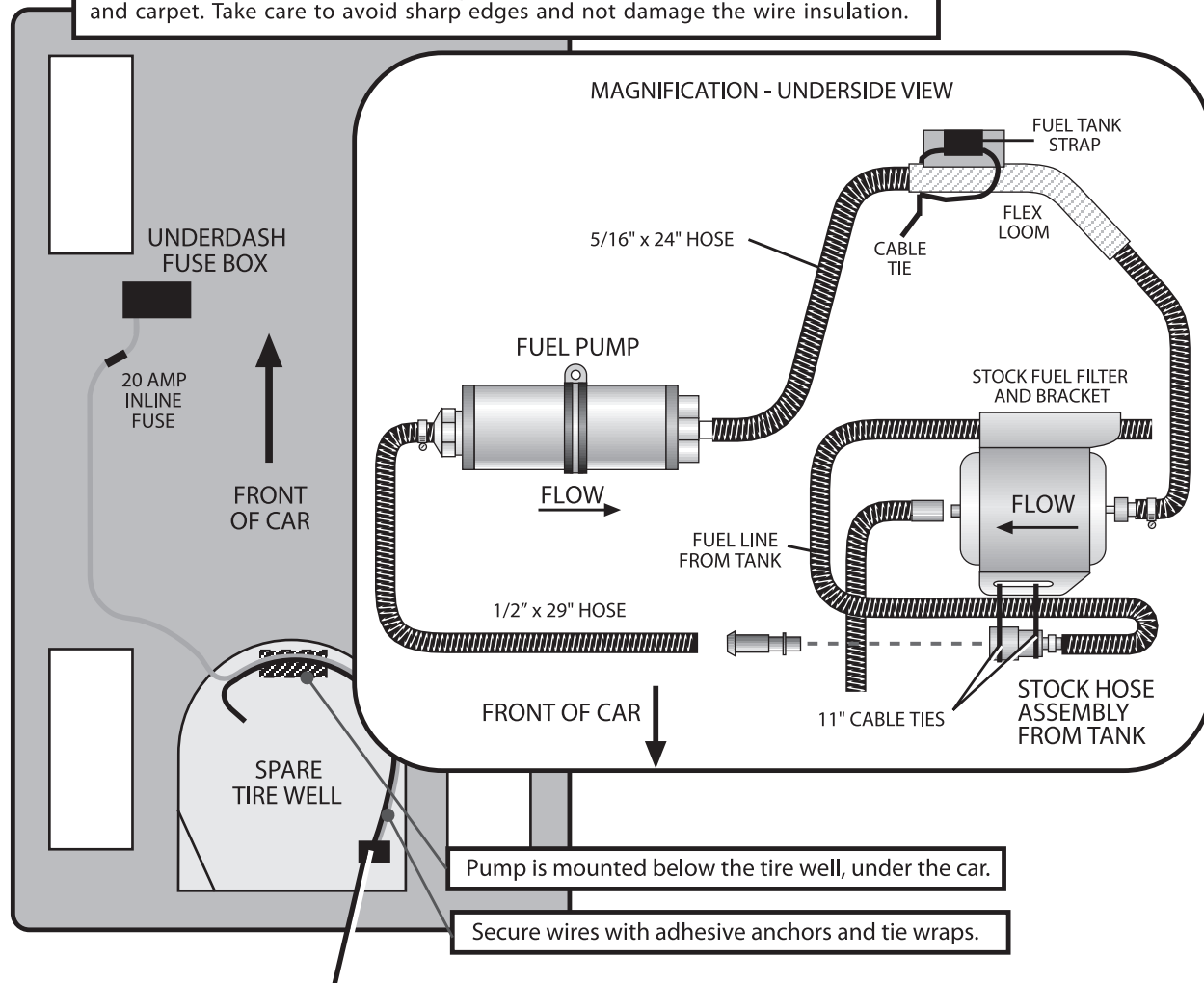


Fig. 5-c

6. AIR CONDITIONING LINE MODIFICATION

- A. Disconnect the vacuum hose and the short 3/4" rubber inlet hose from the passenger side diverter valve. Remove the diverter valve from the bracket and the tube from the exhaust manifold along with any associated bracketry or hardware (1996-1997 only). Remove the factory ignition coil, coil bracket and all coil mounting hardware also from the passenger side of the engine. Remove the vacuum switch assembly from the coil bracket. Leave the electrical connectors and vacuum lines attached. Remove and discard the short rubber hose and two clamps previously connecting the diverter valve to the air pump/diverter valve TEE.
- B. Remove the 8mm fastener attaching the air conditioning pressure line silencer to the lower radiator support to allow line movement during line modification (see Fig. 6-a).
- C. Using a hand-held 1/2" tubing bender, bend the high pressure air conditioning line (the line with the pressure port and cap) so that the pressure port rotates down (for supercharger inlet clearance). (See Fig. 6-b on this page and Fig. 6-c on page 10.)
- D. Reattach the air conditioning silencer bracket to the radiator support.

NOTE: Air conditioning lines are under high pressure and the fluid is highly toxic; therefore, use extreme caution when bending the line to avoid kinking or breaking the line. Support the assembly as much as possible while bending for clearance.



REMOVE FASTENER TO ALLOW
LINE MOVEMENT

Fig. 6-a

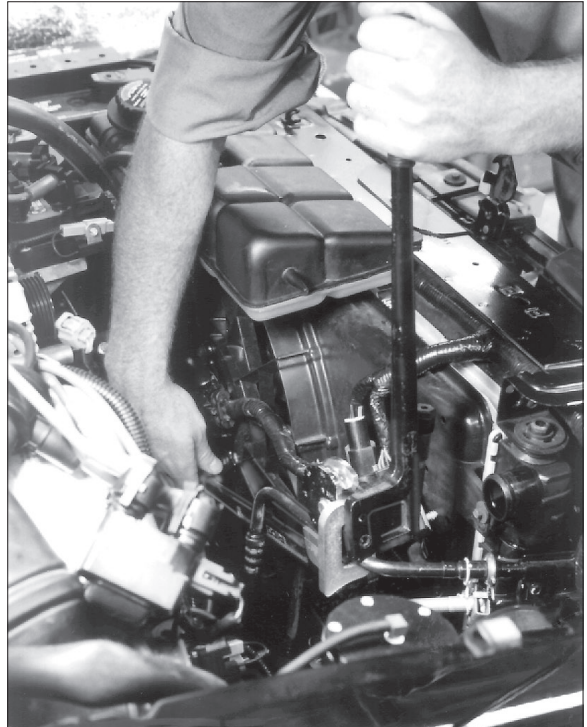


Fig. 6-b

6. AIR CONDITIONING LINE MODIFICATION, cont'd.

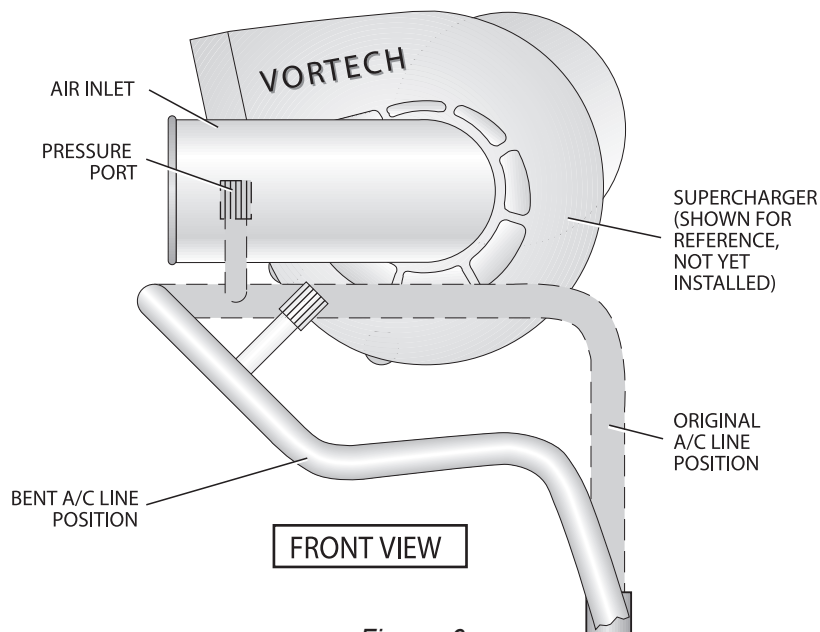


Figure: 6-c

7. MAIN BRACKET ASSEMBLY/DRIVE BELT

- *A. Attach the supplied 1/8" NPT x 45° flare fitting and oil feed hose to the oil feed fitting on the supercharger. Rotate the fitting so that it points forward, toward the volute side of the supercharger, perpendicular to the front cover. When tightening fitting, use a 1/2" wrench on the oil feed base for support.

WARNING: When threading the 1/8" NPT x 45° flare fitting into the supercharger, use engine oil on the pipe threads for lubrication. 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.

- *B. Slide the supplied 1/2" oil drain hose onto the supercharger drain and secure with a #8 hose clamp.
- C. Using the supplied 3/8-16 x 1.75, 2.25 bolts and 3/8" AN washers, secure the supercharger to the Vortech aluminum mounting bracket (see Figs. 7-a, 7-b on page 11). Do not overtighten bolts.
- D. Remove the three timing cover bolts, fixed idler pulley bolt (replace the factory bolt with the supplied 8mm x 16 bolt and heavy duty washer) and right side alternator mounting bolt from the front of the engine. Remove the upper bolt/stud located on the factory belt tensioner and replace with the supplied 8mm x 25mm bolt and washer. Remove the middle bolt also located on the belt tensioner. (See Fig. 7-c on page 11.)

*Applies to "engine oil-fed" units only. V-3 applications skip these steps.

7. MAIN BRACKET ASSEMBLY/DRIVE BELT, cont'd.

NOTE: On some late 1997 and 1998 models, a tensioner stop has been added to the tensioner. This must be removed before bracket installation.

- E. Remove the air conditioning line silencer bracket and mounting hardware from the silencer and engine front cover. Enlarge the smaller of the two holes on the bracket with an 11/32" drill, remove any sharp edges around enlarged hole and reinstall onto the silencer.
- F. Install the supplied threaded stud into the passenger's side alternator mount. (See Fig. 7-d on page 12.) Make sure the end with the least number of threads goes into the block.

NOTE: When mounting the supercharger bracket assembly to the front cover, make sure that the air conditioning line silencer bracket is sandwiched in between the Vortech aluminum bracket and the front cover in positions #1 and #2. (See Fig. 7-e on next page.)

- G. Loosen and remove the three nuts securing the factory coolant reservoir to the car. Temporarily move aside to provide room to mount supercharger. (Do not remove any hoses or connectors from reservoir.)

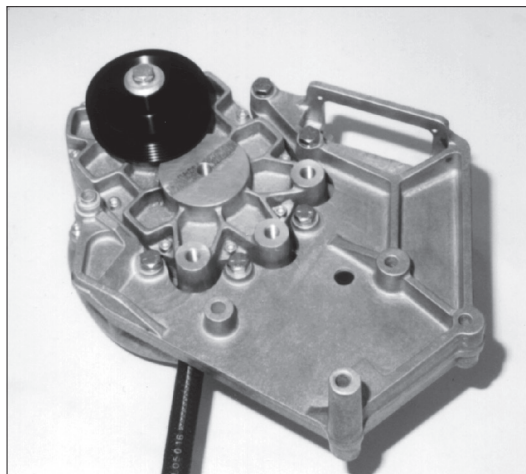


Fig. 7-a

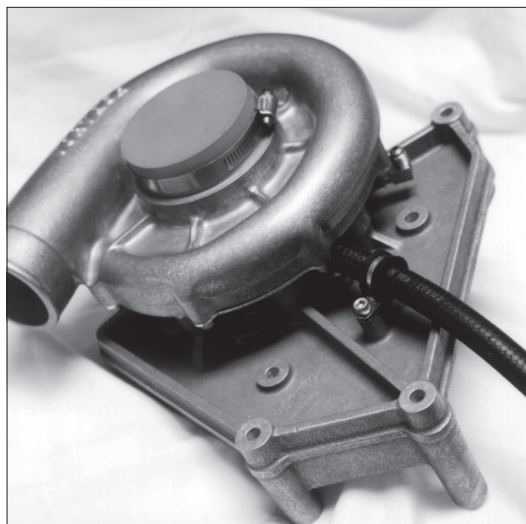


Fig. 7-b

REMOVE FACTORY BOLT/STUD AND
REPLACE WITH SUPPLIED 8mm x 65mm
ALLEN HEAD BOLT AND WASHER

REMOVE FACTORY BOLT/STUD AND
REPLACE WITH SUPPLIED 8mm x 25
BOLT AND WASHER

REMOVE FACTORY HARDWARE
(NEW SUPERCHARGER
BRACKET MOUNTING HOLES)

FACTORY A/C SUCTION LINE
SILENCER BRACKET
MOUNTING HOLES

REMOVE FACTORY BOLT AND
WASHER AND REINSTALL FACTORY
IDLER WITH SUPPLIED 8mm x 16
BOLT AND HEAVY-DUTY WASHER

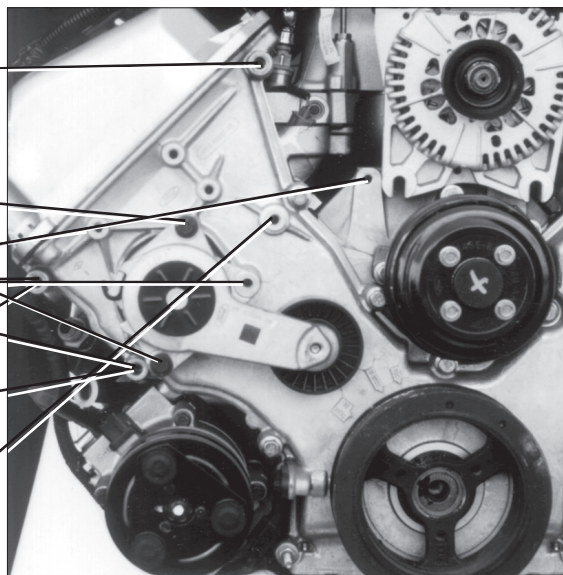


Fig. 7-c

7. MAIN BRACKET ASSEMBLY/DRIVE BELT, cont'd.

NOTE: Make sure that a non-flanged water pump pulley is installed on the vehicle. See note at the beginning of this manual.

- H. Following Figs. 7-d & 7-e, attach the supercharger/aluminum bracket assembly with the Vortech idler pulley and idler spacer to the alternator stud and front cover using the supplied 8mm hardware. Route the new, longer belt around the outside of the supercharger drive pulley, then around the inside of the Vortech idler. Finish routing the belt around all of the pulleys, except for the water pump. Make sure that the Vortech idler pulley and spacer (located against the alternator base), are seated and located in their proper position before tightening down the bolts (see Fig. 7-g for belt routing).

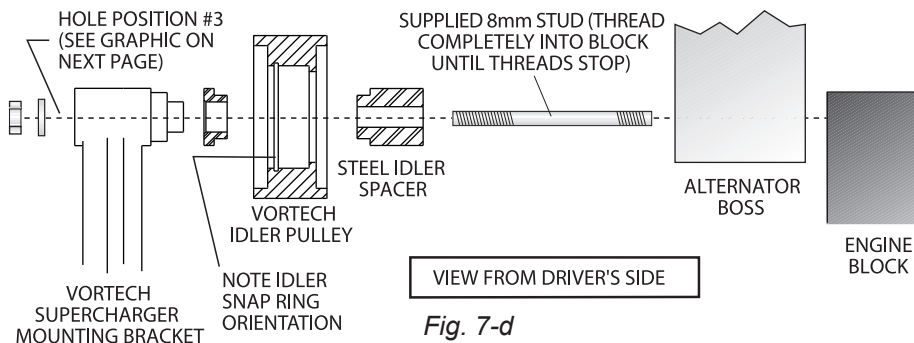
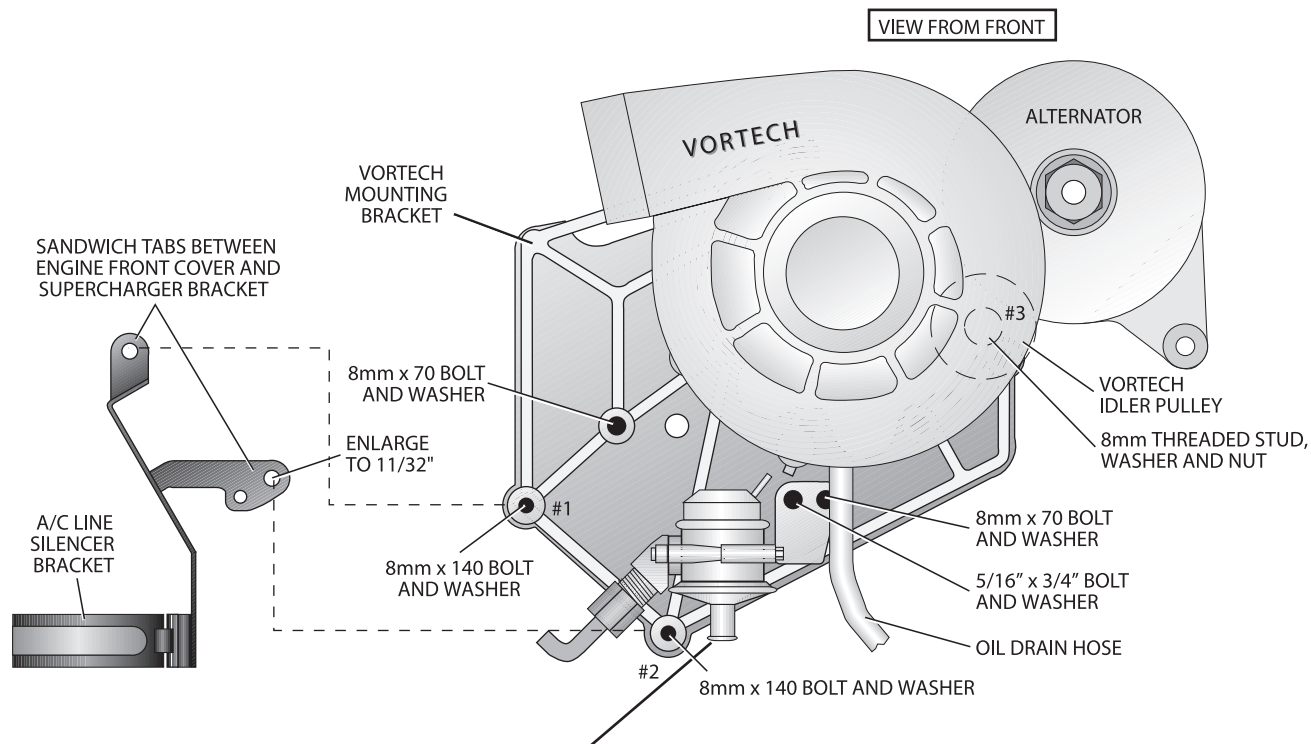


Fig. 7-d



1996 - 1997 MODELS ONLY

Fig. 7-e

7. MAIN BRACKET ASSEMBLY/DRIVE BELT, cont'd.

- I. After the bracket has been fully secured (the belt should be properly routed around/under all pulleys except for the water pump), use a 1/2" breaker bar or ratchet to release the belt tensioner. Push the belt over the top radius of the water pump pulley and release tensioner. (See Figs. 7-f, 7-g.)

IMPORTANT: *It is imperative that the tensioner does not get overloaded when being pulled down during belt installation. Bending of the tensioner may cause belt throwing/shredding problems when vehicle is driven at high speeds.*

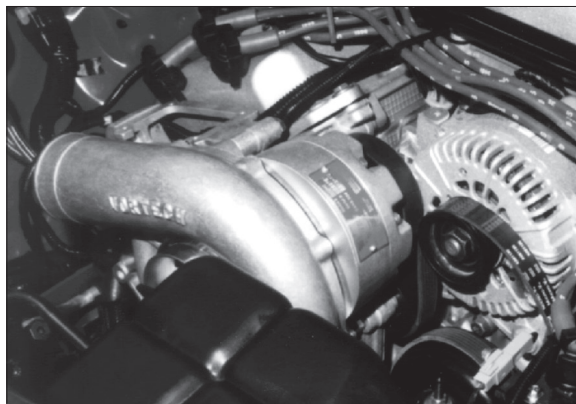


Fig. 7-f

- *J. Route the oil drain hose down to the oil pan tube previously installed. The hose must be routed downhill, free from dips and kinks. Trim hose end, if necessary, slide onto the drain tube and secure with #8 hose clamp. Support fitting in oil pan with a wrench while tightening the drain tube fitting.
- *K. Route the oil feed hose next to the drain hose, down to the feed fitting and secure. Use tie wraps to fasten the lines together.
- **L. Secure the remote drain hose away from the belt and other hoses using tie-wraps.

*Applies to "engine oil-fed" units only. V-3 applications skip these steps.

** Applies to V-3 applications only.

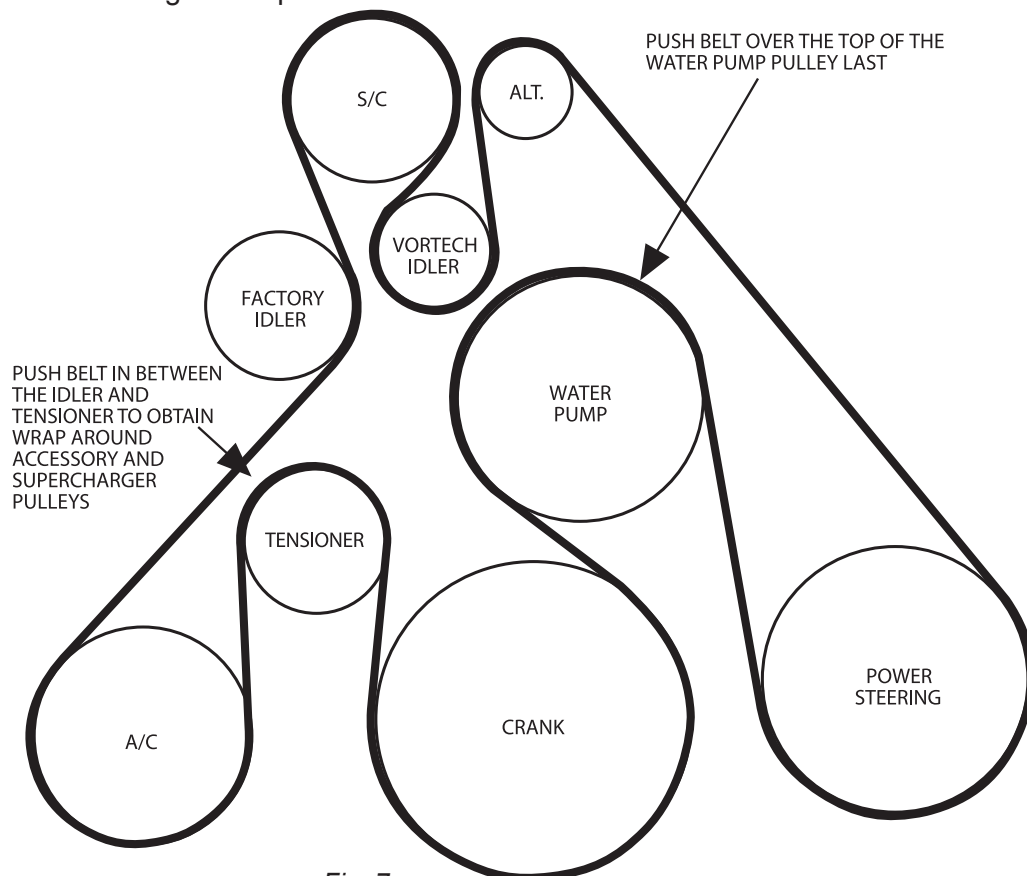


Fig. 7-g

7. MAIN BRACKET ASSEMBLY/DRIVE BELT, cont'd.

(Steps 7-M thru 7-P apply to 1996-1997 models only)

- M. Attach the previously removed diverter valve to the supplied diverter valve support using the original hardware. Using the supplied 5/16" x 3/4" bolt and previously installed 8mm x 70mm bolt, attach valve assembly to the aluminum supercharger bracket (see Fig. 7-i).
- N. Use the supplied 3/4" x 90° rubber hose to reconnect the valve to the plastic TEE. Trim as necessary.
- O. The original diverter valve to exhaust manifold tube must be modified. Cut the tube and deburr as shown in Fig. 7-h, and reconnect each flared end to its original locations (exhaust and valve). Using the supplied 1/2" piece of "high heat" rubber hose and two #8 hose clamps, connect the two ends on the modified steel tube together. Trim hose if necessary.
- P. Remove the small 90° rubber end on the factory plastic vacuum hose originally connected to the diverter valve. Using the supplied piece of 5/32" x 4 foot vacuum hose, connect the diverter valve, in its new location, to the hard plastic vacuum hose originally used. Cut the piece of rubber 5/32" hose to proper length and set aside the remaining portion for use later on the supercharger air bypass valve.
- Q. Reinstall the factory coolant reservoir and secure.

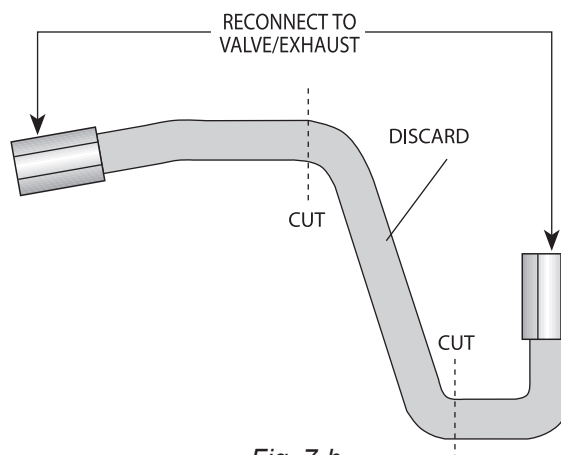
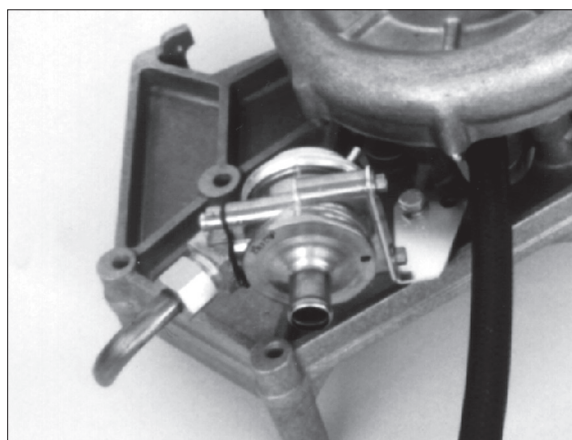


Fig. 7-h



1996 - 1997 MODELS ONLY

Fig. 7-i

8. RADIATOR HOSE/WATER TUBE

- A. Remove the upper radiator hose from the radiator and modify (cut) as shown in Fig. 8-c on page 16.
- B. With the lower radiator hose still connected to the radiator, remove 2" from the end previously connected to the factory water tube. Set the 2" section aside.
- C. Following Fig. 8-d on page 16, pre-assemble the Vortech supplied "L" and "U" bend water tubes using the 2" hose section removed in point 8-B and the supplied #20 clamps. (Do not tighten clamps until assembly is mounted on the engine.)

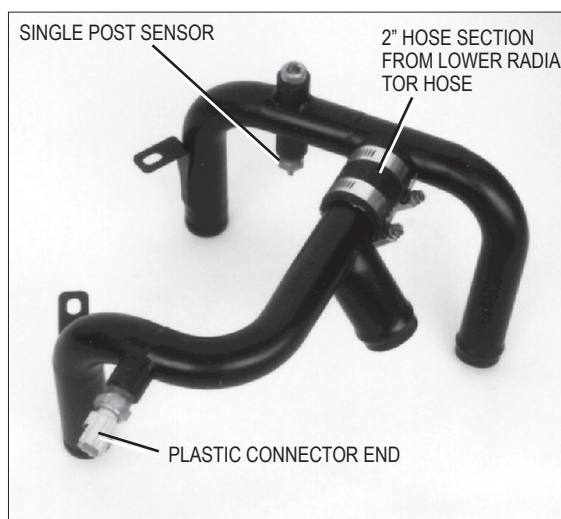


Fig. 8-a

8. RADIATOR HOSE/WATER TUBE, (cont'd).

- D. Thread the two factory coolant temperature sensors into the Vortech water tubes using pipe thread sealant on the sensor threads. Make sure that the single post sensor is installed into the underside of the "U" bend and the sensor with the plastic connector is put on the "L" bend side (see *Figs. 8-c, 8-d* on page 16).
- E. Install the two supplied O-rings into the O-ring grooves located on each end of the Vortech water tube assembly. Apply a small amount of anti-freeze around each O-ring to act as a lubricant for easier installation. With the "U" and "L" bends put together as one assembly, install the unit into the engine block in the factory water tube location making sure that both pipe tabs are aligned onto the intake manifold studs. Push both pipes down until the tabs and/or pipes hit bottom. Secure the assembly with the two factory nuts.
- F. Reinstall the spark plug wire retaining bracket to the alternator and on top of the water tube tabs.
- G. Reattach the factory coolant sensor connectors.
- H. Reinstall the modified upper radiator hose to the radiator with the factory clamp.
- I. Following *Fig. 8-e* on next page, remove 2-1/2" from the long leg of the Vortech supplied 1-1/2" diameter x 90° hose. Attach the hose, along with the factory radiator hose to the supplied 1-1/2" splice using #24 clamps. Connect the entire assembly to the new Vortech water tube.
- J. Attach the open end of the lower radiator hose to the remaining barb on the Vortech water tube and secure with a #20 hose clamp.
- K. Refill radiator. Fill engine block through the 3/8" NPT water fill port on the Vortech water tube. Plug fill port with supplied 3/8" NPT plug.

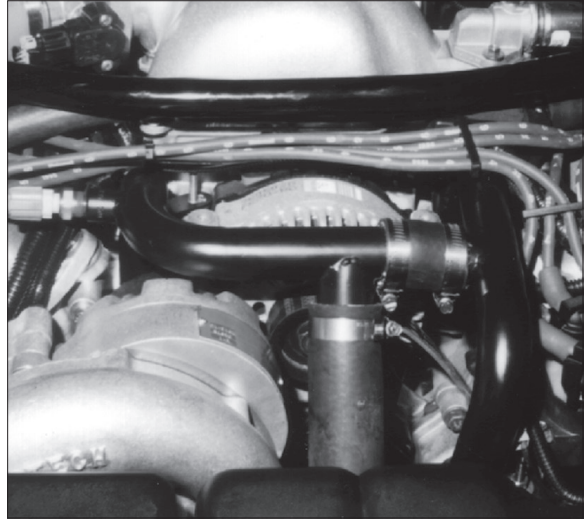


Fig. 8-b

8. RADIATOR HOSE/COOLANT TUBE, cont'd.

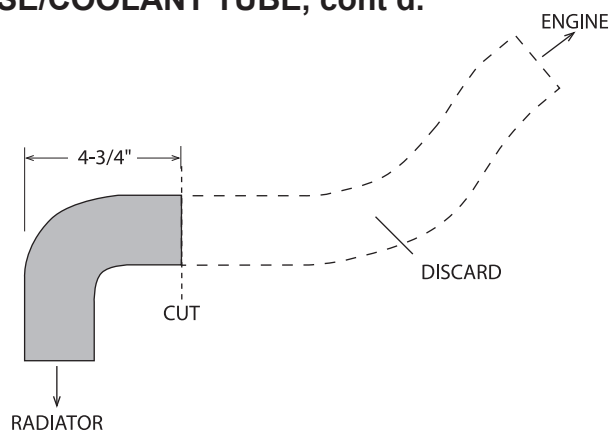


Fig. 8-c
Upper Radiator Hose (Stock)

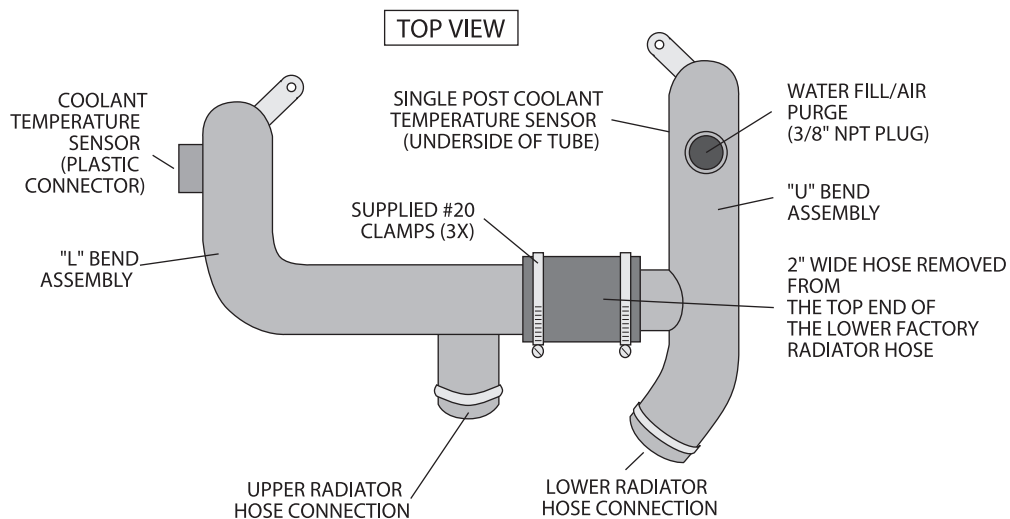


Fig. 8-d
Vortech Water Tube Assembly

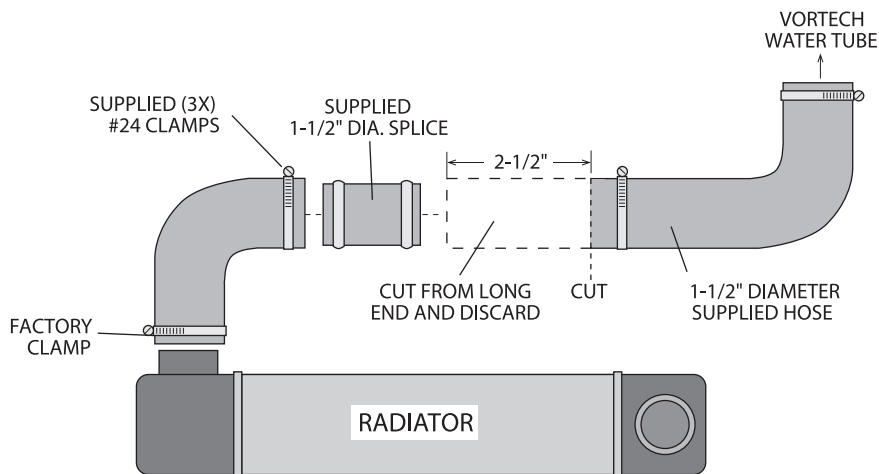


Fig. 8-e

9. AIR PUMP RELOCATION

- A. Unplug all wiring to the air pump located inside of the passenger side inner fender. Remove the entire air pump assembly, including the bracket, from the vehicle. Cut and remove the clamp holding the discharge hose to the pump. Remove the hose.
- B. Remove the air pump and module from the bracket. Remount both pieces onto the supplied mounting bracket with the 10-24 and 1/4-20 hardware provided (see Fig. 9-a).
- C. Install the air pump assembly with the new bracket onto the vehicle using the original location and hardware. The pump now has a slightly different orientation, but will still accommodate the factory wiring and hoses without modification.

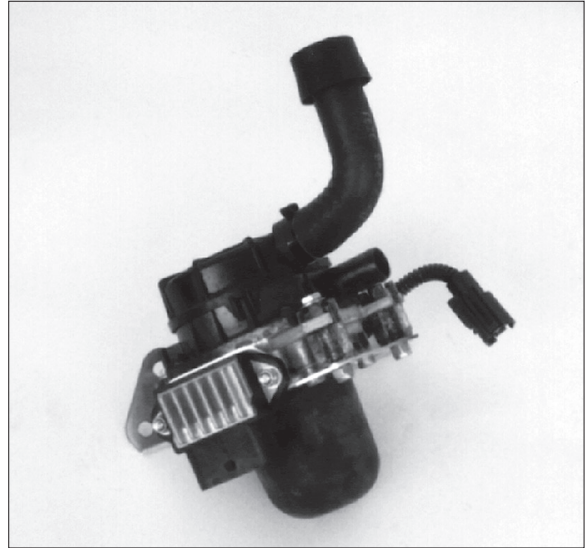


Fig. 9-a

10. AIR INLET

- A. Using the supplied 1/4-20 hardware, mount the MAF meter to the Vortech MAF bracket and secure (see Fig. 10-a for orientation).
- B. Attach the supplied K & N air filter, 3-1/2" sleeve, 90° 3-1/2" elbow and #56 hose clamps to the MAF and secure.
- C. Insert the factory air temperature sensor into the rubber grommet located on the side of the 90° elbow. Lubricate for easier fit.
- D. Working from beneath the vehicle, remove the two factory nuts and washers from the passenger side lower fender valence. Mount the MAF/bracket assembly onto the existing studs using the same washers and nuts originally removed (see Fig. 10-a).
- E. Using a #52 hose clamp, connect the piece of 3-1/2" flex hose to the elbow attached to the MAF meter and route it through the opening in the passenger side inner fender toward the supercharger.
- F. Route the factory temperature sensor and MAF sensor connectors out through the inner fender opening. Reattach the connectors to the relocated sensors.

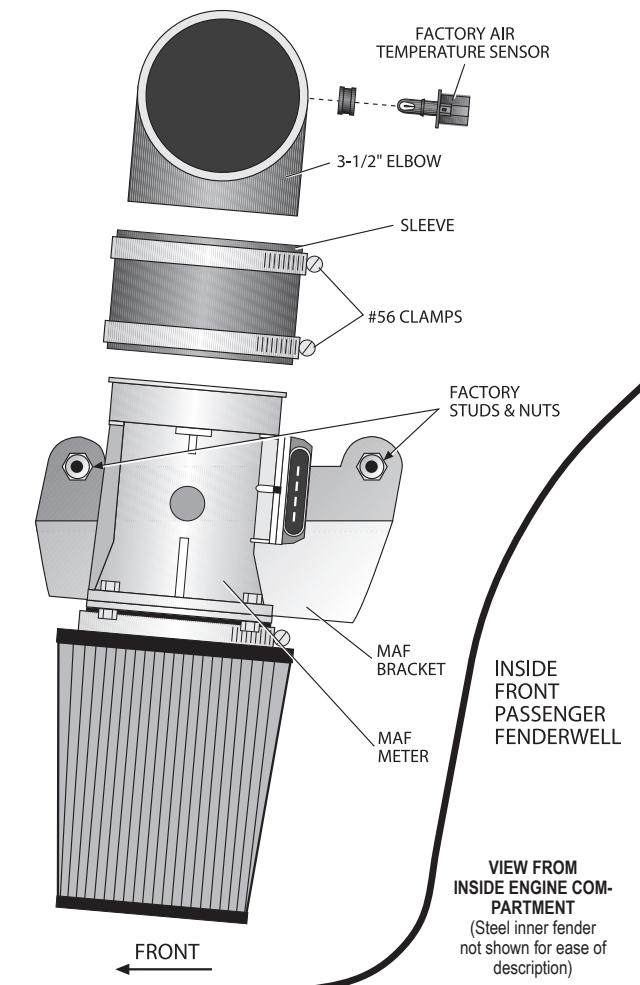


Fig. 10-a

10. AIR INLET, cont'd.

- G. Attach the supplied 1" x 8.5" rubber hose and #16 hose clamp to the white 1" plastic 90° elbow located on the molded plastic (see Fig. 10-c) inlet duct.
- H. Connect the plastic inlet duct to the supercharger inlet using the 3-1/2" sleeve and #56 hose clamps. Route the 1" rubber hose along the front of the vehicle under the upper radiator hose.
- I. Connect the previously installed flex hose to the inlet duct using #52 clamps.
- J. Install the supplied lengths of 5/8" and 3/4" hoses from the supercharger inlet duct, to the crankcase breather fitting and the idle air control resonator (see Fig. 10-d on next page). Trim hose lengths as necessary. Using the supplied #8 clamp, secure the factory rubber "U" shaped IAC hose to the intake manifold.
- K. The plastic radiator cover removed in step 1-c must be modified to clear the air inlet duct. Install the cover in its original position and mark it as to where material needs to be removed for duct clearance.
- L. Using a razor blade or utility knife, cut out the radiator cover to fit over the inlet ducting. Reinstall cover and resecure.

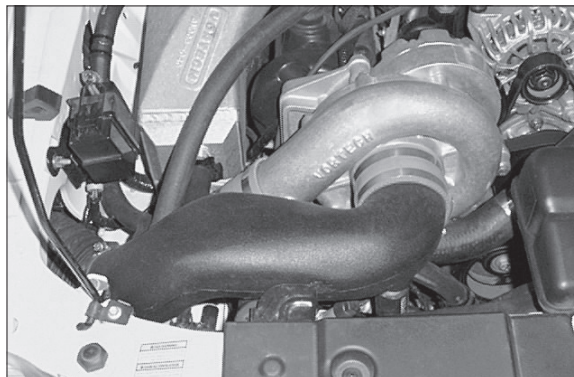


Fig. 10-b

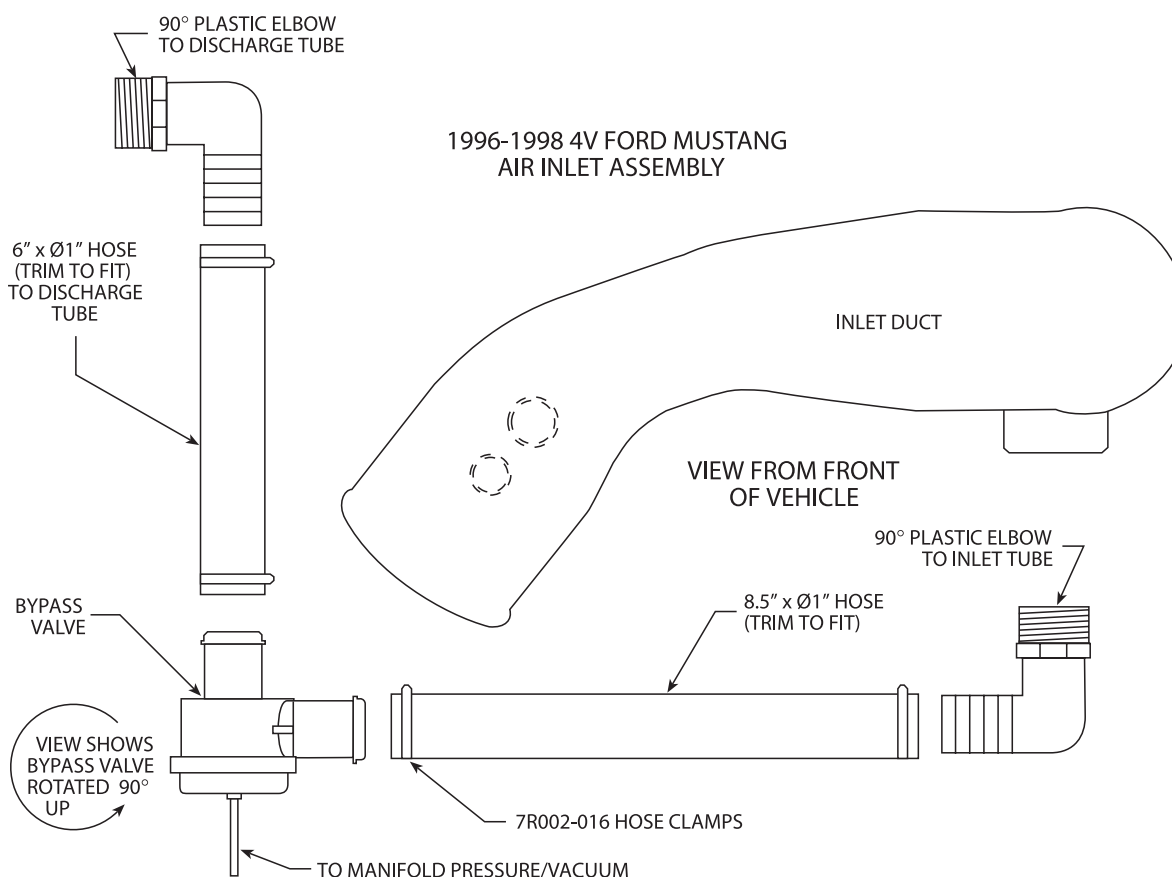


Fig. 10-c

10. AIR INLET, cont'd.

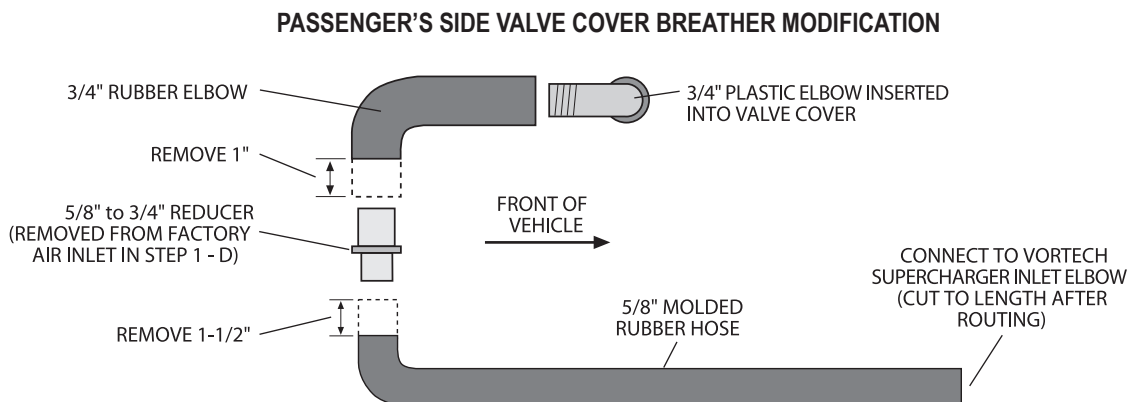


Fig. 10-d

11. SUPERCHARGER DISCHARGE/COIL MOUNT

- A. Slide the 1" x 6" hose clamps and bypass valve to the supplied 1" plastic 90° elbow which mounts into the aluminum discharge duct. Make sure the 5/32" nipple on the bypass valve is pointing away from the discharge duct. (See Fig. 10-c.)
- B. Install the 1" x 6" hose, #16 hose clamps and bypass valve to the supplied 1" plastic 90° elbow which mounts into the aluminum discharge duct. Make sure the 5/32" nipple on the bypass valve is pointing away from the discharge duct.
- *C. Install the plastic discharge tube onto the throttle body. Slide the 3" sleeve and #48 clamps onto the tube. Next, connect the supercharger to the plastic tube using the 90° discharge tube/bypass valve assembly. Align the bypass valve, all hoses and tighten all clamps. Do not overtighten the plastic discharge tube clamps or tighten when the tube is hot or warm. (High clamp tension is not necessary for proper tube retention.) If necessary, trim the 1" bypass hose lengths for best fit. (Refer to Fig. 10-c on previous page.)
- D. Route the 5/32" vacuum line to the bypass valve and TEE into the FMU vacuum line with the supplied 5/32" TEE.
- E. Remove the factory coil bracket from passenger side coil pack.
- F. Secure coil (with main connector facing toward the front of the vehicle) to supercharger bracket with supplied #10-24 x 1-1/2" bolts and washers. Do not overtighten (see Fig. 10-e).
- G. Reconnect main harness connector and spark plug wires. (Some plug wires may need to be rerouted slightly due to different coil location.)

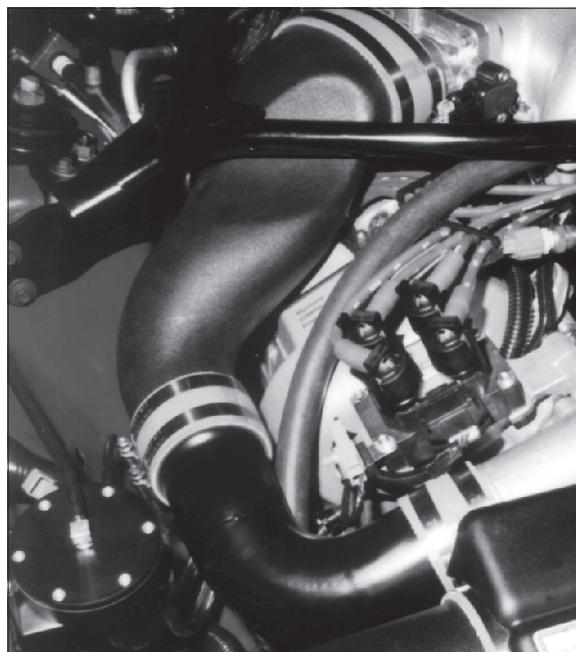


Fig. 11-a

* If a Vortech Power Cooler is being installed at the same time as the supercharger system, ignore this step and refer to the Power Cooler installation manual.

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

12. FINAL CHECK

WARNING: 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.

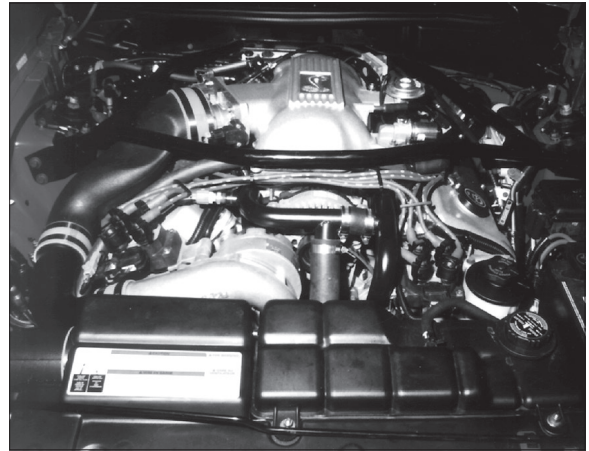


Fig. 13-a

- 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 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 COMPLETED WARRANTY REGISTRATION FORM** within thirty (30) days of purchasing your supercharger system to qualify.

12. FINAL 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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