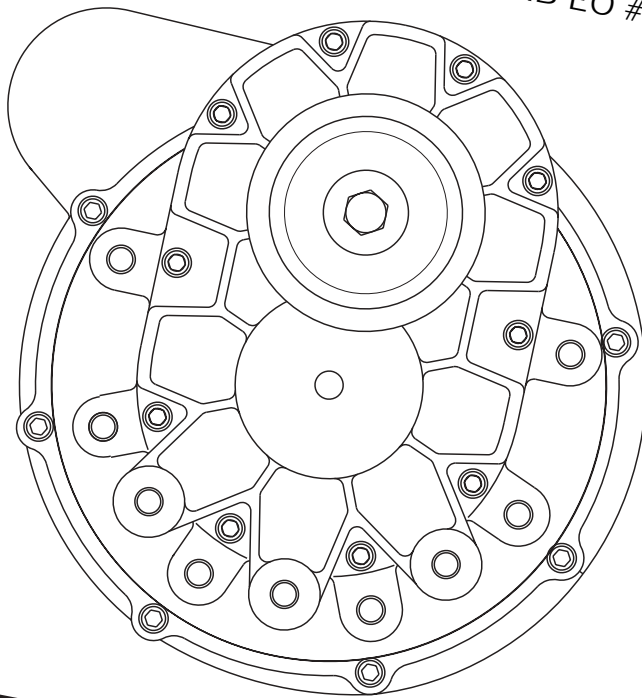


Ford 3.8L V-6 Mustang Supercharger System Installation Instructions

1994-2000 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.

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NOTICE

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1999-2000 Models

This kit requires ECM modification and the installation of a Vortech 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 Vortech 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 photocopies will not 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 ECM Module comes with a twelve month limited warranty from the original date of purchase of your supercharger system (see Owner's Manual for details).

1994-2000
FORD 3.8L MUSTANG
Installation Instructions

50 State Smog Legal 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.

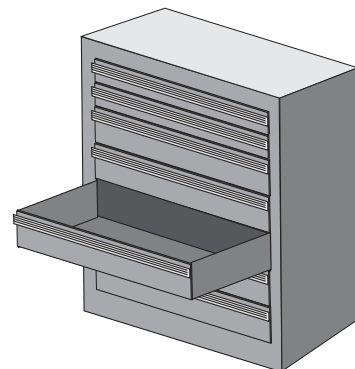
For best performance and continued durability, please take note of the following key points:

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.
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 3 years or 30,000 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 30,000 miles and spark plug wires every 50,000 miles.

TOOL & SUPPLY REQUIREMENTS

* A/C system drain and recharge required - Procedure to be performed properly by a trained technician.

- Factory Repair Manual
- 3/8" Socket and Drive Set: SAE and metric
- 1/2" Socket and Drive Set: SAE and metric
- 3/8" and 1/2" Breaker Bars, 4" Extension
- 3/8" NPT Tap, 3/8-16 Tap and Handle
- Adjustable Wrench
- Open End Wrenches: 3/8", 7/16", 1/2", 9/16"
- Flat #2 Screwdriver
- Phillips #2 Screwdriver
- Heavy Grease
- Silicone Sealer
- Drill Motor
- 3/32", 5/16", 7/16", 9/16" (96-98 models), 37/64 Drill Bits
- Ford Springlock 3/8" Fuel Fitting Disconnect Tool or Lisle A/C and Fuel Disconnect Tool Set #37000
- 5 Quarts SF Rated Quality Engine Oil
- Oil Filter and Wrench
- 9/16" ROTA-BROACH
- T55 Torx Bit
- Power Steering Pulley Puller/Installer (94-95 models)
- Tubing Cutter (ø5/8" Tube)
- Grinder



If your vehicle has in excess of 30,000 miles since its last spark plug change, then you will also need:

- Spark plug socket
- NEW spark plugs



1994-1998 3.8L V-6 Mustang

Part No. 4FF218-010SQ/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
4FF111-021	MOUNTING BRACKET ASSEMBLY	1	4FF238-068	FMU (with lines)	1
4FF011-021	Mounting bracket	1	6Z110-112	10:1 Fuel management unit	1
4FF010-034	Mounting plate	1	4FF145-010	Male fuel assy., 3.8 (from rail)	1
7C010-066	10mm x 1.5 x 65 bolt	3	4FF145-012	Female line assy., 3.8 (to tank)	1
7C080-065	8mm x 1.25 x 65	1	7U030-046	5/32" Vacuum line (6 ft.)	1
7J375-044	3/8" Washer	3	7P156-082	5/32" TEE	2
7K312-001	5/16" Washer	1	7U100-055	Tie wrap, 6" nylon	4
7A375-100	3/8" - 16 x 1" Screw	5	4FF130-036	OIL DRAIN ASSEMBLY	1
7A375-075	3/8" - 16 x 3/4" Screw	5	7U030-036	1/2" x 19" Oil drain hose (1.667 ft.)	1
7K375-040	3/8" Flat washer	10	7P375-017	3/8" NPT x 1/2" Bead straight barb	1
7G010-175	12mm x 1.75 nut	1	7R001-008	#8 Stainless hose clamps	2
2A046-114	Belt	1	7P375-045	45° Street elbow, 3/8" NPT	1
4FA016-170	Idler pulley	1	4FF112-010	AIR INTAKE ASSEMBLY	1
4FD017-011	Idler spacer	1	4FG112-022	Inlet duct w/ ring	1
7C012-050	12mm x 1.75 x 50mm Hex	1	7U035-001	3-1/2" Flex hose (1.33 ft.)	1
4FA016-171	Dust shield	1	7R002-056	#56 Hose clamps	2
7J012-092	12mm Flat washer	2	7R002-052	#52 Hose clamps	2
2E228-250	V2SQ SUPERCHARGER ASSEMBLY	1	8H040-030	Air filter	1
4FF101-003	A/C LINE SUPPLEMENT	1	7J250-001	1/4" SAE washers	8
5W018-020	18 Gauge std. black wire (1.333 ft.)	1	7F250-021	1/4"-20 Nylock nuts	4
5W018-050	18 Gauge std. yellow wire (1.333 ft.)	1	7A250-075	1/4"-20 x 3/4" Socket head cap screw	4
5W018-070	18 Gauge std. green wire (1.667 ft.)	1	7S325-100	3.25 x 1 Sleeve	1
5W018-080	18 Gauge std. blue wire (1.667 ft.)	1	7S350-200	3-1/2 x 2 Sleeve	1
5W001-012	Solderless connector, 22 red gauge	8	4FA012-012	90° Intake elbow	1
5W001-007	3/16" Heat-shrunk tube (1.00 ft.)	1	7U030-056	3/8" PCV hose (1.250 ft.)	1
7P375-039	5/8 x 90° Barb	1	7P250-045	1/4 NPT x 3/8 ID fitting	1
7P625-016	5/8 Union	1	7R005-001	208-91 T-bolt clamp 3.75"	1
7U034-100	5/8 A/C hose (.312 ft.)	1	4FG110-050	MAF bracket assy.	1
7R002-010	#10 Clamp	3	7P375-016	3/8 Pipe plug	1
4FF112-020	DISCHARGE ASSEMBLY	1	7U100-052	7/16 Rubber grommet	1
7R002-044	#44 Hose clamps	4	4FF101-002	FUEL PUMP ASSEMBLY	1
7R002-016	#16 Hose clamps	4	8F001-002	155 Inline fuel pump	1
7S275-200	2-3/4" x 2" Sleeve	2	8F101-200	T-Rex wiring assy.	1
8D001-001	Bypass valve	1	5W001-010	16-14 Gauge female slide, insulated	3
7U034-016	1" Heater hoses (.416 ft.)	1	7R004-003	14.5 Stepless clamps	2
7U034-016	1" Heater hoses (.229 ft.)	1	7R001-004	#4 Hose clamps	2
4FF012-020	Discharge tube	1	7U030-050	12mm Fuel hose (2.41 ft.)	1
4FF130-026	OIL FEED ASSEMBLY	1	7U031-018	5/16 Fuel hose (2 ft.)	1
7U030-026	1/4" Oil feed hose (3.16 ft.)	1	7R003-024	Adel clamp, 1-1/2 ID	1
7P250-066	#4 Swivel x 1/4" hose barb fitting	4	7E010-075	#12 x 3/4" Sheet metal, hex only	2
7P525-067	.525 Crimp ferrules	4	7P312-003	5/16" Female fuel connector	1
7U100-055	Tie wrap, 6" nylon	2	7P500-004	1/2" fuel adapter fitting	1
7P250-144	1/4" NPT x #8 fitting	1	7C008-032	#8-32 Hex lock nut	1
7P250-082	1/4" NPT x #4 90° fitting	1	7J008-001	#8 Flat washer	1
7P125-103	#4 x 45° Male elbow 1/8" NPT	1	5W001-001	Wire tap	1
7P250-034	1/4 NPT Strt., Tee	1	7U100-055	Tie wrap, 6" nylon	5
7U030-026	1/4" Oil feed hose (1.58 ft.)	1	5W001-002	Fuse tap	1
			5W001-015	Blade type fuse, 20 amp	1
			5W001-014	#10 Fuse holder	1
			5W001-019	Solderless connector, 12-10 gauge	1
			5W001-011	16-14 Gauge eyelet, .25" bolt	1
			7U375-135	Mounting pad	5
			7U100-044	Tie wrap	5
			7S625-000	Fire sleeve	1 ft.



ENGINEERING, LLC

1999-2000 3.8L V-6 Mustang

Part No. 4FF218-020SQ/028SQ

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
4FF218-020SQ	99-01 MUST 3.8 V6 KIT	1	7U030-056	3/8" PCV hose (1.250 ft.)	1
4FF111-021	MOUNTING BRACKET ASSY 3.8 V6	1	7P250-045	1/4 NPT x 3/8 ID fitting	1
4FF011-021	Mounting bracket	1	7R005-001	208-91 T-bolt clamp 3.75"	1
4FF010-034	Mounting plate	1	4FG110-050	MAF bracket assy.	1
7C010-066	10mm x 1.5 x 65 bolt	3	7P375-016	3/8 Pipe plug	1
7C080-065	8mm x 1.25 x 65	1	7U100-052	7/16 Rubber grommet	1
7J375-044	3/8" Washer	3	4FF101-003	A/C LINE SUPPLEMENT	1
7K312-001	5/16" Washer	1	5W018-020	18 Gauge std. black wire (1.333 ft.)	1
7A375-100	3/8" - 16 x 1" Screw	5	5W018-050	18 Gauge std. yellow wire (1.333 ft.)	1
7A375-075	3/8" - 16 x 3/4" Screw	5	5W018-070	18 Gauge std. green wire (1.667 ft.)	1
7K375-040	3/8" Flat washer	10	5W018-080	18 Gauge std. blue wire (1.667 ft.)	1
7G010-175	12mm x 1.75 nut	1	5W001-012	Solderless connector, 22 red gauge	8
2A046-114	Belt	1	5W001-007	3/16" Heat-shrunk tube (1.00 ft.)	1
4FA016-170	Idler pulley	1	7P375-039	5/8 x 90° Barb	1
4FD017-011	Idler spacer	1	7P625-016	5/8 Union	1
7C012-050	12mm x 1.75 x 50mm Hex	1	7U034-100	5/8 A/C hose (.312 ft.)	1
4FA016-171	Dust shield	1	7R002-010	#10 Clamp	3
7J012-092	12mm Flat washer	2	4FF112-130	DISCHARGE ASSY 99-01 V6 MUSTANG	1
2E228-350	V2SQ SUPERCHARGER ASSY 3.8 V6	1	4FF112-030	Duct, disch 99-01 V6 mustang	1
4FF130-026	OIL FEED ASSY	1	7P156-082	5/32 TEE	1
7U030-026	1/4" Oil feed hose (3.16 ft.)	1	7R002-016	#16 Goldseal hose clamp	4
7P250-066	#4 swivel x 1/4" hose barb fitting	4	7R002-044	#44 Goldseal hose clamp	4
7P525-067	.525 Crimp ferrules	4	7S275-200	2-3/4 x 2 sleeve	2
7U100-055	Tie wrap, 6" nylon	2	7U030-046	5/32" vacuum line	1.333'
7P250-144	1/4" NPT x #8 fitting	1	7U034-016	1" GS hose	.708'
7P250-082	1/4" NPT x #4 90° fitting	1	7U100-055	Tie wrap, 6" nylon	4
7P125-103	#4 x 45° Male elbow 1/8" NPT	1	7U133-090	Rubber elbow, ø1.0" x 90°	1
7P250-034	1/4 NPT Strt., Tee	1	8D001-001	Std comp bypass valve	1
7U030-026	1/4" Oil feed hose (1.58 ft.)	1	7P375-106	PCV valve	1
4FF130-036	OIL DRAIN ASSY 3.8 V6	1	4FL120-025	ECM CHIP PACKAGE 99-01 V6	1
7U030-036	1/2" x 19" Oil drain hose (1.667 ft.)	1	5A101-016	MAF VOLTAGE CLAMP ASSY	1
7P375-017	3/8" NPT x 1/2" Bead straight barb	1	4FF101-003	A/C LINE SUPPLEMENT	1
7R001-008	#8 Stainless hose clamps	2	4FF014-030	FLEXIBLE EGR TUBE	1
7P375-045	45° Street elbow, 3/8" NPT	1	5W001-051	JUMPER HARNESS	6
4FF112-010	AIR INTAKE ASSY 3.8 V6	1	7P500-626	1/2" F NPT-5/8" TUBE CONN S.S.	2
4FG112-022	Inlet duct w/ ring	1	8F060-038	FUEL INJECTOR, 38 LBS RAIL	6
7U035-001	3-1/2" Flex hose (1.33 ft.)	1	2A046-113	BELT, K061130-GATES	1
7R002-056	#56 Hose clamps	2			
7R002-052	#52 Hose clamps	2			
8H040-030	Air filter	1			
7J250-001	1/4" SAE washers	8			
7F250-021	1/4"-20 Nylock nuts	4			
7A250-075	1/4"-20 x 3/4" Socket head cap screw	4			
7S325-100	3.25 x 1 Sleeve	1			
7S350-200	3-1/2 x 2 Sleeve	1			
4FA012-012	90° Intake elbow	1			

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1. PREPARATION/REMOVAL

- A. Disconnect the negative battery cable.
- B. Remove all of the components that lead to the throttle body including the mass air flow (MAF) sensor, air filter assembly and rubber bellows. Separate the MAF sensor from the air filter assembly and set aside.
- C. Remove the air temperature sensor from the inlet duct.
- D. Remove the factory accessory drive belt.
- E. **It is necessary to remove the refrigerant from the air conditioning system.** This should be performed by a qualified technician using a refrigerant recycling system. Releasing refrigerant into the atmosphere is environmentally irresponsible and should be avoided.
- F. Unplug the A/C compressor and the A/C line electrical connectors. Using a springlock disconnect tool, disconnect both ends of the A/C line that runs from the condenser to the firewall-mounted canister. Remove the screw mounting the A/C line junction block to the compressor and remove the line from the vehicle.
- G. Remove the A/C compressor from the factory bracket.
- H. Using a T55 Torx bit, remove the belt tensioner from the factory bracket.
- I. Remove the factory A/C bracket including mounting hardware from the engine.

(1999-2000 Models Only)

- J. Remove (if equipped) the exhaust gas recirculation (EGR) tube (one end connects to the passenger side exhaust manifold). Note the orientation of the pressure differential sensor.
- K. 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-bracket.
- L. Using the 10mm socket or wrench, remove the harness and plug from the ECM (as you loosen the screw, the connector will slowly release). Remove the ECM from the vehicle.
- M. 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 FEED

NOTE: The supercharger uses engine oil for lubrication and must have an oil feed line connected to a filtered oil access on the engine.

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

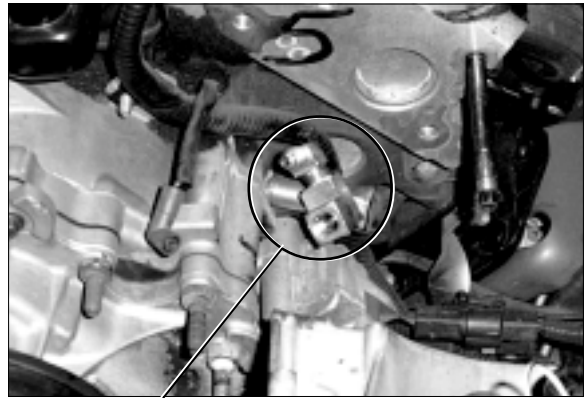
A. 1994-1995 Models only

1. Remove the vehicle's power steering pump pulley. Remove the screws that fasten the power steering/alternator bracket to the head. Pull the assembly away from the engine temporarily to gain access to the oil pressure sending unit. Remove the factory pressure sending unit. Thread the supplied 1/4" NPT street TEE and 1/4" NPT x 90° x #4 flare into the previous pressure sending unit location. Install pressure sending unit into the street TEE. (See Fig. 2-a.)
2. Connect the supplied 19" (2 different hose lengths are supplied) oil feed line to the flare fitting and route up to supercharger location. Secure the hose with the tie wraps provided, routing it away from chaffing and/or sharp objects. Temporarily cover the open end from debris until the connection is made to the supercharger in Step 7.

B. 1996-2001 Models only

1. Remove the factory #8 O-ring plug located on the engine oil filter boss. Replace the plug with the supplied #8 O-ring x 1/4" NPT adapter fitting. Thread the supplied 1/4" NPT x 90° x #4 flare fitting into the adapter fitting. Orient the 90° fitting as shown in Fig. 2-b.
2. Connect the supplied 38" (2 different hose lengths are supplied) oil feed line to the flare fitting and make a gentle upward loop around the power steering pump. Secure the hose with the tie wraps provided, routing it away from exhaust heat, chaffing and/or sharp objects. Temporarily cover the open end from debris until the connection is made to the supercharger in Step 7.

1994-1995 MODELS



OIL FEED FITTING & ADAPTER

Fig. 2-a

1996-2001 MODELS



OIL FEED FITTING & ADAPTER

OIL FEED HOSE

Fig. 2-b

3. OIL DRAIN

- A. To provide an oil drain for the supercharger, it is necessary to make a hole in the oil pan. Locate and mark hole as per *Figs. 3-a and 3-b*.
- B. Carefully drill a pilot hole (the same diameter as the Rota-Broach pilot) into the marked spot on the oil pan (this procedure may also be done by removing the oil pan if you are unsure of your ability to perform the following steps properly). Drill slowly as to catch most of the aluminum chips from the hole being drilled. Using the 9/16" Roto-Broach, very slowly machine a hole in the pan (use the previously drilled hole as a guide). Stop machining just before the tool breaks through into the oil pan. Using a scribe or a small screwdriver, remove the remaining disc-shaped oil pan piece (allowing you to remove the pan slug before it falls into the oil pan and keeps most of the aluminum chips out).
- C. Tap the hole with a 3/8" NPT tap approximately 1/4" deep. Pack the flutes of the tap with heavy grease to hold the chips. Thoroughly clean the threads in the hole with acetone or lacquer thinner.
- D. Using a small amount of silicone sealer, install the 3/8 NPT x 45° elbow into the oil pan. Thread the supplied 3/8" NPT x 1/2" barb fitting into 45° elbow. (Orient the fittings as shown in *Fig. 3-b*.) Temporarily cap the fitting until the drain hose is connected in Step 7.
- E. Drain the engine oil and change the filter. Refill engine with factory specified weight oil. Vortech recommends the use of synthetic oil.

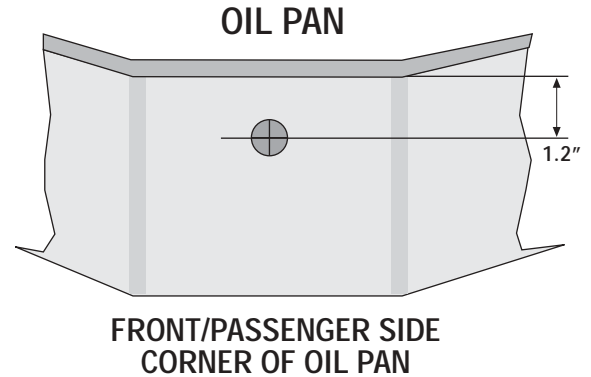


Fig. 3-a



Fig. 3-b

4. FUEL MANAGEMENT UNIT (1994-1998 Models only)

- A. Position the FMU onto the right side inner fender and secure with the supplied sheet metal screws. (See *Fig. 4-a*.)
- B. Disconnect and discard the factory rubber fuel return line running from the fuel rail (note that the return line DOES NOT have pressure test fitting on it) to the steel return line (the smaller of the two) located behind the right side shock tower using a springlock 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. Make sure the hose end is securely "snapped" onto the factory connector. (See *Fig 4-b* on the next page.)
- 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 the hose end is securely "snapped" onto the factory fuel line.
- E. Secure the fuel lines away from abrasion and exhaust 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. (See graphic on the next page.) Trim hose length as necessary.

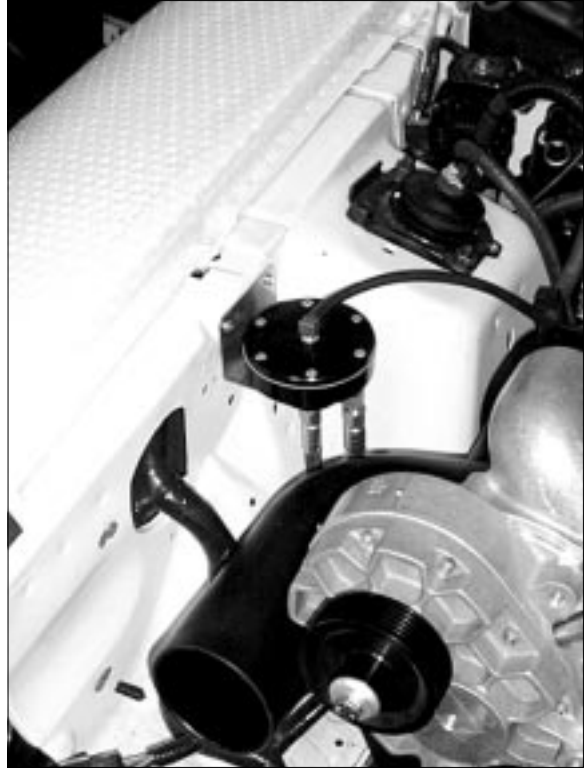


Fig. 4-a

4. FUEL MANAGEMENT UNIT (1994-1998 Models only), cont'd.

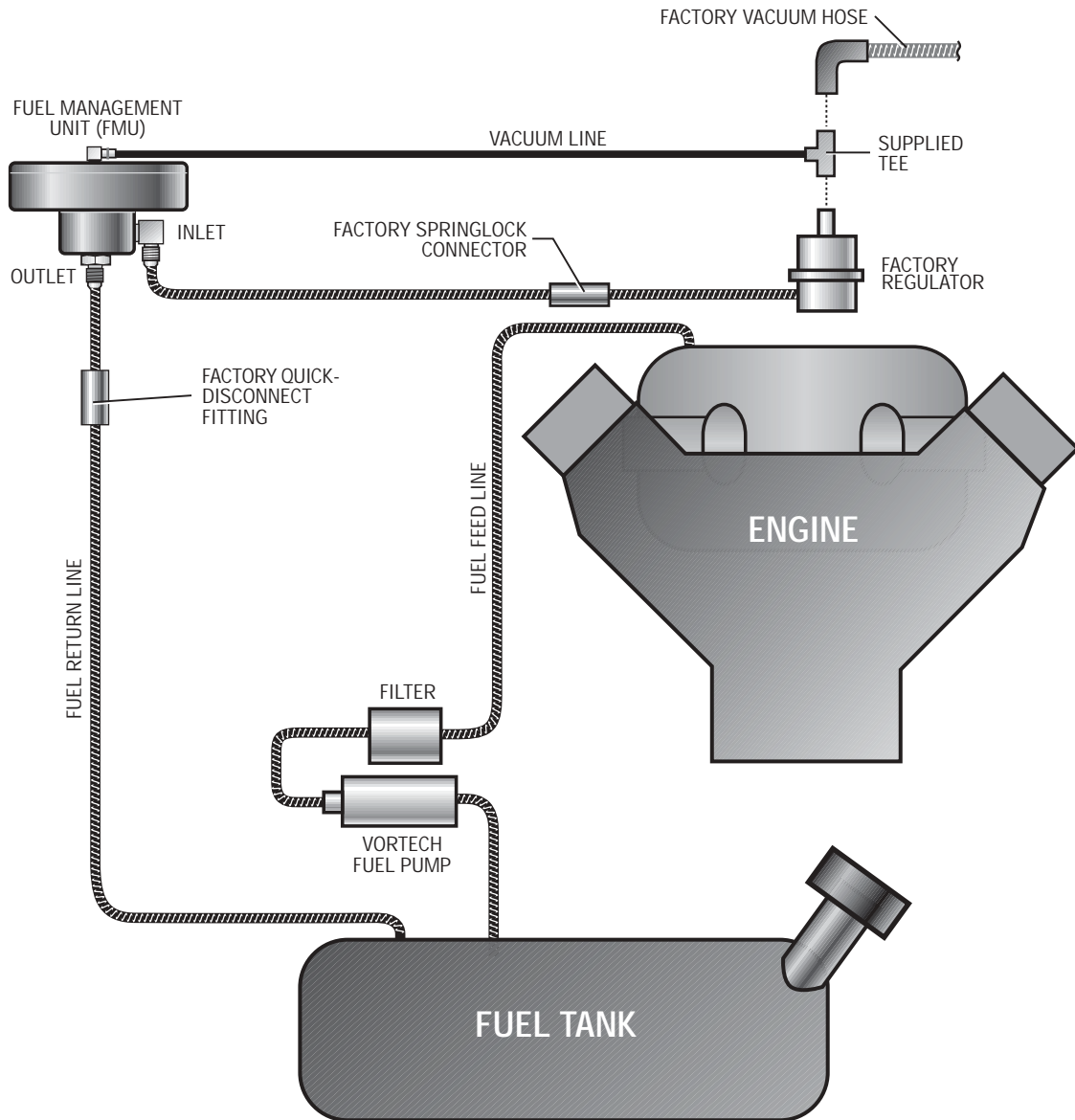


Fig. 4-b

5. FUEL PUMP INSTALLATION (1994-1998 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. Refer to *Figs. 5-a and 5-b*.
- 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.

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 underbody.

- 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-a

5. FUEL PUMP INSTALLATION (1994-1998 Models only), cont'd.

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.

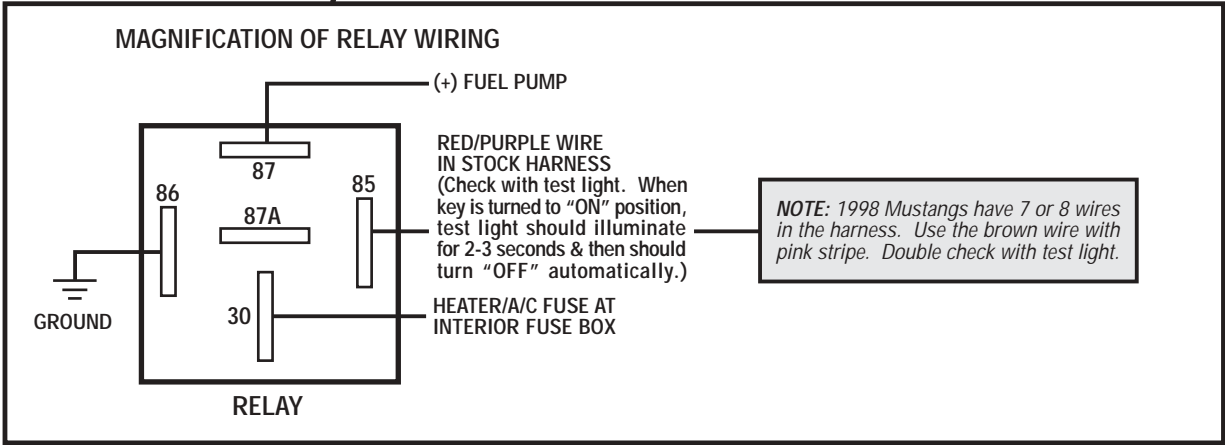
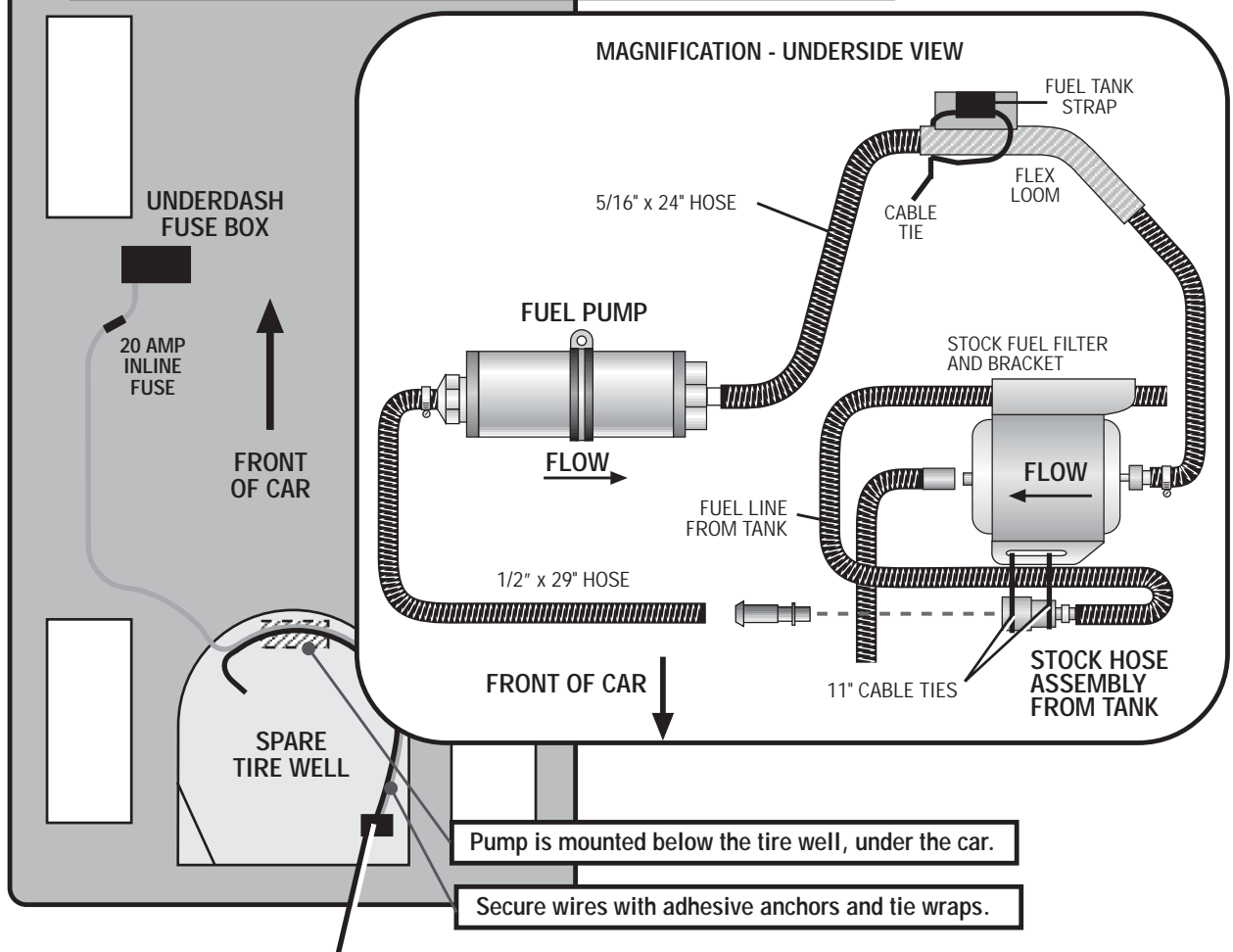


Fig. 5-b

6. MAIN MOUNTING BRACKET/SUPERCHARGER PLATE ASSEMBLY

- A. Using a grinder, remove the casting boss on the factory water pump. (See *Figs. 6-a, 6-b.*)
- B. Using the supplied 12mm nut, washer and factory tensioner screw, secure the factory belt tensioner to the Vortech mounting bracket.
- C. Mount the factory A/C compressor to the Vortech mounting bracket (without the A/C line) using the factory alignment dowels and hardware.
- D. Temporarily remove the two passenger side coil screws from the coil.
- E. Attach the Vortech mounting bracket assembly to the engine using the supplied 10mm x 1.5 socket head screws and single 8mm x 1.25 hex head screw using a washer with each fastener. (See *Fig. 6-c.*)
- F. Attach the Vortech mounting plate to the bracket using the supplied 3/8" - 16 x 3/4" screws and AN washers.
- G. The coil capacitor must be relocated to the front passenger side coil bolt for supercharger compressor clearance (see *Fig.6-c*). The two previously removed coil screws should be reinstalled now.

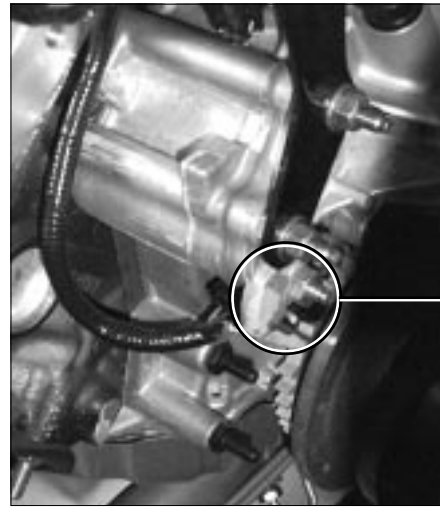
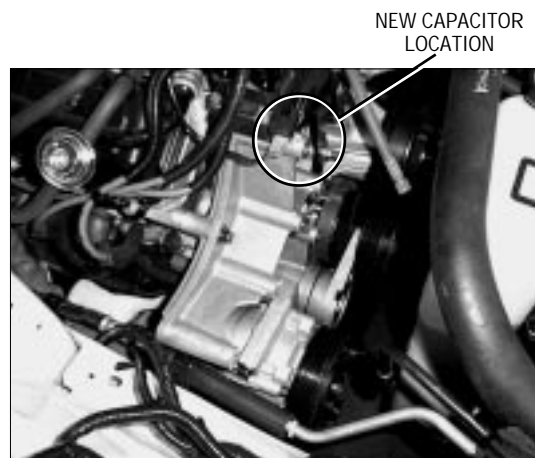


Fig. 6-a



Fig. 6-b



VORTECH MOUNTING
BRACKET INSTALLED

Fig. 6-c

7. A/C LINE MODIFICATIONS

NOTE: Modified air conditioning (A/C) lines may be purchased from Vortech or the installer may perform the modifications by following the steps below.

Modify the A/C suction lines as shown. Note that the 1994-95 models require slightly different modifications than the 1996-98 models.

- A.** Cut off the suction line flush with the junction block (See Fig 7-a). Enlarge the exposed junction block hole by using a $37/64$ " drill (preferably mounted in a milling machine or drill press to ensure that the hole is round and properly sized). Thread the hole with a $3/8$ " NPT tap. Properly clean all chips and lube out of the hole. It is very important that no debris be allowed to enter the A/C compressor.
- B.** Following the graphic, thread the $3/8$ " NPT x 90° fitting into the A/C junction block. Tighten the fitting so that it will point in the proper direction when finished.
- C.** Take the cut-off section of A/C line (separated from the junction block in step 1) and remove the remaining muffler and tube starting where the ferrule meets with the rubber portion of the line (see Figs. 7-b, 7-c, 7-d). Discard muffler/steel tube portion. Clean out the remaining rubber hose/spring lock connector line. Slightly bend the remaining muffler tube following the full scale template on the next page.
- D.** Assemble the open end of the cut-off rubber hose assembly onto the 90° junction block fitting. 1994-95 models require a union and an extra length of rubber A/C hose (supplied). Connect these pieces as shown. Temporarily install the assembled A/C line onto the vehicle. Allow the hoses to rotate so that proper alignment is achieved. Mark the hose rotation and remove the line assembly from the vehicle.
- E.** Secure hose junction(s) with the supplied #10 hose clamps and permanently install the complete A/C line onto the vehicle. Make sure that both O-rings on the A/C line junction block are properly located and that both of the springlock connectors snap properly into place.
- F.** Extend the wires for the A/C compressor and A/C line pressure sensor switch with the supplied wire extensions and heat shrink sleeves.

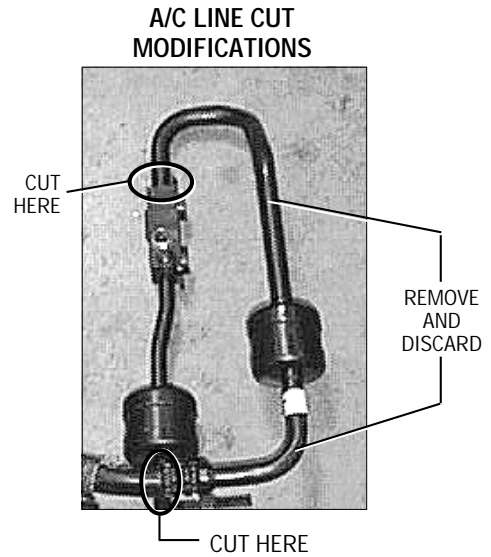


Fig. 7-a

7. A/C LINE MODIFICATIONS, cont'd.

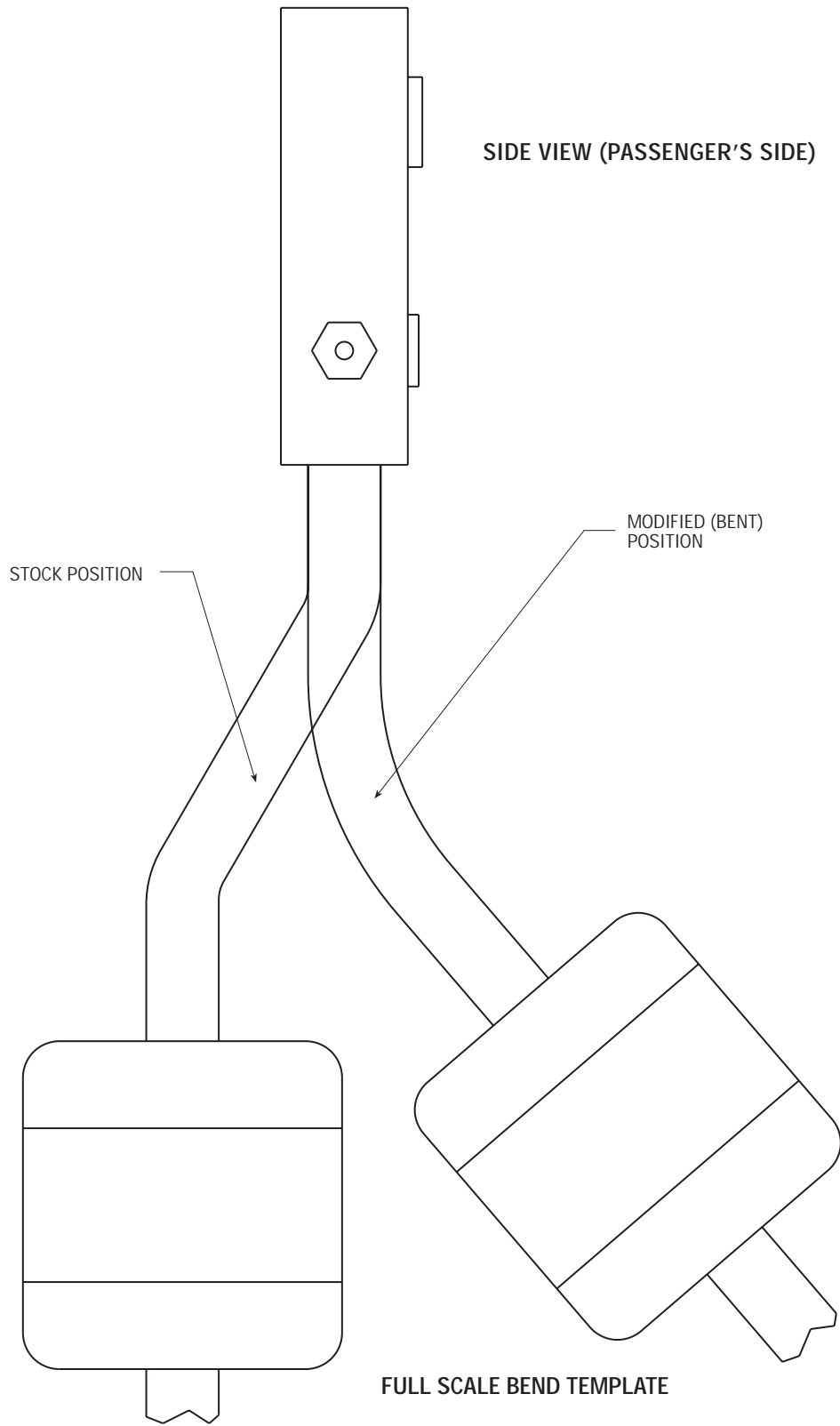


Fig. 7-b

7. A/C LINE MODIFICATIONS, cont'd.

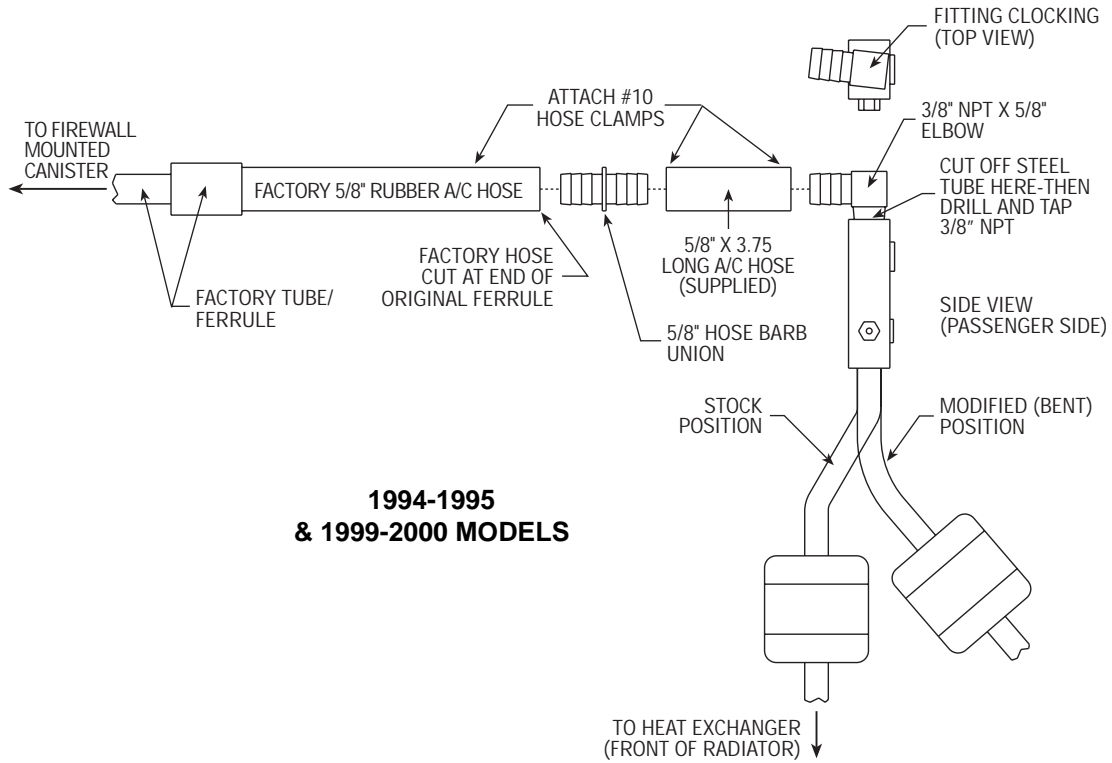


Fig. 7-c

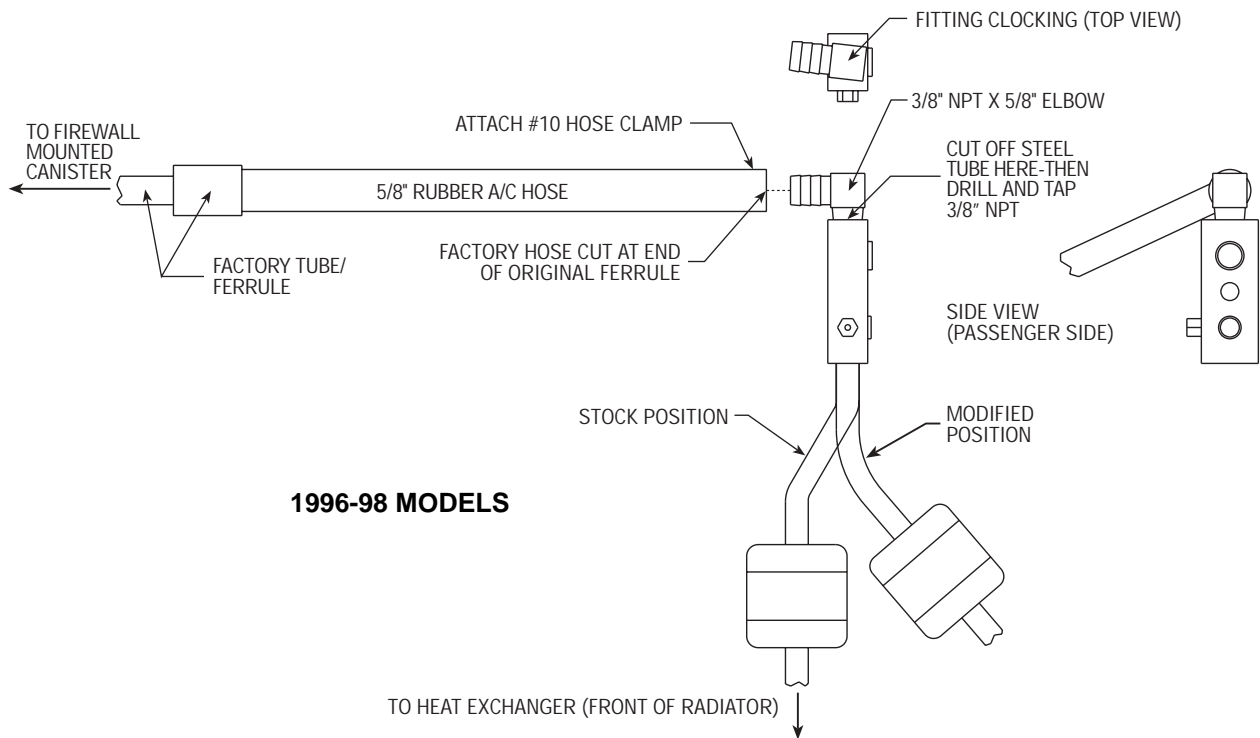


Fig. 7-d

8. FUEL INJECTOR REPLACEMENT, (1999-2000 models only)

- A. Remove the plastic clips holding the ignition wires to the upper manifold. Disconnect the throttle cable and cruise control cable. Remove the 12 screws securing the upper manifold. Disconnect all hose/line and electrical connections and noting their routing. Remove the coil pack, throttle cable bracket and EGR solenoid bracket wiring harness. Unsnap the wiring loom from the back of the upper manifold.
- B. Lift the upper manifold carefully off of the lower manifold. Cover the lower manifold with a clean cloth or rag to help prevent debris from falling into the engine.
- C. Disconnect the wiring harness from each injector and clips securing the injectors to the fuel rail.
- D. Remove the four fuel rail screws (two per side). Lift the fuel rails up and remove the injectors.
- E. Lube the O-rings on the new injectors and install into the fuel rails first, then install the fuel rail assembly into the manifold. Reinstall the retainer clips onto the injectors and fuel rail.

NOTE: New injectors have two grooves. Use the upper groove which is closest to the O-ring.

- F. Reinstall the four fuel rail retainer screws. Install the supplied jumpers onto the new injectors and connect the wiring harness to each one.
- G. Reinstall the previously removed components in reverse order.

9. EGR TUBE MODIFICATION (1999-2000 VEHICLES EQUIPPED WITH AN EGR TUBE)

- A. The EGR tube must be modified to allow proper clearance for the air inlet ducting. Using a tubing cutter, cut the EGR tube just before the 90° bend downward and just after the 90° bend that heads to the exhaust manifold. Use the supplied flexible tube to gauge the proper amount of tubing to be removed, cut and discard section. (See *Fig. 9-a.*)
- B. Remove any burrs remaining on the EGR tube. Install the two 1/2" NPT x 5/8 tubing connectors on to each end of the flexible tube and tighten. (See *Fig. 9-b.*)
- C. Slide one end of the flexible tube assembly over each end of the EGR tube and tighten the compression fittings. (See *Fig. 9-c.*)

9. EGR TUBE MODIFICATION (1999-2000 VEHICLES EQUIPPED WITH AN EGR TUBE), cont'd.

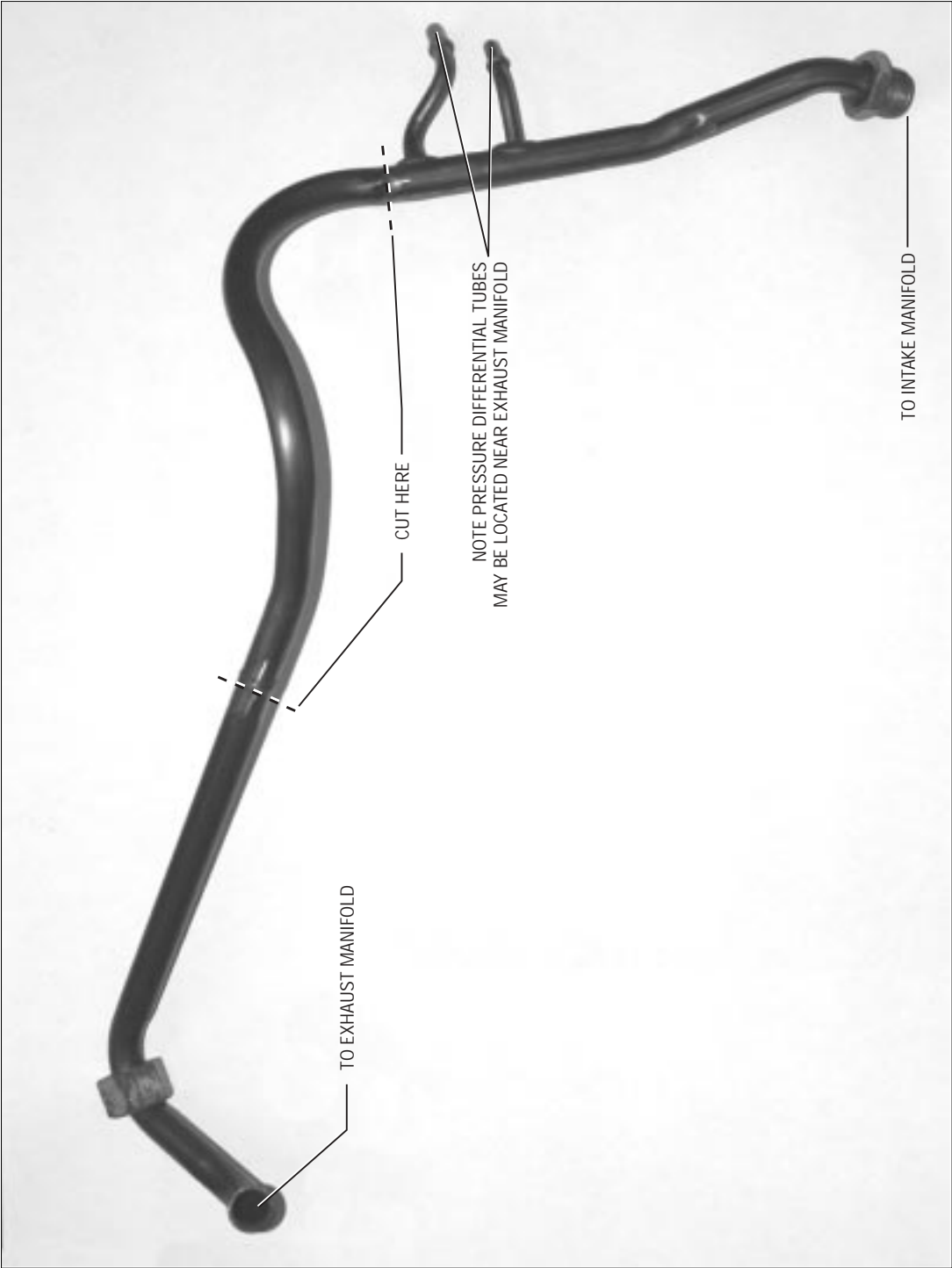


Fig. 9-a

9. EGR TUBE MODIFICATION (1999-2000 VEHICLES EQUIPPED WITH AN EGR TUBE), cont'd.

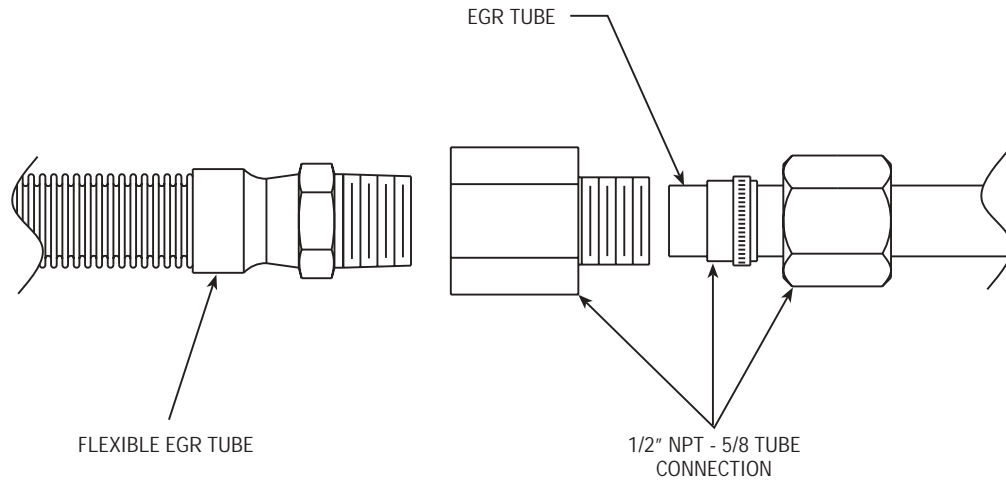


Fig. 9-b



Fig. 9-c

10. SUPERCHARGER MOUNTING/HOSE DRAIN/INLET DUCT

- A. Place the oil drain hose onto the supercharger drain fitting and secure with the supplied #8 clamp. Arrange the clamp housing so that it will not interfere with the mounting plate when installed.
- B. Lower the supercharger down onto the mounting plate while routing the drain hose through the mounting bracket and around the A/C compressor. Secure the supercharger to the mounting plate using the supplied 3/8-16 x 1" screws and AN washers.
- C. Connect the lower end of the drain hose to the fitting in the drain pan. Hose routing must be downhill with smooth bends and must not have kinks, sharp bends or uphill sections. Trim hose length if necessary. Secure drain hose to the oil pan fitting with the supplied #8 clamp.
- D. Attach the 1/8 NPT x 45° brass fitting to the supercharger oil feed fitting. Use a 1/2" wrench to hold the feed fitting while tightening the 45° fitting. Attach the previously installed oil feed hose to the supercharger.
- E. Attach the supplied idler pulley to the supercharger using the supplied spacer, dust shield and M12 x 50mm screw (place the spacer in between the supercharger and the idler pulley). (See Fig. 10-c for idler location.)

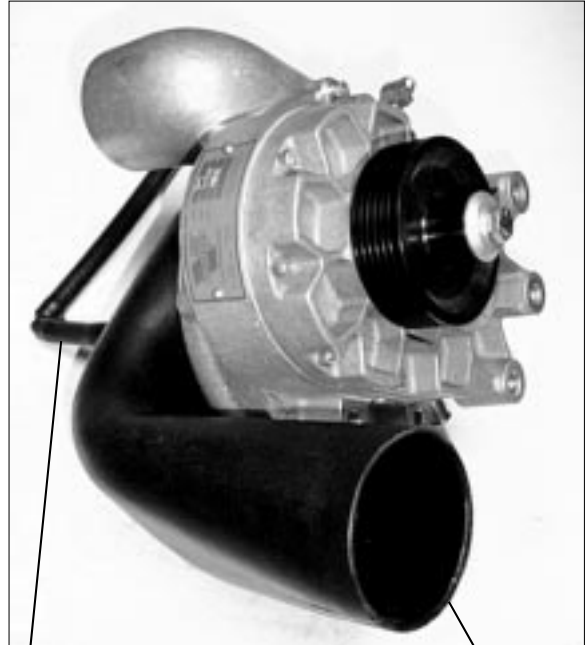


Fig. 10-a

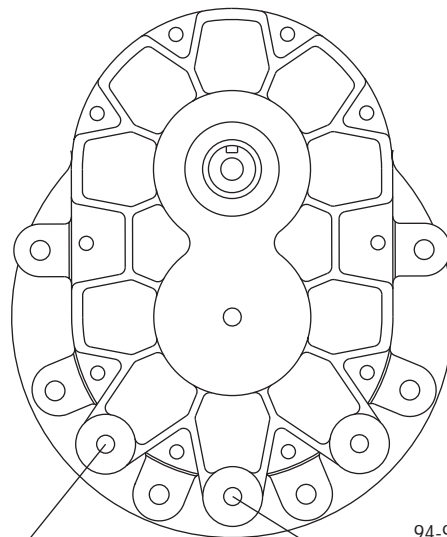
NOTE: Use only clean engine oil on the pipe threads. Teflon tape or pipe sealant is not recommended as it might loosen and cause blockage of the small oil feed orifice resulting in possible supercharger failure.

- F. Install the drive belt following Fig. 10-d, belt routing, on the next page.



VORTECH IDLER PULLEY
(1994-1998 mounting location shown)

Fig. 10-b



99-01 MODELS - IDLER
MOUNTING LOCATION

94-98 MODELS - IDLER
MOUNTING LOCATION

Fig. 10-c

10. SUPERCHARGER MOUNTING/HOSE DRAIN/INLET DUCT, cont'd.

BELT ROUTING

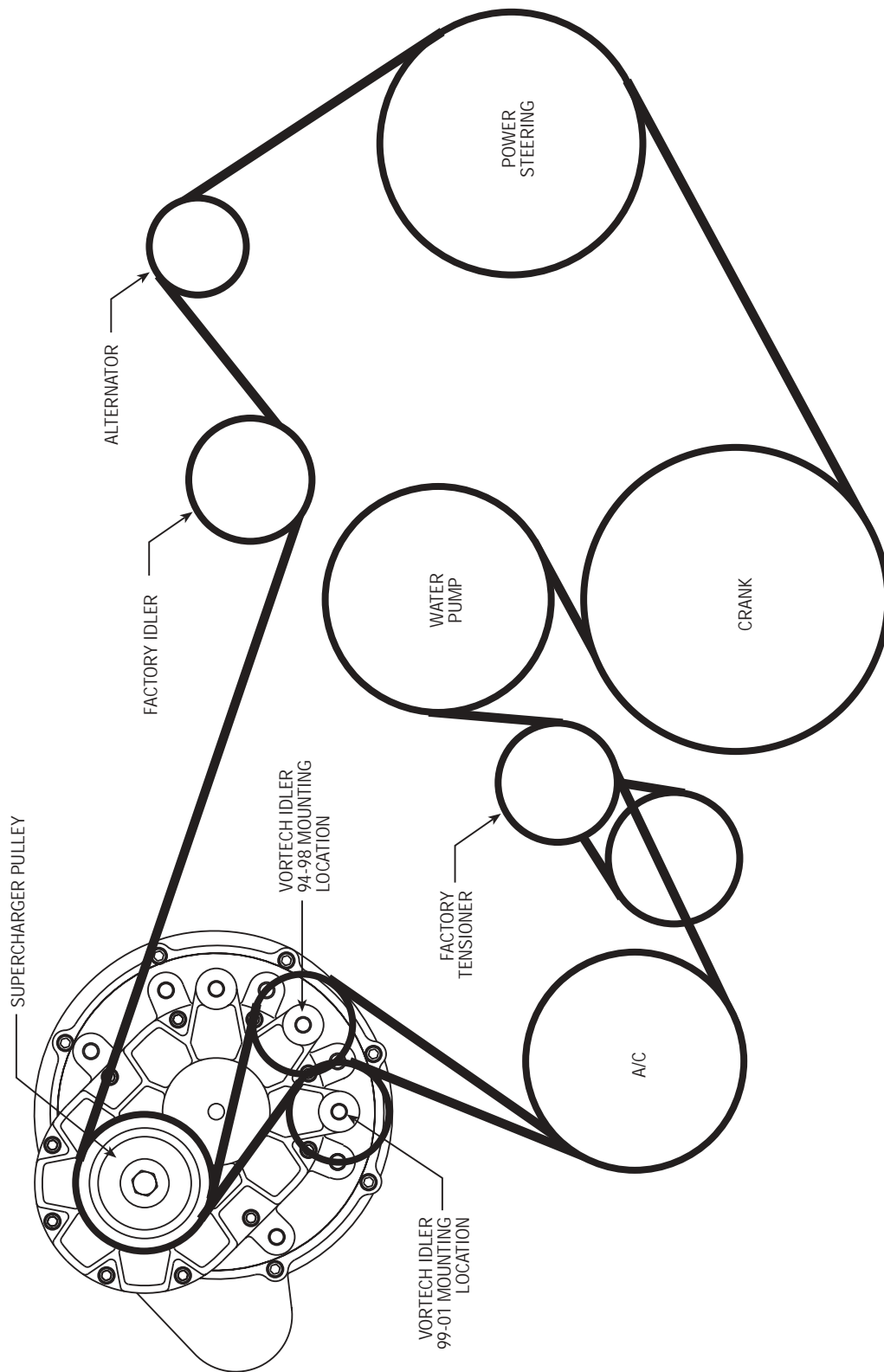


Fig. 10-d

11. AIR INLET

NOTE: 1999-2000 models. Install the MAF voltage clamp using the supplied instructions.

- A. Using the supplied 1/4-20 hardware, mount the MAF meter to the Vortech MAF bracket and secure. (See Fig. 11-a for orientation.) Remove the factory MAF screen before attaching the meter to the new bracket.
- B. Slide the supplied orange sleeve onto the MAF outlet to function as a spacer for the 3-1/2" blue sleeve.
- C. 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.
- D. **AIR INTAKE TEMPERATURE SENSOR:**
 - 1994-95 Models: Thread the temperature sensor into the Vortech MAF bracket.
 - 1996-1998 Models: Plug the Vortech MAF sensor threads with the supplied 3/8 NPT plug. Drill a 9/16" hole into the side of the plastic air inlet elbow (see Fig. 11-a). Insert the factory temperature sensor and supplied grommet into the 9/16" hole. Lubricate for easier fit.
 - 1999-2000 Models: Plug the Vortech MAF sensor threads with the supplied 3/8"NPT plug.
- E. Working from beneath the vehicle, remove the two factory nuts and washers from the right side lower fender valence. Mount the MAF/bracket assembly onto the existing studs using the same washers and nuts originally removed. (See Fig. 11-a.)
- F. 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 right side inner fender toward the supercharger. Make sure the 3-1/2" flex hose does not contact or rub on the edge of the inner fender opening. Eventual hose failure will result if hose is not properly routed. (See Fig. 11-b.)
- G. Route the factory temperature sensor and MAF sensor connectors out through the inner fender opening. Reattach the connectors to the relocated sensors.
- H. 1996-1998 Models: Attach the supplied piece of rubber 3/8" hose to the end of the factory valve cover breather tube (plastic). Into the end of the rubber breather hose, insert the factory 3/8" x 90° plastic breather fitting to allow connection of the tube assembly to the supercharger air inlet duct. (See Fig. 11-c.)
- I. 1996-1998 Models: Using a short piece of 3/8" rubber hose, join the plastic 90° elbow to the 3/8" brass barb on the supercharger air inlet duct.
- J. 1999-2000 Models: Attach the supplied piece of 3/8" rubber hose to the factory valve cover breather, located on the passenger side valve cover. Connect the other end of the previously installed hose to the 3/8" brass barb on the supercharger air inlet duct.

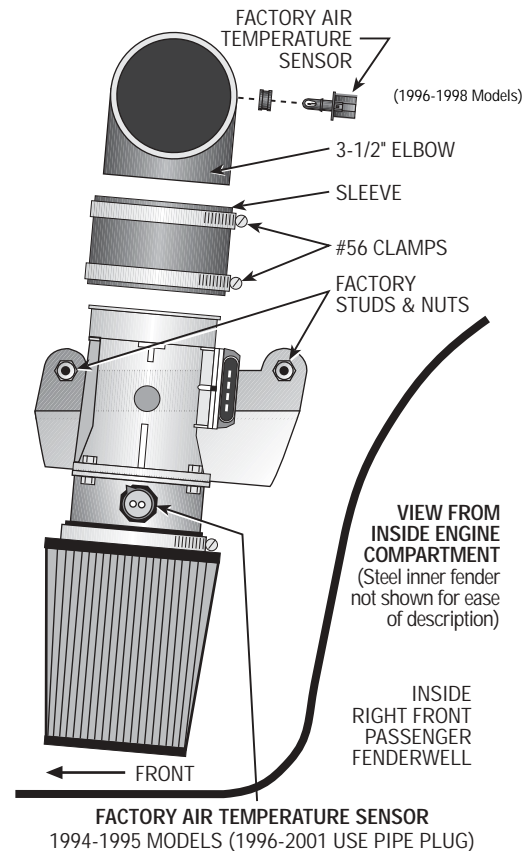


Fig. 11-a



Fig. 11-b

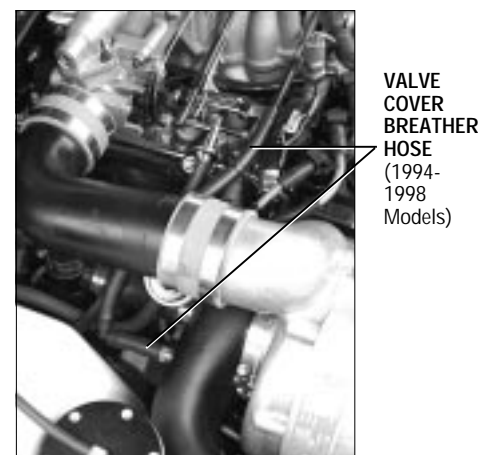


Fig. 11-c

12. AIR DISCHARGE

A. Attach the discharge duct between the supercharger and the throttle body using the supplied 2.75" sleeves and #44 hose clamps.

B. *1994-1998 Models only*

1. Following Fig. 12-a, connect the 1" x 5" and 1" x 2.75" hoses to the supplied supercharger bypass valve and secure with #16 hose clamps. Attach the bypass valve/hose assembly to the bung located on the discharge duct and to the 1" barb located on the plastic molded inlet elbow (make sure the bypass valve nipple is pointing down when installed). Secure with #16 hose clamps.

2. Cut the 5/32" FMU vacuum hose near the shock tower and insert one of the supplied brass TEES into the hose to allow a branch for the air bypass valve connection. Run the supplied piece of 5/32" vacuum hose from this TEE to the nipple located on the bottom of the supercharger bypass valve. (See Fig. 12-a.)

C. *1999-2000 Models only*

1. Following Fig. 12-b, connect the 1" x 8.5" and 1" x 90° hoses to the supplied supercharger bypass valve and secure with #16 hose

clamps. Attach the bypass valve/hose assembly to the bung located on the discharge duct and to the 1" barb located on the plastic molded inlet elbow (make sure that the bypass valve nipple is pointing down when installed). Secure with #16 hose clamps.

2. Insert the supplied brass TEE into the vacuum hose connecting the top of the manifold, near the throttle body. Route the supplied piece of 5/32" vacuum hose from the previously mentioned TEE to the nipple located on the bottom of the supercharger bypass valve.

3. Remove the factory PCV valve from the driver's side valve cover and replace with the one provided.

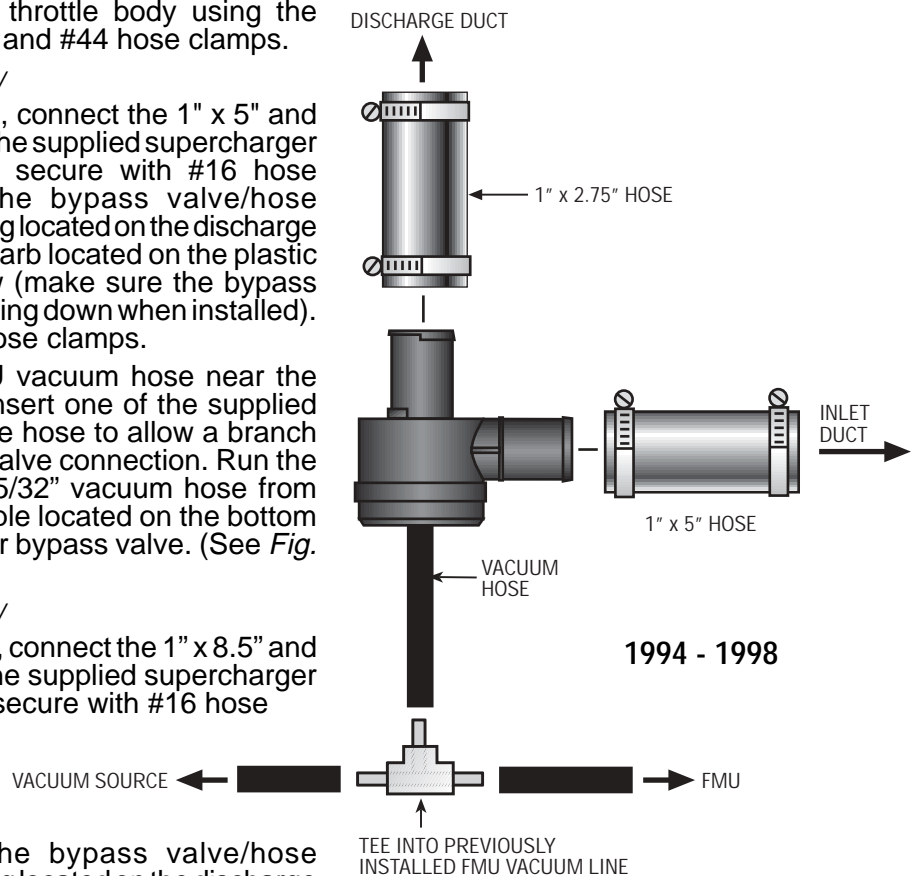


Fig. 12-a

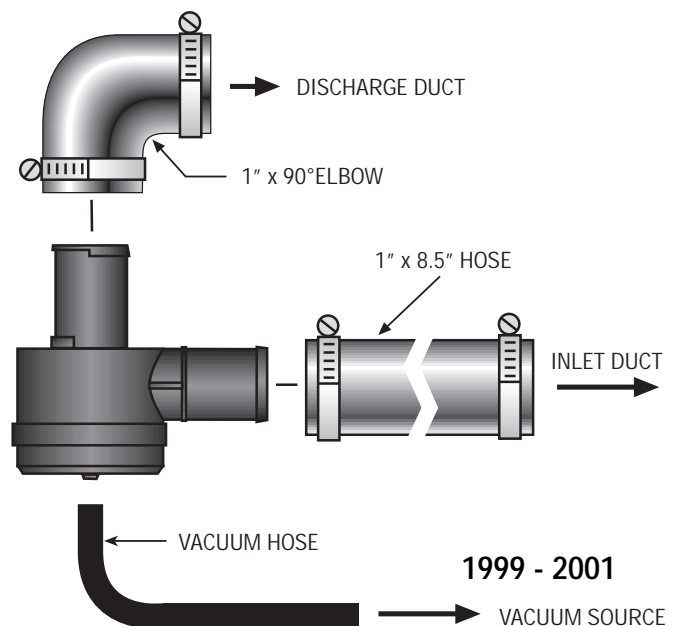


Fig. 12-b

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

13. FINAL CHECK

- A. Reconnect the battery.
- B. If your vehicle has gone over 30,000 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 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 WARRANTY REGISTRATION FORM** within thirty (30) days of purchasing your supercharger system to qualify for the 3 year limited warranty.

NOTE: Do not attempt to operate the air conditioning until a qualified air conditioning technician has performed the necessary steps to purge and recharge the air conditioning system.



Fig. 12-a



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