



Owner's Installation Guide for the
Paxton Automotive
Novi 2000 Supercharger
for the
2003-2005 Dodge Viper

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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 Paxton Automotive for installers in your area.

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Dodge Viper

IMPORTANT NOTES

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When driving the vehicle on non-public roads (off-road applications such as racing/high rpm) it is recommended that the spark plugs be gapped down to .032".

This supercharger kit is designed to work on stock vehicles. Vehicles with modifications may not be compatible with this kit as delivered and should be tested with a wide band oxygen sensor and fuel pressure gauge to determine if the air/fuel ratio is safe. Detonation will quickly damage an engine.

Dodge Viper

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

Paxton 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 Paxton Automotive. **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. Paxton Automotive is not responsible for engine damage.

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

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

1. Use only premium grade fuel 91 octane or higher (R+M/2).
2. The engine must have stock compression ratio.
3. If the engine has been modified in any way, check with Paxton prior to using this product.
4. Always listen for any sign of detonation (pinging) and discontinue hard use (no boost) until problem is resolved.
5. Perform an oil and filter change upon completion of this installation and prior to test driving your vehicle. Thereafter, always use a high grade SF rated engine oil or a high quality synthetic, and change the oil and filter every 3,000 miles or less. **Never attempt to extend the oil change interval beyond 3,000 miles, regardless of oil manufacturer's claims as potential damage to the supercharger may result.**
6. **Before beginning installation, replace all spark plugs** (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 at least every 15,000 miles and spark plug wires at least every 50,000 miles.

RECOMMENDED TOOLS FOR INSTALLATION:

1. Factory Repair Manual
 2. 3/8" Socket and Drive Set: SAE & Metric
 3. 1/2" Socket and Drive Set: SAE & Metric
 4. 3/8" NPT Tap and Handle
 5. Adjustable Wrench
 6. Combination Wrench: SAE and Metric
 7. Center Punch
 8. Springlock 3/8" and 5/16" Fuel Fitting Disconnect Tool
 9. 10 Quarts SH/CF Rated Quality Engine Oil
 10. Oil Filter and Wrench
 11. Flat #2 Screwdriver
 12. Phillips #2 Screwdriver
 13. Heavy Grease
 14. Silicone Sealer
 15. Drill Motor / Pneumatic Right Angle
 16. 1/4" Drill Bits
 17. Stepless Clamp Pliers
 18. 3/16" Allen Wrench
 19. Wire Strippers and Crimpers
 20. Utility Knife
 21. Ø1-1/8" Hole Saw
 22. Pliers
 23. Threadlocker (Blue)
 24. Thread Sealant
 25. Fuel Pressure Gauge
- If your vehicle has in excess of 10,000 miles since its last spark plug change, then you will also need:**
26. Spark Plug Socket
 27. NEW Spark Plugs



2003-2005 Dodge Viper

Part No. 1201840

PARTS LIST

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

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
1011840	VIPER SUPERCHARGER ASSY	1	4PCW112-010	AIR INTAKE ASSY. '03 VIPER	1
2A038-495	BELT K080495	1	4PCW012-010	INLET DUCT, '03 VIPER, SC	1
4PCW038-375	S/C PLY, 8-GRV 3.75" MOD	1	4PCW012-020	BRKT, AIR FILTER RETAINER	1
4PCW118-011	CRANK PULLEY ASSY, VIPER	1	7A250-104	1/4-20 x 1" BHCS SS	4
4PCCW016-011	PULLEY, ACC, '03 VIPER	1	7F250-040	1/4-20 NUT PLATE	2
4PCW018-011	PULLEY, S/C CRANK, '03 VIPER	1	7P375-113	PCV VALVE, VIPER, 3/8-1/2" HOSE 90	1
4PCV110-010	FIXTURE w/GUIDE, DWL PIN INST. V	1	7P500-001	1/2" HOSE UNION	2
7A312-100	5/16-18 x 1" HDCS GR5 P	12	7P500-003	1/2"-3/8" REDUCER BARB UNION	1
7K312-001	5/16"AN WASHER	12	7PS400-225	BUMP SLEEVE, BLACK, 4D x 2.25"	1
7T100-120	DRILL BIT, #31, Ø.120" HSS	1	7R002-064	#64 GOLDSEAL HOSE CLAMP	2
7T110-125	REAMER, Ø.1247" HSS	1	7U030-056	3/8" PCV HOSE	0.167'
7U250-023	DOWEL PIN, 1/8" x 1.25"	2	7U037-030	-8 USCG FUEL HOSE, PUSH-ON	2'
4PCW111-033	MTG PLATE ASSY, VIPER	1	7U100-065	GROMMET, 5"ID, .187" GRV	1
2A017-497	SPACER, 4.975"L, '03 VIPER, MTG BRKT	1	8H040-210	AIR FILTER, 7.5" x 23.75" PANEL, '03 VIPER	1
2A017-103-110	SPACER, COG TENSIONER IDLER 35	4	4809644	VIPER MANUAL, 2003-2004	1
2A017-462	SPACER, IDLER, SMOOTH 6-RIB	1	5A001-076	TIMING CONTROL BOX, VIPER	1
2A017-875-05	SPACER, .875"ID, .404"ID x 3.489" LONG	1	5A001-070	TIMING CONTROL BOX, VIPER	1
4PCW010-033	PLATE, MTG PRIMARY	1	5W001-017	3/8" RING TERMINAL, 12GA	1
4PCW010-044	PLATE, S/C MOUNTING	1	7P156-119	5/32" UNION (Ø.156"OD)	1
4PCW016-021	PULLEY, ALTERNATOR, '03 VIPER	1	7U375-001	VELCRO-HOOK, 1" BLACK	0.22YD
4PCW016-031	IDLER PULLEY, 8-RIB GROOVED, MO	1	7U375-002	VELCRO-LATCH, 1" BLACK	0.22YD
4PCW017-011	SPACER, BLOCK UPPER SRT10	1	4PCW101-003	FUEL PUMP ASSY. VIPER	1
4PCW017-168	SPACER, FACTORY IDLER SRT10	1	SW001-005	3/8" PLASTIC WIRE LOOM	6'
7A312-875	5/16-18 x 8.75" STUD GR8 ZNC	1	5W001-011	16-14GA RING TERM. .26" HOLE	2
7A375-126	3/8-16 x 1.25" HXHD GR8 PLT	7	5W014-030	14GA STRD WIRE, BLACK	1.5'
7A375-224	3/8-16 x 2.25" GR5 HX	1	7E010-075	#12 x 3/4" SHT METAL SCRWB, HEX	4
7A375-276	3/8-16 x 2-3/4" HXHD ZINC	1	7P375-072	3/8" FEMALE FUEL FTG. STEEL	1
7A375-300	3/8-16 x 3" HXCS G5P	1	7P375-006	3/8" GM FUEL TO 5/16" BARB FTG.	1
7A375-425	3/8-16 x 4-1/4"	1	7P312-017	5/16" HOSE BARB TO PBURG OUT	2
7A375-562	3/8-16 x 5-5/8" ALL THREAD	1	7P312-082	5/16" TEE HOSE BARB	4
7A375-950	3/8-16 x 9.5" ALL THREAD	1	7R004-001	STEPLESS CLAMP, 15.7-70	22
7F312-018	5/16-18 NUT USS PLTD	1	7U031-018	5/16" FUEL HOSE, HI-PSR	8
7F375-016	3/8-16 HX NUT	4	7U100-044	TIE-WRAP, 4" NYLON	10
7J312-000	5/16" FLAT WASHER, SAE	1	7U100-055	TIE-WRAP, 6" NYLON	5
7J375-044	3/8" SAE WASHER, PLTD	19	8F001-068	INLINE FUEL PUMP	2
4PCW111-052	SPRING TENS, ASSY, '03 VIPER 8-RIB	1	7U375-001	VELCRO-HOOK, 1" BLACK	0.25YD
4PCW010-100	BLOCK, TENS. RECEIVER	1	7U375-002	VELCRO-LATCH, 1" BLACK	0.25YD
4PCW010-110	BLOCK, TENS. THRUST	1	4PCV238-068	FMU ASSY, VIPER w/SPRING	1
4PCW011-052	SPRING TENSIONER, WITH IDLER BO	1	7P156-082	5/32" TEE	2
4PCW016-171	IDLER PULLEY, 8-RIB SMOOTH, MOD	1	7U030-046	5/32" VACUUM LINE	8'
7A375-275	3/8-16 x 2-3/4" HXCS G8P	2	6Z050-191	FMU WASHER, 8:1 PLATED	1
7A375-602	3/8-16 x 6 HHCS FLY THRD w/GROOVE	1	6Z070-030	FMU, 8:1 RING SPACER	1
7C008-050	#8-32 x 1/2" SOC HD BOLT	1			
7C010-067	M10-1.5 x 65 HXCS G8P FULLY THREADED	17			
7F375-016	3/8-16 HEX NUT	1			
7J010-002	10mm WASHER, PLATED	1			
4PCW130-026	OIL FEED LINE ASSY. VIPER	1			
7P125-004	1/8"NPT 90° x -4 JIC FTG	2			
7P125-005	1/8"NPT x -4 JIC FTG	1			
7P125-034	1/8"NPT x 1/8"NPT STRT T	1			
7U100-055	TIE-WRAP, 6" NYLON	2			
7U250-220	OIL FEED HOSE, 22" -4 STRT	1			
4PCW130-036	OIL DRAIN LINE ASSY. VIPER	1			
7P375-055	3/8"NPT 90° x 1/2" HOSE BARB	1			
7R001-008	#8 STNLS HOSE CLAMP	2			
7T560-001	CUTTER, 9/16" ROTABROACH	1			
7T560-002	ARBOR, ROTABROACH	1			
7U030-036	1/2" OIL DRAIN HOSE	1.5'			
7U100-066	TIE-WRAP, 11" NYLON	2			



2003-2005 Dodge Viper

Part No. 1201840

PARTS LIST

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

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
8PN301-040	POWER COOLER ASSY. ' VIPER	1			
8PN201-040	DISCHARGE ASSY. '03 VIPER	1			
8PN101-040	CAC ASSY, '03 VIPER, AIR/WATER	1			
4PCW012-030	DUCT, DISCHARGE, '03 VIPER	1			
7J006-093	6mm WASHER, PLATED	4			
7P125-025	1/8"NPT x 5/32" HOSE 90	1			
7P375-250	3/8" x 3/8" x 1/4" MALE BARB TEE	1			
7P500-034	1/2"NPT 3/4" BARB 90°	2			
7PS300-200	SLEEVE, BLACK, Ø3.00" x 2.00"L	1			
7PS375-200	SLEEVE, BLACK, Ø3.75" x 2.00"L	1			
7PS450-200	SLEEVE, BLACK, Ø4.5" x 2.0"L	1			
7R002-048	#48 GOLDSEAL HOSE CLAMP	2			
7R002-060	#60 GOLDSEAL HOSE CLAMP	2			
7R002-072	#72 GOLDSEAL HOSE CLAMP	2			
7U030-046	5/32" VACUUM LINE	8'			
7U100-065	GROMMET, 5"ID, .812"OD, .187" GRV	1			
7U133-060	3/4" x 90° HOSE, LONG	1			
8D204-010	RACE BYPASS VALVE, BLACK	1			
8H040-175	FILTER, 1-3/4"ID, MFRB	1			
8N055-050	PLASTIC CAP, SURGE TANK	1			
8PN105-040	WATER TANK MTG ASSY, VIPER	1			
8PN010-170	SUPPORT,WATER TANK, '03 VIPER	1			
7A250-051	1/4-20 x .50" HXHD ZN PLT	2			
7A250-075	1/4-20 x .75" SHCD PLTD	1			
7F250-021	1/4-20 NYLOCK NUT	1			
7J250-001	1/4" SAE WASHER, PLTD	4			
7P375-075	3/4" HOSE UNION	2			
7P500-026	1/2"NPT, 3/4" BARB, 90°	6			
7R007-001	NYLON CLAMP, 1-1/8"	12			
7U038-000	3/4" HEATER HOSE	6'			
7U038-012	HOSE, Ø3/4" 90°, 4 x 12"	3			
8N055-030	TANK, LT1 AFTERCOOLER	1			
8PN106-040	WATERCOOLER ASSY, VIPER	1			
7A250-074	1/4-20 x 3/4" HXHD PLT	6			
7F250-021	1/4-20 NYLOCK NUT ZINC PLTD	6			
7J250-001	1/4" SAE WASHER, PLTD	12			
8N006-010	WATERCOOLER	1			
8PN010-150	SUPPORT, DS VIPER, SRT10	1			
8PN010-160	SUPPORT, PS VIPER, SRT10	1			
8PN107-020	WATER PUMP ASSY, VIPER	1			
5W001-005	3/8" PLASTIC WIRE LOOM	7'			
5W001-009	16-14GA MALE SLIDE INSULATED	1			
5W001-010	16-14GA FEMALE SLIDE INSULATED	3			
5W001-011	16-14GA EYELET .25" HOLE	2			
5W001-013	14-16AWG, SOLDERLESS CONNECTOR	2			
5W001-014	FUSE HOLDER, 10GA WIRE	1			
5W001-015	FUSE, BLADE TYPE 20AMP	1			
5W001-016	RELAY, BOSCH	1			
5W001-017	3/8" RING TERMINAL 12GA	1			
5W001-040	12-10GA FEMALE SLIDE INSULATED	1			
5W014-010	14GA STRD WIRE RED, UL1015	7'			
5W014-030	14GA STRD WIRE, BLACK	2'			
5W014-030	14GA STRD WIRE, BLACK	7'			
5W016-010	WIRE, STRND, 16AWG, YELLOW	2'			
7GL10-150	10mm x 1.5" NYLOCK NUT	1			
7U100-044	TIE-WRAP, 4" NYLON	8			
8F001-402	PUMP, WATER PIERBURG	1			

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Section 1

COMPONENT REMOVAL

1. PREPARATION/REMOVAL

- A.** Disconnect the Idle Air Control (IAC) motor hose and the valve cover breather hose from the air box (air filter housing).
- B.** Remove the air box and all of the inlet ducting up to but not including the throttle body.
- C.** Remove the air temperature sensor from the air box and set aside.
- D.** Jack the front of the vehicle up and support with a jack stand under each frame rail.
- E.** Remove the front lower splash pan from underneath the vehicle (composite pan underneath the steering rack).
- F.** Remove the nut securing the alternator pulley. Remove the accessory drive belt. Remove the alternator pulley.
- G.** Remove the six 5/16" screws securing the crank pulley to the harmonic damper and remove the crank pulley (the harmonic damper need not be removed).

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Section 2

OIL FEED

2. OIL FEED

- A. Remove the oil dipstick by removing the retaining screw from the passenger side valve cover.
- B. Drain the engine oil and remove the oil filter.
- C. Remove the oil pan.
- D. Remove the oil pressure sender (1 1/8") from the passenger side of the engine in front of the engine mount.

***** IMPORTANT *****

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

- E. Install the 1/8" NPT TEE in the oil sender hole. Leave the TEE pointed down.
- F. Install the appropriate 1/8" NPT x -4 fitting into the TEE as shown in Fig. 2-a.

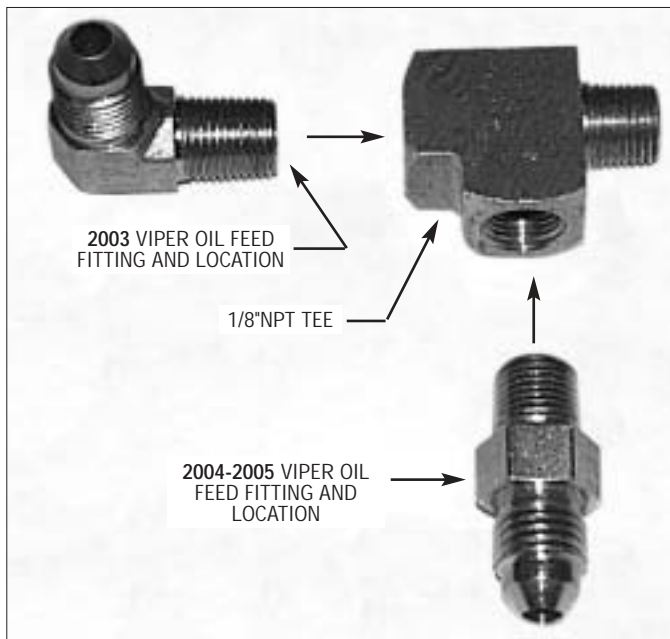


Fig. 2-a

- G. Install the oil pressure sender in the remaining hole in the TEE and re-attach electrical plug (see Fig. 2-b1 or 2-b2).



Fig. 2-b1 (2003 Viper)

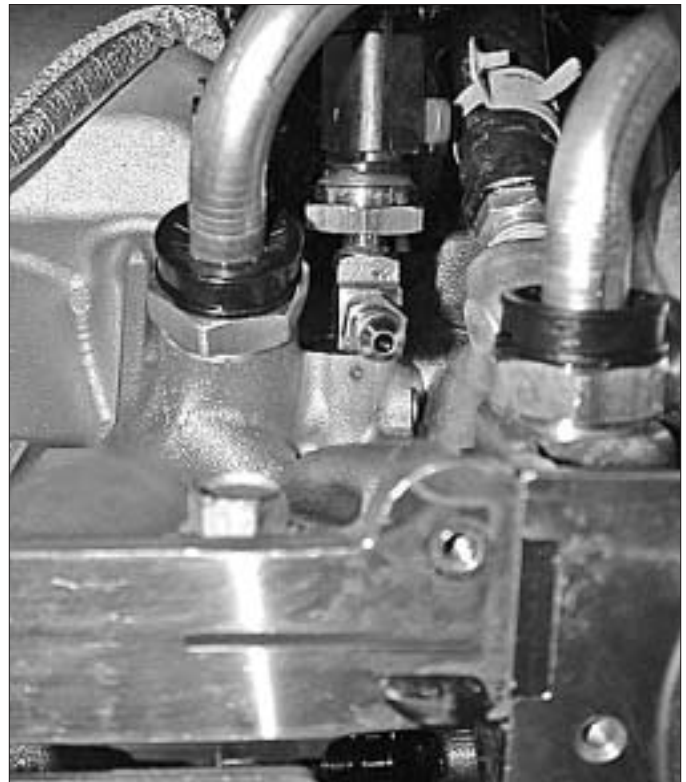


Fig. 2-b2 (2004-2005 Viper)

- H. Temporarily cover one end of the oil feed line and protect it from debris until connecting it to the supercharger.
- I. Connect the open end of the oil feed line to the -4 fitting. Use tie wraps to secure the line and protect it from kinking, abrasion, and high heat areas.

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Section 3

OIL DRAIN

3. OIL DRAIN

- A. To provide an oil drain for the supercharger, it is necessary to make a hole in the oil pan.
- B. The hole should be located per *Fig. 3-a* on the passenger side of the oil pan. Use the supplied 9/16" rota-broach to drill the hole.



Fig. 3-a

- C. Tap the hole with a 3/8" NPT tap until the oil drain fitting can be started.
- D. Thoroughly clean the threaded area and the inside of the oil pan. Apply a small amount of sealer to the new threads. Apply more sealer to the supplied 3/8" NPT x 1/2" 90° hose barb fitting and secure in hole. Make sure seal is formed all around the fitting.

*** **NOTE** ***

Clean and inspect the oil pan gasket. If it is in good condition it can be used again.

- E. Re-install the oil pan per the factory shop manual. Torque the fasteners to 95 in-lbs (11 N-m). Use a small amount of blue thread locker on the four screws in front of the fly-wheel.
- F. Install a new oil filter and refill the engine with fresh oil.

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Section 4

CRANK PULLEY INSTALLATION

4. CRANK PULLEY INSTALLATION

***** NOTE *****

Dowel pins must be installed through the damper and into the crankshaft to assure that the damper does not rotate in the crankshaft snout during engine operation.

- A. Remove the two bolts securing the power steering rack (15/16"). Make sure to note the location of any shims for reinstallation.
- B. Remove the harmonic damper retaining screw. Placing the vehicle in first gear with the emergency brake applied should keep the engine from turning over.
- C. Dowel pins must be installed through the damper and into the crankshaft to assure that the damper does not rotate on the crankshaft snout during engine operation.
- D. Install the supplied drill guide onto the damper using two of the screws that held the crankshaft pulley on. Orient the damper so that the hardened drill insert is rotated to be as high as possible.
- E. Move the steering rack forward as far as possible to provide drill clearance. Pushing the rack to the driver side may provide additional room.
- F. Using a right angle drill and the supplied #31 (.120") drill bit, drill into the damper face at least 1-1/4". (See Fig. 4-a)



Fig. 4-a

Make sure to make small cuts and cool with cutting fluid to prevent the drill from overheating and breaking. Remove drill from hole often to clean out chips.

***** NOTE *****

Remember to add 5/16" for the drill guide thickness. The drill bit must go in at least 1-9/16" from the front surface of the drill guide.

- G. Using the supplied 1/8" reamer, plunge once to the end of the drilled hole and remove. The chucking portion of the reamer shaft may be shortened with side cutters to provide drill clearance.
- H. Remove drill guide from damper. Clean chips from in and around the hole.
- I. Line up one of the supplied Ø1/8" x 1-1/4" dowel pins and lightly tap the tapered end into the reamed hole until flush.
- J. Rotate drill guide 180° from previously installed position so that it pilots on the exposed dowel pin. Rotate engine until the drill insert is at highest point and repeat steps F-I.
- K. Tap both dowel pins into the damper until they are flush with or below the face of the damper.
- L. Re-install the damper retaining bolt using threadlocker and torque to 250 ft-lbs.

- M. Install the supplied 7-rib crank pulley onto the harmonic damper using the supplied 5/16 x 1" hex head bolts, washers and thread locker. Torque the six mounting bolts in a rotating pattern to 20 Ft-lbs.
- N. From underneath the vehicle, install the supercharger 8 rib crank pulley onto the pilot on the 7 rib crank pulley. Install the supplied 5/16" x 1" hex head bolts, washers and thread locker and torque in a rotating pattern to 20 Ft-lbs. (See *Fig 4-b*.)



Fig. 4-b

- O. Reinstall the steering rack making sure that any shims are located in their original location.

Section 5

SUPERCHARGER MOUNTING BRACKET INSTALLATION

5.. SUPERCHARGER MOUNTING BRACKET INSTALLATION

- A. Disconnect the emissions line from the bottom of the throttle body and re-route it on top of the shock tower brace to provide supercharger belt clearance. (See Fig. 5-b.)
- B. Remove the factory metal idler from its location underneath the throttle body. Remove the retainer from the idler and flip the idler front to back. Install the supplied $3/8 \times 5-5/8$ " all thread into the idler mounting boss. Install the factory idler (inverted) and factory retainer onto the stud and secure with the supplied aluminum hex nut spacer (See Fig. 5-a.) Leave the all-thread protruding about $2-5/8$ " past the spacer.

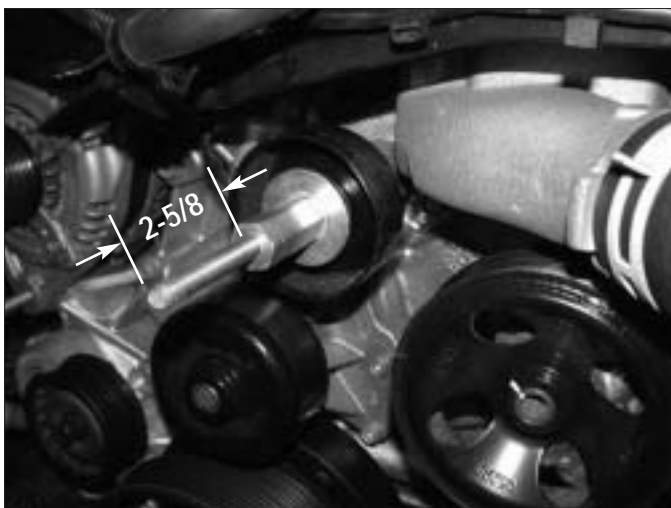


Fig. 5-a

- C. Remove the upper alternator bolt. Loosely install the upper alternator spacer using the supplied $3/8 \times 3$ " bolt and washer through the upper alternator mount.
- D. Remove the A/C compressor bolt nearest the water pump pulley. With the supplied $3-1/2$ " spacer installed on it, insert the supplied $5/16 \times 8-3/4$ " stud into the vacant hole. Thread in as far as possible by hand or until about 1" protrudes past the spacer.
- E. Loosely install the supplied alternator pulley using the factory nut.
- F. Route the factory accessory drive belt in the original manner but do not tension or install.

- G. Route the supplied 8-rib belt around the crank pulley and the upper alternator spacer block (See Fig. 5-b.)

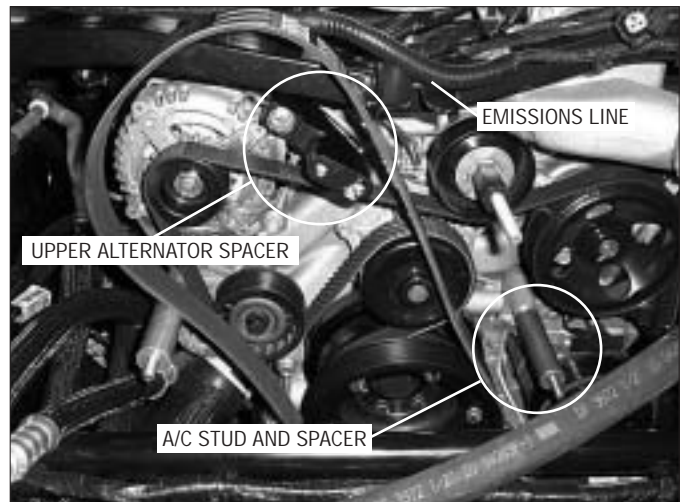


Fig. 5-b

- H. Using the supplied $4-1/4$ " bolt installed through two washers, install the supplied 8-rib idler with the fence (raised lip on one edge) nearest the primary mounting plate. (See Fig. 5-c.) Make sure that the pulley is piloted on one side of the supplied spacer and the other side of the spacer rests flat on the plate.



Fig. 5-c

- I. Install the primary mounting plate onto the previously installed studs making sure that the 8 rib belt is routed around the 8 rib idler.
- J. Install the supplied 5/16" nut and washer onto the A/C stud.
- K. Insert 3/8 x 1-1/4" bolts through the mounting plate and into the threaded holes in the upper spacer block and tighten.
- L. Tighten the alternator bolt securing the upper alternator spacer block.
- M. Remove the lower alternator bolt. Install the supplied 3/8 x 10-1/4" all thread through the lower alternator mounting location. Install a supplied nut and a washer on the end of the all thread behind the alternator. Slide the lower alternator spacer onto the all thread.
- N. Install the accessory drive belt in its original configuration by retracting the factory spring tensioner. (See *Fig. 5-d.*)



Fig. 5-d

- O. Tighten the alternator pulley nut.

Section 6

SUPERCHARGER INSTALLATION

6. SUPERCHARGER INSTALLATION

- A. Install the supplied 1/2" oil drain hose on the barb fitting on the bottom of the supercharger and secure with the supplied #8 hose clamp.

*** NOTE ***

Do not use teflon tape or paste on the fittings as a piece may break loose and clog an orifice resulting in supercharger failure.

- B. Install the supplied 90° fitting into the supercharger oil feed so that it will point downward when the supercharger is installed.
- C. Attach the supercharger mounting plate to the supercharger. Use the supplied 3/8" x 1-1/4" bolts and washers. Leave one of the mounting holes empty. (See Fig. 6-a.)
- D. Install the spring tensioner onto the supercharger mounting plate using the supplied 3/8 x 2-3/4" screw and washer. The tensioner locating pin should be in the counter-clockwise-most hole in the mounting plate as viewed in Fig. 6-a. Use the supplied spring tensioner release tool to fully retract the spring tensioner. (See Fig. 6-a.)

(Use a 3/8" x 1" bolt through the mounting plate to hold the thrust block. The receiver block seats on the protruding threads of the spring tensioner idler retaining bolt.)

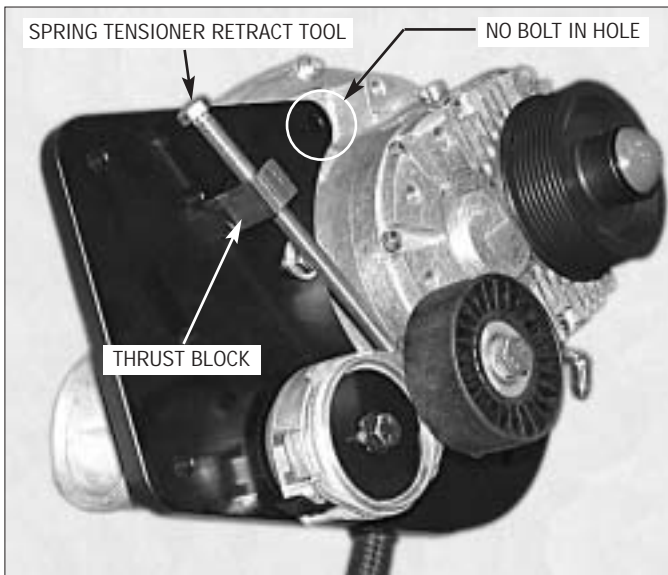


Fig. 6-a

*** NOTE ***

Bending the factory hard line that runs to the radiator fan will provide supercharger clearance. Test fit and then bend as necessary in the middle of the line (avoid stressing the ends)

- E. With 1.1" spacers at all connection points between the two plates, attach the supercharger plate assembly to the primary mounting plate using the supplied 3/8" hardware. Route the oil drain hose over the steering rack. Make sure that the back of the supercharger drive belt encircles the spring tensioner idler. (See Fig. 6-b.)

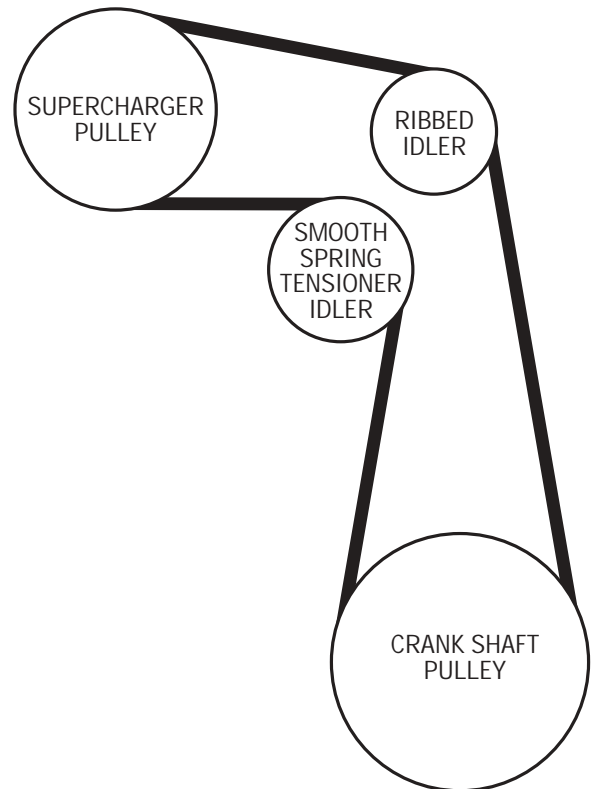


Fig. 6-b

- F. Install the 3/8 x 2-3/4" bolt through the mounting plate assembly and into the open hole in the supercharger gear case. Install the 3/8 x 2-1/4" bolt in the open hole at the bottom of the supercharger plate and thread into the primary plate. (See Fig. 6-c.)

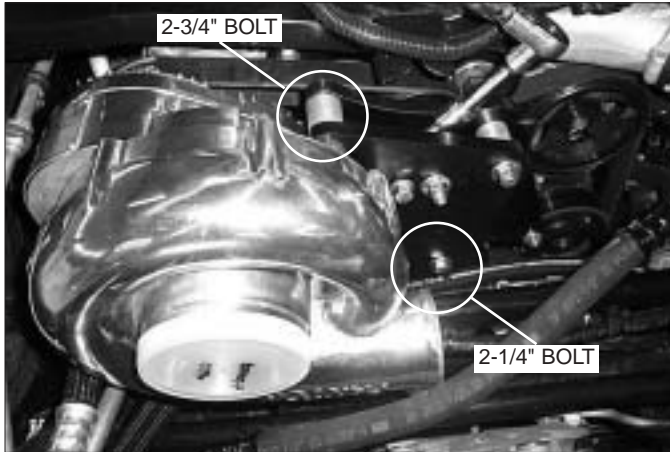


Fig. 6-c

- G. Install the 5/16" nut and washer on the A/C stud and a 3/8" nut and washer on the lower alternator stud.

*** NOTE ***

The front of the lower alternator stud is difficult to reach. Try to start and thread on front nut by hand. Final wrench tightening can be done on the rear nut which is accessible.

- H. Install the supercharger belt onto the supercharger pulley. Make sure that the 8-rib grooved idler is seated square on the spacer pilot and install a nut and washer on its retaining bolt.

*** NOTE ***

In order to provide belt clearance to the shock tower brace, the supercharger pulley may interfere with the alternator pulley. Carefully check the following:

- I. Check the supercharger pulley nose to alternator belt clearance. If necessary, lift the supercharger assembly while tightening the mounting plate fasteners. Tighten all of the mounting plate assembly fasteners. **Verify that the nose of the supercharger pulley is not touching the accessory drive belt.**
- J. Loosen and then remove the previously installed spring tensioner retract tool from the supercharger mounting plate.

- K. Route the free end of the oil feed hose to the supercharger oil feed fitting

*** NOTE ***

Make sure there are no bends, kinks or dips in the oil drain line. The hose must maintain a constant "down-hill" routing. Restriction in the drain path may cause seal leakage and/or supercharger failure

- L. Attach the free end of the oil drain hose to the previously installed oil drain fitting in the oil pan and secure with a #8 hose clamp (cut hose for best fit).
- M. Use zip-ties as necessary to secure the oil drain and oil feed lines away from moving parts.

Section 7

TIMING CONTROLLER INSTALLATION

7. TIMING CONTROLLER INSTALLATION

***** NOTE *****

The VIOLET (and green and yellow if equipped) wire is not used. Tape up to avoid confusion.

- A. Using the supplied adhesive backed Velcro, position the ignition timing control computer as shown. (See Fig. 7-a.)

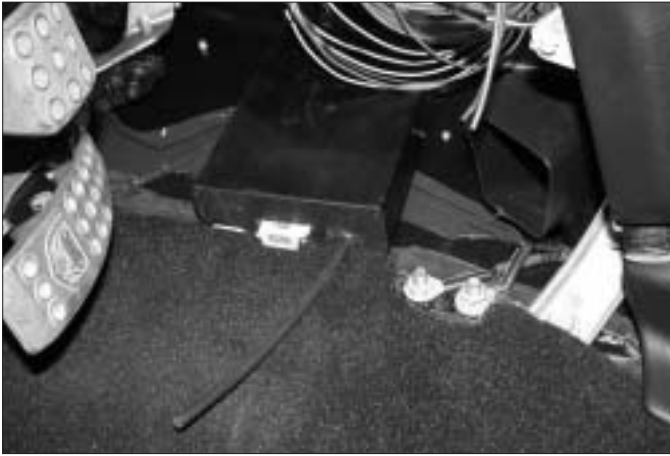


Fig. 7-a

- B. Route the wires and the supplied vacuum hose (using hose union) back from the timing control, under the dash and through the grommet located in the forward-upper driver side footwell. Secure away from moving objects such as the throttle pedal and steering shaft.
- C. The vacuum hose on the timing controller should be connected to intake manifold vacuum using the supplied TEE and hose.
- D. Remove the rearmost (black) Powertrain Control Module (PCM) connector C1.

***** NOTE *****

Soldered wire connections are more sound than crimp on connectors because they can be inspected. It is up to the installer to guarantee good connections. If there is any doubt, or the vehicle performs erratically, solder and insulate each connection.

***** NOTE *****

The following steps have some information in parenthesis. This information applies to 2003 Vipers only. Other vehicles are similar, but a factory service manual should be consulted for verification. Always verify pin location regardless of wire color!

- E. Connect the thin 20GA RED wire to battery positive switched by the ignition (Black PCM C1 connector, Pin # 2, Pink with gray stripe wire). Use the supplied T-Tap and spade connector. The yellow water pump trigger wire (to be installed in Section 8-c) should also be connected to the same power source. Use the supplied T-Tap and spade connector. (See Fig. 7-b.)

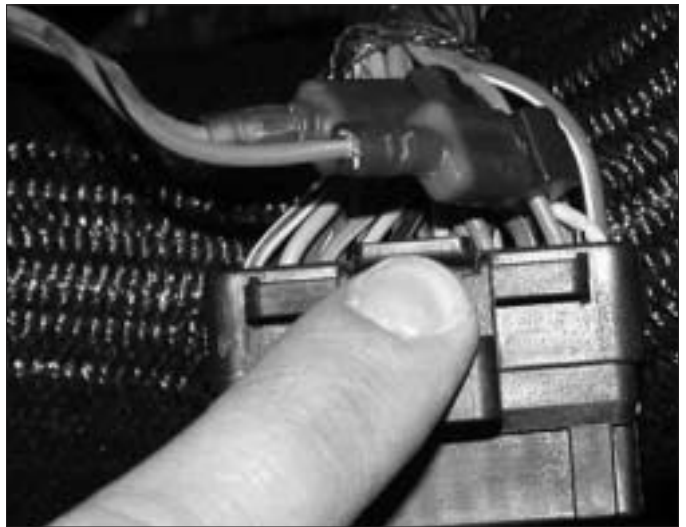


Fig. 7-b

- F. Connect the BLACK wire to signal ground at the PCM (Black PCM C1 connector, Pin # 4, Dark blue with dark green stripe wire). Use the supplied T-Tap and spade connector.
- G. Cut the CRANK sensor signal wire (Black PCM connector C1, Pin # 8, Gray with black stripe wire).
- H. Connect the GRAY wire to the wire leading to the crank sensor.
- I. Connect the GRAY/BLACK wire to the wire leading to the PCM crank sensor input.
- J. Cut the CAM sensor signal wire (Black PCM C1 connector, Pin # 18, Tan with yellow stripe wire).
- K. Connect the TAN wire to the wire leading to the cam sensor.

- L. Connect the TAN/YELLOW wire to the wire leading to the PCM cam sensor input. (See Fig. 7-c.)
- M. Connect the large 12 GAGE RED wire to the battery (+) positive terminal located at the front of the fuse box.
- N. Reinstall the PCM C1 connector.
- O. The two STRIPED RED wires will be used to power the fuel pumps in the following section.

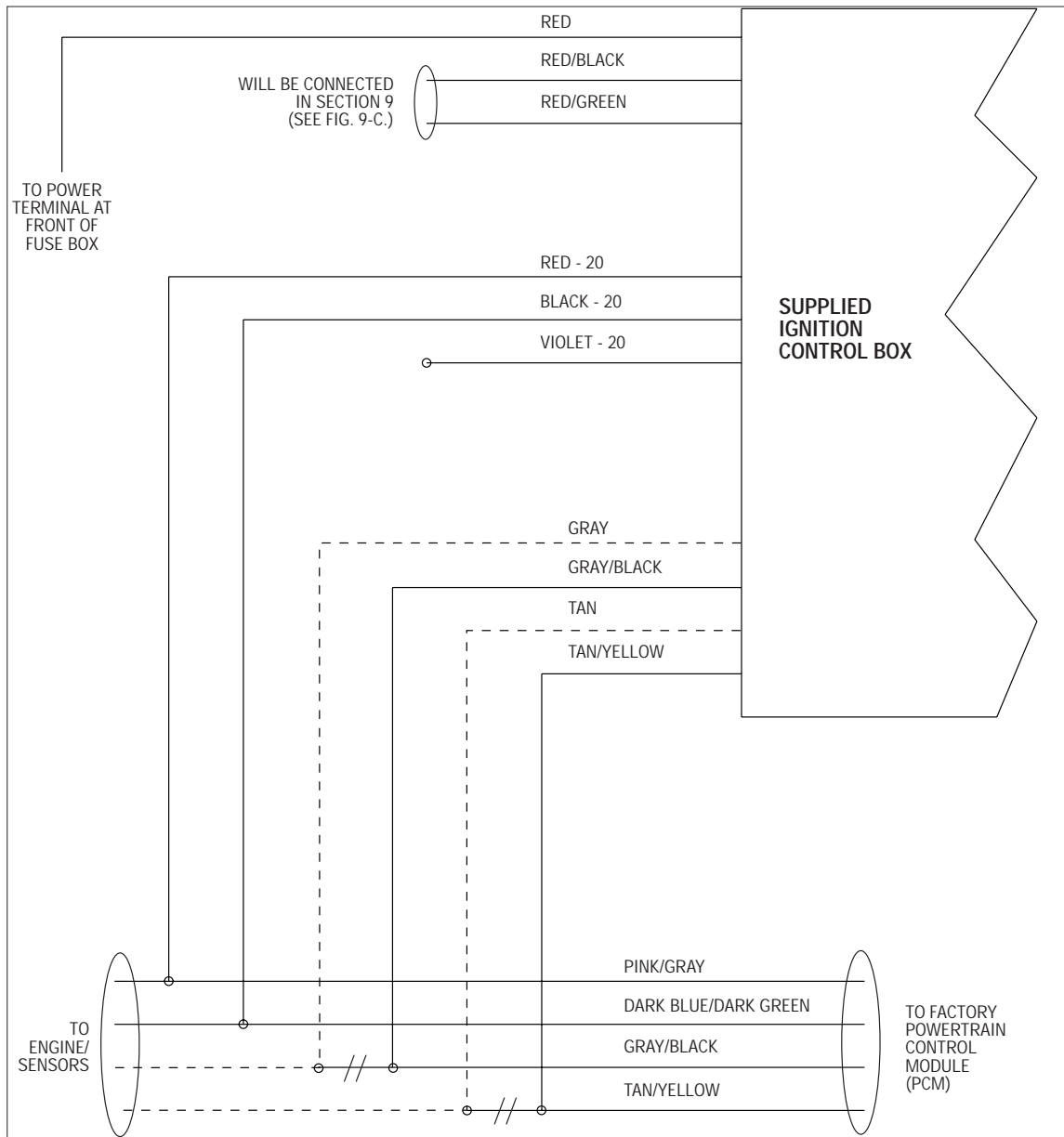


Fig. 7-c

Section 8

CHARGE AIR COOLER INSTALLATION

8. CHARGE AIR COOLER INSTALLATION

A. CHARGE AIR COOLER (CAC) CORE INSTALLATION

1. Using sealant, install 1/2" NPT to 3/4" barb 90° fittings into the cooler end tank so that they point towards the front of the vehicle.
2. Install the supplied bypass valve onto the cooler so that it points to the passenger side. If the bolts are too long and do not tighten on the bypass valve body, use the supplied additional washers under the bolt heads. Connect the supplied 5/32" hose to the fitting on the bypass valve.
3. Install the supplied air filter onto the bypass valve and tighten the clamp.
4. Install a 3" sleeve on the cooler inlet and a 3-3/4" sleeve on the outlet.
5. Install the CAC core assembly onto the supercharger discharge and the throttle body.
6. Install the supplied 4-1/2" sleeve onto the throttle body. Secure with a hose clamp.
7. Install the factory air temperature sensor into the hole in the driver's side of the discharge duct using one of the supplied grommets.
8. Install the discharge duct onto the CAC outlet by rotating the assembly forward and then connecting to the throttle body. (See Fig. 8-a)



Fig. 8-a

9. Verify that the charge air cooler and bypass valve have sufficient clearance and tighten the supplied clamps on all of the sleeve connections.

10. Install the supplied 90° hose (trimmed as necessary) onto the 3/4" barb on the passenger side of the discharge duct. Secure with the factory clamps.
11. Plug in the air temperature sensor.
12. Route the vacuum line connected to the bypass valve to the brake booster. Cut the brake booster and install the supplied TEE. Connect the vacuum line to the TEE.

B. RESERVOIR INSTALL

1. Remove the passenger's side front wheel from the vehicle.
2. Remove the inspection panel and the horn brackets (located behind the passenger's side fog light).
3. Install the supplied water tank bracket into the original horn bracket mounting location using the factory fasteners. (See Fig. 8-b.)



Fig. 8-b

4. The water tank should have 90° fittings installed in the top and bottom.
5. Route an uncut piece of straight hose from the engine compartment and connect it to the top of the water tank.
6. Install the water tank onto the bracket using the lowest, most widely spaced holes and two of the supplied 1/4" screws and washers.
7. Connect the short leg of one of the supplied 90° hoses to the lower fitting on the CAC core.

8. Using one of the supplied hose menders, connect the long leg to the hose attached to the top of the water tank (trim as necessary).
9. Horn "A"
 - a. Using the factory 90° horn bracket with the 2.75" short leg as a template, mark and drill a 5/32" pilot hole approximately 5.5" forward of the front sway-bar bracket bolt into the frame rail. (See Fig. 8-c.)



Fig. 8-c

- b. Mount the factory horn and bracket to the frame using the supplied sheet metal screw.
10. Horn "B"
 - a. Use the remaining factory horn bracket (With 1" short leg) as a template.
 - b. Mark and drill two 1/4" holes approximately .5" from each other on the inner fender. (See Fig. 8-d.)
 - c. Remove the horn from the bracket and reattach it to the inside of the factory 90° bracket.
 - d. Secure the horn and bracket to the inner fender using the supplied 1/4-20 x 3/4" hex head bolt, washers and nylock nut. (See Fig. 8-d.)



Fig. 8-d

- e. Verify that neither of the horn bodies are touching other components.
 - f. Reattach the electrical plugs to the horns and verify undistorted horn tone.
 - g. Reinstall the plastic inspection panel and the front wheel.
- C. CAC WATER PUMP WIRING AND INSTALLATION
 1. Cut a piece of the supplied hose to connect the bottom of the reservoir to the inlet of the water pump.
 2. The pump outlet should point up and toward the front of the vehicle. (See Fig. 8-e.)



Fig. 8-e

3. Drill a hole and use the supplied sheet metal screw to mount the water pump relay and the ground wire in the location shown in *Fig. 8-f1* ('03-'04 vehicles) or *Fig. 8-f2* ('05 vehicles).

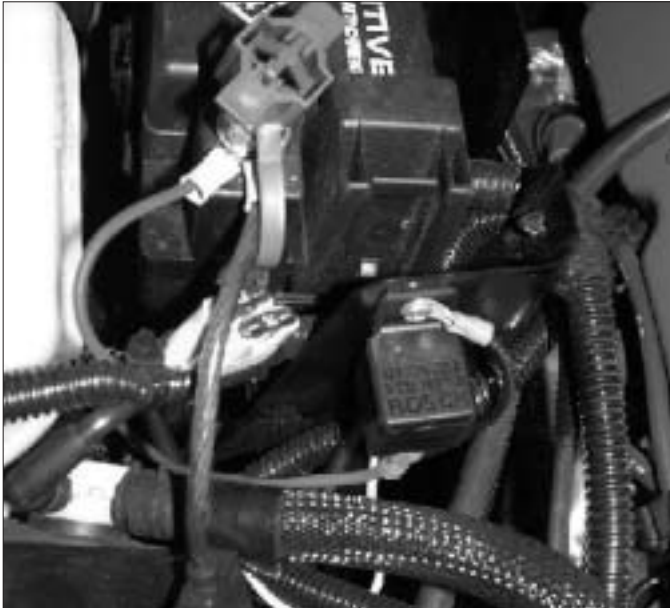


Fig. 8-f1 ('03-'04 vehicles)



Fig. 8-f2 ('05 vehicles)

4. Run the ground wire to terminal #86 on the water pump relay.
5. The supplied yellow wire will be used as the "trigger" wire and should be connected to terminal #85 using a slide connector. The other end of the wire should be connected as described in Section 7-e.

6. Connect the fuse holder using a yellow slide connector to terminal #30 on the CAC pump relay and to the fuse box power terminal on the front of the fuse box using the supplied yellow ring terminal connector.
7. Route the red wire from the water pump to relay terminal #87. Cut off the water pump plug and, using the supplied butt connector, attach the red wire to the positive wire on the water pump (green wire on pump).
8. Use the supplied ring terminal to connect the water pump ground wire (brown wire on pump) to the radiator mounting screw directly under the lower radiator hose.
9. Install the supplied plastic wire loom around the water pump power wires and secure

***** NOTE *****

Double check that all wires are connected to the proper relay lugs

D. WATER COOLER INSTALL

1. Remove the two screws securing the power steering cooler to the hood release mechanism.
2. Using sealant, insert the 90° fittings in the inlet and outlet of the water cooler and point them towards the passenger side of the vehicle.
3. Install the supplied brackets onto the water cooler as shown. (See *Fig. 8-g*.)



Fig. 8-g

4. Connect the short end of one of the supplied 90° hoses to the passenger side of the water cooler and install and tighten clamp. Connect a length of hose long enough to reach the water pump to the other fitting and tighten clamp.

5. Drill the radiator air inlet duct using a 1 1/8" hole saw so that the hose can be routed smoothly from the water cooler to the water pump outlet.
6. Install the water cooler assembly between the power steering cooler and the hood latch mechanism.
7. Bolt the power steering cooler to the brackets at the lowest location using the supplied hardware.
8. Bolt the brackets to the hood latch mechanism using the factory hardware. (See Fig. 8-h.)



Fig. 8-h

9. Connect the outlet of the water pump to the far side of the water cooler with the installed 3/4" hose trimmed to fit.

10. Route 90° 3/4" hose between the radiator and the passenger side frame rail. Install a 90° hose on the top fitting on the CAC core with the short leg trimmed as short as possible. Connect the two hoses using a supplied hose mender. (See Fig. 8-i.)



Fig. 8-i

11. Verify that clamps have been installed and tightened on each hose connection and that all hoses are routed as smoothly as possible.
12. Remove the cap and fill the system with 25%/75% coolant/water mix. Fill system slowly and completely.

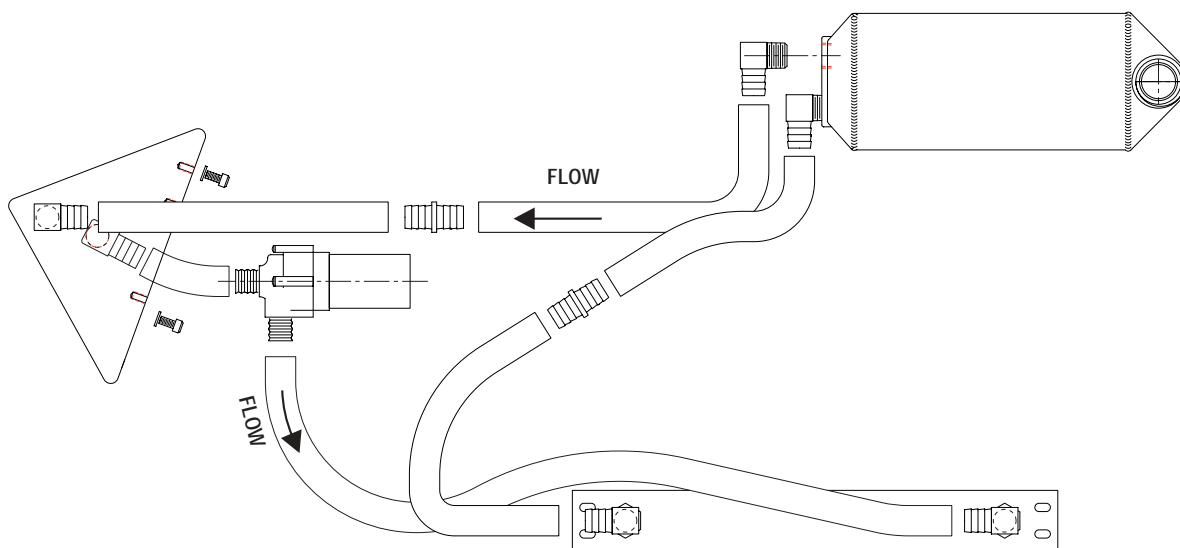


Fig. 8-j

Section 9

AUXILIARY FUEL PUMP ASSEMBLY INSTALLATION

9. AUXILIARY FUEL PUMP ASSEMBLY INSTALLATION

- A. Plumb the supplied fuel pumps in parallel by connecting the pump inlets to a TEE fitting. Do the same with the outlets. The pumps are

now configured so that one TEE feeds both pump inlets and another TEE draws from both pump outlets. (See Fig. 9-a.)

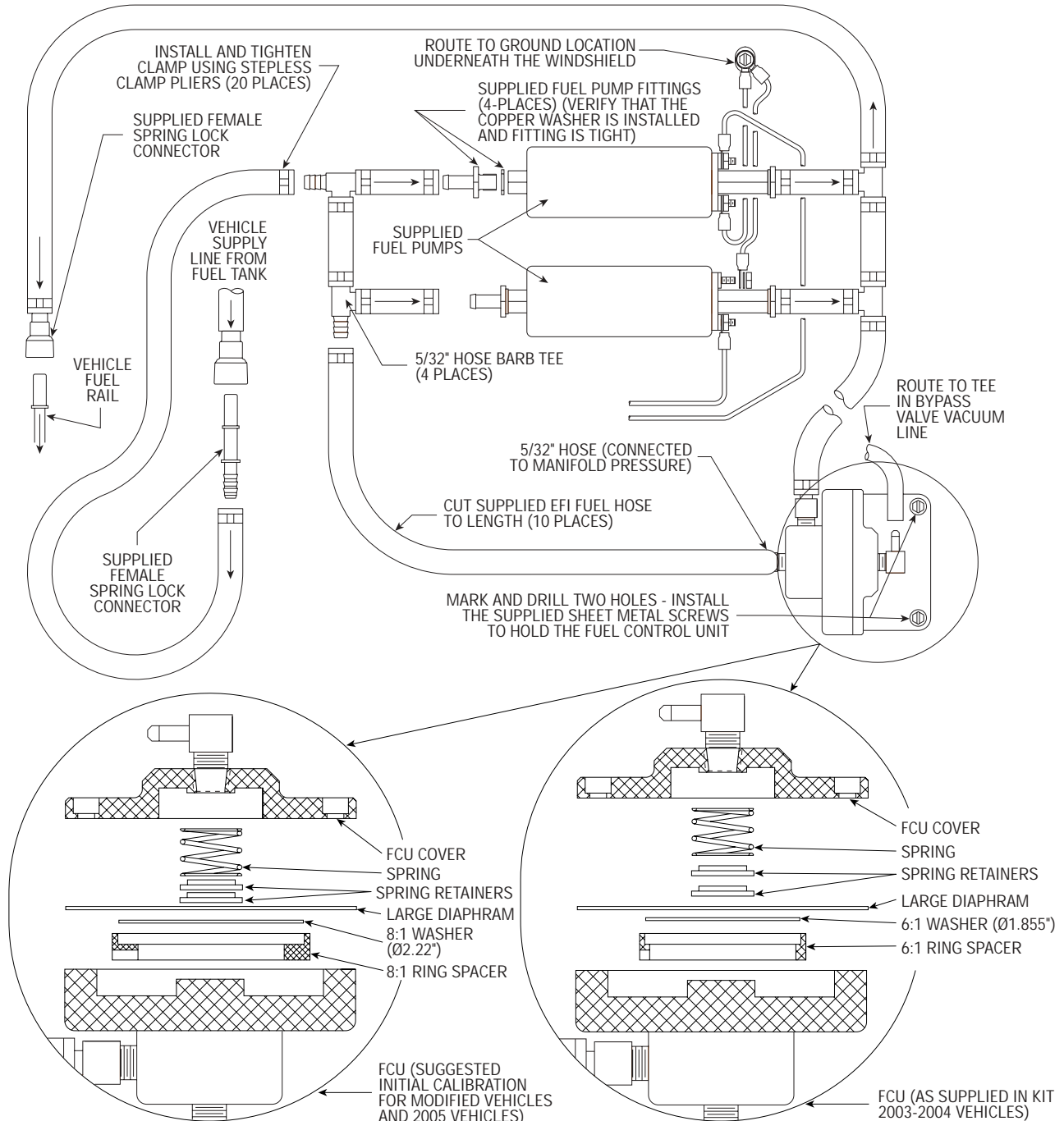


Fig. 9-a

- B. Connect the ground terminals to the grounding location under the windshield using the supplied wire and ring terminal connectors. (See Fig. 9-b.)



Fig. 9-b / (As seen from the front of the vehicle looking under the windshield)

- C. Connect a striped red wire from the ignition control box to each of the fuel pump positive terminals using the supplied ring terminal connectors.
- D. Compress the plastic ring (or use a spring lock disconnect tool) to disconnect the factory fuel line behind the engine.
- E. Connect the supplied spring lock connector to the factory fuel line running to the intake manifold. Attach and route the supplied 5/16" fuel line to the fuel pump outlet TEE.
- F. Connect the other supplied spring lock fitting to the factory fuel supply line with the supplied hose routed to the fuel pump inlet TEE.
- G. Remove the metal bracket from the supplied Fuel Control Unit (FCU) and re-install it so that the fitting on the side of the FCU points toward the back of the vehicle. Tighten the bottom fitting until it points away from the metal bracket. (See Fig. 9-c.)



Fig. 9-c

- H. Install the FCU in the location shown in Fig. 9-d using the supplied sheet metal screws.
- I. Cut the auxiliary fuel pump supply (inlet) line and install a supplied TEE inline. Connect the fuel line coming out of the bottom center (outlet) of the FCU to this TEE.
- J. Cut the auxiliary fuel pump discharge (outlet) line and install another supplied TEE inline. Connect the fuel line coming out of side (inlet) of the FCU to this TEE.
- K. All of the hose connections should have clamps installed and tightened using stepless clamp pliers.
- L. Install a 3/16" TEE into the air bypass valve vacuum line. Attach the supplied 5/32" line from the FCU cover to the TEE.
- M. Use the supplied Velcro on each pump to insulate it from the vehicle. Install the supplied plastic wire loom around the fuel pump power wires and secure.
- N. Make sure that all fuel lines are routed as smoothly as possible while avoiding heat and sharp objects.
- O. On 2005 model year vehicles, or vehicles with any engine related modifications, remove the six screws securing the FCU cover. Replace the 6:1 calibration ring and washer with the supplied 8:1 parts and re-assemble. (See Fig. 9-a.)



Fig. 9-d

Section 10

AIR INLET DUCT INSTALLATION

10. AIR INLET DUCT INSTALLATION

- A. Install the supplied 4" bump sleeve onto the supercharger inlet.
- B. Install the supplied grommet into the hole in the back of the air inlet.
- C. Insert the 4" hose barb of the supplied inlet duct into the open end of the bump hose.
- D. Start the supplied 1/4-20 hardware into the original air box hold down locations. Drill the remaining two holes in the air inlet duct through the radiator fan shroud. (See Fig. 10-a.)



Fig. 10-a

- E. Install the supplied 1/4-20 nut plates onto the newly drilled holes in the radiator shroud. (See Fig. 10-b.)



Fig. 10-b

- F. **1. (2003-2004 vehicles)** Using the supplied 5/8" hose menders and hose, connect the factory crankcase vent hose to the grommet installed in the air inlet duct. Secure with zip ties. (See Fig. 10-c1.)



Fig. 10-c1 (2003-2004 vehicles)

- 2. (2005 vehicles)** Remove the plastic hose from the passenger side valve cover and use the supplied 1/2" hose and hose mender to connect the valve cover to the grommet installed in the air inlet duct. (See Fig. 10-c2.)



Fig. 10-c2 (2005 vehicles)

- G. Slide the supplied air filter into the air box and use the supplied retainer to hold it in. Install the four fasteners through the retainer and air inlet and into the radiator shroud. (See Fig. 10-d.)



Fig. 10-d

- H. Tighten the hose clamps on the supercharger inlet.
- I. **1. (2003-2004 vehicles)** Remove the 1/2" hose from the plastic TEE that connects the intake manifold plenum to the rear of the passenger side valve cover. Install the supplied PCV valve as shown in Fig. 10-e1 using the supplied 3/8" and 1/2" hose and 1/2" - 3/8" barb reducer.



Fig. 10-e1 (2003-2004 Models)

- 2. (2005 vehicles)** Disconnect the rubber elbow from the front of the driver's side valve cover. Install a short length of 3/8" hose onto the inlet of the supplied PCV valve. Install the rubber elbow over the 3/8" hose and attach the other end of the PCV valve to the valve cover using a short piece of the supplied 1/2" hose. (See Fig. 10-e2.)



Fig. 10-e2 (2005 Models)

Section 11

FINAL CHECK

11. FINAL CHECK

- A. Reconnect battery.
- B. Make sure that all oil feed and oil drain fittings are connected and tight and that the engine is filled with factory specified oil.
- C. Temporarily install a fuel pressure gauge onto the -6 fitting on the fuel rail.
- D. Cycle the fuel pump several times by turning ignition on and then off. Check all fuel system hose connections for leakage.
- E. With key on, make sure cooler water pump is operating and that water is flowing through the CAC. Fill as required. Toggle the water pump several times to get as much air out of the system as possible. Do not run the water pump for extended periods (30 seconds or more) without water flow. Fill frequently until the level stabilizes.
- F. Engine detonation manifests itself as a metallic rattling sound emanating from the engine, usually at full throttle. It can quickly destroy an engine. If detonation is detected, discontinue hard use until the problem is fixed.
- G. Monitor the fuel pressure at full throttle. The fuel pressure should reach about 100 psi at 5500 rpm. If this fuel pressure is not achieved, increase the FCU calibration (e.g. replace 6:1 ring and spacer with 8:1.) (See Fig. 9-a.)
- H. Read the “Street supercharger system owner’s manual and return the warranty registration form” within thirty (30) days of purchasing your supercharger system.

***** WARNING *****

If vehicle is to be driven in heavy rain, install a deflector behind the hood scoop to prevent excessive water flow from being introduced into the air box.



Fig. 11-a



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