



**PAXTON**  
AUTOMOTIVE CORPORATION  
SUPERCHARGERS



*Owner's Installation Guide for the*  
***Paxton Automotive***  
***Novi 2000 Supercharger***  
*for the*  
***1996-2002 Dodge Viper***

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# FOREWORD

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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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# 1996-2002 Dodge Viper

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## 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".

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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.

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# 1996-2002 Dodge Viper

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**B**efore 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 that are older than 1 year or 10,000 miles with original heat range plugs as specified by the manufacturer and reset timing to factory specifications (follow the procedures indicated within the factory repair manual and/or as indicated on the factory underhood emissions tag). **Do not use platinum spark plugs unless they are original equipment.** Change spark plugs 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 Set
7. Center Punch
8. Springlock 3/8" and 5/8" 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. 1/8", 13/32", 5/16" 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

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

24. Spark Plug Socket
25. NEW Spark Plugs



# 1996-1997 Dodge Viper

Part No. 1201820

## 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
1011830	VIPER SUPERCHARGER ASY	1	7U033-000	5/8" FUEL/PCV HOSE	1'
2H038-375	S/C PLY, 8-GRV 3.75" PAXTON	1	8H040-050	AIR FILTER 3/5" FLG x 7" L	1
2A048-485	BELT, K080485-GATES	1	<b>4PCV114-018</b>	<b>RADIATOR PIPE ASSEMBLY, VIPER</b>	<b>1</b>
<b>4PCV118-011</b>	<b>CRANK PULLEY ASY, VIPER</b>	<b>1</b>	4PCV014-018	RADIATOR PIPE, VIPER	1
4PCV016-011	PULLEY, VIPER 7-GRV	1	7R002-028	#28 GOLD SEAL HOSE CLAMP	4
4PCV018-011	PULLEY, VIPER 8-GRV	1	7U175-091	HOSE, 1/75" (90° BEND)	1
4CV110-010	FIXTURE w/GUIDE, DWL PIN	1	<b>5A001-073</b>	<b>TIMING CONTROL BOX, VIPER 96-99</b>	<b>1</b>
7A312-100	5/15-18 x 1 HXCS GR5P	6	5A001-070	TIMING CONTROL BOX, VIPER	1
7A312-101	5/16-18 x 1 SOC	6	5W001-017	3/8" RING TERMINAL, 12 GA	1
7K312-001	5/16 AN-WASHER	12	7U375-001	VELCRO-HOOK, 1" BLACK	.22YD
7T100-120	DRILL BIT, #31, Ø.120, HSS	1	7U375-002	VELCRO-LATCH, 1" BLACK	.22YD
7T110-125	REAMER, Ø.1247, HSS	1	<b>4PCV101-003</b>	<b>FUEL PUMP ASSEMBLY, VIPER</b>	<b>1</b>
7U250-023	DOWEL PIN 1/8" x 1.25"	2	5W001-005	3/8" PLASTIC WIRE LOOM	6'
<b>4PCV111-021</b>	<b>MTG BRKT ASSEMBLY, VIPER</b>	<b>1</b>	5W001-011	16-14 GA RING TERMINAL, .26" HOLE	2
4PCV011-021	MTG BRKT, VIPER, MACH	1	5W014-030	14 GA STRD WIRE, BLACK	.75'
4PCV010-044	PLATE, VIPER S/C MTG	1	7E010-075	#12 x 3/4" SHT METAL SCREW H	4
2A017-101-400	SPACER, SBF MOUNTING PLATE	2	7P312-005	5/16" FEMALE FUEL CONCT	1
7A375-575	3/8-16 x 5-3/4" HXCS	2	7P312-007	FUEL FITTING, MALE	1
7A375-126	3/8-16 x 1.25 HXHD	5	7P312-017	5/16" HOSE BARB TO PBURG	2
7A375-175	3/8"-16 x 1-3/4" HXHD	2	7P312-082	5/16" TEE HOSE BARB	4
7J375-044	3/8" SAE WASHER, PLTD	10	7R003-027	ADEL CLAMP, 1-11/16"	4
4FA016-170	IDLER PULLEY, 8-RIB SMOOTH	1	7R004-001	STEPLESS CLAMP, 15.7-70	22
7A375-224	3/8-16 x 2.25 GR5 HX	1	7U031-018	5/16" FUEL HOSE, HI-PRESSURE	8'
<b>4PCV210-180</b>	<b>BRACE ASSY, VIPER SHOCK</b>	<b>1</b>	7U100-044	TIE-WRAP, 4" NYLON	10
4PCV110-120	ASSY, VIPER BRACE, DRIVER	1	7U100-055	TIE WRAP, 6" NYLON	5
4PCV110-130	ASSY, VIPER BRACE, PSGR	1	8F001-068	155 INLINE FUEL PUMP	2
4PCV110-180	ASSY, VIPER BRACE, XBAR	1	<b>4PCV238-088</b>	<b>FMU ASSY, VIPER</b>	<b>1</b>
7A437-150	7/16-14 x 1-1/2" G8	2	7P125-025	1/8" NPT x 5/32" HOSE 90°	1
7B437-001	ROD END, RH, 7/16"	1	7P125-031	1.8" NPT 90° 5/16" BARB	1
7B437-002	ROD END, LH, 7/16"	1	7P125-032	1/8" NPT - STR, 5/16" BARB	1
7C010-020	M10 x 1.5 x 20 HXHD GR8.8	2	7P156-082	5/32" TEE	2
7C010-025	M10-1.5 x 25mm HXCSP	2	7U030-046	5/32" VACUUM LINE	8
7F437-000	7/16-14 HEX NYLOCK NUT	2	62050-191	FMU WASHER 6:1	1
7F438-001	7/16-20 JAM NUT, PLTD	1	62070-030	FMU 6:1 RING SPACER	1
7F438-002	LH 7/16-20 HEX THIN NUT, ZINC	1	<b>4PCV145-060</b>	<b>POWER STEERING HOSE ASSY</b>	<b>1</b>
7GL10-150	10M x 1.5 NUT NYLOCK	2	7U030-038	-6 HI-PRESS PWR STR HOSE	1
7J010-002	10mm WASHER, ZINC PLTD	6	7P250-198	-6 HOSE END, 90°	2
7K437-001	7/16" AN WASHER	6	7P375-216	-6 JIC x M16 x 1.5 BUMP FTG	1
<b>4PCV130-026</b>	<b>OIL FEED LINE ASSY, VIPER</b>	<b>1</b>	7P375-218	-6 JIC x M18 x 1.5 BUMP FTG	1
7P125-004	1/8 NPT 90° x -4 JIC FTG	1	7U030-344	11/32" PWR STR RETURN HOSE	19"
7P125-034	1/8NPT x 1/8NPT STRT T	1	7U100-055	TIE WRAP, 6" NYLON	5
7U100-055	TIE-WRAP, 6" NYLON	2	<b>8PN301-020</b>	<b>POWER COOLER ASSY VIPER*</b>	<b>1</b>
7U250-220	OIL FEED HOSE, 22" -4 STRT	1			
<b>4PCV130-036</b>	<b>OIL DRAIN LINE ASSY, VIPER</b>	<b>1</b>			
7P375-017	3/8" NPT x 1/2" BEADED	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	1.75'			
7U100-066	TIE WRAP, 11" NYLON	2			
<b>4PCV112-010</b>	<b>AIR INTAKE ASSY, VIPER</b>	<b>1</b>			
4PCV012-010	INLET DUCT, VIPER SC	1			
7P375-039	3/8" NPT x 5/8" BARB 90°	1			
7P375-113	PCV VALVE, VIPER, 3/8" - 1/2"	1			
7P625-016	5/8" HOSE UNION, BARBED	1			
7R002-064	#64 GOLDSEAL HOSE CLAMP	2			
7S400-001	ELBOW, RUBBER, 4" ID x 90°	1			
7U030-056	3/8" PCV/VAC RUBBER HOSE	0.083'			

\*See page "vii" for individual components



# 2000-2002 Dodge Viper

Part No. 1201810

## 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
1011830	VIPER SUPERCHARGER ASY*	1	7U038-012	HOSE, Ø3/4" 90°, 4 x 12"	2
4PCV118-011	CRANK PULLEY ASY, VIPER*	1	8N055-030	TANK, LT1 AFTERCOOLER	1
4PCV111-021	MTG BRKT ASSEMBLY, VIPER*	1	<b>8PN106-020</b>	<b>WATER COOLER ASSY, VIPER</b>	<b>1</b>
4PCV210-180	BRACE ASSY, VIPER SHOCK*	1	7A250-074	1/4-20 x 3/4" HXHD PLT	4
4PCV130-026	OIL FEED LINE ASSY, VIPER*	1	7A312-075	5/16"-18 x 3/4" HXCS GR5 ZINC	1
4PCV130-036	OIL DRAIN LINE ASSY, VIPER*	1	7F250-021	1/4-20 NYLOCK NUT ZINC PLT	4
4PCV112-010	AIR INTAKE ASSY, VIPER*	1	7F312-017	5/16-18 NYLOCK NUT	1
4PCV114-018	RADIATOR PIPE ASSEMBLY, VIPER*	1	7J250-001	1/4" SAE WASHER, PLTD	8
4PCV101-003	FUEL PUMP ASSEMBLY, VIPER	1	7K312-001	5/16" AN WASHER, PLATED	2
4PCV145-060	POWER STEERING HOSE ASSY*	1	8N006-010	WATER COOLER	1
*See page "vi" for individual components			8N010-140	SUPPORT, VIPER WATER COOLER	2
<b>5A001-071</b>	<b>TIMING CONTROL BOX, VIPER, 00-02</b>	<b>1</b>	<b>8PN107-020</b>	<b>WATER PUMP ASSEMBLY, VIPER</b>	<b>1</b>
5A001-070	TIMING CONTROL BOX, VIPER	1	5W001-005	3/8" PLASTIC WIRE LOOM	7
5W001-017	3/8" RING TERMINAL, 12 GA	1	5W001-009	16-14 GA MALE SLIDE INSUL	1
7U375-001	VELCRO-HOOK, 1" BLACK	.22YD	5W001-010	16-14 GA FEMALE SLIDE INSUL	3
7U375-002	VELCRO-LATCH, 1" BLACK	.22YD	5W001-011	16-14 GA EYELET .25" HOLE	2
<b>4PCV238-068</b>	<b>FMU ASSY, VIPER</b>	<b>1</b>	5W001-013	14-16 AWG, SOLDERLESS CONNECTOR	2
7P125-025	1/8" NPT x 5/32" HOSE 90°	1	5W001-014	FUSE HOLDER, 10 GA WIRE	1
7P125-031	1.8" NPT 90° 5/16" BARB	1	5W001-015	FUSE, BLADE TYPE 20 AMP	1
7P125-032	1/8" NPT - STR, 5/16" BARB	1	5W001-016	RELAY, BOSCH	1
7P156-082	5/32" TEE	2	5W001-017	3/8" RING TERMINAL, 12 GA	1
7U030-046	5/32" VACUUM LINE	8	5W001-024	MINI ATC FUSE TAP	1
62050-191	FMU WASHER 8:1	1	5W001-025	FEMALE SLIDE, INSULATED, M	1
62070-030	FMU 8:1 RING SPACER	1	5W001-040	12-10 GA FEMALE SLIDE INSUL	1
<b>8PN301-020</b>	<b>POWER COOLER ASSY, VIPER</b>	<b>1</b>	5W014-010	14 GA STRD WIRE, RED, UL101	6'
<b>8PN201-020</b>	<b>DISCHARGE ASSY, VIPER</b>	<b>1</b>	5W014-030	14 GA STRD WIRE, BLACK	1.75'
8PN101-020	CAC ASSY, VIPER, AIR/WATER	1	5W014-030	14 GA STRD WIRE, BLACK	6'
5W001-005	3/8" PLASTIC WIRE LOOM	1.6'	5W016-010	WIRE, STRND, 16 AWG, YELLOW	2'
7PS263-090	2-5/8" 90° ELBOW	2	7A250-074	1/4-20 x 3/4" HXHD PLT	1
7PS300-300	SLEEVE, BLACK, 3.00D x 3.00	1	7F250-021	1/4-20 NYLOCK NUT ZINC, PLTD	1
7R002-040	#40 STAINLESS HOSE CLAMP	4	7J250-001	1/4 SAE WASHER, PLTD	2
7R002-048	#48 GOLDSEAL HOSE CLAMP	2	7R003-027	ADEL CLAMP, 1-11/16"	1
7U030-046	5/32" VACUUM LINE	3.5'	7U100-044	TIE-WRAP, 4" NYLON	8
7U038-012	HOSE, Ø3/4", 90°, 4 x 12"	1	8F001-402	PUMP, WATER, PIERBURG	1
7P375-075	3/4" HOSE UNION	1			
7R007-001	NYLON CLAMP 1-1/8"	2			
7p500-026	1/2"NPT - 3/4" BARB 90°	1			
8D004-053	GASKET MNTG FLNG RACE	1			
8D204-010	BYPASS VALVE-BLACK	1			
8H040-175	FILTER, 1-3/4" ID, MFRB	1			
<b>8PN104-020</b>	<b>SUPPORT COMPONENTS, VIPER</b>	<b>1</b>			
2A017-028	4.3 PLEUM SPACER A	2			
7A250-074	1/4-20 x 3/4" HXHD PLT	2			
7J250-001	1/4" SAE WASHER, PLTD	2			
7U100-055	TIE WRAP, 6" NYLON	10			
8N055-050	PLASTIC CAP, SUGE TANK	1			
8N056-060	SURGE TANK, PLASTIC	1			
<b>8PN105-020</b>	<b>WATER TANK MTG ASSY, VIPER</b>	<b>1</b>			
7A250-050	1/4-20 x 1/2" SHCS ZINC PLTD	2			
7J250-001	1/4" SAE WASHER, PLTD	4			
7P375-075	3/4" HOSE UNION	2			
7P500-026	1/2" NPT - 3/4" BARB 90°	5			
7P500-078	1/2" NPT x 3/4" HOSE FITTING	3			
7R007-001	NYLON CLAMP 1-1/8"	14			
7U038-000	3/4" HEATER HOSE	18			

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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 all of the inlet ducting up to but not including the throttle bodies. Remove the two air box mounting studs from the core support.
- 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. Drain the engine coolant sufficiently to remove the upper radiator hose.
- F. Remove the two screws securing the power steering cooler to the shock tower brace. Jack the front of the vehicle up by placing a jack under the front cross member.
- G. Remove the five screws holding the shock tower brace and remove the brace.
- H. Remove the accessory drive belt.
- I. Loosen the nut on the high pressure power steering line where it enters the power steering pump.
- J. Remove the three screws securing the power steering pump to the bracket and set aside for later use. Remove the three screws securing the bracket to the head and remove the bracket.
- K. Remove the six 5/16" screws securing the crank pulley to the harmonic damper and remove the crank pulley.
- L. Remove the front fascia. Close the rear of the hood to provide access under the front of the hood. Start by removing the mounting screws from the bottom of the vehicle and in the front of each wheel well. Remove the two screws securing the hood release handle. Remove the plastic panel above and in front of the radiator. Remove the two plastic shouds located beneath the removed panel. Remove the four nuts securing the bumper to the frame. (See Fig. 1-a.) Unplug the head and turn signal lights on each side of the vehicle by reaching behind the front fascia. Carefully remove and set aside the front fascia.

**\*\*\*NOTE\*\*\***

Carefully note where any alignment shims are located and replace in the same location when the front fascia is re-installed.



Fig. 1-a

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# Section 2

## OIL FEED

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### 2. OIL FEED

- A. Remove the oil pressure sender from the front passenger side of the engine directly above the oil filter.
- B. Install the 1/8" NPT TEE in the oil sender hole. Leave the TEE pointed forward. Install the 1/8" NPT x -4 straight fitting in the front of the TEE. Install the oil pressure sender in the passenger side hole in the TEE and re-attach the electrical plug. (See Fig. 2-a.)
- C. Temporarily cover one end of the oil feed line and protect it from debris until connecting it to the supercharger.
- D. 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.



Fig. 2-a

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**\*\*\*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.*

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# Section 3

## OIL DRAIN

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### 3. OIL DRAIN

- A. To provide an oil drain for the supercharger, it is necessary to make a hole in the front of the oil pan.
- B. Remove the oil dipstick retaining screw from the passenger's side valve cover bracket.
- C. Drain the engine oil.
- D. Remove the oil pan.
- E. The hole should be centered .40" from the bottom of the oil pan lip between the last bolt and the driver's side of the oil pan. Use a center punch to mark the hole location. Use the supplied 9/16" rota-broach to drill the hole.
- F. Tap the hole with a 3/8" NPT x 1/2" hose barb fitting and secure in the hole.
- G. 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" hose barb fitting and secure in the hole. Make sure a seal is formed all around the fitting.

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**\*\*\*NOTE\*\*\***

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

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- H. Re-install the oil pan. Torque the fasteners to 95 in-lbs (11 N-m).
- I. Install a new oil filter and refill the engine with fresh oil.



Fig. 3-a

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# Section 4

## CRANK PULLEY INSTALLATION

### 4. CRANK PULLEY INSTALLATION

- A. Remove the harmonic damper retaining screw. Placing the vehicle in first gear with the emergency brake applied should keep the engine from turning over.
- B. 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.
- C. 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.
- D. 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.)

**\*\*\*NOTE\*\*\***

Remember to add 1/4" for the drill guide thickness. The drill bit must go in at least 1-1/2" from the surface of the drill guide.

- E. Using the supplied 1/8" reamer, plunge once to the end of the drilled hole and remove.
- F. Remove drill guide from damper.
- G. Line up one of the supplied dowel pins and lightly tap into the reamed hole until flush.
- H. Rotate drill guide 180° from the previously installed position. Rotate engine until the drill insert is at highest point and repeat steps D-F.
- I. Tap both dowel pins into the damper until they are flush.
- J. Re-install the Damper retaining bolt using threadlocker and torque to 250 ft-lbs.
- K. Install the supplied 7-rib crank pulley onto the harmonic damper using the supplied 5/16 x 1" hex head screws and thread locker. If necessary, heat the pulley until the pilot slides easily over the harmonic damper pilot. Torque the six mounting screws, in a rotating pattern, to 25 Ft-lbs.
- L. Install the supercharger 8-rib crank pulley into the pilot on the 7-rib crank pulley. If necessary, heat the 7-rib pulley until the 8-rib pulley pilot bottoms out fully. Install the supplied 5/16" x 1" socket head cap screws

using washers and torque in a rotating pattern to 20 Ft-lbs. (See Fig 4-b).

- M. Rotate the radiator hose clamp ears away from the crank pulley for clearance. (See Fig 4-b).



Fig. 4-a

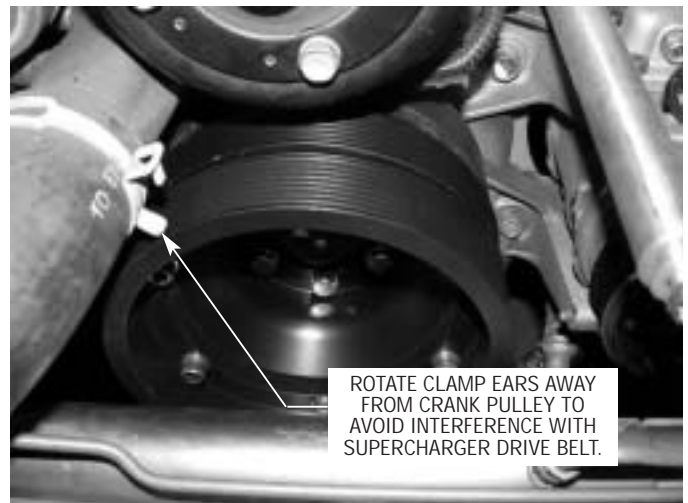


Fig. 4-b

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# Section 5

## REPLACEMENT SHOCK TOWER SUPPORT INSTALLATION

### 5. REPLACEMENT SHOCK TOWER SUPPORT INSTALLATION

- A. Install the supplied shock tower brace onto each shock tower with the chamfered corner pointing forward. Use the factory bolt and nut and the supplied M10 x 20mm bolt and washer in the top two holes.
- B. Using a 13/32" bit, drill the remaining hole in each shock tower using the installed parts as a template. (See Fig. 5-a.)
- C. Install the supplied M10 x 25mm bolts through the drilled holes and tighten using the supplied nuts and washers. (See Fig. 5-b.)

**\*\*\*NOTE\*\*\***

Bracket is slotted to provide supercharger pulley clearance on different vehicles.



Fig. 5-a / Passenger's side shock tower brace

- FACTORY BOLT AND NUT
- SUPPLIED M10 x 20mm BOLT AND WASHER
- SUPPLIED M10 x 25mm BOLT, NUT AND WASHERS

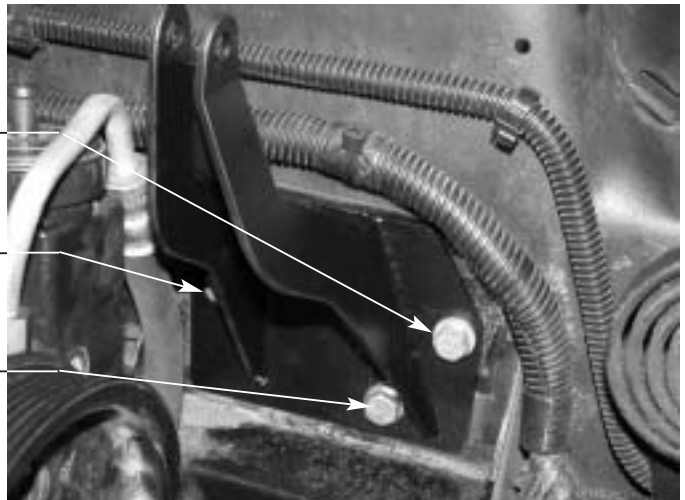


Fig. 5-b / Driver's side shock tower brace

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# Section 6

## SUPERCHARGER MOUNTING BRACKET INSTALLATION

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### 6. SUPERCHARGER MOUNTING BRACKET INSTALLATION

- A. Install the supplied mounting bracket onto the head using the factory power steering bracket screws.(See Fig. 6-a.)

**\*\*\*NOTE\*\*\***

*Mounting bracket/spacer to shock tower support clearance may be too small on some vehicles. Lightly sand one or both parts until 3/16" clearance is achieved.*

- B. Install the power steering pump in the factory manner onto the mounting bracket just installed using the factory pump bolts. (See Fig. 6-b.)
- C. Install the supplied -6 x 18mm adapter into the high pressure port on the power steering rack. Install the supplied -6 x 16mm adapter into the pump, attach the supplied power steering hose to the pump so that it is routed towards the passenger's side. (See Fig. 6-b.) Route the free end of the hose around the mounting bracket, under the AC compressor and attach to the power steering rack.
- D. Replace the hose running from the power steering cooler to the reservoir return fitting with the supplied 11/32" hose.
- E. Secure the power steering lines away from contact with sharp or moving objects using the supplied zip-ties.
- F. Re-install the accessory drive belt.

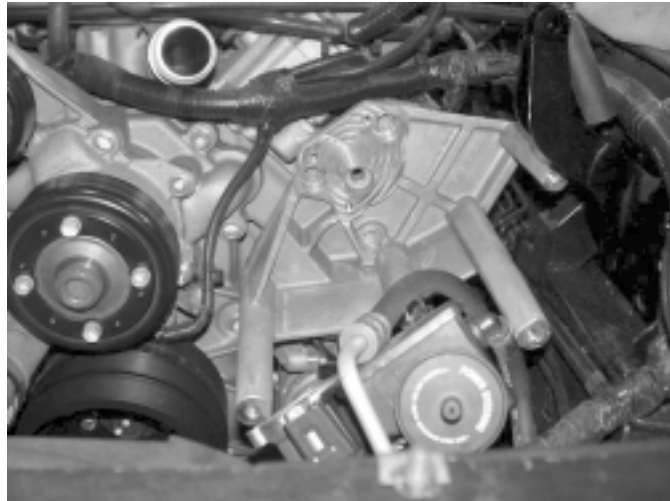


Fig. 6-a



Fig. 6-b

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# Section 7

## SUPERCHARGER INSTALLATION

### 7. SUPERCHARGER INSTALLATION

- A. Install the supplied 1/2" oil drain hose onto the barb fitting on the bottom of the supercharger and secure with the supplied #8 hose clamp.
- B. Attach the supercharger mounting plate to the supercharger. Use five of the supplied 3/8" x 1.25" screws and washers. (See Fig. 7-a.)
- C. Install the spring tensioner onto the supercharger mounting plate using the supplied 3/8" x 2.25" screw and washer. (See Fig. 7-a.) Install the spring tensioner into the low mounting position.
- D. Install the supercharger drive belt onto the supercharger pulley so that the back side will ride on the spring tensioner idler. (See Fig. 7-c for belt routing.)



Fig. 7-a

**\*\*\*NOTE\*\*\***

When installing the supercharger assembly, keep in mind that the supercharger belt will need to be routed around the crank pulley and mounting bracket standoff. (See Fig. 7-c.)

- E. Attach the supercharger plate assembly to the mounting bracket using the supplied 3/8"x 1-3/4" screws and washers. Install the supplied 4" spacers into the two remaining supercharger mounting plate locations and install the supplied 3/8" x 5-3/4" screws and washers. Tighten the screws.
- F. Use a combination wrench on the spring tensioner idler screw to draw the spring tensioner as far away from the power steering pulley as possible. Route the supercharger drive belt around the crank pulley and release the spring tensioner.
- G. Route the free end of the oil feed hose to the supercharger and attach using a 90° fitting in the supercharger oil feed fitting.

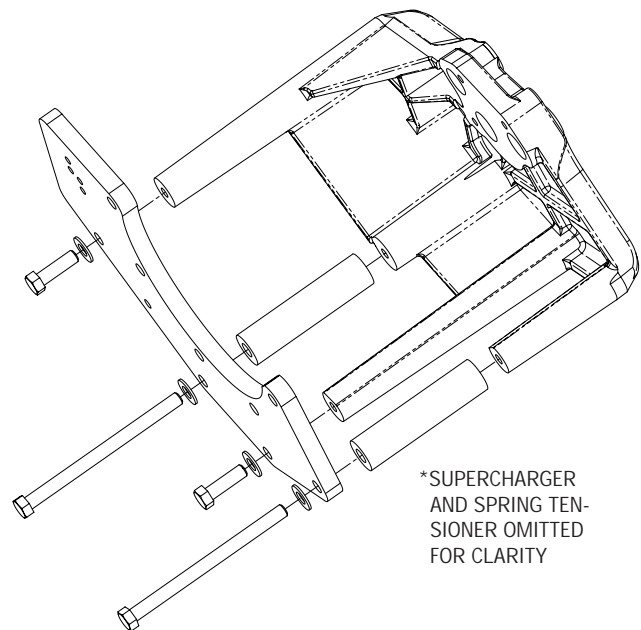


Fig. 7-b

**\*\*\*NOTE\*\*\***

Make sure there are no bends, kinks or dips in the oil drain line. The hose must maintain a constant "downhill" direction. A restriction in the drain path may cause leakage and/or supercharger failure.

- H. 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. Trim hose length if necessary.
- I. Use zip-ties as necessary to secure the oil drain and oil feed lines away from moving parts.

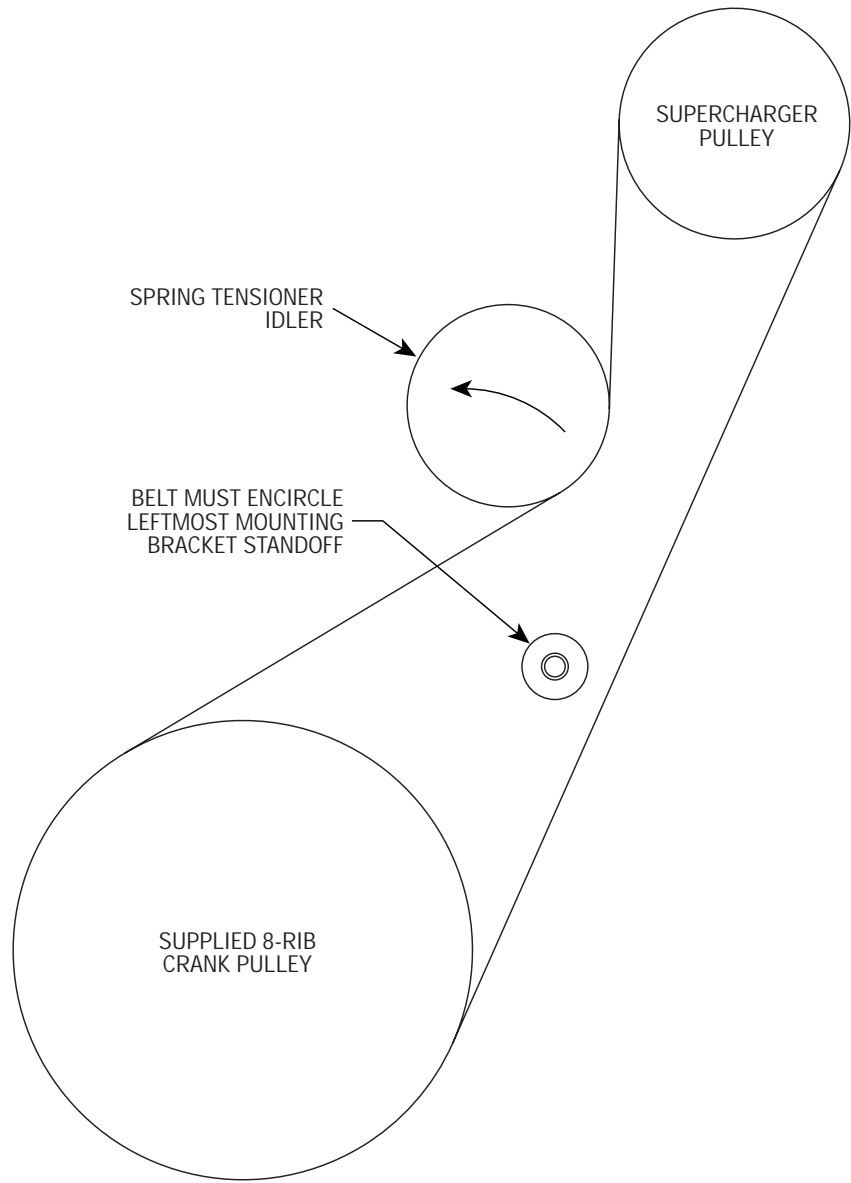


Fig. 7-c

# Section 8

## RADIATOR TUBE INSTALLATION

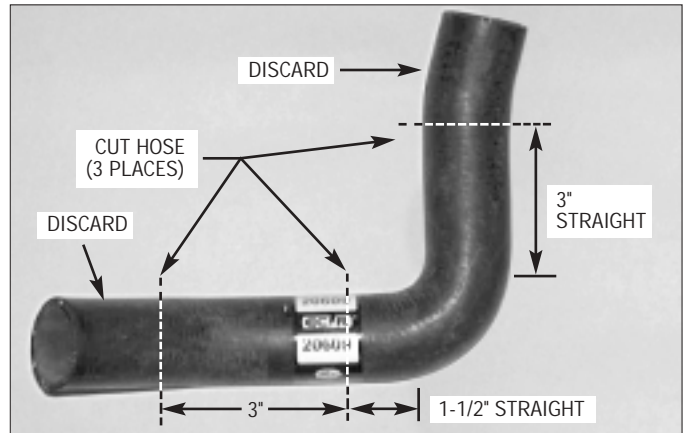
### 8. RADIATOR TUBE INSTALLATION

- A. Cut the 90° portion of the supplied radiator hose per *Fig. 8-a*. Install the short leg onto the engine water inlet.
- B. Cut the longest remaining straight section off of the previously cut hose remnants approximately 3" long and install on the radiator side of the radiator tube. (See *Fig. 8-c* for tube-end reference.) White grease may be used to make it easier to slide the hose all the way onto the tube.
- C. Install the supplied steel radiator tube into the 90° hose installed on the engine. Rotate the hose into position so that it lines up with the radiator. (See *Fig. 8-b*.)
- D. Slide the hose from the tube onto the radiator as shown in *Fig. 8-c*. Install and tighten the supplied hose clamps onto each connection.
- E. Install the shock tower support cross bar onto the previously installed braces. Adjust the bar to the proper length and install and tighten the bolts on each end. Tighten the jam nuts on each rod end.

**\*\*\*NOTE\*\*\***

*If necessary for supercharger clearance, loosen the shock tower supports on both sides of the engine compartment and position so that there is approximately 3/16" clearance. Tighten all fasteners.*

- F. Verify that the radiator tube will not contact the supercharger pulley or the cross bar. Secure as necessary.
- G. Refill the coolant system with a 50/50 mix of ethylene glycol and distilled water as follows:
  - Make sure that the heater control valve is in the "open" position.
  - Remove the cooling system bleed plug from the thermostat housing.
  - Fill the cooling system until the coolant is level with the bleed plug opening.
  - Re-install the cooling system bleed plug.
  - Fill until the coolant level is above the top seam of the coolant surge tank.
  - Install the radiator cap.



*Fig. 8-a*



*Fig. 8-b*



*Fig. 8-c*

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# Section 9

## CHARGE AIR COOLER INSTALLATION

### 9. CHARGE AIR COOLER INSTALLATION

#### A. Cooler Core Installation.

1. Using sealant, install a 1/2" NPT to 3/4" barb 90° fitting in the top cooler end tank hole so that it points downwards.
2. Install the supplied bypass valve with the supplied hardware onto the cooler so that it points to the front of the vehicle.
3. Using sealant, install a 1/2" NPT to 3/4" barb fitting in the bottom cooler end tank hole.
4. Using sealant, install a 3/4" 90° fitting in the 1/2" NPT hole near the bypass valve and point it so that it will be facing towards the back of the car when the cooler is installed. (See Fig. 9-a.)



Fig. 9-a

5. Install the supplied 3/4" 90° molded hose onto the fitting installed in the previous step so that it conforms tightly to the cooler and will point up to the Idle Air Control (IAC) hose that was disconnected from the air box.
6. Install a 3" sleeve on the cooler inlet and a 2-5/8" elbow on the passenger's side cooler outlet.
7. Install a 2-5/8" elbow on the driver's side throttle body and secure with a supplied clamp.
8. Install the aftercooler core assembly between the supercharger discharge and the throttle body. First, attach the 3" sleeve on the supercharger to the cool-

er, then slide the cooler onto the elbow installed on the driver's side throttle body. Lastly, attach the remaining elbow to the passenger's side throttle body. (See Fig. 9-b.)



Fig. 9-b

9. Verify that the charge air cooler has sufficient clearance and tighten the supplied clamps on all of the sleeve connections.
10. Install the supplied 90° x 3/4" hose with the short leg trimmed as short as possible onto the straight fitting installed in the cooler. Point the hose up towards the throttle body area and install and tighten the clamp.
11. Trim the hose installed in step 5 and connect it to the IAC hose using one of the supplied hose menders. Install and tighten a clamp on one end of the hose mender and use the factory clamp on the other end.
12. Connect the supplied 5/32" vacuum line to the fitting on the bypass valve and route it to the capped vacuum nipple behind the driver's side throttle body. Remove the cap and connect the hose.
13. Using the supplied 1/4" hardware, bolt the power steering cooler to the bracket on the bottom of the CAC.
14. Thread the air temperature sensor removed from the air box into the hole located on the CAC discharge duct. Attach the electrical connector to the sensor and secure the wiring harness that the sensor is connected to so that it can't contact any moving parts.
15. Install the supplied air filter onto the bypass valve and tighten the clamp.

## B. Reservoir Installation

### \*\*\*NOTE\*\*\*

**1996-1999 Vehicles:** Require the evaporative canister to be unfastened from the inner fender and moved up about 2". Re-drill the mounting holes in the inner fender to secure.

**1.A 2000 Model Year Vehicles:** Place the water tank on the supplied template (see Fig. 9-m located at the end of this section) and position it as close to the frame as possible. Once a satisfactory position is located, hold the template in place, remove the tank and drill two 1/4" holes on the front of the driver's side fender well that correspond to the brass inserts in the tank. (See Fig. 9-c.)

**1.B All Other Model Years:** Vehicles equipped with ABS (2001 and 2002) or evaporative canister (1996-1999) will need to move the reservoir outboard to clear the additional components. Verify that the chosen location will not interfere with the bumper cover when it is installed. The supplied electric water pump should be rotated inboard for fitment. (See Fig. 9-n for drill template.)

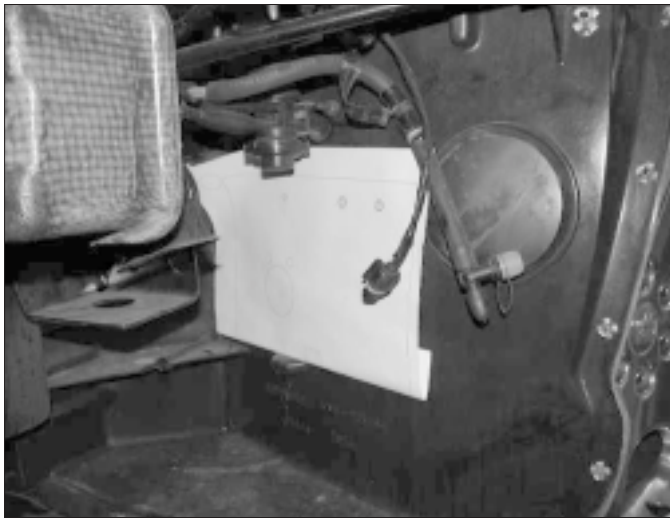


Fig. 9-c

2. Use one or two of the supplied 1/4" screws and washers to secure the reservoir.

## 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. (See Fig. 9-n.)
2. Install the supplied water pump clamp on the water pump. Insert the 1/4-20 x 3/4" bolt through the clamp and tighten. The pump outlet should point up and toward the front of the vehicle.
3. Install a plastic clamp on each hose connection and tighten.



Fig. 9-d-1 (1996-1999 Vehicles)  
\*Installed with 1" NPT Blind Hole Pointing Down



Fig. 9-d-2 (2000 Vehicles)  
\*Reservoir Installed with 1" Blind Hole Pointing Upwards

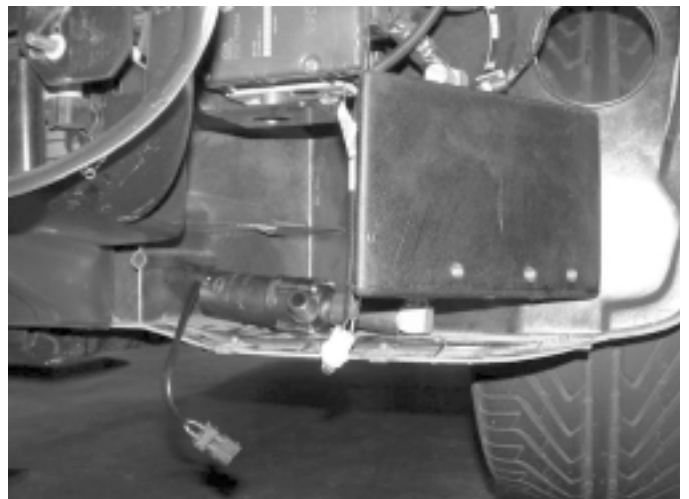


Fig. 9-d-3 (2001-2002 Vehicles)  
\*Installed with 1" NPT blind hole pointing down.

4. Mount the water pump relay at the location shown in Fig. 9-e using the front PCM cover screw.

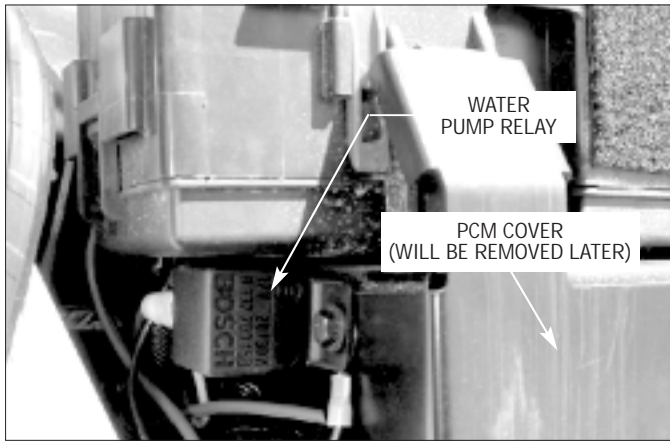


Fig. 9-e

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 will be connected in section 11.
6. Run the black wire from terminal #86 on the water pump relay to the “ground” located beneath the power brake booster or any other good ground location.
7. Connect the fuse holder using a yellow slide connector to terminal #30 on the aftercooler pump relay and to the fuse box power terminal on the front of the fuse box using the supplied yellow ring terminal connector.
8. Use the supplied black wire, ring terminal and slide connectors to extend the water pump ground wire (brown wire on Hella pump) to the same grounding location used for the water pump relay.
9. Route the red wire from the water pump to relay terminal #87. Using the supplied butt connector, attach the red wire to the positive wire on the water pump (green wire on the Hella pump).
10. 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 Installation**

1. Using sealant, insert the 90° fittings in the inlet and outlet of the water cooler and point them towards each other.
2. Drill the air duct directly underneath the bumper using a 1-1/8" hole saw on both sides. Additionally, on the passenger's side, drill another hole next to the radiator overflow tank so that the hose can be routed smoothly from the CAC to the water cooler.
3. Loop the supplied hose through each hole and connect to the water cooler. Install and tighten a supplied plastic clamp on each hose connection. (See Fig. 9-f.)

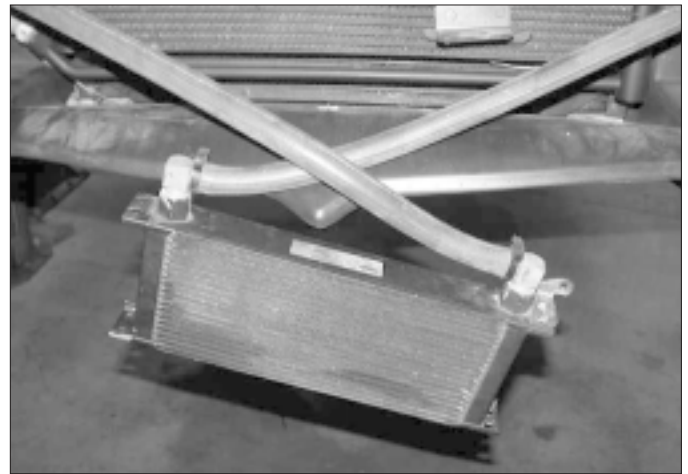


Fig. 9-f

4. Using supplied hardware, loosely attach one of the supplied brackets to the passenger's side oil cooler mounting bolt. (See Fig. 9-g.) Attach the other supplied bracket to the supplied water cooler using the supplied 1/4" hardware.

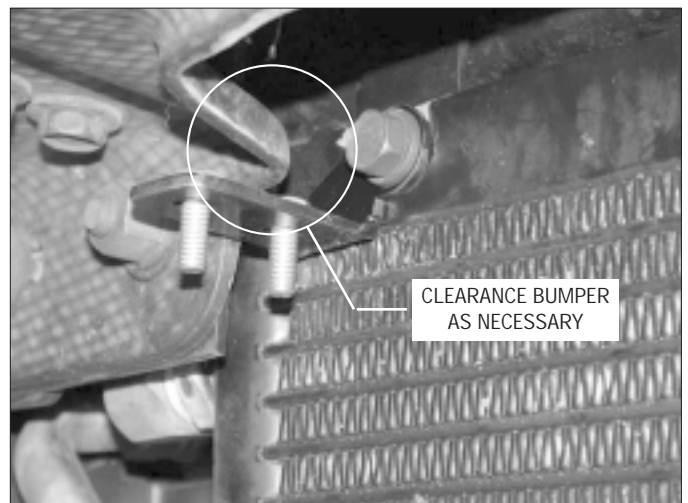


Fig. 9-g

5. Attach the water cooler to the installed bracket and tighten so that the water cooler is as far to the passenger's side as possible.

**\*\*\*CAUTION\*\*\***

In the following step, use extreme care when drilling through the oil cooler flange. If the drill bit slips or goes through the hole too far, it will damage the radiator, oil cooler or the AC condenser.

6. Use the unfastened bracket to serve as a template to drill a 5/16" hole in the top flange of the oil cooler. Install the supplied 5/16" hardware and tighten.
7. Connect the outlet of the water pump to the far side of the water cooler with the installed 3/4" hose trimmed to fit. Clamp each end. (See Fig. 9-h.)

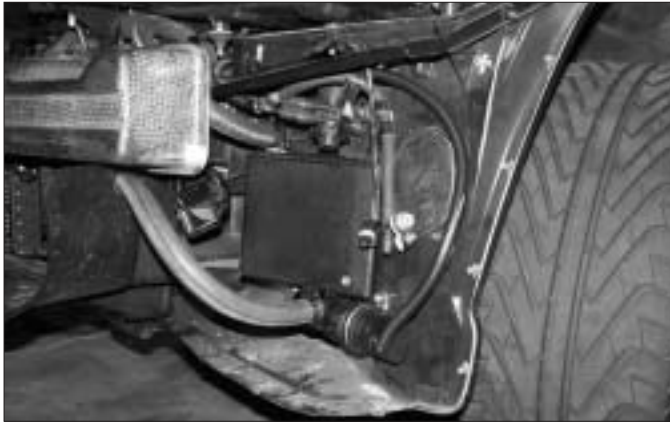


Fig. 9-h

8. Route a 3/4" hose from the remaining fitting on the water cooler through the two holes drilled on the passenger's side, and connect to the 90° fitting installed on the CAC. (See Fig. 9-i.)



Fig. 9-i

9. Connect using the supplied hose mender and tighten a plastic clamp on each connection. (See Fig. 9-o for plumbing schematic.)
10. Trim the hood release handle to clear the water cooler as shown in Fig. 9-j. If necessary, drill 1/8" holes in a new location to remount the handle so that its function is not impaired.

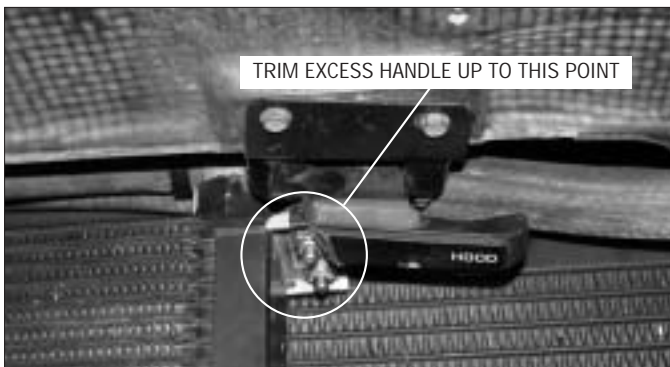


Fig. 9-j

### E. Surge Tank Installation

1. Using thread sealant, install the supplied 1/2" NPT to 3/4" hose barb straight fittings into the front and side of the surge tank. (See Fig. 9-k.)

#### \*\*\*NOTE\*\*\*

Trial fit the surge tank by installing the rear mounting screw through the existing hole in the driver side shock tower. Close the hood, verify that it clears the surge tank cap and proceed with step 2. If there is interference, lower the surge tank and drill out the mounting holes accordingly.



Fig. 9-k

2. Drill a 5/16" hole 3/4" in front of the hole that already exists in the driver's side shock tower. Install the supplied 1/4" screws through a washer, the shock tower, a supplied .3" spacer and into the surge tank.
3. Install a 90° hose onto the fitting on top of the reservoir and secure with a clamp. (See Fig. 9-l.)

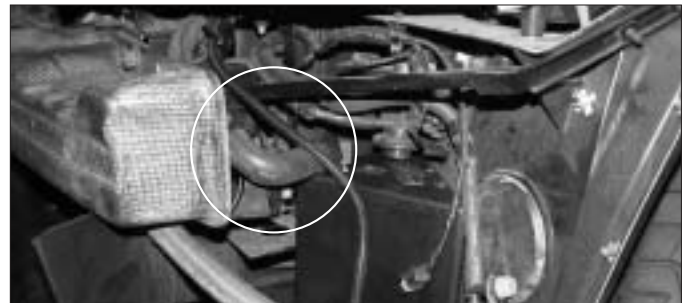


Fig. 9-l

4. Connect the surge tank fitting (pointed towards the front of the vehicle) to the hose elbow installed in the top of the reservoir using a hose mender and a section of the supplied hose. Install and tighten a clamp on each connection.
5. Trim and connect a section of the supplied hose from the 90° hose installed on the CAC end tank to the fitting on the surge tank that is pointed toward the engine. Select the smoothest routing that will keep the hose away from moving parts and secure the CAC end with a clamp. Leave the surge tank end loose until after the system is bled.
6. Plug the open fitting in the surge tank, remove the cap and fill the system with 25%/75% coolant/water mix. Fill the system slowly until it refuses to take more coolant or coolant comes out of the open hose.
7. Uncap the surge tank fitting, connect the open hose to it, and tighten with clamp.
8. Loosely install the plastic cap.

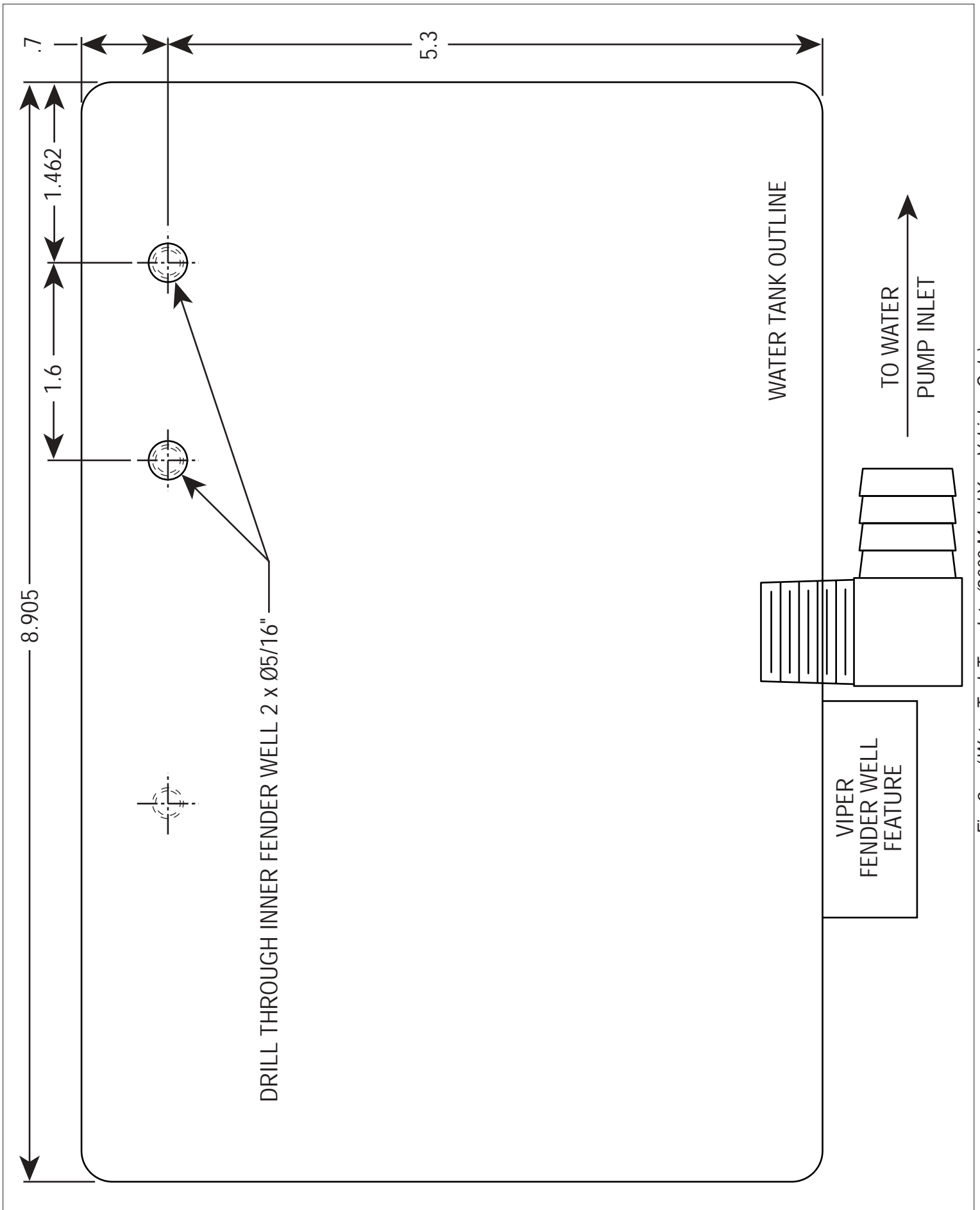


Fig. 9-m / Water Tank Template (2000 Model Year Vehicles Only)

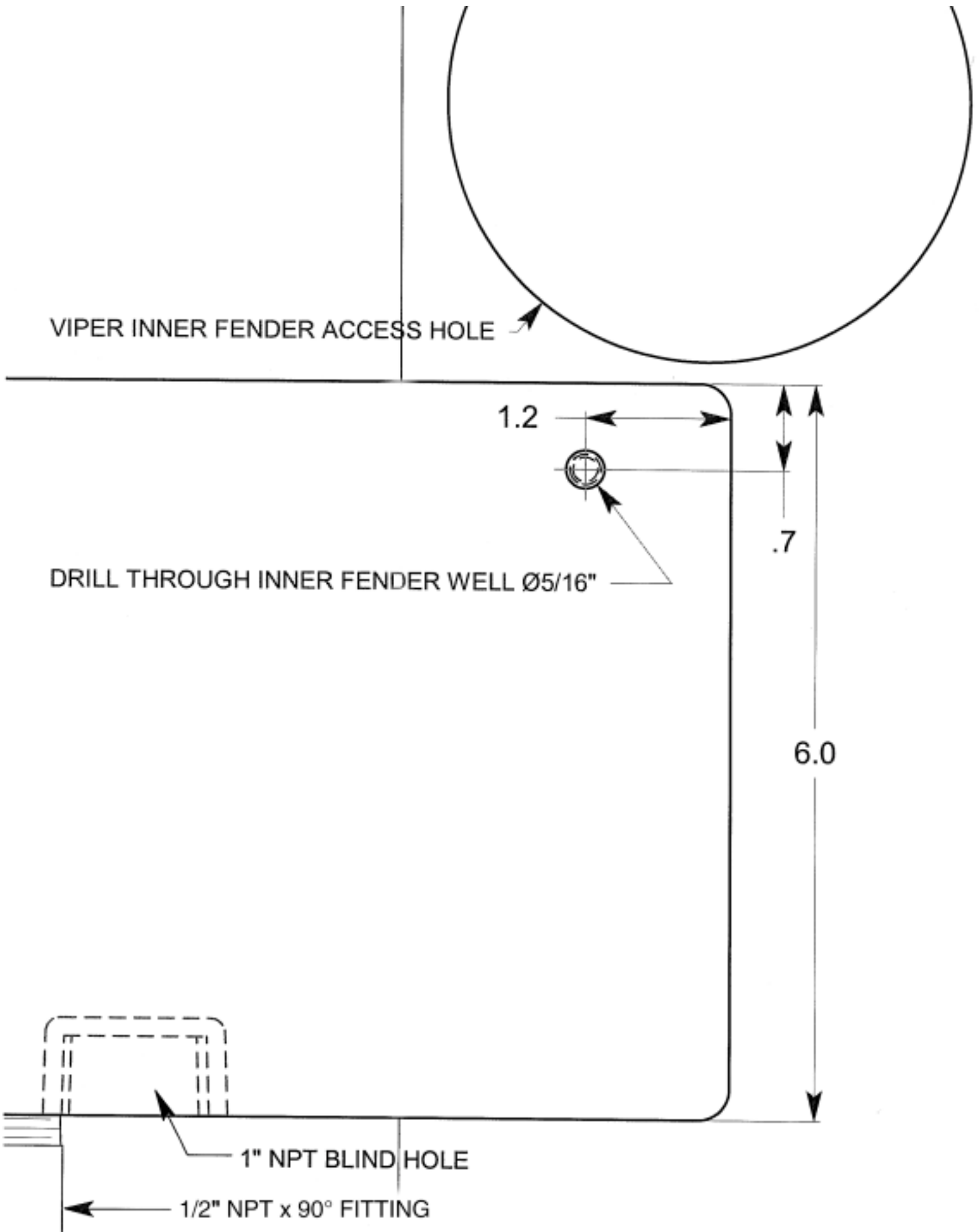


Fig. 9-n / Water Tank Template (All except 2000 Model Years)

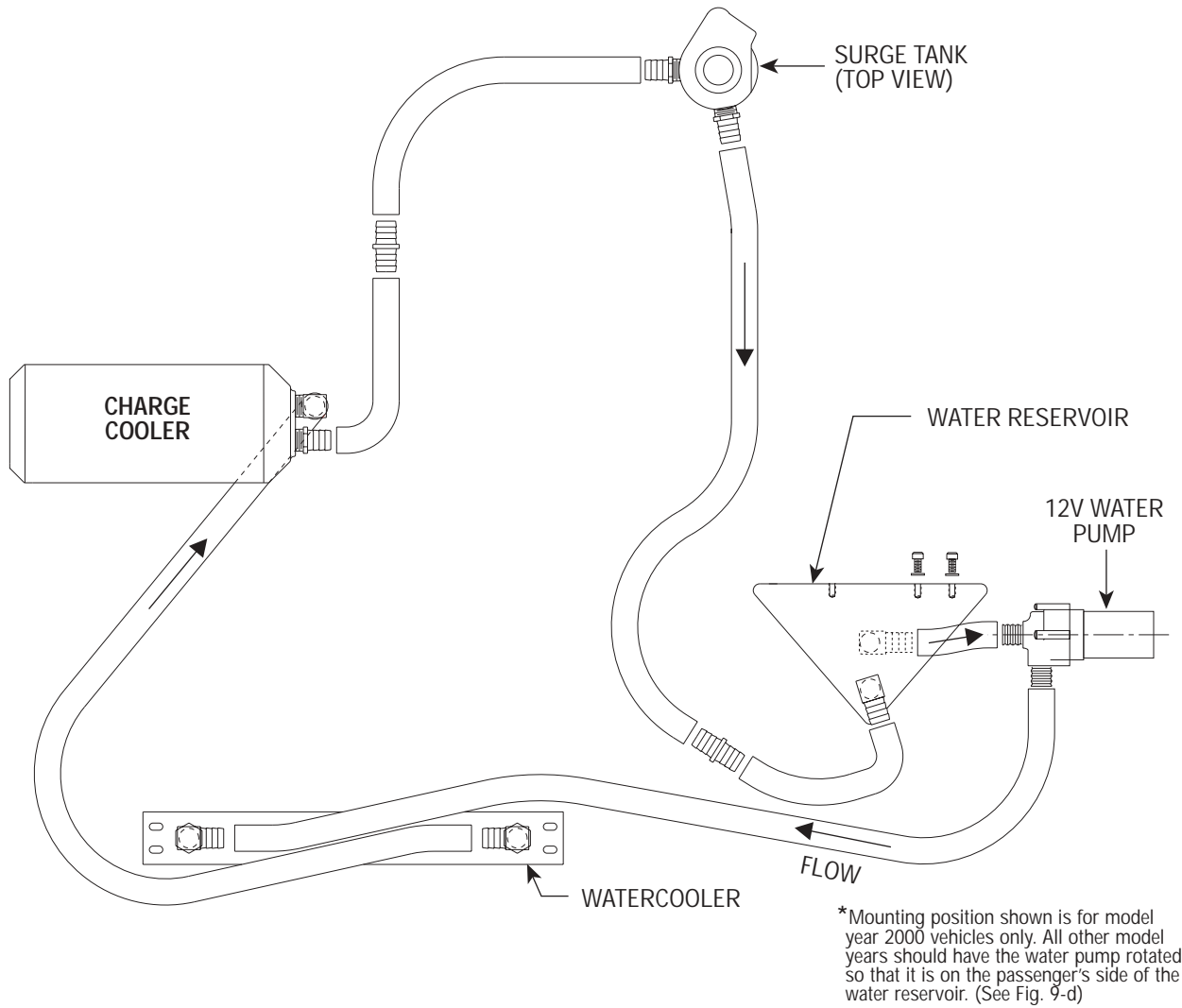


Fig. 9-o / Plumbing Schematic

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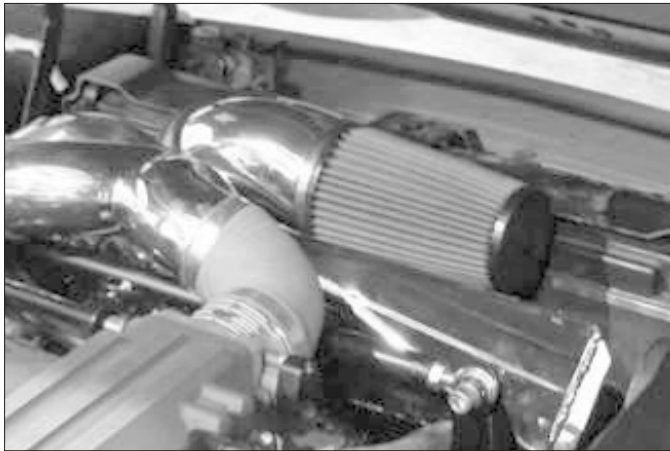
# Section 10

## AIR INLET DUCT INSTALLATION

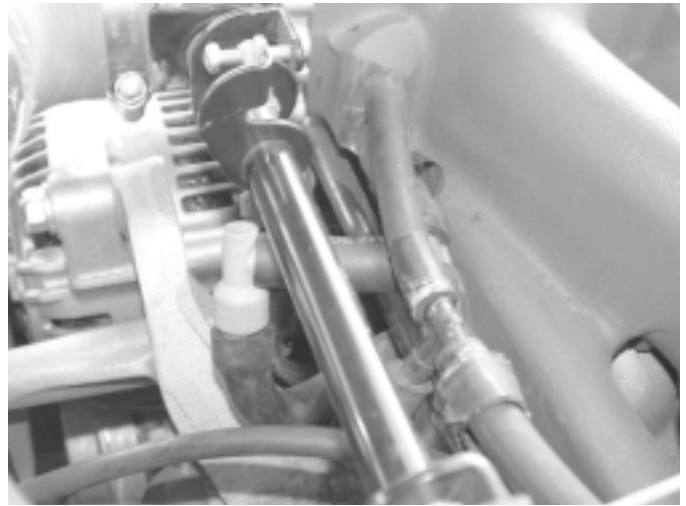
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### 10. AIR INLET DUCT INSTALLATION

- A. Install the short end of the supplied 4" rubber elbow onto the supercharger inlet.
- B. Insert the large end of the supplied aluminum duct into the open end of the rubber elbow.
- C. Install the supplied conical air filter onto the end of the aluminum duct. (See *Fig.10-a.*)



*Fig. 10-a*



*Fig. 10-b*

- D. Orient the assembly to provide as much clearance to the hood as possible.
- E. Tighten a supplied hose clamp on each connection.
- F. Using the supplied 5/8" hose mender and hose, connect the factory crankcase vent hose to the 5/8" fitting installed in the bottom of the supplied air inlet duct. Secure with zip-ties.
- G. For 1998 and later vehicles, remove the 3/8" hose from the plastic TEE that connects the intake manifold plenums to the crankcase. Install the supplied PCV valve as shown in *Fig. 10-b* using the supplied 3/8" hose.

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# Section 11

## TIMING CONTROLLER INSTALLATION

### 11. TIMING CONTROLLER INSTALLATION

**\*\*\*NOTE\*\*\***

The VIOLET wire is not used. Tape up the wire to avoid confusion.

- A. Using the supplied adhesive-backed Velcro, position the ignition timing control computer as shown in Fig. 11-a.

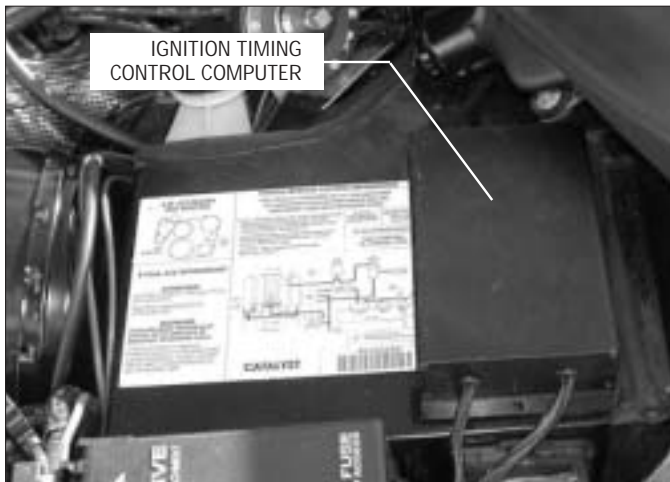


Fig. 11-a

- B. The vacuum hose on the timing controller should be connected to the intake manifold vacuum using the supplied TEE and hose.
- C. Remove the Powertrain Control Module (PCM) cover. (See Fig. 9-e.)

**\*\*\*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 2000 Vipers only. Other vehicles are similar, but a factory service manual should be consulted for verification.

- D. Connect the thin 20GA RED wire to the battery's positive switch by the ignition (black PCM connector, Pin #2, dark blue with gray stripe wire). Use the supplied T-Tap and spade connector. The yellow water pump

trigger wire (installed in section 9-c) should also be connected to the same power source. Use the supplied T-Tap and spade connector. (See Fig. 11-c.)

- E. Connect the BLACK wire to the signal ground at the PCM (black PCM connector, Pin #4, black with light blue stripe wire). Use the supplied T-Tap and spade connector.
- F. Cut the CRANK sensor signal wire (black PCM connector, Pin #8, gray with black stripe wire).
- G. Connect the GRAY wire to the wire leading to the crank sensor.
- H. Connect the GRAY/BLACK wire to the wire leading to the PCM crank sensor input.
- I. Cut the CAM sensor signal wire (black PCM connector, Pin #18, tan with yellow stripe wire).
- J. Connect the TAN wire to the wire leading to the cam sensor.
- K. Connect the TAN/YELLOW wire to the wire leading to the PCM cam sensor input. (See Fig. 11-b.)



Fig. 11-b

- L. Connect the large 12GA red wire to the battery (+) positive terminal located at the front of the fuse box using the 3/8" ring terminal connector.
- M. Reinstall the PCM cover.
- N. The two striped red wires will be used to power the fuel pumps in the following section.

11. TIMING CONTROLLER INSTALLATION, cont'd.

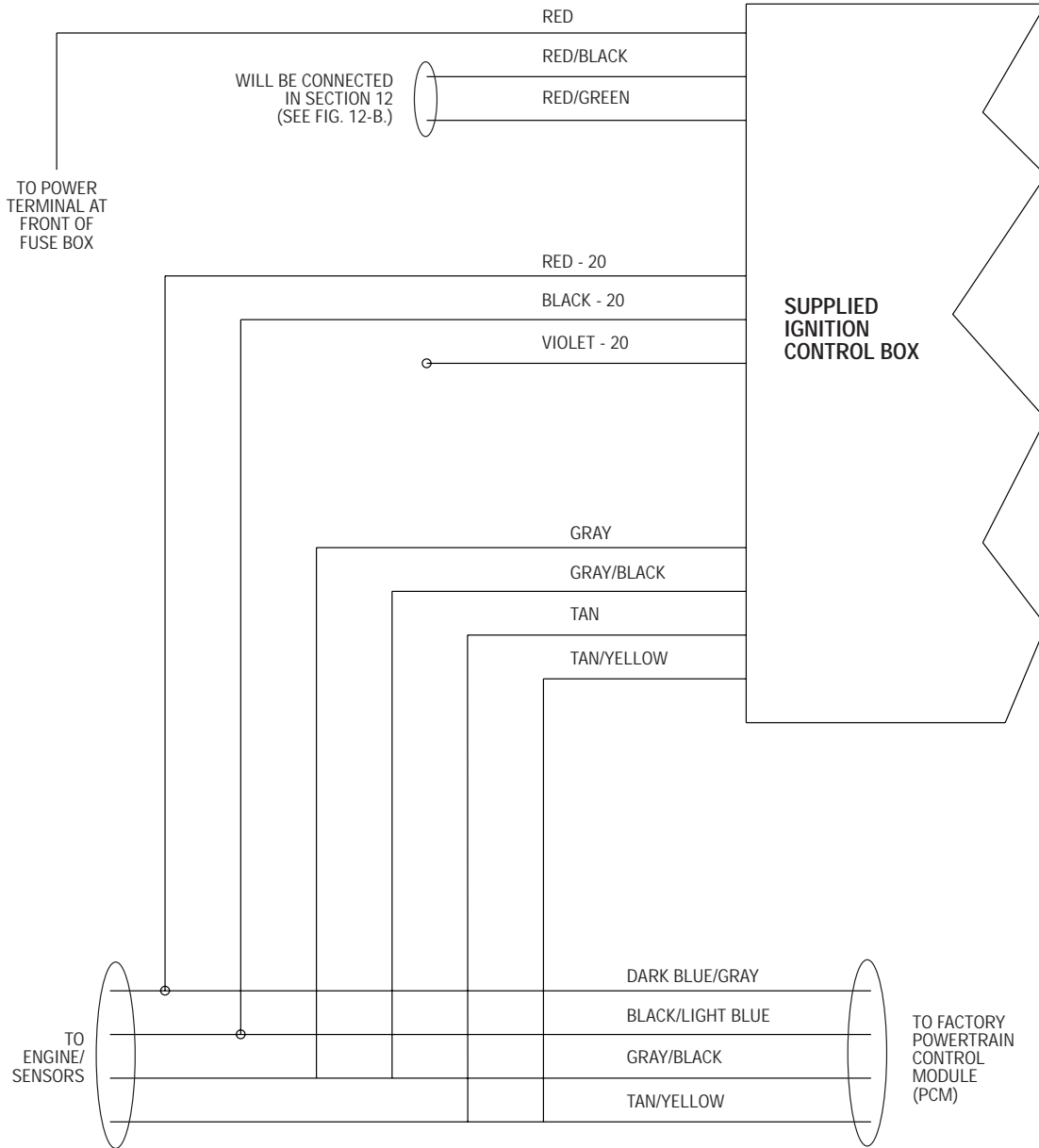


Fig. 11-c / Timing Controller Wiring Schematic

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# Section 12

## AUXILIARY FUEL PUMP ASSEMBLY INSTALLATION

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### 12. 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.
- B. Mount the pumps using the supplied adel clamps and sheet metal screws on the inside of the driver's side frame rail in front of the large frame plate. Install ring terminal connectors on both ends of the supplied black wire and fasten underneath one of the sheet metal screws for later use as fuel pump ground.
- C. Connect the negative terminals of the fuel pumps to each other with the supplied wire and ring terminals.
- D. Connect the previously installed ground wire to one of the fuel pump ground terminals.
- E. Connect a striped red wire from the ignition control box to each of the fuel pump positive terminals using the supplied ring terminal connectors.
- H. Connect the other supplied spring lock fitting to the factory fuel supply line with the supplied hose routed down to the fuel pump inlet TEE.
- I. Install the supplied Fuel Control Unit (FCU) in the location shown in *Fig. 12-b*. Route the fuel lines to the auxiliary fuel pumps.
- J. Cut the auxiliary fuel pump supply (inlet) line and install a supplied TEE in-line. Connect the fuel line coming out of the center of the FCU to this TEE.
- K. Cut the auxiliary fuel pump discharge (outlet) line and install a supplied TEE inline. Connect the fuel line coming out of the side of the FCU to this TEE.
- L. All of the hose connections should have clamps installed and tightened using stepless clamp pliers.
- M. 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.
- N. Install the supplied plastic wire loom around the fuel pump power wires and secure.



*Fig. 12-a*

- F. Compress the plastic ring (or use a spring lock disconnect tool) to disconnect the factory fuel line behind the engine.
- G. 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 down to the fuel pump outlet TEE.

---

**\*\*\*WARNING\*\*\***

*Secure fuel lines away from hot or moving objects. Insulate the fuel line from possible abrasive contact points.*

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12. AUXILIARY FUEL PUMP ASSEMBLY INSTALLATION, cont'd.

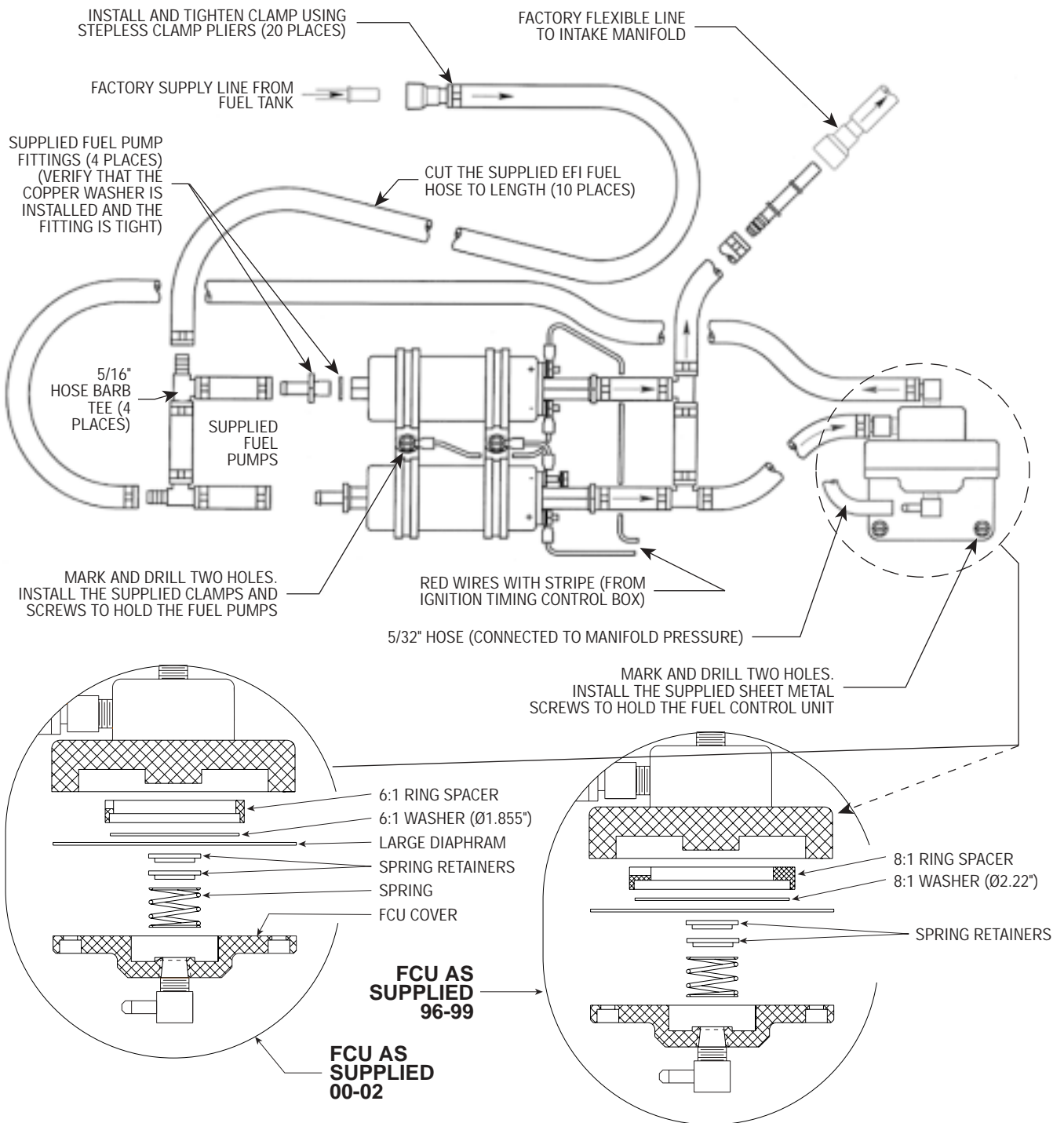


Fig. 12-b

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# Section 13

## FINAL CHECK

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### 13. FINAL CHECK

- A. Reconnect the 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. Make sure that the radiator and reservoir are full.
- D. Verify that the power steering reservoir is at the “full cold” level.
- E. Temporarily install a fuel pressure gauge onto the -6 fitting on the intake manifold. Cycle the fuel pump several times by turning the ignition, then off again. Check all fuel system hose connections for leakage.
- F. With key on, make sure the cooler water pump is operating and that water is flowing through the surge tank. Fill the surge tank 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 the cooler surge tank frequently until the level stabilizes.
- G. With the engine running, turn the steering wheel in both directions. Check the power steering hose connections for leakage.
- H. 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.
- I. Monitor the fuel pressure at full throttle. The fuel pressure should reach 100 psi at 6000 rpm. If this fuel pressure is not achieved, add a spring retainer under the FCU spring or increase the FCU calibration (e.g. replace 6:1 with 8:1).
- J. Read the “Street Supercharger System Owner’s Manual” and return the warranty registration form within thirty days of purchasing your supercharger system.





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