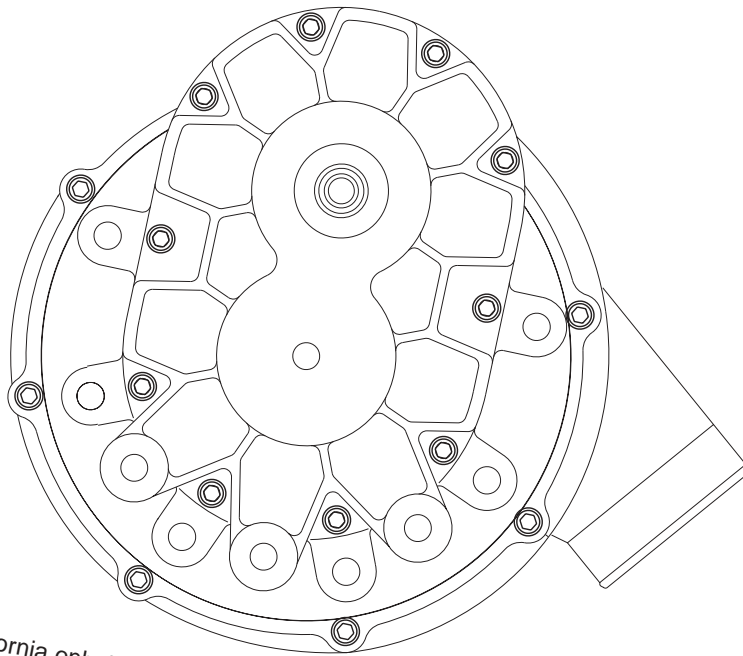


Nissan 350Z

Supercharger System Installation Instructions

2003 Model Year*



*Legal in California only for racing vehicles which may never be used upon a highway.



ENGINEERING, LLC

1650 Pacific Avenue, Channel Islands CA 93033-9901 • Phone: 805 247-0226
Fax: 805 247-0669 • www.vortechsuperchargers.com • M-F 8:00AM - 4:30PM (PST)

FOREWORD

This manual provides information on the installation, maintenance and service of the Vortech supercharger kit expressly designed for this vehicle. Contact Vortech Engineering for any additional information regarding this kit and any of these modifications at (805) 247-0228 8:00am-4:30pm PST.

An understanding of the information contained herein will help novices, as well as experienced technicians, to correctly install and receive the greatest possible benefit from their Vortech supercharger. When reference is made in this manual to a brand name, number, specific tool or technique, an equivalent product may be used in place of the item mentioned. All information, illustrations and specifications contained herein are based on the latest product information available at the time of this publication. All rights reserved to make changes at any time without notice.

WARNING

Extreme care must be taken when driving a supercharged vehicle with the stock clutch. If clutch slippage is detected, discontinue hard use. Vortech recommends replacing the stock clutch with a higher capacity unit if slippage occurs.

WARNING

Although this kit fits 350Z vehicles with an automatic, the transmission does not upshift at full throttle when driving in "D" (drive) mode. In order to shift at full throttle, the transmission must be in the "manual shift" mode and operated by the driver. Vortech makes no claims as to the reliability of the transmission with the supercharger installed.

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NOTICE

This product is protected by state common law, copyright and/or patent. All legal rights therein are reserved. The design, layout, dimensions, geometry, and engineering features shown in this product are the exclusive property of Vortech Engineering, LLC. This product may not be copied or duplicated in whole or part, abstractly or fundamentally, intentionally or fortuitously, nor shall any design, dimension, or other information be incorporated into any product or apparatus without prior written consent of Vortech Engineering, LLC.

2003 Nissan 350Z

Installation Instructions

Congratulations on selecting the best performing and best backed automotive supercharger available today... the VORTECH® supercharger!

Before beginning this installation, please read through this entire instruction booklet and the Street Supercharger System Owner's Manual (Race Owner's Manual for the Renegade kit) which includes the Limited Warranty Program, the Warranty Registration form and return envelope.

Vortech supercharger systems are performance improving devices. In most cases, increases in torque of 30-40% and horsepower between 45-55% can be expected with the boost levels specified by Vortech Engineering. **This product is intended for use on healthy, well maintained engines. Installation on a worn-out or damaged engine is not recommended and may result in failure of the engine as well as the supercharger. Vortech Engineering is not responsible for engine damage.**

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

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

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

TOOL & SUPPLY REQUIREMENT

- Ø2.5" Hole Saw
- 1/8", 11/64" Drill Bits
- Drill Motor
- Stepless Clamp Crimping Pliers
- Seal Cutter
- Gasket Scraper
- Silicone RTV (Permatex Ultra Grey: 82194 or equivalent)
- Factory Repair Manual (Recommended)
- 3/8" Socket and Drive Set: SAE & Metric
- 1/2" Socket and Drive Set: SAE & Metric
- 3/8" NPT Tap and Handle
- Open End Wrenches: SAE & Metric
- Center Punch
- Springlock 5/16" Fuel Fitting Disconnect Tool
- 5 Quarts SH/CF Rated Quality Engine Oil
- Oil Filter and Wrench
- Flat #2 Screwdriver
- Phillips #2 Screwdriver
- Heavy Grease
- Silicone Sealer
- Drill Motor
- 1/8", 3/16" Drill Bits
- Hex Key Wrench Set
- Wire Strippers and Crimpers
- Utility Knife



If it has been 20,000 miles or more since your vehicle's last spark plug change, then you will also need:

- Spark plug socket
- NEW spark plugs



ENGINEERING, LLC

2003 Nissan 350Z

Part No. 4NZ218-010SQ

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 Number	Description	Qty.
2E229-030	V2SQ ASSY, 350Z SATIN	1	8N101-350	CHARGE AIR COOLER, 350Z	1
4GR033-028	S/C PULLEY, 28 TOOTH, C5	1	4NZ112-010	DISCHARGE ASSY, 350Z	1
2A042-075	BELT, GATES 600-8MGT-20	1	4NZ010-020	BRKT, CLR MTG, 350Z	1
2A040-021	RETAINER, PULLEY, FLATHD	2	4NZ012-010	TUBE, S/C OUTLET, 350Z	1
7B375-128	3/8-24X1.25 GR8 FLATHEAD CS	1	4NZ012-030	TUBE, CLR OUTLET, 350Z	1
4NZ110-033	MTG PLATE ASSEMBLY 350Z	1	4NZ012-040	TUBE, COOLER UP PIPE, 350Z	1
2A017-028	4.3 PLEUM SPACER A	1	4NZ012-060	TUBE, MAF OUTLET, 350Z	1
2A017-029	4.3 PLENUM SPACER B	2	4NZ112-020	TUBE ASSY, COOLER INLET, 350Z	1
2A017-103-110	SPACER, COG TENSIONER IDLER, 350Z	1	4NZ112-050	TUBE ASSY, MAF INLET, 350Z	1
2A017-103-602	SPACER, 350Z MTG PLATE MAIN	1	7A250-074	1/4-20 x 3/4" HXHD	2
2A017-462	SPACER, IDLER SMOOTH 6RIB	4	7J250-001	1/4 SAE WASHER	2
2A036-333	S/C PULLEY 3.33" 6 GROOVE	1	7R002-040	#40 STAINLESS HOSE CLAMP	10
2A040-011	PULLEY RETAINER S/C	2	7R002-044	#44 SAE TYPE F SS HOSE CLAMP	2
2A046-935	BELT, 4060935-GOODYEAR	1	7R002-048	#48 SAE TYPE F SS HOSE CLAMP	4
2D070-159	LARGE BEARING, EXTENDED DRIVE	2	7S250-200	2-1/2 x 2 SLEEVE	2
2D070-171	JACKSHAFT, C5, H900	1	7S250-300	HOSE, HI-TEMP, 2.50" ID x 3.00"	2
4FA016-171	DUST COVER (IDLER PULLEY)	1	7S275-251	REDUCER, 2.75 TO 2.50	2
4FH016-150	IDLER PULY, 6RIB SMOOTH 3" FLANGD	1	7S300-200	3 x 2 SLEEVE	2
4GF016-160	PULLEY, 3" IDLER-RIBBED	2	8D204-011	RACE BLOWOFF VALVE-BLUE	1
4GR032-032	PULLEY, 32 TOOTH JKSHFT, DRIVEN	1	8N010-070	BRACKET, PUMP-TO-TANK, MTG, LS1	2
4GR116-300	IDLER ASSY, 20mm BELT	1	8N100-001	NYLON MOUNTING KIT	1
4NZ010-033	MTG PLATE, S/C, 350Z	1	4NZ112-350	INLET ASSY, 350Z	1
4NZ030-041	BRG HSG, 350Z	1	7P625-016	5/8" HOSE UNION, BARBED ENDS	1
7A312-152	5/16-18 x 1.5 SHCS	4	7P625-091	5/8 x 5/8 x 90° BARB ELBOW	1
7A375-100	3/8-16 x 1" HXHD	4	7U033-000	5/8" FUEL/PCV HOSE	30"
7B375-075	3/8-24 x 3/4" GR8 HXHD BOLT	1	8H040-350	AIR FILTER, 3.5" FLG x 4.5L, OFFSET	1
7B375-150	3/8 24X 1-1/2 HX CLS	1	4NZ238-088	FMU W/LINES, W/SPRING, 350Z	1
7C012-050	12mm x 1.75 X 50mm HXHD BOLT	1	6Z050-191	FMU WASHER, 8:1/24LB. PLATED	1
7C012-110	M12x1.75X110 HHCS	1	6Z070-030	FMU 8:1 RING SPACER	1
7C060-020	M6 x 1.0 X 20mm HHCS	2	7E010-075	#12 x 3/4" SHT METL SCRW HEX	2
7C060-025	M6 x 1.00 X 25mm HX	1	7P156-082	5/32 TEE	1
7C060-070	M6 x 1.0 X 70 HXHD GR8.8 PLT	2	7P312-005	5/16 FEMALE FUEL CNCT	1
7G010-175	12mm x 1.75 NUT	1	7P312-007	FUEL FITTING MALE	1
7J006-093	6mm WASHER, PLATED	5	7R004-001	STEPLESS CLAMP, 15.7-70	4
7J012-092	12mm WASHER, FLAT	1	7U030-046	5/32" VACUUM LINE	6'
7K375-040	3/8 AN960 FLAT WASHER	6	7U031-018	5/16 FUEL HSE HI-PSR	2.5'
7U100-069	KEY, 3/16 SQUARE x .73 LONG	1	7U031-018	5/16 FUEL HSE HI-PSR	1.25'
7U100-073	KEY, 3/16 SQUARE x 1.375 LONG	1	4NZ101-002	FUEL PUMP ASSY, INLINE, 350Z	1
7U100-084	SNAP RING, V9	1	5W001-045	16-14 GA RING TERM .17" HOLE	1
7X100-027	WAVE WASHER-LARGE (V-2)	1	5W001-005	3/8" PLASTIC WIRE LOOM	6'
4NZ130-026	OIL FEED LINE ASSY, 350Z	1	5W001-011	16-14 GA RING TERM .26" HOLE	1
7P125-004	1/8 NPT 90° x -4 JIC FTG	1	5W014-030	14GA STRD WIRE BLACK	0.5'
7P125-005	1/8 NPT STR. x -4 JIC FTG	1	7P312-017	5/16" HOSE BARB TO PBURG OUT	1
7P125-034	1/8NPTX1/8NPT STRT T	1	7E010-075	#12 x 3/4" SHT METAL SCREW HEX	2
7P125-125	FTG, 1/8NPT FEM x 1/8BSPT MALE	1	7P625-312	REDUCER, 5/8" BARB - 5/16" BARB	1
7U100-055	TIE WRAP, 6" NYLON	5	7R004-009	STEPLESS CLAMP, 1.0 O.D. HOSE	3
7U250-000-360	OIL FEED HOSE, 36" -4 STRT	1	7U033-010R	HOSE, 5/8" I.D. P/STR RETURN	2"
4NZ130-036	OIL DRAIN LINE ASSY, 350Z	1	8F001-500	PUMP, FUEL, "PRO-FLOW 500"	1
7P375-017	3/8NPT x 1/2 BEADED HSE BRB	1	7P312-082	5/16 TEE HOSE BARB	2
7R001-008	#8 STNLS HOSE CLAMP	2	7R003-028	ADEL CLAMP, 2-3/8". .26 HOLE	2
7T560-001	CUTTER, 9/16" ROTABROACH	1	7R004-001	STEPLESS CLAMP, 15.7-70	8
7T560-002	ARBOR, ROTABROACH	1	7U031-018	5/16 FUEL HSE HI-PSR	5.5'
7U030-036	1/2" OIL DRAIN HOSE	1.5'	7U100-044	TIE WRAP, 4" NYLON	10
7U100-066	TIE WRAP, 11" NYLON	5	7U100-055	TIE WRAP, 6" NYLON	5
			5A001-351	TIMING CONTROL BOX, 350Z	1
			5W001-017	3/8" RING TERMINAL 12GA.	1
			7U375-001	VELCRO-HOOK 1" BLACK	0.22YD
			7U375-002	VELCRO-LATCH 1" BLACK	0.22YD
			7P156-082	5/32 TEE	1
			7P156-119	5/32 UNION (Ø.156 O.D.)	1

1. PREPARATION/REMOVAL

- A. Open doors and disconnect the battery negative cable.
- B. Remove the strut tower brace if equipped (optional).
- C. Remove the plastic engine cover and set aside.
- D. Remove the valve cover breather hose from the factory air inlet duct. Remove the air filter and all ducting up to the throttle body. Unplug the MAF (mass air flow sensor) and remove it from the air filter housing. Set it aside for later use along with its O-ring.
- E. Remove the splash pan from the bottom of the vehicle and set aside.
- F. Loosen the accessory drive belt tensioner idler center nut. From underneath the vehicle, turn the tensioner screw counter-clockwise until it stops. Remove the accessory drive belt.
- G. Remove and discard the two brackets securing the large wiring loom on the top of the engine.
- H. Remove and discard the brackets securing the 5/8" I.D. coolant hose to the front of the engine. Set aside the 12mm screw for later use.
- I. Remove the two engine cover screws from the positions shown. (See *Fig. 1-a.*)
- J. Remove the small engine air inlet duct that protrudes through the radiator core support.
- K. From underneath the vehicle remove and discard the power steering cooler brackets located in front of the radiator.

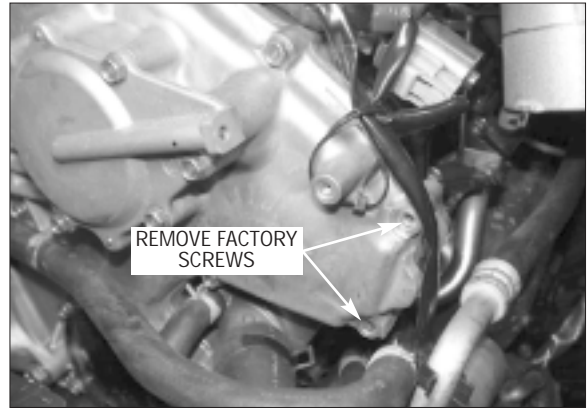


Fig. 1-a

2. OIL DRAIN LINE INSTALLATION

NOTE: It is recommended that the lower oil pan be removed so that any chips from the following procedure can be cleaned up. To do this, a seal cutter and silicone RTV (Permatex ultra grey: 82194 or equivalent) are required.

- A. Drain the engine oil.
- B. Remove the steel oil pan. (Optional.)
- C. To provide an oil drain for the supercharger, it is necessary to make a hole in the driver's side of the aluminum upper oil pan. Locate and center-punch the hole. (See Fig. 2-a.)
- D. Access to the oil drain location is restricted so a low profile or right angle drill may be necessary.
- E. Drill a 1/8" hole at the center location. Use the supplied 9/16" cutter to enlarge the pilot hole making sure to break through easily if the oil pan has not been removed so that the cutout does not fall into the pan.
- F. Thread the hole with a 3/8" NPT tap to approximately 1/2" deep or until the fitting can be started. Pack the flutes of the tap with grease to minimize the amount of debris that gets into the engine. Access is restricted so inserting the tap in a socket and then using a ratchet to rotate it is helpful.
- G. Thoroughly clean the threaded area and the interior of the engine. Apply a small amount of silicone sealer to the new threads. Apply more sealer to the 3/8" NPT hose fitting and secure in the hole. Make sure a seal is formed all around the fitting.
- H. If necessary, reinstall the oil pan. Clean off the old sealant and any oil from both surfaces, apply a .2" (5mm) wide bead of silicone RTV, install the pan within five minutes and torque the screws to 74-82 in-lbs (8.3-9.3 N-m) in a rotating sequence.
- I. Wait at least 30 minutes before refilling with oil.

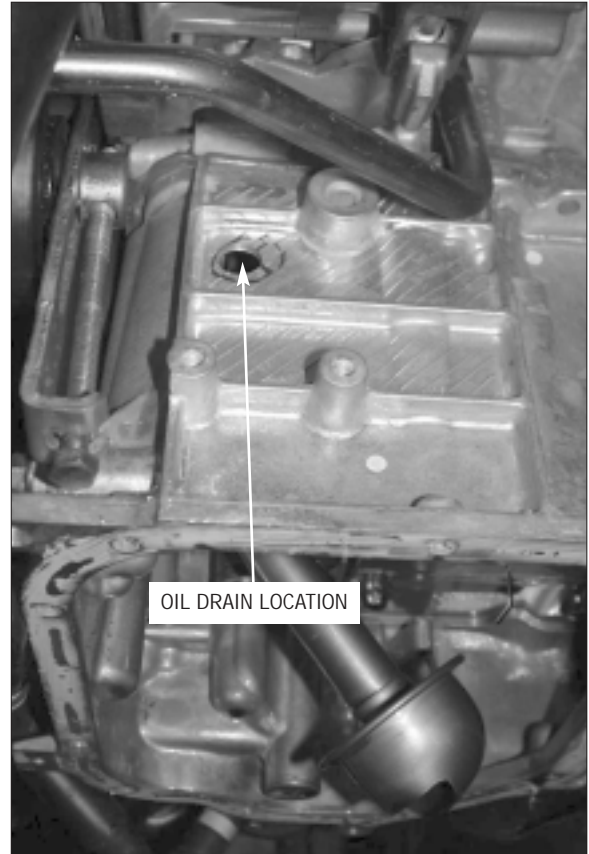


Fig. 2-a

3. OIL FEED LINE INSTALLATION

- A. Remove the oil pressure sending unit located in front of the oil filter.
- B. Using engine oil on the threads, install the adapter into the engine block. Install the TEE into the adapter and tighten. Reinstall the sending unit into the TEE. Install 1/8" NPT to #4 90° fitting onto the TEE and point it toward the driver's side of the vehicle. (See Fig. 3-a.)
- C. Install a new filter and refill with fresh oil.



Fig. 3-a

4. THROTTLE BODY DUCTING INSTALLATION

- A. Use the supplied hose union to attach the supplied 5/8" hose to the engine breather hose that was disconnected from the factory air inlet duct.
- B. Attach the MAF to the supplied duct using the supplied 6mm hardware. The bend in the duct should point the same way as the plug on the MAF.
- C. Using the supplied 3" tube and sleeves, attach the MAF to the throttle body. Plug in the MAF electrical connector.
- D. Install a 2.75" to 2.5" reducer onto the end of the duct. (See Fig. 4-a.)
- E. Install the cast intermediate duct into the vehicle and then slide it up into the reducer sleeve. The duct should be routed between the flexible A/C line and the frame with the bent end pointed down. (See Fig. 4-b.)
- F. Install and tighten clamps on each connection. (These may need to be loosened after the supercharger is installed to improve fit.)
- G. Install the air filter into the hole in the radiator core support so that it can later be attached to the supercharger inlet.
- H. Install the supplied 5/8" 90° hose barb fitting into the hole in the base of the air filter. (See Fig. 4-c.)



Fig. 4-b



Fig. 4-a



Fig. 4-c

5. SUPERCHARGER MOUNTING PLATE ASSEMBLY

- A. Install the supplied $\text{\O}1/2$ " fabric-braid oil drain line onto the supercharger fitting and tighten the supplied hose clamp.
- B. Install the supplied $1/8$ " NPT x -4 oil feed fitting into the supercharger oil feed nozzle using motor oil on the threads. Attach the supplied oil feed hose to the fitting and tighten.

NOTE: Use clean oil on the pipe (tapered) threads. Teflon tape or sealant is not recommended as it may loosen and cause blockage of the small oil feed orifice resulting in supercharger failure.

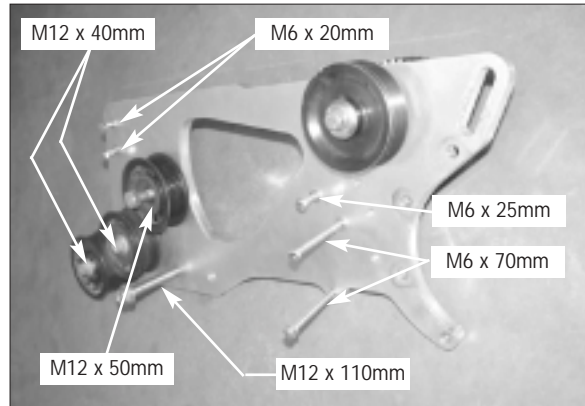


Fig. 5-a

- C. Install the six mounting screws and washers through the mounting plate in the position shown. (See Fig. 5-a.)
- D. Install the supercharger onto the mounting plate and install and tighten the four $3/8$ " x 1" screws and washers.
- E. Install the supplied gilmer (toothed) belt around the pulleys on the mounting plate assembly. (See Fig. 6-a.)

6. SUPERCHARGER MOUNTING PLATE INSTALLATION

- A. Install the four supplied spacers onto their respective screws. (See Fig. 6-a.) A small dab of sealant between the spacer and the mounting plate may help retain them during the following steps.
- B. Position the supercharger mounting plate assembly in front of the engine and start all of the mounting screws.
- C. Make sure that the coolant hose is routed in the groove on the back of the supercharger mounting plate.
- D. Verify that the oil drain hose is routed as smoothly as possible and connect it to the fitting on the oil pan. Tighten a hose clamp on this connection. Secure the oil drain hose and the A/C line away from the A/C pulley with zip-ties. Trim drain hose length if necessary.

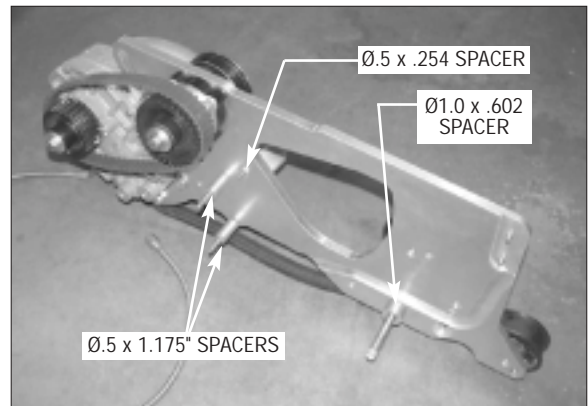


Fig. 6-a

NOTE: Oil in the supercharger is gravity drained to the oil pan. Trim the supplied oil drain hose as necessary so that it is continuously sloping down towards the oil pan. Avoid dips, kinks, etc.

6. SUPERCHARGER MOUNTING PLATE INSTALLATION, cont'd

- E. Route the oil feed hose outside the driver's side frame rail and then to the fitting installed near the oil filter and tighten. Use the supplied zip-ties to secure.
- F. Tighten all of the mounting plate screws.
- G. Install the air filter onto the supercharger inlet and tighten the clamp.
- H. Install the idlers in the positions shown in *Fig. 5-a* (if not already assembled). Make sure that the 50mm screw (longer) is installed through the top idler.
- I. Using the 12mm screw set aside in step 1, install the aluminum idler with the bearing retaining snap ring pointed towards the rear of the vehicle. The screw should pass through the idler, a pilot spacer, the 1.1" spacer and the supercharger mounting plate. Install the supplied nut and washer on the end of the screw and tighten the idler so that the gilmer belt is snug. (See *Fig. 6-b*.)
- J. Install the supplied accessory drive belt. Tighten the belt tensioner until the belt is tight. Tighten the center nut on the belt tensioner idler. (See *Fig. 6-c*.)

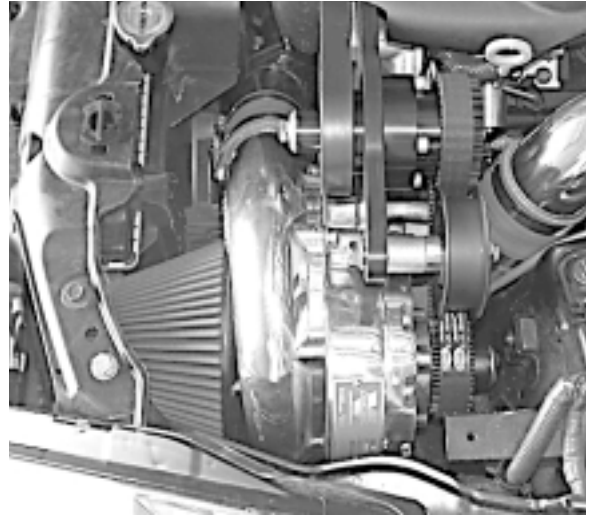


Fig. 6-b



Fig. 6-c

7. FUEL MANAGEMENT UNIT (FMU) AND FUEL PUMP INSTALLATION

- A. Install the FMU in the location shown in *Fig. 7-a* using the supplied sheet metal screws (drill a pilot hole at each location before installing the screw.)
- B. Disconnect the fuel line fitting on the passenger's side frame rail near the engine.
- C. Connect the FMU hoses to the respective fittings on the fuel lines. (See *Fig. 7-c*.)
- D. Install the fuel pump on the driver's side of the front cross member as shown. (See *Fig. 7-b*.) Run a ground wire from the negative terminal on the fuel pump to one of the mounting screws.
- E. Using the supplied 5/8" hose and clamps install the supplied reducer fitting onto the inlet of the fuel pump. Use two clamps on the fuel-pump side of the 5/8" hose.
- F. Cut the FMU line that goes to the vehicle's FUEL TANK and install a 5/16" TEE fitting with clamps. Connect the TEE to the INLET of the supplied fuel pump. (See *Fig. 7-c*.)



Fig. 7-a

NOTE: Ensure that the fuel lines are not kinked and have smooth bends, no chafing etc.

7. FUEL MANAGEMENT UNIT (FMU) AND FUEL PUMP INSTALLATION, cont'd

- G. Cut the FMU line that goes to the vehicle's ENGINE and install a 5/16" TEE fitting with clamps. Connect the TEE to the OUTLET of the supplied fuel pump.
- H. Remove the vacuum cap from the small bump tube on the front passenger's side on the intake manifold. Use the supplied vacuum hose to connect the pump tube to the fitting on the FMU cover. (See Fig. 7-d.)

NOTE: The positive (+) fuel pump wire will be connected in Section 10.



Fig. 7-d



Fig. 7-b

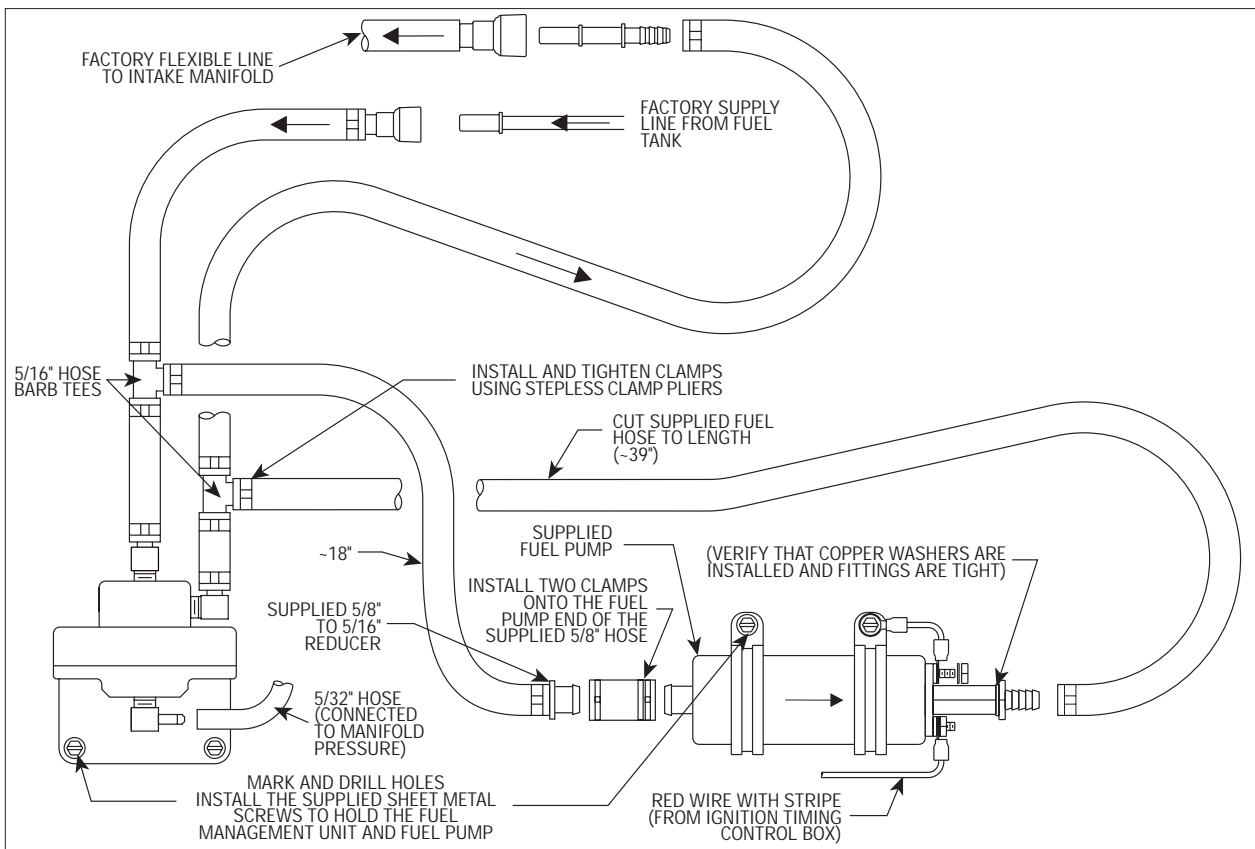


Fig. 7-c

8. CHARGE COOLER INSTALLATION

- A. Remove the wire loom hold-downs from the front of the radiator core support.
- B. Using the supplied adhesive backed foam to insulate the power steering cooler from the radiator, position it as shown in *Fig. 8-a*. Install the snap connectors on the free end. Cut off any excess that would interfere with radiator fan operation.
- C. Rotate any clamps that are pointing toward the front of the vehicle so that they will not contact the charge air cooler. Use the supplied zip ties to secure the wire loom to the air temp sensor and the power steering hose.
- D. Temporarily attach the two supplied matching metal brackets metal brackets to the bottom of the radiator core support using two of the factory splash pan screws. (See *Fig. 8-b*.)
- E. Attach the remaining metal bracket to the charge cooler using the supplied 1/4" x 3/4" hardware. (See *Fig. 8-c*.)
- F. Install the cooler in front of the radiator and rotate the metal brackets to support it as shown.
- G. Mark the plastic panels on either side of the cooler for passage of the Ø2-1/2" cooler tubes. Remove the cooler and drill a horizontal 2.5" hole (minimum) through each of the plastic panels.
- H. Reinstall the cooler. Connect the upper cooler bracket to two of the factory screws that secure the front bumper. Align cooler for best fit and tighten the four screws that attach the bracket.
- I. Install the ducts on both sides of the cooler. Connect the driver's side duct to the previously installed duct that is connected to the MAF. Trim or remove the small plastic panels that interfere with the ducting. (See *Fig. 8-d*.)
- J. Install the supercharger discharge duct from above the vehicle. Use a 2.75" to 2.5" reducer sleeve to connect it to the supercharger and the remaining sleeve to connect it to the previously installed charge cooler duct. (On vehicles equipped with automatic transmissions, it is normal for the discharge duct to deform the trans line as shown. (See *Fig. 8-e*.)

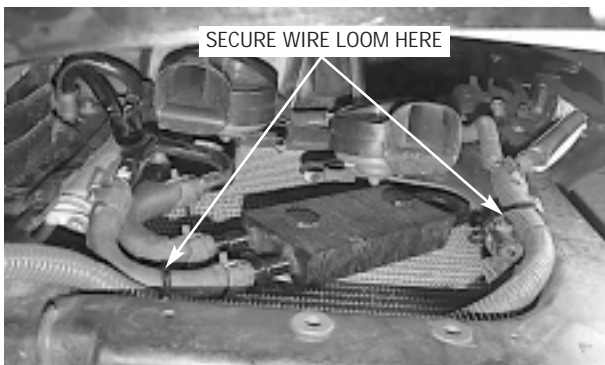


Fig. 8-a



Fig. 8-b

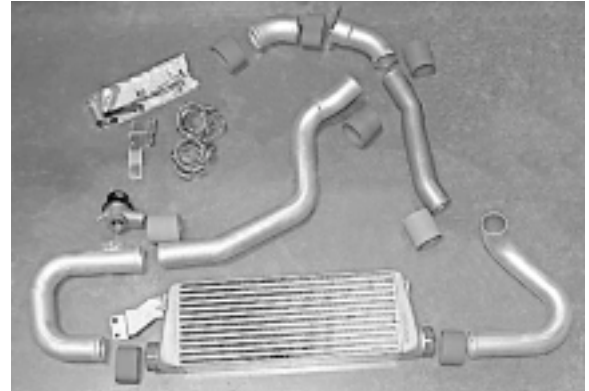


Fig. 8-c

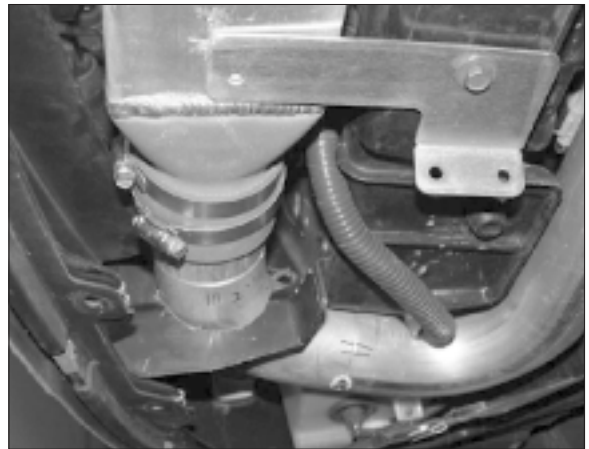


Fig. 8-d



Fig. 8-e

8. CHARGE COOLER INSTALLATION, cont'd.

- K. Position all ducting for best fit and tighten clamps on each connection.
- L. Remove the two brackets that were used to hold the core up during installation.

9. SUPERCHARGER BYPASS VALVE INSTALLATION

- A. Using the supplied gasket and 1/4" hardware, install the bypass valve onto the flange on the passenger's side under the vehicle. (See Fig. 9-a.)
- B. Connect 5/32" vacuum line from the bypass valve to a TEE fitting installed in the FMU manifold vacuum reference hose.



Fig. 9-a

10. TIMING CONTROLLER INSTALLATION

- A. Remove the inspection cover over the battery. Remove the plastic clips securing the larger cover over the battery and remove it as well.
- B. Using the supplied adhesive backed Velcro, position the ignition timing control computer next to the battery as shown. (See Fig. 10-a.)
- C. Run the wires through the firewall grommet next to the main ECU wiring harness.
- D. The ECU is located behind the passenger's side kick panel. Remove the door scuff panel and the kick panel.
- E. Remove the ECU harness connector by pulling on the lever. Remove the plastic cover from the connector so that the wires can be traced to their respective terminals.
- F. See Fig. 10-b for the ECU harness connector terminal layout.



Fig. 10-a

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.

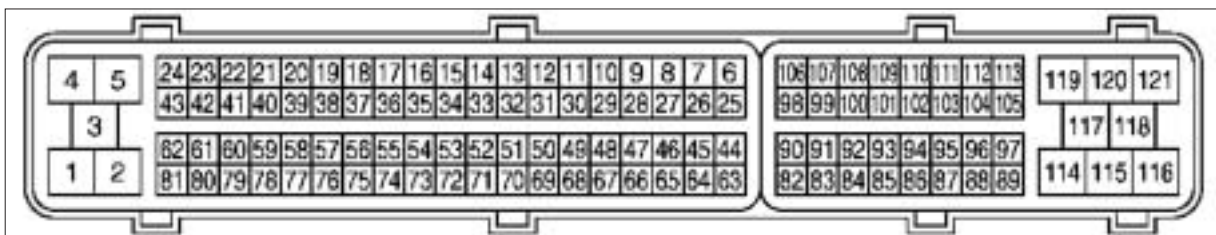


Fig. 10-b / As viewed from the back of the connector (Where the wires are inserted)

10. TIMING CONTROLLER INSTALLATION, cont'd

NOTE: The following steps; have some information in parenthesis. This information applies to the 2003 350Z only. Other vehicles are similar, but a factory service manual should be consulted for verification.

- G. Connect the thin 20Ga RED wire to battery positive switched by the ignition (ECU harness connector terminal 109, white with black stripe wire). Use the supplied T-Tap and spade connector.
- H. Connect the BLACK wire to the ECU ground (Terminal 115, black with white stripe wire). Use the supplied T-Tap and spade connector.
- I. Locate the MAF sensor signal wire and cut it (Terminal 51, orange wire).
- J. Connect the GREEN wire to the wire leading to the MAF sensor.
- K. Connect the VIOLET wire to the wire leading to the ECU MAF sensor input.
- L. Locate the crank sensor signal wire and cut it (Terminal 13, white with blue stripe wire).
- M. Connect the BLUE wire to the wire leading to the crank sensor.
- N. Connect the BLUE/WHITE wire to the wire leading to the ECU crank sensor input.
- O. Locate and cut the CAM 1 sensor signal wire and cut it. (Terminal 33, red wire).
- P. Connect the YELLOW wire to the wire leading to the cam sensor.
- Q. Connect the YELLOW/BLACK wire to the wire leading to the ECU cam sensor input.
- R. Locate and cut the CAM 2 sensor signal wire and cut it (Terminal 14, red with blue stripe wire).
- S. Connect the TAN wire to the wire leading to the cam sensor.
- T. Connect the TAN/BLACK wire to the leading to the ECU cam sensor input. (See Fig. 10-c.)
- U. Connect the large 12-gauge RED wire to the battery (+) positive terminal, using the supplied ring terminal connector.
- V. Reinstall the ECU plug and interior panels.
- W. The STRIPED RED wire needs to be connected to the Positive terminal of the previously installed fuel pump. Use the supplied plastic wire loom to enclose the wire. Route it down the passenger's side of the engine and secure it away from heat and sharp edges.
- X. The vacuum hose on the timing controller should be connected to intake manifold vacuum using the supplied TEE and hose.
- Y. Reinstall the battery covers.

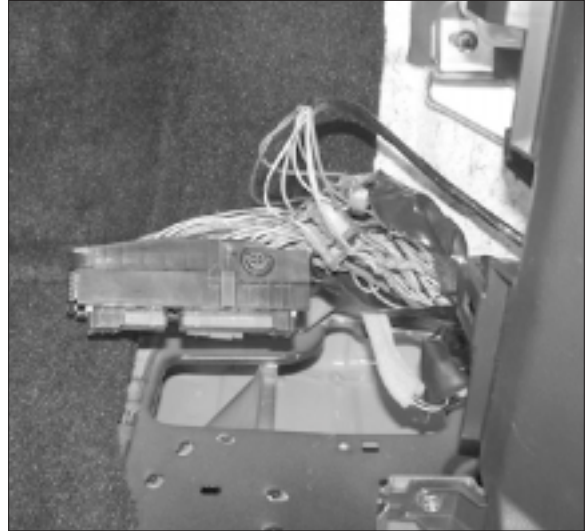


Fig. 10-c

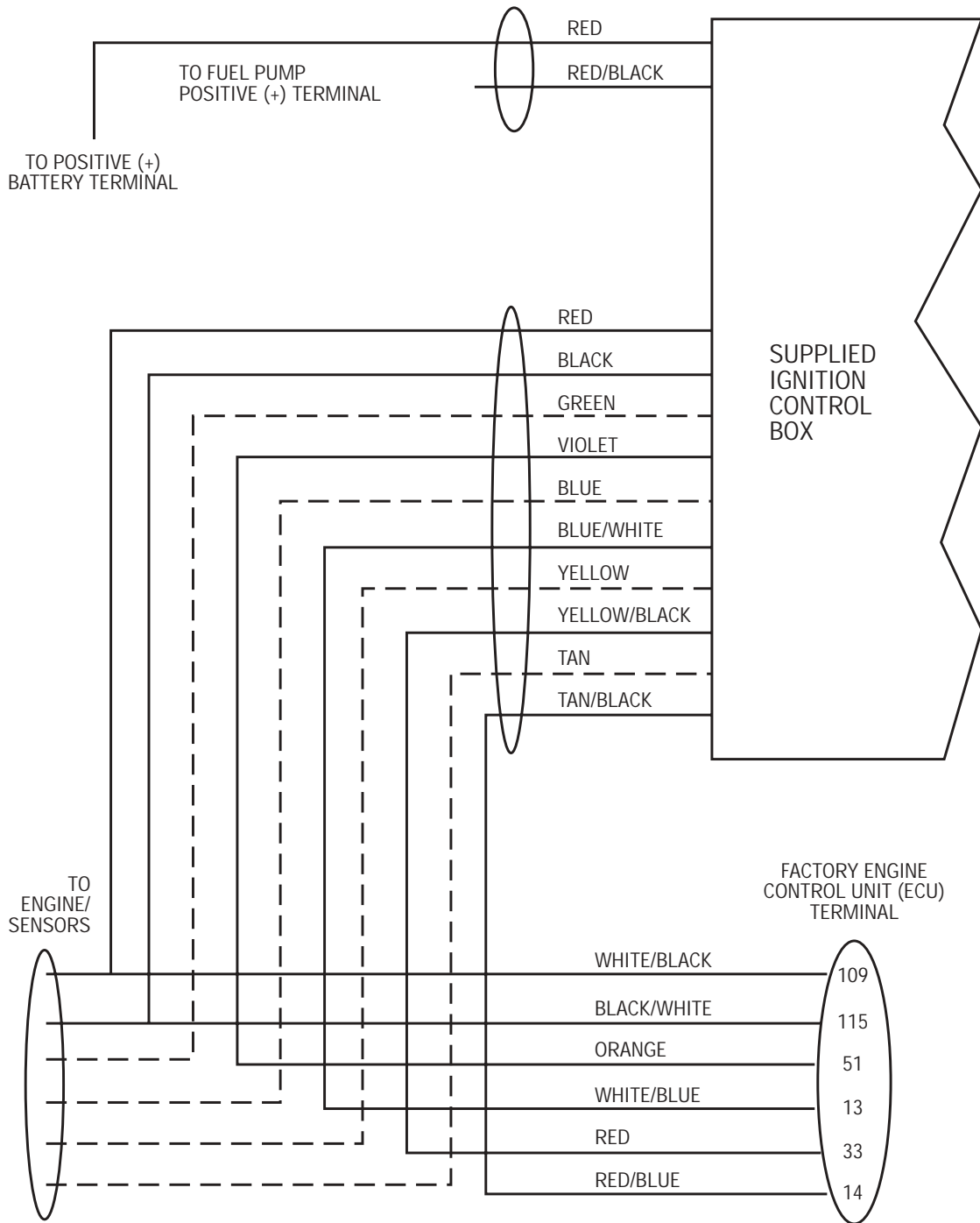


Fig. 10-d / Wiring Diagram

11. FINAL ASSEMBLY AND CHECK

- A. If your vehicle has gone over 20,000 miles since its last spark plug change, it is a good idea to change the spark plugs now, before test-driving.
- B. Make sure that oil drain to oil pan fitting is tight and that the engine is filled with factory specified oil. Check the oil drain hose to make sure it is not touching the A/C pulley.
- C. Make sure that the vehicle is filled with 91 octane or higher fuel before commencing a test drive.
- D. Check all fittings, nuts, bolts and clamps for tightness.

WARNING: Do not attempt to operate the vehicle until ALL components are installed and ALL operations are completed including final check. Failure to do so may cause PREMATURE FAILURE OF MAJOR COMPONENTS.

- E. In order to check the accessory belt tension, turn on as many electrical loads as possible (headlights, A/C, etc) This will place maximum load on the alternator at startup. If belt squeal is heard, tighten the belt tensioner until it is eliminated. This most often occurs immediately after starting the vehicle because the alternator is drawing maximum load.
- F. At this point, it is OK to start the vehicle. Verify that the gilmer belt is running smoothly. If wear is detected on the side of the belt, it is probably too tight. If it is vibrating excessively, tighten until there is minimal movement. Mildly rev the engine to check for belt squeal.
- G. Turn off the vehicle and recheck all fluid levels and verify that no hoses, wires, etc. are near exhaust headers or moving parts and that there is no fluid leakage.
- H. Test drive the vehicle by gradually working up to full throttle and paying close attention to any abnormal sounds or engine detonation.
- I. If belt squeal is heard, tighten the accessory belt tensioner until it is eliminated.
- J. Re-install the splash pan and the plastic engine cover. The engine cover will need to be trimmed to clear the accessory drive belt (see Fig. 11-a). Re-install the strut tower brace (if previously removed).
- K. Read the STREET SUPERCHARGER SYSTEM OWNER'S MANUAL and return the WARRANTY REGISTRATION FORM within (30) days of purchasing your supercharger system to qualify for the 3 year limited warranty.

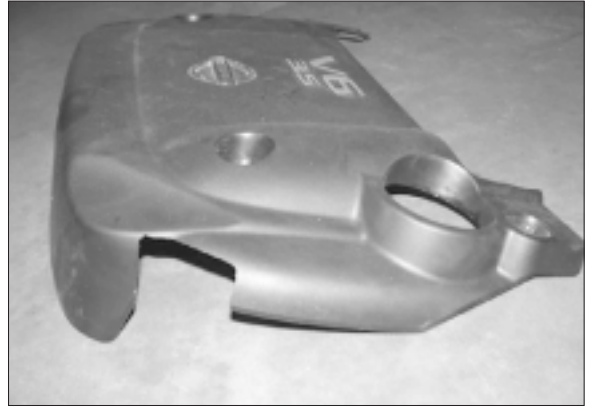


Fig. 11-a



Fig. 11-b

WARNING: Never operate your engine at full throttle when the engine is cold. Always allow plenty of time for the oil to reach full operating temperature before running above 2,500 RPM. Full supercharger operating temperature is generally achieved only after the engine water temperature has been at the normal indicated operating range for several minutes.

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