



993/964 Supercharger Kit - Installation Instructions

(Updated 03/02/06)

PLEASE READ THE FOLLOWING NOTES BEFORE INSTALLATION

CAUTION:

- USE ONLY 93 ron+mon/2 OR HIGHER OCTANE USE ONLY HIGH TEST
- Carefully inspect all castings for loose debris prior to installation.
- Clean all castings thoroughly prior to performing the installation process.
- If you have a question at any time during the installation process, CALL! Do Not Guess!

SPECIAL NOTE(S): The following items are needed for the installation which are NOT included, you can obtain these items from your local dealer.

Years '96-'98 993 with Vario-Ram

OEM Part # **993 110 128 11** (Throttle body)

OEM Part # **993 110 367 04** (Rubber hose)

Years 89-'90 964 with aluminum intake manifold plenum

OEM Part # **964 110 128 00** (Throttle body) *5-speed
Or

OEM Part # **964 110 128 30** (Throttle body) *tiptronic

OEM Part # **964 110 367 00** rubber hose

This installation requires a tube of Loctite 518 (or equivalent) anaerobic gasket maker for the mating of metal-to-metal surfaces. Do NOT use RTV silicone.

993/964 Supercharger Kit Parts

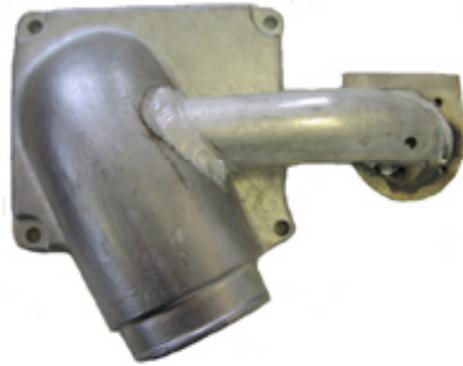


993/964 Supercharger Kit Cast Parts List

**964/993 Supercharger Kit
Cast Parts List**



(1) Inlet Manifold



(1) Discharge Manifold



(1) Discharge Elbow



(1) Intake Manifold



(1) Bypass Air Duct



(1) Aluminum Tube

INSTALLATION STEPS

Step 1. Remove intake manifold. (*The injector stacks are normally not removed but do inspect the injector stacks and rubber couplers for cracks. Replace if necessary.*) Locate left hold down bracket and install as shown in **figure 1a**. Use provided 6mm stud and attach to middle cooling shroud hold down. Follow the same installation procedure for the right hold down bracket, (**see figure 1b**). Make sure the bottom of the right hold down bracket seats flush on top of the power steering pump bracket. Depending on the model year, you may have to trim the bottom of the right hold down bracket so that it seats properly on top of the power steering pump bracket.



Figure 1a



Figure 1b

Step 2. *993 ONLY! Relocate smog pump to the right rear shock tower mount. Some modification to the pump discharge hose will be required. Cut the hose as needed. (**Reference figure 2a**) When relocating the pump, locate the inlet plumbing as pictured in **figure 2b**. (*Please note, when removing the smog pump bracket from the engine reinstall the 6.0mm. fastener to the oil pressure switch housing.*)



Figure 2a



Figure 2b

Step 3. Install the intake manifold provided as shown in **figure 3a**. (*Note: Loosen upper hose clamps on injector stacks before installing. Next, pull down evenly with the Right & Left hold down brackets installed, and then tighten the injector stacks.*) For 964, the fuel pressure regulator bracket must be removed prior to the installation of the intake manifold. This will allow the fuel pressure regulator to have some movement, allowing it to clear the manifold. The fuel pressure regulator can be secured with nylon ties. The hard fuel line near the AC compressor may be shifted slightly to clear the manifold.



Figure 3a

Step 4. Paint the fiberglass Bypass Air Duct and install it between the factory cooling shroud and Heat Exchanger connection.

Step 5. Install the fan bracket to the fan housing using the supplied (3) 6.0 x 1.0mm. socket head bolts as shown in **figure 5a**. (*Note: The fan bracket must properly rest on the factory fan housing as it also supports the nose of the supercharger. Trim the factory plastic cooling shroud so the entire footing of the fan bracket rest directly on the factory fan housing. Part of the fan bracket will over lap the fiberglass bypass air duct installed earlier, this will keep the duct in place.*)



Figure 5a

Step 6. Locate the provided throttle cable stop. Carefully remove the rubber grommet from the engine sheet metal and pull through to the underside of the vehicle. Install the Throttle Stop as shown in **figure 6**. (*Note: The throttle stop should face upward.*) and then pull the cable back through the sheet metal. In this step, you are using the provided throttle cable stop on the backside of the engine sheet metal to shorten the reach of the cable. If this step is not performed properly you will experience diminished performance since you will never run at full throttle! You must check for the throttle plate to make sure it opens fully once the installation is completed. This should also be checked periodically.

Throttle Cable Stop



Figure 6a



Figure 6b



Figure 6c

Step 7. Remove the alternator pulley and fan pulley, then install the provided fan pulley with the original nut and conical washer. **(Note: Use Red Loctite!)** Remove the belt tension sensor and bypass the circuit by connection the two wires.

Step 8. Raise the vehicle and get ready to change the crank pulley. For 993, remove the catalytic converters, mufflers, and the cross-over heat exchanger pipe. For 964, only remove the center muffler. **(Use care. Do not break off hardware. Use heat if necessary to loosen hardware.)** Remove the engine support bracket (motor mount), this will allow the front of the engine to tilt down, so you can remove the crank pulley. Make sure the engine is supported so that all the weight is not resting on the transmission mounts. Remove the factory crank pulley and install the supplied crank pulley. For 993, use the provided hub flange. Install the hub flange on the new crank pulley using 6 x 1.0mm "flange" bolts. **(Note: Always reinstall the hub bolts and crank pulley bolt with Red Loctite!)**

Step 9. With the engine support bracket (motor mount) on the bench, verify your bracket has an extra layer welded on from the factory (as shown in **figure 9a**). If your bracket does NOT have the extra layer, then add alignment shims to the spacer in the bottom hole of the tensioner plate. You want the bottom spacer to be about the same height as the top. (as shown in **figure 9b** and **figure 9c**). Next, center punch and drill holes through the mount using the supplied template (as shown in **figure 9d**). Install the tensioner plate and coil bracket (**993 only**) using the provided hardware and spacers as shown in **figure 9e**. (**Note: The coil bracket is only used for 993 installations! 964 coil assemblies remain in the factory locations.**) Install the coil assemblies as shown in **figure 9f**.



Figure 9a



Figure 9b



Figure 9c

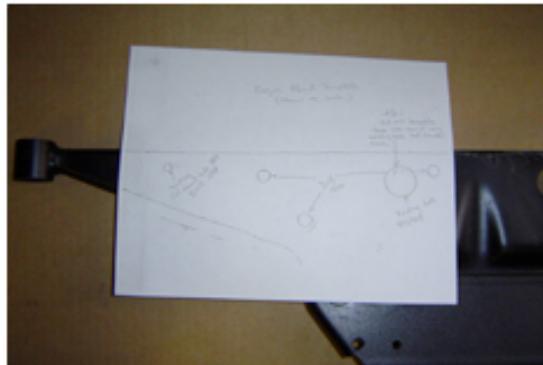


Figure 9d

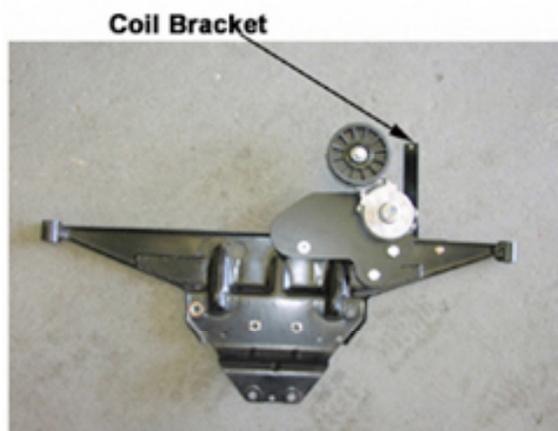


Figure 9e

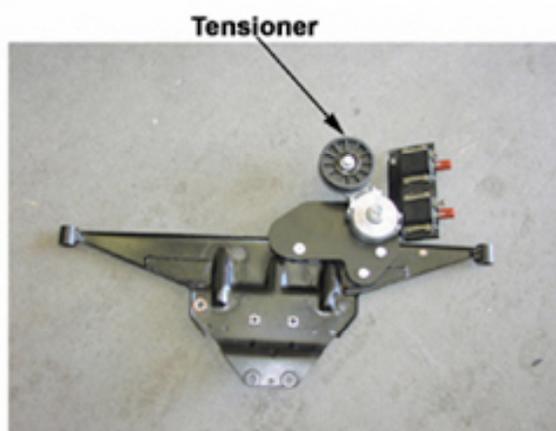


Figure 9f

Step 10. Reinstall the engine support bracket and exhaust. Next step is to prepare the supercharger.

Step 11. Build up supercharger assembly as shown in **figure 11a**. **Note: The inlet manifold uses (2) 8.00x1.25 studs w/jap nuts (smaller head).** Seal with Loctite 518, then attach compressor bypass valve to the outlet manifold using the 6.0x1.0 socket head bolts and seal with Loctite 518. Next, mount to the supercharger using (3) 8.0x1.0 socket head bolts and one stud. **Note: Install the (3) supercharger hold down bolts ((2) 10 x 100mm. & (1) 10x 90mm).**

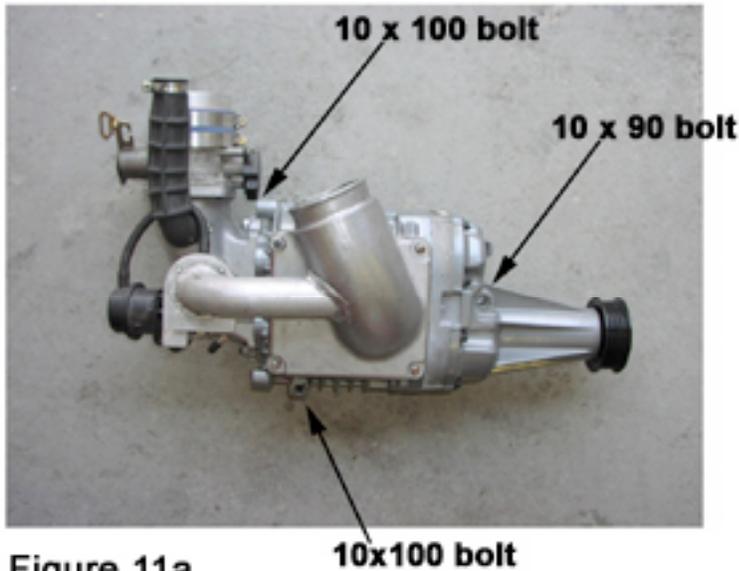


Figure 11a

Step 12. Install the supercharger assembly as shown in **figure 12a**, bolting the supercharger to the fan bracket and the intake manifold. **'96-up** cars refer to **figure 12b** for routing of the AC lines prior to installing supercharger.



Figure 12a



Figure 12b

Step 13. Refer to **figure 13a** and install the discharge elbow and XS pressure relief valve. Make sure the vent port on top of the XS pressure relief valve is left open to the atmosphere. Locate the fuel pressure test port on the left side fuel rail (driver's side in USA). Remove the test port cap and remove the schrader valve from inside the port. Install the supplied fuel injector assembly onto the the test port using the 90 degree fitting. The fuel injector itself goes into the brass compression fitting on the discharge elbow. Make sure the injector is positively pushed into the brass fitting and locked in place. You should check it again later.



Figure 13a

Step 14. Install the air flow meter, idle motor, and air filter. Use the short aluminum tube provided to extend the air flow meter out. For 993, the air filter clamps directly on the air flow meter. For 964, use the adaptor provided. Hook up engine vacuum lines, refer to the supplied drawing (964/993 Vac. Line) . ***If the vehicle you are working on gets a new throttle body & rubber hose, make sure the inlet air temp sensor goes into the new rubber hose.*** The next step is to install the Engine Management System, but before that, you can start the engine and let it idle to make sure there are no vacuum leaks. You can also check for proper belt alignment. You may have to a shim the tensioner to get proper belt alignment. Call us for assistance.

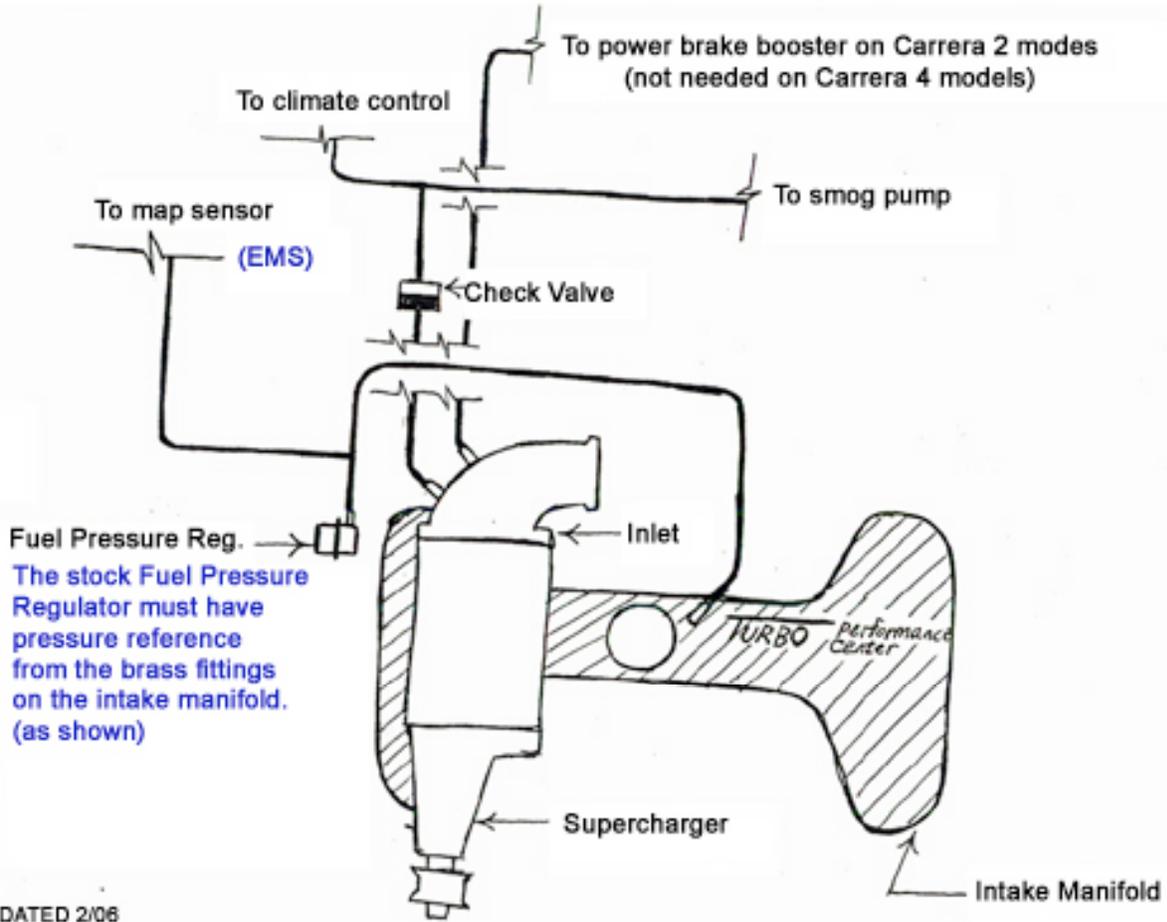
Step 15. Install Engine Management System (EMS) as per supplied drawing (964/993 EMS Diag.) . We recommend soldering all connections. ***NOTE: Make sure the DME box has a factory (stock) chip in it otherwise you may damage the engine. Do not get 12-volt source from ignition coil ! Do not remove any magnetic shielding from the crank sensor harness !***

Step 16. Testing procedure for the Engine Management System. Test the injector function by putting a noid (test) light on the injector connector. This light should illuminate under positive manifold pressure only. This indicates the proper function of the injector under boost conditions. ***Make sure the injector connector is FIRMLY pushed on the injector all the way! You will have to wiggle and push hard.***

DO NOT ATTEMPT TO TEST DRIVE CAR IF THIS PROCEDURE DOES NOT GO AS OUTLINED. Any problems call immediately @ 410-799-7223.

964/993 Vac. Line

The climate control and other factor accessory hoses that requires vacuum can be consolidated to the two brass fittings on the inlet casting



UPDATED 2/06

964/993 EMS Diag

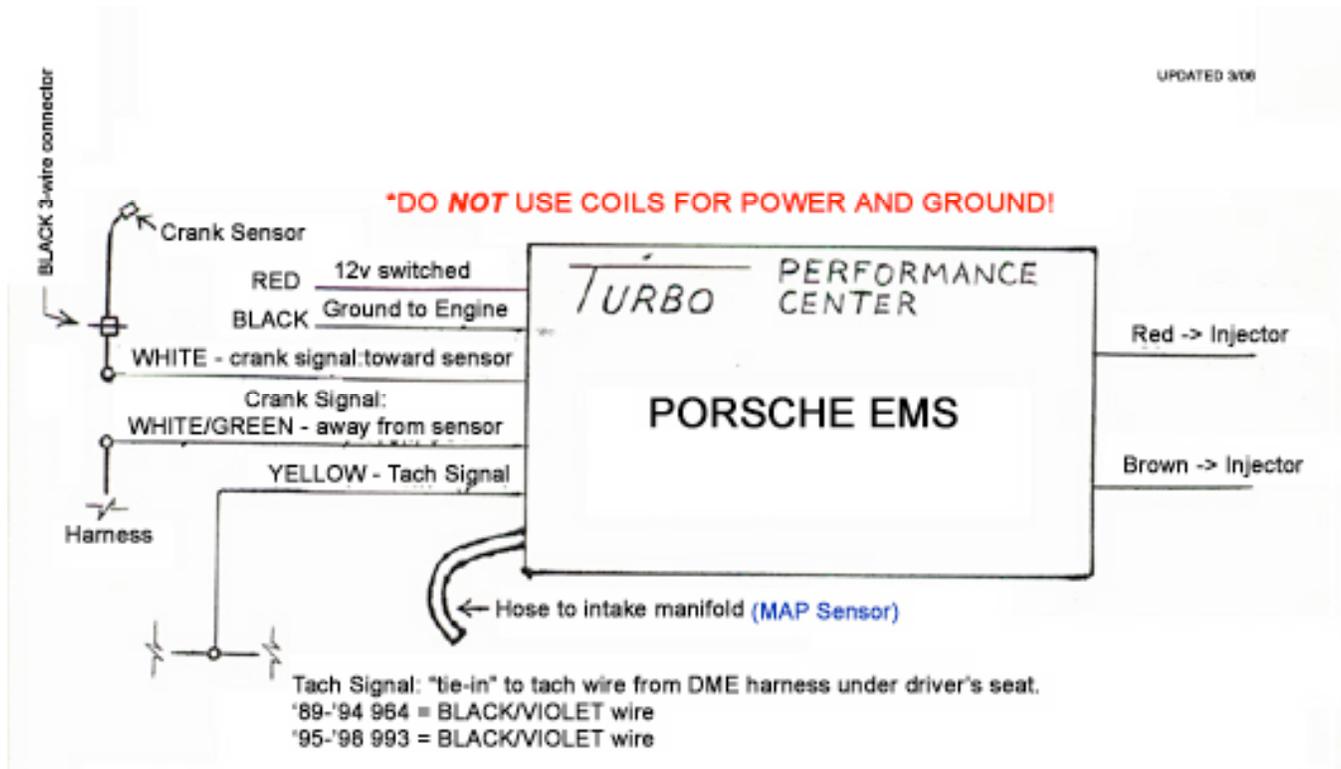
WARNING: USE ONLY WITH STOCK DME!

993 – Mount EMS box in the engine compartment on the fuse panel lid located at the left rear corner.

964 – Mount EMS box in the engine compartment on the back firewall away from the ignition coils.

Once the EMS box is mounted, locate the **BLACK 3-wire connector** for the engine crank sensor. It is near the left strut tower. Confirm it is the crank sensor connector because the cylinder head temp sensor is located in the same general area. If you are not sure, follow the wire into the transmission bell housing.

Refer to the drawing below. Carefully cut into the **WHITE wire** as close to the connector as possible to ensure an optimum crank signal. It is very important that you **DO NOT** remove any of the magnetic shielding from the harness.



NOTE: Make sure the spark plug wires and ignition coils are in good condition and free of cracks. Worn out ignition components will create magnetic interference and will greatly decrease the performance. We recommend using factory spark plug wires and ignition coils. Some of the aftermarket parts are not as well shielded magnetically.