

911.573.ADD.COOL

Attention!

Read All Instruction Prior to Install

Congratulations!

You have purchased the best and most cost effective air conditioning modification currently on the market for 1970 – 1989 Porsche 911's.

This kit is designed to enhance the cooling of your working (but inadequate) 911 air conditioning system, and allow conversion to R134a refrigerant. We have tested this product extensively during the hot, Texas summers with temps near and above 100°F (~38°C). In all cases we have measured vent temperatures ranging from 22 – 42 °F (~ -5.5 – +5.5 °C) at the outlet vents, even in stop and go traffic.

The instructions are designed to assist you with the installation of this product. All installers, professional and do-it-yourselfers alike, are responsible for knowing and following all laws regarding the handling of refrigerants and waste materials used in the installation.

Before You Start

In order for this product to perform successfully, the entire air conditioning (AC) system to be modified needs to function less any defects. Any leaking hoses, a bad compressor, a hole in the condenser, and/or a bad expansion valve or evaporator will result in problems that need to be addressed prior to obtaining good results.

The install can be completed in approximately six hours by a professional technician with the proper tools (lift, AC machine, etc.). If the install is performed at home, then it may take slightly longer.

Safety!

You will be working under the car, using solvents and have your hands in tight places. Protective equipment such as *safety glasses* and *gloves* are recommended. Apply standard safety practices.

Working Environment

Access to the engine compartment from the top and bottom, under the vehicle, and rear wheel well is necessary. Having the car on a lift at a comfortable height will help immensely. If you do not have access to a lift, then use jack stands. The left front and left rear wheels will need to be removed. The battery will need to be disconnected during wiring.

Installation

Step one:

All refrigerant in the system must be recovered by a certified air conditioning service facility. Remove the compressor and drain the oil via turning it upside down and turning the pulley by hand (in the direction of rotation) until no more oil exits the hose connections.

Refill the compressor with 6 ounces of Pag oil for R134a. It can be poured in the suction side of the compressor. Before you run the system but after it is all hooked up, use your hand to gently turn the compressor slowly a few revolutions to disperse the oil into the system without leaving a large amount to hydro lock the compressor. Do not start the car and flip the AC switch on without initially turning it through by hand to insure the oil will not lock up the compressor.

Step Two:

Disconnect the high pressure hose from the condenser. This hose is connected to the driver side of the condenser in the engine compartment. See Picture Below.



Step Three:

From underneath the car, locate the high pressure hose (just disconnected), undo the clamps that hold it, and cut the hose. A hacksaw blade works really well for cutting the hose.

Note: Part of the engine side of this hose will be removed and spliced into the remainder left under the car, so make the cut as close to the entry point of the engine compartment as possible. The excess will be trimmed later.

Step Four:

Pull the cut section of hose out of the car from the engine compartment, paying close attention to where the hose comes through the body. This hose will be replaced with the one supplied in the kit.

Note: On cars previous to 1983, the hose fittings will be “flare” type. On cars 1984 and later, the fittings will be “O-ring” type.

The 6' hose we supply will have a “flare” fitting on one end and an “O-ring” fitting on the other. Simply cut off the fitting you will *not* use and discard it. (Building the hose this way allows us to use one hose for all cars up through 1986. Kits for 1987 and later cars only have one O-ring fitting.)

Tape the leading end of the new supplied hose to prevent contamination and install in reverse of how the old hose was removed. Spray the new hose with some WD40 or spray silicone to ease installation if necessary. Temporary removal of the cruise control servo will simplify this step.

Step Five:

Remove the left front and left rear wheel. Trial fit the condenser/fan assembly in the front of the left rear wheel well. The lower bracket should rest on the torsion bar tube extension (1987 and later models), or it will attach with a bracket to the body lip (pre 1986 models). The condenser will “rock” into position until the rubber protective piece on the corner comes into contact with the body, and the rock shield/mount plate contacts the body.



Helpful tip: The condenser sits at an angle, not parallel to the body cavity. Do not secure the condenser at this time, since it may be moved around a bit when connecting the hoses.

Step Six:

Route the new high pressure hose into position and re-clamp it with the original clamps along the inner fender well. Reattach the upper portion of the hose to the condenser in the engine compartment.



At this point, you should have the new unit loosely in place, and a new high pressure hose hanging, with the rest of the original high pressure hose going forward.

Step Seven:

Attach the supplied hose fittings to the condenser/fan assembly with “finger tight” pressure. It may be necessary to move the condenser rearward to facilitate attaching the fittings. Route the *new* hose to the fitting towards the front and the *old* hose to the fitting toward the *rear* of the condenser/fan assembly. The hoses will actually cross, but routing in this manner will help prevent kinks in the line. Mark the hoses and cut them to length for attachment to their respective fittings, without kinking.

Note: Do Not permanently attach hoses at his point because the system needs to be flushed. There are AC automotive flushes available that do a good job. Some may recommend the use of brake cleaner. Either is probably OK to use, but be sure to observe the safety instructions for each product. These types of volatile liquids evaporate very quickly so

add them to the system and immediately blow it through the lines with compressed air to remove the old debris from the system.

Step Eight:

Go to the left front wheel well and find the receiver/drier. Remove it and install the new one (sold separately). Next, flush the high pressure side of the system as follows. Starting at the new condenser, flush the hose going forward and catch the residue at the hose you removed from the drier. Then, flush the hose going to the rear condenser and catch the residue from the high pressure hose at the compressor. Flush until it is perfectly clean.

Step Nine:

Reinstall the A/C compressor and attach both hoses. Install the hoses on the new condenser/fan assembly using the supplied hose clamps or swage collars, if you have the means to do so.

Mount the new condenser/fan assembly. “Rock” it into position and use the short self tapping screw on the top bracket.



Clamp the lower mount to the torsion bar tube (1987 and later models), or use a long self tapping screw on the bottom bracket (1986 and earlier models). Turbo or Wide Body cars use an additional, supplied extension bracket.



1987 and later (above)
1986 and earlier (below)



Install the new receiver drier and secure the hoses. Use new o-rings where applicable.

Screw on both supplied R134a adapter fittings to the old R12 service ports. Make sure to remove the old inner core of the Schraeder valve **BEFORE** you install the R134a fitting.

At this point all hose fittings should be secured. Evacuate the system and leave under vacuum for at least 30 minutes.

Note: The final steps may be completed while the system is under vacuum.

Step Ten:

Find the supplied relay with the four wires attached. Locate the cover for the electrical panel on the left side of the engine compartment. Remove the cover. The relay will be mounted to the relay board.



Note: It may be easier to make wire connections first, and then mount the relay to the board.

Locate terminal 86 on the relay. It should have a long red wire attached. The wire from this terminal goes to the AC compressor. Tap into the compressor circuit at the connector harness for the compressor on the passenger side of the engine compartment.



Be sure to secure the wire in an inconspicuous place. We suggest running it along the engine lid release tube and around to the compressor harness connection.



Locate terminal 85 on the relay. This should have a black wire attached to it. This wire should ground to the chassis of the car.

Locate terminal 30 on the relay. The attached wire goes to the bottom fuse on the fuse block in the engine compartment.



Locate terminal 87 on the relay. The attached wire goes to the power wire at the fan on the new condenser.

Next, route the wire to the new condenser/fan assembly. Either drill a ¼” hole or route the wire through the hole with the new hose.

Note: Be sure to use an insulating material (such as electrical tape, tubing or a grommet) where the wire goes through the body.

Be sure to secure the new wire to the body. We suggest using zip ties and attaching it to the decklid release cable tube.



The black wire on the new condenser should be grounded. It is attached to the condenser mounting bracket.



Step Eleven:

The modified AC system is ready to be charged with R134a. A system with front, rear and our condenser should use approximately 24 ounces of refrigerant. Run the engine at 2000 RPM while charging. System pressure on suction side should be 20-25 lbs at 2000 RPM. It will be higher at idle. Check once more for leaks and you are done.