911CHIPS Performance Chip
Installation Instructions (964 Carrera 2/4)

The following are instructions for the installation of the performance software chip for the Motronic M2.1 control unit in the Porsche 964 (89-94). For best performance, please read and follow all directions detailed below.

If you have any questions, feel free to contact 911Chips at support@911chips.com or call (323) 819-0722.

Before beginning, you will need the following items:

- Your Porsche performance chip
- A 10 mm deep socket (about 2" long), socket wrench
- Small flathead screwdriver
- 91 U.S. (95 RON) or higher octane gasoline, or 93 U.S. (98 RON) octane if ordered as such

REMOVING THE DME CONTROL UNIT FROM VEHICLE:

The Motronic DME control unit is a silver metal box approximately 6"x5"x2" located under the driver's seat. It has the word 'MOTRONIC' either on a decal on top of the box or stamped on the metal cover. Slide the driver's seat all the way back and all the way up. You do not need to remove the seat. Remove the floor matt that covers the control unit. Using a 2" long 10mm deep socket and socket wrench, remove the four 10mm nuts and washers that fasten the control unit to the floor. The wiring bundle is held in place with a heavy steel strap that is also held down by a 10mm washer and nut. Lift the unit up and off the studs.

DISCONNECT WIRING PLUG:

Holding the Motronic box in one hand, flip back on the steel-retaining tab that holds the electrical connector. Disconnect the box from the wiring plug by rotating the box out so that it pivots away from the retaining tab. When reinstalling, remember that the plastic hook at the end of the connector is installed first.

OPENING THE CONTROL UNIT:

At your workbench, using a small screwdriver, straighten the ten metal tabs on the bottom of the box. At the front of the board is the wiring harness connector block, and at the rear is a wire ribbon cable. The boards are held together by two plastic male/female posts at each end of the wire ribbon cable, which unsnap. (Fig. 1) The best way to separate these posts is to place a small flathead screwdriver in the slit on the female post

as shown by the screwdriver tip in Fig. 1 and twist while gently pulling the boards apart. You may have to use some force to separate the two plastic posts, and it is best to pull on the bracket between the plastic posts. Do not pull at the corners of the circuit board or you could flex and break it! **USE CARE SO AS NOT TO PULL THE BOARDS TOO FAR APART RIPPING THE RIBBON CABLE.**

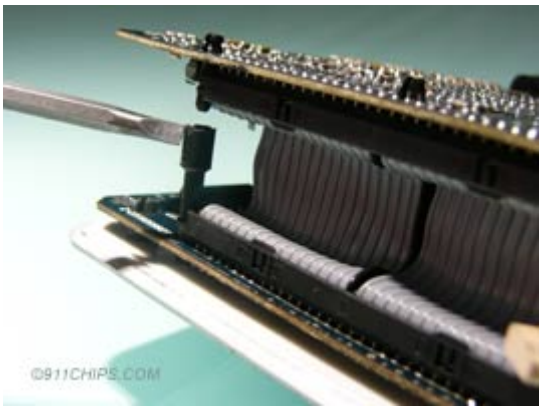


FIG. 1

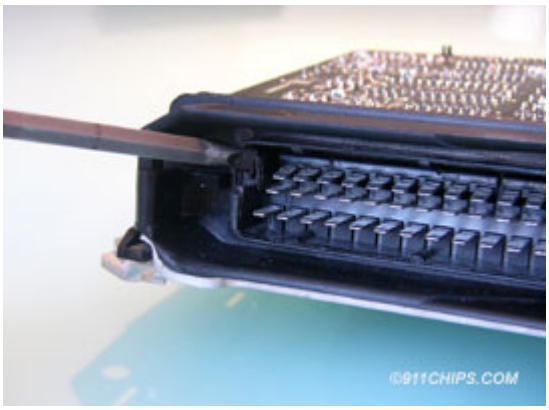
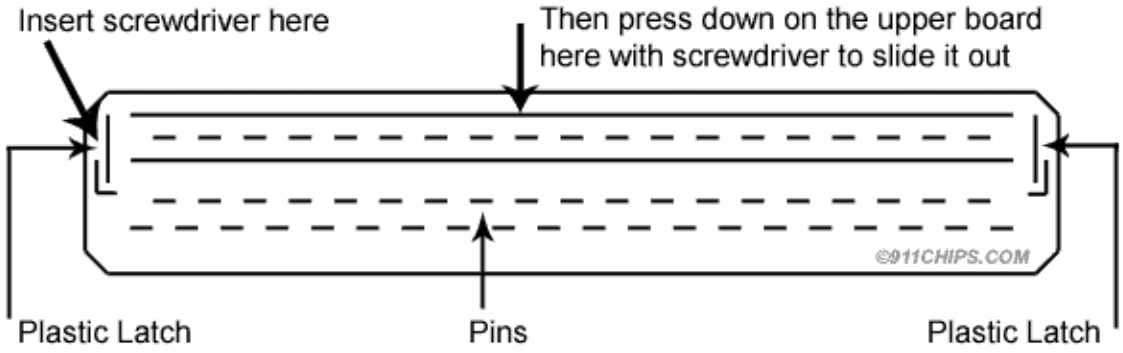


FIG. 2

Here is the most difficult step. Within the DME connector plug you will find two plastic latches inside at each end. (FIG. 1 and 3) To release the latches, take a small pocket screwdriver and insert in the gap between the latch and the plug housing and bend the tab inwards while lifting the board up at the ribbon connector. The upward pressure on the board should keep the latches from relatching when the screwdriver is removed. Release the latch at the other side also.



Disassembling the DME connector plug

FIG.3

With both latches released, use a screwdriver to press down gently on the upper board as shown in Fig. 4 to release the board from the connector plug and allow it to pop out. The upper circuit board can be lifted up at the ribbon connector side and slid out of the plug housing. Gently flip and open the two boards like a book and lay them flat. If needed, more detailed and animated instructions are available online at www.911chips.com.

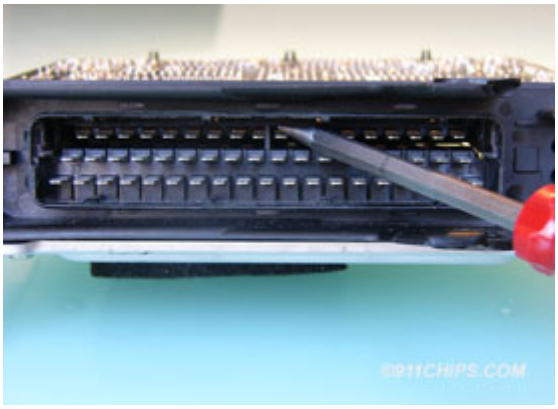


FIG. 4

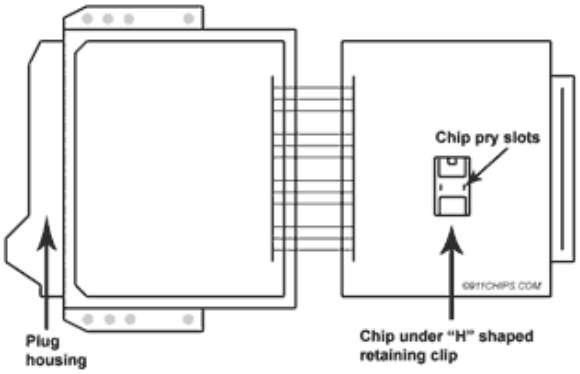


FIG. 5

Locate the memory chip on the board that you just unfolded. It will be raised off the board a bit more than the other chips, and has a plastic "H" shaped retaining clip covering it, locking it into the socket. Use a small screwdriver and insert into one of the small slots in the plastic clip to pop that side up. Do the same for the other slot and set the retaining clip aside. If your car has the stock factory chip currently installed, it will have a silver foil sticker on it with a sequence of numbers going something like 126735xxxx. (FIG. 5)

CHIP REMOVAL:

Before removing the chip, observe its orientation by locating the small notch at the end of the chip. Your performance chip must be installed with its notch facing in the same direction as the original one was. To remove the chip, slide a small screwdriver under the chip and carefully pry upwards, alternating ends frequently to avoid bending or damaging the pins. **(CAUTION: MAKE SURE YOU ARE NOT PRYING UP ON THE CHIP SOCKET WHICH IS SOLDERED TO THE CIRCUIT BOARD)** As you handle the chip, try to handle it by the black body, and not the metal pins. Place the chip you just removed on the metal cover to protect it from possible static damage.

Install the performance chip by again noting the orientation of the small notch on the end of the chip, and installing it in the same direction of the original chip. There is also a small notch on the chip socket illustrating the correct orientation. If the chip is installed backwards, damage to the control unit could result. Install one row of pins in the socket, and push gently on the other side of the chip until the other row of pins lines up with the socket. Press down and fully secure the chip, double-checking that all pins are properly seated. Reinstall the plastic retaining clip, slide the upper board back into the connector block, line up the two boards, and then press down on the top board until the two plastic posts snap together. Check that the upper board latches back into the connector plug (Fig. 3 and 4) as before. Store your original stock chip in the black antistatic box your chip came in if for some reason you wish to return your car to its stock tuning. Replace the cover and reinstall the control unit.

CHECK FOR WIDE OPEN THROTTLE

As many as *a third* of all 911s do not realize their full performance potential because the throttle does not open completely, ***costing at least 20 HP***. To inspect this, have someone fully depress your accelerator pedal while checking to make sure the butterfly at the throttle body opens completely. If incomplete opening is noticed, adjust throttle linkages as necessary to make up for the excess slack.

After checking and adjusting your throttle linkage if necessary, also check that the full throttle microswitch properly activates **FIG 6**. The microswitch should engage closed when the throttle butterfly is at greater than ¾ of full open. This tells the DME to switch to the full throttle fuel and ignition maps for maximum power. The switch is black module on the side of the throttle body. Using a multimeter or continuity tester, disconnect the plug at the connector and test that the full throttle and common pins of the switch make contact when your throttle is at the last ¼ of full open.

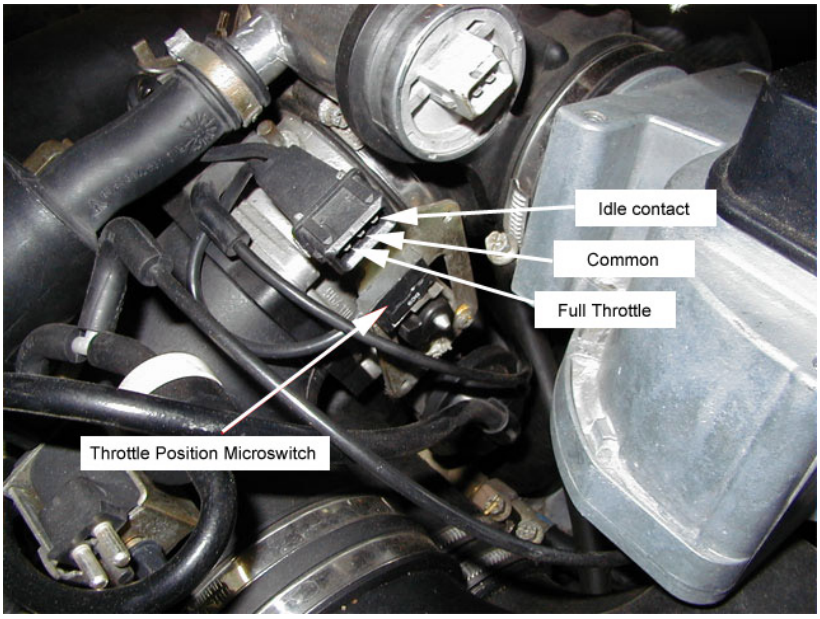


FIG. 6