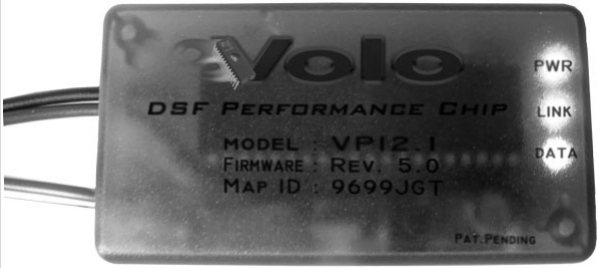
# Volo Performance

## *Dynamic Soft-Flash Performance Chip*

MODEL : VP12.X

Software Rev. 5.0 (Released 10/1/2008)

installation and operation instructions



# Introduction

Thank you for purchasing the Volo DSF Chip. Please take the time to read through this manual to understand the installation and operation procedures before getting started.

The Dynamic Soft-Flash Performance/Fuel Chip is a new concept developed by Volo Performance, and is not offered anywhere else. It works by dynamically changing the values in the ECU. Each Volo Chip comes pre-programmed with a set of EPROM addresses that directly affect efficiency and performance. When the ECU attempts to read the specific EPROM address, the Volo Chip patches the factory value with one from its on-board performance tuned map, allowing you to unleash your engine's full potential.

Actual product may vary from photos.

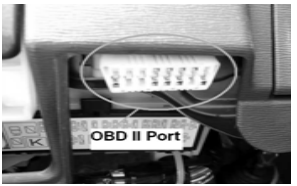


This product is legal for road use in the USA.

Volo Performance, the manufacturer, and distributers of this product are in no way responsible for any property damage, personal injury or death resulting from the installation and/or use of this product. Improper installation or installing on a vehicle other than that which the chip was programmed for could lead to serious damage to the engine, ECU, electrical system, ABS, or other crucial system that in extremely rare circumstances could cause a loss of control of the vehicle. By installing and/or using the product, you agree to the following :

*"I have read the previous paragraph and I know, understand, and appreciate these and other risks that are inherent in vehicle modification. I hereby assert that my participation is voluntary and I knowingly assume all such risks. I also agree to INDEMNIFY AND HOLD Volo Performance, the manufacturer, and distributers of this product HARMLESS from any and all claims, actions, suits, procedures, costs, expenses, damages and liabilities brought as a result of proper or improper installation and/or use of this product."*

# Installation



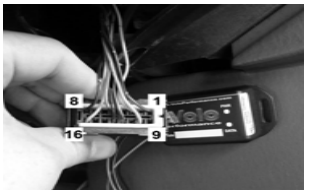

Start by locating your OBD II Port. If you don't know where it is, go to
http://www.obdclearinghouse.com/index.php?body=oemdb
and enter your year, make, and model.

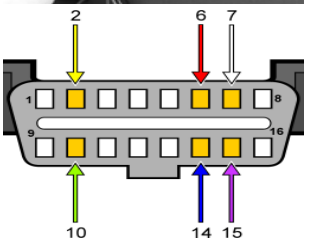
Use the included zip ties or adhesive to mount the Volo Chip near the OBD II port. Make sure you can see the LEDs if necessary.

The Volo Chip will connect to the wires on the back of the port. It is designed not to interfere with OBD scanners, gauges, etc.


Make sure you can get to the wires on the back of the port. Most are held in by catches on both sides of the port. On some vehicles, you may need to remove a couple screws or wire wrap to gain access.

# Installation




The OBD Port has 16 pins arranged in **numerical order when viewed from the front, reverse order from the back**. Note that every pin does not have a wire attached. The **WHITE** (S1) and **GREEN** (S2) wire connections vary by protocol.

**VEHICLE SPECIFIC DIAGRAMS ARE AVAILABLE ONLINE AT VOLOPERFORMANCE.COM/INSTALL.HTML**

**Determine Protocol:**

Look at the front of the port. ***Write down*** which of the following pins are populated (have a metal contact or wire present) : 2, 6, 7, 10, 14, 15.

- **PWM**-If pins 2 & 10 are populated, then connect **WHITE** to pin 2, and **GREEN** to pin 10.
- **VPW**-If pin 2, but *not* pin 10 is populated, then connect **WHITE** to pin 2, and **GREEN** to pin 5

- **ISO**-If pin 7 is populated, then connect **WHITE** to pin 7. Connect **GREEN** to pin 15 if populated, pin 5 if not.
- **CAN**-If pin 6 & 14 are populated, then connect **WHITE** to pin 6, and **GREEN** to pin 14.

## Installation

Connect the red **12V+** wire to pin 16.

Finally, connect the black **GND** wire to pin 4.

The Chip should now be on.

YOU MUST RESET THE CHIP NOW.

After connecting all four wires, tuck them away and secure them with zip-ties.



Replace any screws, panels, or wire wrap you removed to access the port.

## Calibration

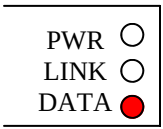
**Initial Calibration**
After installing for the first time, start the car's engine. The Volo Chip will determine which protocol you have and calibrate its on-board map and communication baud rates. This calibration should take 1-3 minutes, depending on the vehicle. During calibration, the LED will flash RED and GREEN very rapidly.
**DO NOT DRIVE OR REV ENGINE DURING CALIBRATION. ALLOW ENGINE TO IDLE UNTIL COMPLETE.**

**Recalibrating**
In the event you make any changes to your vehicle* you must reset the Chip for optimum gains. If you feel the chip is no longer functioning properly, a reset will return it to normal.

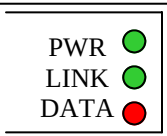
**Changes include anything that affects engine performance or efficiency, such as new engine components, or replacing defective parts.*

**To Reset :**
Turn the vehicle off. Use a paper clip to press the reset button inside the Volo Chip. Both LEDs will come on, then the RED LED may flash up to 20 times, then the Chip will enter Standby Mode. The Volo Chip will now recalibrate the next time the vehicle is started.

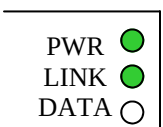
# LED States



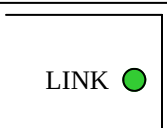

**STANDBY—***(All LEDs off, DATA flashes every 5-10 seconds.)* The Chip is connected properly and waiting for a signal from the ECU. Some newer vehicles with keyless entry or factory alarm may not enter standby.




**CALIBRATING—***(PWR LED on, DATA flashing rapidly for 1-3 minutes.)* The Chip is self calibrating, adjusting its map for your specific engine and modifications. Vehicle must be running during calibration. If not, then apply reset. After calibration, the Chip will enter POWER ON mode.




**POWER ON—***(PWR LED on, DATA flashes occasionally.)* The ECU is active and communicating with the VP12.




**LINK LED—***(Both LEDs flashing rapidly for 1-5 seconds.)* The LINK LED indicates handshake with the ECU and used for diagnostic purposes.

Visit
www.VoloPerformance.com
for
troubleshooting and support.