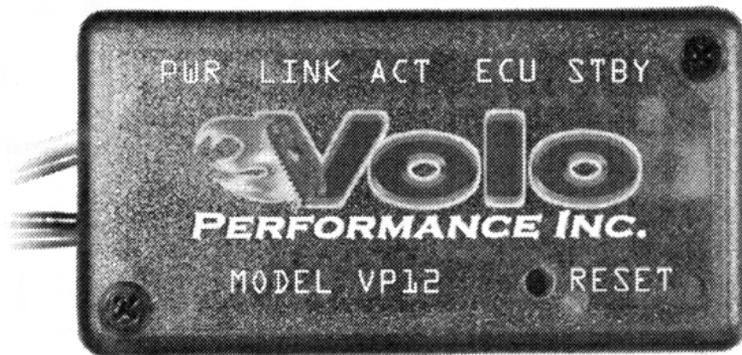# Volo PERFORMANCE

OBD Dynamic Soft-Flash Chip
MODELS : FS2, FS3, VP12
Software Rev. 7.4+

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 Inc., 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 Inc., 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."
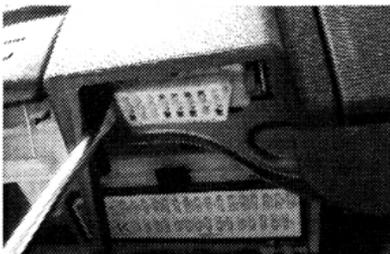
OBD II Port

Start by locating your OBD II Port. If you are having trouble locating your OBD II Port, visit :

http://www.obdclearinghouse.com/oemdb/

and enter your year, make, and model.

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.

Gain access 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.

Now that you've located the port, it is important to orient it correctly to identify populated pins. The port is sometimes installed in dash upside-down. Use the diagram to the left to reference proper orientation.

The OBD Port has 16 pins arranged in numerical order when viewed from the front, reverse order from the back. Note that every pin may not have a wire attached.

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.

For easier Installation
Visit www.VoloPerformance.com and click Installation
to print Vehicle Specific Wiring Diagrams,
OR see below to manually identify protocol.

- **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

- **CAN***-If pin 6 & 14 are populated, then connect **WHITE** to pin 6, and **GREEN** to pin 14.

- **ISO***-If pin 7 is populated, then connect **WHITE** to pin 7. Connect **GREEN** to pin 15 if populated, pin 5 if not.

If both CAN and ISO protocols are present, CAN is preferred.
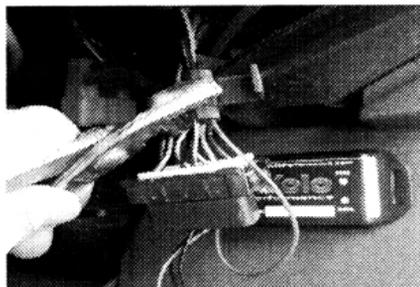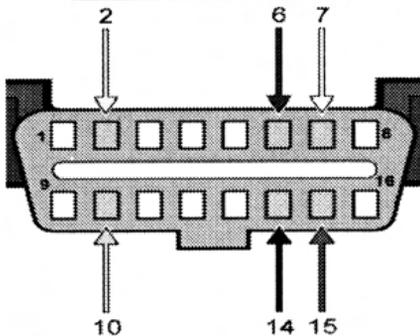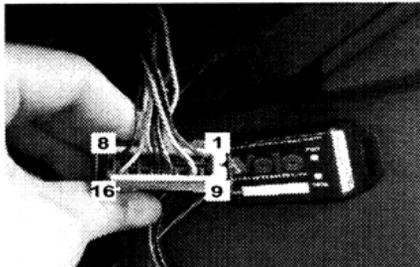
Connect the red **12V+** wire to pin 16.

CAUTION : Accidentally touching your pliers to metal dash structure while connecting the red wire will cause a blown fuse!
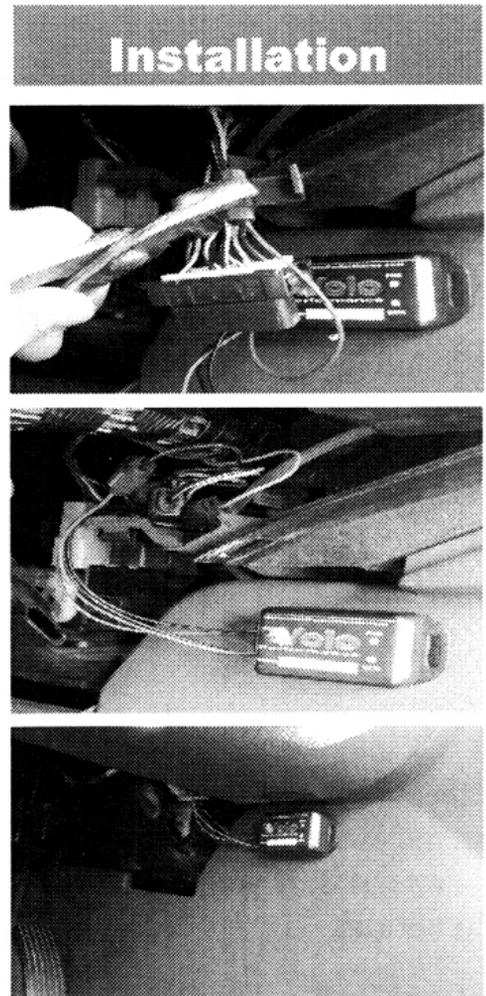
Finally, connect the black **GND** wire to pin 4.

The Chip should now power up.

After connecting all four wires, tuck them away and secure them with zip-ties. Attach the Volo Chip to the lower part of your dash using the included adhesive.

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

Proceed to CALIBRATION...

Calibration

The Volo Chip MUST be calibrated before use.

To Calibrate :

1. Start the vehicle and wait for it to reach normal operating temperature. Leave the engine running for the calibration process.
2. If you have an aftermarket HHO generator equipped, ensure it is connected properly with no vacuum leaks and that it is producing the maximum output you intend to use.
3. Use a paper clip to press the RESET button located inside the Volo Chip's case.
4. Wait 1-3 minutes for calibration to complete. The LINK LED will flash during calibration. Once the LINK LED becomes solid green, calibration is complete.
   > In addition to calibration, most vehicles will require an additional ~120 miles adjustment period for maximum gains.

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.

PWR LINK ACT ECU STBY

STANDBY MODE

STBY LED blinks every 5-10 seconds
There is no signal from the vehicle's computer.
The device may not enter stand-by on some vehicles in
which the ECU remains active after engine shut-off.
This is normal and will not adversely effect operation.

POWER ON MODE

PWR and LINK LEDs are solid green
ACT and ECU LEDs are solid or flashing
This indicates the device is connected and functioning
properly.

CALIBRATING

PWR LED is solid green
LINK LED is flashing
ACT and ECU LEDs are solid or flashing
The device is in Auto-Calibration mode. During this
time, your particular engine characteristics are being
evaluated to generate an offset map. This allows the
device to fine tune itself for optimum performance.