

# DynoTune Installation/Tuning Guide

## **Congratulations!**

You have purchased one of the finest A/F ratio Gauges on the market. Follow the directions below as a guide for installation and tuning. Remember, The DynoTune meter is an instrument that will help guide you to greater performance, but it is only as good as the person using it so be careful and most of all have fun!!

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# Section 1

## Operation overview

The DynoTune A/F meter will display the oxygen sensors output in millivolts. This output tells you what the air fuel ratio is and can help guide you in making adjustments. The typical output is from 0 to .999 millivolts. Most oxygen sensors in vehicles will cycle up and down from 0 to .999mv during cruise situations. During this cycling time the meter will just track the output of the sensor up and down. During mid throttle acceleration the oxygen sensor starts to get more stable and the readings on the DynoTune meter will stabilize. During Full throttle operation is what we are after, now the sensor is putting out a much more consistent voltage. In the tuning section you will learn more about the oxygen sensor output and what it means.

## Section 2

### **Installation of the DynoTune A/F meter**

The DynoTune meter is very simple to install, it's as easy as 1,2,3..

- 1) Find the location to mount the meter. It is always nicer to have the meter located where it can be seen easily like near the instrument panel. Always try and keep the meter out of direct sunlight. Using the Industrial Velcro and or the angle bracket, Stick the meter into position.
- 2) Route the wires to the fuse box area so you will have access to +12 volts and a good ground. Attach the "**Brown**" wire to +12volts. Attach the "**Blue**" wire to a good ground. A direct battery (-) ground is always the best ground.
- 3) You need to determine what type of oxygen sensor you have in your exhaust pipe, 1 wire, 2 wire, 3-wire or 4 wire. Once you find the sensor and determine how many wires you have, follow the directions for that type of sensor. You will need to cut the sensors signal wire on your sensor, splice the three wires together using the splice provided. Optionally you can just strip back a little of the wire and solder/splice the DynoTune' wire to the sensors wire. In either case make sure and seal the joint with electrical tape!! Note: You can connect the Meter to the signal wire near your vehicle's computer if you have the correct wiring diagrams.

**1-wire oxygen sensors** these sensors are the basic original style sensor with one wire for the signal and the ground connection is made through the exhaust. Connect using the provided splice, the DynoTune meter's "**black**" wire to the wire coming out of the Sensor.

**2 wire oxygen sensors** these sensors are the basic original style sensor with one wire for the signal and one for the ground connection. Connect using the provided splice, the DynoTune meter's "**Black**" wire to the Sensor's signal wire (usually comes out of the center of the sensors body).

**3 wire oxygen sensors** these sensors are the newer ones with built in heaters. They have a signal wire and two heater wires (Heater wires are usually the same color, gray). Connect using the provided splice, the DynoTune meter's "**Black**" wire to the Sensor's signal wire (usually black or purple).

**4 wire oxygen sensors** these sensors are the newer ones with built in heaters. They have a signal wire, two heater wires (usually the same color, gray) and a ground wire. Connect using the provided splice, the DynoTune meter's "**Black**" wire to the Sensor's signal wire (usually black or purple).

**Note:** If you do not have any of the color wires listed you need to do some detective work. The heater wires are typically always the same color so rule those out. The ground wire is attached to the body of the sensor, use a multi-meter to check for continuity. The only wire that is left is the signal wire!! **The white wire on the meter is not used.**

## Section 3

# Tuning Guidelines

Use the chart below to help guide you in the right direction. The DynoTune meter displays the output of the oxygen sensor in millivolts. Typically the meter is used for tuning air fuel ratios during wide-open throttle. You will not get a stable reading while cruising under part throttle.

<b><u>Gasoline</u></b>		
<b>DynoTune meter reading</b>	<b>Full Throttle</b>	<b>Air/Fuel Ratio</b>
.000mv		17.0:1
.100mv		17.0:1
.200mv		16.0:1
.300mv		15.5:1
.400mv		15.0:1
.500mv		14.7:1
.600mv	<b>Dangerously lean</b>	14.6:1
.700mv	Getting Lean	14.5:1
.800mv	Max power (Lean) normally aspirated	14.2:1
.875mv	<b>Max power normally aspirated</b>	13.5:1
.900mv	Max power (Rich) (NOS, Blower, Turbo)	13.2:1
1.000v	Very rich	12.5:1

Note: Some of the one & two wire oxygen sensors (Non heated) may take a while to warm up under part throttle driving. Tuning will be best if done on the highway to really get the sensor hot. Readings will not be stable until the sensor heats up.

## Section 4

# Troubleshooting

- **The meter display does not light**-Check all the connections and make sure the wires are not reversed.
- **The meter Readout cycles up and down at idle and cruise**-This is perfectly normal and will continue to do this until wide-open throttle at which point the oxygen sensor is hot and starts to put out a steady voltage.
- **The meter does not stay steady under wide-open throttle**- Check and make sure your oxygen sensor is functioning properly and that the meter is connected to the output of the oxygen sensor.
- **The meter does not stay steady under wide-open throttle**- Some of the one & two wire oxygen sensors (Non heated) may take a while to warm up under part throttle driving. Tuning will be best if done on the highway to really get the sensor hot. Readings will not be stable until the sensor heats up. Go on the highway then do full throttle and check your reading.
- **The meter reads “1.”** “- You have accidentally hooked the meters “**Black**” signal wire to the 12volt heater wire coming out of the oxygen sensor.  
**The meter reads “.000”**- You have accidentally hooked the meters signal wire to the oxygen sensors ground wire.

## Section 5 Specifications

	<b>DynoTune1 A/F meter</b>	<b>DynoTune 2 A/F meter</b>
Min. operating Supply voltage	9 volts	9 volts
Max. operating Supply voltage	15 volts	15 volts
Current consumption	45 milliamps	50 miliamps
Resolution	.001 millivolts	.001 millivolts
Max Display reading	1.999 volts	1.999 volts
Meter size overall L x W x H	.6" x 2.0" x 1.3"	.6" x 2.0" x 1.3"
<b>Green Back-light Display</b>	Yes	No
<b>Red LED Display</b>	No	Yes
Sample rate	4 readings/Sec	4 readings/Sec