

Air Fuel Meter Kit Usage Agreement

Borrower's Information:

Date _____

Name _____

Address _____ City _____

State _____ Zip Code _____ Phone _____

The borrow agrees to use the Air Fuel meter kit solely for the purposes of taking oxygen readings of exhaust gases on a Yamaha XT225 motorcycle which he/she owns. The Air Fuel meter kit includes: 1 oxygen sensor with thread protector, 1 LED bar graph reading device with attached wiring, 1 mounting bracket, 1 hook & loop strap, 1 exhaust plug and 1 XT225 front exhaust pipe with welded in fitting. ENDUCO, Inc. agrees to provide to the borrower all the above items in perfect working condition. It is understood that the items in this kit are not new merchandise. The borrower assumes full responsibility to use all items in this kit correctly and agrees to return all items in working condition after 30 days from the date that appears on this agreement. Parts shall be returned via UPS or Fedex and insured for \$300. The complete kit must be packaged carefully and the borrower assumes full responsibility for any shipping claims made due to a lost or damaged shipment. The borrower agrees to pay the repair and/or replacement cost(s) of any damaged or none working parts resulting from shipping or improper usage. The borrower will also pay the shipping costs to return the kit to ENDUCO, Inc. A \$300.00 deposit is required prior to sending out the kit. Deposits shall be made to ENDUCO, Inc. via VISA or MasterCard. Upon return of the complete kit in working order the \$300.00 deposit will be returned in full via an immediate credit to the borrower's credit card. ENDUCO, Inc. pays for shipping to the borrower's location. No rental or usage fees will be charged to borrowers that have purchased a TM33 kit from ENDUCO, Inc. The usage of this kit is offered free as stated in the terms of this agreement as a service to assist in setting up the TM33-8012 pumper carburetor.

Credit Card Information:

Card Type: _____ Card Number: _____

Expiration Date: _____

By signing below I understand and agree to the terms set forth above.

Please fax back to ENDUCO at number below:

ENDUCO, Inc,
3-C Great Meadow Ln.
East Hanover, NJ 07936
(973) 428 - 0100, (973) 428 - 4878 Fax

USING THE A/F METER:

The A/F meter consists of an O2 sensor and an LED bar graph reading device. To light all 10 bars requires 1 volt which is the maximum voltage the O2 sensor will produce. An O2 sensor must reach 600 degrees F before it will operate properly. All 10 bars illuminated represents a rich mixture. At about .45 volts the A/F mixture is at or near optimal. Given how O2 sensors operate, this part of the oxygen/volt curve is non linear. This means the bar graph will dance back and forth between lean and rich. A small change in oxygen around this portion of the curve makes a big voltage change. The user must visually average this motion out. Normally the O2 sensor would feed a computer which would perform this function. This process is easy and with a minimum of experience you will get a sense of how a given engine is running. The O2 sensor reads instantaneously so small fluctuations in A/F mixture will be detected. The bar graph reading device requires 12 VDC to operate.

HOOK UP:

- 1) Remove the heat shield from the front exhaust pipe.
- 2) Loosen the pinch clamp at the rear of the front exhaust pipe.
- 3) Remove the two socket head cap screws on the exhaust port.
- 4) Slide the front exhaust pipe forward and out of the bike.
- 5) Remove the front flange.
- 6) Slide the front flange onto test pipe. (Don't lose gasket ring inside exhaust port.)
- 7) Install the heat shield on test pipe.
- 8) Install the test pipe on bike and tighten flange and pinch clamp.
- 9) Remove test plug and install the O2 sensor. (Be careful with black lead wire.)
- 10) Locate the reading device in a convenient spot and secure it in place.
- 11) Connect black and red wires to battery terminals inside electrical box.
- 12) Connect white bar graph wire to black O2 sensor wire.

Make sure to run wires safely and use electrical tape to hold wires in place. Bundle excess wire and tape out of harm's way. Make sure the + red wire can't short to the frame. Start the bike, let the sensor warm up and observe readings. Some residual voltage may be present and illuminate 1 or 2 red bars. This is normal. The O2 sensor provided in this kit is delicate and expensive. DO NOT get oil or other contaminants on it. Doing so will ruin the zirconium and render the O2 sensor useless. The O2 sensor's black lead wire is also delicate so be careful to not twist it off or pull it loose.

Each engine carburetor combination is different and will read slightly differently to produce good performance. Some engines will show slightly rich while others may show slightly lean for best performance. Focusing on relative readings may prove more beneficial. The sensor works in real time so road testing while taking readings will be required to determine what carburetor settings yield the best overall performance. Pulling hills, accelerating, shift points, coasting, temperature changes, throttle band, idle etc. can all be monitored easily.