

Arz 2025

Thank you for purchasing a Smiths Classic MC Instrument, please read through the installation instructions thoroughly. The Speedometer and Tachometer are designed to be used with either positive or negative earth 12v systems and using electronic or contact breaker ignition. Please follow the wiring instructions and use good quality connectors. Secure and clean connections with the bike's wiring loom are essential for reliable service.

To begin installing your Smiths Classic instrument ensure a 3 amp fused supply is made to the unit, if fitting a pair of units one 3 amp fused supply is sufficient. During setup, reference is made to a "toggle switch", this can be any momentary contact switch like a horn button (must be insulated for positive earth systems). If no switch is available the units can be calibrated and set by simply touching the (tacho) or the (speedo) wires to the negative (-) side of the circuit.
***When following the setup procedure, please allow up to 10 seconds for the units to enter set-up mode ***

TOGGLE TO NEGATIVE (-) FOR BOTH POSITIVE AND NEGATIVE EARTH SYSTEMS.

The toggle function also enables switching between "odo" and "trip" display during normal speedo operation. The "trip" function may be reset. With the "trip" reading displayed the toggle button may be pressed and held to clear the trip reading and return the reading to zero. The total mileage (or km) ODO reading cannot be cleared.

Wiring instructions are for all charging systems, both negative and positive earth. On positive earth systems, the units may be connected exactly as described, please do not "swap" or reverse polarity designations. Loom colour stripe or bands may vary.

1 Tachometer Setup

Your Smiths Classic Tachometer is factory set to work with most twin cylinder engines. This section enables the unit to be reset for an alternative cylinder arrangement or in the case that your tacho displays high or low rpm

- Black Connect to 12v neg switched supply (-)
- Green Connect to 12v pos switched supply (+)
- White/Red Connect to 12v illumination pos (+)
- Red/Black Connect to 12v illumination neg(-)
- Red/Blue-bands Connect to Switched side of ign coil
- White/Black Connect to Dedicated ECU signal**
- Blue Used to calibrate unit during setup
- Brown/Grey Not used, keep isolated
- Red Not used, keep isolated

**** If using dedicated ECU supply (white/black), DO NOT connect Red/Blue-band wire and vice-versa, only connect one wire****

Most applications the wire should be connected to the negative (-) side of the ignition coil but either side may be used. Systems with a dedicated ECU signal should connect to the wire (**only ever connect one wire, never both**)
 Setup for systems with single, double, triple coil and wasted spark ignition systems ; Remove the isolation material from the wire.
 With the ignition off, press and hold the wire against the chassis for negative earth systems or to (-) side of the battery for positive earth.

Turn the ignition on, hold the toggle or wire until the needle sweeps to the factory setting (eg "2") **this may take 10 secs**, release the wire/toggle, tacho is now in "set mode". Each press of the wire to the negative terminal will move the needle to the next digit, up to the maximum 12 cylinders, the last 4 digits (from 8-12) will be half movements and back down to "1" (single cylinder) in a cycle. Select the required number and press and hold wire again for a further 3 seconds, this resets the unit to

enter setup mode



changing cylinder setting



normal operation and the needle will reset to "0". Turn the ignition off and back on to complete setup. Make sure the wire is now insulated/isolated during normal operation. Unit is now ready for use. If after setup the unit seems to indicate "high" or "low" rpm, ie: double or half the expected rpm, then repeat setup experimentally using a different number until the correct rpm is displayed by the unit.

2 Wiring for Speedometer installation, all charging systems, both negative and positive earth

To begin installing your Smiths Classic instrument it is suggested a fused (3A) supply is installed (if fitting a pair of units one 3 amp fused supply is sufficient) Please connect to your bike's loom in accordance with this wiring colour key

- Black Connect to 12v neg switched supply (-)
- Green Connect to 12v pos switched supply (+)
- White/Red Connect to 12v illumination pos (+)
- Red/Black Connect to 12v illumination neg(-)
- White/Black Connect to White wire on speedo sensor
- Red/Blue-bands Alternative signal input **
- Pink Connect to Red wire on speedo sensor *
- Brown/Grey Connect to toggle switch
- Red Connect to 12v neg switched supply (-)

*Pink wire is a dedicated 5v supply for Smiths 2 wire 5v senders, connect to sender red wire, connect white/black wire to sender white wire. Do not connect pink wire to 3 wire senders!
 **Red/Blue alternate input for dedicated ecu signal.

With the speedo installed, and the ignition on, switch between "odo" and "trip" mode by using a toggle switch or by simply touching the wire to the negative (-)

3 Speedometer setup using DTS (drive-to-set, SETPPU)

The Smiths classic Speedometer facilitates both fully manual and semi-auto set-up features. Ensure a good sender signal is reaching the speedo, with the ignition on, the speedo needle should register rotations of the wheel driving the sender, if pointer movement is barely perceptible please enter a figure of "800" using the PPU setup explained in section 4, it is advisable to check the speedo and sender together using a 12v battery before installing onto the machine.

The DTS function allows the unit's CPU to count the number of pulses sent to it whilst the bike is ridden a given distance, there is no requirement for wheel dimensions etc. Find a route you know to be exactly one mile or in the case of Km setting, one km.



Hold the toggle switch ****** in the depressed position (or contact the brown/slate wire to negative {-}) and switch on the ignition, the speedo needle will sweep across it's range and return to zero, now release the toggle switch. The display will initially read "SETPPU", press the toggle switch again until the display reads "DTS PPU", now depress the toggle switch and hold for approx 3 secs and release, the display will show "000000". **If the display returns to "SETPPU" when the engine is started then repeat the process above until the display reads "DTSPPU" and then "000000"**

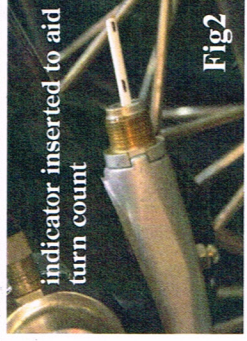
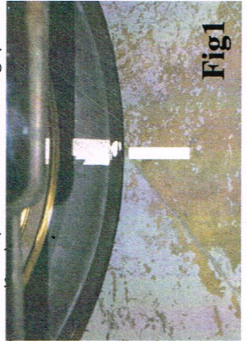
Ride the bike over the measured mile (or Km), the display panel will show an accumulating total, at the designated measured distance bring the bike to a halt but leave the engine and ignition on. Depress the toggle switch for approx 3 secs and release. The display will read "DONE" and then momentarily revert to "SETPPU"

DTS PPU". You should now turn off your ignition to complete the set-up. The Smiths Classic speedo is now calibrated for either MPH or KMH, depending on the measured distance covered.
*****Toggle switch using the chassis as earth will not be suitable for positive earth systems, a two wire switch with a return to (-) supply side of battery should be specified**

4 Speedometer setup manual mode (SETPPU)

The SETPPU or manual mode allows for setup without the need to drive the vehicle. Mark the rear wheel where it touches the ground. Make a similar mark on the ground (fig1). Move the bike forward for a complete wheel revolution, mark the ground again. Measure the distance covered, call this figure "A". Figure A is used to calculate the "calibration" figure.

Wheel revs p/mile = 63360 (inches in 1 mile) divided by A (inches) result = B
 Wheel revs p/km = 1000 divided by A (in metres) result = B (km)
 Put the bike on a stand and if using the Smiths dummy cable, turn six wheel revolutions (to obtain an average) and count the number of times the cable drive



now divide this number by six (number of times you turned the wheel) this is figure "C". Your calibration number = B x C.

For magnetic sensors count the magnets or bolt heads moving past the sensor. Calibration number = B x (the number of magnets or bolts).

To enter this number into the unit please follow the instructions below. Do not attempt to rotate the wheel to enter the SETPPU reading.

Hold the toggle switch ****** in the depressed position (or contact the brown/slate wire to negative {-}) and switch on the ignition, the speedo needle will sweep across it's range and return to zero, now release the toggle switch.



With the display reading "SETPPU" depress the toggle switch for approx 3 secs, a default number will be displayed with each digit flashing for approx 2 sec,

before cycling to the next digit. Whilst the digit is flashing each press of the toggle wire will increase the value of the flashing digit, when the correct figure is obtained wait for the next digit to start flashing and repeat the process until the correct calibration number "C" is displayed.

All the digits should now flash, press the toggle once and the display should read "DONE", after 3 secs the display will revert to "SETPPU". Switch off the power to complete setup.

If the display shows "error" then repeat the SETPPU process taking care to enter the correct value.

