Tachometer Installation and Operations Instructions

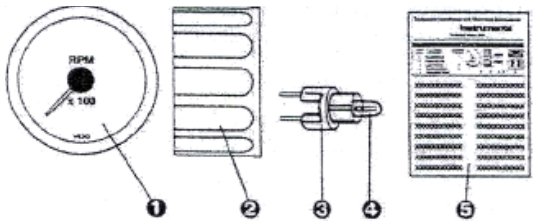
For Ducati & Rotax

VDO®

THE INSTRUCTIONS FOR OPERATION & ELECTRICAL WIRING OF THE TACHOMETER FOLLOWS. USE IS RESTRICTED TO 12 VOLT NEGATIVE GROUND ELECTRICAL SYSTEMS.

PARTS LIST

Item	Description	Quantity
1.	2 1/16" (52mm) Tachometer	1
2.	VDO Spin-Lok™ Mounting Clamp	1
3.	Light Socket	2
4.	12-Volt Light Bulb	2
5.	Installation/Operation Instructions	1



Tools and Additional Material Needed for Installation:
2 1/16" (52mm) hole saw or jigsaw(may not be needed)
Five 1/4" Female Spade Terminals
Philips and/or Flathead Screwdriver
Pliers and/or wrenches
Crimping tool and/or soldering iron

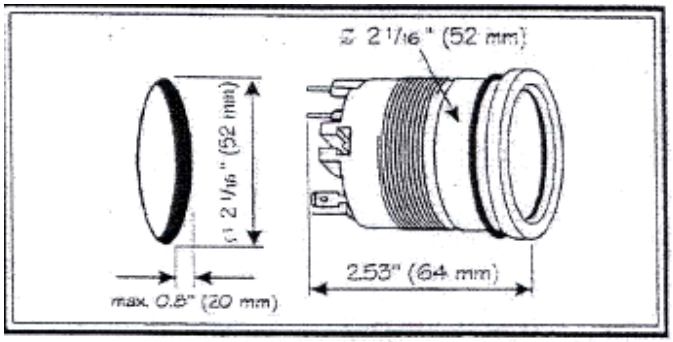


Diagram A
Tachometer dimensions and mounting information

Caution: Read these instructions thoroughly before making installation. Do not deviate from assembly or wiring instructions. Always disconnect battery ground before making any electrical connections.

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Tachometer Installation:

1. Insert the light bulb into the socket. Twist the socket into the socket hole on the gauge.

2. Select the location where you will mount the tachometer. Lay out and mark a center point for the gauge.

3. Cut a 2 1/16" (52mm) diameter hole. Place the tachometer into its hole to be sure it fits. if the fit is too snug, us a file to slightly enlarge the opening until the gauge fits properly. See Diagram A.

4a. Mounting Clamp: Rotate the tachometer in its hole until it is easy to read, then secure it using the VDO Spin-Lok™ Mounting Clamp. Hard-tighten the clamp until the gauge can no longer be rotated by hand in the panel. See Diagram B to determine the proper mounting clamp direction.

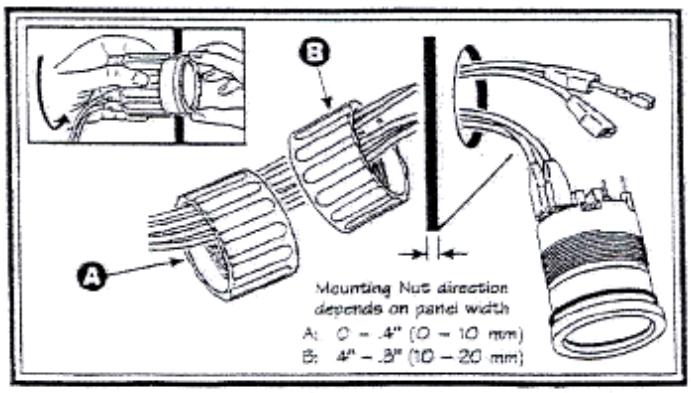


Diagram B
Proper mounting using VDO's Spin-Lok™ Mounting Clamp

Part#0 515 010 444 Rev. 0509

4b. **MOUNTING BRACKET:** To mount your tachometer with the option VDO Mounting Bracket, place the mounting bolts into the slots on the back of the gauge. Slip the mounting bracket over the mounting bolts. Screw on the accompanying nuts. Use a wrench to tighten the nuts until the tachometer can not longer be rotated by hand. DO NOT OVERTIGHTEN. See Diagram C.

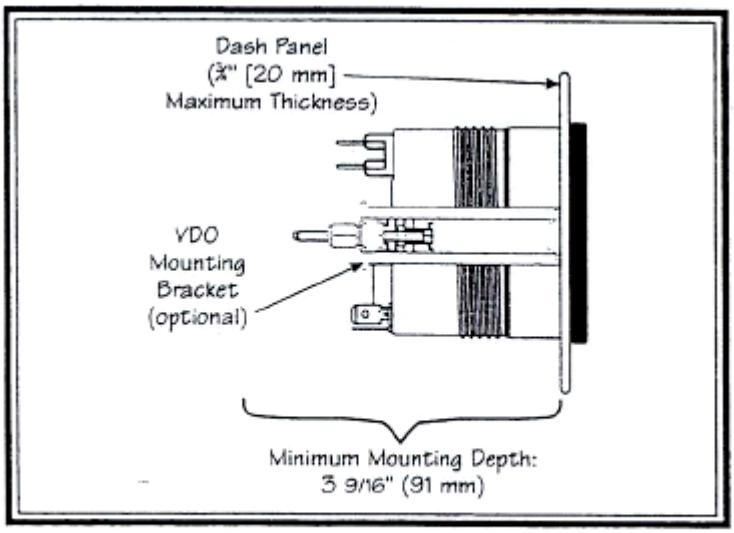


Diagram C
Mounting with the optional VDO Mounting Bracket

Wiring the Tachometer:

Wiring your new VDO Tachometer is a simple and straightforward procedure, as shown in Diagram D.

1. Run a series of wires from the tachometer through the firewall to:
   a) An adequate ground location (either the negative battery terminal, or the spot where the negative battery is connected (grounded) to the frame of the vehicle);
   b) A switch + 12 volt source (usually after the fuse in the fuse box); and
   c) The light switch (also after the fuse in the fuse box);
   d) The signal source you will be using with your tachometer – either the AC Tap on the alternator or the Terminal 1 of ignition coil *(or and additional terminal on special ignition systems. In the case of special ignition systems (such as transistor/coil ignition systems, electronic and fully electronic ignitions) please ask the vehicle manufacturer or the ignition system manufacturer where to find the correct signal terminal).*
2. Connect the ground wire to:
   a) The terminal on the back of the tachometer marked (-) and
   b) One terminal on the lamp socket.
3. Connect the + 12 volt wire from the switched + 12 volt source to the terminal on the back of the gauge marked (+).
4. Connect the wire from the light switch to the remaining terminal on the lamp socket.
5. Connect the wire from the ignition coil, as shown in Diagram D to the #2 terminal on the tachometer.
6. At this point, the installation and wiring of your tachometer is complete. Reconnect the negative battery terminal which you disconnected before beginning this installation. Turn on the lights to be sure they are working. Before the tachometer will function properly, it must be configured, as shown on next page.

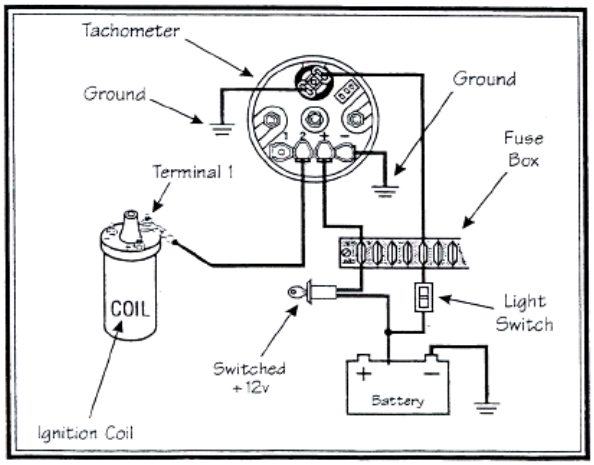
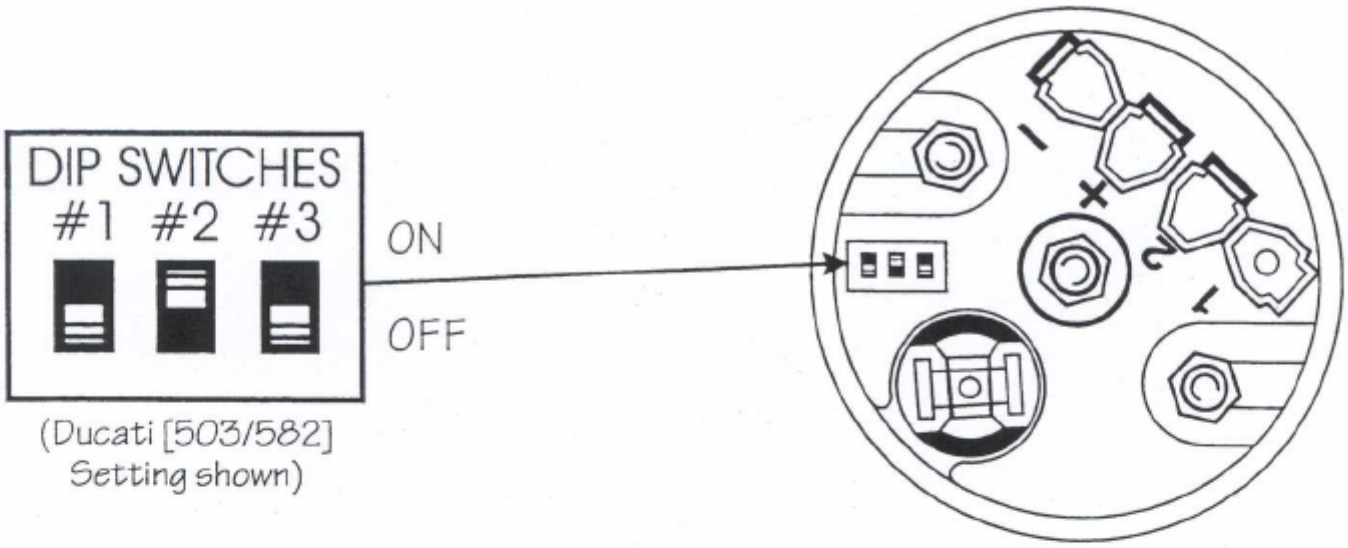


Diagram D
Proper wiring of the VDO Tachometer with the Ignition Coil



TACHOMETER For ROTAX and DUCATI			
Dip Switch #1	#2	#3	
On	Off	Off	Rotax (912)
Off	On	Off	Ducati (503/582)

[**Note**: See Page 4 for Fine Calibration]

Diagram E

Configure by setting the DIP Switches on the rear of the VDO Tachometer

Configuration the Tachometer:

Before your VDO Tachometer will function properly with your engine, you will need to configure it as shown in Diagram E.

The table in Diagram E shows how to set the DIP switches for use with either the Rotax or Ducati.

When you have finished, your installation is completed *unless you determine that a fine adjustment is necessary*.

In some instances, you may need to perform a fine adjustment of the dial pointer, as described on the next page.

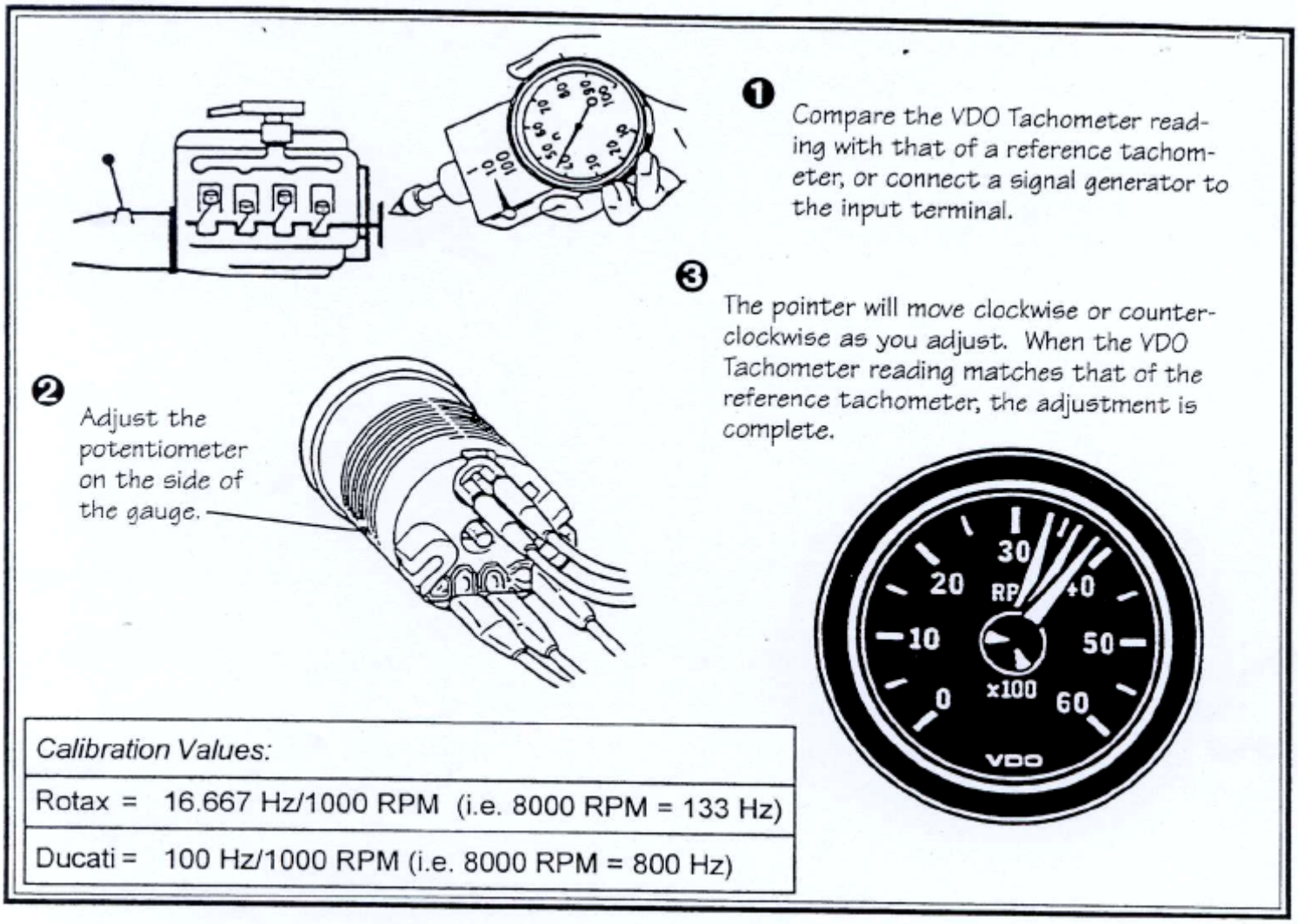


Diagram F

Steps to take to perform a fine adjustment of the VDO Tachometer

Adjustment of the Tachometer Pointer:

Use of the VDO Tachometer with either Rotax or Ducati may require a fine adjustment of the pointer. This can be done as shown in Diagram F. Please note that this calibration is designed to adjust the reading between 30% and 100% of the RPM range.

1. Compare the RPM indication on your VDO Tachometer with a reference indication on a device like a new tachometer.
2. Use an insulated screwdriver to adjust the potentiometer located on the side of the VDO Tachometer.
3. You will see the pointer move clockwise and counterclockwise as you adjust potentiometer. When the reading exactly matches that of the reference tachometer, the adjustment is complete.

At this point, the installation of your VDO Tachometer is complete. The tachometer should illuminate when you turn on your lights, and should give you an accurate indication of the revolutions per minute of your engine. If it doesn't, check your wiring, make sure the DIP switches are set properly according to the table on Page 3, and that all necessary adjustments have been made.