Tools and Materials Needed For Installation:

- Hole saw or jigsaw (may not be needed)
- ⅛" spade terminals
- Miscellaneous electrical connectors
- Philips and/or flathead screwdriver
- Pliers and/or wrenches
- Crimping tool and/or soldering iron (may not be needed)

DIAGRAM A

VDO Tachometer with Hourmeter is programmable from .5 to 200 pulses per revolution

II. Wiring the Tachometer

1. Prepare insulated ⅛" spade terminals for use with the tachometer. Make sure all wires are long enough to reach the necessary positive and negative terminals and any wires from the sensor.

2. Connect the wire from pin #4 to a switched +12 volt or +24 volt source. A switched +12 or 24 volt wire can be found coming from the ignition switch. Follow this wire to a junction, and attach the wire from pin #4 at this junction (i.e. fuse block, etc.). Refer to Diagram D.

3. Connect a wire from pin #5 to a constant +12 or +24 volt source.

4. Attach the wire from pin #3 to a ground (negative) source. One such source can always be found where the battery is attached to the metal frame of the vehicle. Use an appropriate connector to ground this wire.

5. Attach the wire from pin #8 to the positive (+) tachometer signal source [usually a terminal on the ignition coil or the generator in a diesel system] using a butt splice and a crimping tool.

6. Attach the wire from pin #7 to the negative (−) terminal of the sender or floating ground [usually a terminal on the ignition coil or the generator in a diesel system] using a butt splice and a crimping tool.

7. Crimp a spade connector onto a short wire, and attach the wire from pin #4 at a junction (i.e. fuse block, etc.). Refer to Diagram D.

8. Crimp the other end of the short wire, along with

[Text continues at #9]

CAUTION!!!

These instructions contain information about gauges of different sizes. **You must determine the size of your gauge before cutting any holes!**

### Parts List

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tachometer</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Lamp Socket (Push in, wedge-type)</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Light Bulb (12-volt / G.E. #161 or equivalent)</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>VDO Spin-Lok™ Mounting Clamp</td>
<td>1</td>
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<tr>
<td>5.</td>
<td>Installation/Operation Instructions</td>
<td>1</td>
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</tbody>
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Diagram D

Proper wiring of the tachometer with:

1. Ignition; Electronic Control Box; alternator
2. Generator and Inductive senders

* Diesel applications

Legend:
- Battery
- Fuse Block
- Light Switch
- Ignition
- Ground
- Pin #3
- Pin #4
- Pin #7
- Pin #8
- Tachometer
- AC Tap (marked “W” or “R”)
To calibrate your VDO Tachometer manually:

1. Press and hold in the button on the tachometer as you start the engine. Hold in the button until the word “PULSE” is displayed on the LCD readout.

2. As soon as you see the word “PULSE,” release the button. After a few seconds, the display will start flashing a series of numbers (factory default setting) that you can change to represent the pulse-per-revolution value of the ignition in your vehicle. For example, a number like “P 14.70” will show on the display, with each digit flashing in turn from right to left, except the right-most digit, a zero, which is fixed.

3. As each number flashes, press the button and hold it until the correct digit appears. Refer to Diagram H.

For example, let’s say the number that represents the correct calibration value for the diesel engine and ignition system in your vehicle is 16.5 pulses-per-revolution. When you begin the manual calibration process, the LCD displays a default value. When the first digit starts flashing, press the button to start cycling through the numbers. When the number “5” appears, release the button.

At this point, the number “5” is set, and the digit to its immediate left begins to flash. Press the button again, and hold it until the number “6” appears. Release the button. Repeat the procedure until the “1” appears. Again, release the button. At this point, the correct calibration for the tachometer/ignition combination has been properly set...in our example, 16.5 pulses-per-revolution. After a few seconds, the value you have entered will be downloaded into the tachometer’s microprocessor, and the LCD display will automatically revert to its normal mode. Manual calibration of the tachometer is now complete.

In the future, you can use this method to update the calibration value stored in the computer should it ever become necessary. This function also allows you to manually adjust the calibration value after you perform the automatic calibration process.
3. Analog (Pointer) Calibration ($\text{AdP}_{\text{C}}$)

You can adjust the calibration of the tachometer’s analog display (the pointer showing revolutions per minute) by using speed test equipment and the “$\text{AdP}_{\text{C}}$” function on the LCD readout. The pointer can be repositioned anywhere within the calibration range of the tachometer.

To manually calibrate the pointer on the analog display:

1. **Press and hold in the button on the tachometer as you turn on the ignition and start the engine.** Hold in the button until the word “$\text{AdP}_{\text{C}}$” shows up. When it does, release the button. Set the RPM using a reference tachometer at a value above idle (e.g. 2000 RPM).

2. **Press the button once, and the word “$\text{AdP}$” will be displayed on the LCD readout.** Press it twice rapidly then release it for a second, and the word “$\text{dP}$” will be displayed. So if you need an upward calibration of the pointer, press the button once. If you need a downward calibration, press the button twice rapidly and release it.

3. **When either “$\text{dP}$” or “$\text{dR}$” is showing, press the button again, and hold it in.** If you hold the button in for just a short time, the pointer will move slowly either upwards or downwards, depending on which mode you selected. This allows for a very accurate adjustment of the pointer. Holding the button in for a longer period of time makes the pointer move faster.

Adjustments between –30% and +100% are possible, but must be done WITH A REFERENCE TACHOMETER ONLY!!!

It is recommended that these adjustments be done only by experienced mechanics.

4. When you have repositioned the pointer where you want it, release the button and wait. If no further adjustments are made within one minute, the tachometer will revert back to the normal operating mode.

### Diagram I

![Diagram I](image)

Calibration of the analog (pointer) display on the tachometer

TO COMPLETE THE INSTALLATION:

Perform Step 4 of Section One on Page 1. When the tachometer is secure in the panel, your installation is finished.

### 4. Fine Calibration

When the ignition is on and power is supplied to the tachometer you can select the fine calibration function to very accurately adjust the running speed — difference ratio. This allows for compensation of alternator slippage over various speed ranges, for example. This function also allows for synchronization of two engines.

To access and use the fine calibration function:

1. **Press and release the pushbutton on the back of the tachometer.** This enables you to adjust the running speed/difference ratio between –20% and +20%.

   Adjustments are made in (+) or (–) steps of 0.5% by pressing and holding the button. When the adjustment is complete, release the button. After a short time, the display reverts back to its normal mode. See Diagram J for examples of:

   - **Display 1:** 0.0% difference to the adjusted value;
   - **Display 2:** 2.0% difference to the adjusted value;
   - **Display 3:** 2.5% difference to the adjusted value.

### Diagram J

![Diagram J](image)

Fine calibration of the tachometer reading

### VDO Limited Warranty

VDO North America warrants all merchandise against defects in factory workmanship and materials for a period of 24 months after purchase. This warranty applies to the first retail purchaser and covers only those products exposed to normal use or service. Provisions of this warranty shall not apply to a VDO product used for a purpose for which it is not designed, or which has been altered in any way that would be detrimental to the performance or life of the product, or misapplication, misuse, negligence or accident. On any part or product found to be defective after examination by VDO North America, VDO North America will only repair or replace the merchandise through the original selling dealer or on a direct basis. VDO North America assumes no responsibility for diagnosis, removal and/or installation labor, loss of vehicle use, loss of time, inconvenience or any other consequential expenses. The warranties herein are in lieu of any other expressed or implied warranties, including any implied warranty of merchantability or fitness, and any other obligation on the part of VDO North America, or selling dealer.

(NOTE: This is a “Limited Warranty” as defined by the Magnuson-Moss Warranty Act of 1975.)