Universal Sender Kit Installation Instructions

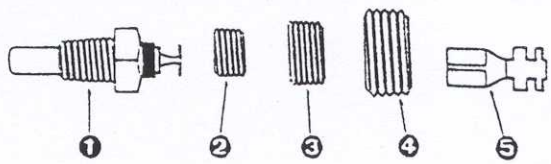
Temperature and/or Pressure Senders for use with Electrical Temperature and/or Pressure Gauges

VDO North America

Allentown, PA USA

Parts List – Temperature Sender Kit

Item	Description	Quantity	Part Number
1.	Temperature Sender (250° Kit)	1	323 900
or	Temperature Sender (300° Kit)	1	323 905
2..	¼"- 18 NPT bushing (adapter)	1	
3.	⅜"- 18 NPT bushing (adapter)	1	
4.	½"- 14 NPT bushing (adapter)	1	
5.	¼" Female spade terminal	1	



Tools/Items Needed to Complete Installation:

9/16" (14mm) wrench
Wire cutter/stripper
Pliers or other crimping tool
a length of 16-Gauge insulated wire

— IMPORTANT —

For best results, install your sender in the order described in these instructions. DO NOT USE TEFLON TAPE. Teflon tape keeps the sender from grounding itself properly. For the same reason, do not use Lok-Tite of any sort. Finally, if you are installing a temperature sender, make absolutely sure 3-5 mm of the sender is immersed in fluid. Mount only in the engine block; mounting in the cylinder head will result in faulty readings.

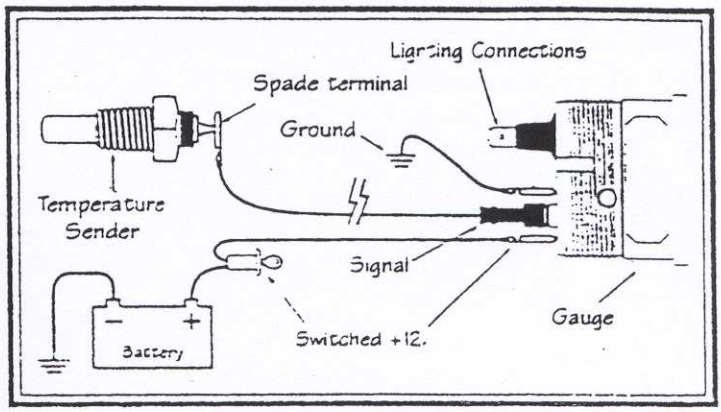


Diagram B

Proper Wiring Between Gauge and Temperature Sender

I. Installing the VDO Universal Temperature Sender

There are three bushings included in this kit—one is ¼"-18 NPT; another is ⅜"-18 NPT; and the third is ½"-14 NPT. The fitting on the sender itself is ⅛"-18 NPT. Decide which bushing, if any, you will need to adapt the sender to the opening in your engine block. Discard the rest, or save them for use later in another project. But be aware that you will have left-over bushings after you complete your installation.

1. Select a location for mounting the temperature sender. The location must be in the engine block—not in the cylinder head, where exhaust heat would cause faulty readings.

2. Take the correct bushing, if needed, and screw it tightly onto the sender with your fingers.

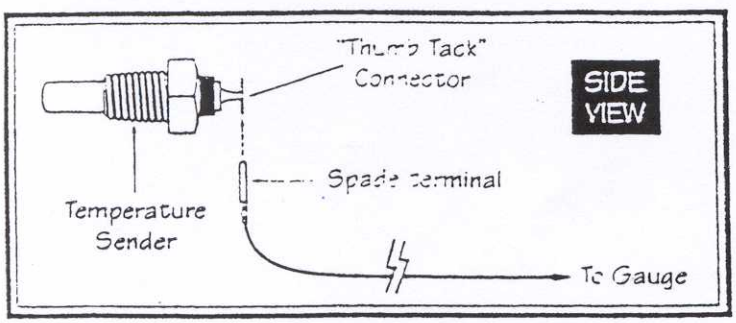


Diagram A

Proper Insertion of Spade Terminal onto Sender Terminal

3. Clean the opening in the engine block where the sender unit will be inserted. Clean threads are absolutely necessary if a good ground and reliable operation are to be obtained.

4. Screw the sender unit finger-tight into the engine block.

5. Use a 9/16" (14mm) wrench to crank the sender into the block until it is secure. As you crank, you will tighten the bushing into the block and the sender into the bushing. Keep tightening until the sender assembly is snug. Do not overtighten. The sender unit is self-sealing, and will not leak.

II. Wiring the VDO Universal Temperature Sender

1. Either run a new wire to the temperature gauge or find the existing wire if a gauge is already installed.

2. Crimp the supplied ¼" female spade terminal onto the sender end of the wire. (Replace any old connectors on an existing wire with the new spade terminal.)

3. Push the spade connector onto the "thumb tack" terminal at the end of the sender as shown in Diagram A.

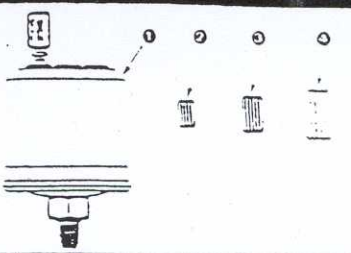
4. Make sure the other end of the signal wire is properly connected to the gauge (see Diagram B).

5. Power up the gauge, and make sure it is working. If it isn't, recheck your wiring and refer to the troubleshooting guide on the other side of this instruction sheet.

Part # 0 511 012 260 Rev. 5/95

Parts List – Pressure Sender Kit

Item	Description	Quantity	Part Number
1.	Pressure Sender (80 PSI Kit)	1	360 900
or	Pressure Sender (150 PSI Kit)	1	360 905
2.	¼"- 18 NPT bushing (adapter)	1	
3.	⅜"- 18 NPT bushing (adapter)	1	
4.	½"- 14 NPT bushing (adapter)	1	



Tools/Items Needed to Complete Installation:

¾" (18mm) wrench
Pliers or other crimping tool (optional)
Wire cutter/stripper
a length of 16-Gauge insulated wire
¼" Ring terminal (optional)

I. Installing the VDO Universal Pressure Sender

There are three bushings included in this kit—one is ¼"-18 NPT; another is ⅜"-18 NPT; and the third is ½"-14 NPT. The fitting on the sender itself is ⅛"-18 NPT. Decide which bushing, if any, you will need to adapt the sender to the opening in the engine block. Discard the rest, or save them for use later in another project. But be aware that you will have left-over bushings after you complete your installation.

1. Select a location for mounting the pressure sender.
2. Take the correct bushing, if needed, and screw it tightly onto the sender with your fingers.
3. Clean the opening in the engine block where the sender unit will be inserted. Clean threads are absolutely necessary if a good ground and reliable operation are to be obtained.
4. Screw the sender unit finger-tight into the engine block.
5. Use a ¾" (18mm) wrench to crank the sender into the block. As you crank, you will tighten the bushing into the block and the sender into the bushing. Keep tightening until the sender assembly is snug. Do not overtighten. The sender unit is self-sealing, and will not leak.

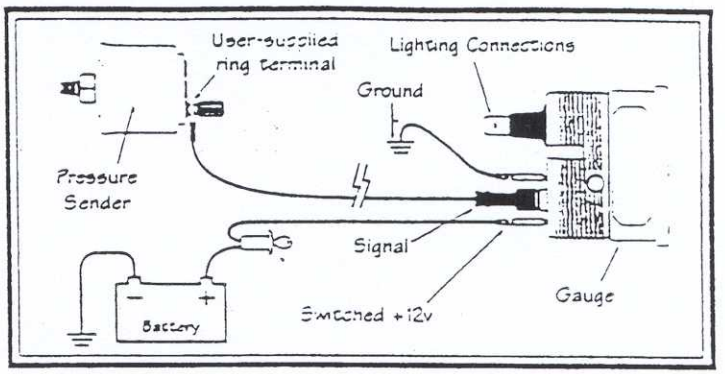


Diagram C
Proper Wiring Between Gauge and Pressure Sender

II. Wiring the VDO Universal Pressure Sender

1. Either run a new wire to the pressure gauge or find the existing wire if a pressure gauge is already installed.
2. Crimp a ring terminal onto the sender end of the wire.
3. Attach the ring terminal to the terminal on the sender.
4. Make sure the other end of the signal wire is properly connected to the pressure gauge (see Diagram C).
5. Turn on the power, and make sure the gauge is working. If it isn't, recheck your wiring. (See "Troubleshooting," below.)

—TROUBLESHOOTING—

TEMPERATURE — PRESSURE SENDERS

Do not use Teflon tape on the threads. It will interfere with the sender ground. Sender threads are tapered pipe threads and are self-sealing. Temperature senders are most accurate when installed in the aftermarket intake manifold. It is also acceptable to use the OEM engine manufacturing specified location. Installing in the cylinder head can cause high readings due to the exhaust manifold heat. Do not use tee adapters, reducing, or angle adapters for temperature senders since the sender tip or bulb will not be immersed in the water flow.

SENDER TESTING

Senders can be tested with an ohmmeter that measures from 10 to 2,000 ohms. Connect the positive lead from the tester to the sender terminal and the negative lead to a good ground. The following readings will occur if the sender is operating properly:

Temperature Sender:	Cold	- 700 ohms
	Hot (250 degrees)	- 22 ohms
Pressure Sender:	Engine off	- 10 ohms
	Engine running 40 psi = 105 ohms; 60 psi = 152 ohms.	

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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, VDO will only repair or replace the merchandise through the original selling dealer or on a direct basis. VDO assumes no responsibility for diagnosis, removal and/or installation labor, loss of vehicle use, loss of time, inconvenience or any other consequential expense. 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, or selling dealer. (NOTE: This is a "Limited Warranty" as defined by the Magnuson-Moss Warranty Act of 1975.)