



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
R0	APPROVED FOR PRODUCTION	9-7-99	AMH
R1	ADDED "NOT USED" NOTE TO VOLTMETER	5-10-00	PJR
R2	ADDED MANIFOLD PRESSURE DETAILS.	6-22-00	PJR
R3	ADDED CHT AND EGT DETAILS.	7-7-00	PJR
R4	ADDED WIRE & ROTARY SWITCH P/N'S APPROVED FOR PRODUCTION	7-18-00	PJR
R5	ADDED "AN SPACER 4D" APPROVED FOR PRODUCTION	11-30-01	PJR

- NOTES:
1. IF USING AN E.I. ROTARY SWITCH, CONNECT VIOLET TO THE POSITIVE INSTRUMENT POST & GRAY TO NEGATIVE. IF NOT USING SWITCH, CONNECT YELLOW TO POSITIVE & RED TO NEGATIVE.
  2. #6 STUD POST TERMINALS TYPICAL OF ALL INSTRUMENTS.
  3. CHT PORTS LOCATED BELOW & INBOARD OF BOTTOM SPARK PLUGS.
  4. USED ONLY FOR MULTI-CYLINDER PROBES. WHEN INSTALLING A PROBE ON A SINGLE CYLINDER, PROBE CABLE CONNECTS DIRECTLY TO INSTRUMENT.
  5. KEEP SHIELD OVER AS MUCH OF THE WIRE AS POSSIBLE.

	<b>VAN'S AIRCRAFT, INC.</b> PO BOX 160 NORTH PLAINS, OR 97133	
	PART DESCRIPTION: GAUGE INSTALL MATERIAL SPECIFICATION: N/A	
DATE DRAWN: 9-7-99	UNITS: INCHES	DRAWING (PART) NO.: GAUGE INSTALLATION
DRAWN BY: ANDREW HANNA TOLERANCES: N/A (UNLESS OTHERWISE SPECIFIED)	SCALE: FULL SCALE	
PATH\FILENAME: Q:\Z OTHER\INSTALL DRAWINGS\GAUGE INSTALLATION.DWG A-SIZE ORIGINAL		

# INSTALLING VAN'S VAM 40 AMMETER

## **Specifications**

- Power required 11-16 volts DC
- Recommended sending unit is a Van's P/N IE VAMSHUNT 40, a 40 Amp, 40 millivolt sender.
- Internal lighting uses 14 volts maximum and is easily controlled with a panel light dimmer (Van's P/N ES DIMMER, LAMP 1.5A) to provide the desired lighting level.
- Power and sensor studs accept a #6 ring terminal (Van's P/N ES 36152).
- 6-32 brass nuts are molded into the instrument case for mounting to the panel.
- Amperage range from -40 to 40 AMP.
- Gauge accuracy within 2% throughout its range.

## **Warranty**

Van's Aircraft warrants this instrument to be free from defects in materials and workmanship for a period of one year from the end user invoice date. Warranty is limited to repair, replacement, or refund of defective parts at the discretion of Van's Aircraft. Parts must be returned prepaid to Van's aircraft for warranty inspection. This warranty does not cover misuse, accident, or negligent repair or installation.

This warranty is in lieu of any other expressed or implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of the Van's Aircraft. In no event will Van's Aircraft be liable for incidental or consequential damages.

## **Installation**

Before you install the ammeter please read the above warranty and check to make sure the range markings on the gauge match your engine. If you are unsatisfied with either please return the gauges in unused, like new condition for a refund.

The gauge should be installed to current aircraft standards (See AC 43.13.)

Use 18-gauge wire and connect the terminal marked I to the circuit chosen for the instrument power. If the gauges are wired backwards they will be ruined. Double check.

Use 18-gauge wire to connect the terminal marked G to ground.

Install the shunt. There are a couple of possible variations in the wiring location of the shunt. The location we show in the wiring diagram is the most popular.

Connect the terminals on the shunt to the terminals on the back of the gauge case using 18-gauge wire. Observe the polarity shown in the wiring diagram.

The gauges have an internal "light on a post" arrangement. One wire from the light needs to go to ground and the other needs to be connected to the panel light dimmer. The light is easily removed by grasping the rubber plug that holds it in the back of the instrument (the one the wires go through) and pulling it out.

Install the gauge in the panel. A drawing with cut-out dimensions is included.

## **Troubleshooting.**

If the gauge is not working first check the power and ground. The voltage must be between 11 and 16 volts.+

# **INSTALLING THE VANS VFL15 FUEL GAUGE**

## **Specifications**

Power required 11-16 volts DC

Recommended sending unit is a Van's P/N IE F-385B (left tank) or IE F-385C (right tank), a 33 to 240 Ohm float type resistive sender.

Internal lighting uses 14 volts maximum and is easily controlled with a panel light dimmer (Van's P/N ES DIMMER, LAMP 1.5A) to provide the desired lighting level.

Power and sensor studs accept a #6 ring terminal (Van's P/N ES 36152).

6-32 brass nuts are molded into the instrument case for mounting to the panel.

Fuel level range from 0-15 Gallons.

Yellow arc from 5 to 2.5 gallons, red arc from 2.5 to 0 gallons. Matches the tank shape of the RV-6 and RV-8 to provide reasonable accuracy.

Gauge accuracy within 2% throughout its range and a calibration point of 2.5 gallons.

## **Warranty**

Van's Aircraft warrants this instrument to be free from defects in materials and workmanship for a period of one year from the end user invoice date. Warranty is limited to repair, replacement, or refund of defective parts at the discretion of Van's Aircraft. Parts must be returned prepaid to Van's aircraft for warranty inspection. This warranty does not cover misuse, accident, or negligent repair or installation.

This warranty is in lieu of any other expressed or implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of the Van's Aircraft. In no event will Van's Aircraft be liable for incidental or consequential damages.

## **Installation**

Before you install the fuel level gauge please read the above warranty and check to make sure the range markings on the gauge match your aircraft. If you are unsatisfied with either please return the gauges in unused, like new condition for a refund.

Wing dihedral in the RV-6/6A and RV-8/8A keeps the inboard bay of the fuel tank (where the senders are) full until 15 or 16 gallons remain. The float does not move until three (RV-6/6A) or five (RV-8/8A) gallons of fuel are used. Even though there is no "full" marked on the gauges, they give as accurate a reading as possible with a float type sender.

The gauge should be installed to current aircraft standards (See AC 43.13.)

Use 18-gauge wire and connect the terminal marked I to the circuit chosen for the instrument power. If the gauges are wired backwards they will be ruined. Double check.

Use 18-gauge wire to connect the terminal marked G to ground.

The gauge is designed to work with the tank shape of the RV-6 and RV-8. To achieve the best accuracy the float should come within 1/8 inch of the top and bottom of the tank at full throw.

Connect the terminal on Van's P/N IE F-385B (left tank) or IE F-385C (right tank) sender to the terminal marked S on the back of the gauge case using 18-gauge wire.

The gauges have an internal "light on a post" arrangement. One wire from the light needs to go to ground and the other needs to be connected to the panel light dimmer. The light is easily removed by grasping the rubber plug that holds it in the back of the instrument (the one the wires go through) and pulling it out.

Install the gauge in the panel. The gauge requires a standard 2 ¼" aircraft cutout for mounting. A drawing with cut-out dimensions is included.

Level the airplane in the roll and pitch axes and add 2.5 gallons of fuel to an empty tank(s). The needles should come close to the 2.5 mark on the face. Repeat for 5, 10, and 15 gallons to check the calibration between the sender and the gauge. The gauge will continue to read 15 gallons whenever the tank contains that amount or more. The amount on the gauges will not be precise when the tanks are nearly full, but by giving up a little accuracy in this situation, they are more accurate when fuel is low, where increased accuracy is more desirable.

### ***Troubleshooting***

If the gauge is not working first check the power and ground (a very high percentage instrument problems are caused by faulty grounds. Double check the sender ground.) The voltage must be between 11 and 16 volts.

If the gauge shows a full scale reading disconnect the sender from the lead. If the gauge returns to zero the sender is shorted to ground. If the gauge remains at full scale, remove the sender wire from the back of the gauge. If the gauge returns to zero the wire is shorted. If the needle remains at full scale the gauge is probably faulty.

If the gauge shows a zero reading remove the wire from the sender and ground it. If the gauge goes to full scale the sender is bad. If the gauge still reads zero, ground the sensor stud on the back of the case. If the gauge goes to full scale the wire is broken. If the needle remains on zero the gauge is faulty.

# INSTALLING VAN'S VFP15 FUEL PRESSURE GAUGE

## **Specifications**

- Power required 11-16 volts DC
- Recommended sending unit is a Van's P/N IE411AB, a 0 to 16 PSI input, 33 to 240 Ohm resistive sender.
- Internal lighting uses 14 volts maximum and is easily controlled with a panel light dimmer (Van's P/N ES DIMMER, LAMP 1.5A) to provide the desired lighting level.
- Power and sensor studs accept a #6 ring terminal (Van's P/N ES 36152).
- 6-32 brass nuts are molded into the instrument case for mounting to the panel.
- Pressure range from 0-15 PSI.
- Green arc from 2 to 6 PSI with redlines at 0.5 and 8 PSI. This matches the requirements for inlet pressure to most Lycoming carburation systems.
- Gauge accuracy within 2% throughout its range and a calibration point of 3 PSI.

## **Warranty**

Van's Aircraft warrants this instrument to be free from defects in materials and workmanship for a period of one year from the end user invoice date. Warranty is limited to repair, replacement, or refund of defective parts at the discretion of Van's Aircraft. Parts must be returned prepaid to Van's aircraft for warranty inspection. This warranty does not cover misuse, accident, or negligent repair or installation.

This warranty is in lieu of any other expressed or implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of the Van's Aircraft. In no event will Van's Aircraft be liable for incidental or consequential damages.

## **Installation**

Before you install the fuel pressure gauge please read the above warranty and check to make sure the range markings on the gauge match your engine. If you are unsatisfied with either please return the gauges in unused, like new condition for a refund.

The gauge should be installed to current aircraft standards (see AC 43.13.)

Use 18-gauge wire and connect the terminal marked I to the circuit chosen for the instrument power. If the gauges are wired backwards they will be ruined. Double check.

Use 18-gauge wire to connect the terminal marked G to ground.

Install the sender. **DO NOT INSTALL SENDER DIRECTLY ON THE ENGINE.** Use a remote mount system. A sender mounted directly on the engine will vibrate and may fatigue and break with potentially disastrous consequences.

Connect the terminal on Van's P/N IE 411AB sender to the terminal marked S on the back of the tachometer case using 18-gauge wire.

The gauges have an internal "light on a post" arrangement. One wire from the light needs to go to ground and the other needs to be connected to the panel light dimmer. The light is easily removed by grasping the rubber plug that holds it in the back of the instrument (the one the wires go through) and pulling it out.

Install the gauge in the panel. The gauge requires a standard 2 ¼" aircraft cutout for mounting. A drawing with cut-out dimensions is included.

## **Troubleshooting**

If the gauge is not working first check the power and ground (a very high percentage instrument problems are caused by faulty grounds. Double check the sender ground.) The voltage must be between 11 and 16 volts.

If the gauge shows a full scale reading, disconnect the sender from the lead. If the gauge returns to zero the sender is shorted to ground. If the gauge remains at full scale, remove the sender wire from the back of the gauge. If the gauge returns to zero the wire is shorted. If the needle remains at full the gauge is probably faulty.

If the gauge shows a zero reading remove the wire from the sender and ground it. If the gauge goes to full scale the sender is bad. If the gauge still reads zero, ground the sensor stud on the back of the case. If the gauge goes to full scale the wire is broken. If the needle remains on zero the gauge is faulty.

# INSTALLING VAN'S VFP50 FUEL PRESSURE GAUGE

## **Specifications:**

- Power required 11-16 volts DC
- Recommended sending unit is a Van's P/N IE 411L, a 0-60 PSI input, 33-240 Ohm resistive sender.
- Internal lighting uses 14 volts maximum and is easily controlled with a panel light dimmer (Van's P/N ES DIMMER, LAMP 1.5A) to provide the desired lighting level.
- Power and sensor studs accept a #6 ring terminal (Van's P/N ES 36152).
- 6-32 brass nuts are molded into the instrument case for mounting to the panel.
- Pressure range from 0-50 PSI.
- Green arc from 14 to 45 PSI with redlines at 14 and 45 PSI. Matches the requirements for inlet pressure to most Lycoming fuel injection systems.
- Gauge accuracy within 2% throughout its range and a calibration point of 25 PSI.

## **Warranty**

Van's Aircraft warrants this instrument to be free from defects in materials and workmanship for a period of one year from the end user invoice date. Warranty is limited to repair, replacement, or refund of defective parts at the discretion of Van's Aircraft. Parts must be returned prepaid to Van's aircraft for warranty inspection. This warranty does not cover misuse, accident, or negligent repair or installation.

This warranty is in lieu of any other expressed or implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of the Van's Aircraft. In no event will Van's Aircraft be liable for incidental or consequential damages.

## **Installation**

Before you install the fuel pressure gauge please read the above warranty and check to make sure the range markings on the gauge match your engine. If you are unsatisfied with either please return the gauges in unused, like new condition for a refund.

The gauge should be installed to current aircraft standards (See AC 43.13)

Use 18-gauge wire and connect the terminal marked I to the circuit chosen for the instrument power. If the gauges are wired backwards they will be ruined. Double check.

Use 18-gauge wire to connect the terminal marked G to ground.

Install the sender. DO NOT INSTALL THE SENDER DIRECTLY ON THE ENGINE. Use a remote mount system. A sender mounted directly on the engine will vibrate and may fatigue and break with potentially disastrous consequences.

Connect the terminal on Van's P/N IE 411L sender to the terminal marked S on the back of the tachometer case using 18-gauge wire.

The gauges have an internal "light on a post" arrangement. One wire from the light needs to go to ground and the other needs to be connected to the panel light dimmer. The light is easily removed by grasping the rubber plug that holds it in the back of the instrument (the one the wires go through) and pulling it out.

Install the gauge in the panel. The gauge requires a standard 2 1/4" aircraft cutout for mounting. We have included a drawing with dimensions to help layout where to cut.

## **Troubleshooting**

If the gauge is not working first check the power and ground (a very high percentage instrument problems are caused by faulty grounds. Double check the sender ground.) The voltage must be between 11 and 16 volts.

If the gauge shows a full scale reading disconnect the sender from the lead. If the gauge returns to zero the sender is shorted to ground. If the gauge remains at full scale, remove the sender wire from the back of the gauge. If the gauge returns to zero the wire is shorted. If the needle remains at full scale the gauge is probably faulty.

If the gauge shows a zero reading remove the wire from the sender and ground it. If the gauge goes to full scale the sender is bad. If the gauge still reads zero, ground the sensor stud on the back of the case. If the gauge goes to full scale the wire is broken. If the needle remains on zero the gauge is faulty.

# INSTALLING VAN'S VOP100 OIL PRESSURE GAUGE

## **Specifications**

- Power required 11-16 volts DC
- Recommended sending unit is a Van's P/N IE 411K, a 0-100 PSI input, 33 to 240 Ohm resistive sender.
- Internal lighting uses 14 volts maximum and is easily controlled with a panel light dimmer (Van's P/N ES DIMMER, LAMP 1.5A) to provide the desired lighting level.
- Power and sensor studs accept a #6 ring terminal (Van's P/N ES 36152).
- 6-32 brass nuts are molded into the instrument case for mounting to the panel.
- Pressure range from 0-100 PSI.
- Yellow arc from 25 to 55 PSI, green arc from 55 to 95 PSI, with redlines at 25 and 95 PSI. Matches the requirements for oil pressure to most Lycoming engines.
- Gauge accuracy within 2% throughout its range and a calibration point of 80 PSI.

## **Warranty**

Van's Aircraft warrants this instrument to be free from defects in materials and workmanship for a period of one year from the end user invoice date. Warranty is limited to repair, replacement, or refund of defective parts at the discretion of Van's Aircraft. Parts must be returned prepaid to Van's aircraft for warranty inspection. This warranty does not cover misuse, accident, or negligent repair or installation.

This warranty is in lieu of any other expressed or implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of the Van's Aircraft. In no event will Van's Aircraft be liable for incidental or consequential damages.

## **Installation**

Before you install the oil pressure gauge please read the above warranty and check to make sure the range markings on the gauge match your engine. If you are unsatisfied with either please return the gauges in unused, like new condition for a refund.

The gauge should be installed to current aircraft standards (See AC 43.13)

Use 18-gauge wire and connect the terminal marked I to the circuit chosen for the instrument power. If the gauges are wired backwards they will be ruined. Double check.

Use 18-gauge wire to connect the terminal marked G to ground.

Install the sender. **DO NOT INSTALL THE SENDER DIRECTLY ON THE ENGINE.** Use a remote mount system such as Van's VA-168 firewall mounted manifold. A sender mounted directly on the engine will vibrate and may fatigue and break with potentially disastrous consequences.

Connect the terminal on Van's P/N IE 411K sender to the terminal marked S on the back of the gauge case using 18-gauge wire.

The gauges have an internal "light on a post" arrangement. One wire from the light needs to go to ground and the other needs to be connected to the panel light dimmer. The light is easily removed by grasping the rubber plug that holds it in the back of the instrument (the one the wires go through) and pulling it out.

Install the gauge in the panel. The gauge requires a standard 2 1/4" aircraft cutout for mounting. We have included a drawing with dimensions to help layout where to cut.

## **Troubleshooting**

If the gauge is not working first check the power and ground (a very high percentage instrument problems are caused by faulty grounds. Double check the sender ground.) The voltage must be between 11 and 16 volts.

If the gauge shows a full scale reading, disconnect the sender from the lead. If the gauge returns to zero the sender is shorted to ground. If the gauge remains at full scale, remove the sender wire from the back of the gauge. If the gauge returns to zero the wire is shorted. If the needle remains at full scale the gauge is probably faulty.

If the gauge shows a zero reading, remove the wire from the sender and ground it. If the gauge goes to full scale the sender is faulty or has a bad ground. If the gauge still reads zero, ground the sensor stud on the back of the case. If the gauge goes to full scale the wire is broken. If the needle remains on zero the gauge is faulty.

# **INSTALLING VAN'S VOT250 OIL TEMPERATURE GAUGE**

## **Specifications**

- Power required 11-16 volts DC
- Recommended sending unit is a Van's P/N IE 02017-00, a 0 to 240 Degree input, 33 to 240 Ohm output sender.
- Internal lighting uses 14 volts maximum and is easily controlled with a panel light dimmer (Van's P/N ES DIMMER, LAMP 1.5A) to provide the desired lighting level.
- Power and sensor studs accept a #6 ring terminal (Van's P/N ES 36152).
- 6-32 brass nuts are molded into the instrument case for mounting to the panel.
- Temperature range from 50-250 PSI.
- Yellow arc from 50 to 140 Degrees, green arc from 140 to 245 Degrees, with redline at 245 Degrees. Matches the requirements for oil temperature for most Lycoming engines.
- Gauge accuracy within 2% throughout its range and a calibration point of 200 Degrees.

## **Warranty**

Van's Aircraft warrants this instrument to be free from defects in materials and workmanship for a period of one year from the end user invoice date. Warranty is limited to repair, replacement, or refund of defective parts at the discretion of Van's Aircraft. Parts must be returned prepaid to Van's aircraft for warranty inspection. This warranty does not cover misuse, accident, or negligent repair or installation.

This warranty is in lieu of any other expressed or implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of the Van's Aircraft. In no event will Van's Aircraft be liable for incidental or consequential damages.

## **Installation**

Before you install the oil pressure gauge please read the above warranty and check to make sure the range markings on the gauge match your engine. If you are unsatisfied with either please return the gauges in unused, like new condition for a refund.

The gauge should be installed to current aircraft standards (See AC 43.13)

Use 18-gauge wire and connect the terminal marked I to the circuit chosen for the instrument power. If the gauges are wired backwards they will be ruined. Double check.

Use 18-gauge wire to connect the terminal marked G to ground.

Install the sender. Your engine may require the VA-147 adapter to allow the threads to match.

Connect the terminal on Van's P/N IE 02017-00 transducer to the terminal marked S on the back of the gauge using 18-gauge wire.

The gauges have an internal "light on a post" arrangement. One wire from the light needs to go to ground and the other needs to be connected to the panel light dimmer. The light is easily removed by grasping the rubber plug that holds it in the back of the instrument (the one the wires go through) and pulling it out.

Install the gauge in the panel. The gauge requires a standard 2 ¼" aircraft cutout for mounting. We have included a drawing with dimensions to help layout where to cut.

## **Troubleshooting**

If the gauge is not working first check the power and ground (a very high percentage instrument problems are caused by faulty grounds. Double check the sender ground.) The voltage must be between 11 and 16 volts.

If the gauge shows a full scale reading disconnect the sender from the lead. If the gauge returns to zero the sender is shorted to ground. If the gauge remains at full scale, remove the sender wire from the back of the gauge. If the gauge returns to zero the wire is shorted. If the needle remains at full scale the gauge is probably faulty.

If the gauge shows a zero reading remove the wire from the sender and ground it. If the gauge goes to full scale the sender is bad. If the gauge still reads zero, ground the sensor stud on the back of the case. If the gauge goes to full scale the wire is broken. If the needle remains on zero the gauge is faulty.

# INSTALLING VAN'S VTACH3500 TACHOMETER

## **Specifications**

- Power required 11-16 volts DC
- Recommended sending unit is a Van's P/N IE 2501610.
- Recommended tach cable drive tips for Lycoming O-320/360 is a 2.56 long tip with one end a 0.104 square and the other end a 0.152 tang. Van's P/N IE 104152x2.56.
- Internal lighting uses 14 volts maximum and is easily controlled with a panel light dimmer (Van's P/N ES DIMMER, LAMP 1.5A) to provide the desired lighting level.
- Power and sensor studs accept a #6 ring terminal (Van's P/N ES 36152).
- 6-32 brass nuts are molded into the instrument case for mounting to the panel.
- RPM range from 0-3500.
- Green arc from 500 to 2700 RPM with redline at 2700.
- Gauge accuracy within 2% throughout its range and a calibration point of 2600 RPM.

## **Warranty**

Van's Aircraft warrants this instrument to be free from defects in materials and workmanship for a period of one year from the end user invoice date. Warranty is limited to repair, replacement, or refund of defective parts at the discretion of Van's Aircraft. Parts must be returned prepaid to Van's aircraft for warranty inspection. This warranty does not cover misuse, accident, or negligent repair or installation.

This warranty is in lieu of any other expressed or implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of the Van's Aircraft. In no event will Van's Aircraft be liable for incidental or consequential damages.

## **Installation**

Before you install the tachometer please read the above warranty and check to make sure the range markings on the gauge match your engine. If you are unsatisfied with either please return the gauges in unused, like new condition for a refund.

The gauge should be installed to current aircraft standards (See AC 43.13)

Use 18-gauge wire and connect the terminal marked I to the circuit chosen for the instrument power. If the gauges are wired backwards they will be ruined. Double check.

Use 18-gauge wire to connect the terminal marked G to ground.

Install the sender on the engine

Using 18-gauge wire (it does not need to be shielded), connect the black wire on the sender (Van's P/N IE 2501610) to the "G" terminal on the instrument, the red wire to the instrument power circuit, and the white wire to the terminal marked S on the back of the tachometer case.

The gauges have an internal "light on a post" arrangement. One wire from the light needs to go to ground and the other needs to be connected to the panel light dimmer. The light is easily removed by grasping the rubber plug that holds it in the back of the instrument (the one the wires go through) and pulling it out.

Install the gauge in the panel. The gauge requires a standard 2 ¼" aircraft cutout for mounting. We have included a drawing with dimensions to help layout where to cut.

## **Troubleshooting**

If the gauge is not working first check the power and ground. The voltage must be between 11 and 16 volts.

If the gauge shows a full scale reading disconnect the sender from the lead. If the gauge returns to zero the sender is shorted to ground. If the gauge remains at full scale, remove the sender wire from the back of the gauge. If the gauge returns to zero the wire is shorted. If the needle remains at full scale the gauge is probably faulty.

If the gauge shows a zero reading, remove the wire from the sender and ground it. If the gauge goes to full scale the sender is bad. If the gauge still reads zero, ground the sensor stud on the back of the case. If the gauge goes to full scale the wire is broken. If the needle remains on zero the gauge is faulty.

# INSTALLING VAN'S VV16 VOLTMETER

## **Specifications**

- Power required 11-16 volts DC
- Internal lighting uses 14 volts maximum and is easily controlled with a panel light dimmer (Van's P/N ES DIMMER, LAMP 1.5A) to provide the desired lighting level.
- Power studs accept a #6 ring terminal (Van's P/N ES 36152).
- 6-32 brass nuts are molded into the instrument case for mounting to the panel.
- Voltage range from 8-16 volts.
- Yellow arc from 12 to 13 and 15 to 16 volts, green arc from 13 to 15 volts. Gauge accuracy within 2% throughout its range and a calibration point of 13 volts.

## **Warranty**

Van's Aircraft warrants this instrument to be free from defects in materials and workmanship for a period of one year from the end user invoice date. Warranty is limited to repair, replacement, or refund of defective parts at the discretion of Van's Aircraft. Parts must be returned prepaid to Van's aircraft for warranty inspection. This warranty does not cover misuse, accident, or negligent repair or installation.

This warranty is in lieu of any other expressed or implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of the Van's Aircraft. In no event will Van's Aircraft be liable for incidental or consequential damages.

## **Installation**

Before you install the voltmeter please read the above warranty and check to make sure the range markings on the gauge match your engine. If you are unsatisfied with either please return the gauges in unused, like new condition for a refund.

The gauge should be installed to current aircraft standards (See AC 43.13)

Use 18-gauge wire and connect the terminal marked I to the circuit chosen for the instrument power. If the gauges are wired backwards they will be ruined. Double check.

Use 18-gauge wire to connect the terminal marked G to ground.

The gauges have an internal "light on a post" arrangement. One wire from the light needs to go to ground and the other needs to be connected to the panel light dimmer. The light is easily removed by grasping the rubber plug that holds it in the back of the instrument (the one the wires go through) and pulling it out.

Install the gauge in the panel. The gauge requires a standard 2 ¼" aircraft cutout for mounting. We have included a drawing with dimensions to help layout where to cut.

## **Troubleshooting.**

If the gauge is not working first check the power and ground. The voltage must be between 11 and 16 volts.