



## Instrument Kit Installation Instructions

Tech Support 1-800-265-1818  
http://usa.vdo.com

Instruction Sheet # A2C59519502

Rev 01-2011

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

**IMPORTANT:** Mounting dimensions vary for different gauges. Please be certain to follow the instructions for your specific gauge.

### Speedometer Gauge Installation:

1. Select the desired mounting location of the instrument.
2. Depending on your mounting situation it might be necessary to configure the gauge before installation.
3. Mount the gauge and secure with the VDO Spin-Lok™ Clamp.

(See page 12 for mounting options and instructions)

### Wiring the Gauge (Illustration A):

1. Route wires from the instrument to:
  - a) the battery (+) constant power after the fuse box or user supplied in-line fuse – 5 amp fast-blow.
  - b) the battery (+) after the ignition switch and after the fuse box or user supplied in-line fuse – 1 amp fast-blow.
  - c) the light switch after the fuse box or user supplied in-line fuse -1 amp.
  - d) a good, dedicated ground location.
  - e) Signal source - Hall Effect sender (included), or original equipment electronic control box.
2. Connect the harness according to the following wiring Matrix:

8 Pin Connector	
Pin	Description
1	Red - Battery constant (+12 / 24 V)
2	Black - Ground
3	Blue/Black - Sender Signal (-)
4	Brown - Battery switched (+12 / 24 V)
5	Green - Sender Signal (+)
6	Blue/Red - Illumination (+)
7	Not Connected
8	Not Connected
<b>Note - Use 18 AWG for wire harness</b>	

14 Pin Connector	
Pin	Description
1	NMEA0183-B (not used)
2	NMEA0183-A (not used)
6	Left Turn (+ Trigger)
7	High Beam (+ Trigger)
9	Park Brake (+ Trigger)
10	Right Turn (+ Trigger)
11	Green/Black – Button (Configuration, ‘-’ Trigger)
12	Green/Red – Button (Mode Select, ‘+’ Trigger)
13	Red - Alarm Output (max 100 mA)
3-5, 8, 14	unassigned
<b>Note - Use 18 AWG for wire harness</b>	



Merchandise warranted 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 products, or misapplication, misuse, negligence or accident. On any VDO part or VDO product found to be defective after examination by manufacturer, manufacturer will only repair or replace the merchandise through the original selling dealer. Manufacturer 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 or merchantability of fitness, and any other obligation on the part of manufacturer, or selling dealer.

**NOTE:** The push-button supplied is to be used as a:

- a) **Configuration** button to set up the speedometer before use.
- b) **Mode** button for operation of the speedometer during normal use.

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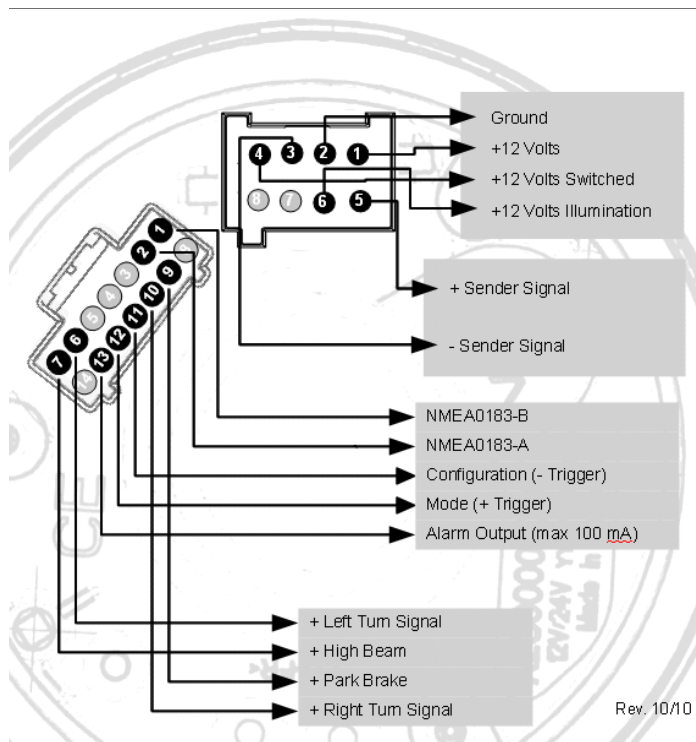
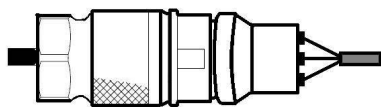


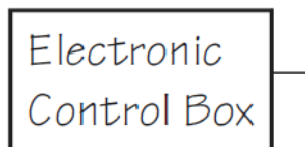
Illustration A



Included Hall Effect Sender  
 (GM version shown)

Wire	Assignment
Red	+12V switched power
Black	Ground
White	Signal, to speedometer signal wire (green)

OR



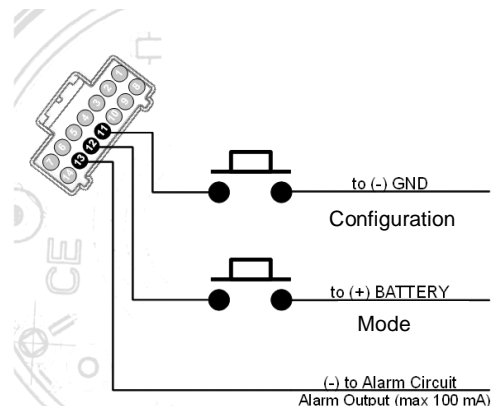
Optional hookup to the output wire of most electronically controlled transmissions

### Programming the Speedometer (Illustration B):

**Operation Basics:**  
 Short Press (< 2sec.) - Long Press (> 2sec.)

The Configuration button must be connected before programming can be done.

The display will return to normal operation if a button is not pressed for 30 seconds. Any settings you have made will not be saved.



Rev. 10/09

Illustration B

### Setting the Speedometer Input:

1. With the ignition switch off, hold in the Configuration button
2. Turn ignition on
3. Release the Configuration button
4. "INPUT" will appear on the display
5. Long press to get to the Input setting screen
6. Short press to cycle through "FREQUE" or "NMEA". NOTE: NMEA input requires no calibration.
7. Select "FREQUE", then long press to exit input setting
8. "INPUT" will appear on the display

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### Calibrating the Speedometer (FREQUE Input)- Autocalibration or Manual

#### Autocalibration (Autocl):

The auto-calibration function can be used successfully on a road with the distance of one mile accurately designated. The road does not have to be straight.

1. While in configuration mode (Refer to step 1-8 above)
2. Short press to get to the "Autocl" setting screen.
3. Long Press to enter the Autocal menu- "button" will appear.
4. When you are ready to begin your calibration run, short press the button again. "000000" will appear on the display.
5. Drive the reference distance of one mile (or 1 kilometer).  
NOTE: As you drive this distance, the pulses will be displayed and the needle will move. If the Speedo is not counting pulses, no useable impulse is being detected.
6. After 1 mile (or 1 km), Short press. The number of pulses counted during the calibration run will be displayed.
7. Long press to save the pulse count and exit the autocalibration ("PULSE" will appear on the display).
7. Turn off ignition. The Speedometer is now programmed.

#### Manual Calibration:

1. While in configuration mode (Refer to step 1-8 above)
2. Short press twice - "PULSE" will appear on the display
3. Long press to get to the pulse setting screen
4. Short press will increase the value of the flashing number by 1.
5. Long press to move to the next position.
6. Continue until right most digit is set.
7. Long press to exit pulse setting.
8. "PULSE" will appear on the display.
9. Turn off ignition.

**The Speedometer is now programmed. The Configuration button can be disconnected and connected to be used as the Mode button.**

### Set Unit and Alarm Threshold:

1. With the ignition switch off, hold in the Mode button
2. Turn ignition on
3. Release the Mode button
4. "UNIT" will appear
5. Long press to enter UNIT menu
6. Short press to change the clock format. 12 hour am/pm - 24 hour
7. Long press to return to UNIT menu
8. Short press to show "WARN" on the display
9. Long press to enter WARNING menu
10. Short press to set Speed warning limit.
11. Short press will increase the value of the flashing number by 1 - Long press will move to the next position
12. Continue until right most digit is set.
10. Long press to exit.
11. Turn off ignition.

*The Warning Icon in the gauge will illuminate and the Alarm Output (Pin 13 of 14 pin connector) will trigger to ground when the Speed exceeds this limit.*



## Instrument Kit Installation Instructions

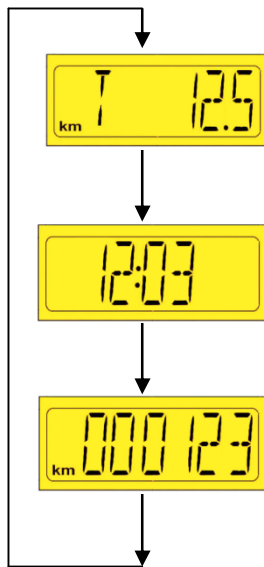
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### Mode Button:

In normal operating situations, Short press of the MODE button will cycle through:



### Reset the Trip Distance:

1. Press the Mode key repeatedly until the trip distance is displayed.



2. Press and hold Mode key to reset.

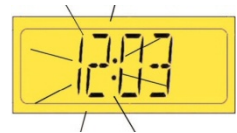


### Setting the Time:

1. Press the Mode key repeatedly until the clock is displayed.
2. Long press the Mode button to enter clock set mode.



3. Short press will increase the value of the flashing number by 1



4. Long press to move to the next position
5. When finished, Long Press to return to clock display

Note if Pin 1 - Battery (+12 / 24 V) – of the 8 pin connector is disconnected, the clock will need to be reset.

### Set the Illumination intensity (1 to 10):

1. Long press the Mode button while the Odometer is displayed to enter Illumination setting.



2. Short Presses will increase the value of the flashing number by 1.



3. Long press to save the Illumination setting and return to the Odometer display screen.

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### TACHOMETER - Gauge Installation:

1. Select the desired mounting location of the instrument.
2. Depending on your mounting situations it might be necessary to configure the gauge before installation.
3. Mount the gauge and secure with the VDO Spin-Lok™ Clamp.

(See page 12 for mounting options and instructions)

### Wiring the Gauge (Illustration A):

1. Route wires from the instrument to:
  - a) the battery (+) constant power after the fuse box or user supplied in-line fuse – 5 amp fast-blow.
  - b) the battery (+) after the ignition switch and after the fuse box or user supplied in-line fuse – 1 amp fast-blow.
  - c) the light switch after the fuse box or user supplied in-line fuse -1 amp.
  - d) a good, dedicated ground location.
  - e) the Ignition Coil - Negative terminal, Alternator W terminal, Inductive , Generator , or Hall Effect Signal the Inductive or Generator.
  - f) the Inductive or Generator.
2. Connect the harness according to the following wiring Matrix:

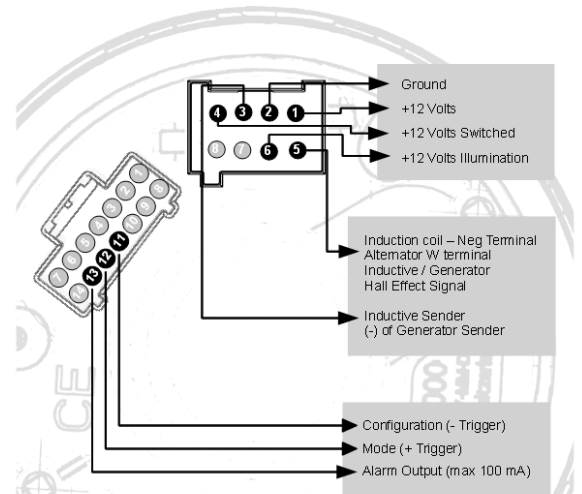
Pin	Description
1	Red - Battery constant (+12 / 24 V)
2	Black - Ground
3	Blue/Black - Sender Signal -
4	Brown - Battery switched (+12 / 24 V)
5	Green - Sender Signal +
6	Blue/Red - Illumination (+)
7	Not Connected
8	Not Connected
<b>Note - Use 18 AWG for wire harness</b>	

Pin	Description
11	Green/Black – Configuration Button (- Trigger)
12	Green/Red – Mode Button (+ Trigger)
13	Red - Alarm Output (max 100 mA)
1-10, 14	unassigned



**NOTE:** The push-button supplied is to be used as a:

- a) **Configuration** button to set up the tachometer before use.
- b) **Mode** button for operation of the tachometer during normal use.



Rev. 10/10

Illustration A

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### Programming the Tachometer (Illustration B):

#### Operation Basics:

Short Press (< 2sec.) - Long Press (> 2sec.)

The Configuration button must be connected before programming can be done.

The display will return to normal operation if a button is not pressed for 30 seconds. Any settings you have made will not be saved.

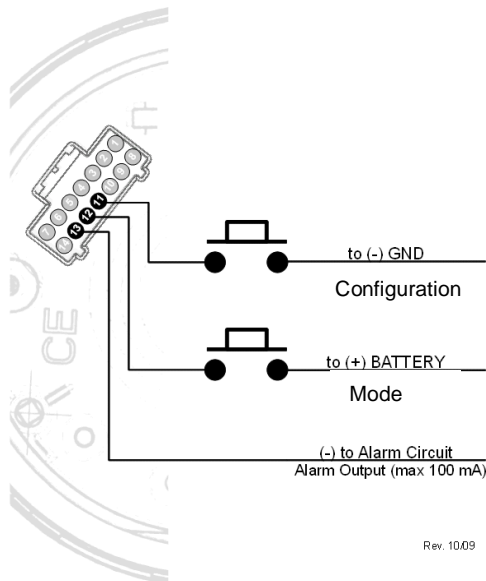


Illustration B

### Setting the Pulses per Revolution: (0.5 to 399.9 pulses)

1. With the ignition switch off, hold in the Configuration button.
2. Turn ignition on.
3. Release the Configuration button.
4. "PULSE" will appear on the display.
5. Long press to get to the pulse setting screen.
6. Short press will increase the value of the flashing number by 1.
7. Long press to move to the next position.
8. Long press to exit pulse setting.
9. "PULSE" will appear on the display.
10. Turn off ignition.

The tachometer is now programmed. The Configuration button can be disconnected and connected to be used as the Mode button.

### Set Unit and Alarm Threshold:

1. With the ignition switch off, hold in the Mode button
2. Turn ignition on.
3. Release the Mode button.
4. "UNIT" will appear.
5. Long press to enter UNIT menu.
6. Short press to change the clock format. 12 hour am/pm - 24 hour.
7. Long press to return to UNIT menu.
8. Short press to show "WARN" on the display.
9. Long press to enter WARNING menu.
10. Short press to set RPM warning limit.
11. Short press will increase the value of the flashing number by 1 - Long press will move to the next position.
12. Continue until right most digit is set.
13. Long press to exit.
14. Turn off ignition.

**The Warning Icon in the gauge will illuminate and the Alarm Output (Pin 13 of 14 pin connector) will trigger to ground when the RPM's exceed this limit.**



## Instrument Kit Installation Instructions

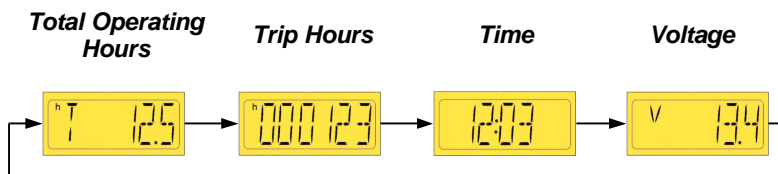
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### Mode Button:

In normal operating situations, Short press of the MODE button will cycle through;



### Reset the Trip Operating Hours:

1. Press the Mode key repeatedly until the trip hours are displayed.
2. Press and hold Mode key to reset.

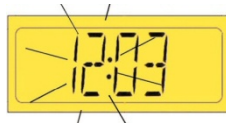


### Setting the Time:

1. Press the Mode key repeatedly until the clock is displayed.



2. Long press the Mode button to enter clock set mode.



3. Short press will increase the value of the flashing number by 1.
4. Long press to move to the next position.
5. When finished, Long Press to return to clock display.

Note if Pin 1 - Battery (+12 / 24 V)  
– of the 8 pin connector is  
disconnected, the clock will need to  
be reset.

### Set the Illumination intensity:

1. Long press the Mode button while the Voltage is displayed to enter Illumination setting.



2. Short Presses will increase the value of the flashing number by 1.
3. Long press to save the Illumination setting and return to the Voltage display screen.

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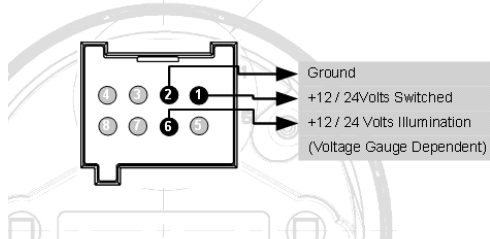
### Voltmeter Gauge Installation:

1. Select the desired mounting location of the instrument.
2. Mount the gauge and secure with the VDO Spin-Lok™ Clamp.  
**(See page ?? for mounting options and instructions)**

### Wiring the Gauge (Illustration A):

1. Route wires from the instrument to:
  - a) the battery (+) switched power after the fuse box or user supplied in-line fuse – 1 amp
  - b) the light switch after the fuse box or user supplied in-line fuse -1 amp
  - c) a good, dedicated ground location.
2. Connect the harness according to the following wiring Matrix:

Pin	Description
1	Red - Switched (+12/24 V) Gauge Dependent
2	Black - Ground
3	Not Connected
4	Not Connected
5	Not Connected
6	Blue/Red - Illumination (+12/24 V) Gauge Dependent
7	Not Connected
8	Not Connected
<b>Note - Use 18 AWG for wire harness</b>	



### Fuel, Temperature and Pressure

#### Gauge Installation:

1. Select the desired mounting location of the instrument.
2. Mount the gauge and secure with the VDO Spin-Lok™ Clamp.

**(See page 12 for mounting options and instructions)**

#### Wiring the Gauge (Illustration A):

1. Route wires from the instrument to:
  - a) the battery (+) switched power after the fuse box or user supplied in-line fuse – 1 amp
  - b) the light switch after the fuse box or user supplied in-line fuse -1 amp
  - c) a good, dedicated ground location.
  - d) the signal terminal on the sending unit.
2. If using the Warning LED in the gauge and a VDO sender with warning contact (WK) see wiring information in Illustration A)
3. Connect the harness according to the following wiring matrix:



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Pin	Description
1	Red - Switched (+12 V)
2	Black - Ground
3	Blue/Black – Not Connected
4	Not Connected
5	Green - Sender Signal
6	Blue/Red - Illumination (+)
7	Yellow/Black - Warning LED (-)
8	Yellow/Red - Warning LED (+)
<b>Note - Use 18 AWG for wire harness</b>	

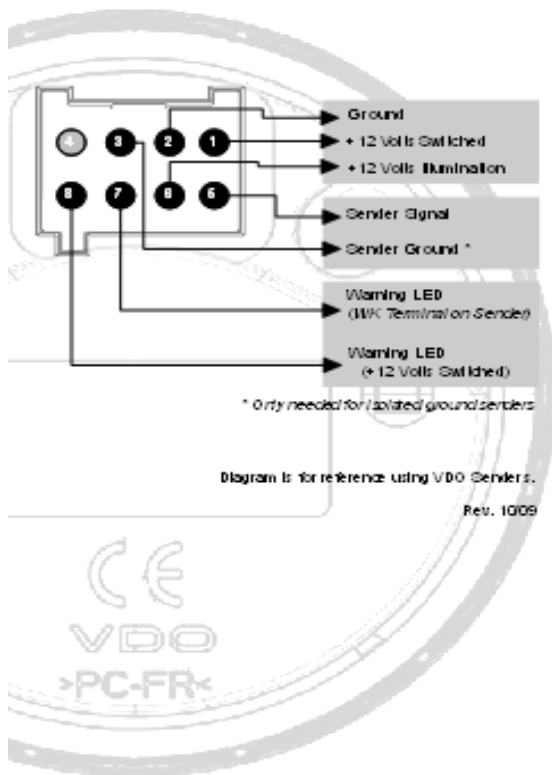


Illustration A

# Instrument Kit Installation Instructions

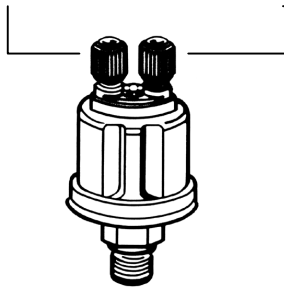
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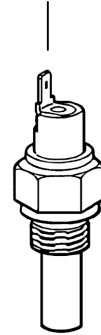
(WK) Terminal.  
To (-) warning  
light wire of  
pressure gauge  
(yellow/black)

(G) Terminal.  
To signal wire  
of pressure  
gauge (green)



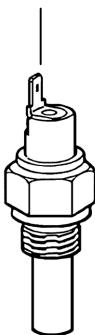
**Included Pressure Sender**  
*Note: do NOT use Teflon  
tape on threads!*

Terminal to (-) warning  
light wire of temperature  
gauge (yellow/black)

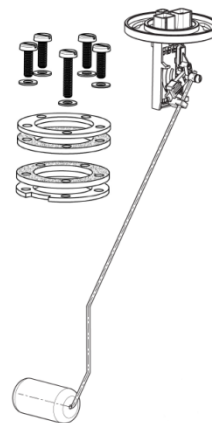


**Included Temperature Switch  
(1/8-27 NPTF Thread)**  
*Note: do NOT use Teflon tape on  
threads!*

Terminal to signal wire of  
temperature gauge (green)



**Included Temperature Sender  
(3/8-18 NPTF Thread)**  
*Note: do NOT use Teflon tape on  
threads!*



**Included Fuel Sender**  
Please see the separate  
instruction sheet included  
with kit

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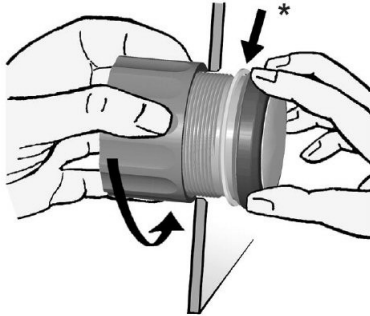
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<b>Kit Contents:</b>
(1) 120mph electronic speedometer
(1) 8,000 RPM tachometer (6 gauge kits, only)
(1) 250F Temperature gauge
(1) 80 PSI oil pressure gauge
(1) E-F fuel gauge
(1) 8-16V voltmeter
(1) Oil pressure sender with low pressure switch
(1) Coolant temperature sender (3/8-18 NPTF threads)
(1) High coolant temperature switch (1/8-27 NPTF threads)
(1) Fuel sender with low fuel switch
(1) Speedometer sender
(5) 8 wire pigtails (6 pigtails in kits with tachometer)
(1) 7 wire pigtail
(1) 3 wire pigtail (only in kits with tachometer)
(1) Brass adapter for temperature sender
(2) Brass adapter kits for temperature switch and oil pressure sender
(2) Momentary on/off buttons
(1) Instrument Kit Installation Instructions
(1) Fuel Sender Installation Instructions

## 52mm

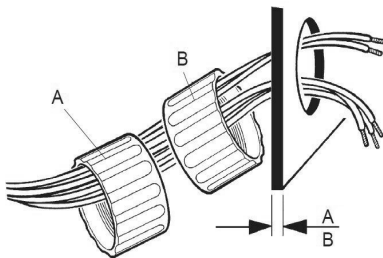
### Conventional (Included)

Instrument is put into the drilled hole from the front. The maximum panel thickness is 20mm. The drilled hole must have a diameter of 53mm.



\* Make sure the seal lays flat between the panel and the front ring.

For 52mm instruments, the Spin-Lok™ nut can be mounted at position A or B. This allows you two clamping depths.

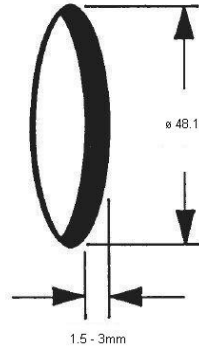


**Version A**  
10mm

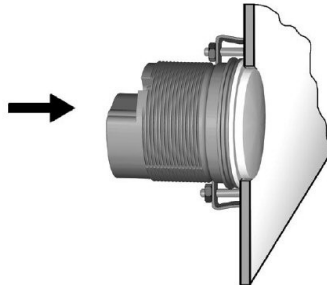
**Version B**  
20mm

### Flush (Optional)

When flush mounting (i. e., from the back so that the instrument glass and the panel form one plane), the front ring must be removed. Press on the instrument glass with both thumbs, while at the same time pulling the front ring forward from the instrument with both index fingers.



The recommended panel thickness is 1.5 to 3 mm. The drill hole must have a diameter of 48.1mm. Ensure that the installation location is level and has no sharp edges.

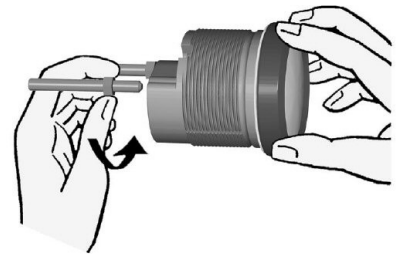


Place the flush mount seal on the instrument glass. Put the instrument into the drill hole from the back. Adjust the instrument so that the gauge is level and fasten it to the stud bolts (not included) on the rear side of the panel, using the flush mount fixing brackets.

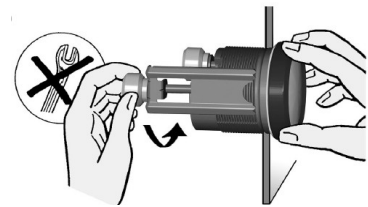
### Stud (Optional)

If you would like to omit the fastening nut, you may use the stud mount as an alternative. This is recommended if the installation location is subject to extreme vibrations.

Screw the stud bolts into the drilled holes on the rear of the instrument housing. Max. stud bolt torque is 1.5Nm.



Place the bracket on the stud bolt and tighten the knurled nut. Do not over-tighten.

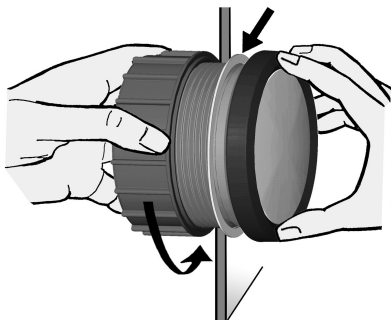


\* Make sure the seal lays flat between the panel and the front ring.

## 85mm

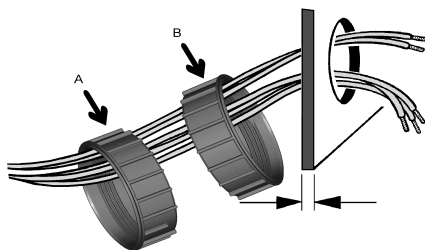
### Conventional (Included)

Instrument is put into the drilled hole from the front. The maximum panel thickness is 20mm. The drilled hole must have a diameter of 86mm.



\* Make sure the seal lays flat between the panel and the front ring.

For 85mm instruments, the Spin-Lok™ nut can be mounted at position A or B. This allows you two clamping depths.

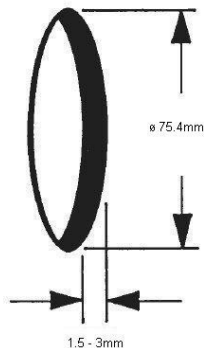


**Version A**  
10mm

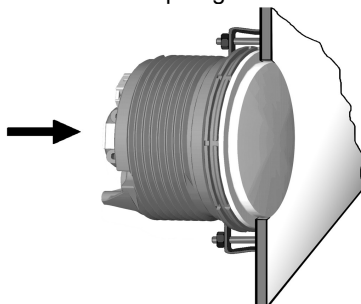
**Version B**  
20mm

### Flush (Optional)

When flush mounting (i. e., from the back so that the instrument glass and the panel form one plane), the front ring must be removed. Press on the instrument glass with both thumbs, while at the same time pulling the front ring forward from the instrument with both index fingers.



The recommended panel thickness is 1.5 to 3 mm. The drill hole must have a diameter of 75.4mm. Ensure that the installation location is level and has no sharp edges.

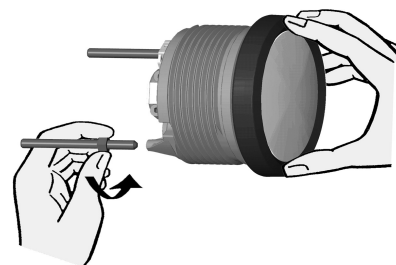


Place the flush mount seal on the instrument glass. Put the instrument into the drill hole from the back. Adjust the instrument so that the gauge is level and fasten it to the stud bolts (not included) on the rear side of the panel, using the flush mount fixing brackets.

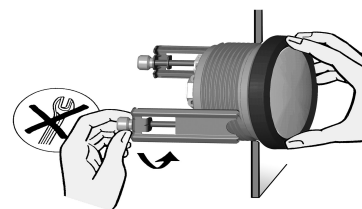
### Stud (Optional)

If you would like to omit the fastening nut, you may use the stud mount as an alternative. This is recommended if the installation location is subject to extreme vibrations.

Screw the stud bolts into the drilled holes on the rear of the instrument housing. Max. stud bolt torque is 1.5Nm.



Place the bracket on the stud bolt and tighten the knurled nut. Do not over-tighten.



\* Make sure the seal lays flat between the panel and the front ring.

