

e-Stroke Sensor & Harness Install Guide

1. e-Stroke Sensor Installation

- Care must be taken during installation to insert the Sensor into the stone guard sensor port with the proper alignment. The Sensor end must be inserted perpendicular to the face of the stone guard until the Sensor is completely seated. Installing the Sensor at an angle could result in damaging the Sensor. **See Figures 1, 2**
- When installing the e-Stroke Sensor insure that it is pressed in completely. The Sensor is fully inserted into the sensor port when the Sensor ears are flush with the face of the stone guard. Failure to fully seat the Sensor will directly influence the system accuracy. **See Figure 3**
- Insure that the Sensor port is orientated on the inboard side of the actuator. Due to the articulation of the piston rod, this Sensor orientation is required to insure the long term durability of the Sensor. **See Figure 4**

Figure 1: e-Stroke Components

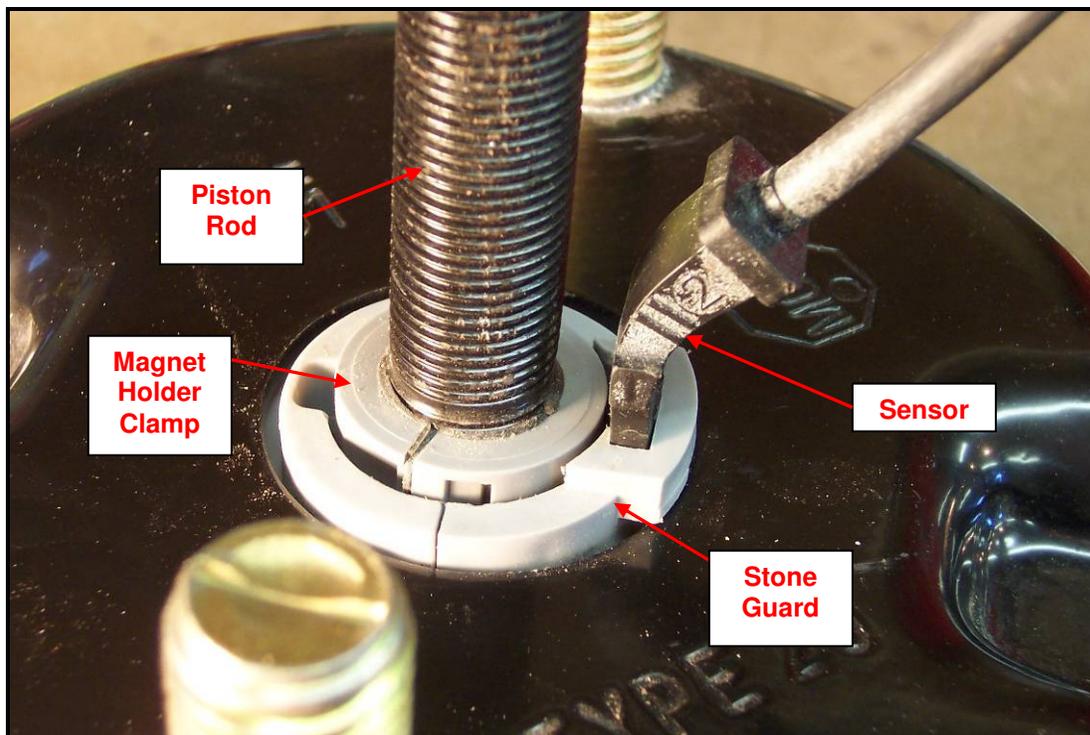


Figure 2: e-Stroke Sensor Installation – Appropriate Force Direction

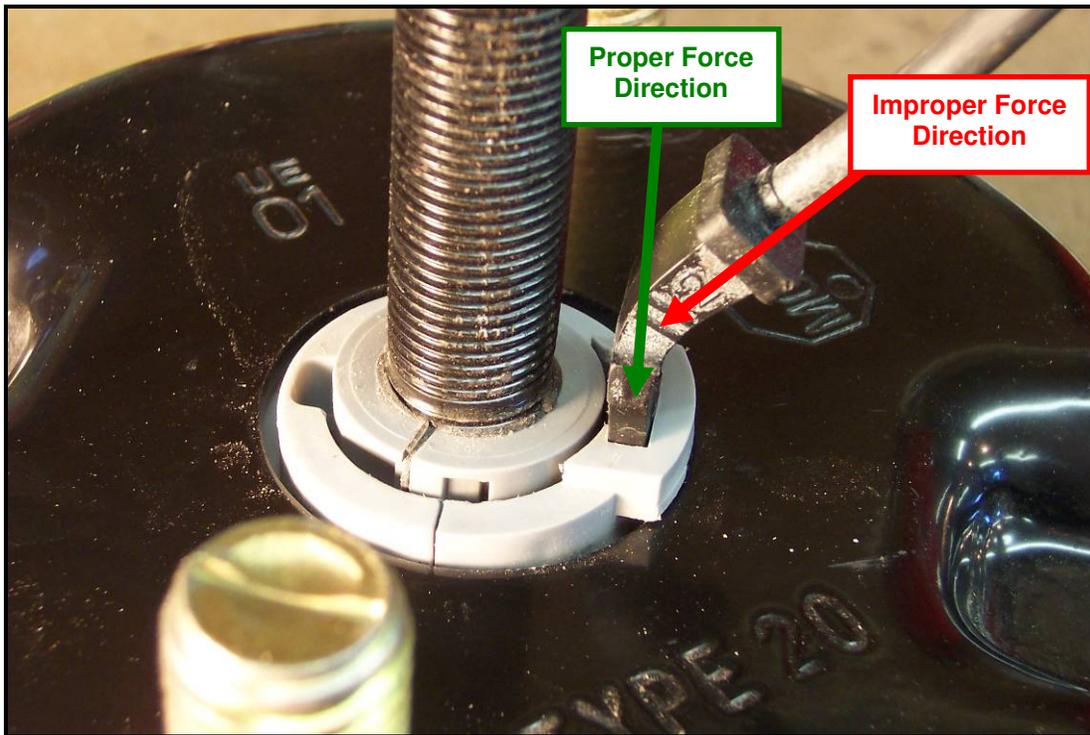


Figure 3: e-Stroke Sensor Installation

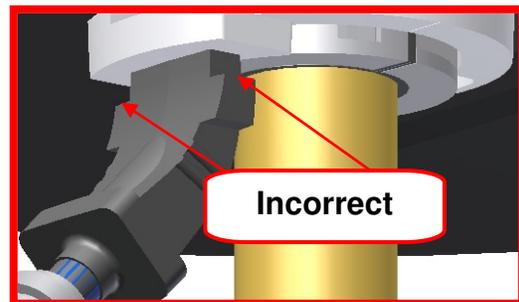
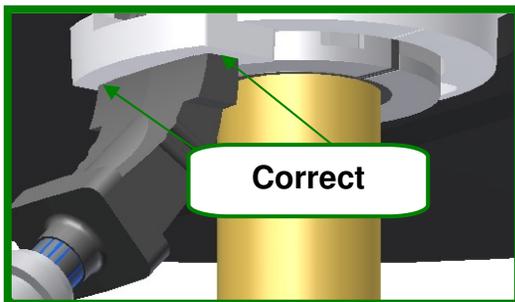
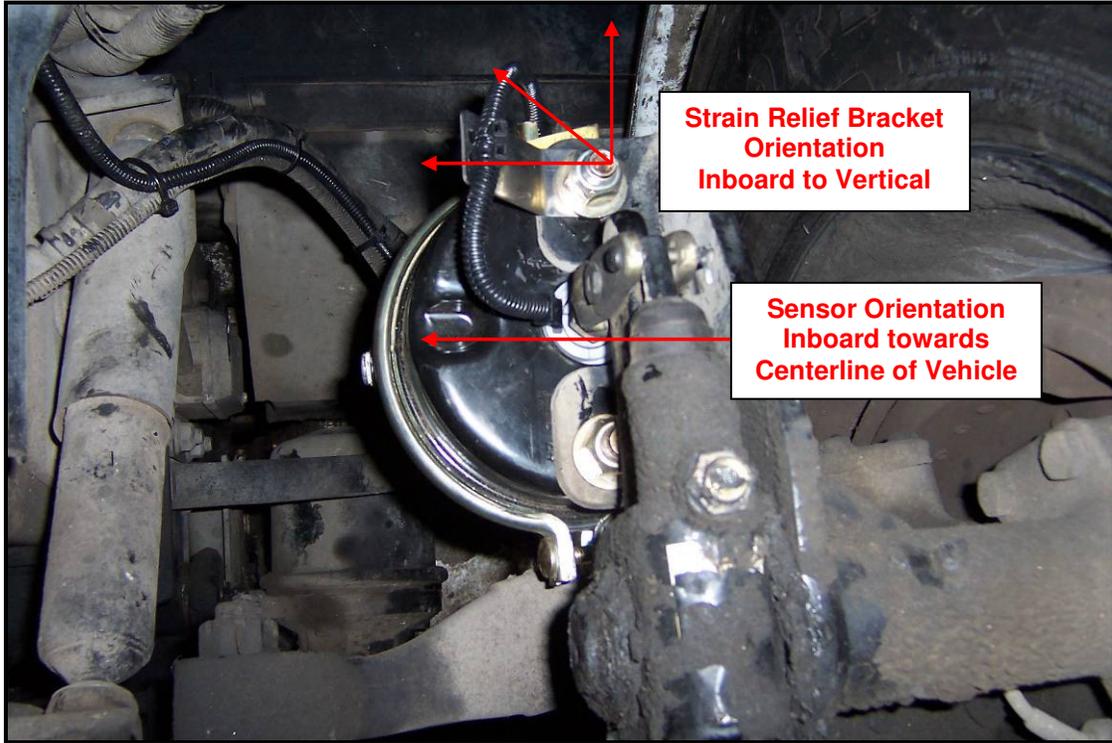


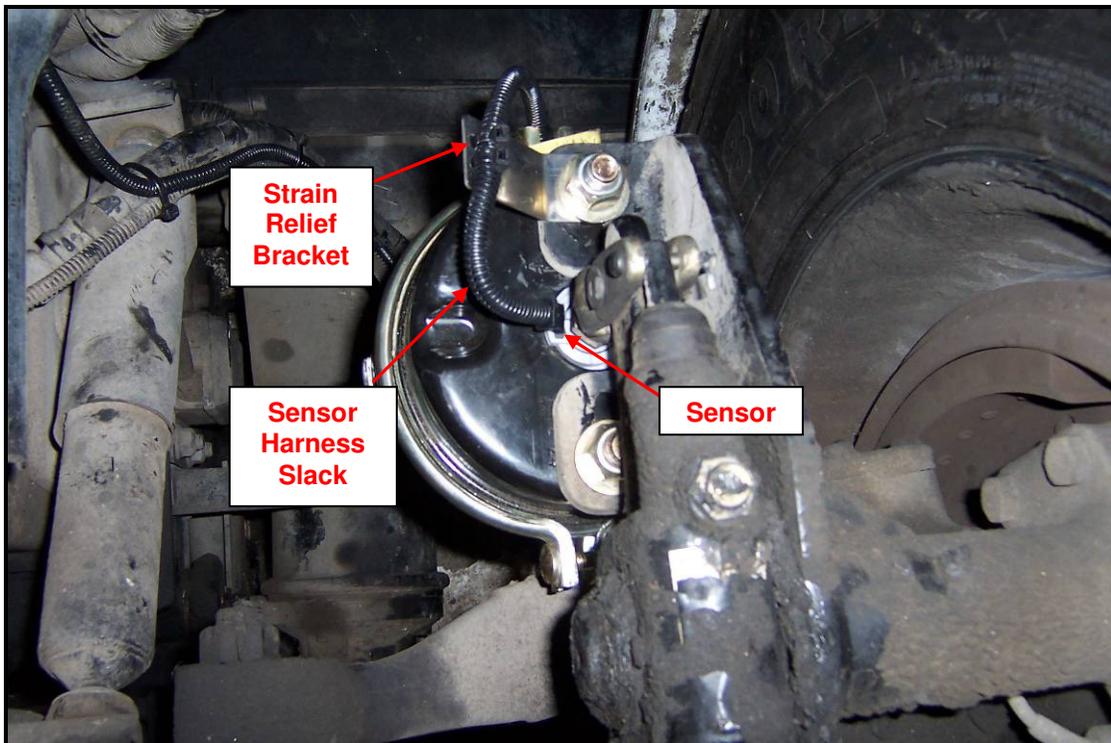
Figure 4: e-Stroke Sensor and Strain Relief Bracket Orientations



2. e-Stroke Strain Relief Bracket

- A stainless steel strain relief bracket is provided with the actuator to provide a means for securing the sensor pigtail to the vehicle to prevent the sensor from being inadvertently damaged or pulled out of the sensor port during normal vehicle operation.
- Ideally the strain relief bracket should be installed on the upper mounting bolt of the actuator facing toward the centerline of the vehicle. **See Figure 4**
- If clearance is an issue the strain relief bracket may be rotated upward out of the way. On some applications the strain relief bracket may be mounted on the bottom mounting stud. The strain relief bracket should be placed under the washer and nut on the mounting stud.
- The sensor harness should have some slack in between the actuator port and the strain relief bracket. Leaving a small loop of cable will insure that the harness is not pulled tight. This is a very important configuration to check. Pulling the sensor tight may cause the sensor to become damaged. **See Figure 5**

Figure 5: e-Stroke Sensor Harness Installation at Actuator



3. Securing the Harnesses

- From the strain relief bracket, the sensor harness should be secured to the Air Line Fitting at the actuator air port before being secured to the Air Line. If the actuator has a clamp band the sensor harness may be attached to the clamp band bolt for added support.
See Figures 6, 7, 8
- The sensor harness should be secured to the air line from the airline fitting at the actuator to where the airline attaches to the frame. At no point should the sensor harness be routed off of the air line before reaching the fittings at both ends of the air lines. **See Figure 9**
- Routing the sensor harness with the full length of the airline will insure that the articulation of the air line will not be able to put stress on the harness. As the harness transitions from the actuator to the strain relief bracket and then to the vehicle frame at no point should the routing be such that the harness can be pulled tight.
- To test whether the sensor harness is properly installed move the air line around in a couple of directions. If the sensor harness is not pulled tight by this movement then it is properly installed.
- If the actuator is installed on a steer axle, the wheels may be turned fully in either direction to check that the harness and strain relief bracket does not contact any other vehicle component, air bag, etc.
- All harnesses and cables should be secured to either air lines, wire harness bundles or the frame every 12 to 16 inches with wire ties.

Figure 6: e-Stroke Sensor Harness Installation at Actuator

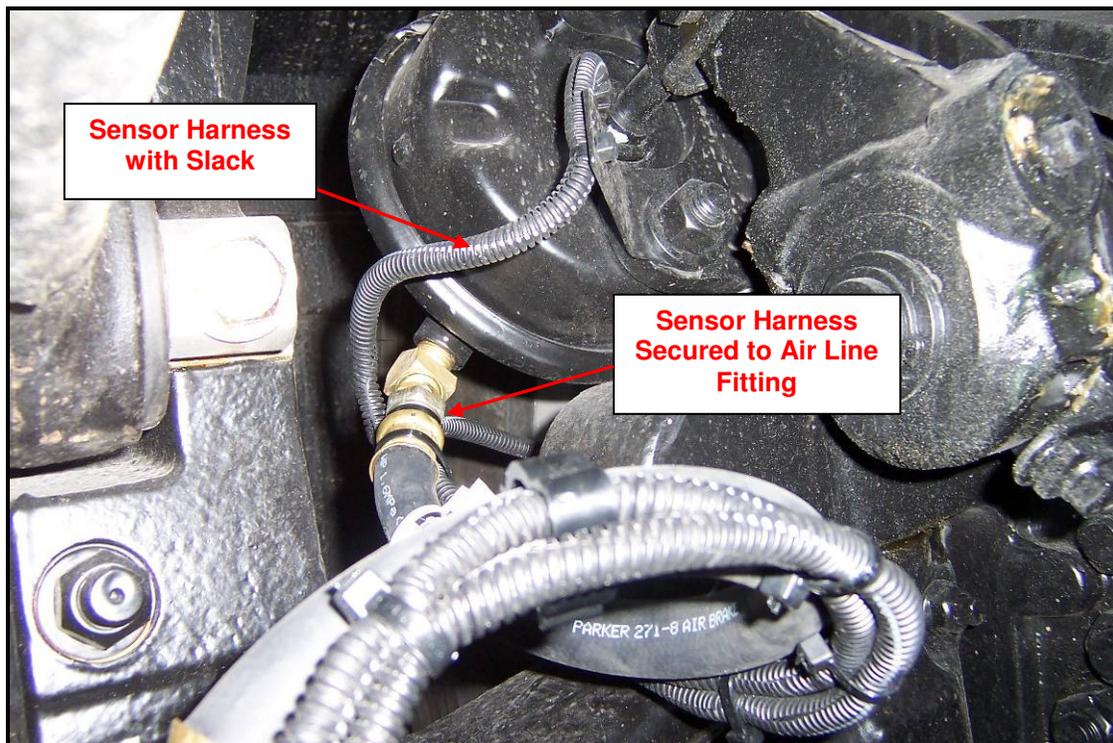


Figure 7: e-Stroke Sensor Harness Installation from Actuator to Air Line

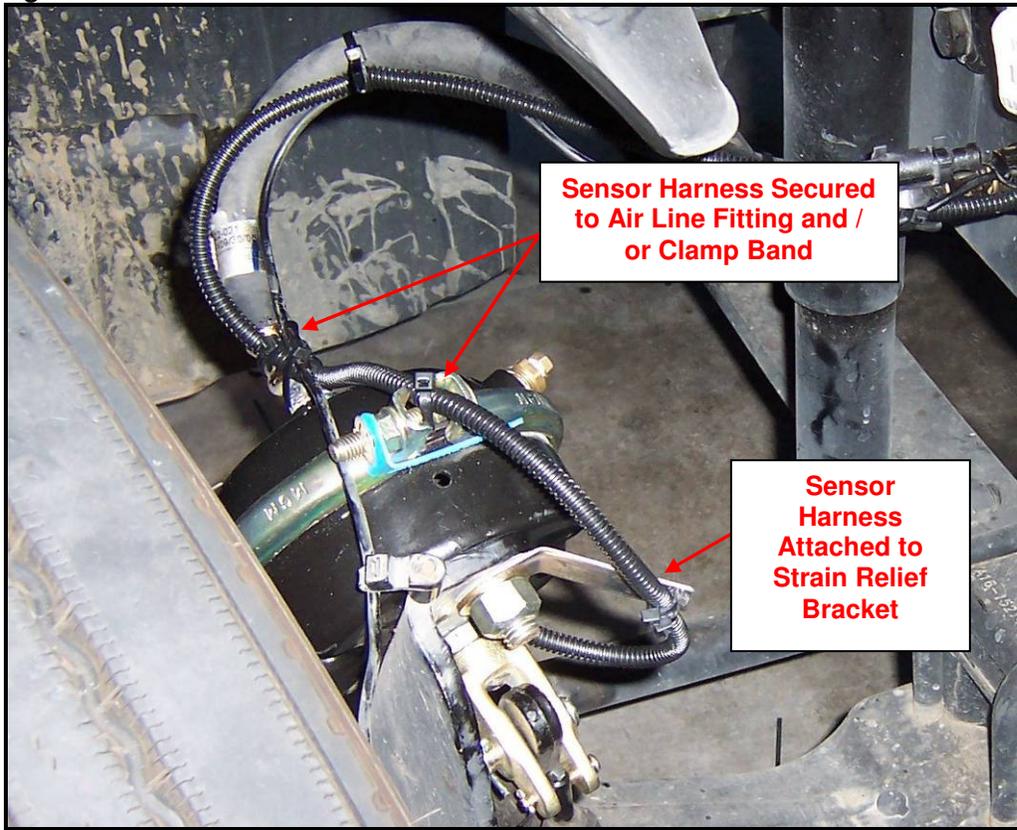


Figure 8: e-Stroke Sensor Harness Installation from Actuator to Air Line

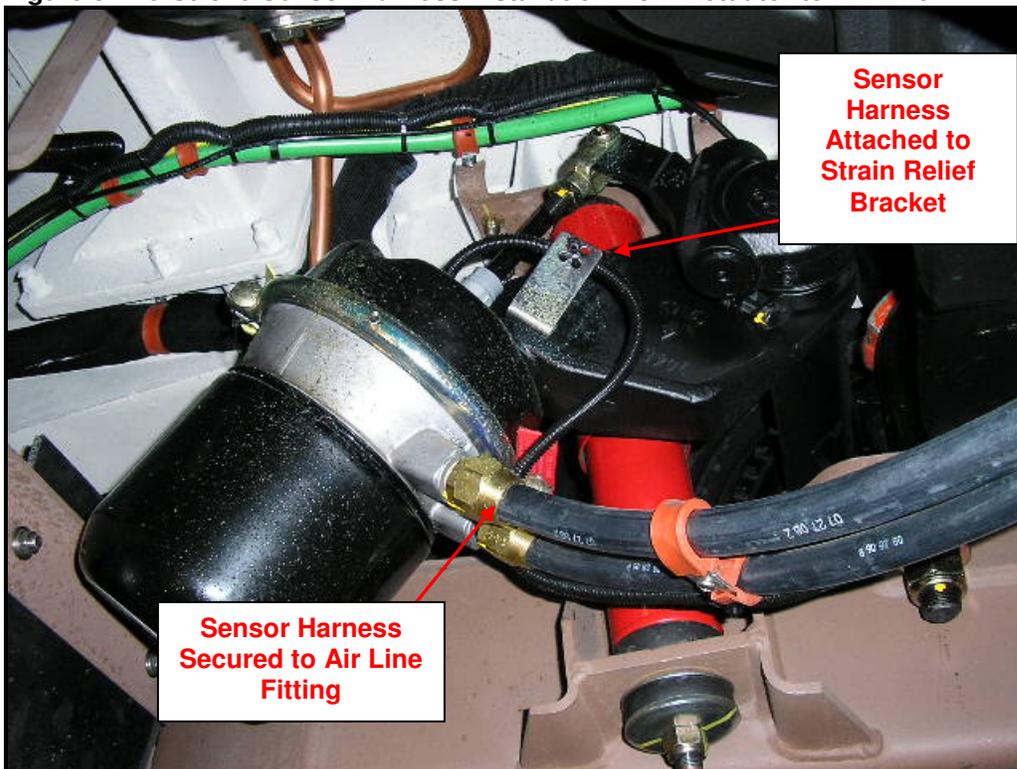


Figure 9: e-Stroke Sensor Harness Attachment to Air Line



4. Securing Sensor Harness Connectors – Packard / Delphi Metri-Pack 150 Series

Step 1: Secure sensor harness connectors together by routing a cable tie (0.18" Width) through the connector clip after the connector mates are plugged together. This will insure a complete connection and lock the connector halves in place. **See Figures 10**

Step 2: Use the cable tie routed through the connector clip in Step 1 to secure the connector body to a ridged component on the vehicle such as existing Air-Lines, Cable Harnesses, or a Frame Component. Take care to insure that the harnesses are not pulled tight on either side of the connector. **See Figure 11**

Step 3: Harnesses should be routed straight out from either side of the connector for a minimum of 4 inches and secured at this point with a cable tie. This will insure that the harness is not pulled tight or bent at the connector which may lead to water intrusion and a reduction in harness durability. **See Figure 11**

Note: All connectors must be positioned in a serviceable location.

Note: A minimum of 6-8 inches of harness slack should be provided and secured near the exterior connectors. This extra length of harness may be used at a later time if the connector requires servicing.

Figure 10: Secure e-Stroke Sensor Harness Connector with Cable Tie through Connector Clip

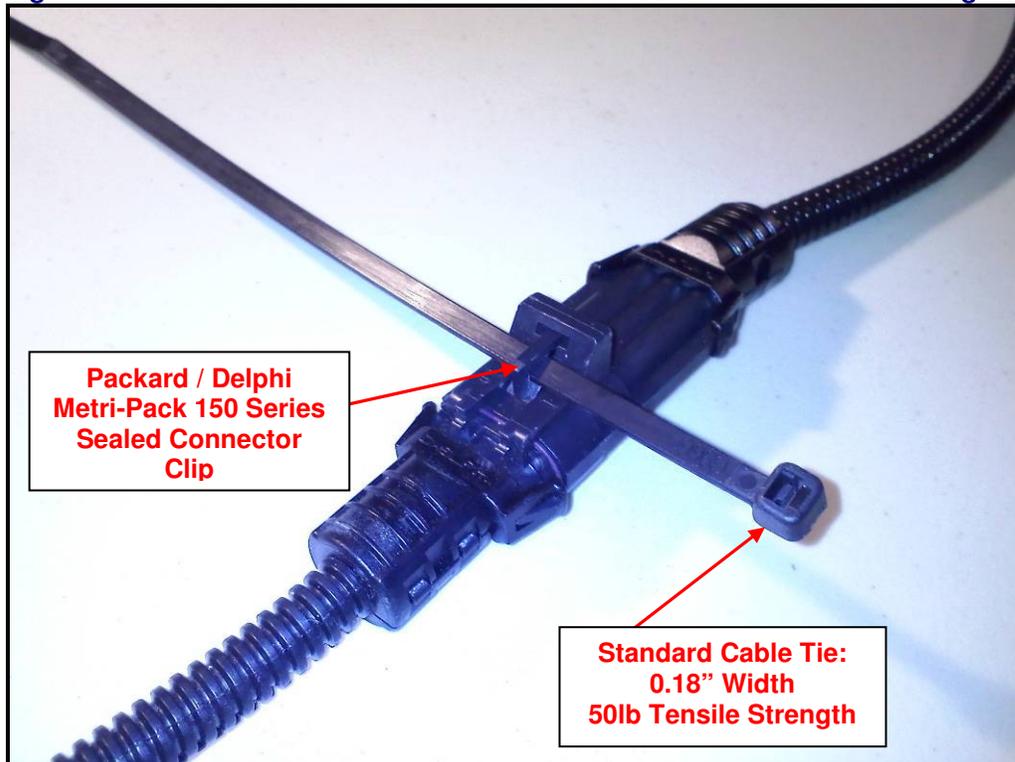


Figure 11: e-Stroke Sensor Harness Connector Secured with Cable Ties

