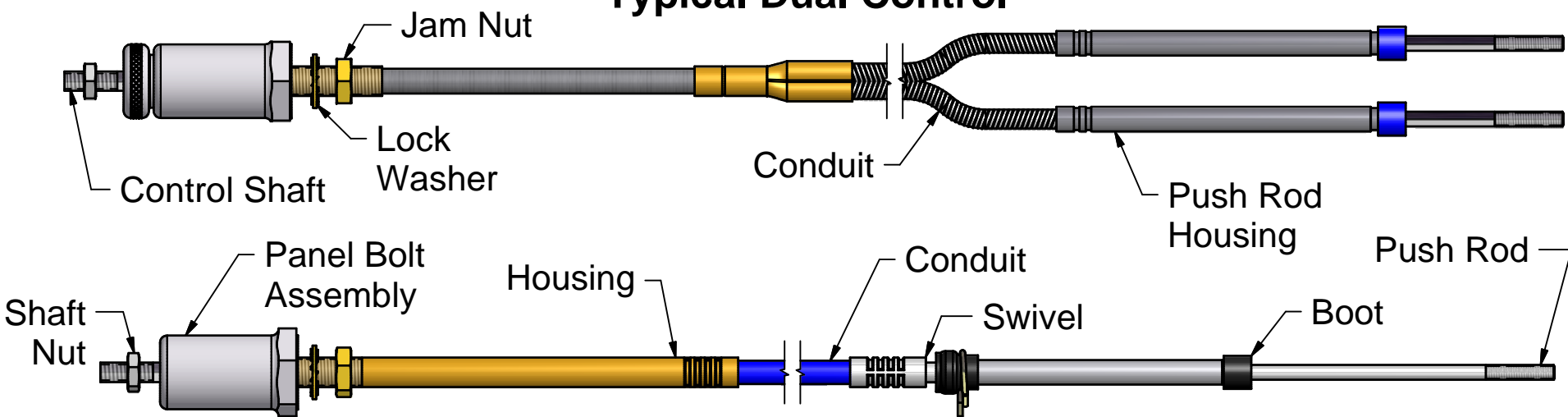


Vernier-Assist™ Control With Push Rod Installation Instructions

Typical Dual Control

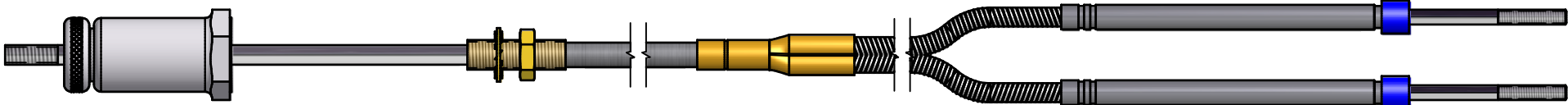


Typical Single Control

Caution: During the installation process, a shaft must always remain completely inserted inside the Panel Bolt Assembly or internal parts will be lost or misaligned.

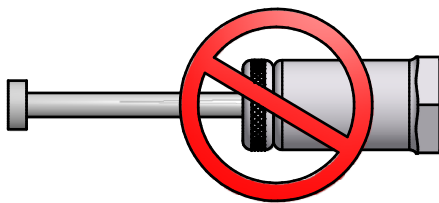
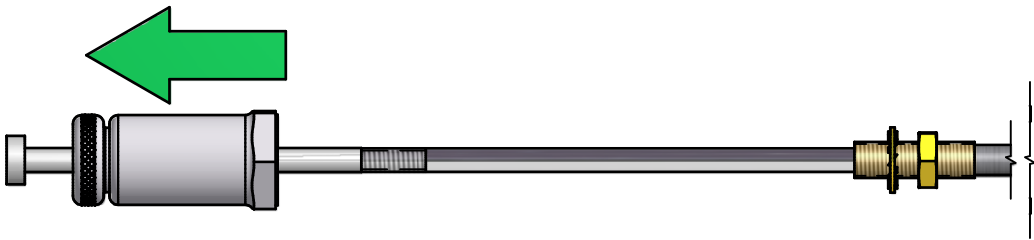
Note: Minor configuration differences or alternate options from the controls shown will not affect the installation methods described.

1. Remove the Shaft Nut from the Control Shaft and unthread the Panel Bolt Assembly from the Housing.



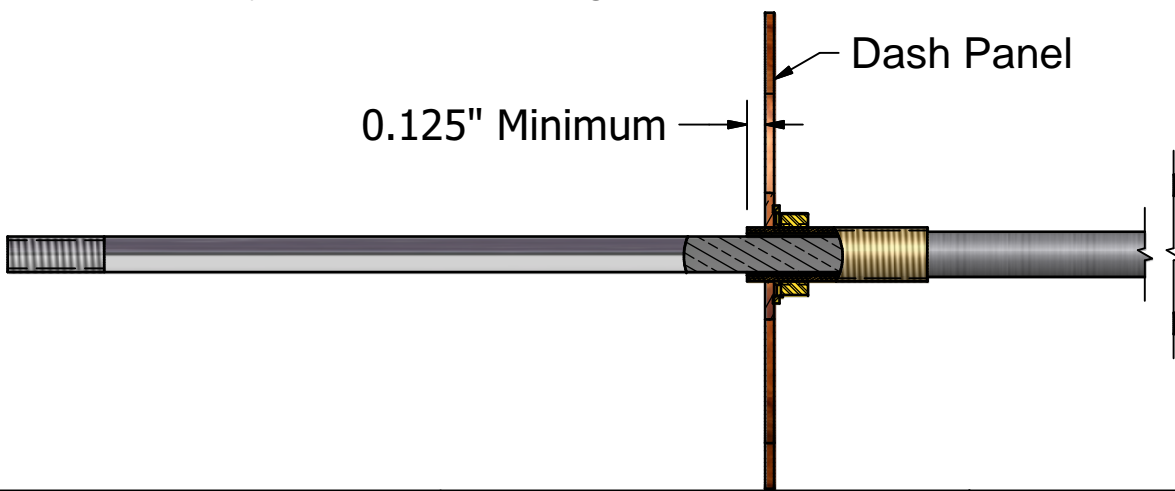
2. Align the Temporary Shaft with the Control Shaft and carefully slide the Panel Bolt Assembly onto the Temporary Shaft while holding pressure on the Temporary Shaft against the Control Shaft. Set the Panel Bolt Assembly and Temporary Shaft aside.

Caution: Do not allow a gap between the Temporary Shaft and Control Shaft while sliding the Panel Bolt Assembly or the control may be damaged.



Caution: Do not allow the Panel Bolt Assembly to slide off during installation.

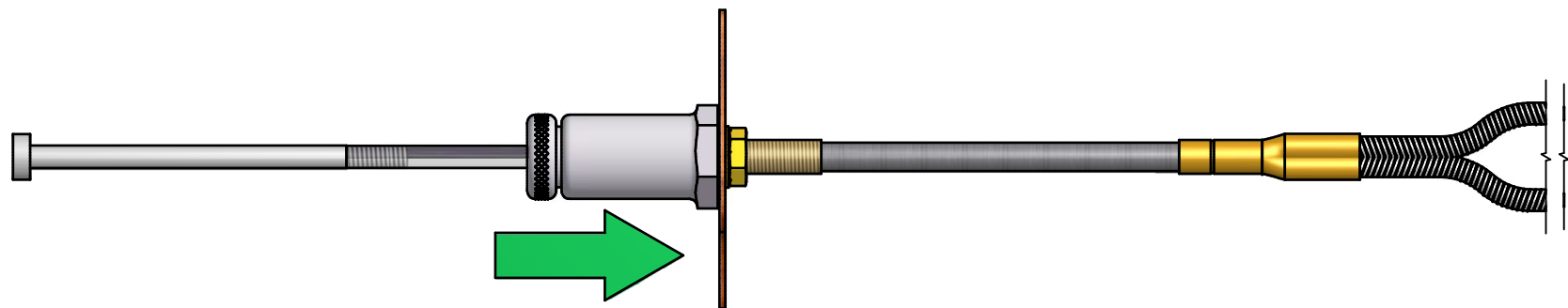
3. Insert the shaft and housing assembly through the back of the dash panel so that the housing extends past the dash panel by a minimum of 0.125". Route and install the remaining conduit and push rod end of the control. For best results, conduit routing should be as direct as possible with any bending kept at the largest possible radius. Pull the Control Shaft fully from the Housing.



Project Engineer:	Engineering Manager:	Quality Manager:	Manufacturing Manager:
Date: 11-24-12	Date: 11-21-12	Date: 11-20-12	Date: 11-26-12
McFarlane			
McFarlane Aviation, Inc. 696 East 1700 Road Baldwin City, Kansas 66006			
Title: INSERT, V.A., GENERAL, PUSHROD			
Size: B	Drawn: BWM	Sheet: 1 of 2	
Part Number: N/A		Drawing Number: 6309	REVISION
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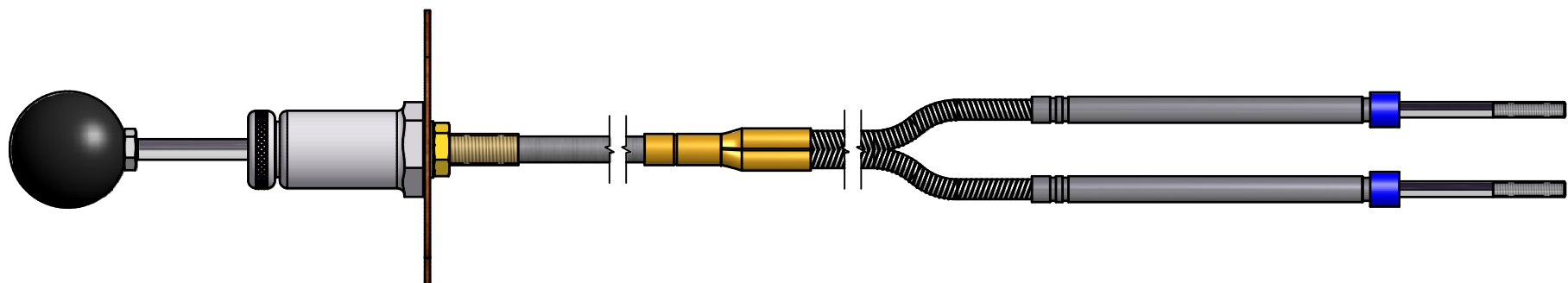
4. Align the Temporary Shaft with the Control Shaft and carefully slide the Panel Bolt Assembly back onto the Control Shaft. Do not allow the Control Shaft to slide back into the Housing while performing this operation. Thread the Panel Bolt Assembly onto the Housing (~3 full turns) and tighten the Lock Washer and Jam Nut until the Panel Bolt Assembly is secure against the Dash Panel.

Do not allow the Shaft to slip past the end of the Panel Bolt Assembly or the control may be permanently damaged.

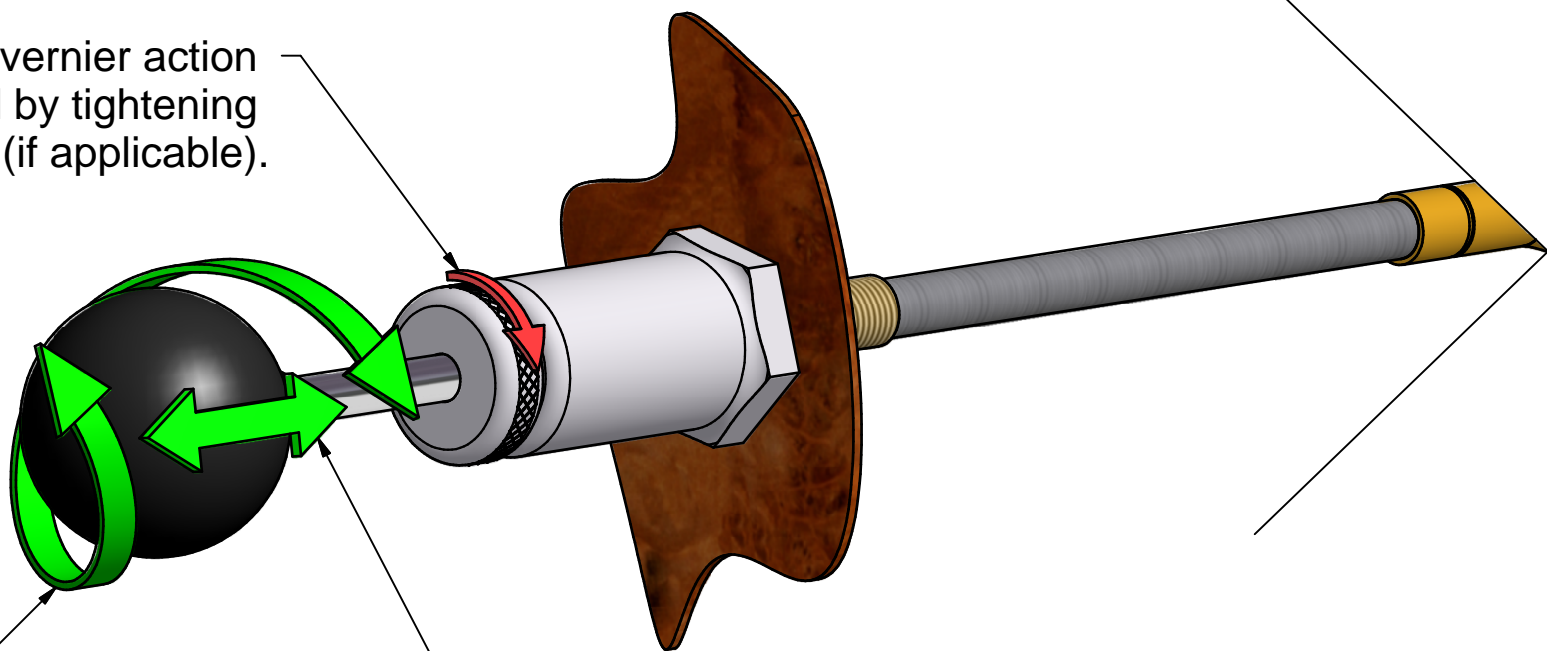


5. Install the Jam Nut and Knob onto the Shaft to complete the control. For controls that do not feature a jam nut, apply the provided thread locking compound to the Shaft threads before installing the Knob. This is best accomplished by gripping the Knob and tightening the Jam Nut. A thin strip of rubber or other high friction material will aid in holding the knob during installation.

Caution: Do not use pliers, vice grips, or any other tool that can damage the surface of the Shaft or the control's performance will be degraded.




Tension and vernier action are increased by tightening the tension nut (if applicable).



Large adjustments are made by pushing the knob inwards or pulling the knob outwards.

The McFarlane **Vernier-Assist** type control uses a patented spring and roller drive and does not use a positive lock thread engagement. Fine adjustments are made by rotating the knob clockwise or counterclockwise. During rotation, slight inward or outwrd pressure may be required for vernier action, depending on the amount of drag produced by the conduit routing.

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Title: INSERT, V.A., GENERAL, PUSHROD			
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