

Service Call:

Inspecting Fiberglass Leveling Rods

Tools Required:

Rags

Simple Green or a Degreasing Cleaner

Light Sandpaper

Model(s):

All Units with Fiberglass Leveling Rods

HR, HRX, TC, TCX, XT, XT Pro, SC,

SCM, RM, RMX

Tech Tip Safety Rules



Danger

Failure to obey the instructions and safety rules in the appropriate Operator's Manual and Service Manual for your machine will result in death or serious injury. Many of the hazards identified in the operator's manual are also safety hazards when maintenance and repair procedures are performed.

Do Not Perform Maintenance Unless:

- You are trained and qualified to perform maintenance on this machine.
- You read, understand and obey:
 - manufacturer's instructions and safety rules
 - employer's safety rules and worksite regulations
 - applicable governmental regulations
- You have the appropriate tools, lifting equipment and a suitable workshop.

The information contained in this tech tip is a supplement to the service manual. Consult the appropriate service manual of your machine for safety rules and hazards.

Step 1

If you need to inspect the leveling rods for an annual inspection or where removal is not required, position the boom so the terminal ends are visible through the inspection hole in the boom.

If performing the 5-year leveling inspection, remove leveling rods per the instructions in the unit specific maintenance manual. Be sure to mark the position of the rods to aid in reinstallation.

Step 2

Clean rods with Simple Green and wipe dry.

Step 3

Inspect the rods for any gouges, cracks, and nicks on the fiberglass and on the terminal ends.

Step 4

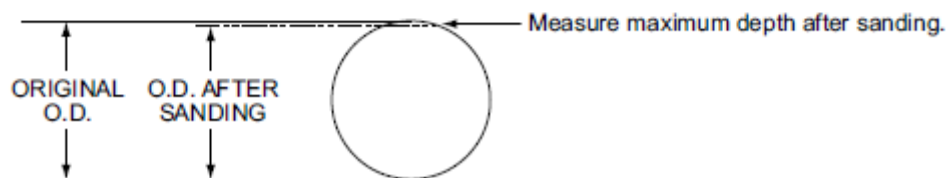
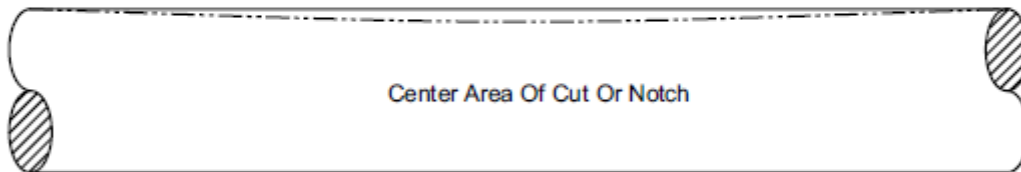
If any damage is found, sand the rod to remove the damage. Feather the area to distribute the removal of the damage, avoiding an abrupt notch in the rod. (See diagram below)

After sanding the damaged area, use the chart in the unit specific maintenance manual to determine the depth of the damage. If the damage exceeds the maximum allowed, replace the rod.

Rod Diameter	Max Depth
.50	.125
.75	.156
.88	.172

Sand to remove damage.

Feather to distribute the removal and to avoid an abrupt notch in the fiberglass rod.

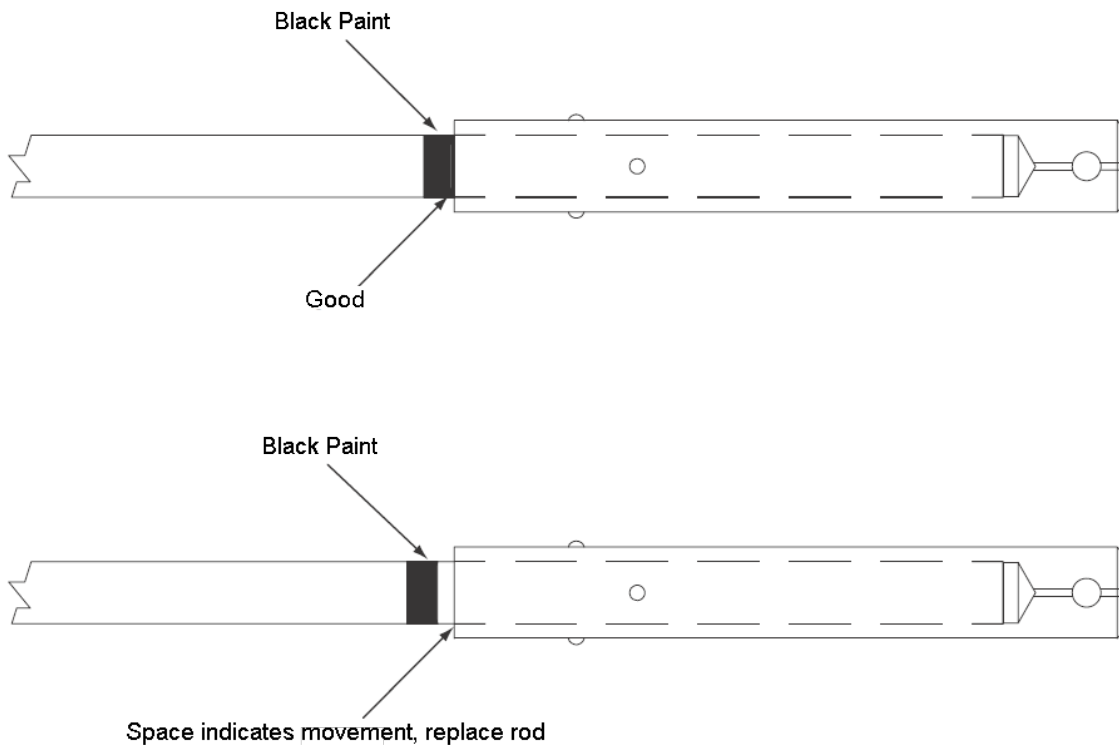


If the rod does not require replacement, seal the area with a marine type gel coat to prevent moisture and contamination from seeping into the rod. Evercoat Gel Coat Scratch Patch is just one example that may be used.

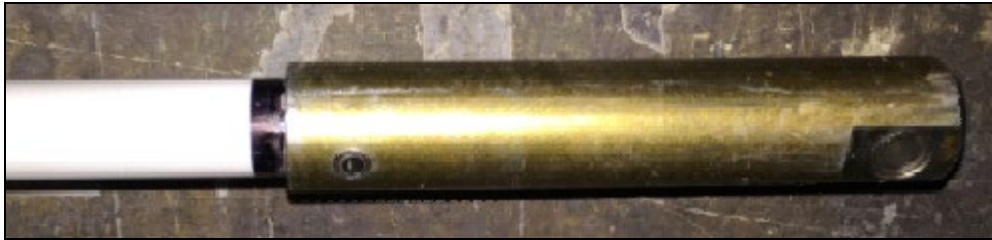
Step 5

Check the terminal end and inspect the area bonded on the ends. The smaller 1/2" rods with the roll pins on the ends will have a black paint mark against the terminal end.

If there is no gap between the terminal end and the black paint marker and the roll pins are in place and have not sheared, then the rods may be placed back in service. This style of rod is common in the XT series.



These are examples of the latest rods found in the XT Pro series. Note that they are in good condition and have not separated from the terminal end.



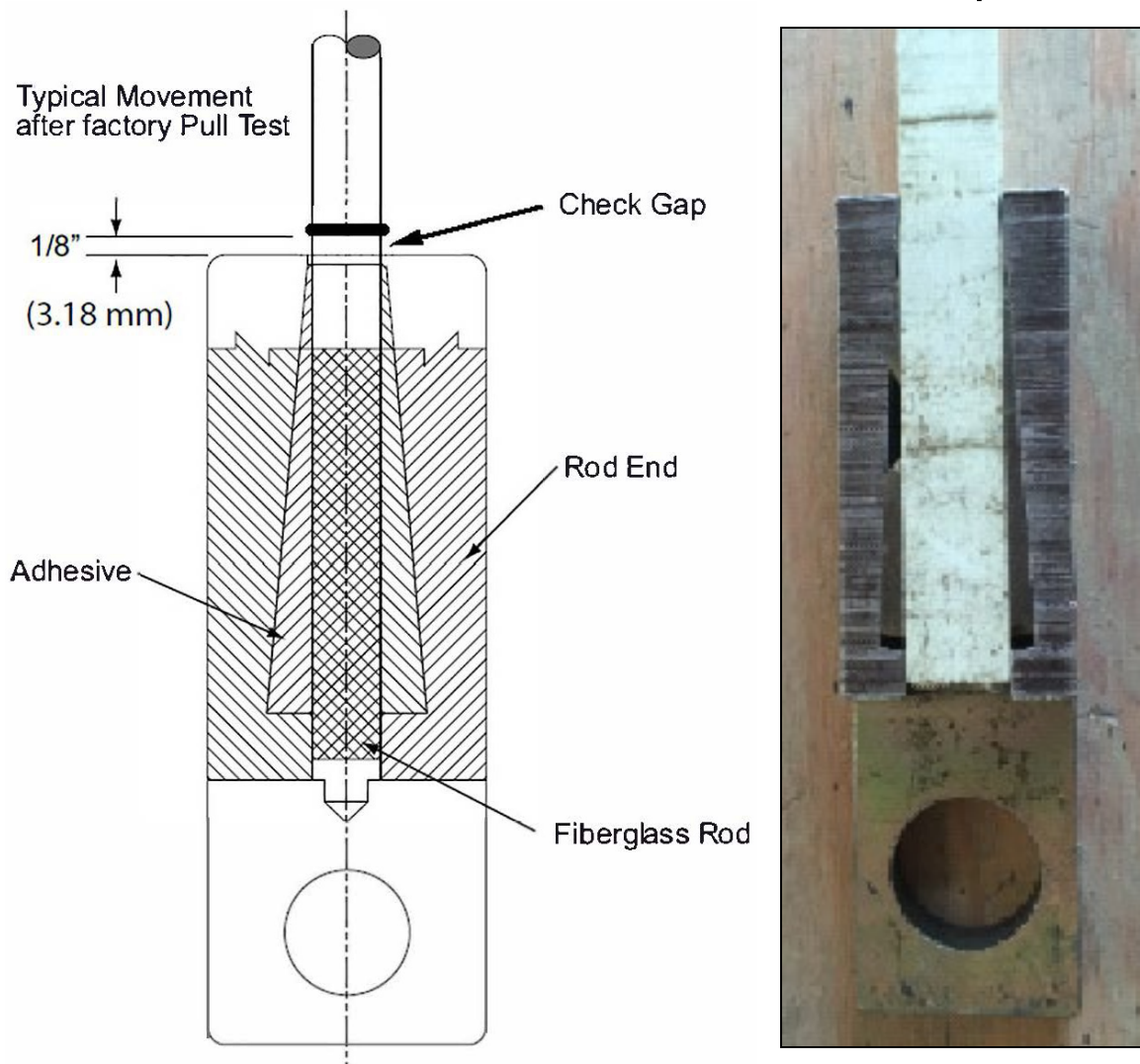
Below are some examples of the smaller leveling rod terminal ends.



This is an example of a failure. Notice it pulled away from the marker and the pins are sheared.

Step 6

Units equipped with platform rotation have a wedge-shaped cavity. Each rod is pull tested after curing and will typically move 1/8". If the gap between the O-ring and the terminal is larger than 1/8", then further evaluation is needed to determine if the rod must be replaced.



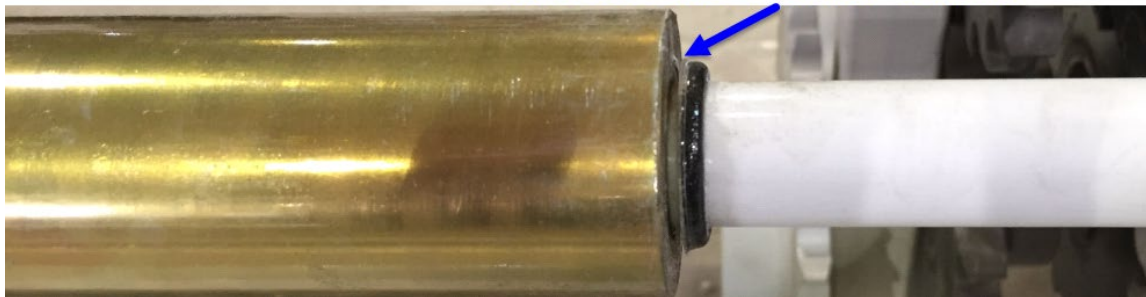
Step 7

Reinstall the rods according to the unit specific maintenance manual.

Step 8

If any portion of the insulating section is replaced, including the leveling rods, a dielectric test is required on the unit.

Gap between O-ring and Terminal



The picture above is an example of what the terminal end looks like on the heavy leveling rods found on any unit with platform rotate produced on or before November 2016.

Examples include: HR, HRX, TC, TCX, OM, RM, RMX, SC, and SCM models.

On these style leveling rods, a 1/8 inch gap is normal between the O-ring and the terminal end. If a gap is larger than 1/8", further evaluation is needed to determine if the rod must be replaced.

Note: Starting in November of 2016, a change has been made to the visual aid for detecting movement in the leveling rod assembly between the insulated rod and rod end. The O-ring has been replaced by a black paint mark at the terminal that is applied after the pull test.

If there is no gap between the terminal end and the marker, then the rods may be placed back in service. If a gap exists, the rod must be replaced.

