

Will-Burt Product Service Bulletin

Pneumatic Mast Product Line

Tube Stop Hole Deformation

Bulletin #0102

April 16, 2012

Product Market Segment	Product Line	Models Affected
Military and Commercial	Pneumatic Masts	Locking and Non-locking Masts

Description of Problem:

The top tube of a pneumatic mast may stick due to the following:

- Mast not being properly cleaned, lubricated, and maintained
- Payload cables temporarily caught on an obstruction then released
- Mast tube deformed due to freezing

When the top tube sticks, the following can occur when the mast is extended:

1. Air pressure builds
2. Top tube finally releases
3. Top tube propels at high velocity
4. Top tube is abruptly stopped by the lower collar
5. Payload locking pin deforms the payload locking pin hole

This high velocity then sudden stop (sometimes accompanied with a loud sound) is an indication that the mast is in need of attention. If this condition is not corrected, the payload platform locking pin can deform or open up the hole (Figure 1) causing the pin to disconnect and possibly causing the payload to fall. This potential problem only occurs on masts with an old-style tube stop (Figure 2) that were shipped on masts prior to the year 2006 (serial numbers up to serial number 36375). This is not a problem with the new-style tube stop, called the heavy-duty tube stop (Figure 3), that shipped in the year 2006 and later. If a mast has the old-style tube stop, remove the old-style tube stop and install a heavy-duty tube stop as instructed in the “*Installing the Heavy-duty Tube Stop*” section below.

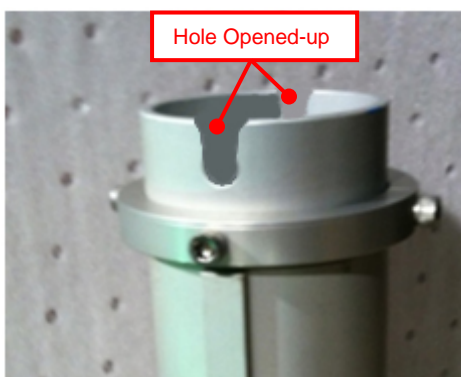


Figure 1 Old-style Failure

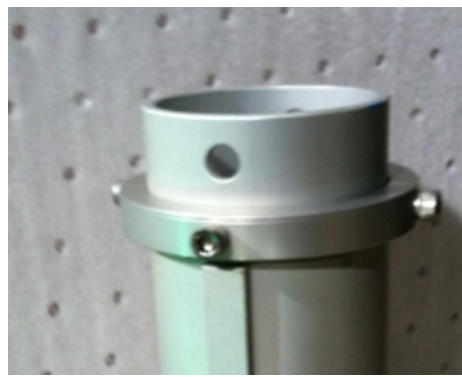


Figure 2 Old-style (potential problem)



Figure 3 Heavy-duty (no problems)

Hardware and Tools Required:

Heavy-duty top tube stops are interchangeable with the old-style top tube stops. The part number to order for the heavy-duty top tube stop is determined by measuring the top tube outside diameter (Figure 4) and selecting the tube finish. The type of tube finish is typically either clear anodized or black anodized. Using the top tube diameter and the tube finish, locate the part number in Table 1. Once you determine the part number for the heavy-duty tube stop (with locking pin), order by contacting Will-Burt Service at 330-684-5244. For tube finishes not listed in Table 1, contact Will-Burt Service.

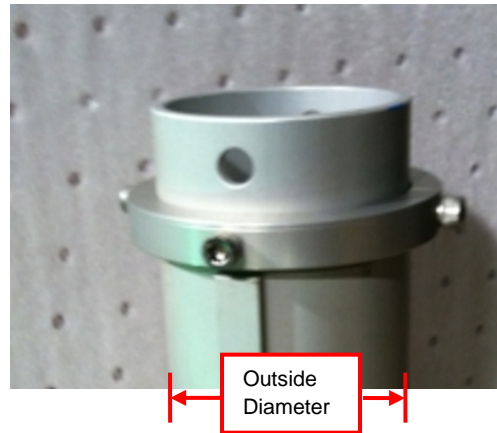


Figure 4 Top Tube Outside Diameter Dimension

Top Tube Outside Diameter (inches)	Tube Finish	New-style Part Number to Order
3.00	Clear Anodized	4006301
3.00	Black Anodized	4006302
3.75	Clear Anodized	4006501
3.75	Black Anodized	4006502
5.25	Clear Anodized	4010701
5.25	Black Anodized	4010702
4.50	Clear Anodized	4010601
4.50	Black Anodized	4010602
5.25	Clear Anodized	4010701
5.25	Black Anodized	4010702
6.00	Clear Anodized	4010801
6.00	Black Anodized	4010802
6.75	Clear Anodized	4010901
6.75	Black Anodized	4010902
7.50	Clear Anodized	4011001
7.50	Black Anodized	4011002

Table 1 New-style Tube Stop Part Numbers

Table 2 lists the tools required to replace old-style tube stop.

Number	Description
(1) Set	Allen wrenches

Table 2 Tools Required

Installing the Heavy-duty Tube Stop:

To remove the old-style tube stop and replace with a heavy-duty tube stop, proceed as follows:

1. Completely nest the mast.
2. Remove the payload from the old-style tube stop.
3. Extend the top tube by applying a small amount of air pressure to the mast, just enough to raise the top tube about six inches, then shut off the air pressure. This will ensure that the top tube does not retract into the mast when the tube stop is removed.
4. Keep hands and fingers clear of the bottom of the tube stop in case air is accidentally exhausted and the top tube falls causing the tube stop to hit the collar below.

⚠ WARNING

Pinch Point Hazard! Moving parts can crush and cut resulting in death or serious injury. Keep clear of moving parts while working on mast.

5. Using an Allen wrench, remove the four bolts holding the old-style tube stop onto the top tube (Figure 5).

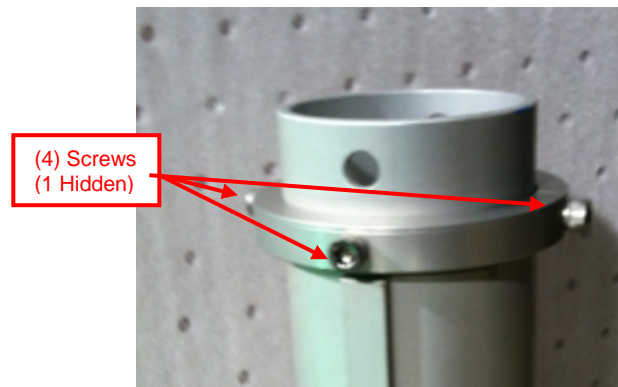


Figure 5 Remove Four Screws on Old-style Tube Stop

6. Lift and remove the old-style tube stop.
7. Place the heavy-duty tube stop onto the top tube.
8. Using an Allen wrench, tighten the four bolts on the heavy-duty tube stop to the top tube (Figure 6).

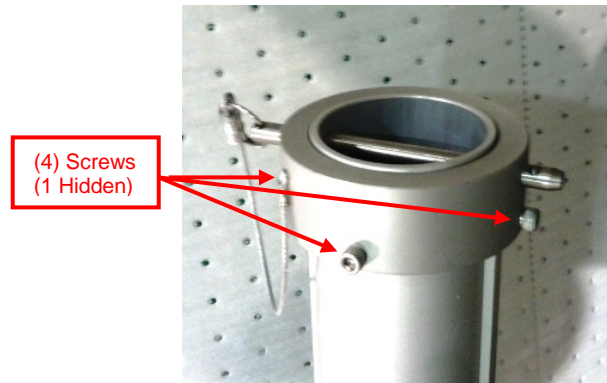


Figure 6 Tighten Bolts on Heavy-duty Tube Stop

9. Keep hands and fingers clear of the bottom of the tube stop and exhaust air to allow the tube stop to settle on the collar below.



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10. Fasten the payload adapter onto the mast.
11. Note that a new longer quick release pin is included and attached by a lanyard to the new top tube stop. The old quick release pin should be removed from the top adapter.
12. Test by slowly extending and nesting the mast.