

Will-Burt Product Service Bulletin

NightScan Chief Product Line

Actuator Bolts Disengage

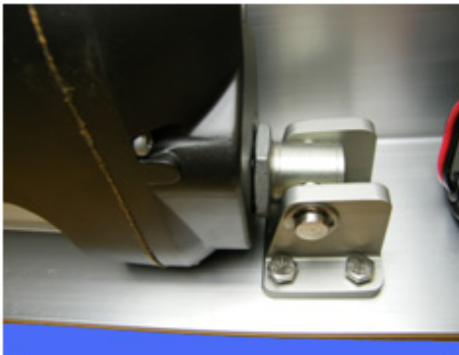
Bulletin #0101

January 9, 2012

Product Market Segment	Product Line	Models Affected
Commercial	NightScan Chief	1.8 & 2.3 Meter Products

Description of Problem:

For NightScan Chief masts shipped from 8/1/11 through 9/15/11, a condition can exist where the bolts that fasten the actuator to the base can loosen from the base when the mast is repeatedly forced stowed into the saddle. This condition occurs on masts that do not have through bolts (see Figure 1).



Potential Problem

(bolts do not go through base and do not attach with nuts)

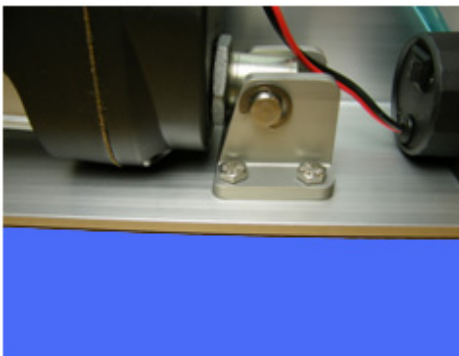


No Potential Problem

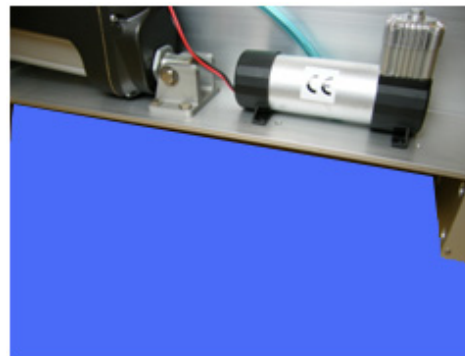
(bolts go through base and actuator bracket)

Figure 1 Actuator Fastening Configurations

Normal stowing of the mast does not cause the problem; however, during a forced stow the operator may cause the mast to stow with additional pressure. Over repeated forced stows, this additional pressure can cause the bolts that are threaded into the base to become loose or disengage from the base. If the bolts completely disengage, the actuator arm may also hit the magnetic switches. If the mast has the potential problem as shown in Figure 1, the four actuator bolts should be replaced with through bolts. The procedure to follow to replace the old bolts depends on whether the mast is mounted flush to a surface or mounted to a supporting structure (Figure 2).



Flush to a Surface



To a Supporting Structure

Figure 2 Typical Mast Mounting

Hardware and Tools Required:

An Actuator Bolt kit can be ordered from Will-Burt, P/N 4762201. This kit contains the hardware listed in Table 1. If questions, contact Will-Burt Service at 330-684-5244.

Number	Description
(4)	Stainless Steel Flat Head Cap Bolts 5/16-18x1" (P/N 4551)
(4)	Stainless Steel Hex Head Cap Bolts 5/16-18x1" (P/N 0964)
(4)	Stainless Steel Nuts 5/16" (P/N 0816)
(1)	Loctite 242 .02 oz (P/N 4363601)

Table 1 Kit Hardware

Table 2 lists the tools required to replace the actuator bolts.

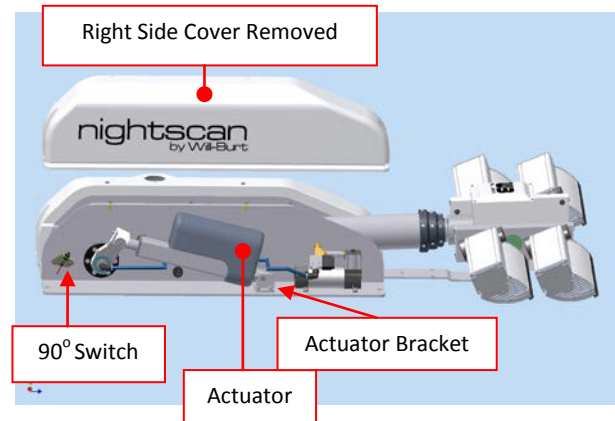
Number	Description
Set	Open ended wrenches
Set	Allen wrenches
(1)	Flat-head screw driver
(1)	Drill
(1)	Drill bit (5/16" to 11/32")
(1)	Torque wrench
(1)	Counter Sink Bit

Table 2 Tools Required

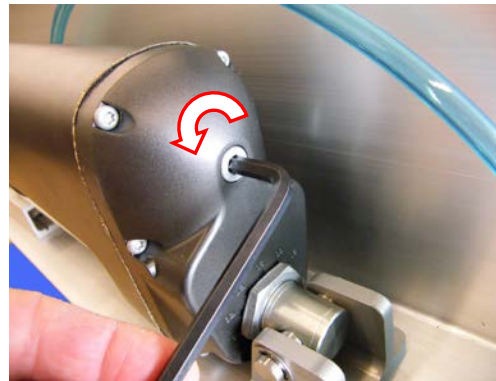
Details of the Solution for a Mast Mounted to a Supporting Structure

If the mast base is mounted to a supporting structure, as shown in Figure 2, it will not be necessary to tilt the mast and bevel or counter-sink for the bolts. Proceed as follows to replace potential problem bolts on a mast that is mounted to a supporting structure:

1. Stow the mast.
2. Turn all AC and DC power off to the mast.
3. Remove the right side base cover (opposite the lookup light) by removing the three screws on the top cover with a flat head screw driver.



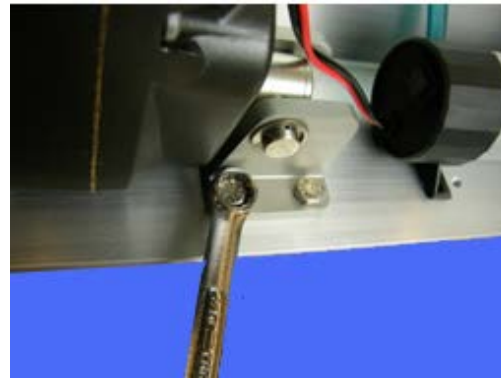
4. Since the mast is stowed, there may be pressure on the actuator. This pressure should be released before removing the actuator bracket. Use a 6mm Allen wrench and turn counterclockwise and remove this cover bolt.



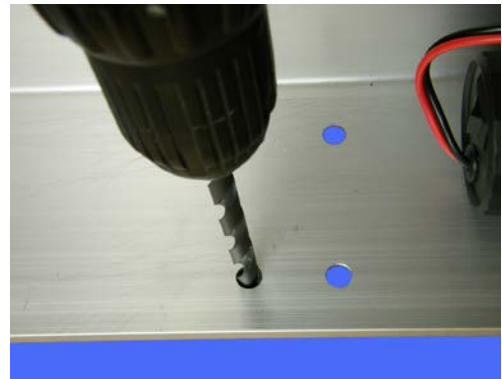
5. Place the long end of a 6mm Allen wrench into the hole to reach another 6mm bolt. A socket Allen wrench may be used but care must be taken not to damage the adjacent air compressor. Turn the 6mm Allen wrench counterclockwise to slightly raise the mast to release pressure off the actuator.



6. Remove the four bolts that attach to the actuator to the mast base.



7. Remove the actuator and actuator bracket.
8. From the actuator side of the base, using a 5/16" to 11/32" drill bit, drill through holes where the four actuator bolts were mounted.



9. Place blue loctite 242 onto the four new actuator bolts.



10. Place the four new actuator bolts from the bottom of the mast base and through the actuator bracket.



11. Place four nuts onto the bolts and tighten the bolts to 16-20 ft-lbs.

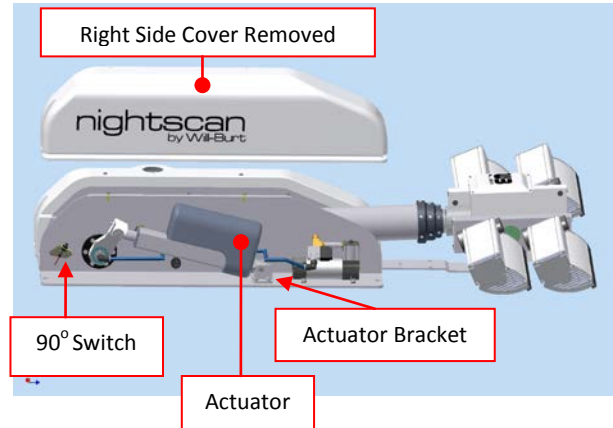


12. Reconnect AC and DC power to the mast.
13. Test the mast by raising, lowering, auto-stowing, and force-stowing the mast. Perform this test sequence several times and ensure proper operation.

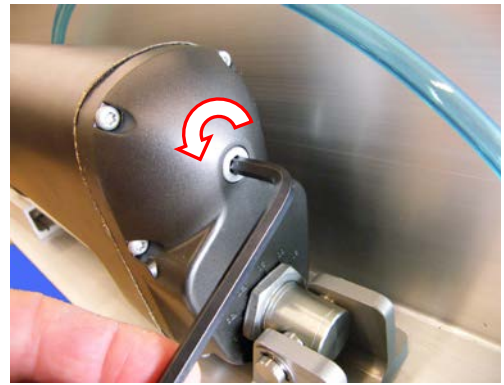
Details of Solution for a Mast Mounted Flush to a Surface

If the mast base is flat to the vehicle surface, the mast must be tilted up to bevel or countersink for the bolts. Proceed as follows to replace potential problem bolts on a mast that is mounted flush to a surface:

1. Stow the mast.
2. Turn all AC and DC power off to the mast.
3. Remove the right side base cover (opposite the lookup light) by removing the three screws on the top of the cover with a flat head screw driver.



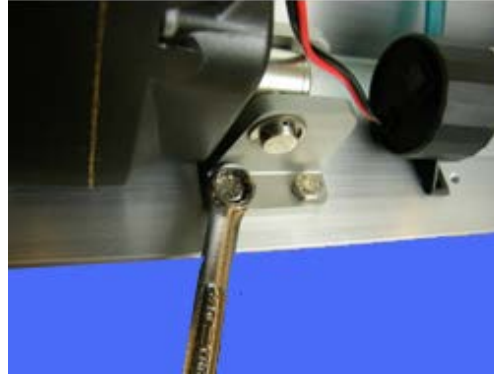
4. Since the mast is stowed, there may be pressure on the actuator. This pressure should be released before removing the actuator bracket. Use a 6mm Allen wrench and turn counterclockwise and remove this cover bolt.



5. Place the long end of a 6mm Allen wrench into the hole to reach another 6mm bolt. A socket Allen wrench may be used but care must be taken not to damage the adjacent air compressor. Turn the 6mm Allen wrench counterclockwise to slightly raise the mast to release pressure off the actuator.



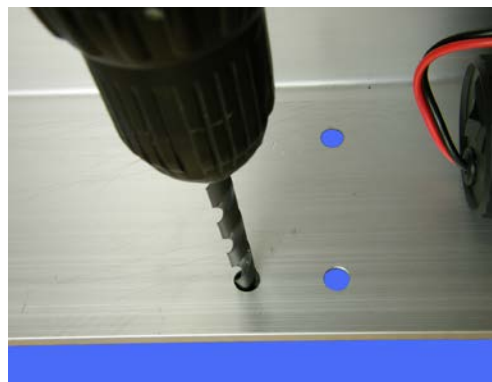
6. Remove the four bolts that attach to the actuator to the mast base.



7. Remove the actuator and actuator bracket.
8. Remove the four bolts that attach the base to the vehicle mounting surface.



9. Ensure that there is sufficient slack in the electrical cables to the mast base to allow the base to be tilted on its side.
10. To gain access to bevel or countersink the actuator holes at the bottom of the mast, tilt the base on its side.
11. From the actuator side of the base, using a 5/16" to 11/32" drill bit, drill through holes where the four actuator bolts were mounted.



12. To ensure that the mast mounts flat to the vehicle mounting surface, bevel or counter-sink the bottom of the mast base for the four new actuator bolts.



13. Place blue loctite 242 onto the four new actuator bolts.



14. Place the four new actuator bolts from the bottom of the mast base and through the actuator bracket.



15. Place four nuts onto the bolts and tighten the bolts to 16-20 ft-lbs.



16. Lay the mast base flat onto the mounting surface.

17. Replace the four bolts that attach the base to vehicle mounting surface and tighten down the bolts



18. Reconnect any cables that were disconnected to get slack in the cable.
19. Reconnect AC and DC power to the mast.
20. Test the mast by raising, lowering, auto-stowing, and force-stowing the mast. Perform this test sequence several times and ensure proper operation.