Preventive Maintenance Procedures

Introduction

To keep your Furio system in perfect running condition, regular preventive maintenance is required. Perform the following maintenance procedures at the indicated intervals:

Weekly Maintenance:

- Dolly - "**Inspect and Clean the Dolly Wheels**" on **page 2**
- Dolly - "**Inspect the Barcode Positioning System (BPS)**" on **page 3**
- Dolly - "**Inspect the Wiredraw Systems**" on **page 3**
- VR600, X300, or X350 Head - "**Inspect Cables**" on **page 5**
- VR600, X300, or X350 Head - "**Inspect Teleprompter Equipment**" on **page 5**

Monthly Maintenance:

- Dolly - "**Inspect the Igus Chain Socks**" on **page 4**
- Dolly - "**Inspect the Nuts Above the Dolly Wheel Sets**" on **page 4**
- Track - "**Inspect the Track Leveling Screws**" on **page 6**
- Track - "**Inspect the Rail Tensioners**" on **page 6**
- Track - "**Inspect the Stability Arms or Stability Bars**" on **page 7**

Biannual Maintenance (every six months):

- VR600, X300, or X350 Head - "**Inspect Backlash on Pan and Tilt Axes**" on **page 5**

If you have any questions or difficulties, please contact Ross Video Technical Support.

IMPORTANT: The system must be powered off before any maintenance or servicing.
The lift, head and payload must be removed from the system before performing belt maintenance on one of these items.

IMPORTANT: Before operating or servicing any Furio system, please refer to and carefully read the ***Furio Safety Guide (5100DR-304-02)*** to ensure safe handling and operation.

5100DR-007-02

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Preventive Maintenance of the Dolly

Inspect and Clean the Dolly Wheels

Perform this procedure **weekly**:

1. **Inspect the contact surface of the wheels, especially the motorized wheel.**
   Examine the rubber carefully to detect any cuts or damage to the rolling contact surface.
   Refer to **Figure 1.**

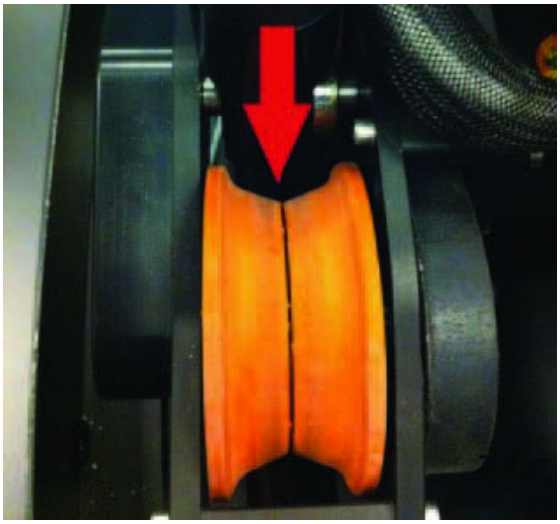

Figure 1 - Inspect and Clean the Dolly Wheels

2. **Clean the wheels with one of the following:**

- Loctite 7063 cleaner, as shown in **Figure 2** (highly recommended)
- Acetone Solvent

Figure 2 - *Recommended Cleaning Agent (Loctite 7063)*

3. Apply the cleaner to dirty rubber, and then dry immediately.
   To ensure perfect traction, we recommend cleaning the wheels weekly.

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Inspect the Barcode Positioning System (BPS)

Perform this procedure **monthly**:

1. **Inspect barcode tape.**

   Regularly check the barcode tape for signs of wear or damage.
   Ensure it is free of wrinkles and securely attached.
   Replace the tape if any issues are found.

2. **Clean the optical sensors and tape.**

   Use a soft, lint-free cloth and a commercial glass cleaner to carefully clean both the optical sensors and the barcode tape.

Inspect the Wiredraw Systems

Note: The Barcode Positioning System (BPS) replaces traditional wiredraw encoders in all Furio Studio models effective July 2024. This transition enhances the precision, reliability, and maintenance of the system.
Warning: Do not let go of the wiredraw red wire/cable when disconnecting it from the system.
Free spooling of the cable can cause severe injury.

Perform this procedure **weekly**:

1. **Check that the wiredraw cable coating is not damaged when sliding on the rail.**
2. **Check that the wire coming from the track wiredraw system is well-guided by the pulley wheel.**
   Refer to **Figure 3**.

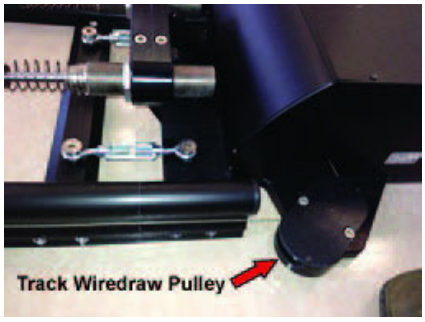

Figure 3 - *Track Wiredraw Pulley*

3. **Check that the wiredraw cables are not kinked or otherwise damaged.**
   Figure 4 shows a damaged cable.

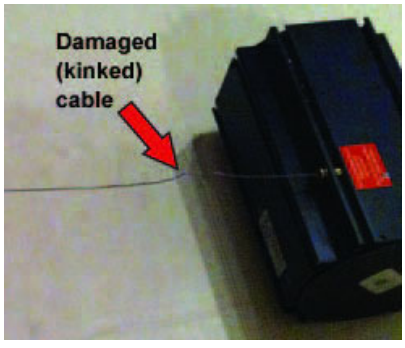

Figure 4 - Inspect the Wiredraw Cables for Damage

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Inspect the Igus Chain Socks

Perform this procedure **monthly**:

a. Check that the cable hanging from the dolly is firmly fixed.

b. Check that the wiring is clean and in good condition.

c. Check that the Igus chain socks are in good condition, and that the sock zippers face upwards.

Figure 5 - *Inspect the Igus Chain Socks*

Inspect the Nuts Above the Dolly Wheel Sets

Perform this procedure **monthly**:

a. Check that the large nut above each set of wheels is tight.

b. The recommended torque is 30 Nm.

c. These nuts and the associated bolts attach the wheel sets to the dolly frame.

Figure 6 - *Nut Attaching the Wheel Set to the Dolly Frame*

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Preventive Maintenance of the VR600, X300, or X350 Head

Inspect Cables

Perform this procedure **weekly**.

1. **Check that the cables have enough slack to prevent them becoming tight when the head moves through its entire range of motion.**
   Use zip ties to bundle cables into a single harness.
2. **Check that no cables catch on anything when the head moves through its entire range of motion.**

Inspect Teleprompter Equipment

Perform this procedure **weekly**:

1. **Check that the hardware attaching your teleprompter to head is tight.**
2. **Check that cables to the teleprompter are properly connected.**

Inspect Backlash on Pan and Tilt Axes

Perform this procedure **biannually**:

1. **If backlash on either axis exceeds 0.11 degrees, the system requires service. Adjusting the backlash is an advanced maintenance procedure.**
   Contact Ross Video for more information.
2. **To measure the backlash on pan and tilt axes:**
   - Attach a laser level similar to the one shown in **Figure 17** to the Pan/Tilt Stage Camera Mounting Plate.

Figure 7 - *Laser Level*

3. Shine the laser on a wall or target surface at least 3m away.
   Refer to **Figure 18**.

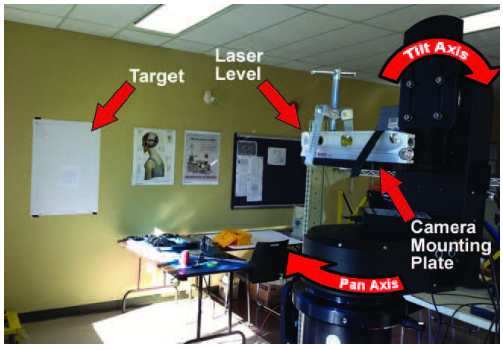

Figure 8 - *Laser Level*

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4. **Accurately measure the distance from the laser to the target.**
5. **Mark the starting point.**
6. **Push on the Tilt Stage (camera mounting bracket).**
   Ensure caution to isolate the induced motion from the Pan axis, and mark the displaced position of the laser dot. This may require assistance from a second person.
   Note: that the force used should only be enough to rotate the Tilt Stage with little or no resistance. Do not exert so much force as to induce motion to the pan axis, lift column, or dolly.
7. Measure the displacement and perform the following calculation:

   Backlash = tan-1 (Displacement / Target Distance)

   For example, for a target at 3m and a displacement of 15mm:
   Backlash = tan-1(15mm / 3000mm) = 0.29 degrees

   Note: In the case above, the Tilt axis backlash is not within specification, because it is not less than or equal to 0.11 degrees.
8. **Repeat the measurement and calculation for the Pan axis.**
   Use caution to isolate the induced motion to the pan axis only.

Preventive Maintenance of the Track

Inspect the Track Leveling Screws

Perform this procedure monthly:

1. Check the rigidity of the track by pushing the rail firmly to the floor.
   There should be no play between the track and the floor.
2. If you feel any play, tighten the leveling screw.
3. If you make more than one complete turn, check that the track is still level.

Inspect the Rail Tensioners

Perform this procedure monthly:

1. Check that the rail tensioners are tight.
2. Check that the track sections join each other smoothly.
   Refer to **Figure 19**.

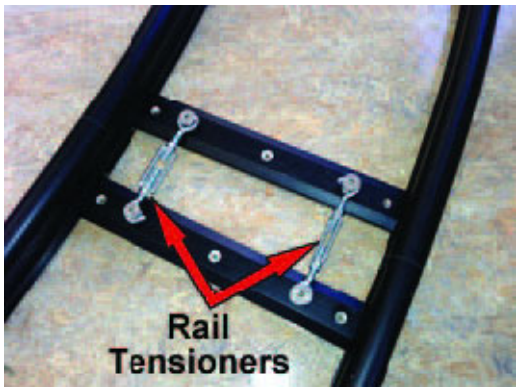

Figure 9 - *Rail Tensioners*

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Inspect the Stability Arms or Stability Bars

Stability Arms

For straight and curved tracks, stability arms (8 total per dolly) are located on each sliding passive wheel (4 stability arms per passive wheel). Refer to

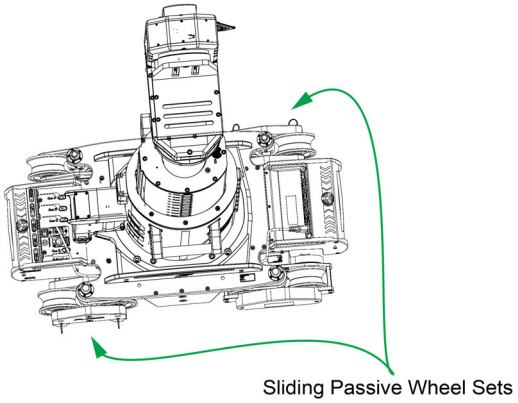

Figure 10 - *Sliding Passive Wheels*

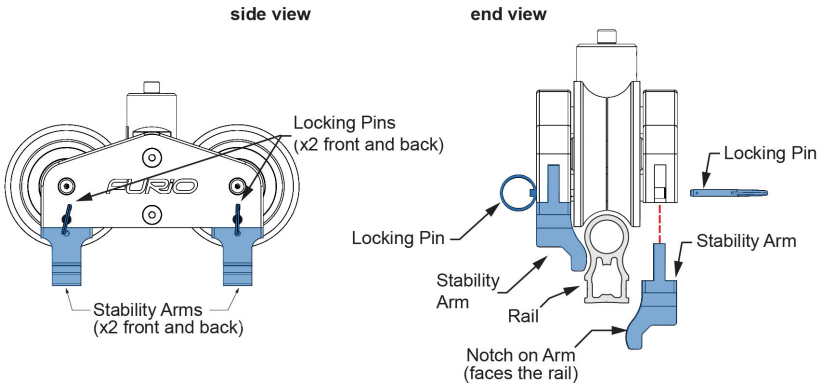

Figure 11 - *Stability Arms*

Perform this procedure monthly:

1. Check that the locking pins are securely fixed to the wheel unit.
2. Ensure the stability arm notches align with the track rail.

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Stability Bars
For integrated rails, stability bars are located at either end of the dolly and across the track.

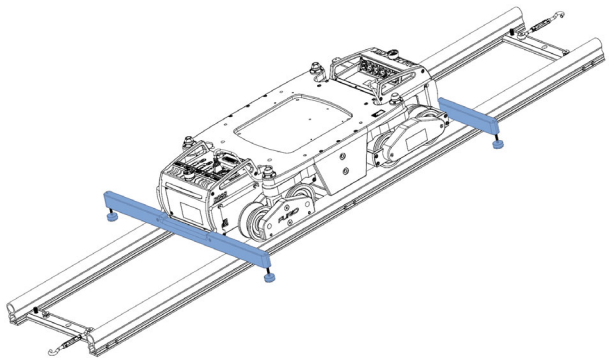

Figure 12 - *Stability Arms*

1. Check that the screws attaching the stability bar to the dolly base are tight.
2. Ensure there are no obstructions or debris blocking the stability bar's motion.

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