

CTB-01602 Rev 001

Date: July 31, 2026

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Product: Selenia Dimensions & 3Dimensions **Subsystem:** Gantry

Subject: Selenia Dimensions/3Dimensions VTA Rotation Screw
Hardware Inspection

Purpose

To provide instruction on the inspection method for the Selenia ® Dimensions and 3Dimensions™ VTA rotation screw hardware.

Scope

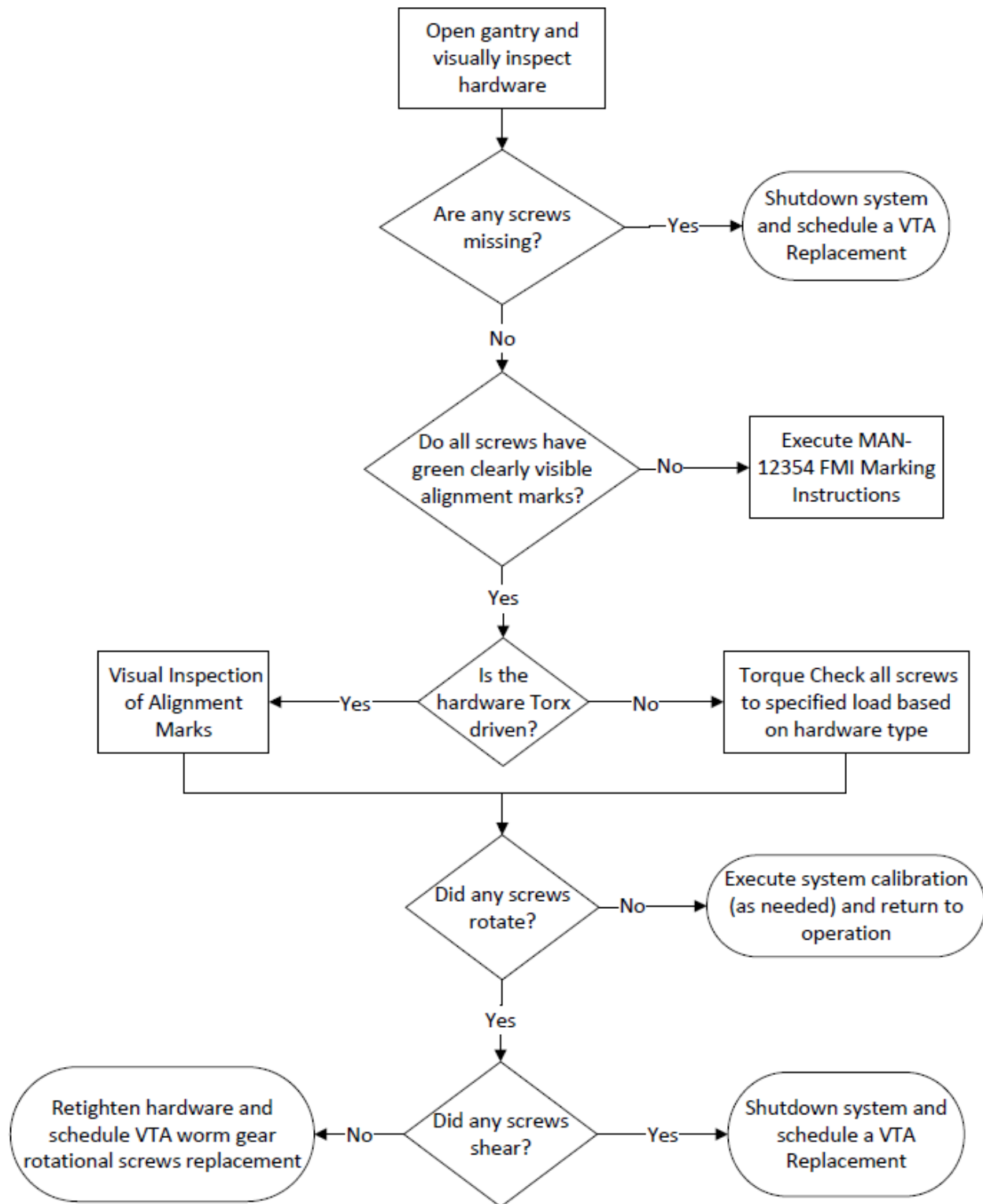
This bulletin applies to all Selenia Dimensions and 3Dimensions products running all software versions. All training requirements within the Service Manual are applicable for execution of this procedure. This inspection

Required Tools and Equipment

- Standard Tool Kit
- Light
- Extension Cord
- ASY-02442 – Dimensions Tool Kit
- TLS-09648 – Torque Wrench, Adjustable Ratcheting, 3/8" Drive, 40-200 in.-lbs, ±4% accuracy clockwise, 2 in-lb or smaller graduations, NIST traceable calibration (or equivalent)
- TLS-11122 – 3/8" Female x 1/4" Male Square Drive Adapter (or equivalent)
- TLS-11121 – Tool, 1/4 "Square Drive Socket Extension, 6" Long, Steel (or equivalent)
- TLS-11122 – 3/8" Female x 1/4" Male Square Drive Adapter (or equivalent)
- TLS-11121 – Tool, 1/4 "Square Drive Socket Extension, 6" Long, Steel (or equivalent)
- TLS-10958 – 1/8" Hex Bit, 1/4" Hex Shank (or equivalent)
- TLS-11089 – 5/32" Hex Bit, 1/4" Hex Shank (or equivalent)
- TLS-10950 – Secure Hold Bit for Socket 1/4" Square Drive (or equivalent)

Customer Technical Bulletin (cont.)

Workflow Overview



Customer Technical Bulletin (cont.)

Marking & Torque Inspection

1.1. Determine System Bolt Configuration

1. Remove the Gantry rear access panel and hang the side doors on the gantry.
2. Raise the C-Arm high enough to access the entire worm wheel from the panel in the back and rotate the C-Arm to 0° as shown in Figure 1.



Figure 1 – Back of 3Dimensions with raised C-arm for VTA Access. Red arrows indicate some of the VTA rotation screws

Customer Technical Bulletin (cont.)

3. Visually inspect the eight (8) worm gear rotational screw locations (shown in Figure 1) for missing hardware and alignment marks, rotating C-arm as needed to visualize.
 - a) If any screws are found missing or sheared, skip to section 1.7 – [Screw Missing or Broken – System Shutdown and Repair Scheduling](#) on page 14.
 - b) If the system has visible green alignment marks and socket head hardware (Figure 2A), skip to section 1.2 – [Readily Accessible Screws](#) on page 5.
 - c) If the system has visible green alignment marks and flat head hardware (Figure 2B), skip to section 1.2 – [Readily Accessible Screws](#) on page 5.
 - d) If the system has visible green alignment marks and Torx hardware (Figure 2C), skip to section 1.4 – [Torx Screw Visual Inspection Only](#) on page 11.
 - e) **If the system does NOT have green alignment marks on all 8 screws, stop here and perform the workflow called out in MAN-12354 VTA Rotation Screws, Alignment Mark Addition to complete the procedure.**



Caution:

If red/green color-blind consult with a second individual to confirm alignment mark color.



Note

If instructions are printed in color, Figure 2A contains red cross check paste and green alignment marks.

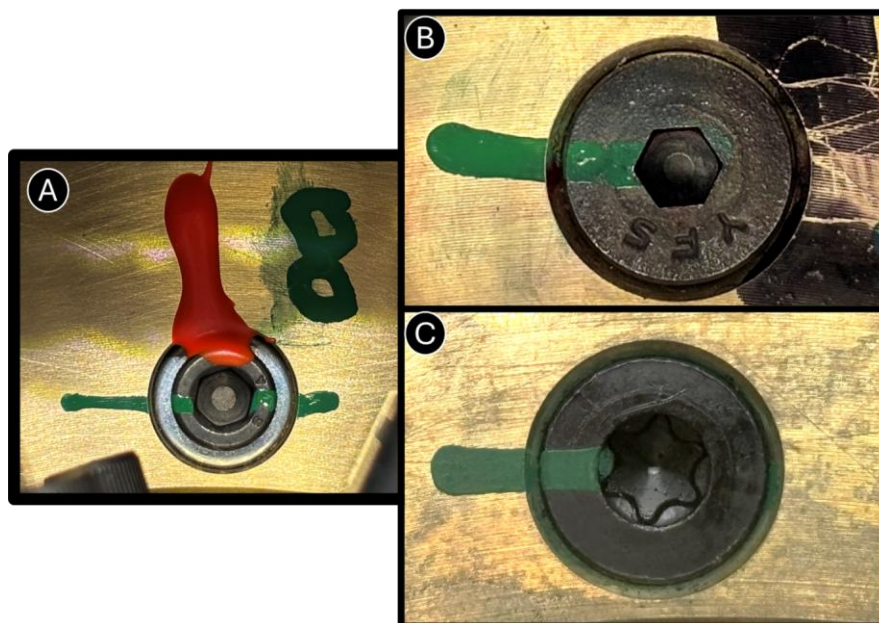


Figure 2 - Examples of different VTA hardware types. A) Socket Head Cap Screw, Hex driven, with red cross check paste and green mark B) Flat Head Hex Screw, C) Flat Head Torx Screw with green alignment mark

Customer Technical Bulletin (cont.)

1.2. Readily Accessible Screws

4. Power down the gantry and turn off the circuit breaker on the rear of the unit.
5. Remove the breast platform and detector from the gantry per the Selenia Dimensions/3Dimensions service manual and store in a safe location.
6. Remove the gantry front covers to gain access to the front of the VTA assembly and use the TLS-01064 Gantry power supply to rotate the VTA to center one of the readily accessible screw heads as shown in Figure 3.
 - a) Refer to [Appendix A, Procedure to Use TLS-01064 Power Supply](#) for instructions on how to use the power supply for C-arm and tubehead rotational control.
 - b) 6 of the 8 screws are readily accessible (screws 1, 3-6, & 8 as numbered in Figure 4). Screw 2 and 7 are blocked by the tensioner assembly and will be evaluated last.



Caution:

Do not leave C-Arm Brake energized for more than 5 continuous minutes to avoid overheating.

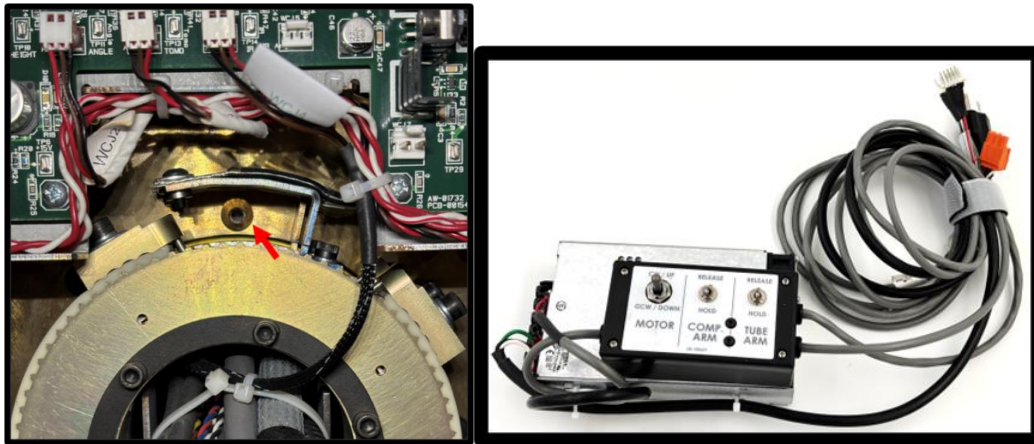


Figure 3 – Screw number centered in system (left) and TLS-01064 power supply (right)

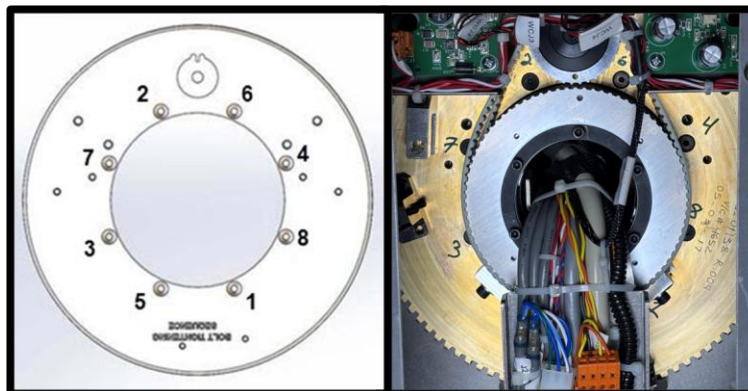


Figure 4 – Example of final numbering of hardware on bronze worm gear face

Customer Technical Bulletin (cont.)

7. If the system has **flat head hex screws** as shown in Figure 5, set TLS-09648 torque wrench to **46 in-lbs.** and slowly torque the marked screw in the tightening (clockwise) direction.



Note

If the system has socket head screws, proceed to step 9.

- a) Make sure the 1/8" bit is fully seated in the screw to avoid stripping the head.
- b) If any screw continues to rotate without reaching the set torque value the hardware is most likely sheared and a VTA replacement is required, proceed to section 1.7 – [Screw Missing or Broken – System Shutdown and Repair Scheduling](#) on page 14.



Caution

Do not over torque the hardware. The “click” indication from the torque wrench does not always produce an audible noise.



Figure 5 – Flat head hardware torque inspection tools

8. Skip to step 10.

Customer Technical Bulletin (cont.)

9. If system has **socket head screws**, set TLS-09648 to **76 in-lbs.** and slowly torque the marked screw in the tightening (clockwise) direction .
 - a) Make sure the 5/32" bit is fully seated in the screw to avoid stripping the head.
 - b) If any screw continues to rotate without reaching the set torque value the hardware is sheared and a VTA replacement is required, proceed to section 1.7 – [Screw Missing or Broken – System Shutdown and Repair Scheduling](#) on page 14.



Caution

Do not over torque the hardware. The “click” indication from the torque wrench does not always produce an audible noise.



Number	Description
1	TLS-11089, 5/32" Hex Bit
2	TLS-10950, 1/4" Square Drive x 1/4" Hex
3	TLS-11121, 1/4" to 3/8" Socket Adapter
4	TLS-11121, 6" Socket Extension
5	TLS-09648, Torque Wrench 40-200 in-lbs

Figure 6 - Socket head hardware torque inspection tools

Customer Technical Bulletin (cont.)

10. Inspect the torqued hardware closely to determine if the alignment mark on the screw head rotated relative to the bronze gear as shown in Figure 7.
- a) If the screw **DID NOT** rotate, the screw passes. Repeat step 7 (for flat head screws) or step 10 (for socket head screws) for the remaining readily accessible screws (1 & 3-8 per Figure 4). Once all readily accessible screws have been inspected, proceed to section 1.3 – [Final Screw Inspection](#) on page 9.
 - b) If the screw **DID** rotate, proceed to section 1.6 – [Screw Rotation Found – System Calibrations and Repair Scheduling](#) on page 14

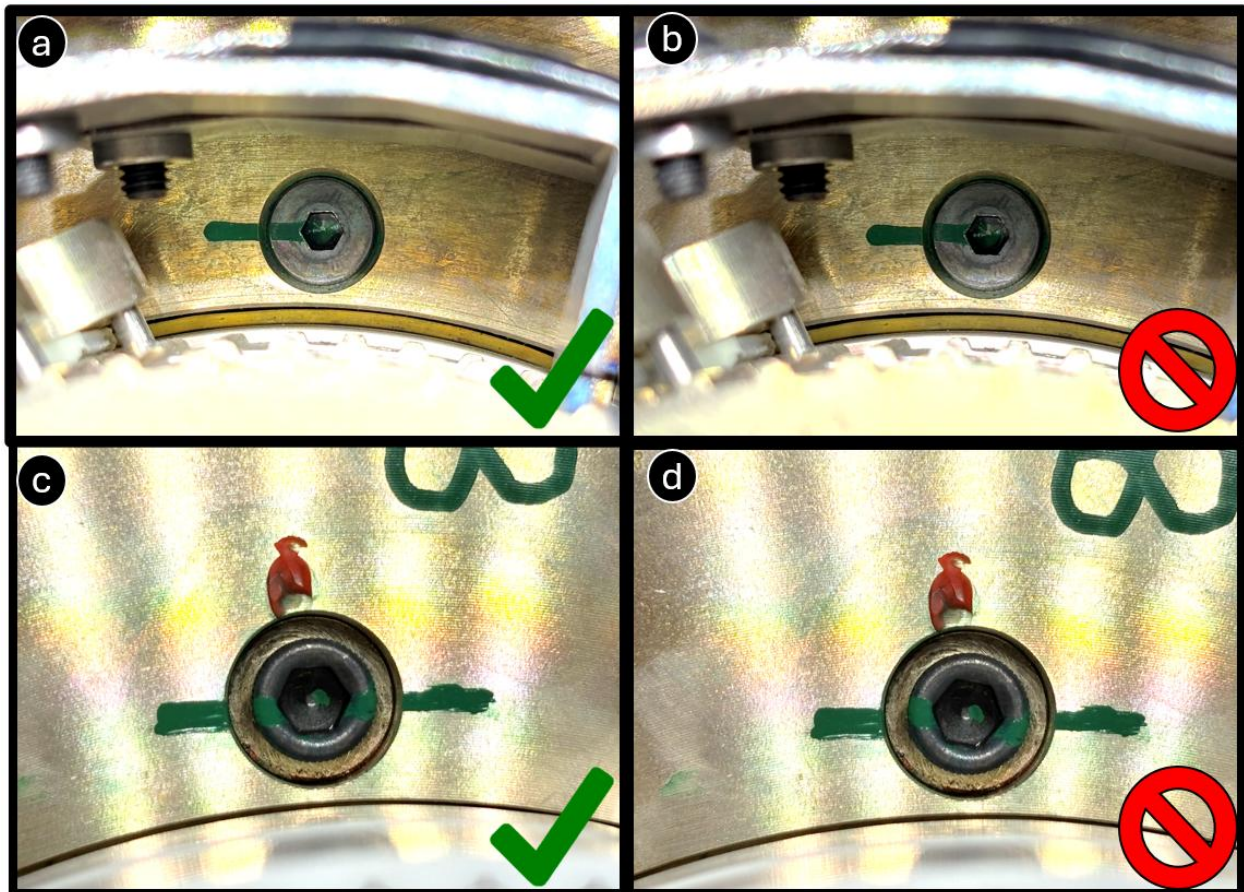


Figure 7 - Examples of No Rotation (a) & (c) and rotation (b) & (d) post torque inspection

Customer Technical Bulletin (cont.)

1.3. Final Screw Inspection

11. Using a 5/32" hex, remove the belt tensioner socket head screw closest to the center and loosen the other socket head screw. Rotate the tensioner mount clockwise around the remaining screw and retighten the remaining screw as shown in Figure 8.
 - a) Do not adjust the tensioner set screws.
 - b) Do not leave the tensioner mount loose as this can catch in the system when rotating.

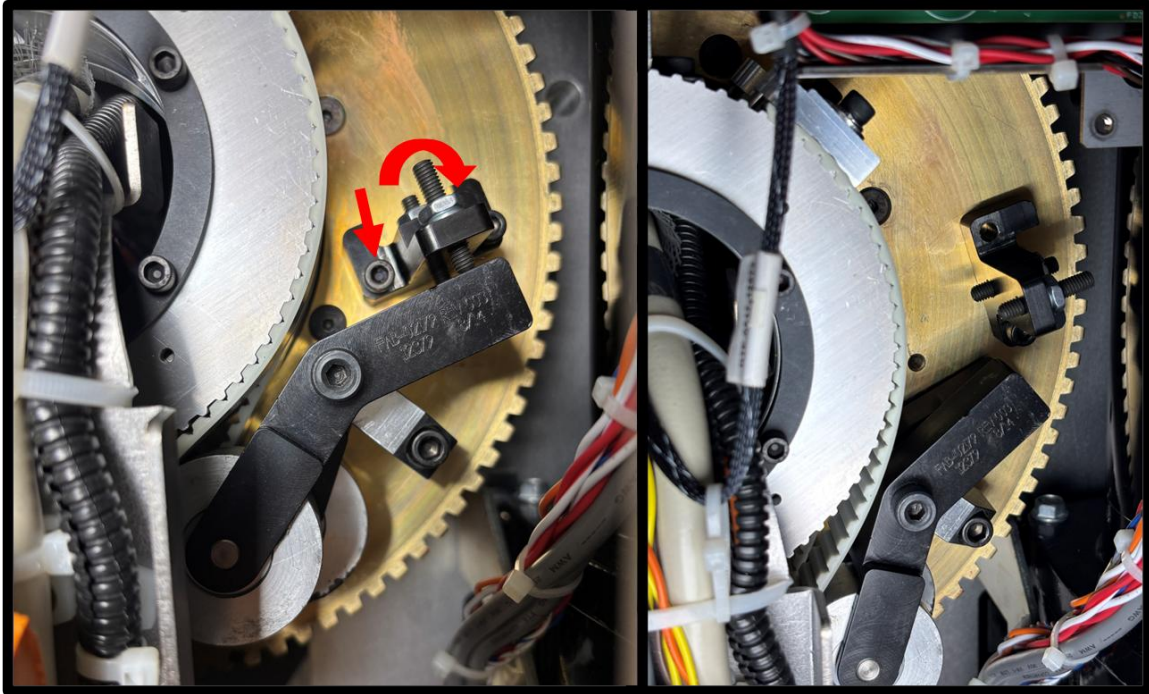


Figure 8 - Tensioner Mount before (left) and after repositioning (right)

Customer Technical Bulletin (cont.)

12. Remove the pivot screw and rollers then loosen and rotate the roller mount away from the VTA rotation screws as shown in Figure 9. Retighten the remaining hardware to secure in place.



Caution:

Failure to position and secure the tensions rollers as shown in Figure 9 (right) can result in contact with the system while rotating and shearing of the tensioner hardware.

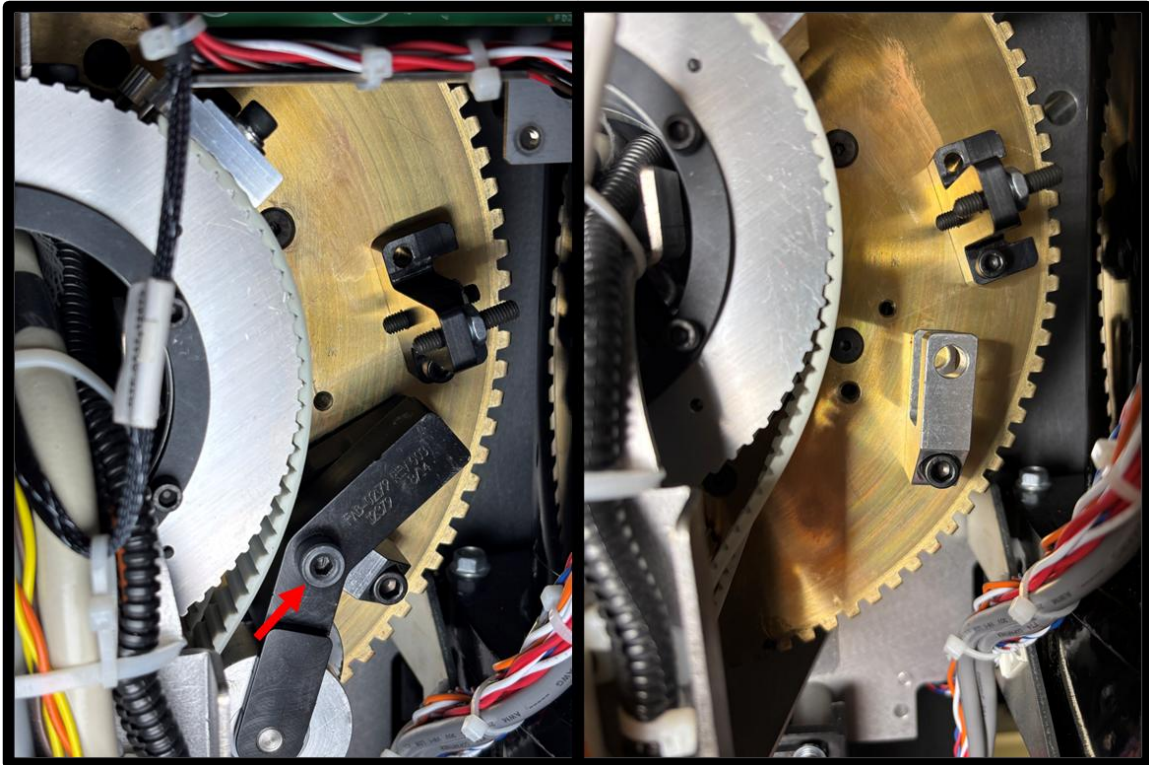


Figure 9 - Tensioner Rollers before (left) and after removal (right)

13. Use TLS-01064 power supply to rotate the system and center screws 2 and 7 executing steps 7 (for flat head screws) or 10 (for socket head screws) to torque inspect the final screws.
 - a) If the screws **DID NOT** rotate, the screws pass, proceed to section 1.5 – [All Screws Pass Inspection – System Calibrations](#) on page 12.
 - b) If either screw **DID** rotate, proceed to section 1.6 – [Screw Rotation Found – System Calibrations and Repair Scheduling](#) on page 14.

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1.4. Torx Screw, Visual Inspection Only

14. If the system has Torx driven hardware with existing green alignment marks, continue from this point.
15. Visually inspect the hardware closely to determine if the alignment marks on the screw heads have rotated relative to the bronze gear as shown in Figure 10.
 - a) If any screws **DID** rotate, proceed to section 1.6 – [Screw Rotation Found – System Calibrations and Repair Scheduling](#) on page 14.
 - b) If all screws have been visually inspected and passed, proceed to section 1.5 – [All Screws Pass Inspection – System Calibrations](#) on page 12.

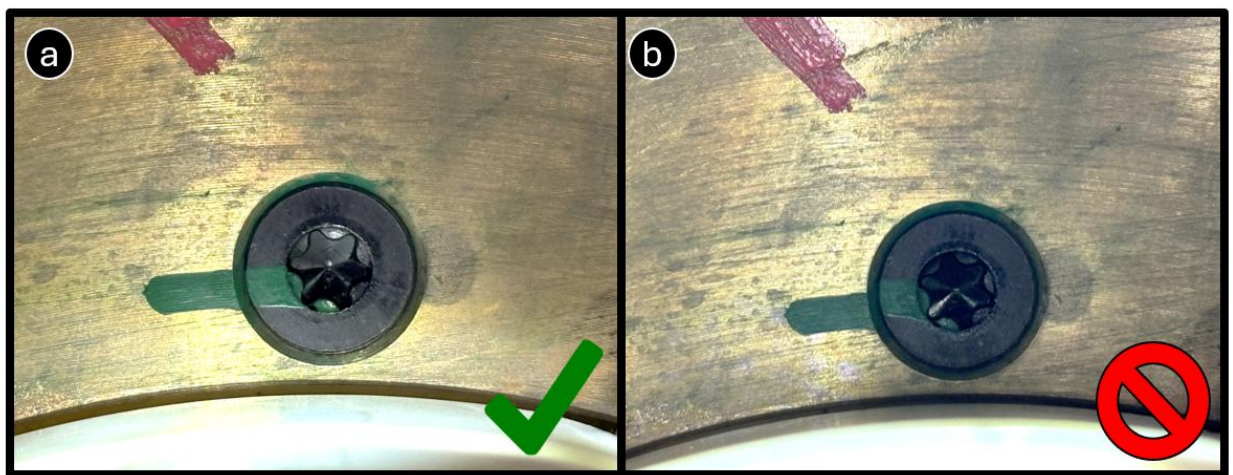


Figure 10 - Examples of No Rotation (a) and Rotation (b)



Caution:

If the tensioner assembly was disengaged, as described in Section 1.3 – [Final Screw Inspection](#), then Section 1.5 – [All Screws Pass Inspection - System Calibrations](#) must be executed in its entirety to return the system to proper operation.

Customer Technical Bulletin (cont.)

Post Inspection Steps

1.5. All Screws Pass Inspection – System Calibrations

16. Use the TLS-01064 power supply and TLS-01065 C-arm/Detector Alignment pin to center the tube arm relative to the C-arm as shown in Figure 11.



Note

It may be necessary to lower the C-arm to fit the TLS-01065 C-arm/Detector Alignment pin past the gantry bellows



Figure 11 - C-Arm and Tube head positioned at 180° with C-Arm positioned to engage alignment pin

17. Place the TLS-01065 C-Arm/Detector Alignment pin into the alignment holes for the detector as shown in Figure 12 to align the gears and white VTA belts.

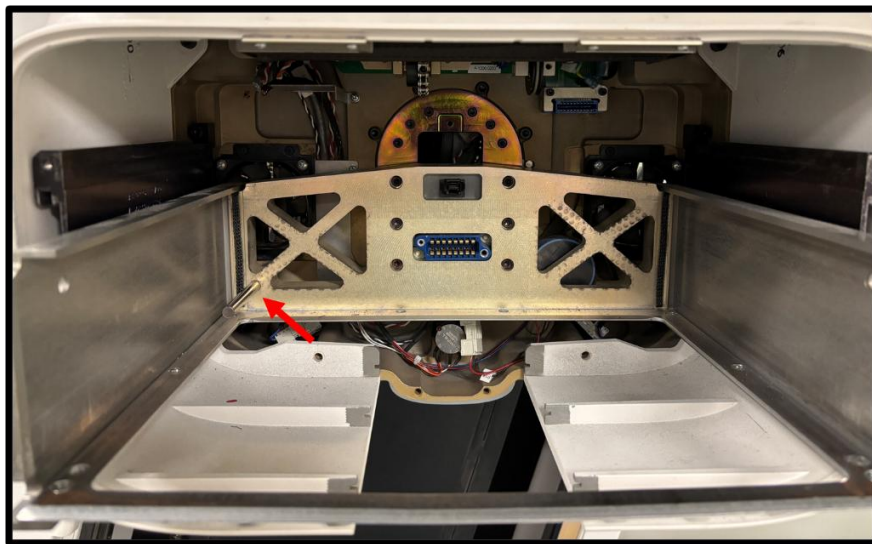


Figure 12 - C-Arm/Detector Alignment Pin in Alignment Hole

Customer Technical Bulletin (cont.)

18. With the TLS-01065 C-arm/Detector Alignment pin in the detector alignment hole, reinstall the belt tensioner mount and tension roller assembly disengaged in section 1.3 as shown in Figure 13.

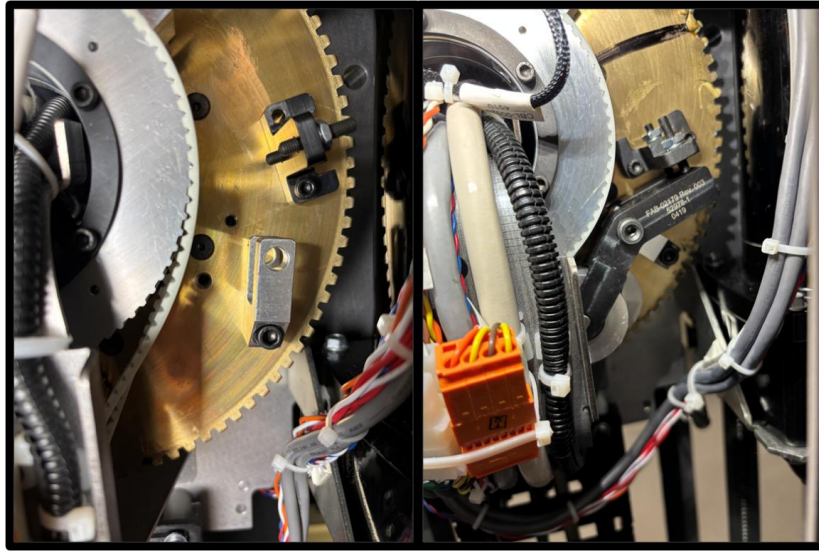


Figure 13 - Reinstall of Tensioner Roller Assembly

19. Remove the TLS-01065 C-Arm/Detector Alignment pin from the detector cradle.



Caution:

Failure to remove Alignment Pin can result in damage to the detector pullies.

20. Reinstall the detector and breast platform to the system
21. Reinstall the Gantry rear access panel and the front two panels.
22. Turn on the rear circuit breaker and power on the system. Launch CalTool and perform these calibrations:
 - a) C-Arm Zero Positioning (verify and calibrate if needed)
 - b) VTA Gains Calibration
 - c) VTA Tomo Motion Calibration
23. Exit CalTool and from the Windows desktop launch the Capture Application and perform the following, capturing screen shots of results to upload to the Work Order:
 - a) Geometry Calibration
 - b) Image Artifact Evaluation
 - c) Phantom Image Quality exposure(s) - for 2D and Tomo (if licensed)
 - d) Inspection complete. Return system for customer use. End of Procedure.

Customer Technical Bulletin (cont.)

1.6. Screw Rotation Found – System Calibrations and Repair Scheduling

24. If any single screw rotates during the inspection, continue with the procedure from this point.
25. Torque inspect all remaining screws following the instructions in steps 7-9 for the readily accessible screws and refer to section 1.3 – [Final Screw Inspection](#) on page 9 for the remaining screws to verify none have sheared.
 - a) If any screws shear, immediately skip to section 1.7 – [Screw Missing or Broken – System Shutdown and Repair Scheduling](#) on page 14.
26. Execute steps 16 – 23 to return system to operation.
27. Inspection complete. Schedule a screw replacement repair within 30 days. End of Procedure.

1.7. Screw Missing or Broken – System Shutdown and Repair Scheduling

28. If any single screw is found missing or sheared, proceed from this point.
29. Shutdown the system.
30. Inspection complete. Inform customer of the issue and schedule a VTA replacement (Reference TB-01143 – Dimensions VTA Replacement Procedure). End of Procedure.

Customer Technical Bulletin (cont.)

Appendix A – Instructions for use of TLS-01064 Power Supply

For troubleshooting purposes Hologic provides the TLS-01064 Power Supply to use for moving the Selenia Dimensions/3Dimensions C-Arm without the need of the system's control circuitry.

The power supply can directly interface with the Selenia Dimensions/3Dimensions Rotational and Vertical Motors along with Tomo, C-Arm, and Electromagnetic Lift Brakes to position the C-Arm in position suitable for servicing.



Caution:

To avoid damage, do not rotate C-Arm beyond 180°.

Procedure – Connecting to Selenia Dimensions/3Dimensions for C-Arm and/or Tubehead Rotation Control:

1. Remove the Top and Bottom covers of the gantry per the Selenia Dimensions/3Dimensions service manual. Offset the side covers per the Selenia Dimensions/3Dimensions service manual.

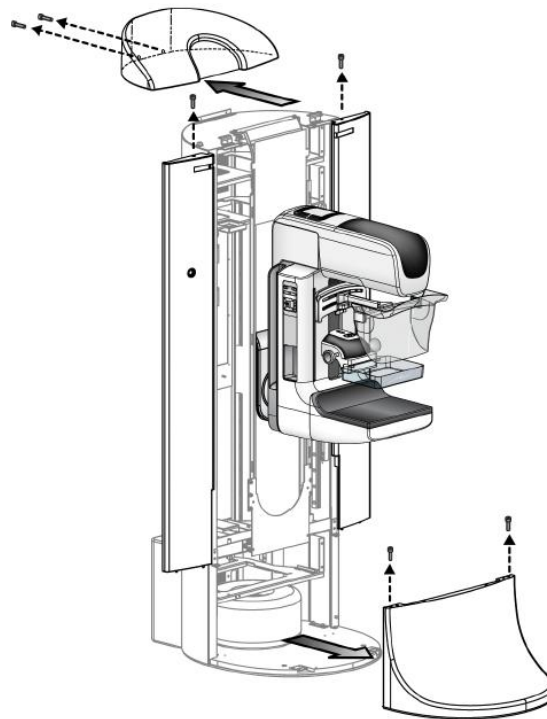


Figure 14 - Removing Top, Side and Bottom Covers of Gantry

Customer Technical Bulletin (cont.)

2. Remove upper rear panel on the gantry.
 - a. If possible, power on system and adjust the height of the C-arm to allow access to the VTA Control Board, P/N PCB-00154, from the upper rear panel opening.
3. Remove power by flipping the circuit breaker located at the rear of the gantry to OFF. Allow power to bleed down by waiting for 2 minutes.
4. Disconnect the rotation motor cable, WJ1, from the VTA Driver Board, P/N PCB-00155, and connect to the "MOTOR" cable on the TLS-01064 External Power Supply. (Reference Figure 3)

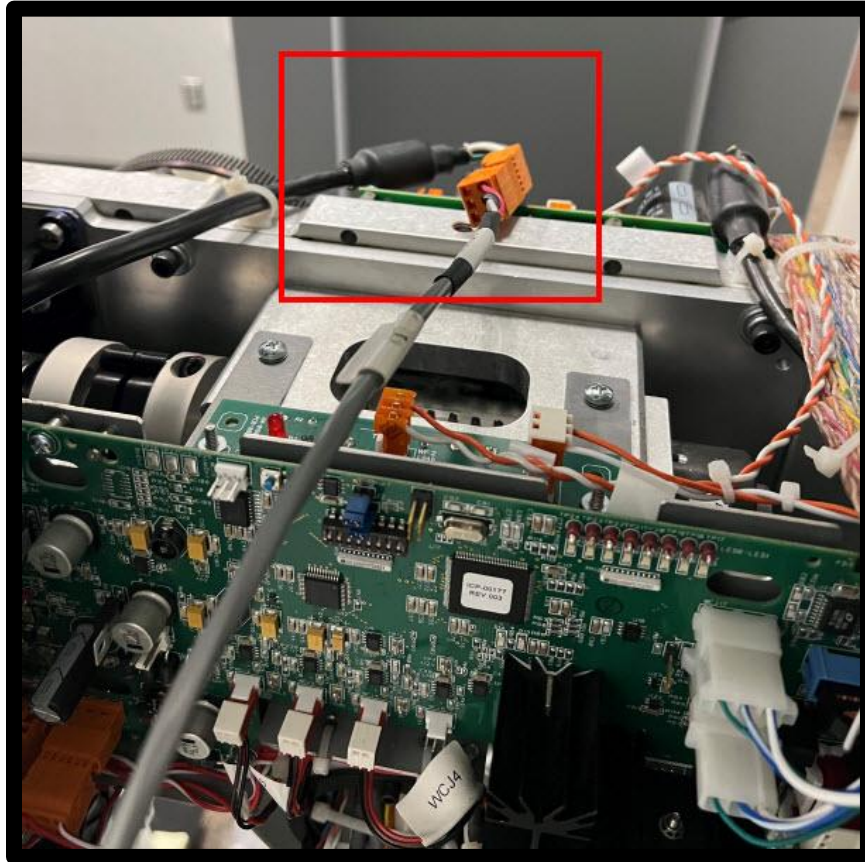


Figure 15 - Connecting TLS-01064 Power Supply to Rotation Motor

Customer Technical Bulletin (cont.)

5. Disconnect the rotation brake cable, WCJ11, from the PCB-00154 VTA Control Board, and connect to the "COMP ARM BRAKES" cable on the External Power Supply.
6. Disconnect the tomo brake cable, WCJ14, from the PCB-00154 VTA Control Board and connect to the "TUBE ARM BRAKES" cable on the TLS-01064 External Power Supply. (Reference Figure 4)



Figure 16 - Connecting TLS-01064 Power Supply to C-Arm and Tomo Brakes

7. On the TLS-01064 External Power Supply, verify that TUBE ARM and COMP. ARM Brake switches are set to "HOLD", and that the MOTOR toggle switch is in the middle position (OFF) before powering it on. (Reference Figure 5)



Figure 17 - Setup of TLS-01064 External Power Supply

Customer Technical Bulletin (cont.)



Warning:

Do NOT release the Comp. Arm and Tube Arm simultaneously. This will allow the compression portion of the C-arm to rotate into the hard stop on the tubehead and can cause damage to the system.



Warning:

Do NOT engage the Motor switch without releasing the desired brake. This can cause damage to the motor or c-arm brakes.

8. Plug in TLS-01064 External Power Supply to an accessible wall outlet.

- a. **For C-Arm rotation:** Release the Rotational Brakes by moving the COMP. ARM Toggle Switch to “RELEASE”. Move the MOTOR toggle switch to the clockwise (CW) or counterclockwise (CCW) position to move the C-Arm assembly accordingly.

Once in the desired position, move MOTOR toggle switch to the middle (OFF) position. Reengage the Rotational Brakes by moving the COMP. ARM Toggle Switch back to “HOLD”. Unplug TLS-01064 External Power Supply.

- b. **For Tubehead rotation:** Release the Tomo Brake by moving the Tube Arm Toggle Switch to “RELEASE”. Move the MOTOR toggle switch to the clockwise (CW) or counterclockwise (CCW) position to move the Tubehead assembly.

Once in the desired position, move MOTOR toggle switch to the middle (OFF) position. Reengage the Tomo Brake by moving the Tube Arm Toggle Switch back to “HOLD”. Unplug TLS-01064 External Power Supply.



Caution:

Do not leave C-Arm Brake energized for more than 5 continuous minutes to avoid overheating.

9. When work is complete, disconnect TLS-01064 External Power Supply. Reconnect rotation brake cable, WCJ11, and tomo brake cable, WJC14, to PCB-00154 VTA Control Board.
10. Reconnect rotation motor cable, WJ1, to PCB-00155 VTA Driver Board.