

<b>TS-1052</b>	<b>Replacement of Z-axis Drive Pulley Bearings (VX2/VXL/RETROS)</b>	<b>Document Owner:</b> Service Department	<b>Effective Date:</b> AUG-24-2022	<b>Page 1 of 6</b>
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## Purpose

This document provides the steps required to replace the drive pulley bearings in the Z-axis of the Sci-Print VX2/VXL/RETROS instruments.

## Intended Use

This procedure works for the *Rev. C* and *Rev. D* model Z-axes which require different sized bearings.

## Required Material and Equipment

- 2 x Drive Pulley Bearings (PN 2000-023 for Rev. C and PN 2000-494 for Rev. D)
- 2, 2.5 and 3 mm allen wrenches

## Intended Audience

Certified Scinomix Technician

## Prerequisites

N/A

## Procedure

1. Detach the grounding strap inside the instrument (back left corner of the lid).



Figure 1. (SNs < 0100 and instruments with the updated plastic lid will **not** have this grounding strap)

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- Remove the four Lid screws and pull up to remove the lid (keep it level).

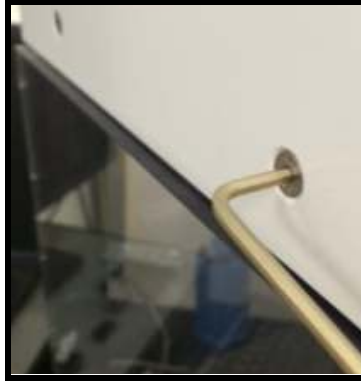


Figure 2.

- Find and adjust the belt-tensioning screw on top of the Z-arm until there is slack in the belt; this is important because the brass colored pulley needs to be removed in order to change the bearings.



Figure 3.

- Loosen the three or four Z-motor mounting screws on the other side of the Z-axis, and slide the motor towards the large pulley to remove tension on the power belt.

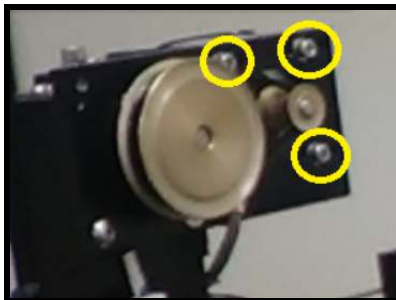


Figure 4.

- Find and loosen the single set screw on the collar of the large pulley, then remove the pulley from the shaft in which it is mounted.

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**Note:** It may be necessary to hold the small pulley on the opposite side and twist the large pulley while pulling out. A thin washer should be on the backside of this pulley. Save this washer for reinstallation.



Figure 5.

6. The bearing on the large pulley side should now be exposed.



Figure 6.

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7. Push or tap the shaft through the bearing; the small pulley on the other side and the shaft are removed together. Another shim washer may also be on the small pulley side.

**Note:** When these bearings fail, the shaft may become stuck and is therefore difficult to remove. Use of a hammer and a punch or screwdriver may be needed to tap the shaft through the bearings.



Figure 7.

8. The bearing on the small pulley side should now be exposed.



Figure 8.

9. Remove the bearings from both sides of the Z-axis.
10. Insert the new bearings on both sides, making sure they are mounted flush.

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11. Replace the small pulley and shaft into the bearings, (with the shim washer if present) and seat the belt on the pulley.
12. Replace the shim washer on the large pulley side and remount the large pulley to the shaft.

**Note:** There should be a flat side on the shaft. Mark the end of the shaft to denote the direction/orientation of the flat side to make it easier to identify and tighten the set screw onto the flat.



Figure 9.

13. Seat the power belt onto the large pulley.
14. Push the Z-motor away from the large pulley to add some tension to the belt and tighten the 3 x Z-motor mounting screws.

**Note:** The belt needs to be taut, but applying too much tension can cause the belt to fail.

15. Test for function before replacing the lid.

*If you need additional assistance, please call our service department at 314-298-9800 or email [service@scinomix.com](mailto:service@scinomix.com).*

## Definitions

N/A



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### Revision History

<b>Version:</b>	<b>Change:</b>	<b>Effective Date:</b>	<b>Approved by:</b>
A	NEW	MAY-05-2020	B. Petty
B	Content review <i>Intended Use</i> added	AUG-24-2022	Service