


Document Title		Upgrade to use 4 Groove Capstans					
Document #	Rev	Type	Reason	Recommendation	Original Release Date	Updated Date	
ZSB-015	G	Service Bulletin	Performance Enhance	Optional	2015/05/07	2023/02/28	

Upgrade to use 4 Groove Capstans



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Serving Helicopter Rescue Hoist Users Worldwide

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Purpose	Performance Enhance	
Recommendation is Mandatory or Optional	Optional	

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1. Introduction

Purpose: To alert the Hydraulic RHGSE Users of an Upgrade that extends the service life of the capstans.


Reason: The Hydraulic RHGSE was originally intended to be used for Preflight, Post flight, and daily maintenance of the rescue hoist cable. The user community has various technical criteria from the hoist OEMs maintenance manuals that has resulted in the RHGSE being used at higher loads, and at higher speeds on a regular basis than was originally envisioned. At the higher loads and speeds the capstans wear faster and the slippage between the cable and the capstan increases.

The result of the excessive wear is excessive slip on the capstans and increased twist on the cable between the capstans and the Rotatub. By increasing the number of turns on the capstan, slippage is reduced considerably. Therefore, by making the first groove stainless steel the wear on the first groove due to higher constant loading is eliminated.

Included Items:

- Qty. 2 – 4 Groove Capstans
- Qty. 2 – ZGS-10123-3 Capstan Key
- Qty. 1 – ZGS-10096-1 Spacer
- Qty. 8 – 10-32 x 1-1/4" screws
- Qty. 1 – 90298A622 Shoulder screw
- Qty. 1 – A7X8-C12375 .375" spacer
- Qty. 2 – Gauge Pins

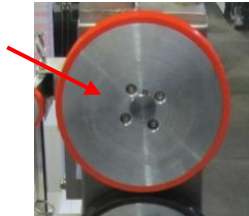


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Instructions:

2. Remove Old Capstans

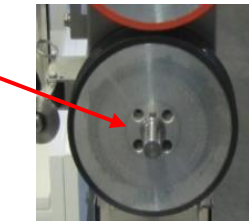
Step 1
Remove (4)
10-32 x 1-1/4" screws and
remove the Upper
Capstan (Orange).
Discard hardware.



Step 2
Remove the capstan
key and discard it.



Step 3
Remove (4)
10-32 x 1-1/4" screws and
remove the Lower
Capstan (Black).

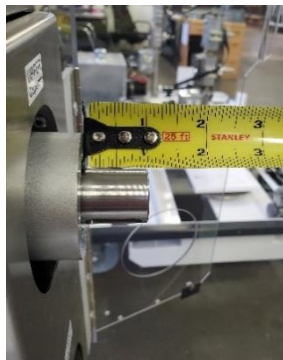


Step 4
Remove the capstan
key and discard it.

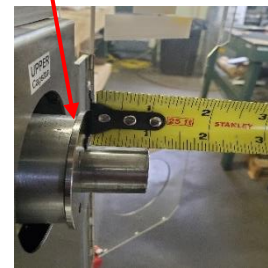


3. (If applicable) Addition of ZGS-10096-1 Spacer for Upper Capstan

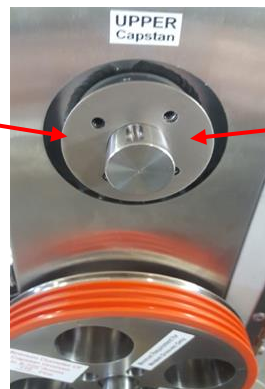
Step 1
Verify the distance from
Upper Capstan Attachment
to Upper Capstan drive
shaft is approximately 1
inch. If distance is 1",
proceed to section 5. If
distance is approximately
1.1 inches, continue here.




**ZGS-10096-1 added to
bring distance to 1"**



Step 2
Install the included
ZGS-10096-1 "Capstan
Spacer" on Shaft and
the align the 4 through
holes.



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4. Install New 4 Groove Capstans

Step 1
Install the included Capstan Key's into the keyway on each Shaft.

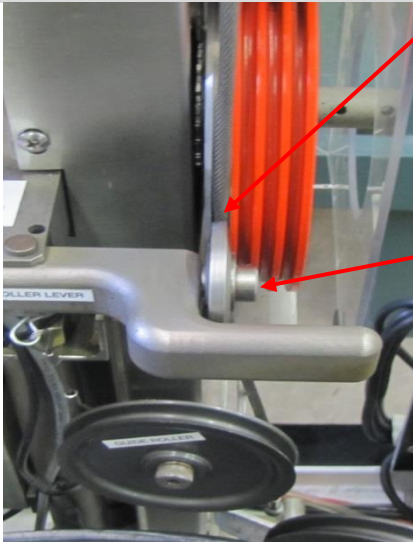


Step 2
Install the 4 Groove Capstans using (8) of the included 10-32 x 1-1/4" screws.

Use Anti-Seize compound on Capstan Hardware



5. Pressure Roller Alignment Check




Alignment of Pressure Roller to the center of the first groove in the lower capstan should be adjusted if found to be 'off center'.

Alignment of Pressure Roller can be accomplished by shifting the roller on its bearing in the direction desired to achieve center alignment.

If needed, remove the pressure roller by unscrewing the shoulder screw and place pressure roller with its bearing in a press. Support bearing.

Shift roller in the proper direction on its bearing to achieve alignment. In most cases shifting of roller on its bearing has been .015" - .020".

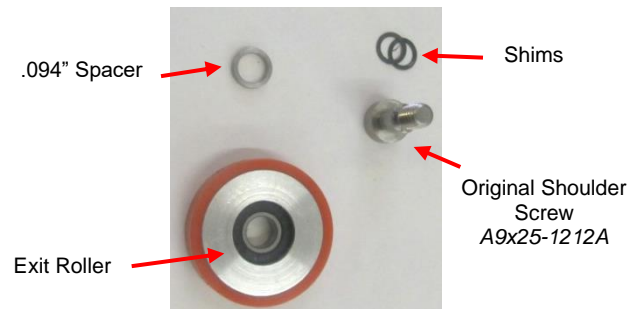
Reinstall the Pressure Roller on shoulder screw and attach to arm using Loctite to secure the shoulder screw.

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6. Exit Roller Extension for 4 Groove Capstan

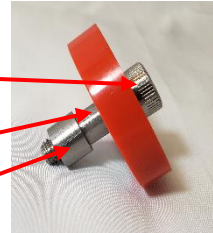
Step 1

Remove Exit Roller Assembly. **Retain the .094" spacer and Exit Roller for reassembly.** The A9X25-1212A Shoulder Screw and any shims that may be present can be discarded.



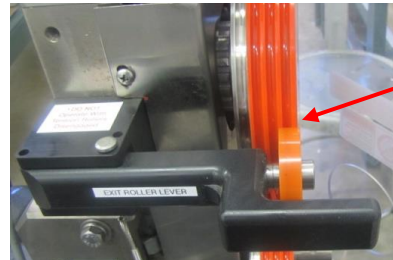
Step 2

Assemble the Exit Roller using the Included 90298A622 Shoulder Screw. Add first the retained .094" spacer. Then add (1) supplied .375" spacer.



Step 3

Install Exit Roller assembly. **DO NOT over tighten.**



Step 4
Verify Exit Roller locates in the center of the first groove on the new 4 Groove Capstan.

Assembly Complete

Price / Availability: Contact Zephyr International for information.