


Document Title		Upgrade to use 4 Groove Capstans				
Document #	Rev	Type	Reason	Recommendation	Original Release Date	
ZSB-015	A 2016/08/30	Service Bulletin	Performance Enhance	Optional	2015/05/07	

## Upgrade to use 4 Groove Capstans (Hydraulic RHGSE Only)



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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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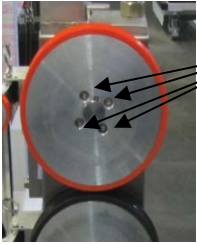
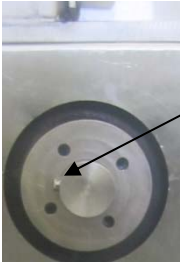
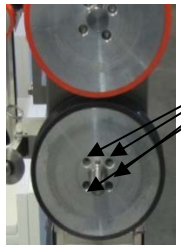

**Purpose:** To alert the Hydraulic RHGSE Users of an Upgrade that extends the service life of the capstans.


**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 then 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.

**Procedure:**

Remove Old Capstans

<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-right: 10px;">1</div>  <div style="margin-left: 10px;"> <p>Remove (4) 10-32 x 1-1/4 screws (Screws can be discarded) from the Upper Capstan (Orange) And remove old Capstan</p> </div> </div> </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-right: 10px;">2</div>  <div style="margin-left: 10px;"> <p>Verify the .7 Key is still in place</p> </div> </div> </div>
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-right: 10px;">3</div>  <div style="margin-left: 10px;"> <p>Remove (4) 10-32 x 1-1/4 screws (Screws can be discarded) from the Lower Capstan (Black) And remove old Capstan</p> </div> </div> </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-right: 10px;">4</div>  <div style="margin-left: 10px;"> <p>Verify the .8 Key is still in place</p> </div> </div> </div>

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### Install New ZGS-10506-1 Upper Capstan (In Box noted as Upper)

1



Install new ZGS-10506-1 attach using the

Supplied (4) 10-32 x 1-1/2 screws

**Use Anti-Seize compound on Capstan Hardware**



### Install New ZGS-10506-1 Lower Capstan (In Box noted as Lower) This will also be Orange Alignment of Pressure Roller to First Groove of Lower 4 Groove Capstan

1



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.

Remove pressure roller by unscrewing shoulder screw. 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".

Remount pressure roller on shoulder screw and attach to arm using Loctite to secure the shoulder screw.

2




Install new ZGS-10506-1 attach using the

Supplied (4) 10-32 x 1-1/2 screws

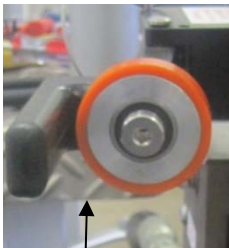
**Use Anti-Seize compound on Capstan Hardware**




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### Exit Roller Spacer Change

**1**



Exit Roller Assembly



.094 Spacer

Exit Roller

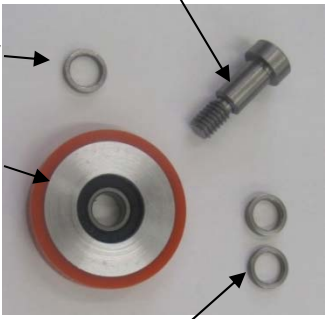
Shims

A9X25-1212A Shoulder Screw

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

**2**

A9X25-1220A Shoulder Screw

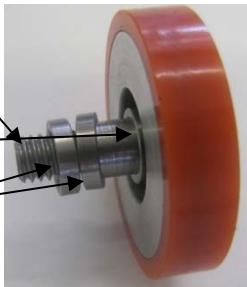


.094 Spacer

Exit Roller

.125 Spacers

Assemble Exit Roller using  
Supplied A9X25-1220A Shoulder Screw




The retained .094 spacer

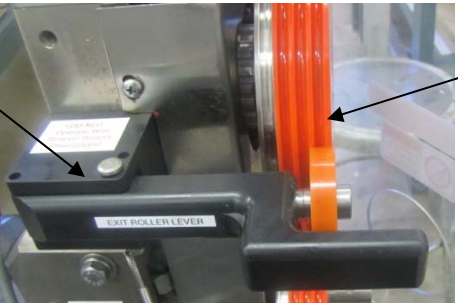
The (2) Supplied .125 spacers

### Attach Exit Roller Assembly and Verify location to Capstan

**1** Attach Exit Roller Assembly



**2** Engage Exit Roller Lever



Verify Exit Roller locates in the center of the first Groove on the new Capstan

Assembly Complete

**Price / Availability:** Contact Zephyr International for information.