


Document Title		Vertical Belt Alignment for Zephyr Hydraulic RHGSE				
Document #	Rev	Type	Reason	Recommendation	Original Release Date	
ZSB-013	C 2016/11/22	Service Bulletin	Performance	Mandatory	2015/05/07	

Vertical Belt Alignment



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Purpose	Performance	
Recommendation is Mandatory or Optional	Mandatory	

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Purpose: To alert users of the need to pin the capstan attachment to the shafts of the RHGSE.

Reason: There is a possibility the vertical belt between the upper and lower pulleys may be out of alignment due to movement of the upper or lower pulley. This bulletin provides a check and corrective action and also provides a permanent fix going forward.

Description of the problem: The timing of the capstans to the Rotatub is accomplished via two pulleys. The upper pulley is attached to the lower capstan drive shaft and the lower pulley is attached to the right angle gearbox shaft. If either of these pulleys move out of position, then improper timing between the capstans and the Rotatub may result in excessive wear on the belt and most importantly improper timing between the capstans and the Rotatub. Thus causing the cable to ride to the top of the Spooler during operation. If the cable escapes the Rotatub and Spooler during operation the cable may be twisted and kinked as a result.

Belt wear has been noted on several units that were used under repeated high loads. There have also been reports of the cable escaping the tub and being damaged.

Background: Both capstan pulleys are locked to their shafts via (2) setscrews which are set with Loctite. If the setscrews loosen, then the pulleys can move outward, and the vertical drive belt then is forced to ride up on a shoulder of the lower capstan chain sprocket. The increase in diameter of the belt riding on the shoulder causes the speed of the Rotatub to be greater and thus the timing between the Rotatub and the capstans is thrown off.

The lower pulley is attached either with a taper lock bushing or via two setscrews. If the taper lock bushing loosens or the setscrews loosen, the pulley may move and the result is the same as stated above.


Check: A simple check is to pull on the capstan towards the end of the shaft. If it is loose or moves, do not use the RHGSE until the situation has been corrected. The lower pulley position can be measured.

Root cause solution: is to pin the pulleys to the shafts to prevent any movement. This has been incorporated into all units from **H01130513** for Hydraulic units and **M01010613** for Manual units and **E00010813** for Electric units

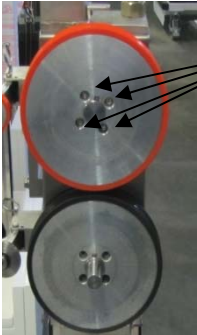
Effectivity: This bulletin applies to all Hydraulic RHGSE before S/N **H01130513**, and all Manual RHGSE S/N before **M01010613**. The last four digits of the serial number represents the month and year the equipment was manufactured. However, any RHGSE that has already been refurbished might have already have been pinned. If your unit was refurbished at our shop, you would see a “refurbished” label on the RHGSE next to the serial number. Please contact us via email with your serial number and we can confirm if your RHGSE was already pinned.

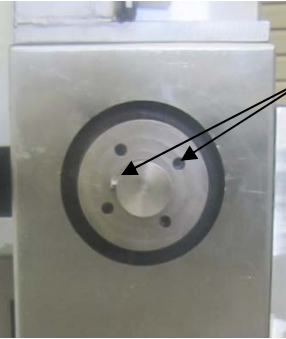

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Procedure: Remove Capstans




1  Remove (4) 10-32 x 1-1/4 screws (set aside for reassembly) Upper Capstan (Orange) And remove old Capstan


2  Remove the .7 Key and Spacer and set aside for reassembly This will leave the pulley exposed 

3  Remove (4) 10-32 x 1-1/4 screws (set aside for reassembly) Lower Capstan (Black) And remove old Capstan

4  Remove the .8 Key and Spacer and set aside for reassembly This will leave the pulley exposed 

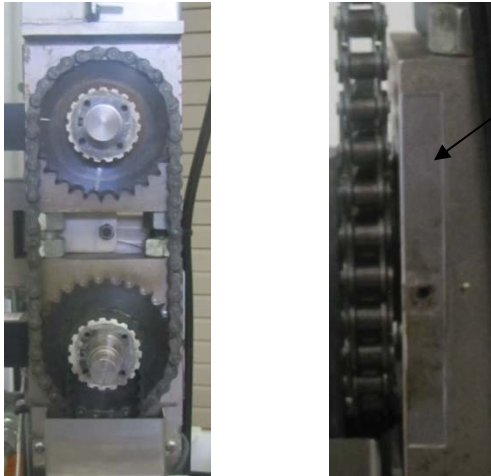
Remove the Chain Guard

1  Chain Guard  Remove (4) screws and set aside for reassembly from the Chain Guard (2 on each side) 

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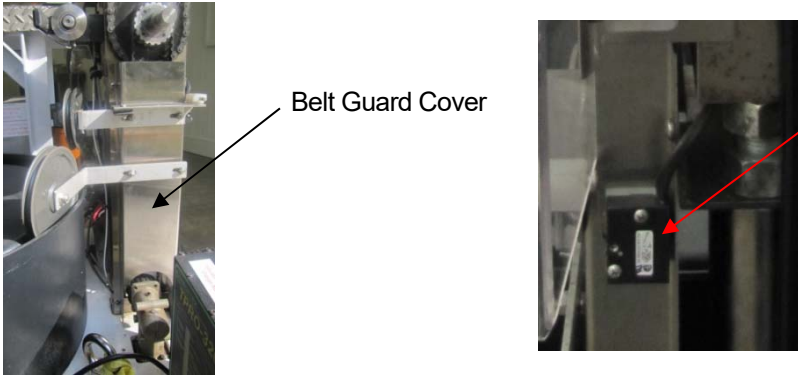
Remove Chain Guard



Verify that plastic shims (4) remain in place on each side of both heads
Attach with Super Glue if needed

Removing the Belt Guard Cover

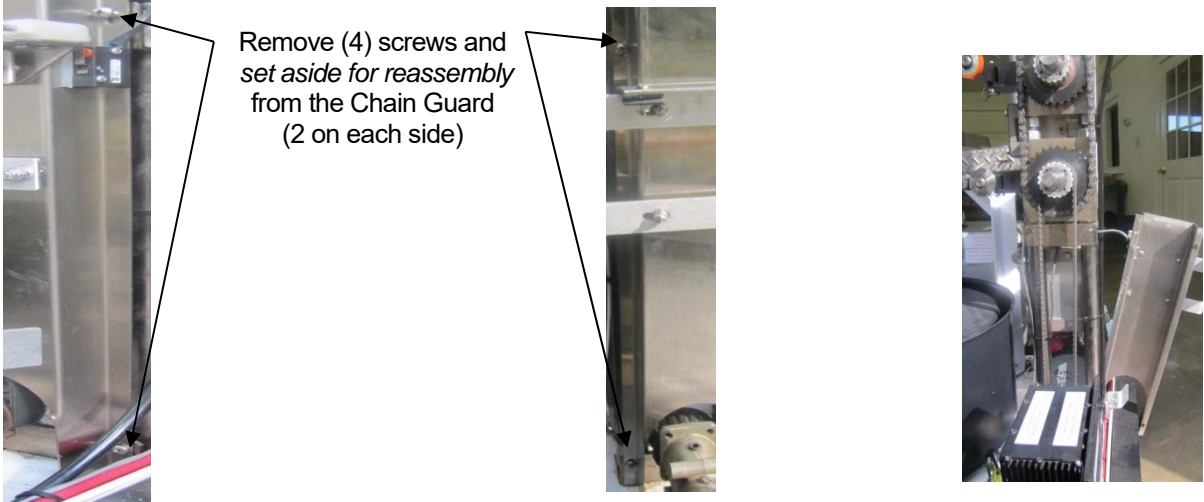
1




Belt Guard Cover

Remove Limit Switch (If applicable)
Set aside for reassembly

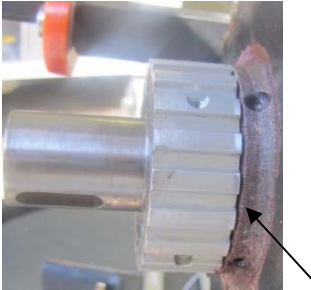

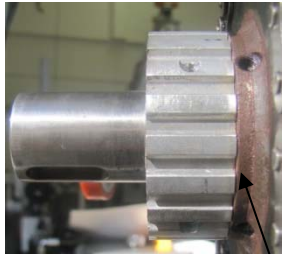
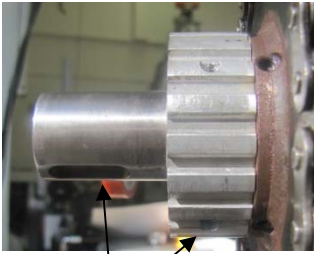
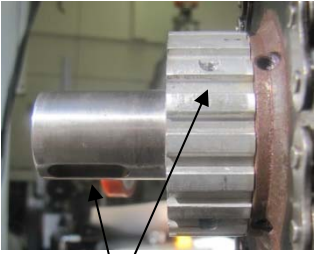

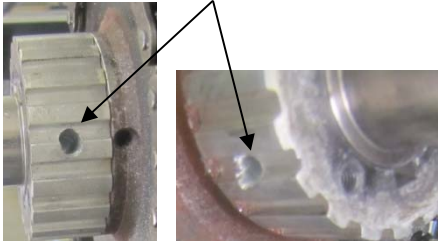
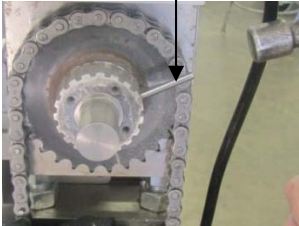
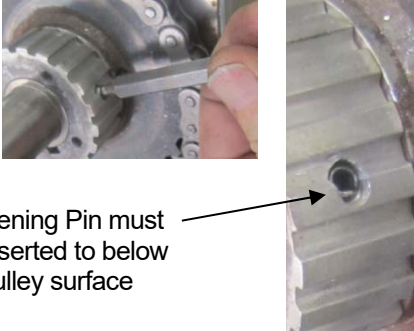
2




Remove (4) screws and set aside for reassembly from the Chain Guard (2 on each side)

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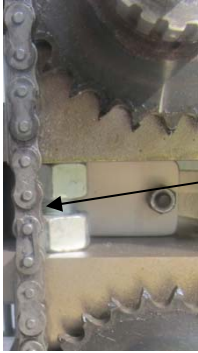
Drilling and securing Pulley on Upper Capstan Head

<p>1</p>  <p>Verify the pulley is flush to the sprocket <i>(If space is visible between pulley and sprocket proceed to next step)</i></p>	<p>2</p>  <p>Locate the (2) set screws and loosen slightly</p>	<p>3</p>  <p>Tap pulley back into place so it is flush with the sprocket</p>
<p>4</p>  <p>Tighten the set screw that is located directly in line with the key location</p>	<p>5</p>  <p>Remove & discard the set screw that is located away from the key</p>	<p>6</p>  <p>Drill the entire way through the pulley and shaft using a 3/16" drill bit</p>
<p>7</p> <p>Check each hole location and remove any burrs that remain</p> 	<p>8</p> <p>Insert the ZGS-10803-1 3/16" x 2" Fastening Pin</p> 	<p>9</p>  <p>Fastening Pin must be inserted to below pulley surface</p>

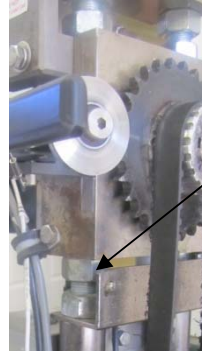
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Removing the Chain and Vertical Belt

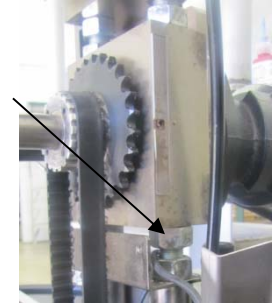
1



Remove the master link in the chain
Note: the link must be located between the top and bottom head for easy removal



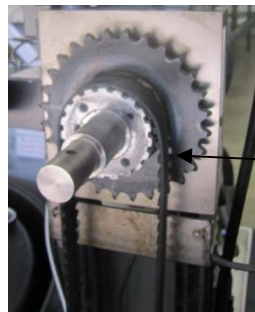
Loosen the nuts below the bottom head (2) places so the head will move slightly downward



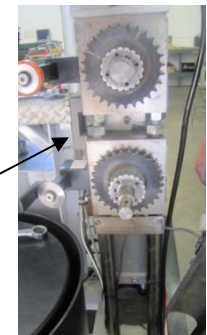
2



Remove the lower bolt from the Load Brake Support

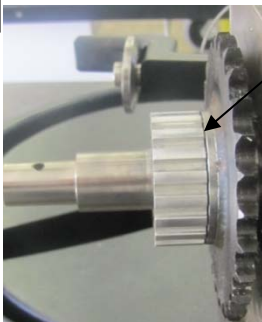


Belt will loosen and can be removed



Drilling and securing Pulley on Lower Capstan Head

1




Verify the pulley is flush to the sprocket
(If space is visible between pulley and sprocket proceed to next step)

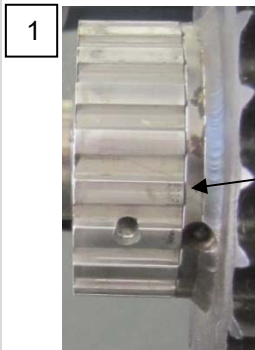
2



Locate the (2) set screws and loosen slightly

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Drilling and securing Pulley on Lower Capstan Head



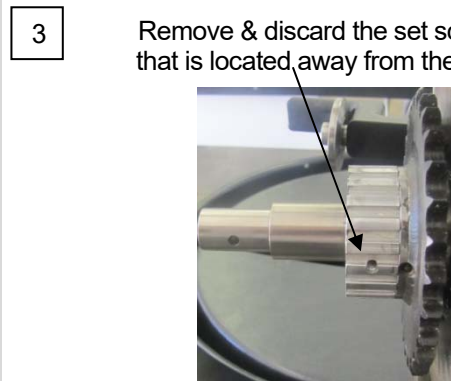
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Tap pulley back into place so it is flush with the sprocket



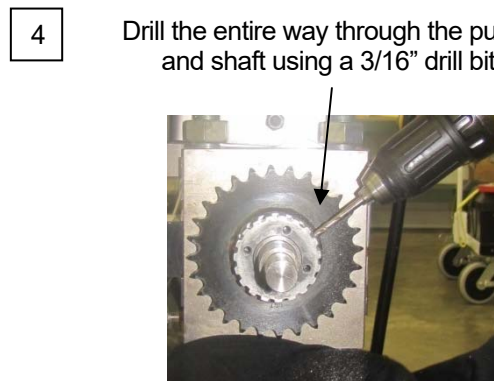
2

Tighten the set screw that is located directly in line with the key location



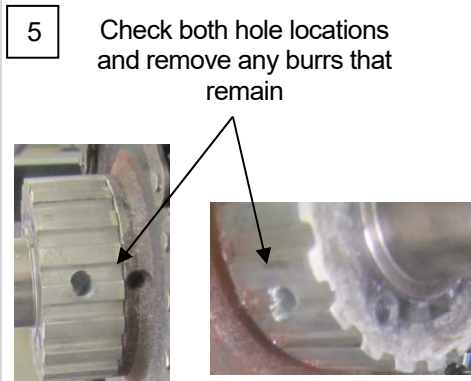
3

Remove & discard the set screw that is located away from the key



4

Drill the entire way through the pulley and shaft using a 3/16" drill bit



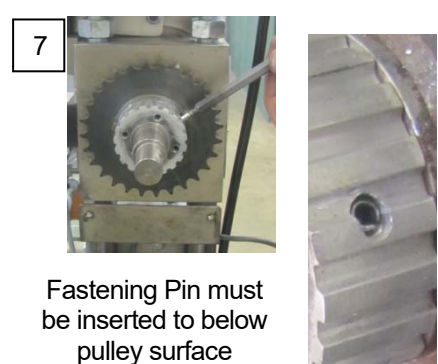
5

Check both hole locations and remove any burrs that remain




6

Insert the ZGS-10803-1 3/16" x 2" Fastening Pin






7





Fastening Pin must be inserted to below pulley surface

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Attach the Vertical Belt

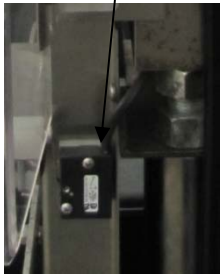
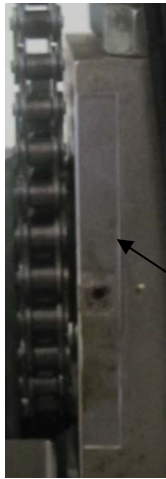
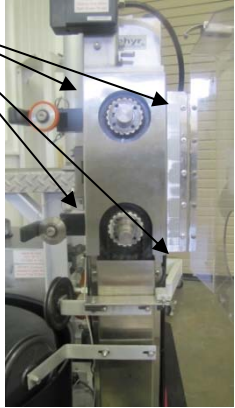
<p>1</p>  <p>Attach the vertical belt to the unit</p>	<p>2</p>  <p>Retighten the nuts below the bottom head (2) places so the head will move back into position to the top nuts</p> <p>Tighten such that the belt deflects about 2mm with 0.5 kg force at the mid-point</p>	<p>3</p>  <p>Reattach the lower bolt from the Load Brake Support</p>
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Attach the Chain and the Vertical Belt Guard Cover

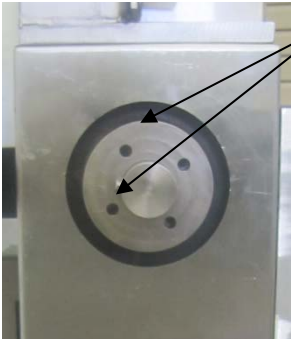

<p>1</p> <p>Reattach the chain <i>Note: the master link must be located between the top and bottom head for easy assembly</i></p> 	<p>2</p>  <p>Reattach using the (4) screws that were removed from the Chain Guard (2 on each side)</p>  
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Attach the Limit Switch and Chain Guard

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<p>1</p> <p>Attach Limit Switch (If applicable)</p> 	<p>2</p>  <p>Attach using the (4) screws that were removed from the Chain Guard (2 on each side)</p> <p>Verify that plastic shims (4) remain in place on each side of both heads <i>Attach with Super Glue if needed</i></p> <p>Chain Guard</p> 
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Attach Upper and Lower Spacers and Keys

<p>1</p>  <p>Attach the spacer and .7 key that were removed from the Top Head</p>	<p>2</p>  <p>Attach the spacer and .8 key that were removed from the Bottom Head</p>
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Procedure Complete

After checking your capstans in accordance to "ZSB-008 Capstan Check and Upgrade Service Bulletin". Reinstall your capstans.

Price / Availability for the ZGS-10803-1 Fastening Pin: Contact Zephyr International for information.