


Document Title		Description of Service Bulletin				
Document #	Rev	Type	Reason	Recommendation	Original Release Date	
ZSB-008	A 2016/09/26	Service Bulletin	Proper Maintenance	Mandatory	2012/12/04	

Capstan Check and Upgrade



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Serving Helicopter Rescue Hoist Users Worldwide

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Purpose	Proper Maintenance	
Recommendation is Mandatory or Optional	Mandatory	

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ZSB-008 Capstan Check and upgrade Service Bulletin

Purpose: To advise ZGSE users:

- 1) Effects of worn capstans and cable diameter,
- 2) The procedure to check the capstans,
- 3) To advise the various part number capstans available for the various size cables
- 4) To advise on the replacement procedures.

Effect of rescue hoist cable diameter

The rescue hoist cable diameter is an important variable that affects the way the cable is collected in the rotating tub of the Zephyr ground support equipment. The cable diameter does vary according to the way the wire rope manufacturer produces the cable and there are also several different cable diameters being used worldwide today. The table below correlates the cable diameters to the correct capstans that should be used with the cable.

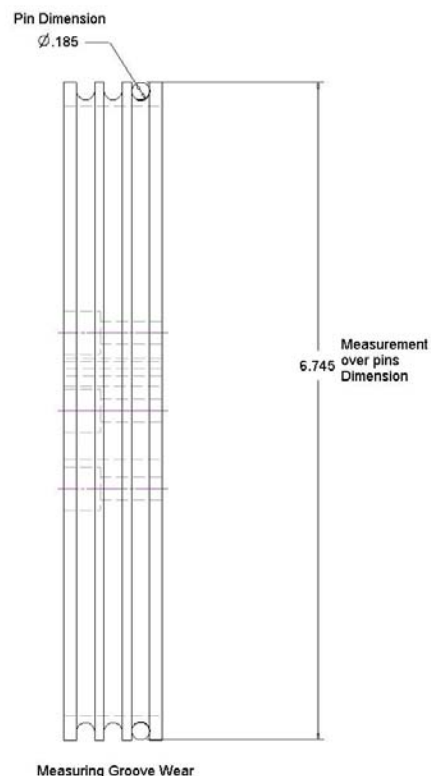
Effect of worn capstans


The capstans will wear as a result of slipping and heavy loading over time. The first groove on the lower capstan will wear first because it has the heaviest load applied to it. For RHGSE that are being used with a 600 lbs capable hoist the lower capstan is black and a harder material than the upper capstan. When the wear of the capstans becomes significant the cable will slip excessively on the capstans. The results may be seen as the cable starting to ride to the top of the spooler or twisting of the cable between the top of the RHGSE and the rescue hoist.

Checking the Capstans

It is essential to replace the capstans when the pitch diameter of the first groove, of the lower roller becomes too small. To check the pitch diameter a 6-7 inch micrometer is required and a set of pins of the correct diameter is required.

There are several capstans available for the different size cables in use. It is important to use the correct part number capstans for the type of cable being serviced. The following table lists the relevant dimensions for each capstan style



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Lower Capstans

Cable Diameter	Lower Capstan Part number	Measurement Pin diameter	Minimum dimension over pin
3/16 inch	ZGS-10113-20-1	.185	6.745 in
4.5 mm	ZGS-12474-1	.175	6.725 in
5/32 inch	ZGS-10113-30	.156	6.715 in
3.5 mm	ZGS-10340-1	.132	6.695 in
1/8 inch	ZGS-10113-40	.120	6.685 in







Note: ZGS-12474-1 can be used for 3/16 and 4.5 mm cables.

Upper Capstans

Cable Diameter	Upper Capstan Part number	Measurement Pin diameter	Minimum dimension over pin
3/16 inch	ZGS-10113-20	.185	6.745 in
4.5 mm	ZGS-12474-2	.175	6.725 in
5/32 inch	ZGS-10113-30	.156	6.715 in
3.5 mm	ZGS-10340-1	.132	6.695 in
1/8 inch	ZGS-10113-40	.120	6.685 in

Capstan Replacement

The capstans can be easily replaced when required. Also, if different size wire rope is to be serviced then the capstans will have to be changed to accommodate the different wire rope diameters.

Replacing Capstans					
	<p>Open the cover and remove the (4) 10-32 x 1-1/2 screws from the upper capstan. Remove old capstan <i>(Note: that the upper capstan uses longer screws than the lower capstan.)</i></p>		<p>Verify the .7 Key has remained in its location</p>		<p>Install new upper Capstan (Orange) and attach using the (4) 10-32 x 1-1/2 screws</p>
	<p>Remove (4) 10-32 x 1-1/4 screws from the Lower Capstan (Black) And remove old Capstan</p>		<p>Verify the .8 Key has remained in its location</p>		<p>Install new lower capstan (Black) and attach using the (4) 10-32 x 1-1/4 screws</p>