

Rigging Projects

Steering Hub - Fwd User Guide



RP4294- GSH-F - UG - 01

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Caution

The Rigging Projects Steering Hub has been tested extensively to ensure the safety and function of the product. However, it is important for the users to understand the risks involved in the event of a mechanical failure and loss of steerage. Ensure there is a qualified person on active watch during the use of product. Failure to take safety precautions could lead to severe injury or death.

Introduction

This manual provides an overview of the Rigging Projects Geared Steering Hub-Fwd and its maintenance. Please read this manual carefully before installation, use or maintenance, to ensure that you have understood and are familiar with all relevant details.

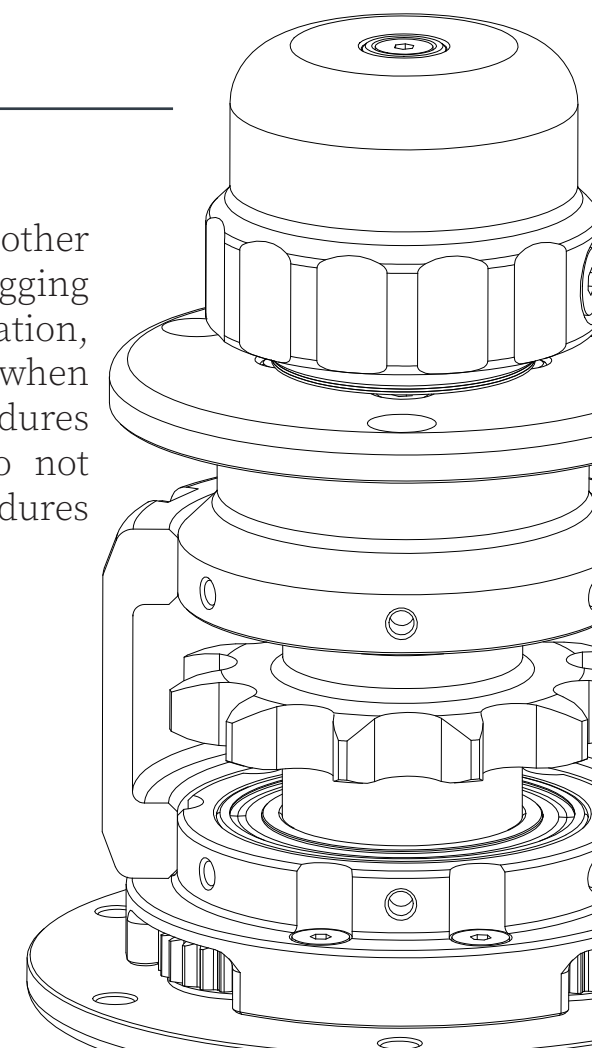
Prior to using this product, all persons should be made aware about the possible hazards associated with its operation and use. Any service work, repairs maintenance or equivalent work carried out on the product should be undertaken by technically qualified persons.

Key Design Features

- Patented, clutchless gearing mechanism incorporated in the head sprocket of the steering system
- Seamless transition from one setting to another with a simple turn of the handle
- Maximise the helmsman's driving experience by reducing the load by up to 25% in the steering wheel while reaching or running
- The Steering Hub can be installed in new builds or retrofitted into existing vessels

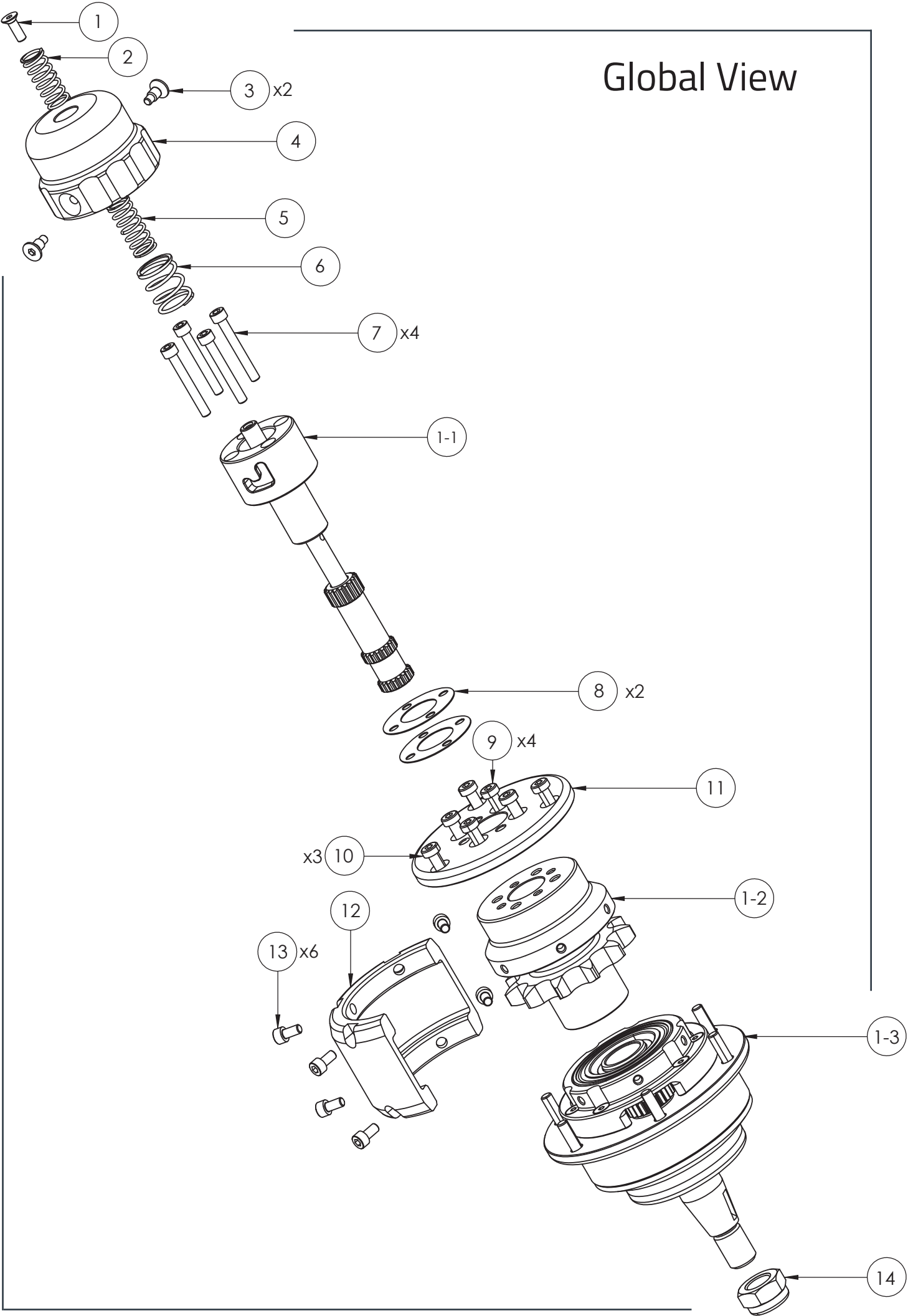
Disclaimer

It is not permitted to modify the product or its parts, other than replacing parts specified in this manual. Rigging Projects Ltd is not liable for any dangerous situation, accidents, damage and consequences thereof caused when deviating from the instructions, guidelines and procedures described in this manual. To retain warranty do not deviate from the instructions, guidelines and procedures described in this manual.



Diag #	Part #	Description	Qty
1-1		KNOB: MAIN BODY ASSEMBLY	1
1-2		SPROCKET ASSEMBLY	1
1-3		HELM SHAFT ASSEMBLY	1
1		M5 x 15 SOCKET CSK HEAD SCREW	1
2		COMPRESSION SPRING	1
3	RP3899	GUIDING SCREW	2
4	RP3898	KNOB	1
5		COMPRESSION SPRING	1
6		COMPRESSION SPRING	1
7		M5 x 40 SOCKET HEAD CAP SCREW	4
8	RP3490	SHIM	1
9		M6 x 14 SOCKET LOW HEAD CAP SCREW	1
10		M6 x 20 SOCKET LOW HEAD CAP SCREW	1
11	RP3460	FWD PLATE	1
12	RP4037	BRIDGE	3
13		M5 x 10 SOCKET HEAD CAP SCREW	4
14		M16 PREVAILING TORQUE NUT	1

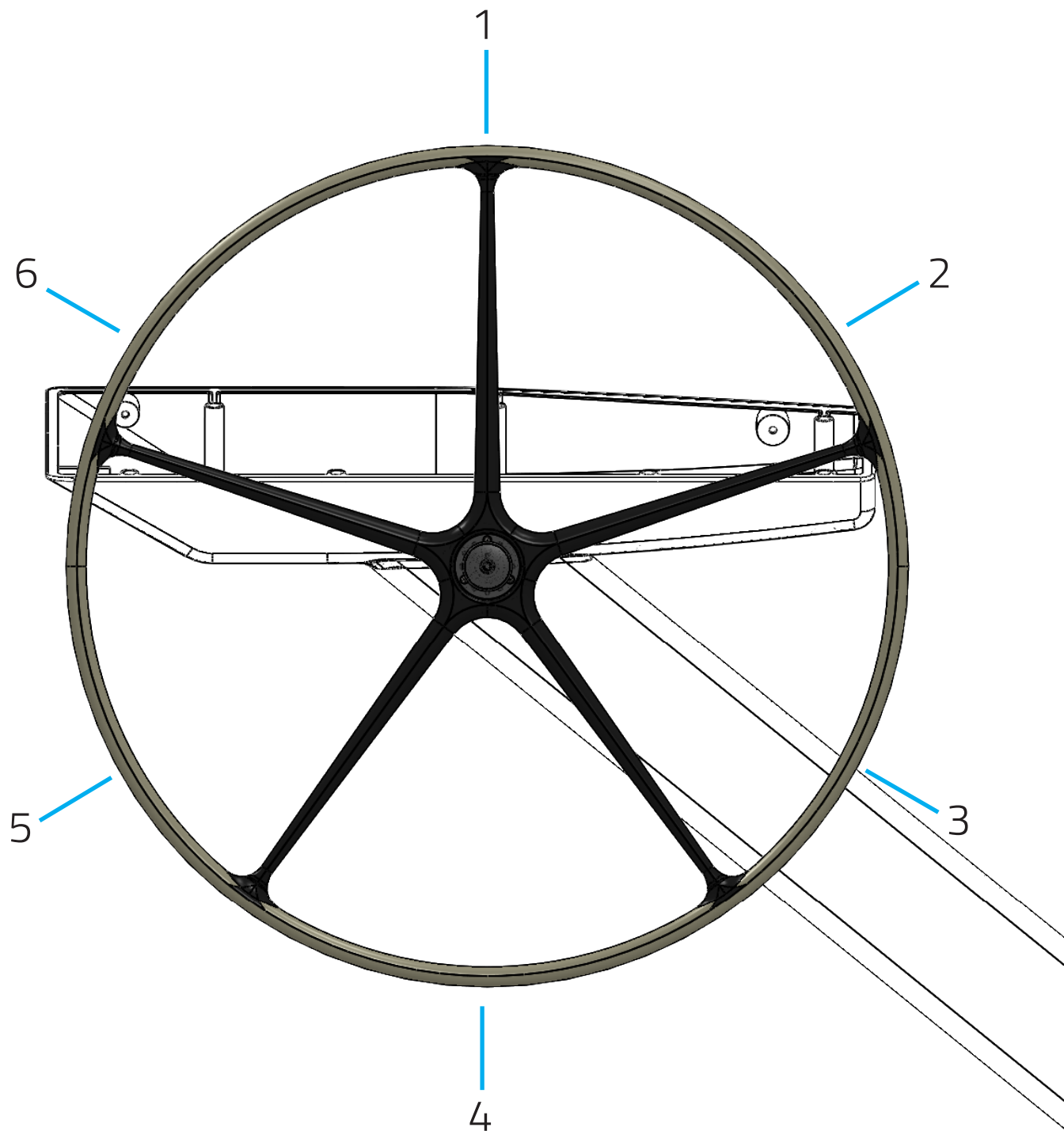
Diagram numbers do not corresponding to Technical Drawings.



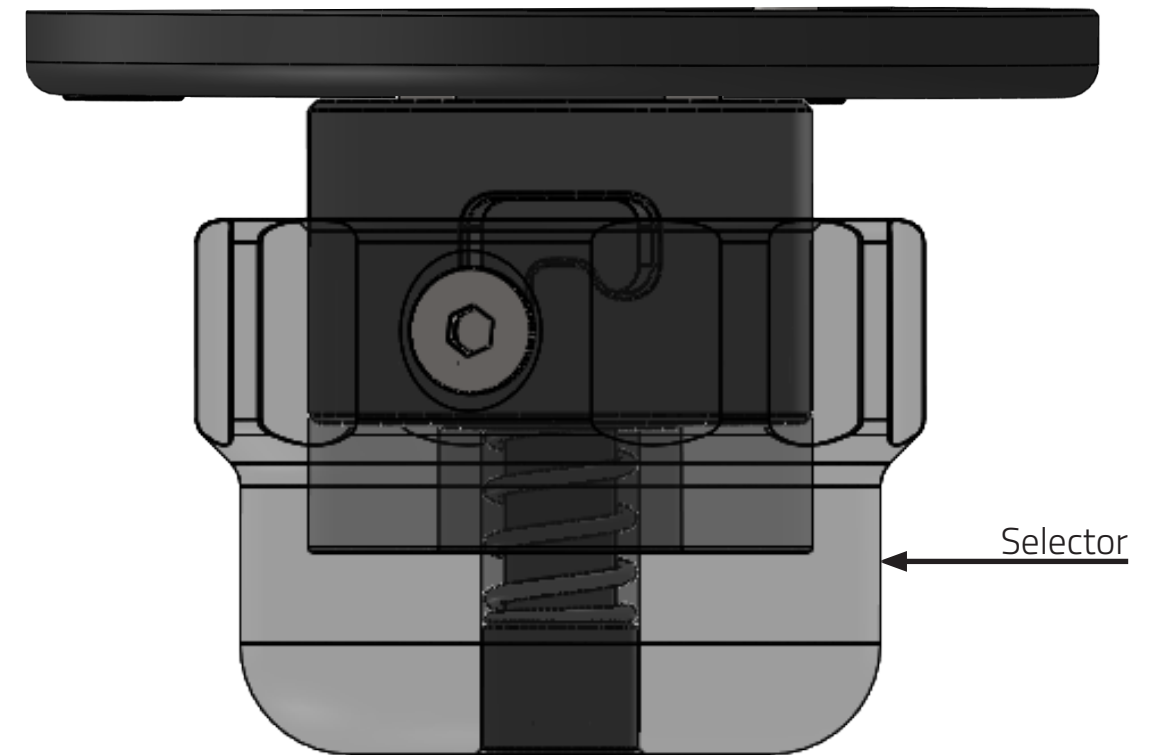
Engagement Positions

In order for the selector to engage effectively, the wheel must be in one of these six positions. In the process of changing gears, **continue to turn the wheel** to find one of these positions and the selector will self engage.

Gear changing will be more effective if there is reduced load on the steering.

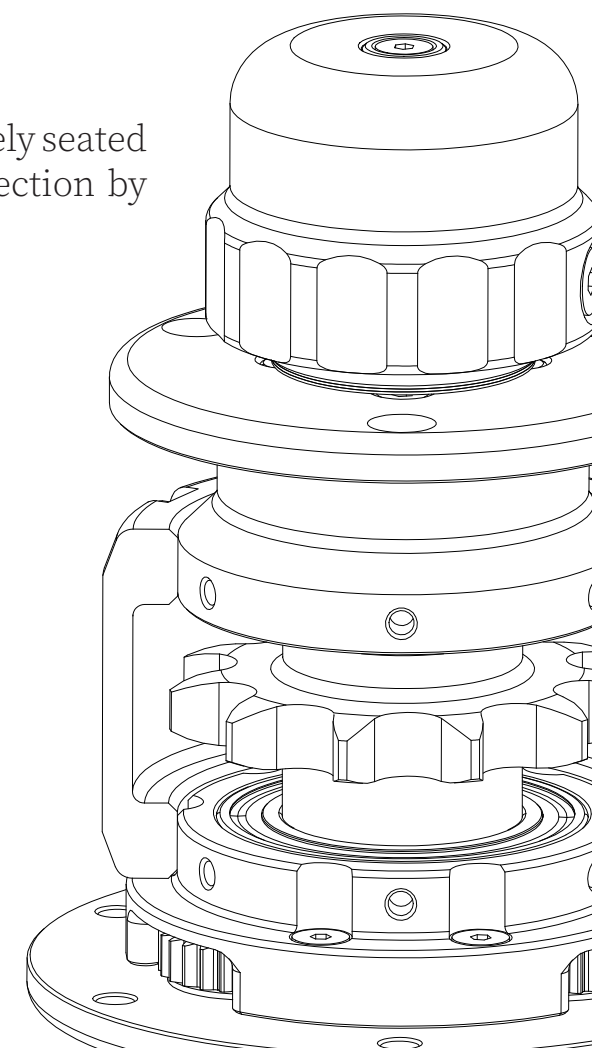


Engagement Positions

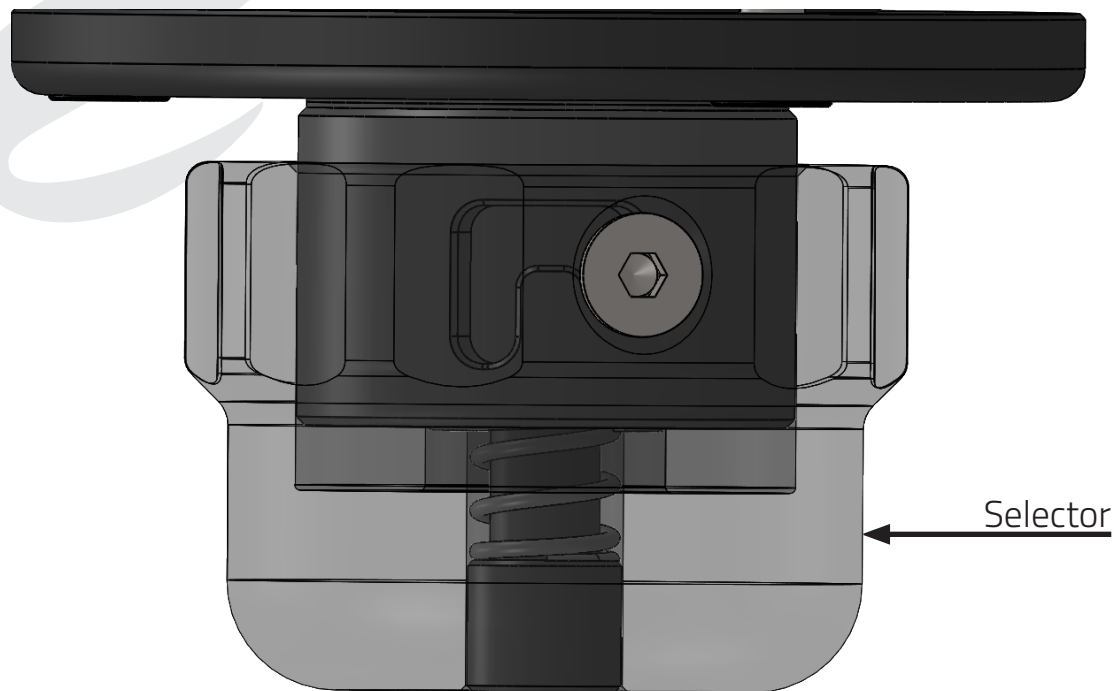


Direct 1:1

- Push selector and rotate counter clockwise
- The user should feel the selector being effectively seated towards the wheel by the spring, confirm selection by attempting to rotate gently
- The selector will be fully extended

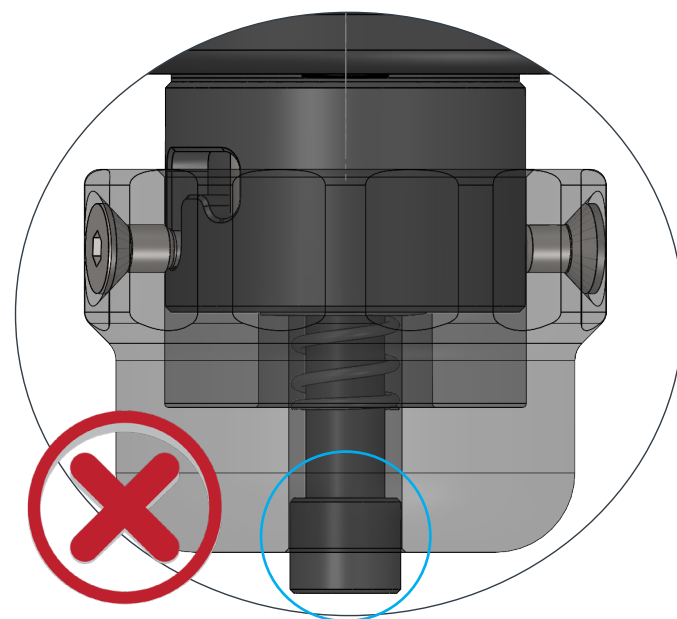


Engagement Positions



Reduced

- Push selector and rotate clockwise
- The user should feel the selector being effectively seated into the hand
- The geared steering hub is activated and there will be a reduction in load felt at the wheel
- The selector will be fully compressed



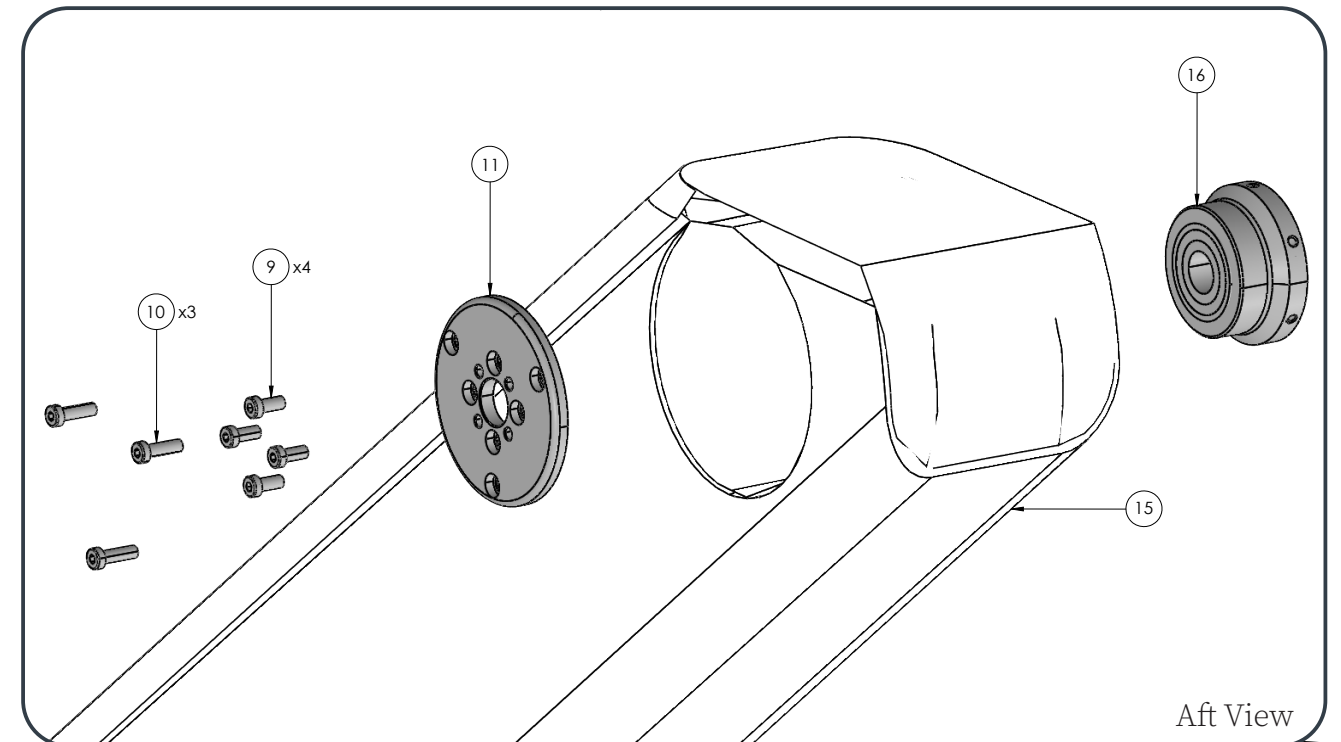
If gear is selected and the shifting assembly is not flush to the selector, the gear is not effectively engaged. Reduce the load on the hub and rotate the wheel until the selector self engages

Installation Guide

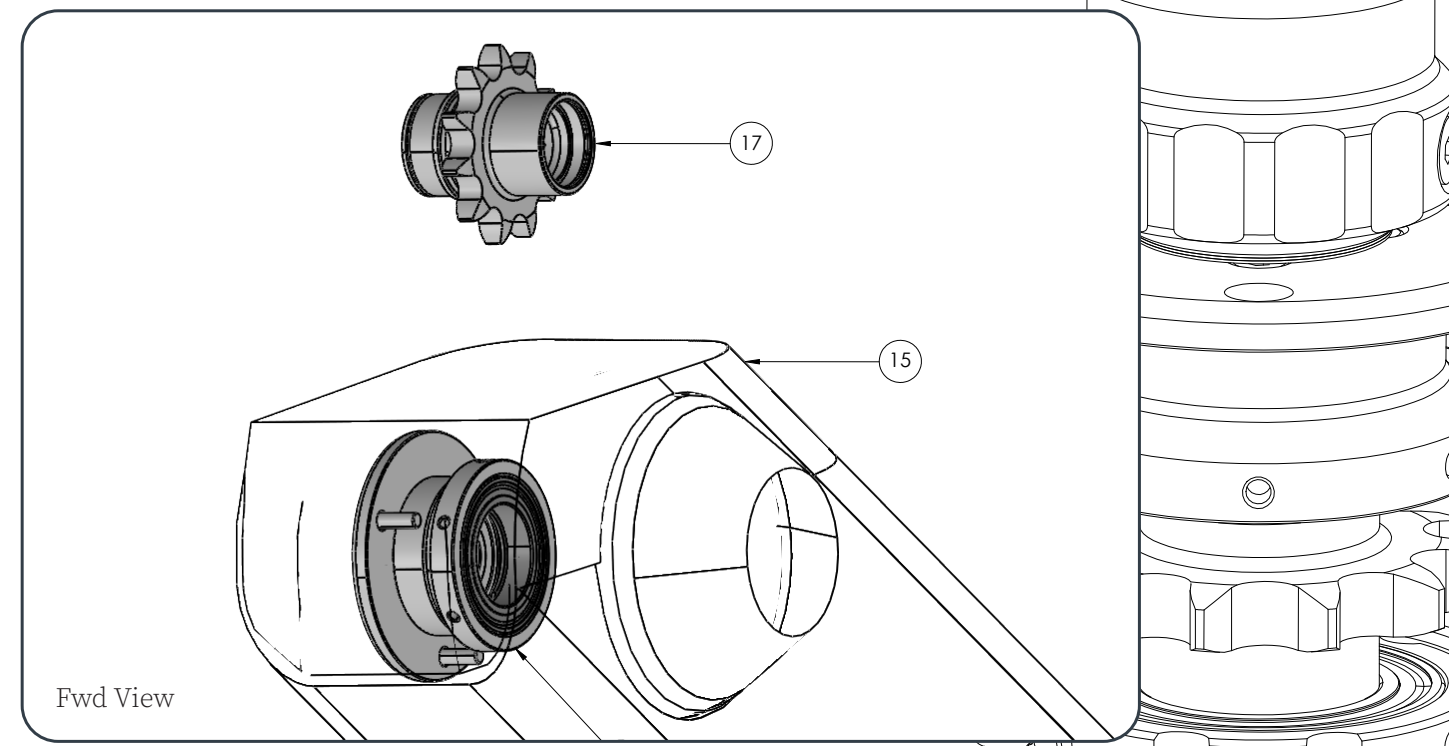
Please note: this is a generic guide for installation of the fwd activating geared steering hub and the installation may vary depending on the arrangement of the steering position

Hand tighten fasteners during the initial phase of installation

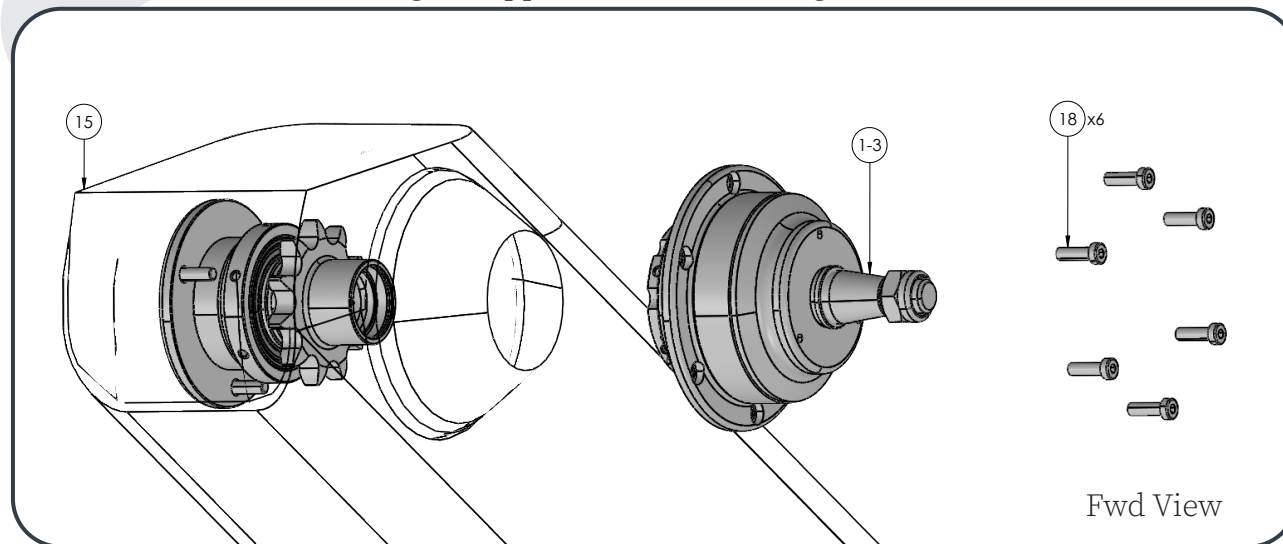
01 The fwd plate (11) is secured the pedestal (15) with 3x M6 x 20 cap head fasteners (10). The forward sprocket bearing (16) is secure to the fwd plate with 4x M6 x 14 cap head fasteners (9).



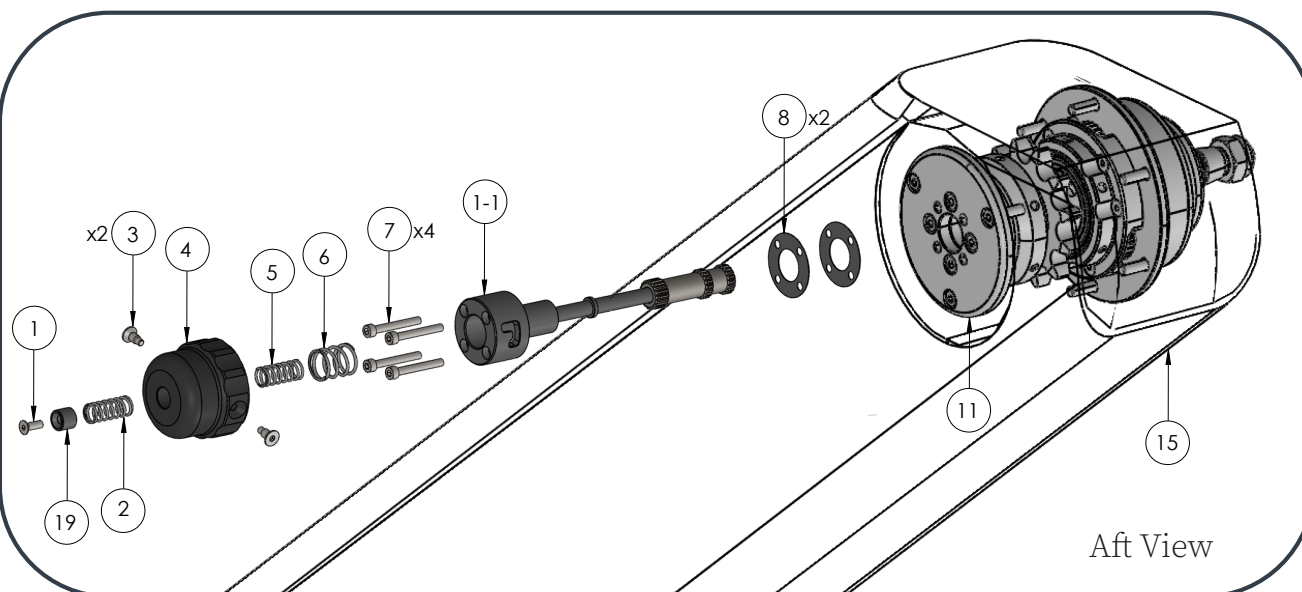
02 The chain is installed on the sprocket (17) and the sprocket is installed into the sprocket bearing (16) from the top of the pedestal (15)



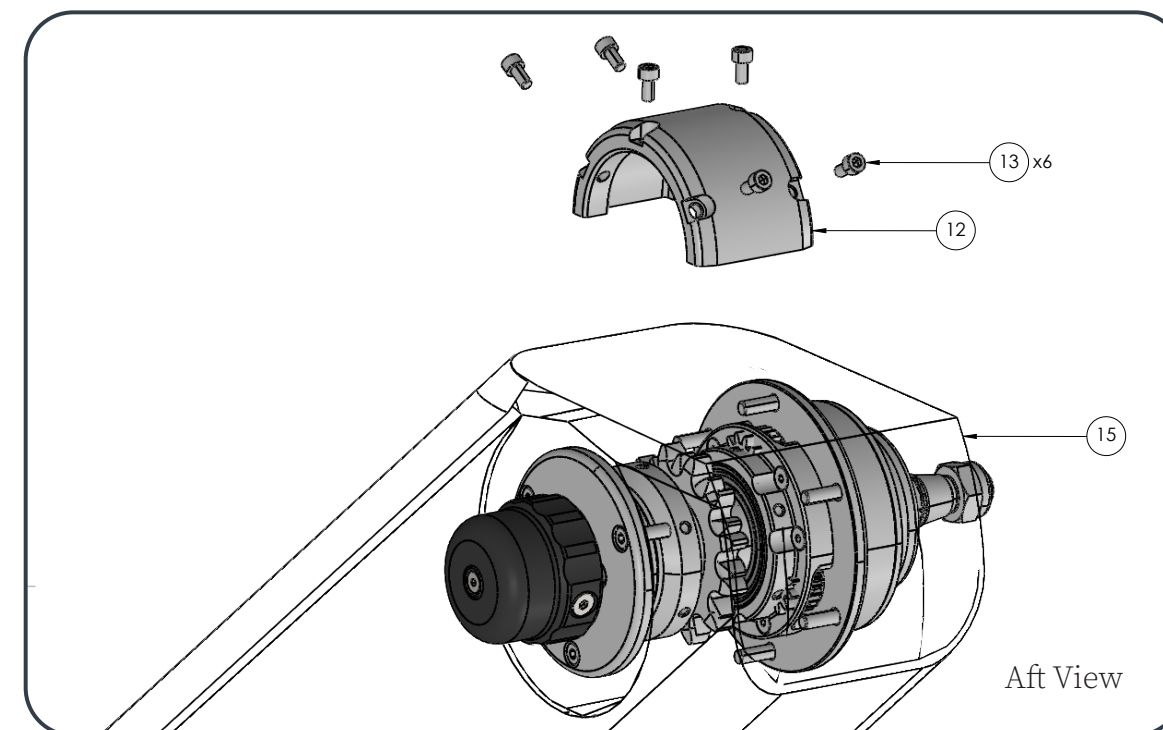
- 03 The aft housing assembly (1-3) is installed through the front of the pedestal (15) and secure with 6x M6 x 20 cap head fasteners (18). Incrementally tighten the fasteners, ensuring the opposite fastener are tightened after each other



- 04
1. Assemble main body (1-1) with rod and shuttle
 2. Install the shims (8) x2 onto inside face of the main body
 3. Insert main body assembly into fwd plate (11). Alignment may be required during installation. Secure with 4x M5 x 40 cap head fasteners (7)
 4. Install spring (5) on the the shaft of the main body (1-1)
 5. Insert spring (6) into the knob (4)
 6. Secure the knob (4) with the guiding screw (3) x2
 7. Secure the final spring (2) and indicator plug (19) with M5 x 15 fastener (1)



- 06 Install the bridge (12) from the top of the pedestal and secure with 6x M5 x 10 cap head fasteners (13)



Important

During the initial install an assembly jig is required to set the bearings in to the carbon. If any damage or movement occurs in the pedestal the steering hub bearings should be reset using the install jig.

Only once all the components are in position should you apply Torque to the fasteners.

Ensure no tension is in the chain or steering cables.

1. Secure the fwd plate (11) fasteners (10) up to 6Nm of torque
2. Secure the bridge (12) fasteners (13) up to 3Nm of torque
3. Secure the sprocket bearing (17) fasteners (9) up to 6Nm of torque
4. After each step ensure the sprocket and shaft is free to turn.
5. If at any point it becomes too tight to turn return to step 1 of securing procedure

Inspection Intervals

During each interval please carry out preceding inspection advisories

Interval	Advisories
Inshore Racing Daily Check	Check both helms are able to activate direct drive, reduced drive and neutral seamlessly while unloaded
	Operate the gear selector and listen for any signs of roughness or irregularity during movement
	Check the helm load for any indication of cable tension change
Offshore Sailing or 2 Months or 2500nm	Visually inspect the main sprocket. Ensure there is a light covering of grease present on the chain and sprocket. Inspect for any sign of metal filings or deformation on the chain or sprocket. Physically move the sprocket and check for excessive movement in the bearing axis
	Visually inspect the bearing seals for signs of corrosion or structural fatigue. Any bearings that are visible without disassembly should be inspected for structural integrity
	Inspect the fasteners connecting the wheel to the hub
	Inspect the chain for abnormalities
	Inspect the helm shaft assembly for excessive wear on spline teeth
2 years & 35, 000nm	Full inspection and service by Rigging Projects technician

Important

Please **do not attempt** to disassemble Geared Steering Hub unless specifically recommended by an RP Technician.

Rigging Projects equipment is designed for minimal maintenance, but some maintenance is required for optimum and safest possible operation and to comply with the Rigging Projects limited warranty. In general, the most important aspect of maintenance is to keep your equipment clean. In corrosive atmospheres, stainless parts may show discolouration around holes and screws. This is not serious and may be removed with a fine abrasive.

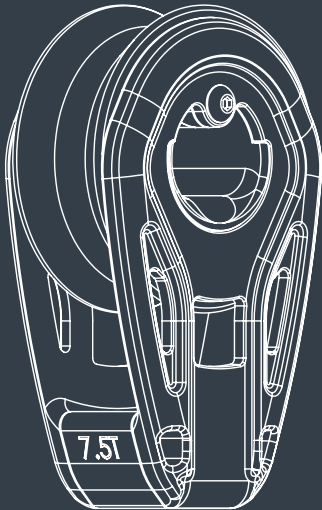
Trouble Shoot

Problem	Probable Cause	Solution
Not engaging into selected gear	Helm/ pedestal fasteners have come loose	Remove all fasteners and reapply blue Loctite and torque up to spec (in a star pattern)
	Shifting spring fatigue/ damage	Photograph area of concern and contact Rigging Projects customer services.
Shifting assembly not free to slide under zero load	Shaft has experienced excessive load or damaged and is showing signs of structural vulnerability. Splines are visually deformed or fractured	Photograph area of concern. Using a dye pen where necessary highlight cracks or clearly mark deformation in the shaft. Return to Rigging Projects for service.
Steering feels stiff/ heavy	Inadequete lubrication on the steering chain	Visually inspect, clean and reapply lubrication to steering chain
	Debris in steering hub/chain	
Not shifting gears	Damage to hub or main sprocket	Photograph area of concern. Using a dye pen where necessary highlight cracks or clearly mark deformation in the shaft. Contact Rigging Projects customer services.
	Signs of wear on helm shaft load faces, deformity or bending along the length of the shaft, cracks or fractures on the part.	
Rattling or scraping sound coming from geared steering hub	Excessive grease allowing for debris to contaminate the mechanism	Remove debris and clean the sprocket, chain and sun gears with degreaser and clean rag. Reapply a light covering of grease
Helm shaft or sprocket requires excessive force to rotate	Bearing seal is damaged or no longer preventing the ingress of foreign objects into the ball bearing raceway.	Visually inspect steering cables system for obstructions or abnormalities. Ensure rudders are clear to swing before proceeding
Bearing is not rotating or is making an audible noise while rotating		Disassemble the steering system, photograph the bearing in place. Remove the bearing, if possible, alternatively return complete assembly to Rigging Projects for service.
Excessive off axis movement in the helm	Fractures in the pedestal or bearing supports. Chain or cable routing is rubbing or becoming deflected between the main sprocket and turning block.	Using a dye pen explore the extent of any cracking. Mark visible crack ends to monitor any propagation. If cracking around the bearing supports is propagating remove the steering hub and seek advice from a structural engineer.
		If the chain or cable is being deflected on its path ensure that this object is removed or properly adjusted to avoid contact with the chain or cable. Check the positioning of the turning block and pedestal to ensure there in no movement present

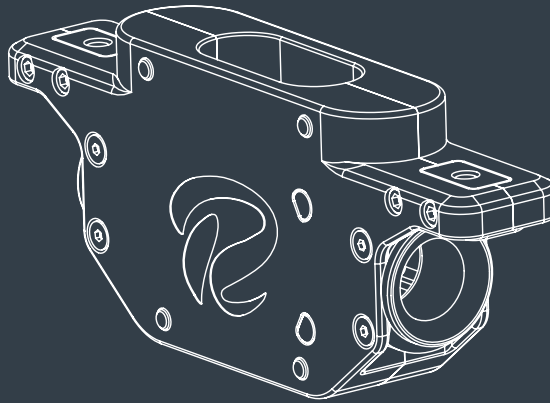
Customer Support

Info@riggingprojects.com

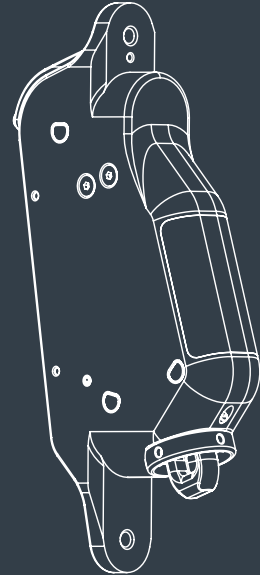
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X- Glide Range



Internal Lock Range



Fwd Lock Range

AHEAD OF THE CURVE

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