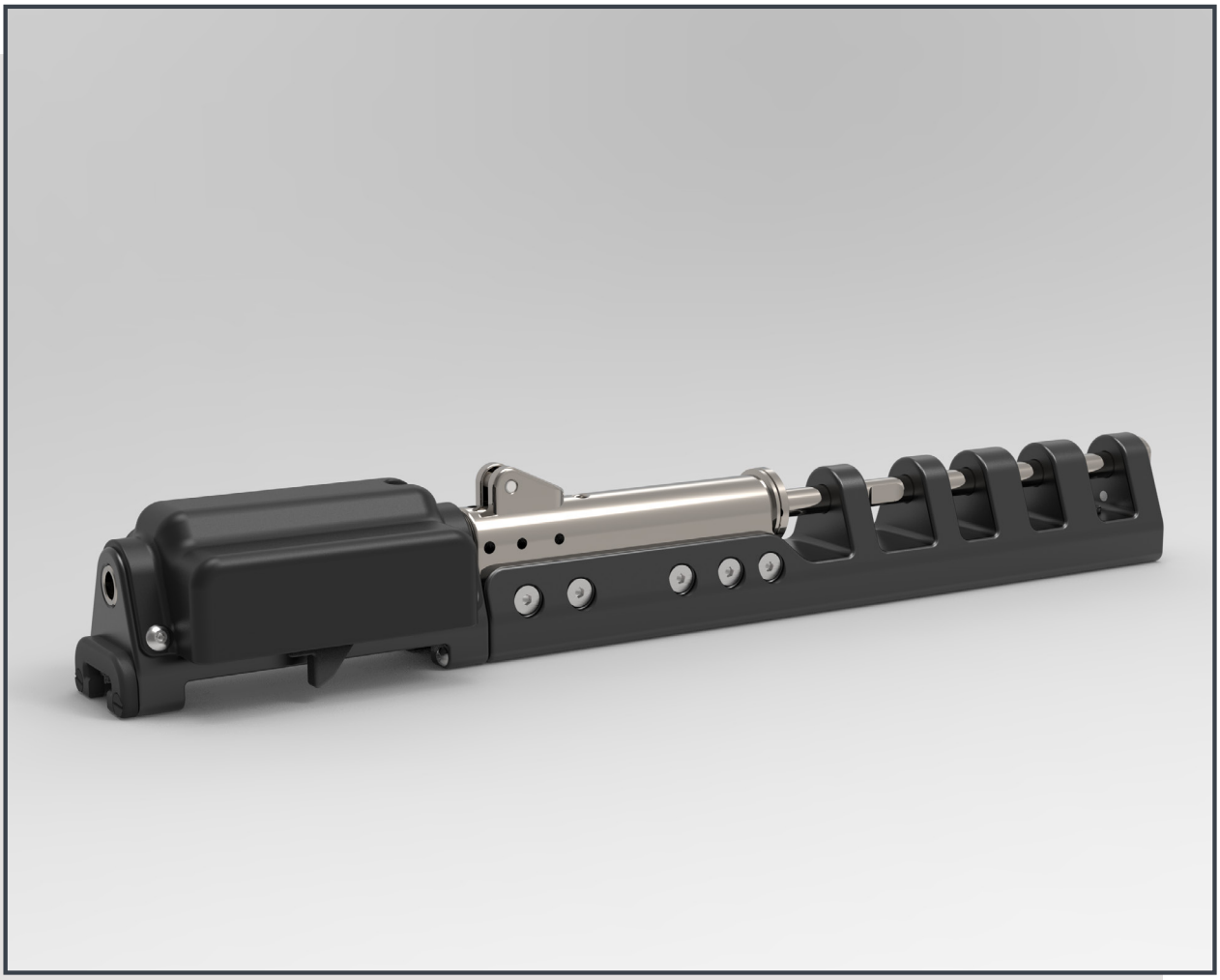
# Rigging Projects

## Locking Headboard Car

## 4T, 6T, 8T

## User Guide



RP3922 - HBM - UG - 02

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for Demo

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## Introduction

This manual provides an overview of the Rigging Projects Self Locking Headboard Car system 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.

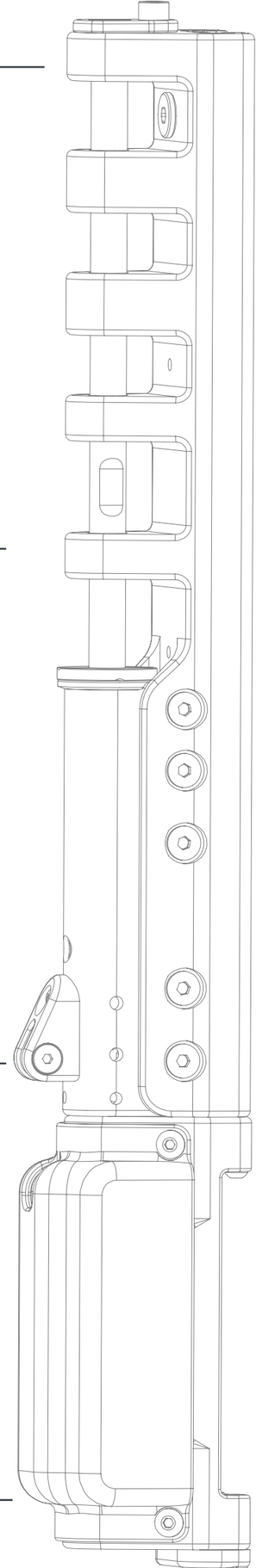
Prior to using this product, all persons should be made aware of the possible hazards associated with its operation and use. Any service work, repairs maintenance or equivalent work carried out on the product should be undertaken by technically qualified persons.

## Key Design Features

- Patented self-lock mechanism; negates the need for internal trip lines within the mast
- A choice between an manual lock or self-lock
- Automatic self locking activation
- Aluminium carriage with independent titanium locking cartridge
- Titanium cartridge carries all the vertical load, hence lowering the centre of effort in the car & reducing track levering
- Impossible to false lock on fastener holes in track
- Safety system to allow triggers to be disengaged independently from trip line
- An external manual trip line is also installed as a backup

## Caution

The Rigging Projects Locking Headboard Car has been tested extensively to ensure the safety anf function of the product. However, it is important for the users to understand the risks involved in the event of a mechanical failure. Care should be taken to stow the halyard appropriately to avoid entanglement should the sail drop unexpectedly. Failure to take safety precautions could lead to severe injury or death.



| Rigging Projects Gaff Lock | Recommended Halyard ∅ (mm) | Max Halyard Load 80% BL (T) | Min. Gate length | |
|---|---|---|---|---|
| | | | Auto | Manual |
| RBGL4 | 8 | 3.6 | 500 | 350 |
| RBGL6 | 10 | 4.4 | 530 | 380 |
| RBGL8 | 10 | 4.4 | 540 | 400 |

## Installing Headboard Car onto Track

1. Remove gate track section from mast
2. Slide the locking headboard car on to track ensuring the barrel section of the car is at the lower end
3. Reinstate gate section. Make sure track joins are seamlessly aligned

## Trigger Seat Installation

If retrofitting the headboard car, the self locking trigger seat must be installed by a Rigging Projects technician.

## Halyard Indicators

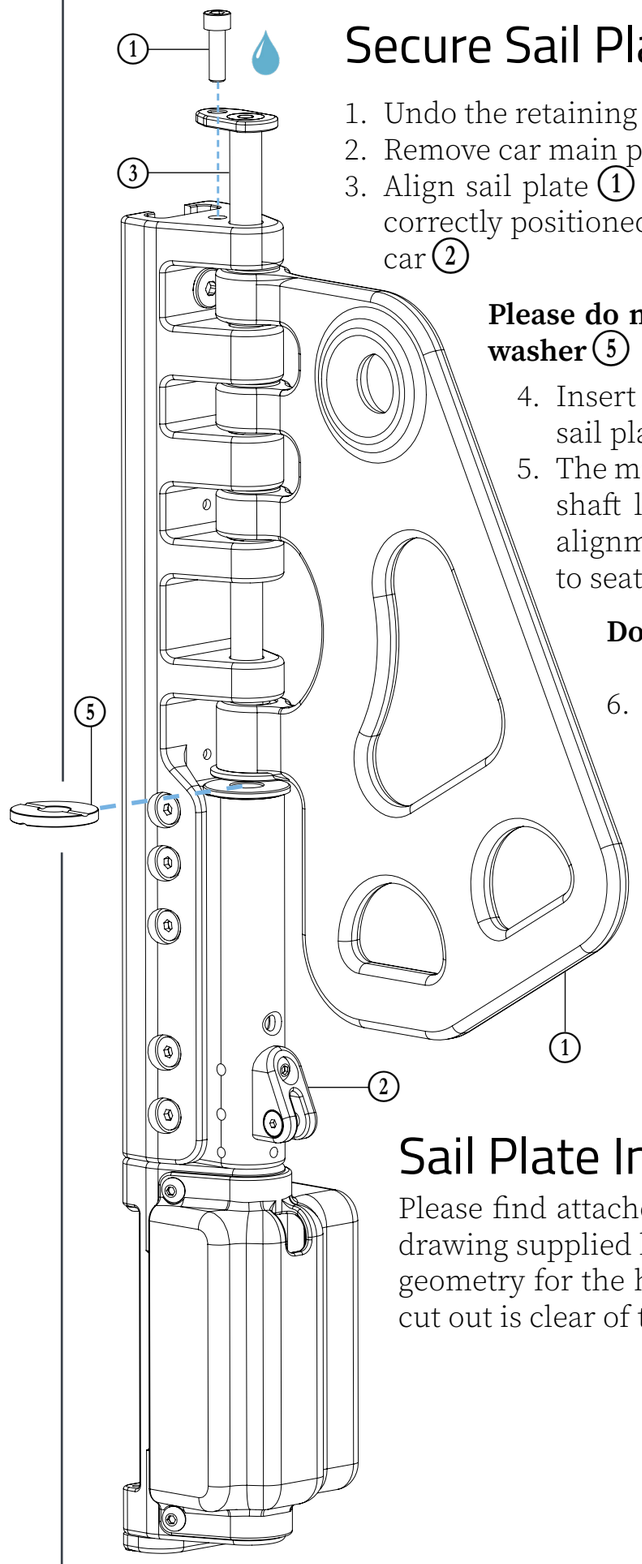
If there is no sensor kit installed Rigging Projects recommends marking your halyard at full hoist and at all reef point with a whipping in different colours.

## 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.








## Secure Sail Plate on Head Board Car

1. Undo the retaining cap head fastener (4)
2. Remove car main pin (3)
3. Align sail plate (1) in place, ensure the main washer (5) is correctly positioned between the sail plate (1) and the main car (2)

**Please do not apply any grease or Tef-Gel to main washer (5)**

4. Insert main pin through the car, washer and sail plate secure with cap head fastener.
5. The main pin is required to align with the pawl shaft located in the main car housing. Some alignment of the pawl shaft might be required to seat main pin correctly.

**Do not use a hammer to secure the pin**

6. Use a few drops of blue Loctite 423 the fastener (4) that retains the main pin.

## Sail Plate Installation

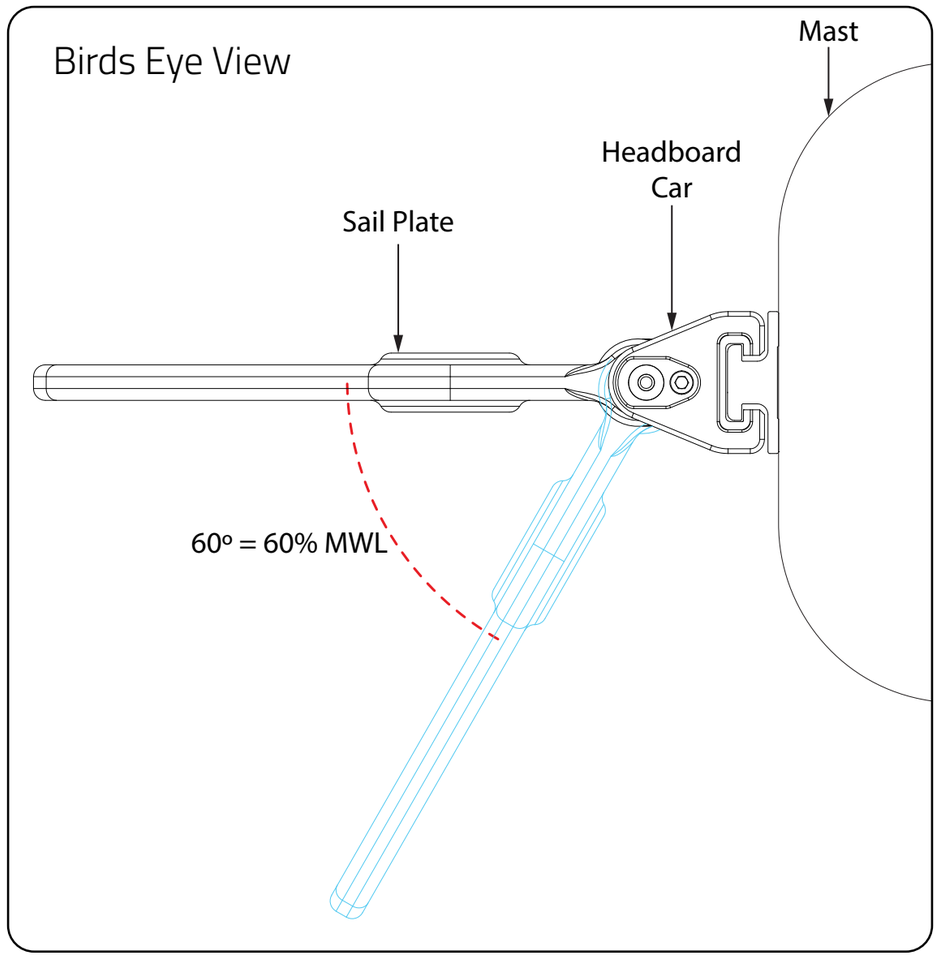
Please find attached to your user guide pack a sail maker drawing supplied by Rigging Projects to ensure the correct geometry for the head of the sail. It is **critical** the the sail cut out is clear of the headboard car and selflock.

# Load Diagram

## Headboard Car Load Diagram

| Rotation from Center | % of Maximum Working Load |
|---|---|
| 0° | 100% |
| 15° | 100% |
| 30° | 85% |
| 45° | 70% |
| 60° | 60% |
| More than 60° | Not advised |
| 105° | Maximum Rotation |

This diagram shows the operating range of a mainsail headboard car relative to the boat's centerline. As the headboard car rotates away from the centerline, its load capacity decreases.

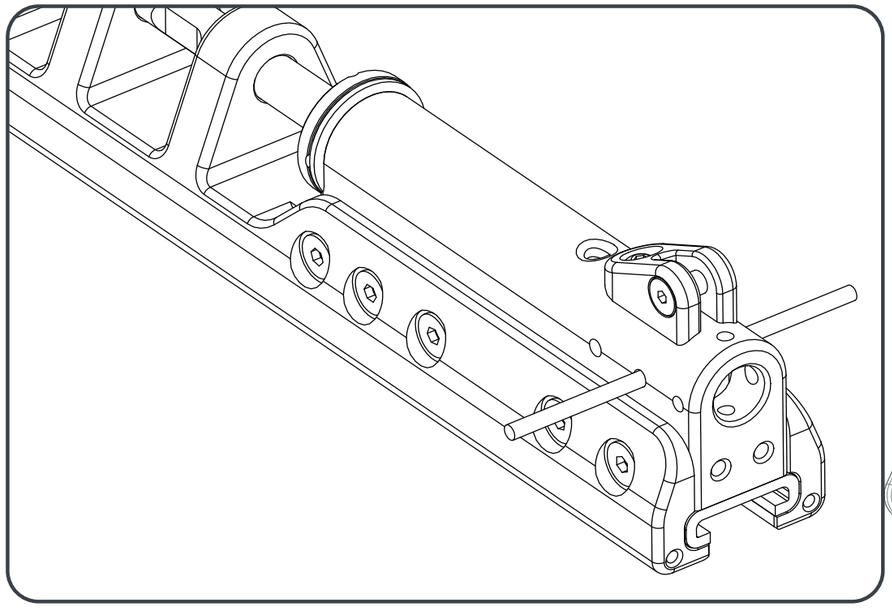


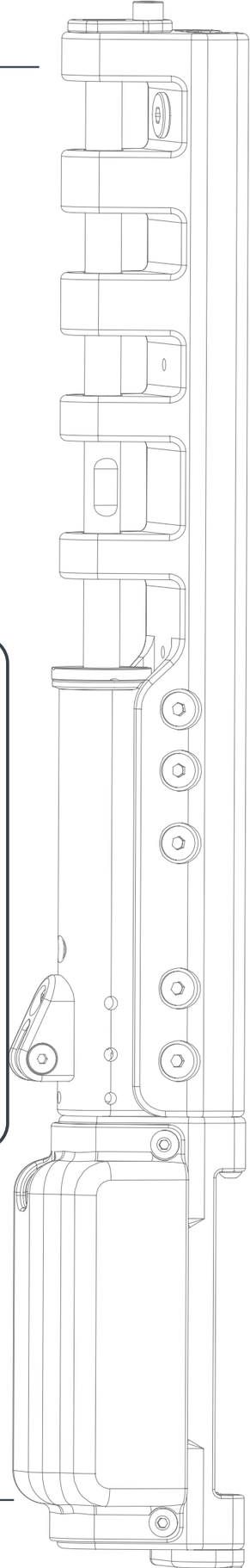



## Safety Lock Out Mode

In the unlikely event of the locking pawl not retracting during the dropping of the sail, follow these steps:

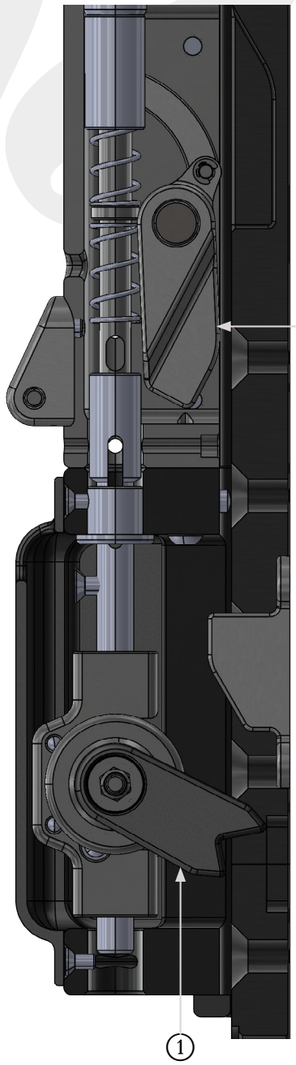
1. Find a 4mm rod (a bolt, Allan key or screw driver)
2. Go aloft to the headboard car
3. Hoist the car away from the high load track section where the pawl can engage
4. Insert the rod through the pawl housing in the **centre hole**
5. Ensure the rod is installed through entire body
6. Ease the main
7. Contact Rigging Projects customer support





# On The Lock

Scan or Click for Demo




## 01 During Hoist Pawls Retracted

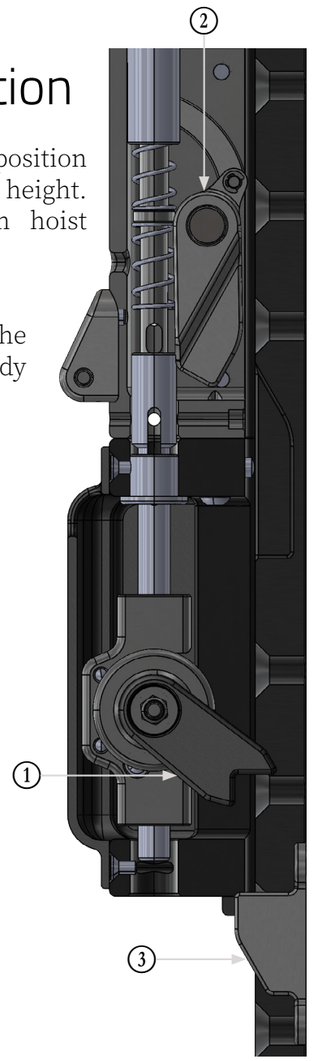
1. Ease main sheet, vang and tack tension before manoeuvre

During this time the self lock pawl is free to spring over the trigger seat and the main pawl is retracted

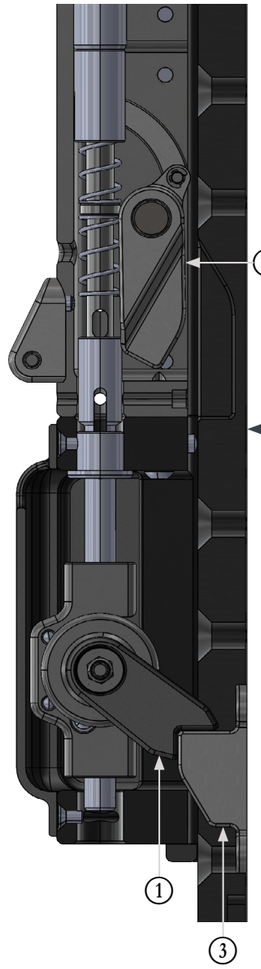
## 02 Over Hoist Position

1. Hoist the halyard and wait for the position sensor signal to indicate the correct height. Without sensor kit: to maximum hoist halyard mark

Once hoisted past the trigger seat ③, the self lock pawl ① is in lock mode and ready to activate the main pawl ②






## 03 Self Lock Engages

1. **Slowly ease** the halyard to allow the self lock pawl ① to engage with the trigger seat ③.

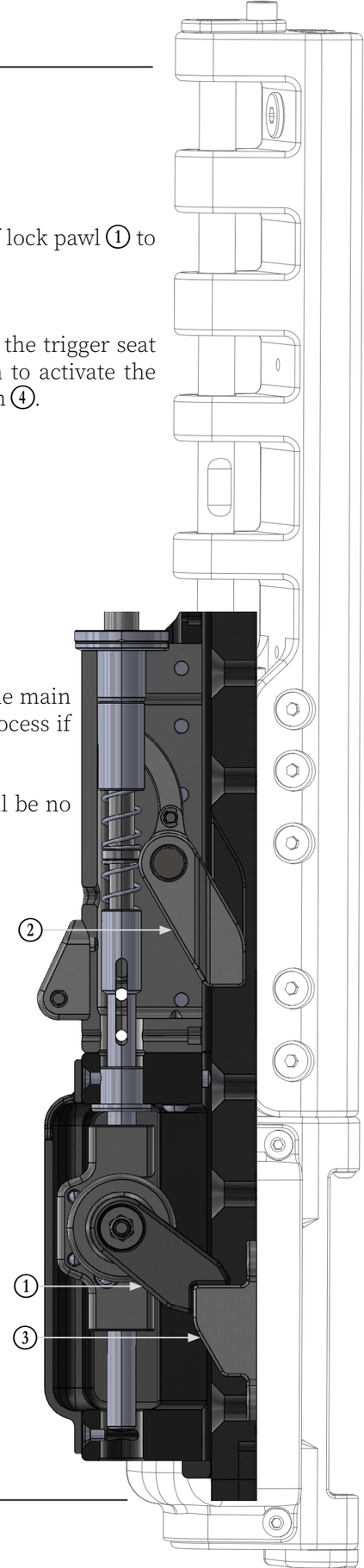
When the self lock pawl ① is engaged with the trigger seat ③, the mechanism causes a chain reaction to activate the main pawl ② into the high load track section ④.

## 04 On the Lock

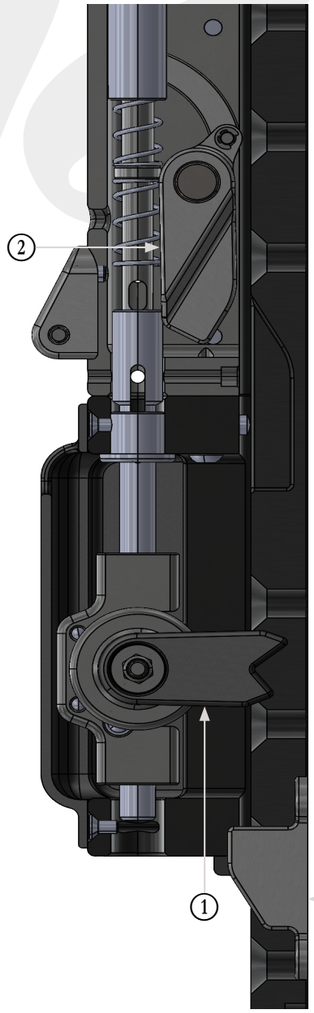
There will be no weight on the halyard if the main pawl ② is properly engaged. Repeat the process if not.

Now the main pawl ② is engaged there will be no weight on the self lock pawl ①.

Please ensure the halyard is stowed appropriately so that there is no risk of entanglement in the event of mechanical failure and the sail drops unexpectedly.



# Off The Lock




## 01 Over Hoist

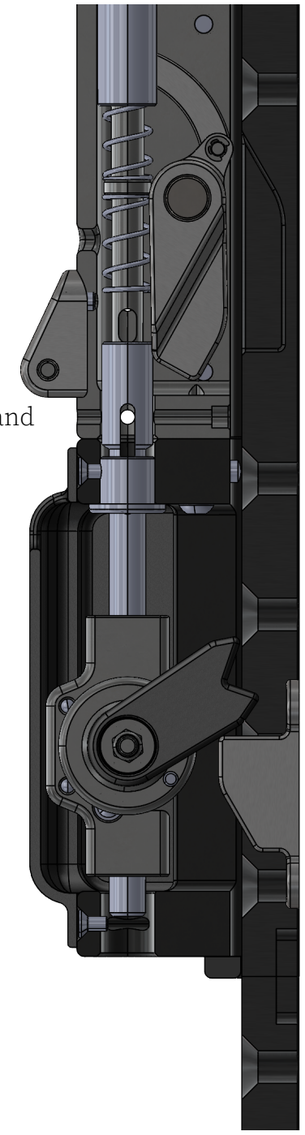
1. Ease main sheet, vang and tack tension before manoeuvre
2. Hoist the halyard until the sensor indicates the correct position of the car. Without sensor kit: to maximum hoist halyard mark.

During the hoist the main pawl automatic retracts and the self lock pawl goes into **unlock mode** and is able disengaged from the trigger seat.

## 02 Halyard Ease

1. Ease the halyard to drop the sail

Now both of the pawls are disengaged and the sail is free to be lowered





## Reefing

To reef the sail, please follow the same ‘On The Lock’ procedure.

1. Ensure the car is lowered below reef trigger seat
2. Over hoisted the head board car to activate self lock pawl
3. **Slowly ease** onto the lock

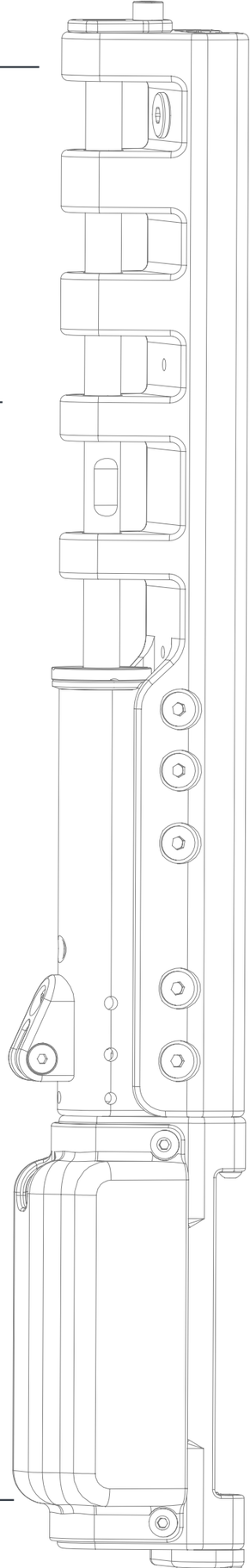
## Manual Lock

If you do not have the self locking casette installed;
1. Over hoist the head board car
2. Gently pull the trip line at the base of the mast
3. Ease the halyard **slowly**
4. The main pawl (2) will engage

If the self-lock cassette fails to engage on the lock, a manual trip line is available to engage the main pawls into the highload track section

## Important

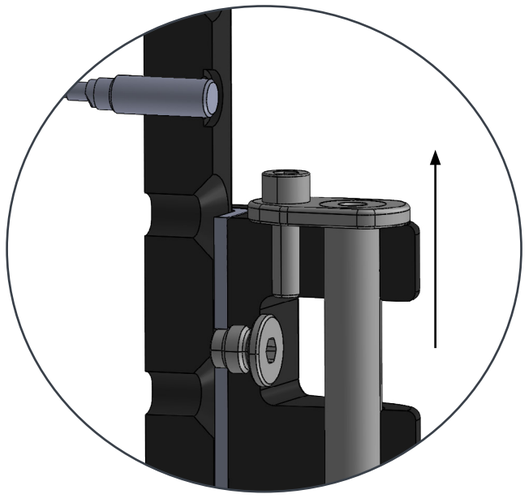
Due to the nature of mechanism for the manual trip line it is important the line is **free to run** if not in use.



# Sensor Kit Installation

| Step | Instruction |
|---|---|
| 1 | Mouse sensor wires from the junction box to the relative reef points and full hoist locations on the mast |
| 2 | Pass the sensor through the mast and thread onto the back high load track section. **Ensure the sensor is 3.9mm** recessed from the surface of the track |
| 3 | Secure the sensor in place with backing nut |
| 4 | Test the sensor signal to ensure the function of the sensor |
| 5 | Secure the high load track section to the mast |

## On The Lock



### 01 During Hoist

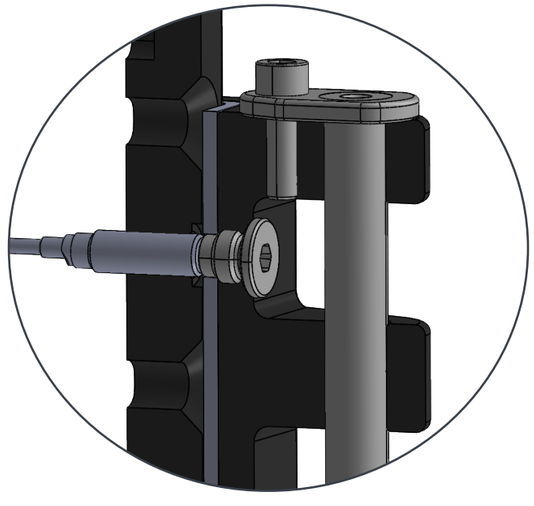
Off

The sensor will activate at each reefing point during a full hoist manoeuvre. Otherwise the indicator will be off.

### 02 Over Hoist

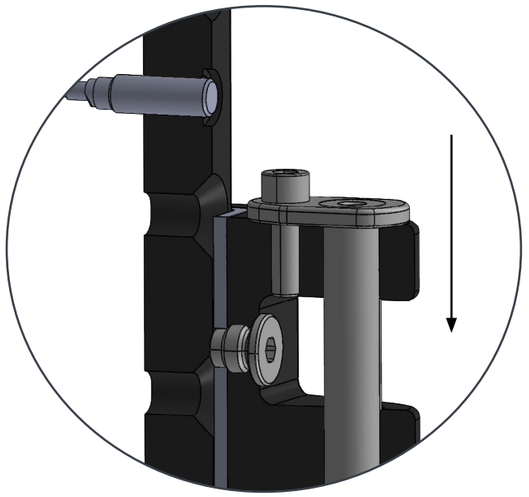
On

The sensor will activate to indicate the headboard car is in the over hoist position and can now be **slowly eased** onto lock.







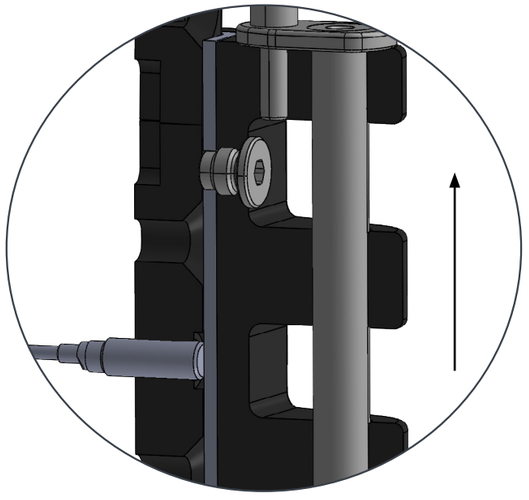


### 03 On the Lock

Off

After the halyard is eased the sensor will be disengaged when the headboard car is on the lock.

## Off The Lock



Off On Off

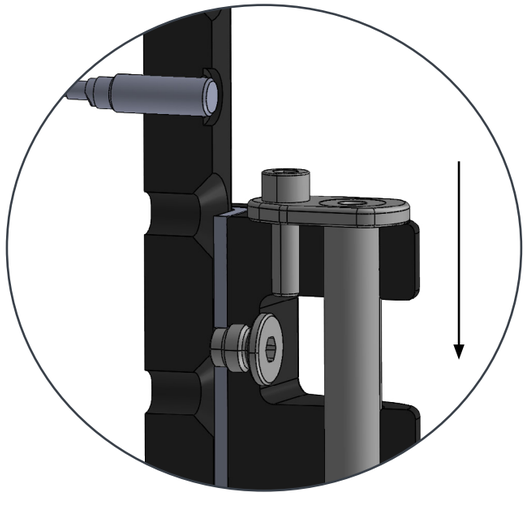
### 01 Over Hoist

From the ‘on lock’ position, when the car is hoisted, the signal will show an Off, On, Off sequence. The headboard car is now in the unlocked position.

### 02 Halyard Ease

From the ‘over hoist’ position the signal will repeat an Off, On, Off sequence as the sensor is activated during the dropping of the sail.

Off On Off



# Inspection Intervals

During each interval please carry out preceding inspection advisories

| Interval | Advisories |
|---|---|
| Inshore Racing Daily Inspection | Visual inspection over the body for signs of wear and tear |
| | Ensure all fasteners are secure of the high load track section, sail plate and the main car |
| | Rinse thoroughly with fresh water |
| | Inspect top of main car body for cracking |
| Offshore Sailing or 2 Months or 2500nm | Inspect the top hat bushings of the sail plate for signs of wear and tear |
| | Remove, inspect and clean the main washer |
| | Inspect the main pin for alignment and deformation |
| | Check the sail plate is free to rotate on the main pin |
| | Check for chafe on the manual trip line |
| | Inspect locking track section fasteners are secure |
| | Remove self lock cassette cover to visually inspect the ball plunger and self lock pawl mechanism. Please do not attempt to disassemble. |
| If Racing- Annual | Full visual inspection by Rigging Projects Technician |
| 2 Years or 35,000nm | Return to Rigging Projects HQ for full service |

## Service Guide

Click or Scan

Manual Lock

Auto Lock

## Important

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 by frequently flushing with fresh water. In corrosive atmospheres, stainless parts may show discolouration around holes and screws. This is not serious and may be removed with a fine abrasive. Exposure to some caustic solutions can result in discolouration of part and is not covered under the Rigging Projects warranty.

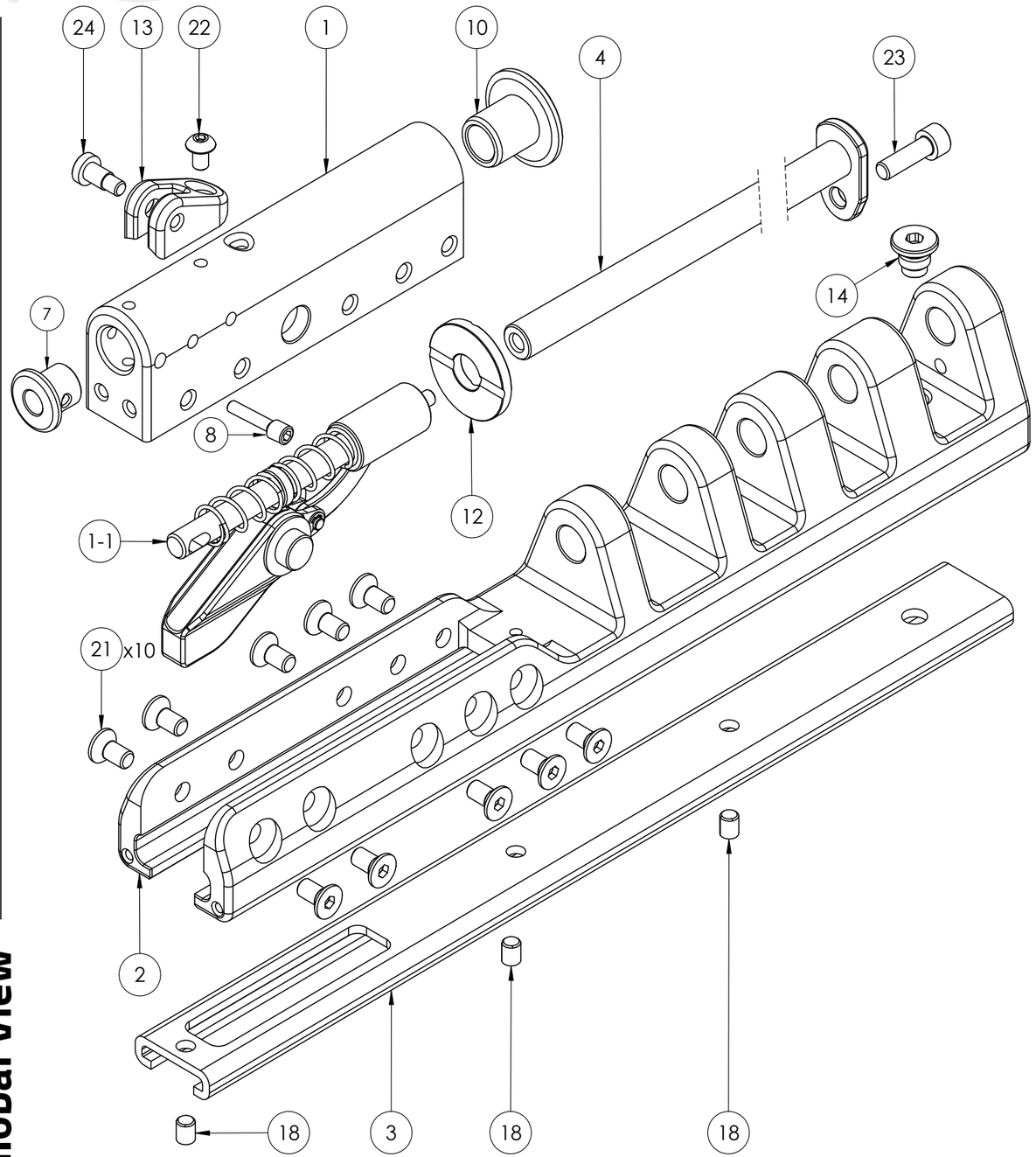




# Troubleshoot

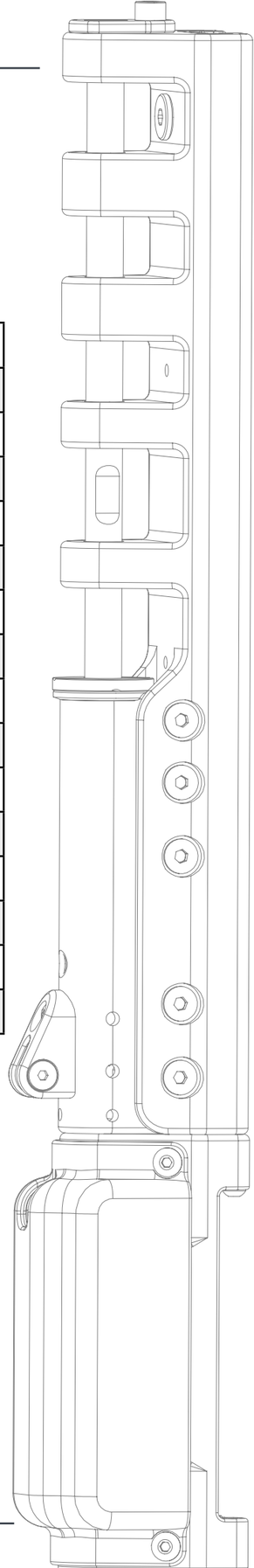
| Problem | Probable Cause | Solution |
|---|---|---|
| Car binds on track | Slider damaged or missing | Check or replace slider and dowels |
| | Track misaligned | Check alignments on track |
| | Track fasteners protruding | Check all track fasteners are properly secured |
| Car jams when hoisting | Headboard is catching on running rigging e.g. lazy jacks, reef lines and halyard | Use topping lift to hold boom and pull lazy jacks forward if possible |
| Luff on sail is loose and car is engaged | Check range of Cunningham and luff length | Adjust Cunningham or luff length |
| Luff of sail is tight and not engaging | Incorrect set up of control lines | Mainsail tack should be eased, or consider floating tack car instead of lashing |
| Car is not locking | Self lock pawl is seized and requires lubricating | Remove plastic cover, inspect self lock spray internal mechanism with WD40 |
| | On self-lock models, the self lock pawl may have become damaged due to a fast drop | Remove plastic cover of self lock cassette and inspect self lock pawl for damage |
| | Trip line damaged | Check trip line is activating lever and replace if necessary (Should be carried out by qualified personnel) |
| | Trip line under tension | Ensure the manual trip line slack |
| | Self-lock pawl shaft has deformed | Part needs replacing; please contact Rigging Projects |
| | The car is not moving past the high load track section | Ensure the halyard marks are correct and the car has reached the appropriate height |
| | Damage to self lock ramp | Part needs replacing; please contact Rigging Projects |
| Car is not unlocking | Manual trip line is caught and forcing the pawl to engage | Go aloft to visually inspect the manual trip line is slack |
| | The self lock pawl is no deactivating | Go aloft to visually inspect the self lock pawl unlocking during the over hoist. If not, disengage manually |

# Headboard Car

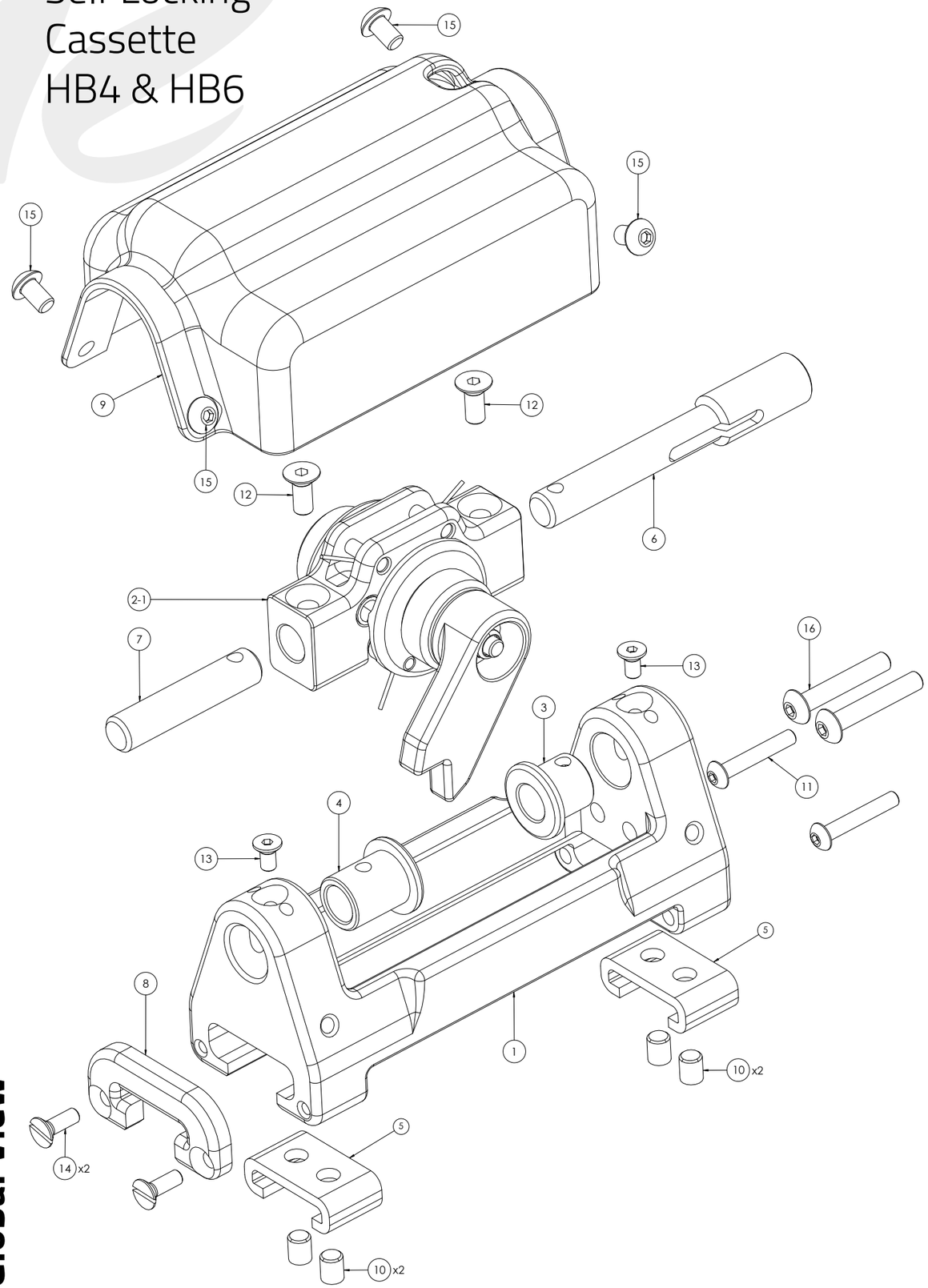



# Bill of Materials

| ITEM No. | DESCRIPTION | Qty |
|---|---|---|
| 1-1 | MAIN CAR PAWL ASSEMBLY | 1 |
| 2 | MAIN CAR BODY | 1 |
| 3 | SLIDER | 1 |
| 4 | MAIN PIN | 1 |
| 7 | GUIDE (MANUAL LOCK ONLY) | 1 |
| 8 | ANTI ROTATION SCREW | 1 |
| 10 | TOP HAT | 1 |
| 12 | MAIN WASHER (SERVICABLE PART) | 1 |
| 13 | TRIP LINE BRACKET (AUTO LOCK ONLY) | 1 |
| 14 | INDUCTIVE SENSOR TARGET | 1 |
| 18 | DOWEL | 3 |
| 21 | SOCKET CSK HEAD SCREW | 10 |
| 22 | SOCKET BUTTON HEAD SCREW | 1 |
| 23 | SOCKET HEAD CAP SCREW | 1 |
| 24 | LOW HEAD SOCKET SHOULDER SCREW | 1 |



# Self Locking Cassette HB4 & HB6

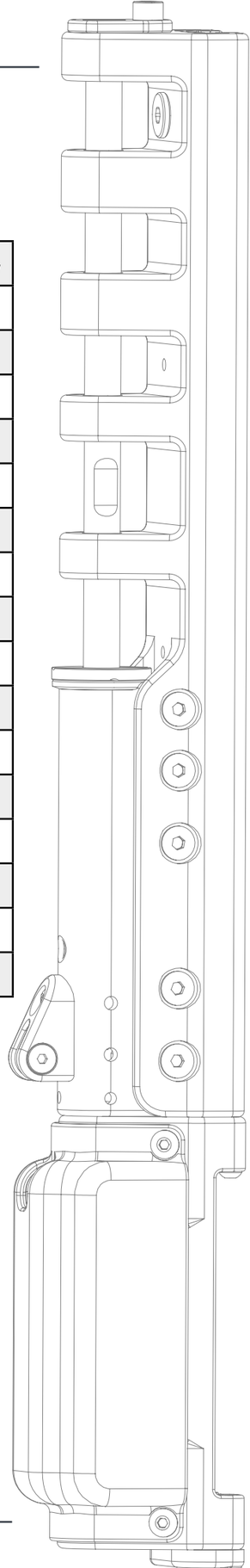



Global View

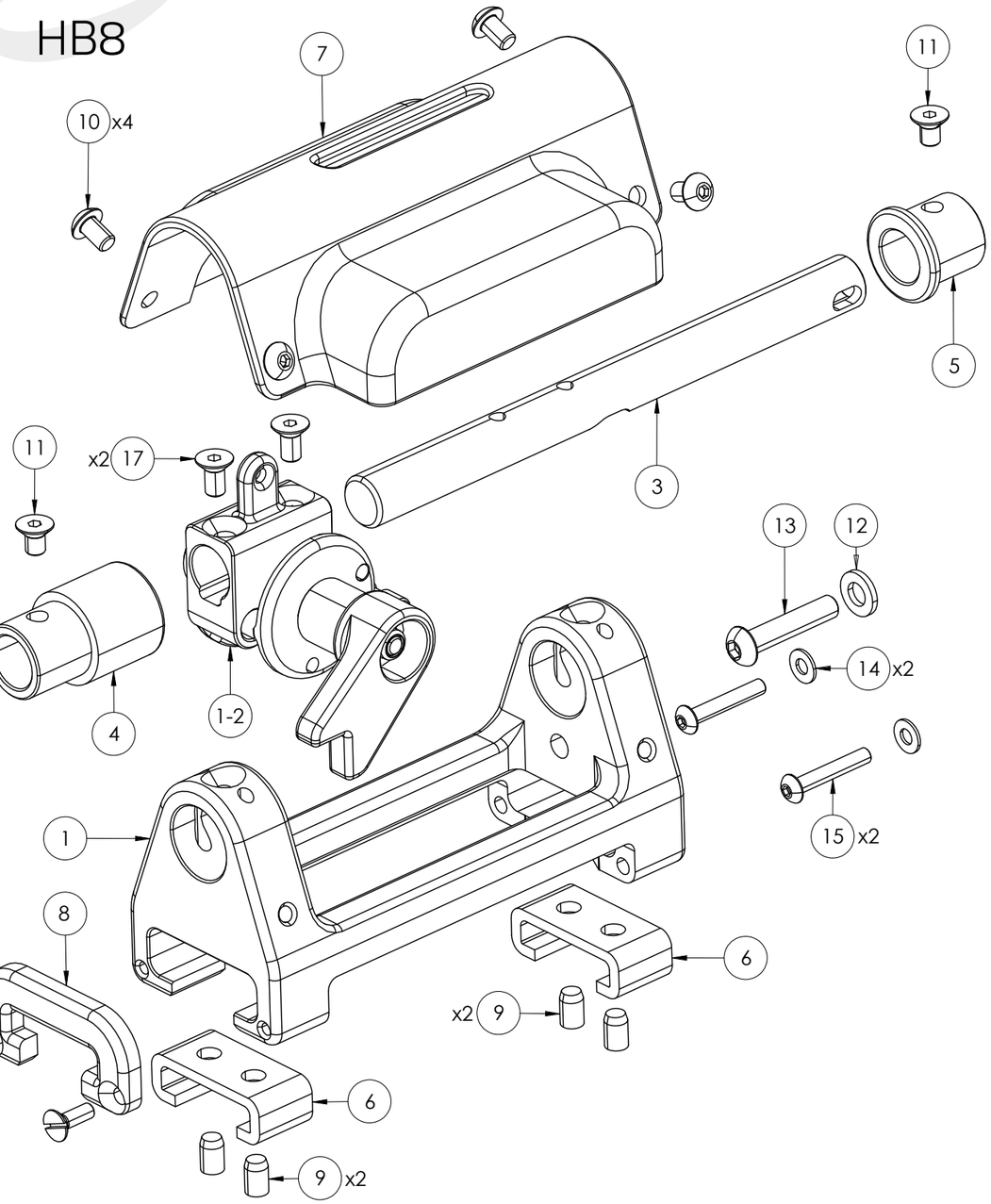


## Bill of Materials

| ITEM No | DESCRIPTION | Qty |
|---|---|---|
| 1 | HOUSING | 1 |
| 2-1 | PAWL ASSEMBLY - STBD | 1 |
| 3 | UPPER BUSH | 1 |
| 4 | LOWER BUSH | 1 |
| 5 | SLIDER | 2 |
| 6 | UPPER SHAFT | 1 |
| 7 | LOWER SHAFT | 1 |
| 8 | RUBBER BUFFER | 1 |
| 9 | COVER | 1 |
| 10 | DOWEL | 4 |
| 11 | SOCKET BUTTON HEAD SCREW | 2 |
| 12 | SOCKET CSK HEAD SCREW | 2 |
| 13 | SOCKET CSK HEAD SCREW | 2 |
| 14 | SLOTTED CSK HEAD SCREW | 2 |
| 15 | SOCKET BUTTON HEAD SCREW | 4 |
| 16 | SOCKET BUTTON HEAD SCREW | 2 |



# Self Locking Cassette HB8

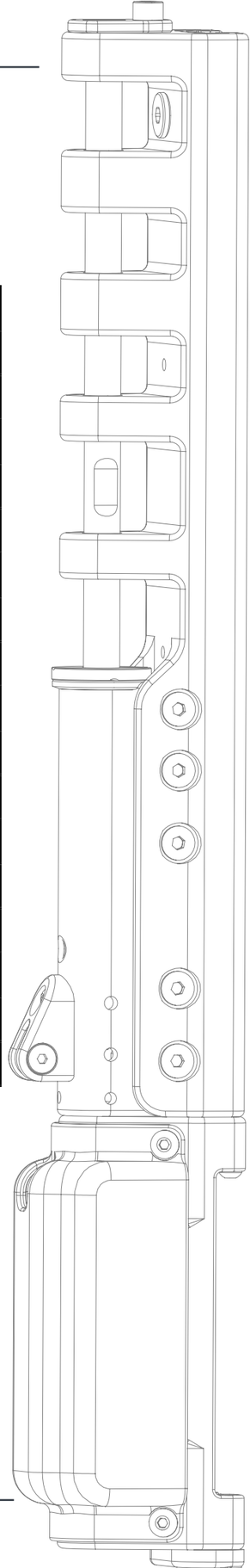



Global View



## Bill of Materials

| ITEM No | DESCRIPTION | QTY |
|---|---|---|
| 1 | HOUSING | 1 |
| 1-2 | PAWL ASSEMBLY | 1 |
| 3 | SHAFT | 1 |
| 4 | LOWER BUSH | 1 |
| 5 | UPPER BUSH | 1 |
| 6 | UPPER SLIDER | 2 |
| 7 | COVER | 1 |
| 8 | RUBBER BUFFER | 1 |
| 9 | DOWEL PIN | 4 |
| 10 | SOCKET BUTTON HEAD SCREW | 4 |
| 11 | SOCKET CSK HEAD SCREW | 2 |
| 12 | WASHER | 1 |
| 13 | SOCKET BUTTON HEAD SCREW | 1 |
| 14 | WASHER | 2 |
| 15 | SOCKET BUTTON HEAD SCREW | 2 |
| 16 | SLOTTED CSK HEAD SCREW | 2 |
| 17 | SOCKET CSK HEAD SCREW | 2 |



## Customer Support

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