



Forward Lock User Manual

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Introduction

This manual provides an overview of the Rigging Projects Forward Lock 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.

This manual is an essential part of the product and should be kept for reference. Further copies can be made available upon request.

User information

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/crew.

Any persons/crew carrying out service work, repairs, maintenance or equivalent work must read this manual prior to starting any works.

Disclaimer

It is not permitted to modify/alter the product or its parts in any way other than replacing parts subject to wear and tear with Rigging Projects specified and supplied parts as described 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.

Purpose

Ranging from 2.5 to 30T, the Rigging Projects Forward Lock covers the entire range of yachts, from performance driven race yachts, right through to the biggest superyachts.

The Rigging Projects Forward Lock is designed to enable the sail to be locked and unlocked without the need for any trip line or external device. The system allows the user to lock or unlock by simply over hoisting the halyard through the lock.

Use of this product for other than normal sailing vessels applications is not covered by the limited warranty.

Forward Lock key design features:

- No need for internal trip line within the rig.
- End stop within the lock allows the halyard man to know when the sail is at full hoist.
- A two-pawl system reduces the stress on the body when compared to a single pawl system.
- Coming off lock simply requires a small over hoist on the halyard.

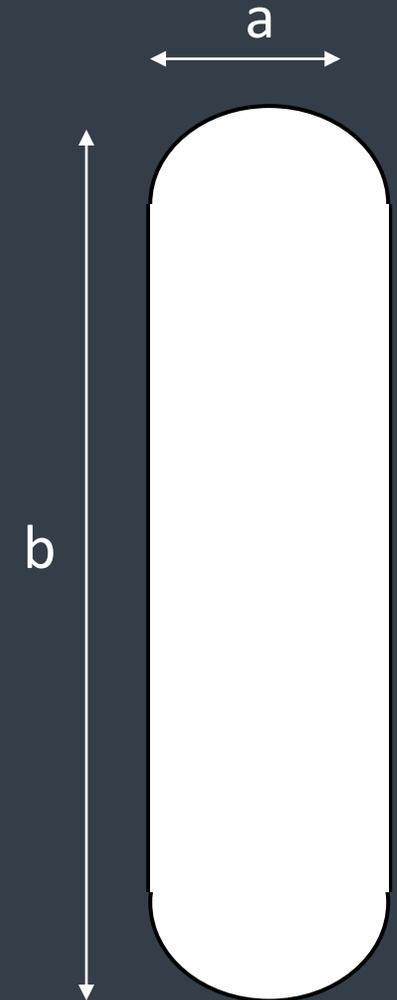
AVAILABLE SIZES

The Forward Lock is available in a range of 2.5 to 30T.

Configurations and Dimensions

Forward Lock sizes and configurations.

Forward Lock Reference	Max Working Load (T)	Dimensions (mm)		Total Weight (Including Spigot) (Kg)	Mast Wall Thickness (mm)
		a	b		
RP1246 2.5T FWD LOCK	2.5	tbc	tbc	tbc	tbc
RP1153 5T FWD LOCK	5	41	183.8	1.34	19
RP1110 8T FWD LOCK	8	52	210	2.20	24
RP1247 10T FWD LOCK	10	tbc	tbc	tbc	tbc
RP1248 12T FWD LOCK	12	tbc	tbc	tbc	tbc
RP1249 15T FWD LOCK	15	tbc	tbc	tbc	tbc
RP1250 20T FWD LOCK	20	tbc	tbc	tbc	tbc
RP1251 25T FWD LOCK	25	tbc	tbc	tbc	tbc
RP1252 30T FWD LOCK	30	tbc	tbc	tbc	tbc



Installation

Forward Lock Installation into mast

- Installation of a Rigging Projects Forward Lock should only be carried out by a suitably qualified and experienced personnel. If in any doubt, contact Rigging Projects.
 - Installation should only be carried out using the router jigs supplied by Rigging Projects.
 - **Mast tube engineering should be checked prior to locks being fitted to mast – If in any doubt, contact Rigging Projects first.**
1. Working with the rig on the ground, position the router jig in the correct position on the mast and secure to the rig using the two lock mounting bolts.
 2. Once happy with the position of the lock, cut out the slot within the jig plate and tidy up with a drum sander to achieve a neat finish.
 3. Working with the front cover and lower ferrule removed, tie a bowline through the ferrule hole and front cover slot.
 4. Angle the top of the lock into the slot in the mast and push through until the lower edge passes through the slot.
 5. Tilt the lock back to the upright position and pull towards the front of the rig until it seats in the slot. Fit the two mounting bolts and tighten to pull the lock into place. **These mounting bolts should be fitted with Loctite.**
 6. Fit the ferrule to the lock and fit the nylon tipped grub screw with blue Loctite to retain it.
 7. Check the operation of the lock and once happy, fit the front cover using suitable adhesive.

Installation (cont.)

Forward Lock Installation into mast



Fit line through lock body to retain whilst fitting.



Tilt top of lock body and pass through cutout in mast until the bottom lug is through.



Pull lock parallel to mast into place in the slot.



Fasten retaining bolts with Loctite, fit ferrule and grub screw. Fix cover in place with suitable adhesive



Fit halyard and check operation of the lock

Operations & Procedures

Procedure for Forward Lock To Lock

1. After connecting the sail to the lock strop, begin hoisting the sail on the halyard.
2. As the spigot reaches towards the entrance of the lock body, reduce the speed at which the halyard is raised.
3. Keep raising the halyard until the spigot reaches the end stop within the lock- the line will not be able to be raised any further and tension will occur in the halyard.
4. Once confirmed the spigot has reached the end stop, ease down slowly on the halyard until the locking pawls engage. Before removing the halyard from the winch, increase the tack load to ensure that the lock is engaged.
5. Halyard can now be completely removed from the winch.

Operations & Procedures (cont.)

Procedure for Forward Lock (cont.)

To Unlock

1. Before removing any load on the tack, load the halyard onto a winch.
2. Once the tack is released, slowly wind the halyard to take up the tension. Only a small over hoist is required to open the pawls.
3. After a small over hoist, the halyard can be slowly eased down to ensure the lock has been released. If unlocked, drop the sail as normal.
4. If the over hoist on the halyard is too much, the mechanism will reactivate and lock. A smaller over hoist is required to open the pawls without reactivation.

Maintenance & Checks

The following maintenance and checks should be carried out on the lock as per the below sheet.

Description	Period	Mileage
Visual inspection of body external to the mast	2 Months	2500 Miles
Check ferrule is still secure in body and inspect for any damage		
Remove front cover and move pawls by hand to check for any debris or stickiness		
Check the plastic wedges on the snap ring holder for any serious wear		
Remove Ferrule and visually inspect the snap ring in the holder for any damage		
Check the surface of the spigot for any wear or damage		
The lock should be removed from the rig and all components inspected, cleaned, re-greased and reassembled using Loctite where required on screws. If in doubt, please contact RP for further information or clarification.	Annually	20000 Miles

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 discoloration around holes and screws. This is not serious and may be removed with a fine abrasive.

IMPORTANT! Exposure to some teak cleaners and other caustic solutions can result in discoloration of part and is not covered under the Rigging Projects warranty.

Maintenance & Checks (cont.)

Strip Down

1. Remove the ferrule grub screw (19) and then unscrew the ferrule (18).
2. Remove the front cover being careful to ensure it doesn't get damaged (17).
3. Remove both rear covers (15 & 16).
4. Remove the x4 end stop retaining screws (14) and withdraw the end stop (13) and snap ring holder (12)- this may be stiff to remove from the body.
5. Punch out the dowels that retain the pawl springs within the body (11).
6. Unscrew the pawl retaining pin screws (7 & 10) and remove the pawl pins (6 & 9).
7. Withdraw the pawls (5 & 8) along with the pawl springs.
8. Remove the sheave pin retaining screw (4) and then remove pin (3) and sheave (1), ensuring the thrust washers are retained.

Maintenance & Checks (cont.)

Assembly

1. Starting with the bare body, fit the halyard sheave (1), then the sheave pin(3), ensuring that the thrust washers are fitted either side(2). Loctite the pin retaining screw(4).
2. Fit the forward most pawl (5) ensuring that the leg of the spring is held by the dowel on the pawl. Fit Pawl pin (6) and loctite the pawl pin retaining screw(7).
3. Fit the rear most pawl (8) ensuring that the leg of the spring is held by the dowel on the pawl. Fit the pawl pin (9) and loctite the pawl pin retaining screw(10).
4. Fit the through body dowels (11) ensuring the leg of the spring is held so that the pawls remain open in the rest position.
5. Slide the snap ring holder (12) onto the end stop (13). Push the two parts into the main housing (This may be stiff until it is in position in the body).
6. Fit the (x4) end stop retaining screws (14).
7. Fit the top rear cover (15) with the 3 retaining screws
8. Fit the lower rear cover (16) with the 4 retaining screws
9. Once installed back in the rig, the front cover (17) can be refitted using suitable adhesive.
10. Lower ferrule (18) can be refitted and secured using the grub screw (19)

Maintenance & Checks (cont.)

Replacement of the snap ring

1. Strip down the lock as described in the previous section.
2. Place the snap ring holder (12) in a suitable vice.
3. Remove the plastic ramps (22) and then the cover plate by removing the two screws.
4. Fit the new snap ring into the holder.
5. Ensure that the new snap ring is retained in the groove but is free to move around within the housing.

Replacement of the end stop bush

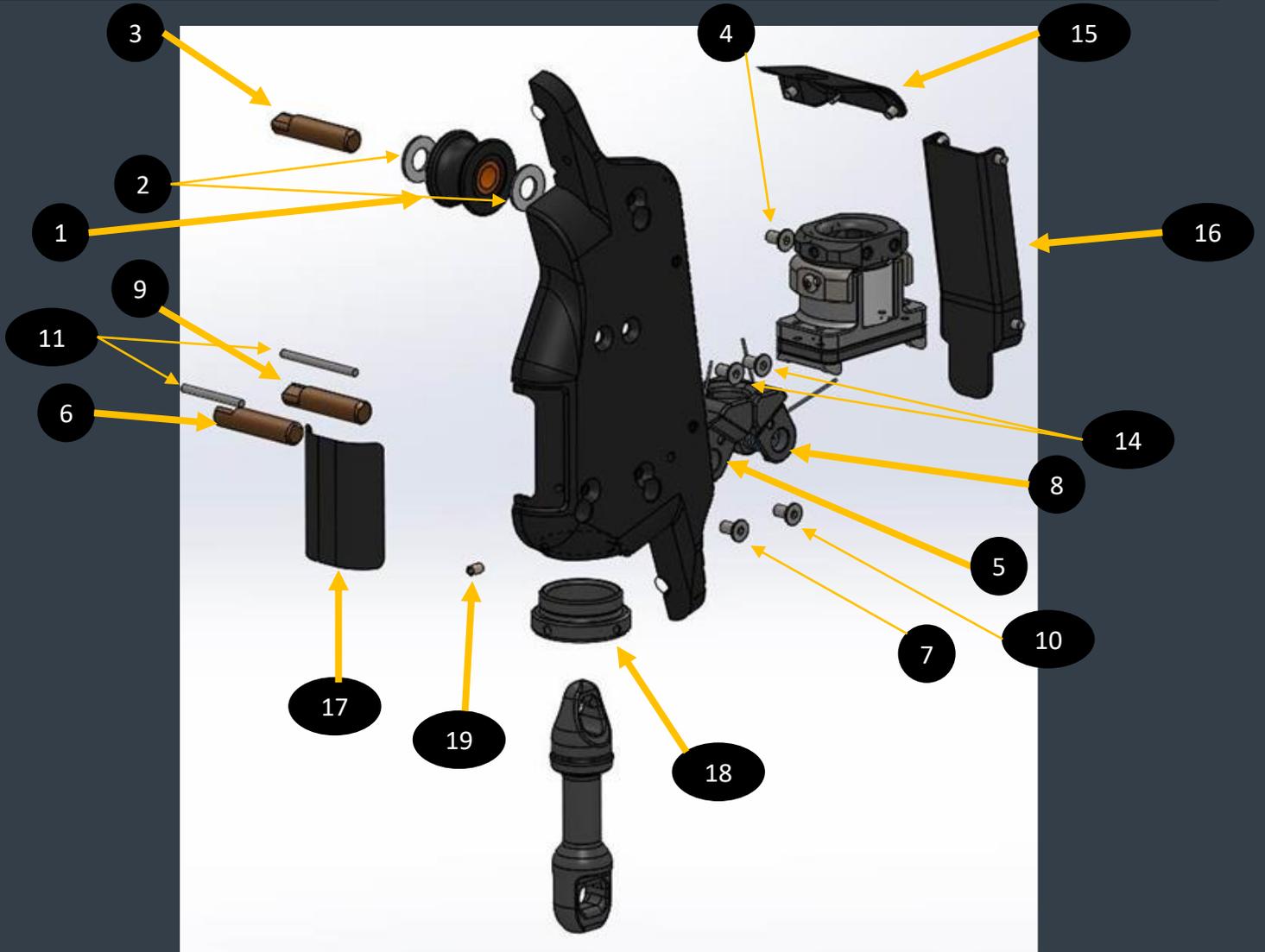
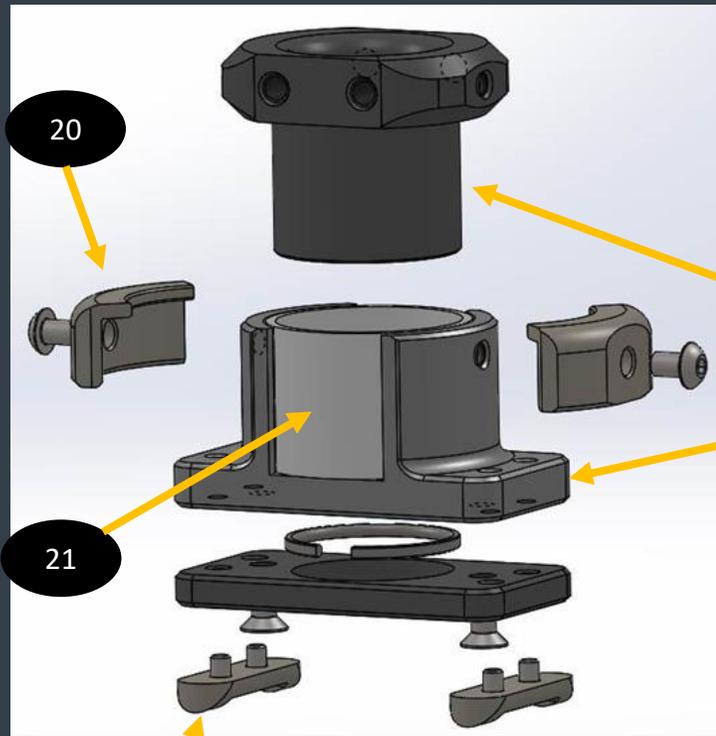
1. Strip down the lock as described in the previous section.
2. Unscrew locking wedges (20) from snap ring holder.
3. Withdraw bush from snap ring holder (21).
4. Refit locking wedges (20) and apply Loctite to screws.

Replacement of the rolling wedges

1. Strip down the lock as described in the previous section.
2. Unscrew rolling wedges (22) from snap ring holder.
3. Refit new wedges applying Loctite to retaining screws

Maintenance & Checks (cont.)

Exploded Assembly



Troubleshooting

Problem	Probable Cause	Solution
Lock reactivates rather than unlocking	-Halyard is being over hoisted too much.	-A smaller over hoist will allow the pawls to open without the lock reactivating.
The lock mechanism will not unlock to allow the sail to be dropped	-The halyard may not have been raised enough to allow the pawls to open. -The pawl springs may have been damaged resulting in the pawls not flipping open to allow the spigot to pass through.	-Try increasing the amount of halyard taken up to try and unlock. -Remove front cover and whilst the halyard is raised, check that the pawls spring open. If not, the pawl springs may need to be changed or there may be debris in the pawl mechanism, in which case a strip down will be required.
The lock mechanism will not activate and therefore won't lock	-The snap ring or bayonet may have been damaged. -The force required to close the pawls may be more than normal. -The rolling wedges on the snap ring holder may be worn not closing the pawls	-With the bayonet out of the lock, visually check the snap ring is present and not damaged. Check the bayonet for damage. Try to operate the pawls with the front cover removed -If the snap ring is damaged, a strip down will be required and ring replaced- contact Rigging Projects for parts -Replace the rolling wedges if after inspection, they appear to be worn.



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