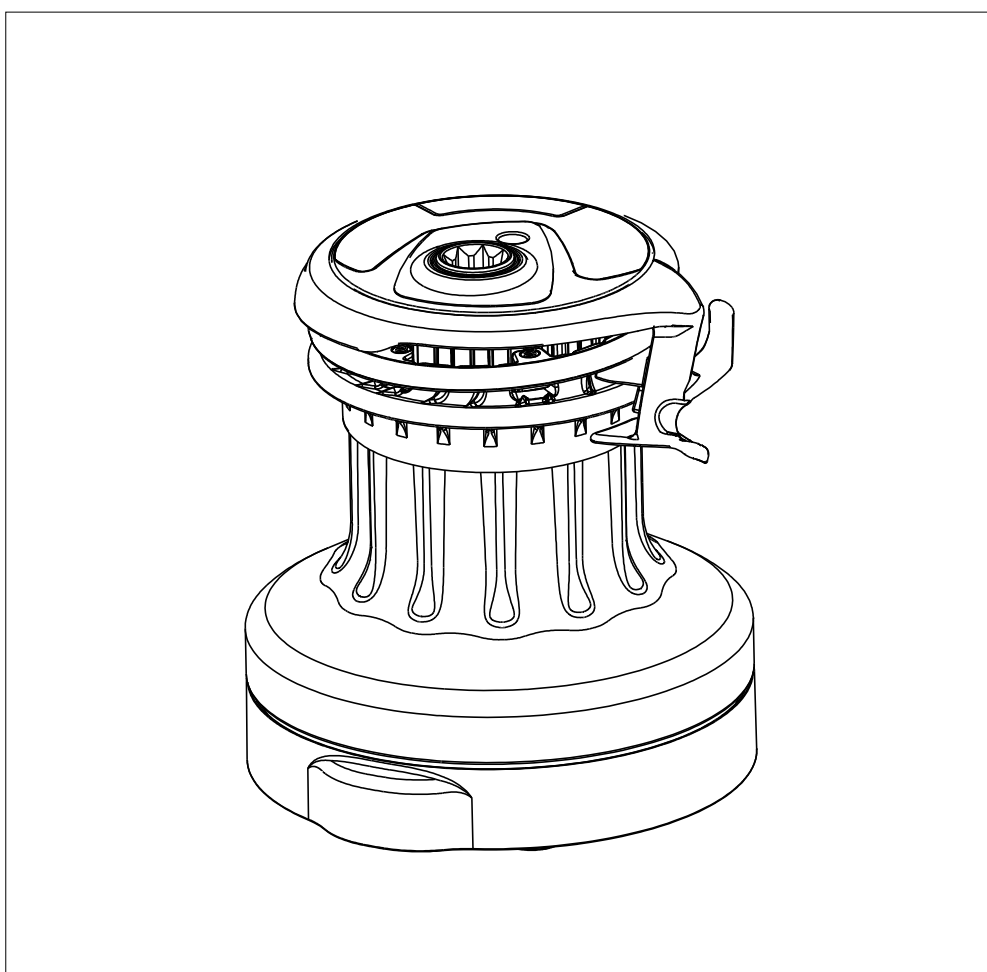


Manual for Reversible winch R30, R40, R46 & R52



1 Introduction

1.1 The manual

To derive the maximum benefit and enjoyment from your Seldén winch, we recommend that you study this manual carefully.

All safety-related information is indicated by the following symbol:



The manual covers 4 different Winch sizes, R30, R40, R46 & R52. The model designation can be found on the top of the winch.

Identification-/serial number is located inside the winch, but also at the delivery box.

The Seldén winch installation system is based on metric screws or bolts.

This manual will be updated subsequently. For latest update check www.seldenmast.com or contact Seldén for your own issue.

1.2 Warranty

Seldén Mast AB guarantees the winch for 2 years. The guarantee covers faults arising from defective design, materials or workmanship.

The guarantee is only valid if the winch is installed, operated and maintained in accordance with this manual and is not subjected to loads in excess of those indicated in the brochure and instructions.

If the winch is repaired by anyone other than Seldén Mast AB or one of our authorized dealers, the guarantee ceases to be valid.

The Seldén winch is designed for line handling on sailboats only.

Complete shipment and warranty conditions are to be found on Seldén's website www.seldenmast.com. See Resources/Partners information/General information/General conditions of sale (595-546-E).

Seldén Mast AB reserves the right to alter the content and design without prior warning.



This information must be followed to avoid damage to the winch and the risk of personal injury. The 2-year guarantee on the Seldén winch is only valid if the winch is installed and operated correctly according to the manual.

1.3 General warning & instructions

Make sure the winch is dimensioned according to Seldén's design standards and not is subjected to loads greater than those stated in the brochure and instruction materials and is used solely for its intended use, i.e. normal sailboat applications for running rigging.

The winch is intended for high loads and shock loading from heavy breezes. Keep hand and fingers, hair and clothing from moving parts. Thereby it is recommended to let one person only, work with the winch at the time.

If a Seldén winch, despite the above, is used for going aloft in the mast, double halyards must be used, to be hauled in and eased off at the same time. (Seldén rigging manual "Hints & Advice", 595-540-E, "Working aloft").

For your own personally safety, make sure the winch have been installed, regularly inspected and maintained according to this manual.

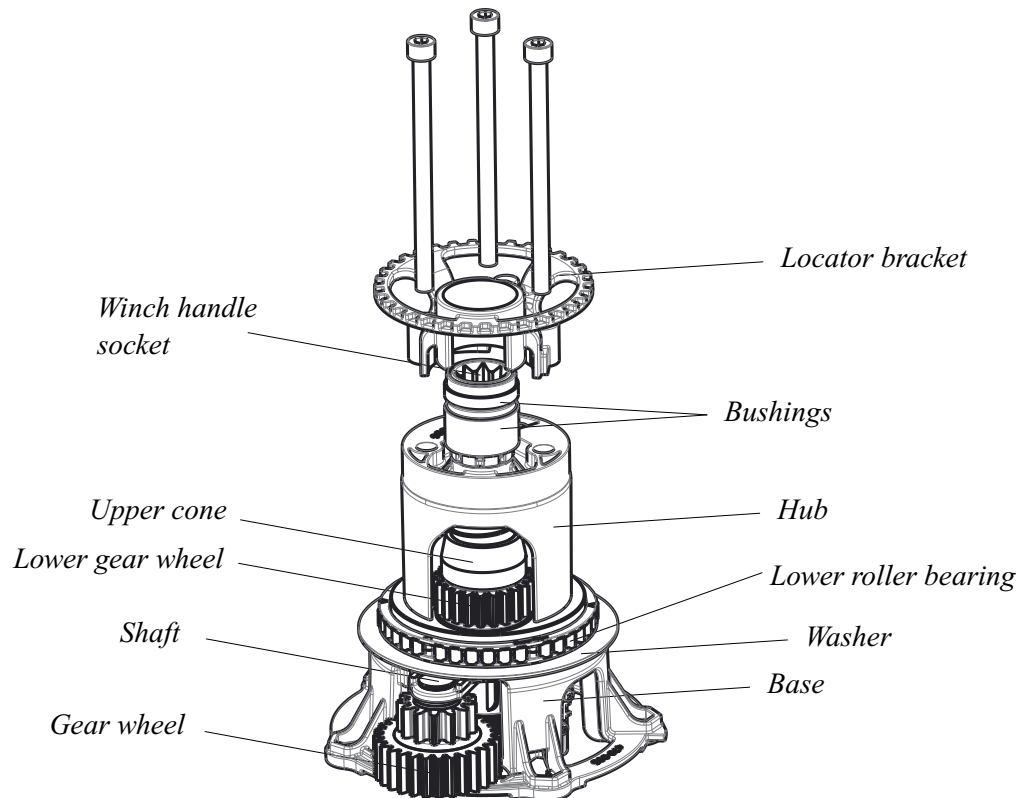
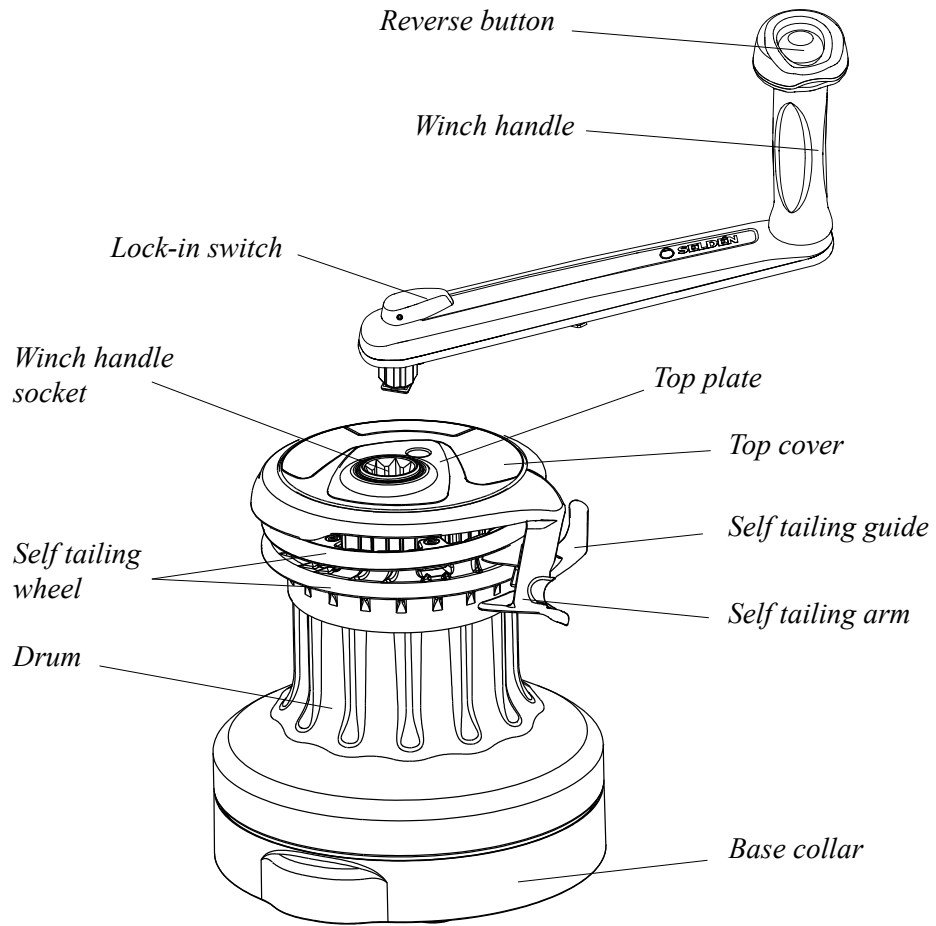


The Seldén winch is designed for line handling on sailboat only!

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*For service, spare parts and dealers go to
our website www.seldenmast.com.*



2 Operation instructions

Seldén winches are manually operated and of self-tailing type with two gears forward and a release function for reversing.

1. Place the line 2-3 turns clockwise around the winch. The number of turns determines the grip and is related to the line construction.
2. Lead the line onwards over the stripper arm, into the self tailing wheel for $\frac{3}{4}$ of a lap and lock it into the self tailing guide. The line remains in the self tailing guide/-wheel all the time which means it's a one hand operation to trim the sheet, the halyard or the spinnaker guy.
3. Put the winch handle into the socket.

2.1 Winch handle

The purpose made winch handle has a button which is pushed down with your thumb to prepare the winch for reversing. The reverse function can only be activated by using the purpose made Seldén R-winch handle.

2.2 Winching

Fast gear: Turn the winch handle clockwise.

Low gear: Turn the winch handle anti clockwise.



Consider the risk of injury which is associated with winching!

2.3 Reversing

To ease out the line, press the button on top of the winch handle and hold, push the handle slightly anticlockwise to disengage the fast gear clutch, then turn the handle clockwise. The line will be eased out as long as it is tensioned and the winch handle is continuously turned. The line remains in the self tailing guide/wheel during the whole operation.

3 Installation

3.1 Installation preparations

3.1.1 Winching orientation

Decide the location of the winch according to operation direction, with reference to the mostly used line and the bulb on the winch base. See fig. 3.1.1.a or the drilling template, enclosed in the winch package.

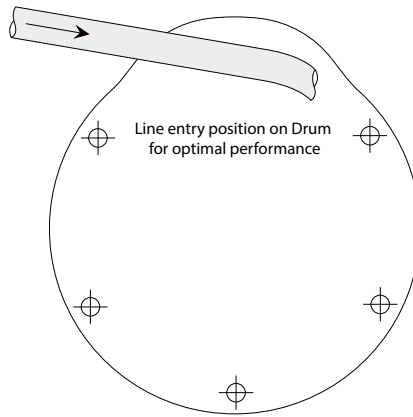


Fig. 3.1.1.a

3.1.2 Line routing

The line should enter the winch according to fig. 3.1.2.a to prevent from override.

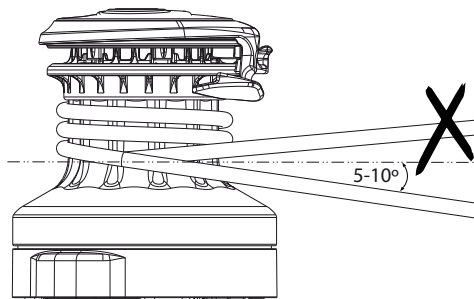


Fig. 3.1.2.a

3.2 Installation instructions

The winch has two systems for installation:

1. Hexagon headed bolts which slide into the winch base. No need to dismantle the winch. To be used with washers and nuts at the bottom. See 3.2.1.
2. Cheese headed screws, feed from the top. The winch needs to be dismantled. For cases where the boat is prepared with metal inserts in deck construction. See 3.2.2.

3.2.1 Installation with hexagon headed bolts (sliding bolt installation)

1. Cut the enclosed drill template after the winch outer contours.
2. Place the template on deck at the desired position acc. to chapter 3.1 "Installation preparations".
3. Drill the holes through deck using a drill dimension according to table.

Winch	Screw/Thread	Drill for through deck fastening	Drilling template
R 30	M6	Ø 7 mm	595-687-E
R 40	M6	Ø 7 mm	595-688-E
R 46	M8	Ø 9 mm	595-689-E
R 52	M8	Ø 9 mm	595-690-E

4. Make a countersunk recess at the top of the holes. Along with the sealant this extra space will create a better seal around the screw.

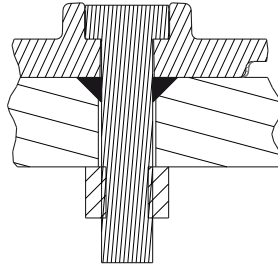


Fig. 3.2.1.a

5. Mount the screw by sliding the hexagon head into the base and apply sealant into the U-recess and around the screw. Apply enough sealant to fill the countersunk recess at the holes in the deck.
6. Install the full package, base and screws, in the deck simultaneously. Mount the washers and nuts under deck and tightened from below.

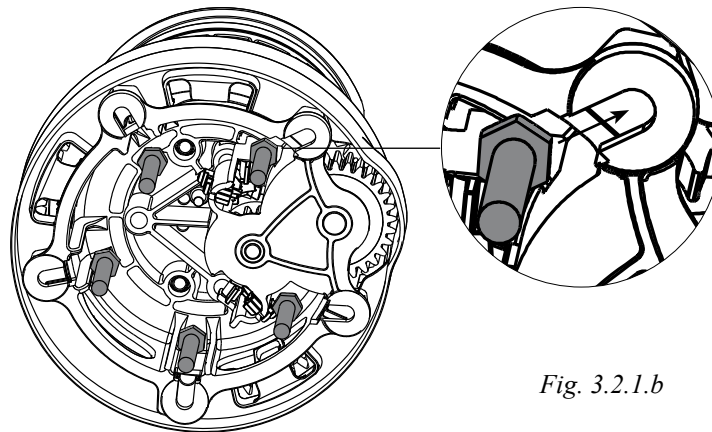


Fig. 3.2.1.b

3.2.2 Adjustment of the selftailing arm

The direction of the Selftailing arm might be adjusted. It should preferable be mounted so that the line feeds into the cockpit when using the winch.

Tools needed: Hexagon key 5 (M6)

1. Remove the cap screw (1) and remove the top plate and the top cover.

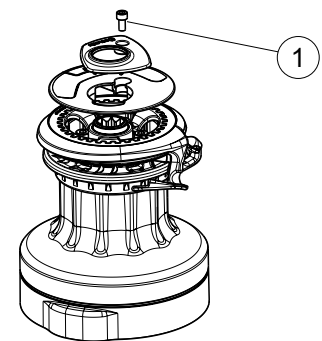


Fig. 3.2.2.a

2. Lift the selftailing arm by tilting it according to fig. 3.2.2.b and turn it to the desired position.



Fig. 3.2.2.b

3. Reassemble the parts in reverse order.

3.2.3 Installation with Hexagon socket head cap screw (Allen screws) with cylindrical head (None sliding bolt installation)

If the winch should be fastened by Hexagon socket head cap screw (Allen screws) with cylindrical head, the winch must be partly dismantled. This fastening method has to be used for threading into the deck. E.g. if the boat has purpose made metal plates, baked into the deck structure, or if non-hexagon headed through deck screws are used with washer and nuts.

Tools needed:

R30, R40 & R46: Hexagon key 5 (M6), Hexagon key 6 (M8)

R52: Hexagon key 5 (M6), Hexagon key 8 (M10)

1. Remove the cap screw (1) and remove the top plate and the top cover.

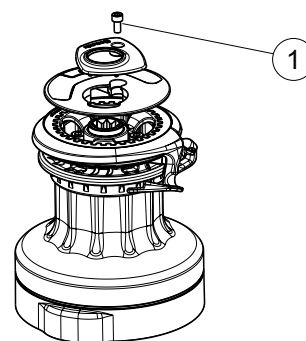


Fig. 3.2.3.a

2. Lift the selftailing arm by tilting it acc. to fig. 3.2.2.b and remove it.



Fig. 3.2.3.b

3. Loosen the three screws whose heads have now become visible. Remove the locator bracket (2).

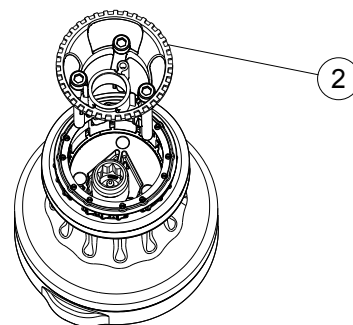


Fig. 3.2.3.c

4. Lift the drum/self tailing assembly (3) together straight up. On R30 & R40, make sure the composite hub remain on the base.

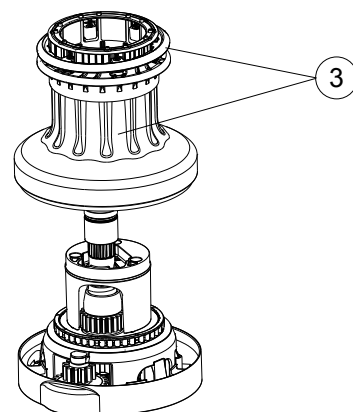


Fig. 3.2.3.d

5. Remove the base collar (4) from the base by releasing the clips (5) (x3) carefully.

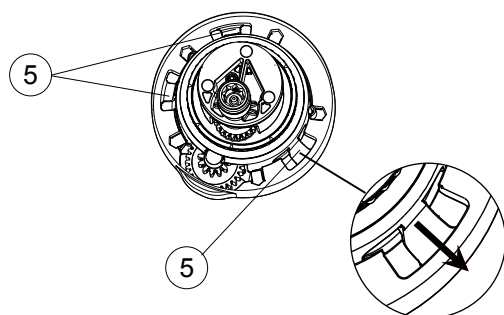


Fig. 3.2.3.e

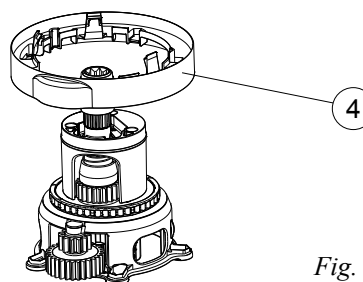


Fig. 3.2.3.f

6. Mark the fastening holes using the winch as a template or use the enclosed paper template.
7. Drill through holes fastening or for threading. See table. Make the threads if that fastening system has been selected.

Winch	Screw/Thread	Drill for through deck fastening	Drill for thread	Drilling template
R 30	M6	Ø 7 mm	Ø 4.9 mm	595-687-E
R 40	M6	Ø 7 mm	Ø 4.9 mm	595-688-E
R 46	M8	Ø 9 mm	Ø 6.5 mm	595-689-E
R 52	M8	Ø 9 mm	Ø 6.5 mm	595-690-E

8. Make a countersunk recess at the top of the holes. Along with the sealant this extra space will create a better seal around the bolt.

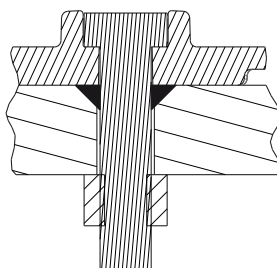


Fig. 3.2.3.g

9. **Through deck fastening:** Mount the screws into the base and apply sealant into the U-recess and around the screw. Apply enough sealant to fill the countersunk recess at the hole in the deck.

Install the full package, Base and screws, in the deck simultaneously. Mount the washers and nuts under deck. Hold the head of the screw without turning it while the screws are tightened from below.

Fastening by threading: Apply sealant into the countersunk recesses at the top of the hole in deck. Make sure to get a full measure of the sealant. Position the winch over the holes, mount and tighten the screws.

10. Reassemble the winch parts in reverse order. When assemble the self tailing arm, make sure it is mounted so that the line feeds into the cockpit when using the winch.

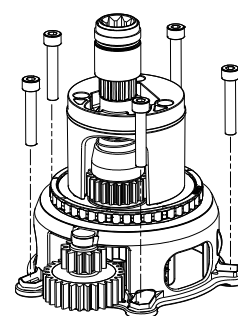


Fig. 3.2.3.h

4 Dismantling and Maintenance

To obtain full function and performance of the Reversible winch it is important that these maintenance instructions are carefully followed. Any grease should be applied **ONLY** at these places where it is stated. Grease must absolutely **NOT** be applied where this is specified below.

During dismantling, check wear and condition of all parts. Replace if necessary.

4.1 Dismantling for normal service

Tools needed:

R30, R40 & R46: Hexagon key 5 (M6), Hexagon key 6 (M8),
R52: Hexagon key 5 (M6), Hexagon key 8 (M10)

1. Remove the cap screw (1) and remove the top plate and the top cover.

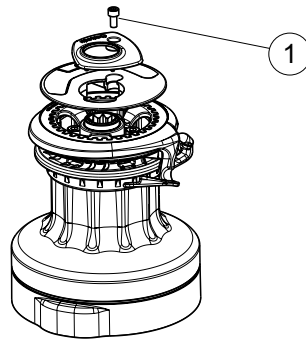


Fig. 4.1.a

2. Lift the self tailing arm by tilting it according to fig. 4.1.b and remove it.



Fig. 4.1.b

3. Loosen the three screws whose heads have now become visible. Remove the locator bracket (2).

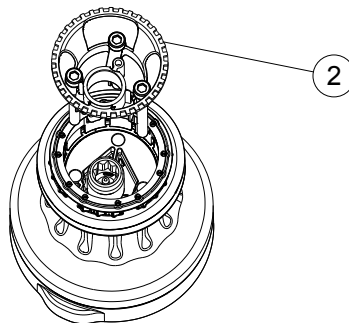


Fig. 4.1.c

4. Lift the drum/self tailing assembly (3) together straight up. On R30 & R40, make sure the composite hub remain on the base.

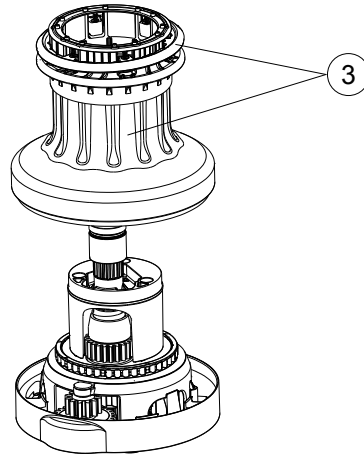


Fig. 4.1.d

5. Remove the base collar (4) from the base by bend the clips (5) (x3) slightly.

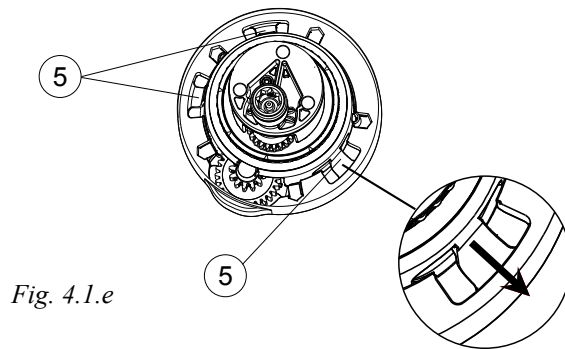


Fig. 4.1.e

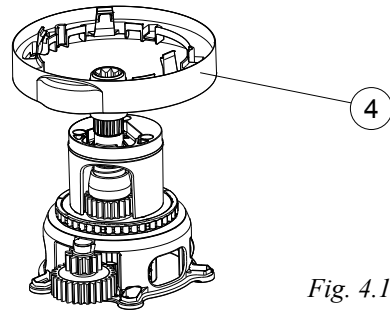


Fig. 4.1.f

6. Remove the lower roller bearing (6) and the washer (7).

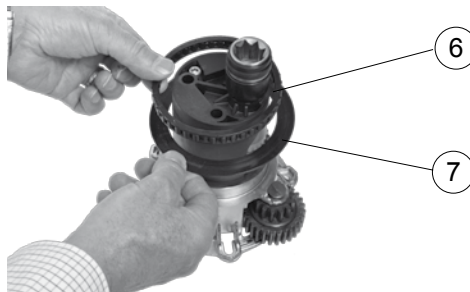


Fig. 4.1.g

7. Perform service according to chapter 4.3 "Service Instructions".
8. Reassemble the parts in reverse order. When assemble the self tailing arm, make sure it is mounted so that the line feeds into the cockpit when using the winch.

4.2 Dismantling for extended service

Continuation of the dismantling according to chapter 4.1 “Dismantling for normal service”, items 1-6.

Keep careful track of the order in which the parts are mounted.

Reassemble sub assemblies directly after checking and cleaning if possible.

Handle all parts carefully. All machine surfaced are very sensitive to scratches. Place the disassembled parts on soft cloths or similar.

Tools needed:

Small-medium size screwdriver-flat

Needlenose pliers

Small Torx-screwdriver T-10

R46: Hexagon key 5 (M6)

R52: Hexagon key 4 (M5)

1. Remove the shaft (8) and the twin gear wheel (9).

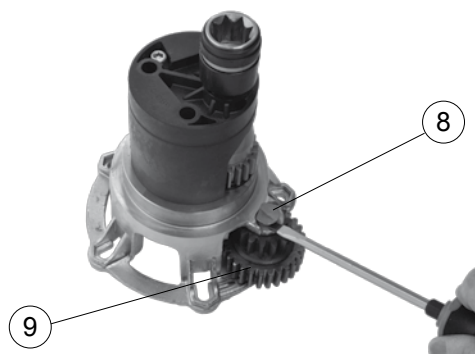


Fig. 4.2.a

2. Remove the washer (10). Note how this washer and ratchet wheel (11) are mounted. The washer has an asymmetrical rear and fit only to the ratchet wheel if this is fitted in the correct direction.

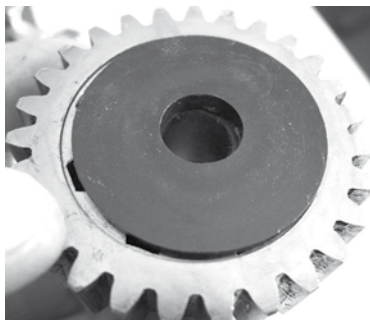


Fig. 4.2.b

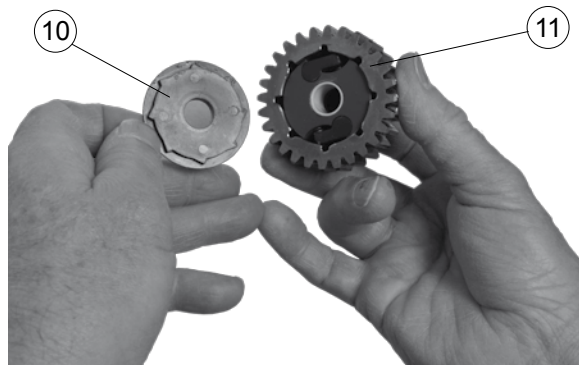


Fig. 4.2.c

3. Pull off the ratchet wheel and check functionality of the pawls (12). Dismantle the pawls and pawl springs if necessary. Worn pawls and springs should be replaced.

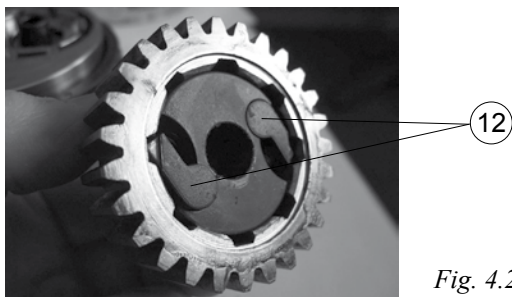


Fig. 4.2.d



Fig. 4.2.e

4. Lift out the winch handle socket (13) together with it's bushings (14).

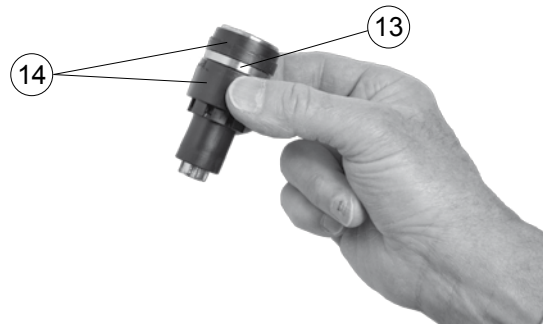


Fig. 4.2.f

5. Remove the hub. On R46 & R52; loosen first the cap screw which secure the hub.



Fig. 4.2.g



Fig. 4.2.h

6. Lift out the upper gear wheel cone assembly (15). (Upper gear wheel cone, drive shaft, brake activator, etc).



Fig. 4.2.i

7. Unscrew the upper cone (16). Pull out the lift pin (17) and remove the brake activator pin (18).

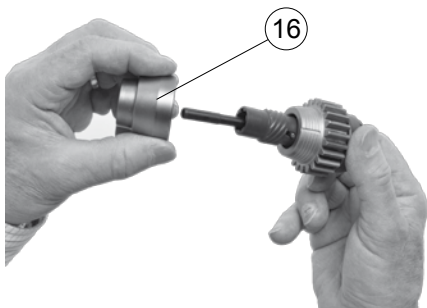


Fig. 4.2.j

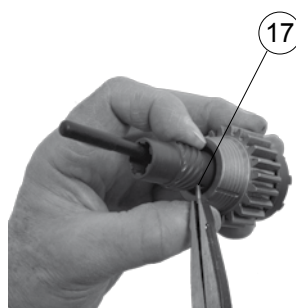


Fig. 4.2.k

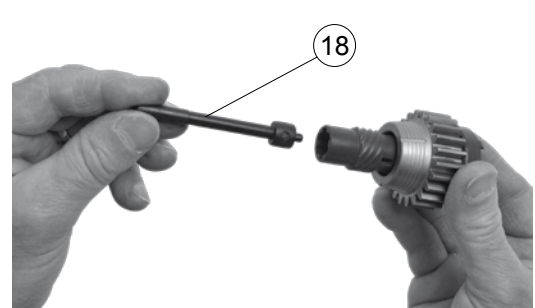


Fig. 4.2.l

8. Separate the drive shaft (19) and the lower gear wheel (20).

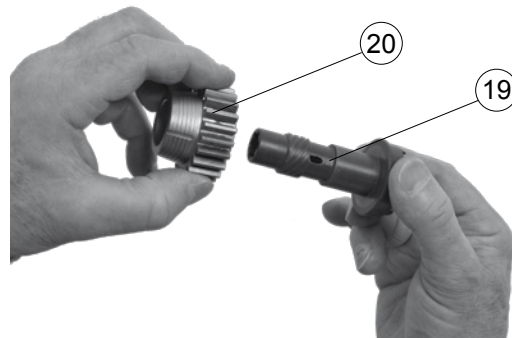


Fig. 4.2.m

9. Clean the parts (16-20) using a dry cloth or with white spirit. Check wear and condition.
10. Reassemble these parts (16-20) directly and put the assembly aside.

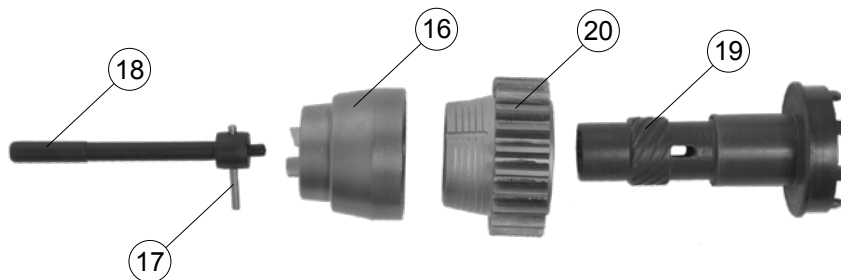


Fig. 4.2.n

When reassembly the lift pin into the brake activator; push the brake activator into the drive shaft and make sure that the holes for the lift pin aligns before inserting the lift pin.

11. Remove spirol spring (21) and the wave spring (22).

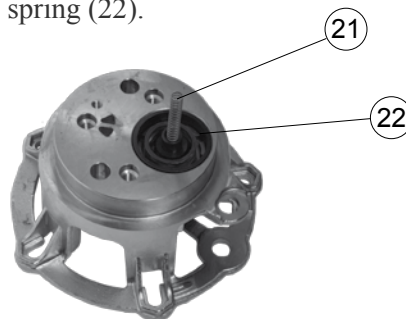


Fig. 4.2.o

12. Lift out the lower gear wheel assembly (23). Push a small screwdriver below the gear wheel according to fig. 4.2.p. And lift the complete assembly. The composite bushing on top will comply during this operation.

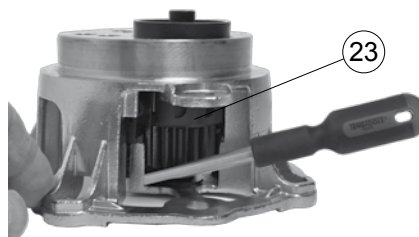


Fig. 4.2.p

13. Unscrew the lower gear wheel (24) from the lower gear wheel assembly (ratchet wheel (25)). Turn it clockwise. Make sure the upper cone (27) don't fall out.

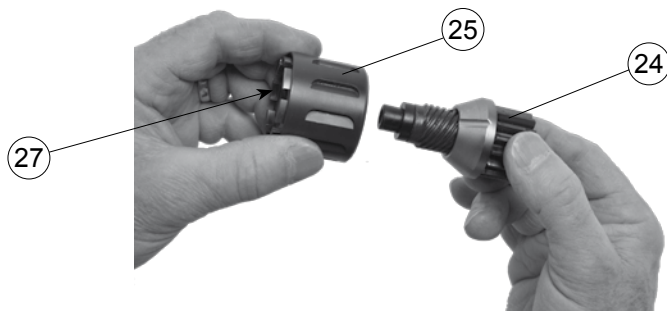


Fig. 4.2.q

14. Unscrew the lower cone (26) from the lower gear wheel.

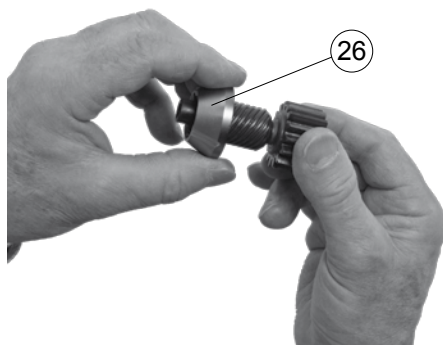


Fig. 4.2.r

15. The upper cone (27) remains probably stuck into the ratchet wheel (25). To remove it, screw the lower gear wheel (24) threads approx. 10 mm into the upper cone (27) from top (fig. 4.2.s) and pull it out (fig. 4.2.t). Check the condition of the o-ring (28) and replace it if it's worn.

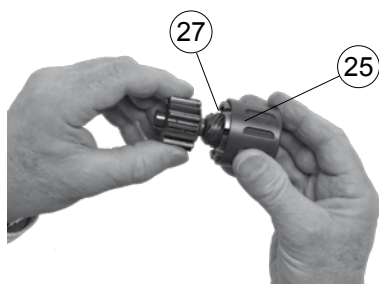


Fig. 4.2.s



Fig. 4.2.t

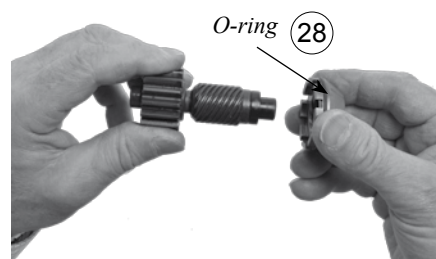


Fig. 4.2.u

16. Check all four conical surfaces in this assembly and make sure they are not uneven worn (asymmetric) or worn out.

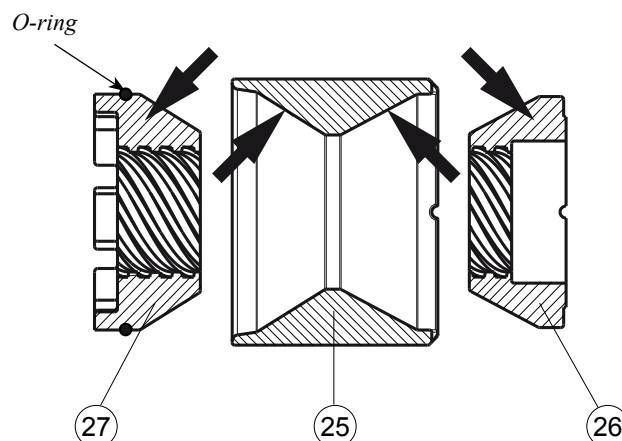


Fig. 4.2.v

17. Clean the parts using a dry cloth or with white spirit.
18. Reassemble the lower gear wheel assembly. At the ratchet wheel (25) there is a notch (29) at the lower edge. The upper cone (27) is the one that has an o-ring mounted.



Fig. 4.2.x

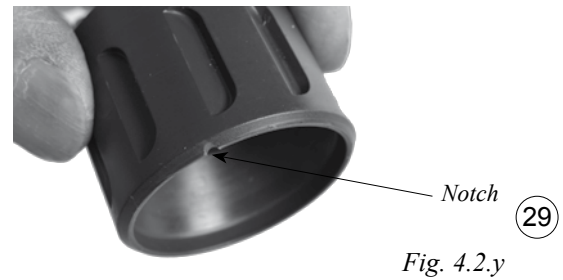


Fig. 4.2.y

19. Check function and possibly wear of the pawls in the base. Remove the pawl holder assemblies only if the function is poor. Dismantle the pawls and pawl springs if necessary (item 20-22). Worn pawls should be replaced. Pawl holder assemblies before 2016 should be replaced if removed.

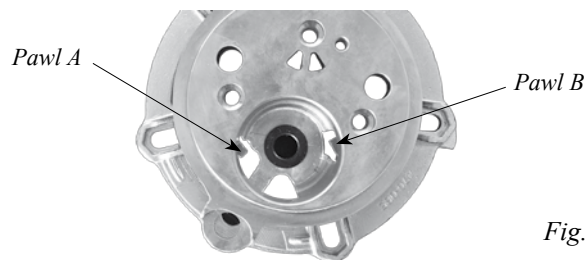
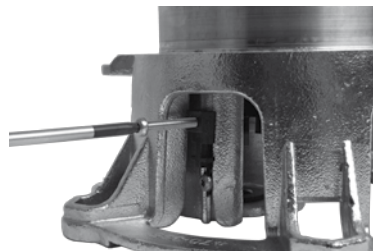


Fig. 4.2.z

20. Removing the pawl assemblies by unscrew the pawl holders. Loosen the upper screw only. (Torx-T10) The screw must be unscrewed almost completely.



Pawl B

Fig. 4.2.a.a

Pawl A: Pull out the pawl holder assembly towards the gear wheel assembly compartment using a needlenose pliers.

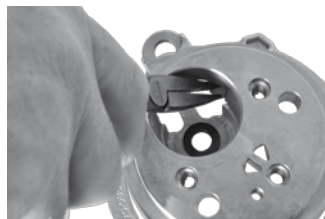


Fig. 4.2.a.b

Pawl B: Pull out the pawl holder assembly from outside using a needlenose pliers. (Pushing with a finger may help).



Fig. 4.2.a.c

21. Dismantle the pawls and pawl springs if necessary. Clean the parts to ensure full function. Worn pawls should be replaced. Pawl holder assemblies before 2016 should be replaced if removed.

22. When refitting the pawl holder assemblies, old or new, make sure that it slides on the tongue at the remaining locator insert.

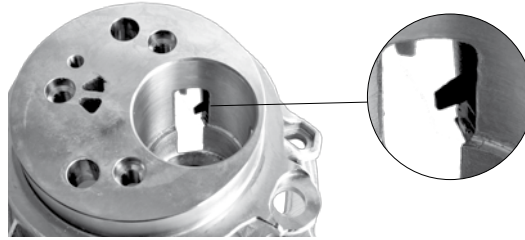


Fig. 4.2.a.d

Pawl A: To be held by a needlenose pliers and mounted from the gear wheel assembly compartment, as show.



Fig. 4.2.a.e

Pawl B: To be mounted from outside using a needlenose pliers.



Fig. 4.2.a.f

23. Reassemble the rest of the parts in reverse order. When mounting the lower gear wheel assembly, screw together the package by hand and put it down into the base until it rests on the pawls. Rotate the ratchet wheel anti clockwise approx. one turn. (Through this procedure the small notch at the ratchet wheel will open the pawls which allows complete assembly).



Fig. 4.2.a.g

When mounting the upper gear wheel assembly, turn the driveshaft to make sure drive shaft teeth fits into underlying parts.



Fig. 4.2.a.h

Lubricate the cogs according to chapter 4.3. “Service”, item 1-4. Any grease should be applied ONLY at these places where it is stated. Do NOT grease other parts!

When assemble the self tailing arm, make sure it is mounted so that the line feeds into the cockpit when using the winch.

4.3 Service instructions

1. Dismantle the winch according to the steps 4.1.
2. Clean all surfaced before lubricating using a dry cloth or with white spirit.
3. Apply a thin layer of grease with a brush at the upper and lower ring gear at the drum.
Use seldén lubrication grease 312-501.



Fig. 4.3.a

4. Lift the shaft which holds the twin gear wheel and lubricate the shaft. Put it back. Lubricate the outer cogs at the twin gear wheel.



Fig. 4.3.b

5. The brake activator assembly needs only service if the function are bad.
See chapter 4.2 “Dismantling for extended service“.

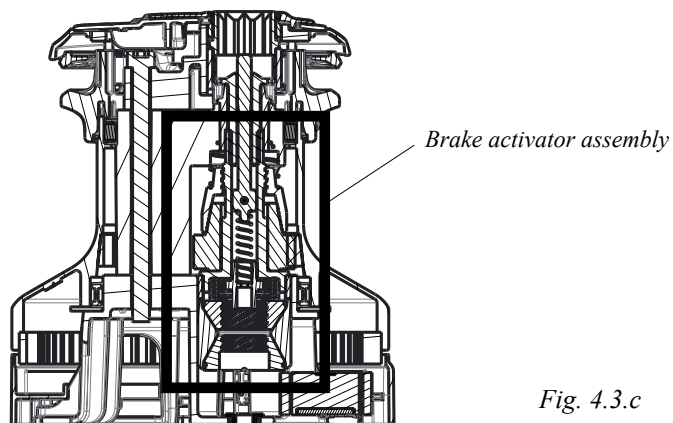


Fig. 4.3.c



Any grease should be applied ONLY at these places where it is stated. Grease must absolutely NOT be applied at other places.

Notes

[illegible]

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