ANDERSEN
STAINLESS STEEL WINCHES

# PRODUCT MANUAL
# 82-3ST Winch


FOR USE WITH:

Manual Winch: RA2082010000

Winch Versions: ≥ V.1.0

Rev.0

RONSTAN

# SAFETY NOTICES

**Read All Safety Notices and Product Manuals**

Do not install or operate this winch before reading and fully understanding the contents of this Safety Notice Sheet and the Product Manual.

**Stay Alert When Operating**

Andersen winches are very powerful and have the potential to cause significant damage and/or serious injury if used improperly or without due caution and vigilance.

**Operators Must be Trained**

Help prevent significant damage and/or serious injury by ensuring any person operating a winch has a thorough understanding of its proper operation and is aware of the potential hazards involved. As a minimum, all winch operators must read and understand this Safety Notice Sheet and the Product Manual.

Particular attention is drawn to the following points:

- Children and others not qualified to operate an electric winch must be kept at a safe distance from the winch and any rigging or fittings that are under load.
- Long hair and/or loose clothing must be tied back to avoid being caught in the winch.
- In the event of a rope override or other fault, stop the winch and turn off power before attempting to resolve the problem.

**Avoid Accidental Operation**

Always turn off power to electric winches at the circuit breaker and remove winch handles when not in use, to help avoid unsupervised or unintentional operation. Failure to do so could result in significant damage and/or serious injury.

**Maintenance**

Turn off power to electric winches before performing any maintenance or service tasks. Failure to do so could result in significant damage and/or serious injury.

**Lifting Operations**

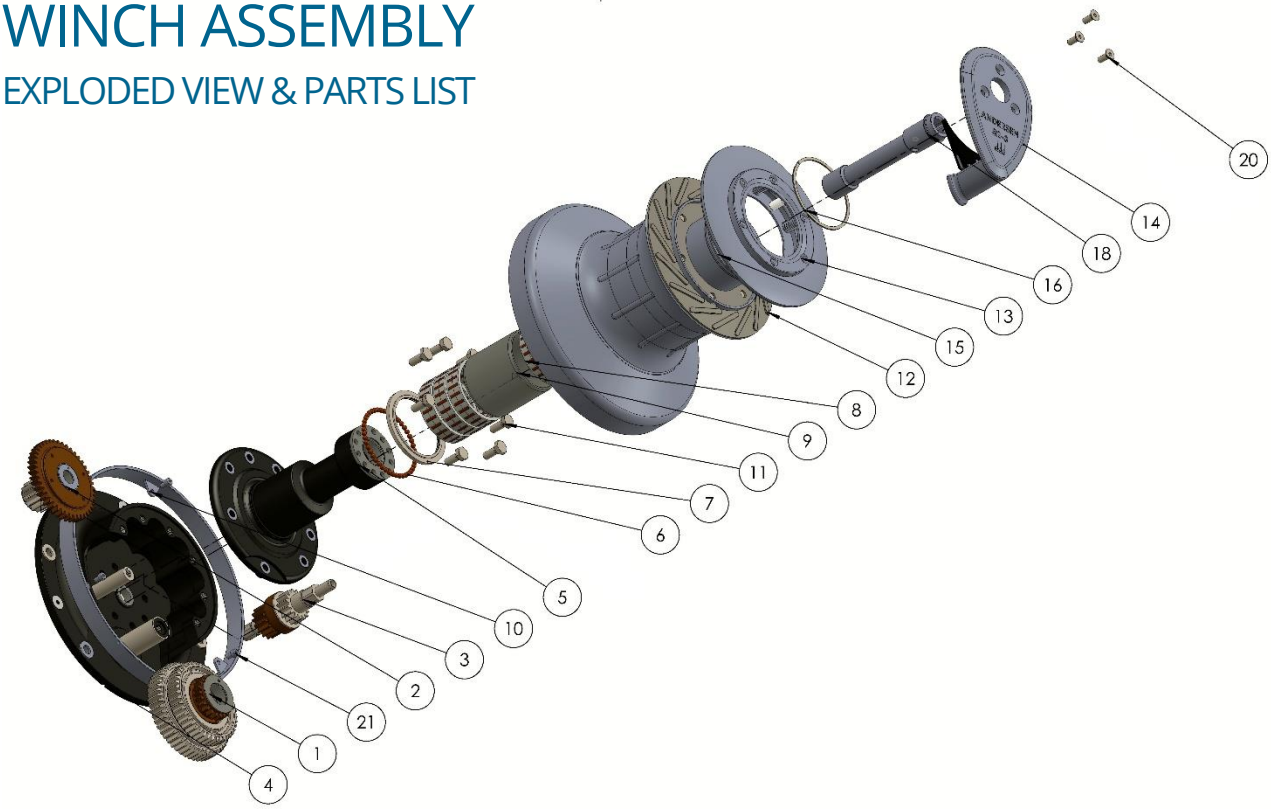
The winch must not be operated with the rope in the self-tailer when used in any kind of lifting operation. Any lifting operations should be conducted by two persons in order to maintain constant visual contact with the object being lifted. Furthermore the self-tailer must not be used as a cleat for a rope used to lift or suspend any object. The rope must be secured properly by tying off, or leading to a suitable fitting such as a cleat or bollard.

**Failure to observe these precautions could result in serious injury or death.**

DO NOT DISCARD

# WINCH ASSEMBLY

## EXPLODED VIEW & PARTS LIST

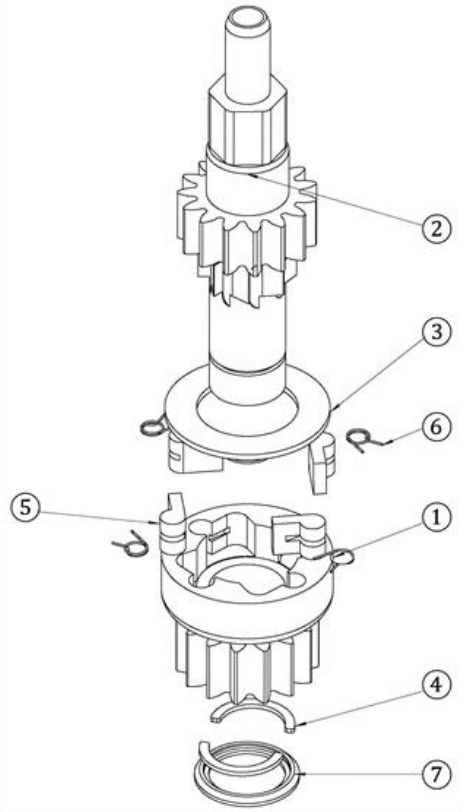



| Item no. | Qty. | Description | Part no. |
|---|---|---|---|
| 1 | 1 | Main drive gear set 82-3ST | 539604 |
| 2 | 1 | 3rd speed gear set 82-3ST | 538003 |
| 3 | 1 | Central gear set 82-3ST | 539704 |
| 4 | 1 | Base 82-3ST | 741607 |
| 5 | 1 | Centre stem assembly 82-3ST | 741511 |
| 6 | 45 | Torlon® ball dia. 1/4" (6.35mm) | 501001 |
| 7 | 1 | Ball retaining ring 82-3ST | 539512 |
| 8 | 4 | Torlon® roller bearing assembly 82-3ST | 539210 |
| 9 | 1 | Bearing spacer 82-3ST | 538201 |
| 10 | 1 | Base cover 82-3ST | 751152 |
| 11 | 8 | Bolt M10x25 hex head | DIN933-A4-M10X25 |
| 12 | 1 | Drum 82-3ST | 741321 |
| 13 | 1 | Self-tailer top 82-3ST | 545411 |
| 14 | 1 | Self-tailer arm 82-3ST | 733412 |
| 15 | 1 | Bush, drum 78ST,82-3ST | 538800 |
| 16 | 1 | Circlip | 590100U |
| | | | |
| 18 | 1 | Drive shaft 82-3ST | 538415 |
| | | | |
| 20 | 3 | Screw M8x20, CSK socket head | DIN7991-A4-M8X20 |
| 21 | 3 | Screw M6x12, CYL socket head | DIN 912-A4-M6X12 |

# GEAR SET ASSEMBLY

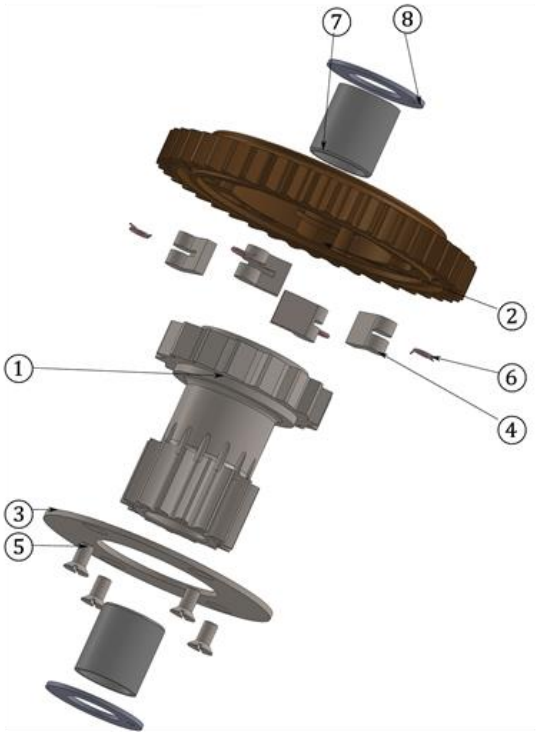
## EXPLODED VIEWS & PARTS LISTS

### Central Gear Set 82-3ST



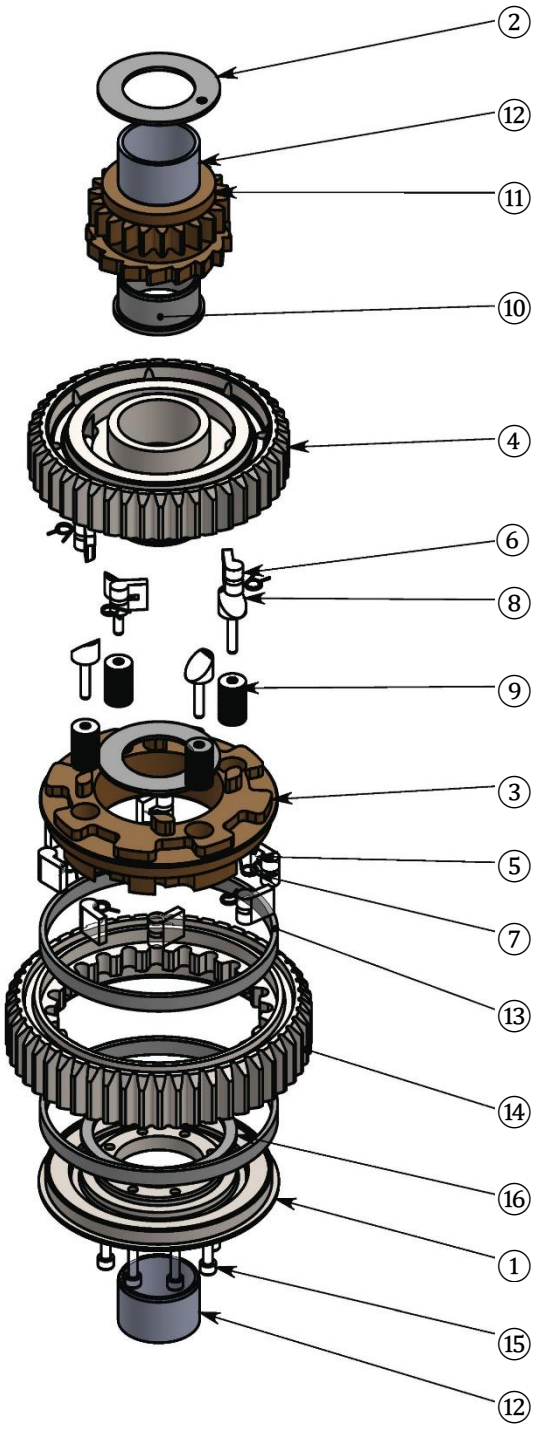

| Item no. | Qty. | Part no. | Description |
|---|---|---|---|
| 1 | 1 | 539702 | Lower center ratchet 82-3ST |
| 2 | 1 | 538501 | Lower driveshaft 82-3ST (manual drive) |
| 3 | 1 | 539901 | Center gear thrust bearing 82-3ST |
| 4 | 2 | 539902 | Collets |
| 5 | 4 | 713200 | Pawl for arm spring |
| 6 | 4 | 713300 | Pawl spring, arm |
| 7 | 1 | 539903 | Retainer ring |

### 3rd Speed Gear Set 82-3ST




| Item no. | Qty. | Part no. | Description |
|---|---|---|---|
| 1 | 1 | 538004 | Small 3rd speed drive gear |
| 2 | 1 | 537501 | Large 3rd speed drive gear |
| 3 | 1 | 537800 | Cover washer 82-3ST |
| 4 | 4 | 713200 | Pawl for arm spring |
| 5 | 4 | DIN7991-A4-M5X10 | Screw M5X10 CSK socket head |
| 6 | 4 | 713300 | Pawl spring, arm |
| 7 | 2 | 537901 | Hub bearing |
| 8 | 2 | 537902 | Thrust washer |

# Main Drive Gear Set 82-3ST




| Item no. | Qty. | Part no. | Description |
|---|---|---|---|
| 1 | 1 | 542215 | Cover plate/ bearing |
| 2 | 2 | 532604 | Thrust washer, top |
| 3 | 1 | 542230 | Pawl carrier,auto-switch centerpiece |
| 4 | 1 | 542210 | Drive gear 82-3ST |
| 5 | 8 | 713200 | Pawl for arm spring |
| 6 | 4 | 713201 | Pawl for auto-switch 82-3ST |
| 7 | 12 | 713300 | Pawl spring, arm |
| 8 | 4 | 542235 | Auto-switch angled slider/plunger 82-3ST |
| 9 | 72 | 542238 | Auto-switch disc spring |
| 10 | 1 | 532602 | Overdrive hub bearing, lower |
| 11 | 1 | 542220 | Overdrive gear 82-3ST |
| 12 | 2 | 532603 | Overdrive hub bearing, upper |
| 13 | 2 | 534810 | Bearing, main ratchet gear 82-3ST |
| 14 | 1 | 537702 | Freewheel gear 82-3ST |
| 15 | 8 | DIN912-A4-M4X15 | Screw, CYL socket head |
| 16 | 1 | 532606 | Clutch bearing 82-3ST |

# ANDERSEN Stainless Steel Winches®

Your Andersen winch is made with the care and craftsmanship that come from more than sixty years of experience. Andersen winches are built to last, to retain their exceptional finish and to deliver season after season of reliable performance and sailing pleasure to their owners through the years.

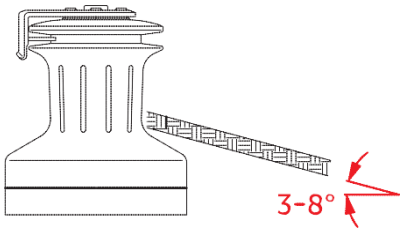
# INSTALLATION

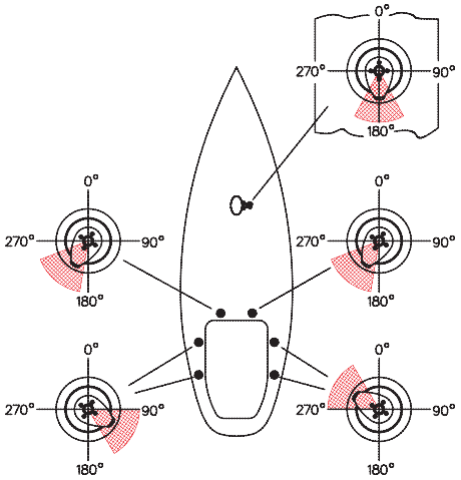
**Required for installation:**

- Drilling/mounting templates for 82-3ST winch
- Hex key, 5mm (included)
- Hex key, 10mm for winch mounting bolts
- Drill bit Ø12.5mm
- 6x ISO 4762-A4 M12 mounting bolts (length as required for deck thickness)
- 6x M12 locking nuts and large washers (or backing plate to match drilling template)
- Spanner, 19mm for mounting bolt locking nuts
- Sealant / bedding compound

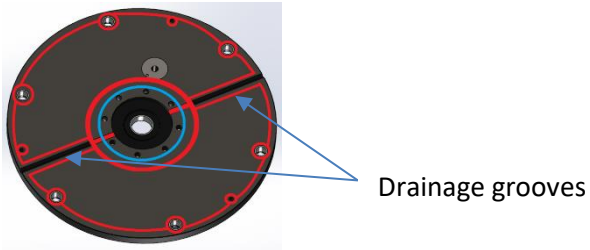
## Step 1 Determine mounting location and orientation

Position the winch with the recommended line entry angle of 3-8° from horizontal. The self-tailing arm should be positioned to allow the rope to drop clear of the winch as it feeds out of the self-tailer. Positions will typically be as indicated by the shaded sectors in the diagram. The self-tailing arm can be adjusted after installation into one of 12 different positions, as indicated on the drilling template.

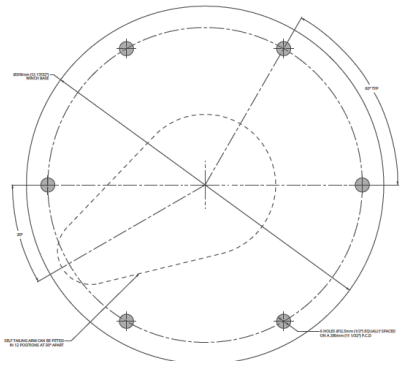



Note the drainage grooves on the underside of the winch base. If the mounting surface is not horizontal due to deck camber or other factors, plan the installation such that water may drain away from the winch base towards the lowest point in relation to the slope of the mounting surface.



## Step 2  Prepare the mounting surface



After confirming the mounting location and orientation of the winch, clean the mounting surface and place the drilling template in the required position on the deck. Ensure that the surface is flat and there is adequate space and clearance below deck for access to mounting bolts.

With the drilling template in the desired orientation, drill the Ø12.5mm holes for the M12 mounting bolts.

Clean any wood or fibreglass splinters from the holes, and clean the deck thoroughly to ensure deck sealant can adhere properly. Apply sealant to the deck around the mounting bolt locations, taking care not to block the drainage grooves in the winch base. For aluminium boats use a galvanic isolating ring/gasket.

## Step 3  Install the winch

Use a hex key to remove the screws at the top of the winch, then lift off the self-tailing arm and the drum to expose the centre stem, base and gears. See the exploded view for guidance.

Note that it is not necessary to completely disassemble all components shown in the diagram in order to install the winch.

Position the winch base on the deck in the desired orientation, with mounting holes aligned, and secure it to the deck using appropriate length M12 bolts, large washers or backing plate, and locking nuts.

# OPERATION CHECKS

## Check manual operation of the winch

First check the winch by rotating the drum by hand. Then use a winch handle to operate the winch manually, turning the handle in both directions with no load on the drum. The winch should operate smoothly in both gears, always with the drum rotating only in a clockwise direction.

For normal operation start by using the winch in 1st gear (highest speed) by turning the handle in a clockwise direction. As load increases and operation becomes more difficult, shift into 2nd gear by turning the handle in the opposite direction so that you can continue to operate the winch comfortably.

- At low loads, reversing the direction of handle rotation from 2nd gear and turning clockwise again will return the winch to 1st gear operation.
- At higher loads, the winch will automatically shift so that reversing direction of handle rotation from 2nd gear to clockwise again will put the winch into 3rd gear, allowing continued operation under high load.

*Note: The winch will only shift gear automatically to allow operation in 3rd gear if sufficient load has been reached while operating in 2nd gear. You may manually assist this transition by turning the handle in second gear until there is sufficient resistance to trigger the shift.*

# SERVICE & MAINTENANCE

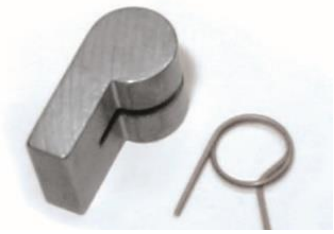
Inspection and service of your Andersen winch is recommended at two year intervals. Service dates can be recorded on the back page of this manual for future reference.

**Required for service:**

- Hex key, 5 mm
- Spanner, 17mm
- Small flat screwdriver
- White/mineral spirits
- Soft cloth
- Andersen Winch Grease
- Small brush

1. Remove the screws (20) that secure the self-tailer arm (14).
2. Remove the self-tailer arm and drum assembly. It is not necessary to disassemble the spring loaded self-tailer to perform a normal servicing.
3. Clean the bearing surfaces and the gear teeth in the drum with white/mineral spirits. Apply Andersen Winch Grease to the gear teeth, but do not apply any grease to the bearing surfaces.
4. Remove the drive shaft (18) by inserting a winch handle to help pull it out of the centre stem.
5. Remove and clean the roller bearings (8) in soapy water with a soft cloth.
6. Leaving the retaining ring (7) and the ball bearings (6) in place, clean the ball bearings with soapy water using a small brush.
7. Remove the 8x M10 hex head bolts (11) and lift the centre stem (5) off the winch base (4).
8. Remove and dismantle the central gear set (3) and the 3rd speed gear set (2).
9. Clean the gears, pawls and springs in white/mineral spirits.

TYPICAL PAWL & SPRING

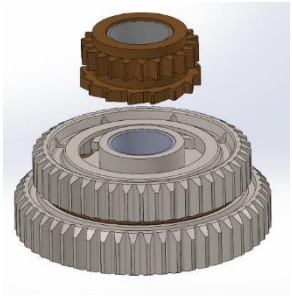


Note the curved spring “arm”

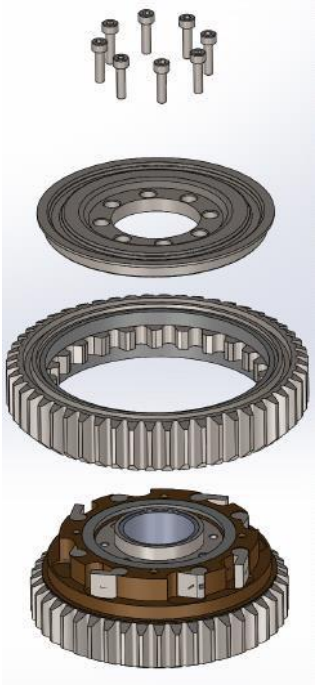
Correctly fitted in a pawl pocket

10. Reassemble the central gear set and the 3rd speed gear set, applying a very thin film of Andersen Winch Grease to the pawls. Do not use any other kind of grease for this purpose. Check the functioning of each pawl by pushing the pawl against the spring. The pawls should move smoothly and automatically return to their normal position where the pawls engage within the gears. If the pawls do not work correctly replace the springs and check again. Malfunctioning pawls may lead to unexpected release of the winch force resulting in serious injury to the user and others.

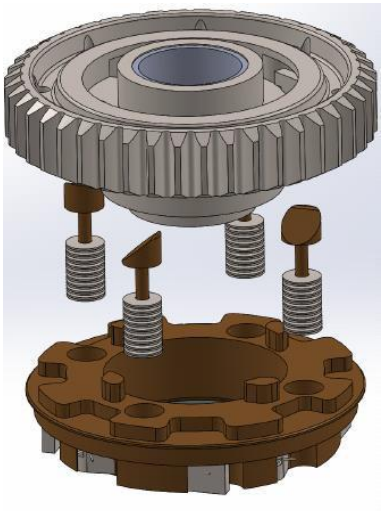
11. Apply grease to the gearwheels and teeth. Put these gear sets aside for the moment and proceed with the next step.
12. Main Drive Gear Set Service
    The main drive gear set (1) contains the clutch that engages and disengages to provide 3rd gear or 1st gear operation when turning the winch handle in a clockwise direction. Remove it from the winch base as a complete unit before disassembly.



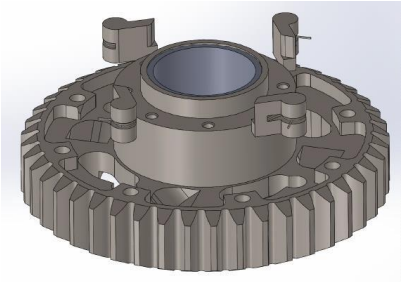
a. The overdrive gear positioned at the top of the gear set can be lifted off and cleaned. Check for wear on the gear teeth and bearing surfaces. Set the overdrive gear aside and proceed with the next steps.



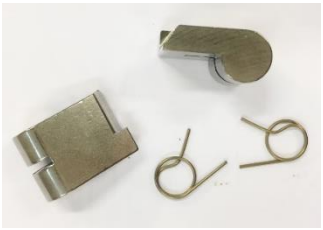
b. Turn the lower part of the gear set upside down and remove the 8 screws that hold it together. Lift off the closing plate and the freewheel gear to expose the bronze pawl carrier. Remove and clean the pawls and springs, checking the pawls and pawl pockets for wear. With normal use these pawl springs should be changed every two years or so.



c. Turn over the pawl drive assembly and separate the drive gearwheel from the bronze pawl carrier to access the springs that control the gear shifting torque. Lift out and clean the springs; check the 4 angled sliders for wear.



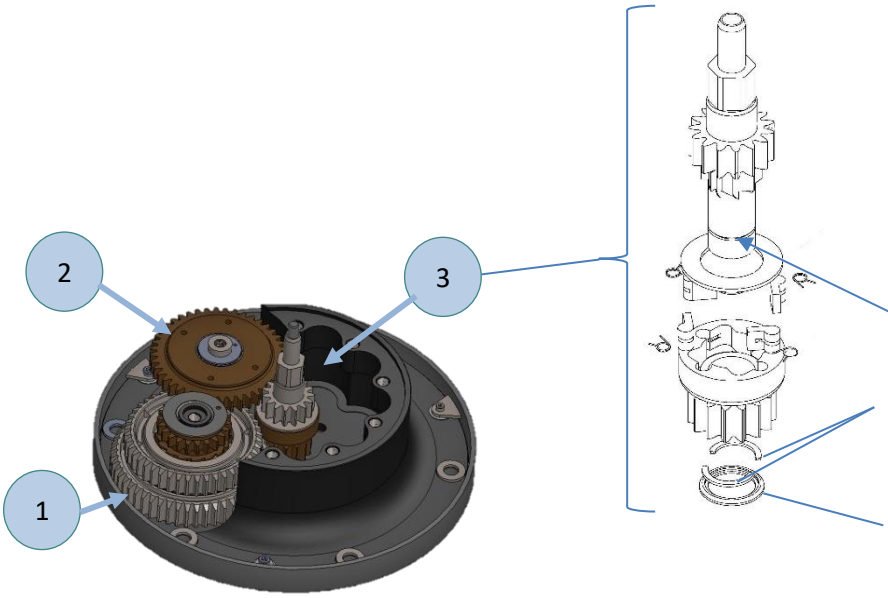
d. Turn over the drive gearwheel and pull out the 4 special auto-switch pawls. These pawls have a unique profile that is quite distinct from standard winch pawls, so take care to keep them separate. Clean the gearwheel, pawls and springs and check for wear. Springs should be replaced every two years or so.



Auto-switch pawls with arm springs

e. Reassemble the complete main drive gear set in reverse order to the steps above, taking care to ensure that the 4 angled sliders align with the corresponding slide paths machined into the drive gearwheel. Use Andersen Winch Grease on the gear teeth, bearing surfaces and slide paths, and a very thin film of the same grease on the pawls. When fitting the overdrive gear into place, a flat screwdriver may be used to help move the pawls into their engaged position to facilitate assembly.

13. See the exploded view for reference. To reinstall the 3 gear sets in the winch base: Insert first the main drive gear set (1), then the central gear set (3) and then the 3rd speed gear set (2). The two collets that secure the central gear must be fully inserted and secured in position by the retainer. The collets fit within the recess on the underside of the retainer.




The central gear set assembly is secured by two collets. These must be fully inserted in the groove of the shaft so that they locate within the recess of the retainer ring that holds them in position.

14. Reinstall the centre stem, checking that all gears run freely before tightening the 8x M10 hex head bolts (11). After tightening the bolts, fit the bearings, drive shaft, drum and self-tailing arm to complete the winch assembly. Before first use, check the operation of the winch as described earlier in this manual.

# NOTES

# CONTACT

Andersen Stainless Steel Winches® are manufactured by Ronstan Denmark ApS.

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## WORLDWIDE DISTRIBUTION & SERVICE

andersenwinches.com

## WARRANTY

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