ANDERSEN
STAINLESS STEEL WINCHES

PRODUCT MANUAL

68ST & 72ST E2 Electric Winch

FOR USE WITH

Electric Winches: RA2068011800, RA2072011800
Conversion Kits: RA2068211800, RA2072211800

Winch Versions: 68ST ≥ v.2.5
72ST ≥ v.1.2

Your Winch Version No. _____

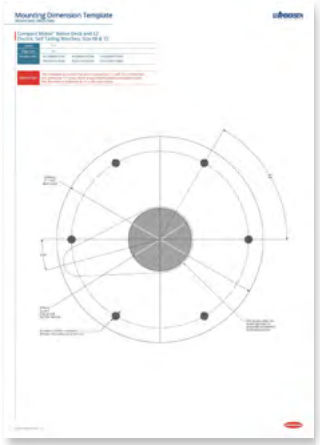
Your Motor Serial No. _____

RONSTAN

Rev.2

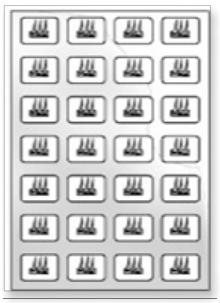
EXPLODED VIEW

68-72ST E2 Electric Motor Unit 24V



A1

A2



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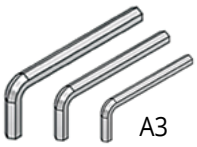


A3

A4

A6

A7

A8

PARTS LIST

ITEM NO.	QTY	DESCRIPTION	PART NO.
1	1	Deck plate	892201
2	1	Gearbox	RD100910
3	1	Cover	776170
4	1	Driveshaft housing 68/72ST E2	776102
5	8	Screw SS, M8 x 20 hex socket cyl. head	DIN912-A4-M8X20
6	1	Connecting shaft	892951
7	1	Lip seal	RD100169
8	8	Screw SS, M8 x 30 Hex CSK Head	SC4-830
9	1	Circlip	712800U
10	1	Cover (access to PCB, relays, fuse)	
11	1	Motor flange	776500
12	4	Bolt SS, M6 x 20 hex head	DIN933-A4-M6x20
13	8	Screw SS, M6 x 25 hex socket cyl. head	DIN912-A4-M6x25
14	1	Motor, 24V 1500W	777440
15	1	Gearwheel	890400
16	2	Shaft key	DIN6885-A-8x7x35
17	1	Glide Bush	823100
18	1	O-ring Ø72x2 NBR	776103
19	6	Screw SS, M10 x 20 hex CSK head	DIN7991-A4-M10x20
A1	1	Mounting template	
A2	1	Product Manual	
A3	1	Hex key set	
A4	1	Lifting eye	RD100896
A5	1	Push button label sheet	RD100029
A6	6	Screw M4 x 20mm, self tapping	
A7	2	Push button with plastic cover	RA582000
A8	2	Push button gasket	

Optional Accessories:

Push button, stainless steel cover	RA582010
Push button, stainless steel cover	RA582020
Circuit breaker	Refer to Winch Data Sheet*
Drive shaft & housing extension kits	Contact Dealer

*View or download the Winch Data Sheet for this winch at *andersenwinches.com*

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

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.

The electric motor unit has a high level of in-built monitoring and system protection, including an internal fuse for protection against improper connection with reversed polarity. The "Intelligent" illuminated push buttons act with the controller to flash status codes to assist in troubleshooting in the event of overload, or where other system protection intervention occurs. The push button will flash a number of times in quick succession, followed by a short break, and then repeat again.

This functionality includes:

- Accidental start protection
- Mechanical overload protection
- Working load alert (a separate acoustic alert may also be fitted for this function)
- System low voltage detection
- Thermal overload protection
- Continuous run time limiting

Refer to the Troubleshooting guide at the end of this product manual for further information.

Installation

Required for installation:

- Mounting template for 68ST/72ST E2 Electric Winch (included)
- Hex keys, metric (included)
- Cross head screwdrivers, small flat head screwdriver (for circlip)
- Drill bit Ø10.5mm for M10 mounting bolts (or 13/32" for 3/8" bolts)
- Drill bit Ø3mm (1/8")
- Hole saws Ø86mm (3 3/8") for drive shaft housing, Ø25mm (1") for push button
- 6 x ISO 4762-A4 M10 (or 3/8") mounting bolts (length as required for deck thickness)
- 6 x M10 (3/8" locking nuts and large washers (or backing plate to match mounting template)
- Spanners: 13mm for motor terminals, 17mm for M10 locking nuts (or 9/16" for 3/8 locking nuts)
- Andersen winch grease
- Sealant / bedding compound
- Wire crimping tool/pliers
- Circuit breaker (not included – may be ordered separately or sourced locally). Must be a "slow blow" or "long delay" type to allow for start-up current spike. Refer to Winch Data Sheet* for recommended circuit breaker current rating.
- Marine grade electrical power cables with lugs to suit your battery terminals and the motor and circuit breaker terminals. Refer to Winch Data Sheet* for cable size recommendations. Terminals are M8 for the motor and for circuit breakers purchased from Andersen.

View or download the Winch Data Sheet for this winch at **andersenwinches.com*

INSTALLATION INSTRUCTIONS

Before installation, record the version number of your winch and the serial number of your motor in the space provided on the front cover of this manual for future reference. These details can be found as shown below.

Winch production year and month [YY-MM] followed by version number engraved on base of centre stem.

Motor serial number engraved on flange of drive shaft housing

For conversion of an existing 68ST or 72ST manual winch for use with an E2 Electric drive unit, see the appendix at the end of this product manual.

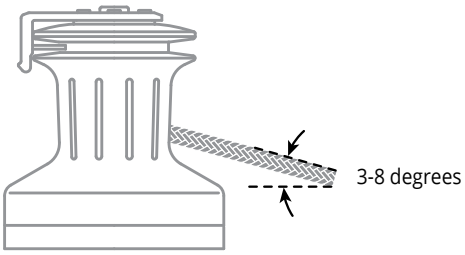
STEP 1

Determine the position of the winch and motor unit

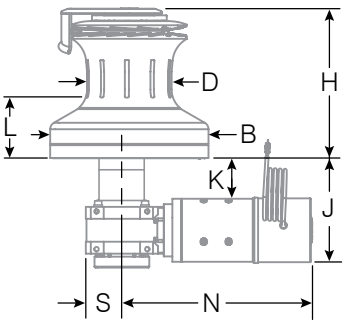
1.1 Magnetic fields in the motor may affect compasses even when the motor is not in use. Install the motor at least 1m away from any compass, and always have your compass recalibrated after installation.

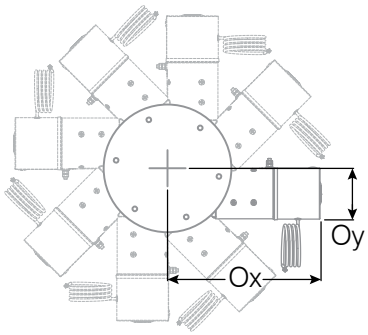
1.2 The winch should be positioned with the recommended line entry angle of 3-8° from horizontal. Refer to the diagrams in this product manual for details of correct line entry angle and self-tailing arm positioning.

1.3 Refer to the Winch Data Sheet for your winch model for clearance and space requirements for the motor unit below deck. You may choose to drill a small pilot hole to indicate the position of the centre of the drive shaft, to assist with this.



Recommended line entry angle





STEP 2

Install the deck plate

2.1 A stainless steel deck plate [1] is included with the motor unit. Use the mounting template [A1] to identify the locations on deck for the mounting holes and deck cut-out. The self-tailing arm of the winch can be adjusted after installation into one of eight different positions as indicated on the template.

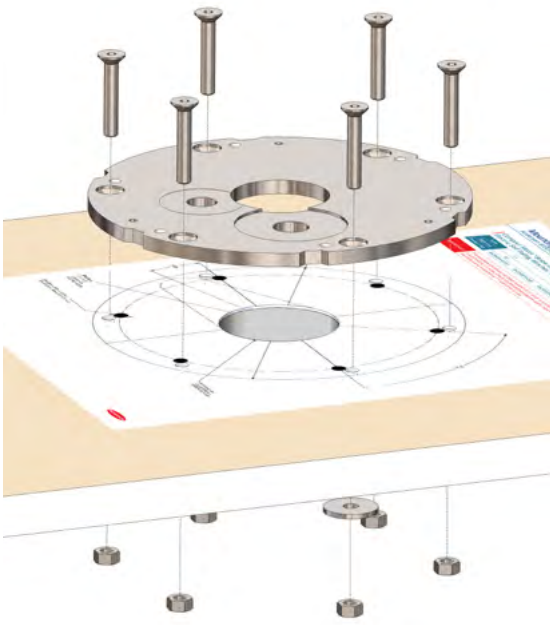
2.2 Use the template as a guide for preparing the deck. Ensure that the mounting surface is flat and there is adequate space and clearance on deck for the winch base and below deck for the motor. With the template in the desired orientation, drill or cut the Ø86mm (3 3/8") hole for the motor drive shaft housing.

2.3 Drill the Ø10.5mm holes for the M10 deck plate mounting bolts (or 13/32" holes for 3/8" bolts).

2.4 Clean any wood or fibreglass splinters from the holes, and clean the deck thoroughly to ensure deck sealant can adhere properly.

2.5 Apply sealant to the deck where the deck plate will be fixed. For aluminium boats use a galvanic isolating ring/gasket.

2.6 Fit the deck plate to the deck using appropriate length M10 or 3/8" countersunk head bolts, large washers or backing plate, and locking nuts.

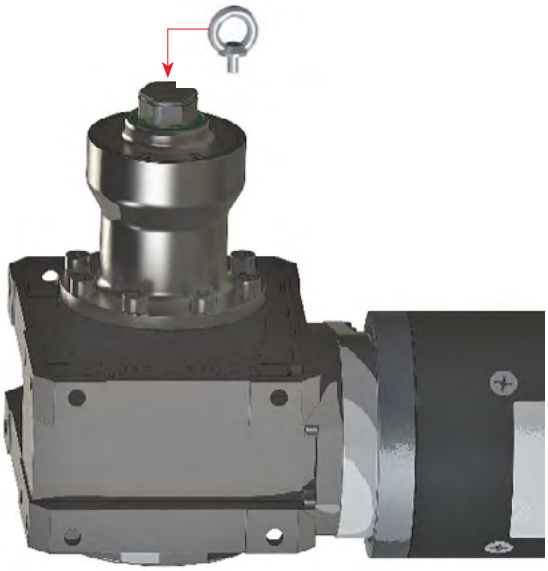


Deck plate mounting

STEP 3

Fit the motor unit to the deck plate

Correct alignment of the motor during assembly is essential. Improper alignment can cause excessive noise and vibration and lead to premature wear of bearings and gears. For best results the following steps should be carried out by two persons.



3.1 Refer to the exploded diagram and ensure that the circlip [9], gearwheel [15] and screws [8] have been removed. Apply a thin layer of Andersen winch grease to the top of the driveshaft housing [4], to the O-ring [18] and to the eight countersunk holes in the centre of the deck plate [1].

3.2 Screw the M6 eye bolt [A4] into the threaded hole in the top of the drive shaft. Attach a strong rope or use a lifting device to raise the motor unit into position so that the eight threaded holes in the top of the drive shaft housing align with the holes in the deck plate.

3.3 While supporting the motor unit in this position, insert and tighten the screws [8] to secure the assembly. Tip: first insert and tighten four of the screws in the 3, 6, 9 and 12 o'clock positions. Then, with the drive shaft housing now mated snugly with the underside of the deck plate, insert and tighten the remaining four screws.

Watertight assembly is ensured by the O-ring under the deck plate; no additional sealant is required.

3.4 Remove the eye bolt, Add a thin layer of grease to the octagonal section of the shaft and install the gearwheel with the recess facing upward. Secure the gearwheel in place with the circlip (use a small flat head screwdriver to flick it in place). Grease the gear teeth.

STEP 4

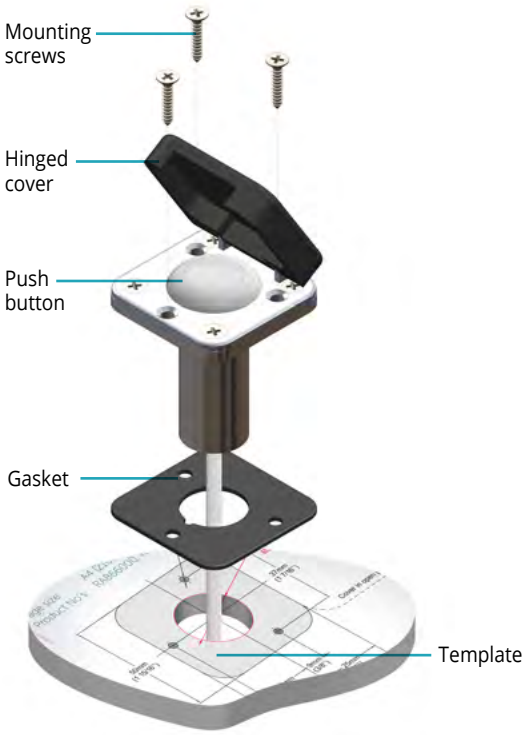
Install push buttons

4.1 The push buttons [A7] require 25mm clearance depth below the mounting surface. They are supplied with 500mm cable leads. Cable leads supplied with the motor are 1400mm long so no additional wiring should be required.

4.2 Drill a Ø3mm (1/8") hole in each of the three mounting screw locations.

4.3 Fit gasket and push button in place. Secure the push button unit with the 3x M4x20mm self-tapping screws [A6] provided, using a small amount of sealant at each hole.

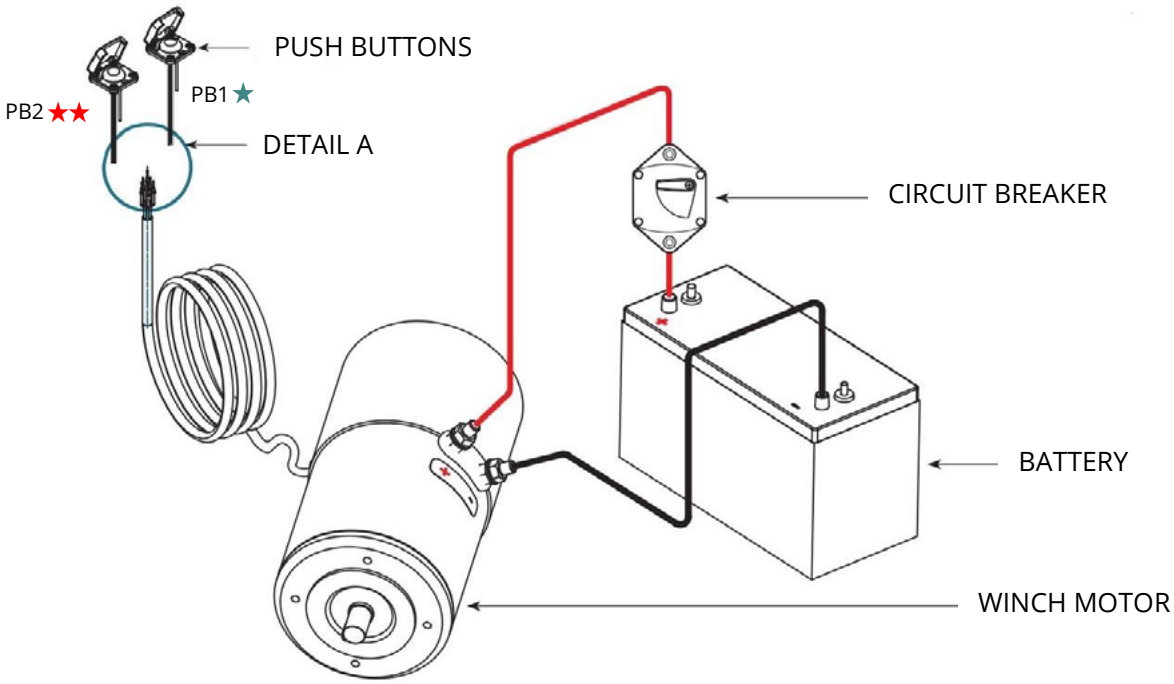
4.4 Ensure that the breather channel on the side of the through-deck tube of the push button is clear and free of dirt or sealant.



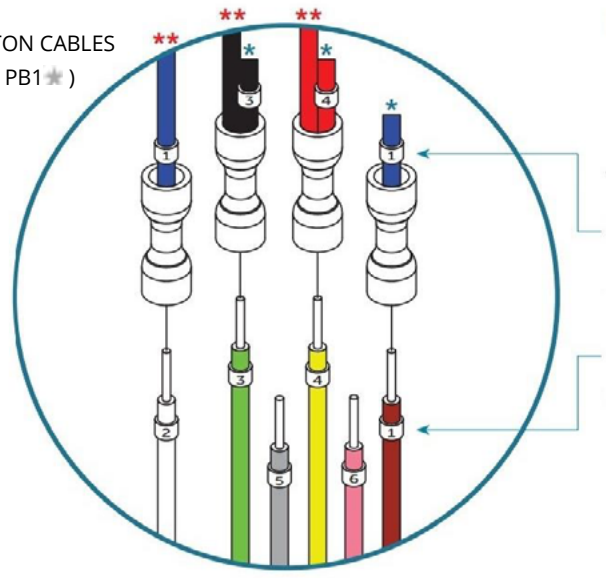
Push button installation

WIRING CONNECTIONS DIAGRAM – 24V MOTOR

Positive (+) motor terminal must be connected to Positive (+) battery terminal via the circuit breaker. Negative (-) motor terminal must be connected to Negative (-) battery terminal. If polarity is reversed, the motor controller internal fuse will blow and need to be replaced (see Troubleshooting section in this manual).



PUSH BUTTON CABLES
(PB2 ★★ & PB1 ★)



MOTOR CABLE

DETAIL A

CABLE CONNECTIONS

Motor		PB1 ★		PB2 ★★
1 BROWN	→	1 BLUE		
2 WHITE	→			1 BLUE
3 GREEN	→	3 BLUE BLACK	&	3 BLUE BLACK
4 YELLOW	→	4 RED	&	4 RED
5 GREY	NO CONNECTION			
6 PINK	NO CONNECTION			

Motor cable

1. Brown	=	Switch
2. White	=	Switch
3. Green	=	Ground
4. Yellow	=	LED
5. Grey	=	Acoustic working load alert (optional)
6. Pink	=	Not assigned

Push button cable

1. Blue	=	Switch
3. Blue Black	=	Ground
4. Red	=	LED

ELECTRICAL INSTALLATION

Always disconnect power during installation and before performing any service or maintenance work on an electric winch; disconnect power when the winch is not in use or when the boat will be left unattended.

STEP 5

Prepare the installation

Refer to the wiring diagram and cable size recommendations in the Andersen Winch Data Sheet for the model and voltage corresponding to your Andersen Electric Winch.

5.1 Choose the shortest and most direct route possible for the power cables, in order to minimise voltage drop between the battery and the motor.

5.2 Measure the distance from the battery to the motor, and back again via the circuit breaker, to determine the necessary total cable length.

5.3 Consult the table in the Winch Data Sheet for the model and voltage corresponding to your Andersen Electric Winch, to determine the minimum wire size for your cables according to the total cable length required for your installation.

5.4 If in doubt, consider choosing a thicker cable as this will help to minimise voltage drop.

5.5 Choose a suitable location for the circuit breaker in an easily accessible position as close as possible to the battery. The circuit breaker must be a “slow blow” or “long delay” type to allow for start-up current spike.

5.6 Make up the cables with lugs to suit the terminals of your battery and the terminals of the motor and circuit breaker. Do not use smaller wire size than recommended in the Winch Data Sheet table.

5.7 Connect the negative (–) terminal of the battery to the negative (–) terminal of the motor.

5.8 Connect the positive (+) terminal of the battery to the positive (+) terminal of the motor via the circuit breaker.

5.9 Connect the push buttons to the motor unit using the cables and connectors provided, as shown in the Wiring Connections Diagram.

STEP 6

Check the electrical installation

6.1 Ensure that there are no persons, objects or obstructions on or near the deck plate, particularly near the gearwheel, and that the push button covers are closed. Switch the circuit breaker to the “ON” position.

6.2 Check that the push buttons are illuminated, indicating that the system is powered up.

6.3 Press one of the push buttons to activate the motor, then release.

6.4 Press the other push button to activate the motor in the opposite direction, then release.

6.5 Switch the circuit breaker to the “OFF” position before continuing with the installation.

STEP 7

Install the winch

7.1 Use a hex key to remove the screws at the top of the winch, then lift off the self-tailing arm.

7.2 Lift off the drum to expose the centre stem and gears.

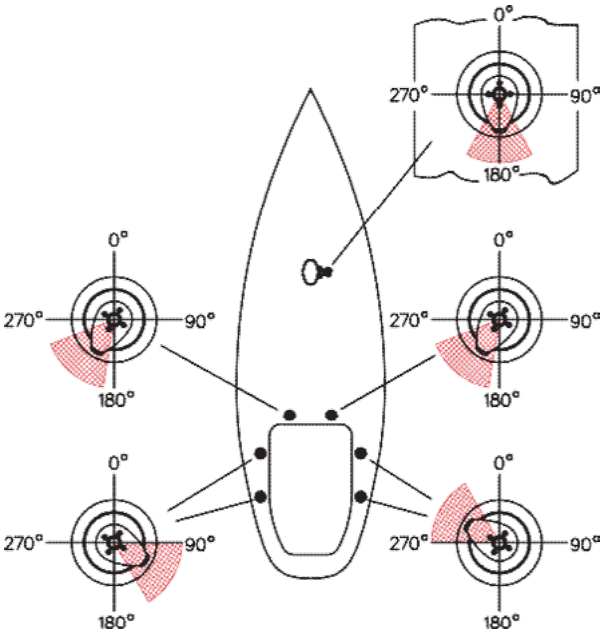
7.3 Position the base cover and centre stem of the winch on the deck plate with mounting holes aligned, and secure to the deck plate using the M10 hex socket countersunk screws [19] provided.

7.4 Reassemble the winch in reverse order. Take care not to overtighten the three countersunk screws that secure the self-tailing arm. A torque of no more than 4Nm is sufficient.

Winch installation

7.5 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.

7.6 The self-tailing arm can be adjusted after installation into one of 8 different positions, as indicated on the mounting template.



OPERATION CHECKS

Ensure that the circuit breaker is switched to the "OFF" position before proceeding.

Check manual operation of the winch

Check the winch by rotating the drum by hand, observing that it is able to turn only in a clockwise direction. Then operate the winch manually with the handle, with no load on the drum. It should operate smoothly in fast and slow speeds.

Check electrical operation of the winch

Remove the handle and test electrical operation by pressing each of the push buttons. One of the push buttons will activate the motor to drive the winch in the fast speed, the other in slow speed.

A delay of slightly more than 1 second will be experienced when changing quickly between gears. This is pre-set at the factory as an additional security feature, and helps to ensure a long and trouble-free service life for your electric winch.

The motor will cut out after 60 seconds running at 70% of maximum load, and after 30 seconds at 90% of maximum load. This factory setting helps to protect the motor from overheating. Normal operation may resume after a delay of 4 seconds.

TROUBLESHOOTING

The electric motor unit has a high level of in-built monitoring and system protection. Electric motor operation may be disabled automatically when certain faults are detected.

Illuminated Push Buttons

The illuminated push buttons with integrated LED illuminate when power to the winch system is on. If the push buttons do not illuminate when the circuit breaker is switched to "ON":

- Check that the main battery switch is on.
- Check power cable connections and polarity.
- Check that the push buttons are connected correctly to the motor, as shown in the Wiring Connections Diagram.
- Check the internal 5A fuse according to the procedure below.

Reverse Polarity Protection

If the motor unit is inadvertently connected to the power system with incorrect polarity, the motor's internal 5A fuse will blow. The fuse will have to be replaced before the motor will start again. To replace the fuse:

- Remove the cable ties that secure the cable to the outside of the plastic motor cover [10] located at the end of the motor.
- Remove the two screws from the end of the outer motor cover using a #1 cross-head screw driver; refer to picture below.
- Rotate the plastic cover slightly, while carefully pulling it away from the motor unit. After the first 5mm of movement, the O-ring will release the cover and there will be no resistance the rest of the way. Very little force should be used so as not to damage the internal wiring connections – you may need to help the cover slide along the cable as you pull it away.
- Ensure that the internal control wires are not being pulled tight by the weight of the removed cover and the free cable.
- Replace the 5A glass fuse, located on the PCB as shown below.
- Reassemble in reverse order. Make sure that the internal cable wires are not caught or pulled between the cover and internal components. No force should be required to replace the cover until the O-ring is reached. Before pushing the cover the final few millimetres over the O-ring, make sure that the screw holes in the outer cover are aligned with the threaded rods inside. Refer to picture below for threaded rod position.

Motor outer cover attachment screws

5A Glass Fuse PCB location

Threaded rods for motor outer cover attachment screws

FLASHING STATUS CODES

The “Intelligent” Illuminated Push Button acts with the controller to flash status codes to assist in troubleshooting in the event of overload or where other system protection intervention occurs. The push button will flash a number of times in quick succession, followed by a short break, and then repeat again. The number of flashes indicates the system status as follows:

1 Flash: Working Load Alert

The single flash sequence during operation indicates that the load on the winch has reached 70% of the maximum pulling load and, if running in the fast speed, you should change to the slow speed.

If the motor cuts out and the single flash sequence is displayed, you have reached the pre-set maximum pulling load for electrical operation of the winch. Status will automatically reset to normal and the winch will be ready for use 5 seconds after the button has been released, if the load has decreased below the max limit and the button is pressed again.

2 Flashes: Low system voltage detected

This will occur if the system voltage drops below 21 Volts (24V systems) in idle state, or below 18 Volts (24V systems) while running. This prevents further drain on batteries and avoids triggering low voltage reset of navigation instruments and other electronic devices. Batteries should be recharged before the winch is used again. Status will automatically reset to normal and the winch will be ready for use again when the voltage comes back above 22 Volts (24V systems).

3 Flashes: Maximum temperature of the motor has been reached

The motor has overheated. Status will automatically reset to normal and the winch will be ready for use when the motor has cooled down sufficiently (this may take some time). Ensuring adequate ventilation around the motor will help to avoid overheating.

4 Flashes: Maximum temperature of the internal PCB has been reached

The temperature of the PCB located inside the motor cover [10] has exceeded 85°C. Status will automatically reset to normal when the PCB temperature drops below 75°C. Ensuring adequate ventilation around the motor will help to avoid overheating.

5 Flashes: Push button error

Operation of the winch is prevented because a push button has been pressed when system power up was initiated – i.e. when power was supplied to the winch by switching the circuit breaker or battery switch to “ON”. To reset status to normal, ensure push buttons are not pressed. If the error continues, check push button wiring.

6 Flashes: Maximum continuous motor run time has been reached

The motor has been running continuously for approximately 10 minutes. To reset status to normal, release the push button, then press it again to resume operation.

7 Flashes: Maximum relay cycles reached

The motor relay has been activated 20,000 times and should be replaced to ensure continued safe operation. Contact Ronstan or your local Andersen Winches distributor for advice.

8 Flashes: Performance alert

The winch has been operated for more than 60 seconds at 70%, or for more than 30 seconds at 90%, of the pre-set maximum pulling load. In these conditions the heat generated by the motor may soon cause the motor to overheat and cut out. If already running in the slowest gear when this alert occurs, be aware that you may soon reach the pre-set maximum temperature that will cause the motor to cut out. Status will automatically reset to normal and the winch will be ready for use 4 seconds after the button has been released.

SERVICE & MAINTENANCE

Proper care and maintenance of your Andersen products will ensure many years of reliable service. In order to avoid water ingress and to ensure a long and trouble-free service life for your Andersen electric winch motor drive, we recommend lubrication of the motor shaft lip seal once a year.

Safety First! Always disconnect power before performing any service or maintenance work on an electric winch.

Periodic lubrication of the motor drive shaft lip seal

Lubrication of the motor drive shaft lip seal is recommended once a year to condition the lip seal and avoid water ingress. The seal can be accessed by removing the centre stem of the winch from the deck plate.

Liberally apply a high quality bearing grease such as Klüber Isoflex® TOPAS NB52.

Andersen Winch Grease may also be used for annual lubrication.

Isoflex® is a registered trademark of Klüber Lubrication München SE & Co. KG

Periodic replacement of the motor drive shaft lip seal

Replacement of the motor drive shaft lip seal is recommended every 10 years, depending on usage, in order to avoid water ingress and ensure a long and trouble-free service life. The lip seal must have stainless steel spring – contact Ronstan or your local Andersen Winches distributor to order the correct lip seal for your winch.

Winch inspection & service

Inspection and service of your Andersen winch is recommended at two year intervals. For information consult the separate product manual for your winch model which contains instructions, assembly diagrams and information about spare parts. Product manuals are available for download from the Andersen website.

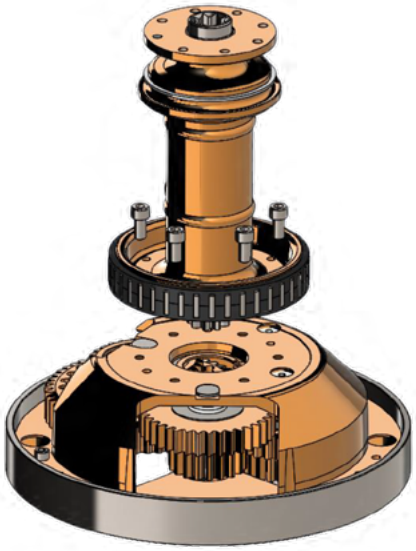
APPENDIX 1

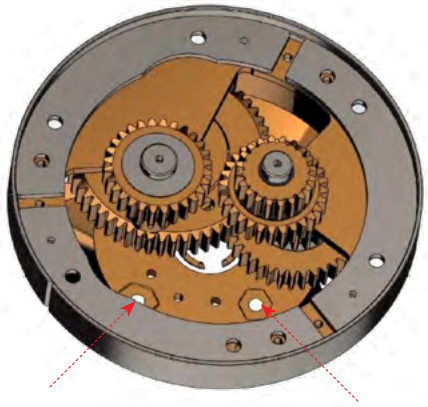
Conversion of existing 68ST or 72ST manual winch for use with E2 electric drive unit

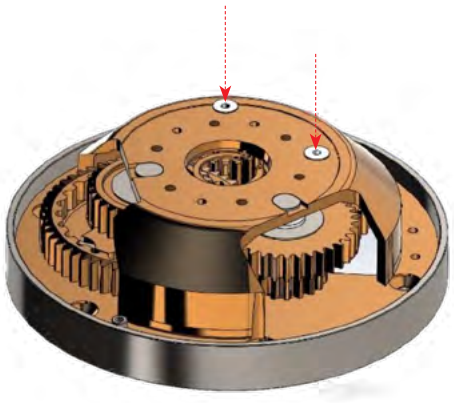
Refer to the product manual for your existing winch, and to the exploded view on the following page of this product manual.

1. Remove the self tailer arm and lift off the drum to expose the centre stem assembly, as described in steps 7.1 – 7.3 of this product manual.
2. Remove the six screws that secure the top part with the drive shaft. Lift the top part and the main roller bearing and set these parts aside for the moment.
3. Holding the bronze lower centre stem within its stainless steel base cover, turn the assembly over to expose the gears.
4. Locate the two extra gear sets supplied with your E2 electric drive conversion kit. Install these gear sets such that the hexagonal ends of their stainless steel shafts mate with the hexagonal recesses in the bronze base.
5. Turn the assembly over again and fit the two screws to secure the shafts of the extra gear sets.

Use a drop of thread lock on each screw!



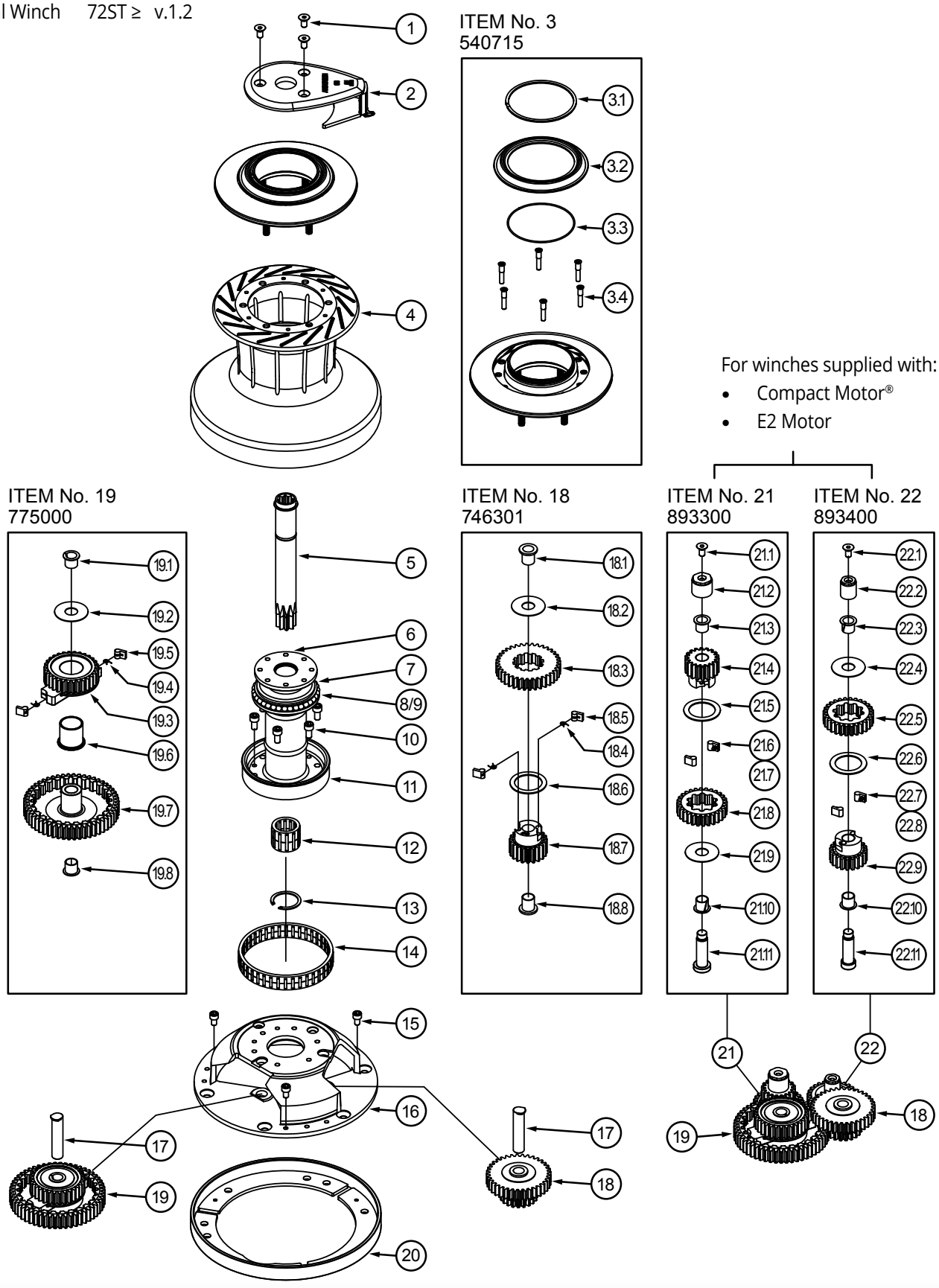




EXPLODED VIEW

Manual Winch 68ST ≥ v.2.5

Manual Winch 72ST ≥ v.1.2



NOTES

ANDERSEN
STAINLESS STEEL WINCHES

CONTACT

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