



Compact Electric Winches



**Above and Below Deck Electric Compact Motors for
ANDERSEN Winches® 28/40/46/48/52/58/62/68/72ST**

Version 5.4



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Safety notices



Warning!



IMPORTANT INFORMATION:

1. **Warning!** The positive cable (red +) must be connected to the positive terminal of the motor. Incorrect polarity will cause permanent damage to the motor.
2. The Andersen Compact electric winch uses a brushless DC motor. Brushless DC motors draw current from the battery when operating, and can send current back to the battery when spinning down unloaded.

The following notices must be strictly observed:

- a. Lithium Ion batteries must **NOT** be used in conjunction with Andersen Compact motors, as they are not compatible with the sporadic charging effect associated with the motor. Use of Lithium Ion batteries is likely to result in damage to the motor, battery or other elements of the system.
- b. Avoid operating an Andersen Compact electric winch at high speed with no load on the drum, as spinning down an unloaded motor from high speed can stress the motor and battery and could result in reduced service life or damage to the motor, battery or other elements of the system.

Failure to observe these notices will invalidate the warranty.



Avertissement!



INSTRUCTIONS IMPORTANTES:

1. **Avertissement!** Le câble positif (rouge +) doit être relié à la borne positive du moteur. Une polarité incorrecte endommagera le moteur de façon irréversible.
2. Le winch électrique compact Andersen utilise un moteur sans balais. Les moteurs sans balais utilisent le courant de la batterie en fonctionnement, et peuvent envoyer le courant de nouveau à la batterie quand ils tournent entraînés.

Les instructions suivantes doivent être suivies impérativement:

- a. Les batteries au Lithium Ion ne doivent pas être utilisées avec les moteurs compacts Andersen car elles ne sont pas compatibles avec le système de rechargement sporadique lié au moteur. L'utilisation des batteries au Lithium Ion peut entraîner des dommages au moteur, à la batterie ou à d'autres éléments du système.
- b. Eviter d'activer le winch électrique compact Andersen à grande vitesse sans chargement du tambour car faire tourner un moteur déchargé à grande vitesse peut soumettre le moteur et la batterie à une contrainte trop forte pouvant entraîner une diminution de la durée de vie ou des dommages au moteur, à la batterie ou à d'autres éléments du système.

La non observation de ces instructions annulerait la garantie.



Waarschuwing!



BELANGRIJKE INSTRUCTIES:

1. **Waarschuwing!** Verbind de pluskabel (rode +) aan de positieve aansluiting op de motor. Foutieve polariteit veroorzaakt permanente schade aan de motor waardoor de garantie vervalt.
2. De Andersen Compact elektrische lier gebruikt een gelijkstroom motor zonder koolborstels. Deze motoren onttrekken niet alleen stroom van de accu's maar, zodra de bedieningsknop wordt losgelaten en de lier draait nog rond, leveren ze ook stroom terug aan de accu's.

De volgende instructies moeten strikt worden nageleefd:

- a. Lithium-Ion accu's mogen niet worden gebruikt in combinatie met Andersen Compact motoren omdat deze NIET in staat zijn de kortstondige retourstroom van de motoren te verwerken. Het gebruik van Lithium-Ion accu's kan resulteren in schade aan de motor, accu's of andere elementen van het systeem.
- b. Vermijd het onbelast laten draaien van de Andersen Compact elektrische lier op hoge snelheid aangezien grote retourstroom optreden in het elektrische circuit zodra de bedieningsknop wordt losgelaten. Dit kan resulteren in schade aan of verminderde levensduur van de motor, accu of andere elementen van het systeem schade.

Het niet naleven van deze waarschuwingen zal de garantie doen vervallen.



Attenzione!



AVVISO IMPORTANTE:

1. **Attenzione!** Il cavo positivo (rosso +) deve essere collegato al terminale positivo del motore. Inversione di polarità provoca danni permanenti al motore.
2. Il verricello elettrico compatto Andersen utilizza un motore a corrente continua senza spazzole. I motori a corrente continua senza spazzole prelevano corrente dalla batteria durante il funzionamento, e possono inviare corrente in dietro alla batteria girando fino all'arresto senza carico.

I seguenti avvisi devono essere rigorosamente rispettati:

- a. Batterie al Litio NON devono essere utilizzate in combinazione con motori Andersen compatti, in quanto non compatibili con l'effetto sporadico di carica associata con il motore. L'uso di batterie agli ioni di litio può provocare danni al motore, alle batterie, o altri elementi del sistema.
- b. Evitare di far funzionare un verricello elettrico compatto Andersen ad alta velocità senza carico sul tamburo, questo può causare stress al motore e alla batteria e potrebbe ridurre il periodo di servizio o danni al motore, batteria o altri elementi del sistema.

La mancata osservanza di questo avviso può invalidare la garanzia.



Warnung!



WICHTIGE INFORMATIONEN:

1. **Warnung!** Das rote Pluskabel (+) muss an den Pluspol des Motors angeschlossen werden. Ein falscher Anschluss des Motors (Verpolung) führt zur Beschädigung des Motors und Verlust der Garantie.
2. Die Andersen Compact Elektro-Winden verwenden einen bürstenlosen DC (Gleichstrom Motor). Bürstenlose Motoren verbrauchen Strom aus der Batterie, geben aber auch Strom an die Batterie ab, wenn sie lastfrei ausdrehen.

Die folgenden Ratschläge müssen strengstens beachtet werden um Schäden zu vermeiden:

- a. Lithium Ionen Batterien dürfen für den Betrieb von Andersen Compact Winden NICHT benutzt werden, da sie den zurückgeführten Ladestrom des Motors nicht vertragen. Die Benutzung führt zur Beschädigung der Batterien.
- b. Vermeiden Sie es die Winde ohne oder mit sehr wenig Last drehen zu lassen. Hohe Geschwindigkeiten, dadurch resultierende Überhitzung und zurückgeführter Ladestrom kann zur Schäden am Motor, der Batterie oder anderen Teilen des Systems führen.

Nichtbeachtung dieser Hinweise führt zum Verlust der Garantie.



Advarsel!



VIGTIG MEDDELELSE:

1. **Advarsel!** Plus kablet (rød +) skal tilsluttes til motorens plus terminal. Forkert tilslutning medfører permanent skade på motoren.
2. Andersen Compact elektrisk spil benytter en børsteløs DC motor. Børsteløse DC motorer trækker strøm fra et batteri når de er i drift, og de kan sende strøm tilbage til batteriet når de spinder ned uden belastning.

De følgende instruktioner skal overholdes nøje:

- a. Litium Ion batterier må IKKE benyttes i forbindelse med Andersen Compact motorer, da de ikke er forenelig med sporadisk lade effekt tilknyttet til motoren, batteri eller andre komponenter i systemet.
- b. Undgå at betjene et Andersen Compact elektrisk spil ved høj hastighed uden belastning på tromlen. Hvis en motor spindes ned uden belastning fra høj hastighed kan dette stressere motoren og batteriet, og kan medføre nedsat levetid eller skade på motoren, batteri eller andre komponenter i systemet.

Svigt i overholdelse af disse instruktioner vil medføre bortfald af garantien.



Varning!



VIKTIG INFORMATION:

1. **Varning!** Pluskabeln (röd+) måste kopplas till pluspolen på motorn. Vid polvändning kommer motorn att skadas permanent.
2. Andersen Compact elektrisk winch använder en DC motor utan kol. Dessa motorer tar spänning från batteriet när den används och kan även skicka spänning tillbaka till batteriet när man släppt knappen och motorn inte stannat när winchen är obelastad.

Följande måste följas:

- a. Litium Ion batterier får INTE användas för att driva Andersen Compact motorer, eftersom dessa batterier inte är kompatibla med att få en spänning tillbaka via en sporadisk laddning från motorn. Användning av dessa batterier kommer troligtvis att resultera i en defekt motor, batteri eller elsystem.
- b. Undvik att köra en Andersen Compact elektrisk winch med hög hastighet obelastad eftersom en sporadisk laddning kan gå till batteriet. Detta kan resultera i förkortad livslängd på elmotor, batteri eller elsystem.

Underlåtenhet att följa denna information vill upphäva garantin.



Cuidado!



AVISO IMPORTANTE:

1. **Cuidado!** El cable positivo (rojo +) debe conectarse al terminal positivo del motor. La polaridad incorrecta dañará el motor de forma permanente.
2. El winche eléctrico con motor compacto Andersen funciona con un motor de corriente continua sin escobillas. Los motores sin escobillas gastan corriente de la batería y devuelven corriente a la batería (motor aún girando sin soportar ninguna carga).

Los siguientes puntos deben respetarse escrupulosamente para evitar daños:

- a. Baterías de iones de litio NO deben usarse en combinación con los motores compactos de Andersen, debido a que no soportan la carga eléctrica que devuelve el motor a la batería.
- b. Evite que el winche gire a altas velocidades sin soportar ninguna carga en el tambor. Altas velocidades pueden causar un sobrecalentamiento del motor y dañar el sistema eléctrico por el exceso de corriente que devuelve el motor a la batería.

No cumplir con estas indicaciones conllevará la pérdida de la garantía.

DO NOT DISCARD



Safety First

Never work on an energized motor.

An electric winch is very powerful - only competent sailors should operate an electric winch. Before powering the winch, make sure that children and other crew are standing well clear of not only the winch but also rope being pulled. Always be wary of what the winch is pulling on, as well as the rope's progression to the winch. A rope snagged or jammed on a sail, spar or rigging can result in dangerous overloading. This is especially relevant when using a primary winch for less demanding tasks, where the winch is overly powerful for the task at hand.

Under no circumstances should children be allowed to use an electric winch.

General Information

Please read the following prior to the installation and operation of your new Andersen Compact Winch motor.

Congratulations on purchasing your new *Andersen Electric Compact Winch*. Your new *Andersen Motor* is light, powerful and uses considerably less current than most other motors. Furthermore all the electronics are contained compactly in one neat motor unit. With correct installation your new motor will offer you many years of trouble free sailing.

- For above deck models make sure that the control switch cable is well protected against wear as it passes through the deck. Worn cables can short circuit and disable the motor or cause it to start without warning.
- Magnetic fields in the motor may affect compasses even when the motor is not in use. Always install the motor at least a 1 m from your compass. However, while activated the motor may affect compasses at greater distances. Always have your compass recalibrated after installing your motor.



Andersen Below deck compact motor with deck plate



Andersen Above deck compact motor with stainless steel sleeve

Important

The motor is not designed for continuous extended use. *Avoid unnecessary unloaded running of the motor* as this will generate heat, reducing the running time of the motor.

INCORRECT INSTALLATION WILL INVALIDATE WARRANTY.

Guideline for use

Please read the following prior to get the best use of your new Andersen Compact Winch motor.

Notice safety precautions

Under no circumstances should children be allowed to use an electric winch.

Main power

When not in use, switch off main power supply to your Compact motor

Use of an electrified winch

With a motorised winch you have lots of power in your control; therefore you must be careful and have attention when using the motorised winch.

The winch will only stop when reaching the maximum pull limit.

Function

The Compact motor system gives you an opportunity of having a various line speed on the sheet. The more you push the control button down – the more power and line speed you will get.

Control switch with stepless speed control

The switch gives the opportunity of stepless control of line speed, simply by pushing the button more or less down. The more you push the button down, the more power you release to the motor.

Control switch signal codes

The motor will stop and the switch control light will flash and the motor stops if:

- **The winch max load is exceeded.**
The motor has an automatic overload cut-off device, which switches off the motor when the load reaches a predetermined level. The motor is automatically reset and can be reactivated when the load drops below the cut-off level.
- **The motor max temperature is exceeded.**
The motor is deactivated automatically when it reaches max temperature. Function will revert to normal once it has cooled down.
- **Use by more than one control switch.**
If your motor has two control switches, only one can be operated at a time, the one which is out of control will flash if you try to operate this together with the other switch.
- **If the run time is too long.**
The flashing light indicates that the winch has been running for more than maximum secure run time, and therefore it stops. If needed you can continue by reactivating the control switch again.

Installation

If in doubt about how to install your new *Andersen Compact Motor* ask a qualified tradesperson for help.

1. Select the position where the winch is to be mounted. Make sure that the surface is even and clean of any visible dirt as an uneven surface can damage the motor.
2. Using the template supplied with your motor carefully drill the required holes in the deck. Always position the motor so that the drain hole is at the lowest position in relation to the slope of the deck. This is particularly important for mast installations.
3. For below deck models, bolt the deck plate in place and go to step 9. For above deck models go to step 4.

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4. For above deck models remove the stainless steel sleeve. Ensure that the 2 o-rings on the top and side of the motor are sitting in their relevant grooves.



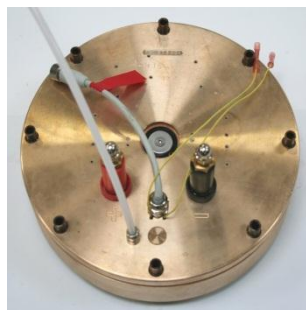
Cable extensions in red and black for Above deck motors

5. Attach the terminal extensions to the power terminals (tighten with max 12Nm torque). *Ensure that the red extension is connected to the red positive terminal and the black extension to the black negative terminal. The terminal extensions can be shortened to suit your deck thickness.*
6. Connect the drain hose, and make sure that the hose has continuously fall from the motor to its end, so no water can be kept in here. *The drain hole is both a breathing hole for the motor*

and an outlet for any condensation water in the motor (which should not exceed more than a few drops per week). If the motor is situated in a position where damage of boat linings or other equipment could occur then lead the hose to the bilge, sink or another appropriate outlet. In most cases, this does not apply and the hose can be cut off just below the deck

7. Thread the control cable, terminal extensions and drain hose through the deck and bolt the motor to the deck inserting the plastic washer provided between the deck and motor. The bolts are not included with the motor.

For 52/58/62ST: Use ISO 4762-A4-70-M6



Special information for 52/58/62

Above deck models

These models are installed with 10mm studs in the base of the motor. The Ø6,2mm boltholes must be counter sunk 10,2mm x 11mm deep into the deck

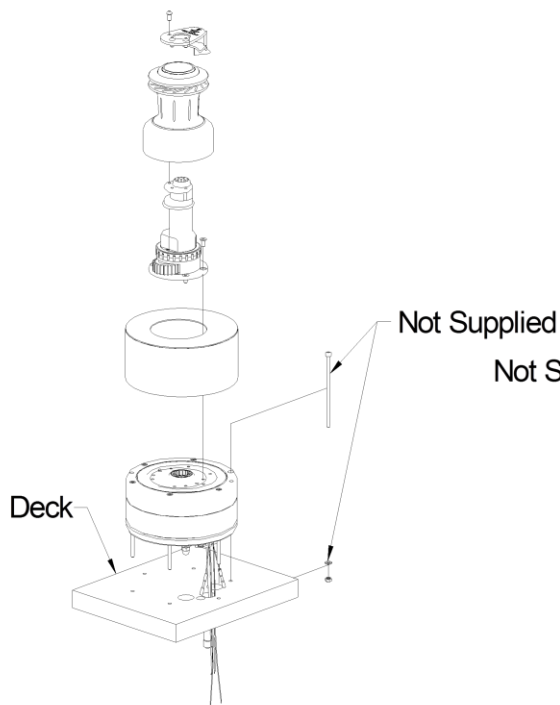
bolts, length 78mm + thickness of the deck + thread.

For 68/72ST: Use ISO 4017- A4-70-M10 bolts, length 81mm + thickness of the deck + thread, or M10 bolts mounted from below. Always use corresponding nuts where possible. Avoid using threaded aluminium plate, as aluminium may not have the required strength. All threads must be at least as strong as the corresponding stainless steel nut. When inserting the bolts place a small amount of silicone under the bolt head to ensure that water does not run down the bolts and under the motor. The base of the motor should also be sealed with silicone so that water on the deck cannot run beneath the motor.

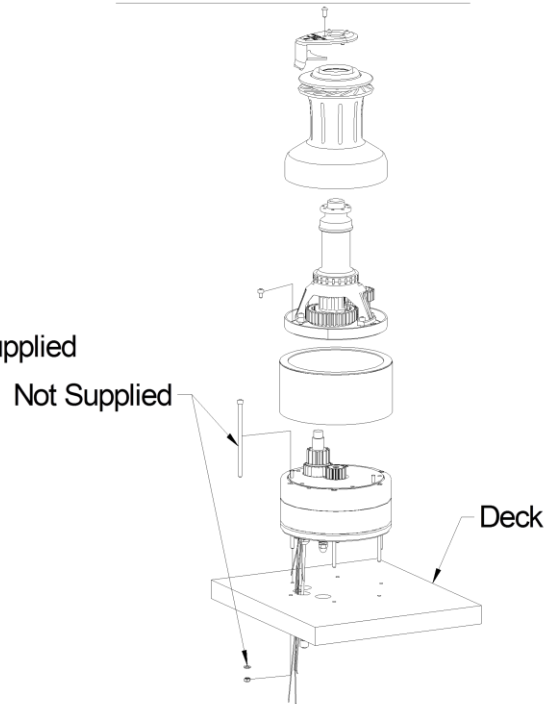
For 68/72ST: 2 control buttons are needed!

Mounting sketches for Above deck

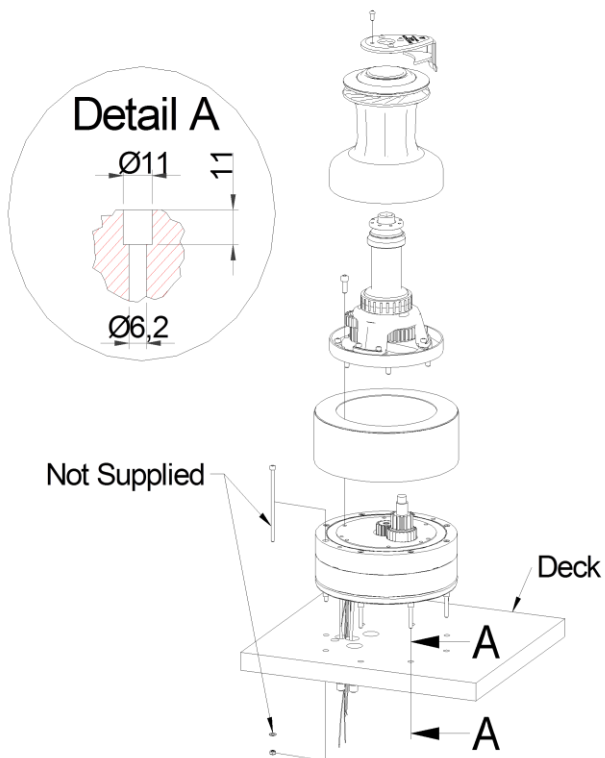
Winch 28/40ST AD



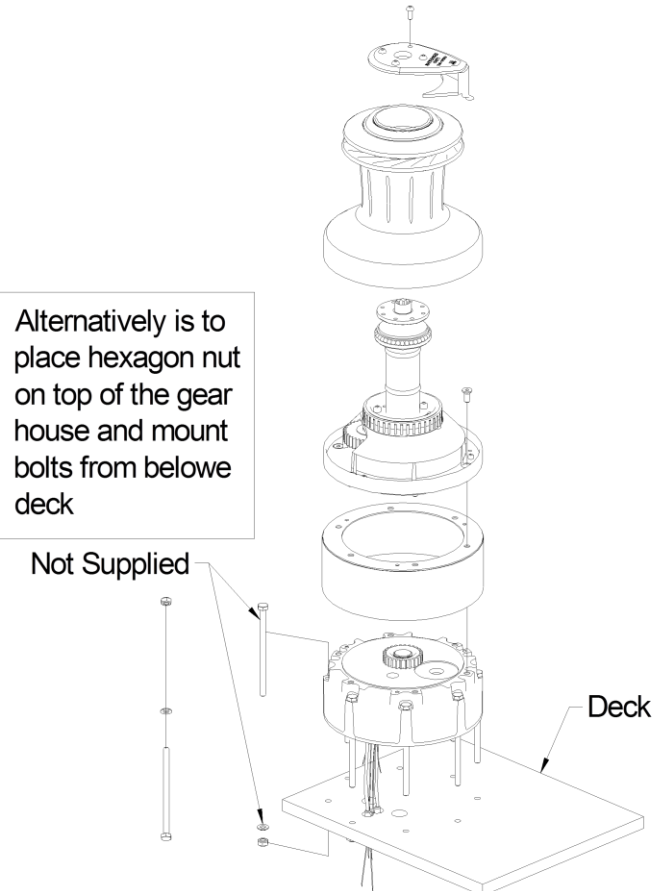
Winch 46/48ST AD



Winch 52/58/62ST AD



Winch 68ST AD





SPECIAL WARNING FOR MAST INSTALLATIONS

*Always use a waterproofing agent (e.g. silicone) to ensure that water cannot run between the motor and the mounting surface. **Ensure that the motor is installed so that the drain is positioned at the lowest point.***

Use the plastic washer to insulate the bronze motor from unlike metals such as Aluminium.

8. Replace the stainless steel sleeve, checking that the o-rings are in place and are lightly greased. Place the free running axel in the Ø30mm bearing on the top of the motor. (The free running axel is not used on 28ST and 40ST winches. For 68/72ST models the free running axels are pre-mounted in the winch.) Make sure that the bearing hole and the gear wheels are greased. Please note that the axle may run tightly before the motor is run in. Go to step 12.
9. With the deck plate securely in place, remove the mounting nut and push the top of the motor up through the deck and the deck plate*. Re-secure the mounting nut on top of the deck. This may require two people to complete if the motor cannot be supported by another device. *For 52/58/62/68/72ST winches you need to remove the gear wheel on the top of the motor to be able to push the top of the*



1. Place the mounting nut over the axle.

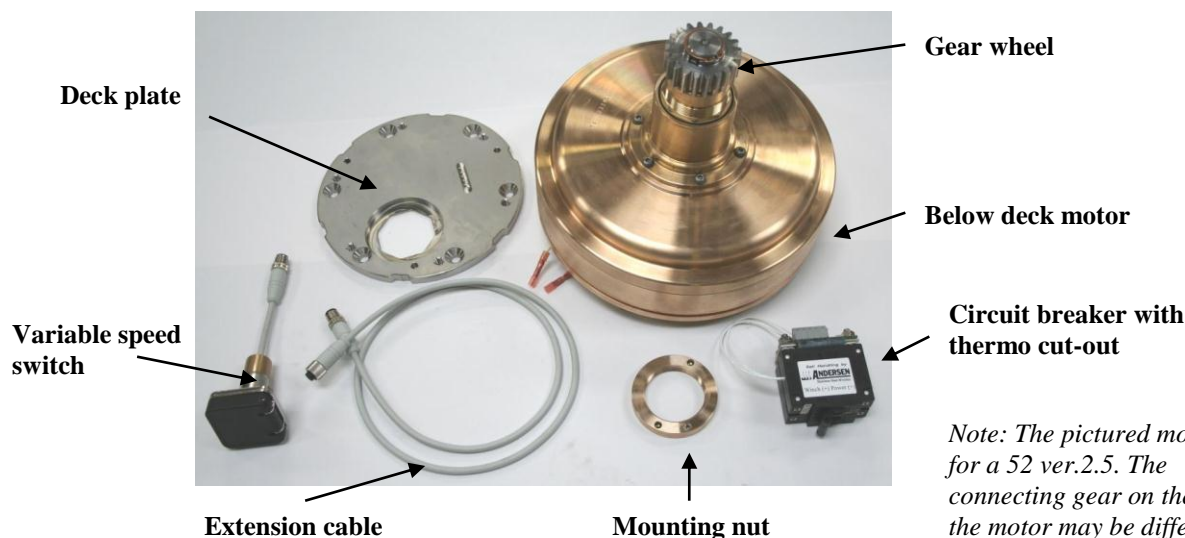
2. With the tool provided tighten the nut firmly.

3. Lock the mounting nut by tightening the screw on nut's top side.

motor through the deck plate. To do this, remove the circlip from the top of the gear wheel, then slide the gear off the axle. Remount the gear once the motor has been installed through the deck.

This can be achieved with the help of the following:

- Drill a hole through the deck which is wider than the motor flange. When mounted, there must be free space between the deck and the flange.
- Clean the deck hole before attempting the install the motor so that during insertion



Note: The pictured motor is for a 52 ver.2.5. The connecting gear on the top of the motor may be different for other winch sizes

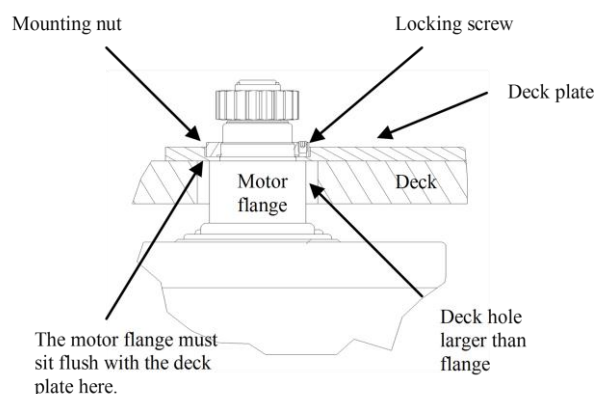
through the deck, the motor flange does not catch splinters of fiberglass or wood.

10. With the tool provided tighten the mounting nut on top of the deck.
11. Tighten the small hexagon locking screw on the mounting nut.

- Ensure that the underside of the deck plate is clean and free from resin, varnish or sealants.
- Do not use a sealant between the flange and deck plate. An o-ring ensures a

* Important Installation Information for below deck motors!

It is extremely important that your motor is aligned with your winch. Non-aligned motors will be noisy and gear wear will be accelerated. To ensure correct alignment, the motor flange must be flush with the deck plate and the eight-sided nut must fit snugly into the octagon in the deck plate.



waterproof connection.

Extra waterproofing can be achieved by applying sealant to the top of the deck plate next to the mounting nut after installation.

- Ensure that the o-ring on top of the gear unit is placed in its groove
- Before tightening the mounting screw, ensure that the locking screw on the mounting nut is not protruding beyond the contact surface. Tighten the locking screw when the mounting nut is securely in place.

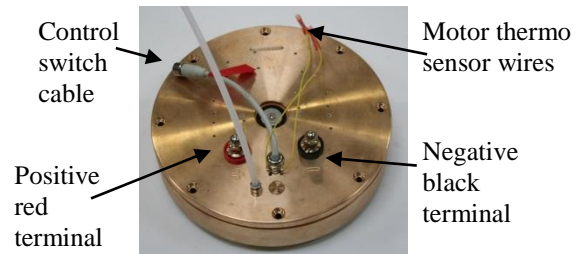
12. Place the winch on the deck plate for below deck models or on the motor for above deck models. With the provided aligning pins in place, bolt the winch in place with the bolts provided. Without the aligning pins, the gears connecting the winch to the motor may not run smoothly. The pins are inserted through the holes in base plate of the winch and into the deck plate or above deck motor case. It may be necessary to tap the pins in with a small hammer. (For 28ST & 40ST the pins are secured during manufacturing)

*Note: for 28ST Below Deck Compact Motors only **4 bolts are used to secure the winch**. One hole on the winch base is not used.*

13. Place the winch drum on the winch base and secure the self-tailing arm.
14. Spin the drum with your hand and operate the winch manually with the normal handle. The winch should turn in both gears without great resistance. If this is not the case, repeat steps 12-14.

Electrical Installation

Due to the special design of the motor, incorrect electrical installation will result in permanent damage to the motor and invalidation of any warranty. If in doubt regarding any aspect of the installation seek assistance from a qualified tradesperson.



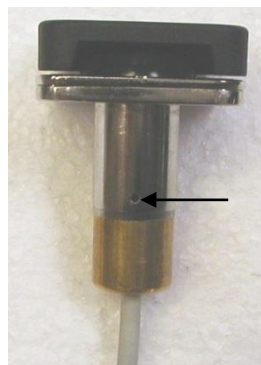
- Always apply the relevant voltage to your motor.
- Always use the Andersen circuit breaker provided, wired as described in the wiring diagram
- Never alter any part of the motor including switches and control cables. The motor may only be installed as delivered. Any changes made to the motor invalidate the warranty.
- There are no user serviceable parts in the motor. In case of any mal-function contact your Andersen dealer.
- Never work on an energized motor.

1. Determine the location of the circuit breaker. The circuit breaker should be mounted **vertically**, close to the battery and in an easily accessible position. (See also Circuit breaker safety switch installation on next page).
2. Measure the distance from the battery to the motor (and back) via the circuit breaker to determine the necessary **total** cable length and thickness (see wiring diagram). The cable should be as short as possible to minimise voltage drop from the battery to the motor. A thicker cable (than suggested in the wiring diagram) will also reduce voltage drop.
6. Connect the switch control cable extension to the motor and then push the other end up through the switch hole in the deck. Attach the cable to the switch (with the switches rubber gasket in place). Position the switch and screw it in place. (Do not block the breather hole on the side of the switch) The motor is provided with 1m of cable. If longer cable is required, contact your Andersen dealer for an extension cable.
7. When cleaning, don't use solvents on the cables. It can cause serious injuries. Instead use ethanol for cleaning.

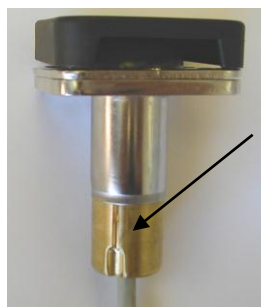
IMPORTANT WARNING Reverse installation of the power cables will permanently damage the motor.

3. Connect the negative black terminal on the motor (tighten the terminal bolts with max 12Nm torque) to the negative terminal on the battery.
4. Connect the red positive terminal on the motor (tighten the terminal bolts with max 12Nm torque) to the circuit breaker end marked “winch” (tighten breaker circuit bolts with max 5Nm torque). Connect the other end of the circuit breaker “power” to the battery (ensure the circuit breaker is in the “OFF” position). A low amperage switch can be installed on your control panel with the help of a solenoid relay as described in the wiring diagram. Appropriate solenoid relays are available from your Andersen dealer.
5. Determine the position of the switch (es), and drill the appropriate hole(s)(Ø25mm). *To avoid accidentally activating the wrong winch and the risk of subsequent personal injury or damage to equipment, it is recommended that switches be mounted in close vicinity to the winch.*

NOTE: Care must be taken that the breather hole on the side of the switch, is not blocked.



The breather hole is either a Ø2 mm hole, or a milled 2mm track.



Circuit breaker safety switch installation

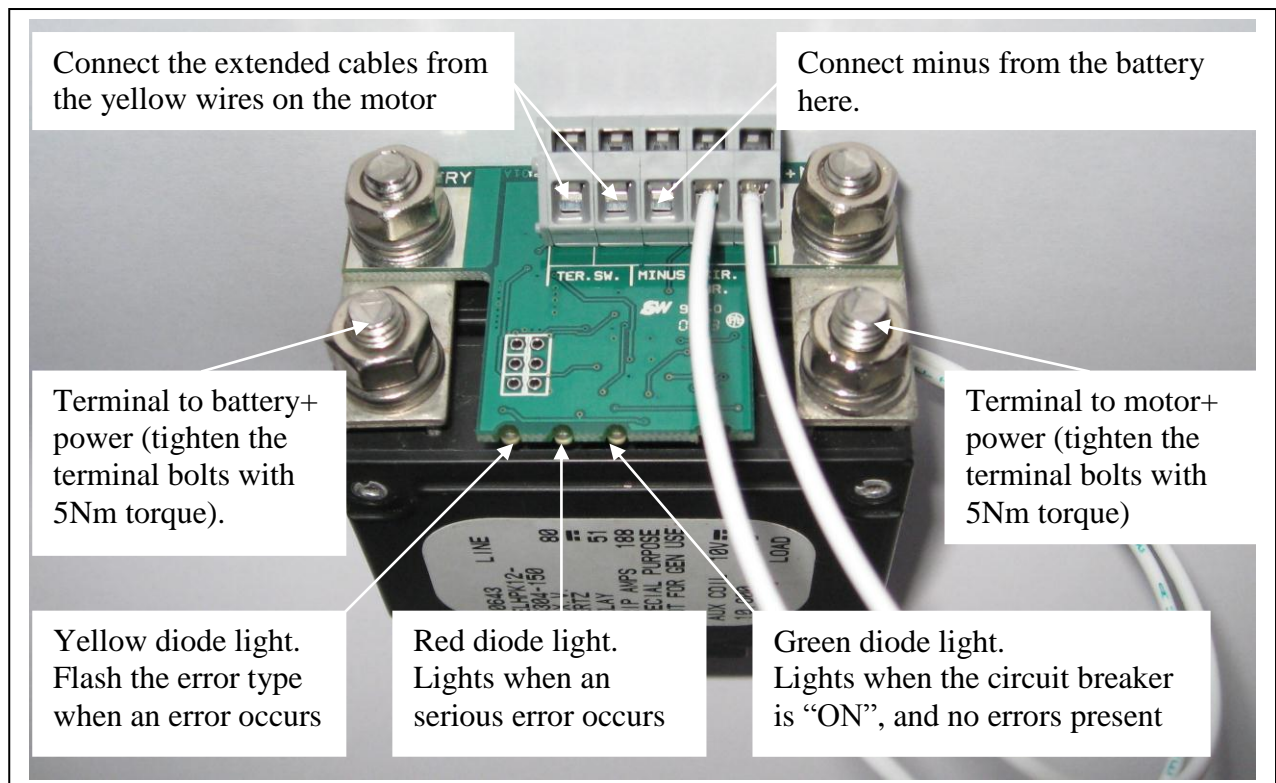
The Compact motor is supplied with a special circuit breaker safety switch for the Compact motor installation. The circuit breaker safety switch is fitted with a PCB (Print Circuit Board), which shall be connected as described below. The system is a combined safety switch and PCB makes a reliable circuit protection for the motor installation.

The safety switch system monitor: system conditions and cuts off the power if any error occurs.

Notice that the circuit breaker shall be placed very near the battery – see wiring diagram.

Circuit breaker installation

- To install the switch, extend and connect the 2 yellow wires from the motor to the “TER. SW” connectors on the back of the circuit breaker.
 - Connect the negative battery terminal to the “MINUS” connector on the back of the circuit breaker (0.75mm² wire).
 - When installed correctly the green diode light will turn on and off when the circuit breaker is on and off.
Notice: when turning off the switch the green diode will turn off with a little delay of a few seconds.
- *If the green light remains on when in the “OFF” position the terminals to the battery and winch need to be swapped.*
 - *If no light is present check the connection to the “MINUS” terminal*
 - *If all light is flashing the PCB connection is wrong and the “MINUS” terminal is missing*
 - *Make sure all wires are connected correct*



Notice: You can TYPICAL add maximum a 50mm² tubular cable lugs on the circuit breaker - this is regarding the free space around the print circuit board.

Be sure that cable lug, washers etc, doesn't touch the print circuit board when installed.

Circuit breaker safety switch information codes

The circuit breakers printed circuit board (PCB) is fitted with 3 LED (diodes) – green, yellow and red color – see photo on the previous page.

The LED's gives information function about the actual drift, they have the following function:

- Green: normal operation. The LED lights constant for 5minutes, and flashes afterwards
- Yellow: a error has occurred, the number of flash tells the error type
- Red: a serious error has occurred, count the yellow flash for error type

Green LED

The green color LED alone indicates that there is power on, when circuit breaker is “ON” and everything is ok. The green LED lights constant light from start (power up), and starts flash for every 20 seconds after 5 minutes.

Yellow LED

Yellow LED flash indicates errors. Every error type has a number and by counting the flash when an error occur the error number can be detected. The error type will be flashed for every 20sec. – count the flash and see the table for error type.

The yellow LED is the normal error count LED that tells what error tripped the circuit breaker. General is the higher error number equal to more serious errors

Red LED

If the red LED flash, when yellow is off, a very serious fault is present, count the yellow flash. Either it's because that:

- the circuit breaker can not be tripped by the PCB,
- the yellow wires from the motor thermo switch has an interrupt,
- the electric connection to the PCB main +motor and +battery is wrong.

Errors codes – count the numbers of flashes on the circuit breaker yellow LED:

3	Battery voltage higher than limit at power up, check battery charger
4	High current consumption at power up, check for failure
5	Extremely low voltage, check battery charger and electric installation
6	Low voltage, check battery charger and electric installation
7	Low continuously current consumption (15min or more), check electric installation
8	High continuously current consumption (8 min or more), check electric installation
9	High voltage, during motor running, check battery charger
10	High voltage, check battery charger
11	Extremely high voltage, check battery charger and electric installation
13	Thermo switch in motor activated, or could also be damaged wiring
14	Wrong PCB connection, switch over +motor and +battery cable on breaker

Important electric installation information

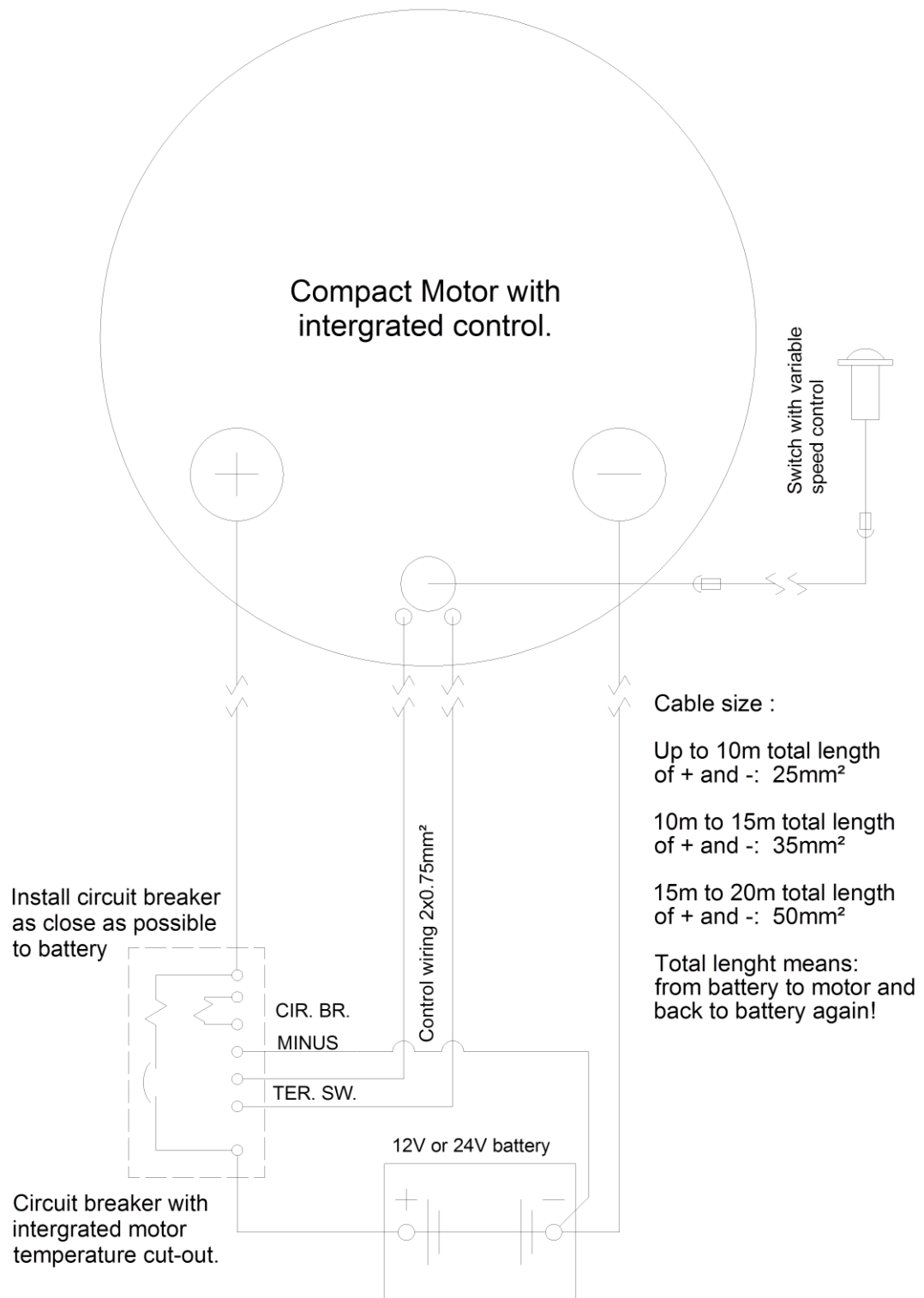


- Incorrect system polarity will permanently damage the motor
- To protect your Compact motor, make sure that the power is supplied through the circuit breaker unit (delivered with your compact motor)
Notice that the circuit breaker shall be placed near the battery – see wiring diagram.
- Make sure that the thermal cut out protection in the motor (yellow wires) is connected via extension cables to the circuit breaker printed circuit board
- Observe that the wiring dimensions given on the wiring diagram are met.
You can use shorter and / or thicker wires than indicated – but never longer and thinner
- No other devices than the provided circuit breaker (and possible main fuse >160 A, and / or main switch) must be installed between the compact motor terminals and the battery terminals
- No other devices than the Compact motor must be connected to the circuit breaker.
- Never supply the motor from an external power supply but exclusively from the battery. For 12V motors the supply voltage must be within 10,5V-15,5V. For 24V motors the supply voltage must be within 21V-28,5V
- If the battery is charged from the grid, disconnect the circuit breaker or main switch to avoid electronic damage on the motor caused by high voltage spikes
- Check that the (unloaded) voltage of any generator(s) does not exceed 15,5V for 12V systems - and 28,5V for 24 V systems. Be sure that the alternator does not charge with higher voltage than 15,5 (12V system) or 28,5 volt (24volt system)
- Never alter control cable wiring
- Always disconnect the power when not in use to avoid accidental activation.

See wiring diagram on the next pages.

Any deviation from the above listed instructions will invalidate the warranty!

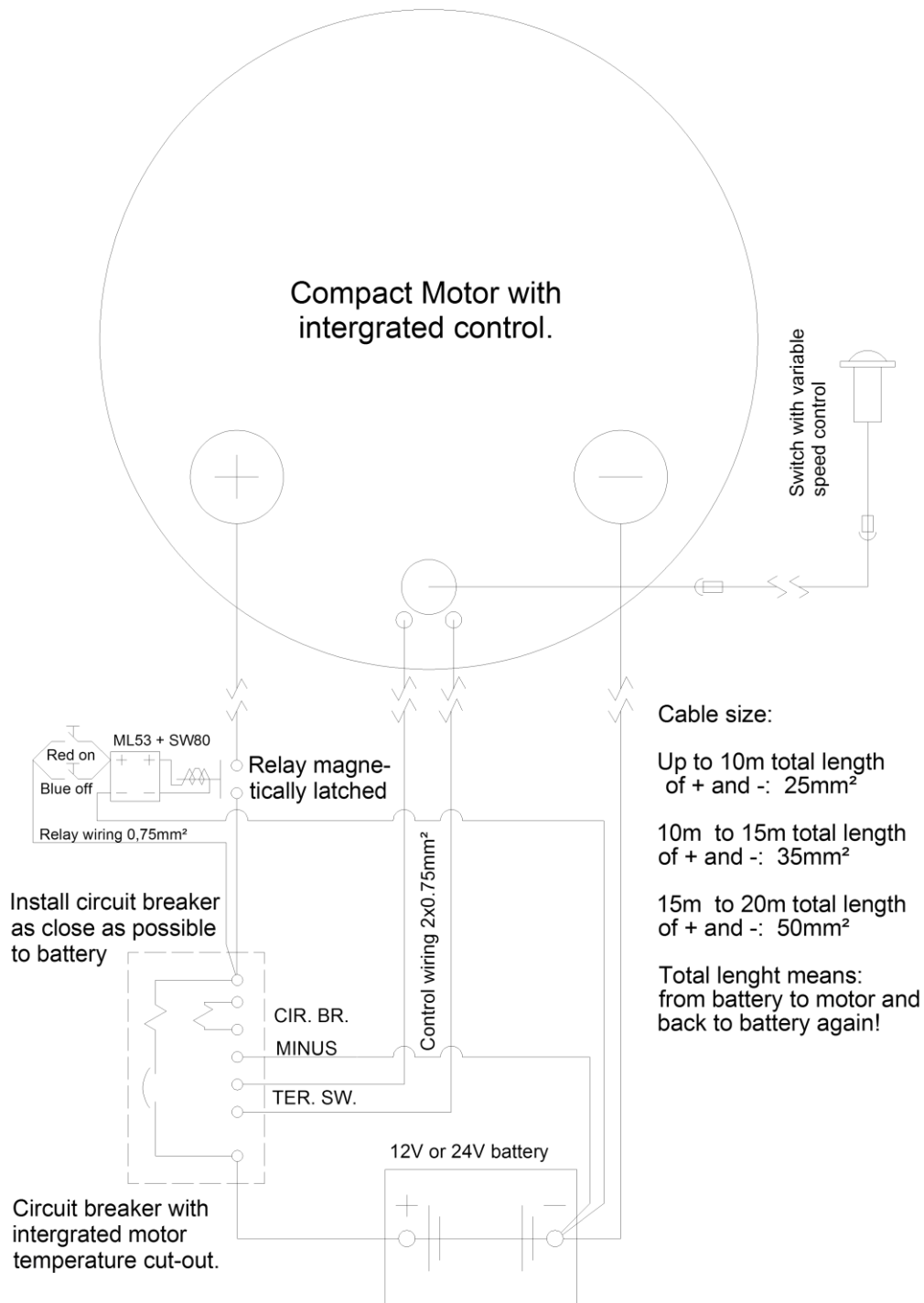
Wiring Diagram Schematic - standard installation



Important: Read electric installation information on p.13

Wiring Diagram Schematic - low current switch installation

(not standard)



Important: Read electric installation information on p.13

Trouble shooting

Fault	Check	Action
Motor stops and the light in the motor control switch flashes	The motor has reached the max load limit	Release the button and run the winch with less load
	The motor circuit has reached max temperature, which is app 60°C	When the temperature falls within the accepted range, the motor will function normally. Let the motor cool off till its ready to operate again
	The flashing light in the motor control switch indicates that the winch has been running for more than 4¼ minute	Release the button and start over again.
	Check that the motor control switch cable is not damaged or worn	Replace cable is necessary
The motor does not run, there is <u>no</u> light in the motor control switch	Check that the circuit breaker and main power switch are in the “ON” position	If “OFF” turn “ON”
	Check the voltage supply at the motor	Check terminal connections
	Check that the motor control switch is connected to the motor	Connect the switch
The motor does not run when activating the motor control switch but there's light in the switch	Check that the voltage supply to the motor terminals is correct	When the correct voltage is available, the motor function shall be normal
	Check that the switch cable is not worn or damaged in any place	Replace cable if possible
The circuit breaker trips straight away after being reset	Error code on the circuit breaker, see chapter: Circuit breaker safety switch information codes	Depending on the error code action has to be taken.
	Check that the voltage at the breaker is correct	Charge or change battery Check terminal connections When the correct voltage is available, the breaker can be reset
	Check the connections and wiring from the motor thermo sensor to the circuit breaker printed circuit board	If the thermo-sensor is not connected the breaker will trip. Re-connect the wire and replace if damaged
	Check that the motor hasn't overheated. If over 70°C the motor thermo sensor will turn the circuit breaker “OFF”	When the motor cools the circuit breaker can be re-set. If the problem re-occurs contact your Andersen dealer for service.
The circuit breaker trips when using the winch	Error code on the circuit breaker, see chapter: Circuit breaker safety switch information codes	Depending on the error code action has to be taken.
There is no light or flashing in the green diode on the back of the circuit breaker when it is switched “ON”	When there is no light from the circuit breaker important safety features will not function. Check that the “MINUS” supply to the circuit board is not broken or damaged.	Reattach the “MINUS” wire to the minus terminal on the print
		The printed circuit board on the breaker can be damaged, replace it with a new print circuit board.
The circuit breaker trips and no error code is present on the diodes	The current consumption is higher than the rated current consumption on the circuit breaker, therefore it cuts off	Check the installation for faults

General Service Instructions

The compact electric drive unit is lubricated with regular Andersen Winch Grease. Although the unit is sealed, with time the grease will dry and the unit must be serviced, depending on the conditions of use, servicing is recommended every 2-3 years. A noisier motor is a sign that service is due.

In order to service the unit, it must be uninstalled, disassembled, cleaned and then re-lubricated.

It may be appropriate to change the motor seals at the same time - Contact your Andersen dealer for assistance or service kit supply.

Do not attempt to service the unit on board. Find an appropriate clean and stable area to work on the unit.

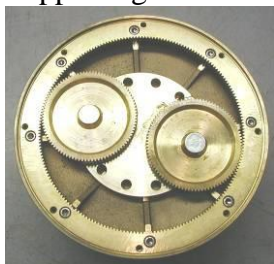
The gear assembly runs with Ø6mm ball-bearings - Care should be taken that these do not fall out during the service

Below deck Motors 28-72ST (Ø195 & Ø250)

1. With the unit removed from the boat unscrew the 6 or 8 bolts from the bottom of the motor.
2. Separate the motor unit from the gear unit by lifting the gear unit up. If difficult to separate, tap the gear house with a plastic hammer while pulling apart.
3. Clean the top of the motor including the gear, re-lubricate the gear with Andersen Winch Grease Andersen Winch Grease and place it to one side.
4. With the shaft pointing up, remove the 6 bolts connecting the flange to the gear housing, and remove the flange and the shaft.



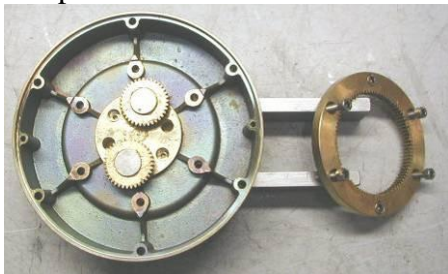
5. Remove the pawls and springs.
6. Clean all parts and check for excessive wear.
7. Reassemble the shaft assembly applying a thin coat of Andersen winch grease and mount new pawls and springs – place to one side.
8. Clean the shaft base and the surrounding ball bearings on the gear housing. Do not remove the bearings.
9. Re-lubricate the bearings and shaft base
10. Reattach the shaft and flange onto the gear housing.
11. With the flange attached turn the motor so the flange is pointing down.
12. Supporting the motor, clean and Re-lubricate the gears with Andersen Winch Grease.



13. Reattach the motor to gear unit. (Use the bolts to help align the motor to the gears)

Above deck Motors 28/40ST (Ø195)

1. With the unit removed from the boat take off the stainless steel cover and unscrew the 2 bolts from the top of the unit.
2. Remove the motor unit from the gear unit. If difficult to separate, tap the gear house with a plastic hammer while pulling apart.
3. Clean the top of the motor including the gear, re-lubricate the gear with Andersen winch grease and place it to one side.
4. Place the gear housing upside down on 2 blocks so that the centre plate on the gear housing is supported by the blocks
5. Remove the 6 bolts from the crown gear.
6. Carefully remove the crown gear, clean and place it to one side.



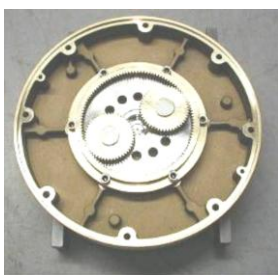
7. Clean and lubricate the planet gears
8. While taking care to hold the top of the gear housing, turn the motor around.
9. Pull the top plate out by attaching two bolts and pulling upwards.



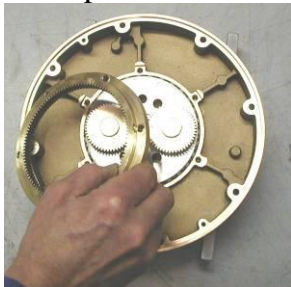
10. Remove the connecting ratchet shaft.
11. Remove the pawls and springs.
12. Clean all parts and check for excessive wear.
13. Reassemble the ratchet shaft assembly lubricating lightly with a thin coat of Andersen winch grease and mount new pawls and springs – place to one side.
14. Clean the shaft base and the surrounding ball bearings on the gear housing. Do not remove the bearings.
15. Re-lubricate the bearings and shaft base
16. Check seals and o-rings for wear and replace if necessary.
17. Place the ratchet shaft in the shaft base and replace the top plate checking that the o-ring is sitting in its groove.
18. While taking care to hold the top plate of the gear housing, turn the motor around and support the plate with 2 blocks.
19. Reattach the crown gear using a locking liquid on the bolts
20. Re-connect the motor unit to the gear unit. Replace the gasket if damaged. Use the bolts to align the motor to the gear unit.

Above deck Motors 46/52/58/62ST (Ø195 & Ø250)

1. With the unit removed from the boat take off the stainless steel cover and unscrew the 2 bolts from the top of the unit.
2. Remove the motor unit from the gear unit. If difficult to separate, tap the gear house with a plastic hammer while pulling apart.
3. Clean the top of the motor including the gear, re-lubricate the gear with Andersen winch grease and place it to one side.
4. Place the gear housing upside down on 2 blocks so that the gear on the top of the housing is not touching the work surface.



5. Remove the 6 bolts retaining the crown gear.
6. Carefully remove the crown gear, clean it and place it to one side.



7. Clean the planet gears and the bearings, taking care not to dislodge the bearings.
8. Lubricate the gears and bearings and reassemble the crown gear.
9. Re-connect the motor unit to the gear unit. Replace the gasket if damaged. Use the bolts to align the motor to the gear unit.

Above Deck 68/72ST (Ø280)

1. With the unit removed from the boat, mark up how the motor is placed in the gear house
2. Remove the motor unit from the gear housing, by removing the 8 bolts. If difficult to separate, tap the gear house with a plastic hammer while pulling apart.
3. Clean the top of the motor including the gear, re-lubricate the gear with Andersen winch grease and place it to one side.
4. Place the gear housing upside down on 2 blocks so that the gear on the top of the housing is not touching the work surface.
5. Remove the 8 bolts retaining the crown gear.
6. Carefully remove the crown gear, clean it and place it to one side. Do not remove the bearings.
7. Re-lubricate the bearings base in the crown gear and the gears, and reassembly again.
8. Re-connect the motor unit to the gear unit. Replace the gasket if damaged. Use the bolts to align the motor to the gear unit.

Spare parts

NAME	ANDERSEN product number
EXTENSION CONTROL CABLE 1M STANDARD	RD877610
EXTENSION CONTROL CABLE 5M	RD877611
COMPACT CONTROL SWITCH STANDARD	866000
CIRCUIT BREAKER SAFETY SWITCH COMPLETE	877750
PRINTED CIRCUIT BOARD FOR CIRCUIT BREAKER	RD878103
MOUNTING BRACKET FOR CIRCUIT BREAKER – RIGHT	868000
MOUNTING BRACKET FOR CIRCUIT BREAKER – LEFT	868050
MOUNTING BRACKET FOR CIRCUIT BREAKER – FRONT PLATE	868100
ABOVE DECK MONTAGE BOLT	ISO 4762-A4-70-M6X100
ABOVE DECK MONTAGE BOLT	ISO 4762-A4-70-M6X110
ABOVE DECK MONTAGE BOLT	ISO 4762-A4-70-M6X120
ABOVE DECK MONTAGE BOLT	ISO 4762-A4-70-M6X130
ABOVE DECK MONTAGE BOLT	ISO 4762-A4-70-M6X140
ABOVE DECK MONTAGE BOLT	ISO 4762-A4-70-M6X150
ABOVE DECK MONTAGE BOLT	ISO 4762-A4-70-M6X160
ABOVE DECK MONTAGE BOLT	ISO 4762- A4-70-M8X100
ABOVE DECK MONTAGE BOLT	ISO 4762- A4-70-M8X110
ABOVE DECK MONTAGE BOLT	ISO 4762- A4-70-M8X120
ABOVE DECK MONTAGE BOLT	ISO 4762- A4-70-M8X130
ABOVE DECK MONTAGE BOLT	ISO 4762- A4-70-M8X140
ABOVE DECK MONTAGE BOLT	ISO 4762- A4-70-M8X150
ABOVE DECK MONTAGE BOLT	ISO 4762- A4-70-M8X160
COMPACT SERVICE KIT 1; 28ST COMPACT A/D*	710101
COMPACT SERVICE KIT 2; 40ST COMPACT A/D*	710102
COMPACT SERVICE KIT 3; 46ST COMPACT A/D*	710103
COMPACT SERVICE KIT 4; 52, 58/62 ST COMPACT A/D*	710104
COMPACT SERVICE KIT 4; 68/72 ST COMPACT A/D (Ø280mm)*	710104
COMPACT SERVICE KIT 5; 68/72ST COMPACT A/D (Ø300mm)*	710105
COMPACT SERVICE KIT 11; 28,40 ,46, 52, 58/62ST, 68/72ST COMPACT B/D (ø195 & Ø250mm)**	710111
COMPACT SERVICE KIT 12; 68/72ST COMPACT B/D (Ø300mm)**	710112
ANDERSEN WINCH GREASE	500001-1
TERMINAL EXTENSION SET (41mm – Notice: only one per terminal)	877800
COVER - THERMINAL EXTENSION(+)	878000
COVER - THERMINAL EXTENSION(-)	878050
TEMPLATE 28-40-46 COMPACT ABOVE DECK MOTOR (Ø195)	RD100455
TEMPLATE 52-58-62 COMPACT ABOVE DECK MOTOR (Ø250)	RD100456
TEMPLATE 68-72 COMPACT ABOVE DECK (Ø280)	RD100528
TEMPLATE 68-72 COMPACT ABOVE DECK (Ø300)	RD100698
SOLENOID RELAY MAGNETICALLY LATCHED 12V	RD100480
SOLENOID RELAY MAGNETICALLY LATCHED 24V	RD100490

* contains: extra ball bearings, pawls and springs, O-ring, gasket and shaft sealing – but not grease

** contains: extra ball bearings, pawls and springs, O-ring and shaft sealing – but not grease

Warranty

Refer to our website www.ronstan.com/warranty for our warranty terms and conditions.

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