

Installation, Operation & Maintenance Manual



For Savwinch CS, SS, and SSS Series Drum
Winches



Installation, Operation & Maintenance Manual

Savwinch SS Series and SSS Deluxe Series Drum Winches

Thank you for purchasing from the Savwinch family of drum winches. This manual describes how to plan, install, operate and maintain the following models:

Series	Description	Models
CS Series 	316 stainless steel drum, powder coated steel motor, and alloy gearbox	450CS, 880CS, 1000CS, and 1500CS
SS Series 	316 stainless steel drum and motor, and alloy gearbox	450SS, 880SS, 1000SS, 1500SS and 2000SS
SSS Deluxe Series 	All 316 stainless steel – drum, motor and gearbox	1000SSS, 1500SSS, 3000SSS and 4000SSS

The information provided in this manual focuses on recreational boating. For commercial boats in survey, please discuss your requirements with a Savwinch specialist and/or a marine surveyor.

Before you start

Please read these instructions carefully before attempting to install, operate or maintain this product. Observe all safety information. Failure to comply with instructions could result in personal injury and/or property damage. Retain these instructions with the vessel for future reference.

Be thoroughly familiar with its controls and correct use. This winch should be operated only by users fully conversant with these instructions.

Treat your winch with respect. Use it with caution and always follow the safety guidelines.

SAFETY WARNINGS

Throughout this manual there are four symbols designed to draw your attention to safety issues:



Danger: A hazard that **WILL result in death or serious injury** if the warning is ignored.



Warning: A hazard that **COULD result in death or serious injury** if the warning is ignored.



Caution: A hazard that **COULD result in personal injury**, or could damage property.



Note: Additional information regarding the product and/or its correct usage.

General

1. Winches are potentially dangerous equipment and must be installed correctly. For your safety and the reliability of this product, Savwinch recommends installation by a trained marine mechanic or marine electrician.
2. Periodically (recommended once per year) check the winch installation to ensure that all bolts are tight.
3. When operating in shallow water, avoid overloading the drum with rope and chain. It is recommended that you fill the Drum to 80% capacity.
4. Do not overload your winch and do not attempt prolonged pulls at heavy loads. Overloads can damage the winch and/or the rode, and create unsafe operating conditions. Do not maintain power to the winch if the motor stalls.
5. The engine/generator should be running during winch operation to minimize battery drain and maximize winch power and speed. If considerable winching is performed with the engine off, the battery may become too weak to restart the engine.
6. Never use your winch for lifting or moving people or for performing overhead hoisting operations.
7. Never operate the winch without an unobstructed view of the winching operation.
8. Do not machine or weld any part of the winch. Such alterations may weaken the structural integrity of the winch and will void your warranty.
9. Never allow shock loads to be applied to your winch as this can cause serious damage to your boat.
10. The general winch operating voltage is 12V. 24V is possible through the use of a 24V solenoid in the place of the supplied 12V solenoid. If the winch is running slowly there may be a voltage drop in the wiring.



Rope breakage and whiplash hazard.



1. Never stand between the load point and the winch. If the rope breaks it could snap back with enough force to cause severe injury or death.
2. Use the rope designed for this product.
3. This winch is intended to lift anchors of the specified weight range only. Do not attempt to lift oversized anchors or other objects.
4. Before each use inspect the winch system for wear or damage. A frayed rope or damage splice to the chain should be replaced immediately to avoid damage.

Electrical shock and fire hazards.



1. Do not use electrical wire sizes smaller than those specified in this manual. Using underrated cable could result in overload and fire.
2. To avoid the risk of electrical fire, use only the supplied switches, remote controls and accessories. Use of non-factory approved components may cause injury or property damage and will void your warranty.
3. For maximum protection, install the breaker as close as possible to the power source. If it is also used as the manual isolator, install it near the Up/Down switch.
4. To minimize corrosion, only use marine-grade, fully tinned wire for electrical connections.
5. Ensure crimped electrical connections are fit for purpose.
6. Disconnect and wrap the battery terminals in plastic before installing or servicing the winch.



Cruising and boat trailering hazards.

1. When the boat is cruising or being trailered, consider tying the anchor to a cleat (or other secure point) with the rope off the drum. If the anchor breaks free during cruising or trailering, it could cause serious damage and/or injury.

Entanglement hazards



1. Keep the winching area clear. Do not approach within one meter of the winch when power is applied to it. Hands, feet, hair and clothing, if caught in the winch when operating, can lead to serious injury or death.
2. Disable power from the winch when it is not in use.
Note. Savwinch recommends installing a visible or audible alarm to the input side of the solenoid or Electronic Fast Fall System to warn crew when the winch has power applied to it.
3. Never place any object or tool in the rope spool while power is applied to it. Objects tangled in the rope could cause serious injury and/or damage to the winch.
4. Ensure no one is swimming nearby as the anchor is lowered or retrieved.
5. Never operate the winch under the influence of drugs and/or alcohol.

Anchoring hazards



1. Never guide the rope onto the drum with your hand. A roller or fairlead is used for this purpose.
2. Tie the anchor line off to a cleat (or other secure point) if the boat is left unattended or is anchored overnight or in heavy weather.
3. Do not attempt to lift a load greater than the rating for the winch. If the circuit breaker disconnects power to the winch during retrieval or deployment, the winch may have been overloaded. Determine why the breaker tripped before re-setting it.
4. Avoid continuous pulls from extreme angles as this will cause the rope to pile up on one end of the drum. This can jam the rope in the winch and cause damage to the rope or winch.

COMPONENTS OF YOUR DRUM WINCH

Sawwinch drum winches retrieve and deploy anchors using a combination of rope and chain. These winches are usually controlled from the helm.

The components of powered anchor systems typically include:

- anchor
- rope and chain (the rode), shackle and swivel, aluminium backing plate and bolts
- hawse pipe or guide roller and bowsprit
- winch assembly (including winch, power supply, power and control cables and Up/Down switches, circuit breaker, and solenoid or Electronic Fast Fall System)

The Anchor The measure of an anchor's performance is how well it holds the boat under the forces of wind, current and wave action. To be effective, it must hold in a variety of conditions on the sea bed; and it must stay buried, even when the boat swings 180° with changing tides. Equally important, it must be easy to retrieve. When it is time to move, there is nothing more frustrating than to find that your anchor is firmly attached to the sea bed, with no chance of recovering it.

Sawwinch recommends plow, claw and escape anchor types (all available in a range of sizes, and fabricated in galvanised or stainless steel, or in some cases, aluminium). The pursuit of better holding capacity and ease of retrieval has led to extensive research and development. Newer winch designs usually offer superior holding power.

Choosing the right size and style of anchor is critically important in the planning and purchasing of your anchor system. There are so many different types and styles of anchors available. Some suit certain types of sea beds better than others. Even among modern designs, the holding power of each style can vary considerably in different conditions.

For boats anchoring in moderate wind speeds (up to 25mi/40kph) with light-to-average waves, on a sand or mud sea bed, rule of thumb suggests your anchor should be about 3lb/1.5kg per metre of the boat's length. Some of the more modern anchor designs quote as little as 2lb/1kg per metre.

Example: A 20ft/6m boat could achieve good results with a 20lb/9kg plow anchor and 20ft/6m of chain. A modern design such as a 13lb/6kg escape or delta anchor could provide the same, if not better, holding power.

These figures assume a boat with an average displacement and windage. Heavier boats such as a large flybridge cruiser, a ketch or a catamaran would need 4lb-7lb/2-3kg per metre of boat length and would usually carry more chain.

The operating environment can greatly affect your choice of anchor. If you only day fish, never anchor in heavy seas or in winds greater than 20mph/30kph, and don't sleep overnight on your boat, you may be able to drop to one size smaller.

The following should be considered regardless of the size of your boat:

1. If you only use your boat for lakes, rivers and inland waterways, or if you plan to use it on protected bays for day trips, then back to shore, then you may be fine with a slightly smaller anchor.
2. If the weather takes a turn for the worse, and you have to ride out the storm at anchor because you're not always close enough to head back to shore, or if you're anchoring in very deep water or you're anchoring overnight, consider using an anchor one size larger.
3. **Note:** When choosing your primary boat anchor, it is recommended that you assume a minimum 30mph/50kph wind rating.

Remember to carry a spare anchor and rode at all times. For a really good night's sleep in rough weather, consider deploying both anchors. Do your homework. If it makes you feel more secure, don't hesitate to go to the next larger size.

If you're anchored on a lee shore with an engine that won't start and bad weather moving in, you'll probably wish you had invested in a more substantial anchor!

The Rode The connection between the winch and the anchor (the rode) is a combination of rope and chain. It is typically three-to-five times your greatest anchorage depth. This is called its 'scope'.

The anchor rope is fastened to the chain with an eye splice and shackle. The shackle should be larger than the chain links but still run smoothly over the bowsprit. It's wise to wire the pin (called 'mousing') or use a waterproof thread sealant such as Loctite, Threadlock, Nutlock, or Clessetite Thread Sealant to keep it from coming undone. A swivel reduces twist in the rode, helping the anchor to run cleanly up onto the bowsprit.



Note. Tying a knot in a rope can reduce its strength by up to 50%. This is why anchor ropes are spliced onto stainless-steel thimbles. While the bitter end of the rope is usually tied to the winch drum rather than splicing, this is not regarded as a problem as the knot is usually covered by layers of rope wound onto the drum well before any significant load is applied.

Some Savwinch anchors include a sliding escape ring to assist with freeing the anchor from the sea bed if it becomes jammed.

A chain leader ensures that the shank of the anchor lies in the correct position; and it reduces abrasion of the rope on rocky and coral sea beds. The chain should be at least equal to the length of your boat. The chain is fastened to the anchor with a swivel. If you find that the swivel jams, an extra two or three links of chain between the swivel and the anchor usually fixes this problem.

Most Savwinch models come with double braided nylon, polyester or UHMWPE (Ultra High Molecular Weight Polyethylene) rope. Nylon and polyester have similar performance characteristics. Both are suitable for recreational boating.

UHMWPE offers a very high strength-to-weight ratio, very high abrasion resistance, high UV resistance, and does not absorb water. Its disadvantages are that it has very low stretch and it floats (which can be a disadvantage to boats passing close by when you are anchored). But 3mm UHMWPE, for example, is stronger than 8mm nylon or polyester. It allows you to fit a much longer anchor rode on your drum. Since it doesn't stretch, it's a good precaution to fit a few metres of three-core nylon (a 'top shot') before the chain to dampen shock loads that can be uncomfortable and can jerk the anchor out of the sea bed.



Note. One downside of thin UHMWPE is that it can jam easier than larger nylon and polyester ropes. This can be minimized by taking extra care when raising your anchor. For trouble-free operation, choose a winch large enough to carry the length of nylon or polyester that you need.

Once you've settled on an anchor and chain configuration, you can select the correct size of winch from the recommended maximum anchor weight and chain options listed below:

Winch Model	Maximum Anchor Size	Maximum Chain
450CS/SS	Up to 18lb/8kg	Up to 18lb/8kg (26ft/8m)
880CS/SS	Up to 22lb/10kg	Up to 18lb/8kg (32ft/10m)
1000CS/SS/SSS	Up to 37lb/17kg	Up to 24lb/11kg (46ft/14m)
1500CS/SS/SSS	Up to 42lb/19kg	Up to 26lb/13kg (52ft/16m)
2000SS/SSS	Up to 55lb/25kg	Up to 35lb/16kg (65ft/20m)
3000SSS	Up to 77lb/35kg	Up to 56.4lb/25.6kg (105ft/32m)
4000SSS	Up to 88lb/40kg	Up to 61.7lb/28kg (115ft/35m)

These recommendations are based on a safe margin for lifting with mud clinging to the anchor or other objects on the sea bed that could increase the load during the lift. **Do not exceed these recommended sizes.**

Hawse Pipe or Guide Roller, Bowsprit and Samson Post Guiding the anchor and rode as it's launched and retrieved is an important consideration. If the winch is mounted below deck (typically in the anchor well) and feeds through a hinged cover, cut a hole through the cover and fit a guide roller on the deck. Alternatively, fit a hawse pipe to guide the rope from the winch to the bowsprit. Take care to minimize abrasion as the rope feeds on and off the drum.

If the winch is mounted above deck, a guide roller is usually fitted.

A suitable bowsprit or bow roller is also needed to store and secure the anchor. Consider whether you need to lock the anchor on the roller, particularly if the boat is being towed on a trailer.

A samson post or bollard serves to secure the anchor rope on a strong point, to protect the winch from excessive loads while at anchor in heavy weather.

The Winch Assembly

Our winches consist of three key components: the drum, gear box and a DC electric motor. The drum is made from 316 marine-grade stainless steel (316 SS). The gear box and motor are various combinations of powder coated, marine anodized and/or 316 SS.

A critical consideration when fitting an anchor winch is the strength and stability of the mounting point. Depending on the size, weight and capacity of the winch, it could place extremely high loads. This is due to the winch's high torque, vibration and other shock forces involved. Using a samson post can reduce the demands on the winch mounting point while lying at anchor in heavy weather.

The Electrical System To complete your anchor system, you'll need to install the solenoid or Savwinch Electronic Fast Fall System, Up/Down switch, circuit breaker and electrical wiring.

As a safety precaution, Savwinch recommends fitting a marine-grade audible alarm that operates whenever power is applied to the system. This should be wired directly to the 12V input of the solenoid or Savwinch Electronic Fast Fall System. Refer to the schematic on page 10 of this manual.



Note. The Savwinch Electronic Fast Fall System for boat winches features no mechanical parts. This increases the speed of the motor on the way down, comparably as fast as you can freely drop your anchor. This system can be retrofitted to most existing installations.

When considering larger cable sizes, the total length of red and black cable from the battery to the winch must be considered. Never use cable that's smaller than the recommended size for the winch size (refer to page 8 for cable size).

The motor is supplied with 20in/500mm lengths of cable that need to be joined to longer runs of higher-rated cable to reach the battery (preferably in a dry area). Protect the cable joins with adhesive-sealed heat shrink to minimize the risk of moisture ingress. Use only tinned copper wire and, where possible, terminate the cables in a dry part of the boat to reduce the risk of corrosion – usually below deck.

One way to prevent the risk of moisture is to mount the solenoid or Electronic Fast Fall System in a dry area (such as behind a bulkhead), as near to the winch as possible. The cable supplied with most winch models is too small to run the full distance to the battery, as the voltage drop would be excessive. If possible, fit the solenoid or Electronic Fast Fall System behind the dash to ensure the switch cable easily reaches the dashboard. Then fit heavier cable from the Electronic Fast Fall System terminals to the battery. This reduces the voltage drop and eliminates the need for cable joins.

To provide maximum protection, the winch circuit breaker should be mounted as close to the battery as possible. The Up/Down switch and an optional isolator switch would normally be mounted near the helm, with tinned copper wire connecting it to the control terminals of the winch solenoid or Electronic Fast Fall System. If the battery is located close to the helm, you may prefer to mount the circuit breaker beside the Up/Down switch, using the breaker as the isolator.

Note. Avoid operating the circuit breaker/isolator when power is applied to the winch as this can shorten its life.

Call a Professional

Several Savwinch vendors offer installation services or can put you in contact with a qualified installer. If you intend to fit your own winch system, take your time with the planning. Think about how it will operate. Select a solid mounting point. Ensure everything is well sealed from water ingress. If you don't have the tools and the skill to fabricate the cables, purchase them from a reputable supplier or engage a marine electrician to perform that part of the job.



WINCH SPECIFICATIONS

The Savwinch family of drum winches for recreational boating covers seven sizes: the 450, 880, 1000, 1500, 2000, 3000 and 4000.

Each size is available in two combinations of drum, motor and gearbox casing, as listed below:

- CS Series – made with 316 stainless-steel drum, powder coated steel motor and an alloy gearbox
- SS Series – made with 316 stainless-steel drum and motor, and an alloy gearbox
- SSS Deluxe Series – made with all 316 stainless-steel drum, motor and gearbox

General

Motor Voltage	12V
Physical Dimensions	Refer engineering drawings.

Model 450 CS and 450 SS

Unit Weight	20lb/9kg
Maximum Anchor Weight	18lb/8kg
Maximum Chain Length	26ft/8m
Circuit Breaker	40A
Minimum Cable Size	6 B&S
Included Rope & Chain combinations:	6mm x 45m Double Braid Rope + 6mm x 5m Chain

Model 880 CS and 880 SS

Unit Weight	22lb/10kg
Maximum Anchor Weight	22lb/10kg
Maximum Chain Length	33ft/10m
Circuit Breaker	40A
Minimum Cable Size	6 B&S
Included Rope & Chain combinations:	6mm x 65m Double Braid Rope + 6mm x 6m Chain

Model 1000 CS, 1000 SS and 1000 SSS

Unit Weight	37lb/17kg
Maximum Anchor Weight	37lb/17kg
Maximum Chain Length	46ft/14m
Circuit Breaker	60A
Minimum Cable Size	4 B&S
Included Rope & Chain combinations:	6mm x 95m Double Braid Rope + 6mm x 7m Chain

Model 1500 CS, 1500 SS and 1500 SSS

Unit Weight	42lb/19kg
Maximum Anchor Weight	42lb/19kg
Maximum Chain Length	52ft/16m
Circuit Breaker	60A
Minimum Cable Size	4 B&S
Included Rope & Chain combinations:	8mm x 95m Double Braid Rope + 6mm x 8m Chain

Model 2000 SS and 2000 SSS

Unit Weight	55lb/25kg
Maximum Anchor Weight	55lb/25kg
Maximum Chain Length	65ft/20m
Circuit Breaker	80A
Minimum Cable Size	3 B&S
Included Rope & Chain combinations:	8mm x 140m Double Braid Rope + 6mm x 10m Chain

For Custom Rope Kits, please contact your Savwinch Dealer.

Model 3000SSS

Unit Weight	86lb/39kg
Maximum Anchor Weight	77lb/35kg
Maximum Chain Length	98ft/30m
Circuit Breaker	120A

Minimum Cable Size

3 B&S

Model 4000SSS

Unit Weight	101lb/46kg
Maximum Anchor Weight	88lb/40kg
Maximum Chain Length	98ft/30m
Circuit Breaker	120A
Minimum Cable Size	3 B&S

You must use the following cable sizes as a minimum (for standard 12V Winches):

It is suggested that you use the recommended cable sizes to ensure minimum voltage loss. Savwinch drum winches can operate with up to a 9% voltage loss without affecting performance significantly, though you will encounter slightly slower drop and retrieval speeds. Note that if using the Electronic Fast Fall System a voltage loss of no more than 6% is acceptable; any less and the Electronic Fast Fall System will not function.

450CS/SS & 880CS/SS Winch:

*For up to 4.5m of cable, use 6B&S and experience 4% voltage drop

*For up to 9m of cable, use 4B&S and experience 5% voltage drop

*For up to 12m of cable, use 3B&S and experience 4% voltage drop

1000CS/SS/SSS & 1500CS/SS/SSS Winch:

*For up to 4.5m of cable, use 6B&S and experience 6% voltage drop

*For up to 9m of cable, use 4B&S and experience 8% voltage drop

*For up to 12m of cable, use 3B&S and experience 6% voltage drop

2000SS/SSS Winch:

*For up to 4.5m of cable, use 6B&S and experience 8% voltage drop

*For up to 9m of cable, use 4B&S and experience 9% voltage drop

*For up to 12m of cable, use 3B&S and experience 8% voltage drop

3000SSS & 4000SSS Winch:

*For up to 4.5m of cable, use 4B&S and experience 6% voltage drop

*For up to 9m of cable, use 3B&S and experience 8% voltage drop

*For up to 13.5m of cable, use 2B&S and experience 9% voltage drop

INSTALLATION

TOOLS REQUIRED:

1. Electric drill
2. Center punch
3. Drill bits (8mm for 450, and 880, 10mm for 1000, 1500, and 2000)
4. Metric sockets and wrench
5. Philips head screwdrivers
6. Wire cutters and pliers
7. Terminal crimping tool
8. Heat gun
9. Waterproof thread sealant
10. Marine sealant

UNPACKING

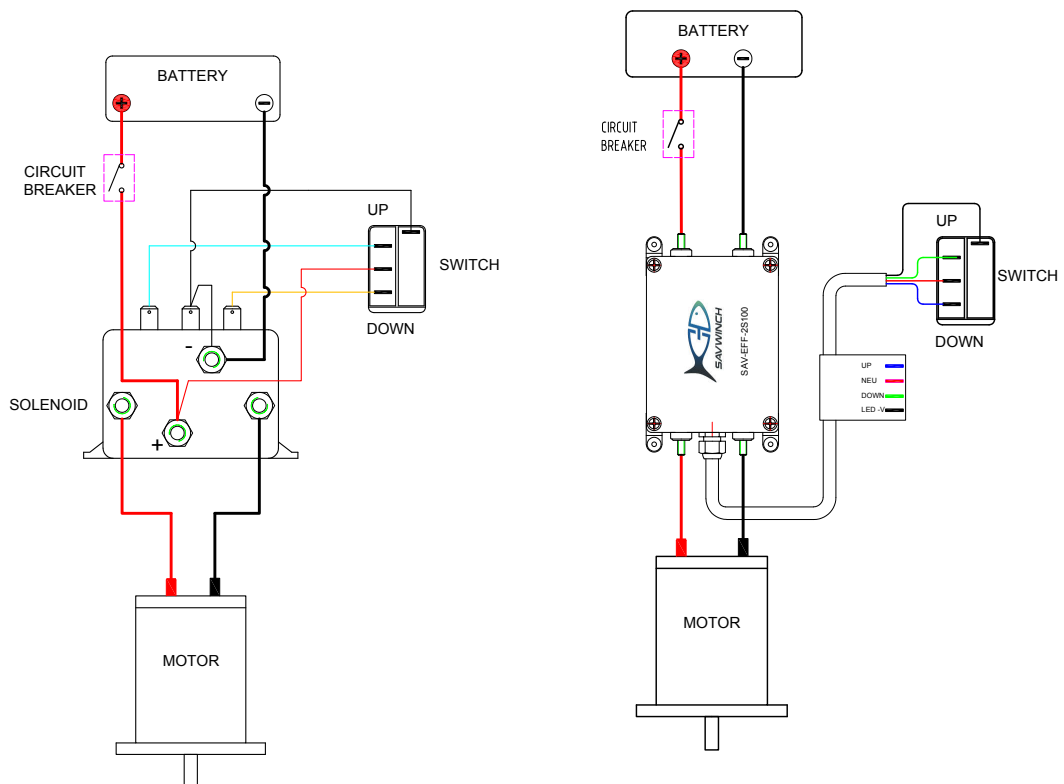
1. Check the packing list enclosed with your winch system. Carefully inspect the contents for completeness and for any damage that may have occurred during transit.
2. Study the boat's layout.
 - a. The winch gearbox and motor can be rotated to different mounting positions. This allows them to be re-positioned. Determine the best location for mounting the winch, solenoid or Electronic Fast Fall System, circuit breaker and Up/Down switch. If applicable, also consider the location for the guide roller or hawse pipe, the bowsprit/bow roller. Ensure that the anchor rode will flow freely from the drum to the bowsprit/bow roller in both directions.
 - b. Ensure that the operator (usually the skipper) will have a clear view of the anchor when it is dropped and retrieved from the location where the Up/Down switch is to be fitted. It's possible to run dual switches off the Electronic Fast Fall System or solenoid if required.
 - c. Locate the winch in a suitable position on the deck or in the anchor well so that there is no interference from other ropes or objects. Ensure that the position of the winch, if crew and/or equipment are nearby, will not lead to any safety issues when it is operating.
 - d. Ensure that the rope has a clear lead to the winch. Use a roller if required to direct the rode to the drum. Ensure that there is sufficient room to run the electrical cables to the winch without interfering with the operation of the winch or with other activities on the foredeck.
 - e. If the deck is angled or curved, a suitably shaped mounting block will be required to spread the load evenly over the deck surface and to mount the winch on a level and even footing. Depending on the thickness of the mounting, a suitable spacer may be required to mount the winch.
 - f. Check that the mounting points are strong enough for the winch, solenoid or Electronic Fast Fall System, circuit breaker, and Up/Down switch, as well as the guide roller or hawse pipe, and the bowsprit/bow roller (if applicable). If unsure, refer to your boat maintenance professional or marine servicer.
 - g. Electrical cables will be run from the battery to the circuit breaker, solenoid or Electronic Fast Fall System and Up/Down switch. Investigate possible paths for the cabling to run. You may need to drill or cut penetrations for the cable to pass through bulkheads. Ensure that this does not have a negative impact on the integrity of waterproof compartments.
 - h. Select a suitable mounting point for the solenoid or Electronic Fast Fall System (in a dry area of the boat, ideally as close as possible to the winch to minimize voltage drops).
 - i. Select a suitable mounting point for the circuit breaker, as close as possible to the positive battery terminal to ensure maximum protection for the electrical circuitry.
 - j. Select a suitable mounting point for the battery terminations. If there is a common termination point for the negative terminal of the battery, the negative cable for the winch should be terminated at that point (not at the battery negative). This is done to minimize ground loops, which can cause electrical interference with radio communication and electrical instruments, and to minimise corrosion due to

galvanic action. There may be spare connections on the positive terminal of the battery to a busbar or common termination point.



Caution: Before beginning winch installation, disconnect the battery, then tape a plastic bag over the positive terminal to ensure it cannot be inadvertently re-connected until the work is completed.

3. If required, loosen the lock screws on the flange of the winch (this is the round piece that connects the gearbox to the drum), then rotate the winch motor to the desired position. Re-tension the lock screws.
4. Position the drum winch carefully, checking the rope path before mounting to your deck or bulkhead. Drill mounting holes for the winch. Deburr and clean up the holes, as required. If the mounting plate is made from fiberglass or timber, seal the exposed material with epoxy to prevent water ingress. If the mount is made from steel plate, rust proof the exposed metal.
5. Apply an appropriate rubber gasket (or grease) to the base plate and mounting block (if required), taking care to align mounting holes when assembling. For aluminium and steel-hulled vessels, it is important to insulate the winch with a non-conductive rubber gasket to minimise corrosion. This also applies to the mounting bolts, nuts and washers. Where the deck construction is light of foam sandwich construction, a marine-grade plywood stiffener of at least 5/8" should be fitted to the reverse side of the mounting point to spread the load. Install and tighten the stainless-steel mounting bolts.
6. To help the rope to lead onto the drum, a minimum spacing of one meter is recommended between the last roller and the winch. If the winch is being used inside a rope locker, it is recommended to have a Savwinch guide roller or hawsepipe.
7. Ensure sufficient room to run electrical cables to the winch.



*Note the Winch Isolator, Flashing Light, and Siren are optional and not required for general use.

Circuit Schematics for Solenoid & Free Fall System Motor Control

8. Connect the cables to the Up/Down switch. Drill the mounting holes in the panel. Seal the holes to prevent water ingress, as required. Pull the cables through to where they will be terminated on the solenoid or

Electronic Fast Fall System. Use any form of cable ties, conduit or other method to secure the cable every 10 inches. Then mount the Up/Down switch.

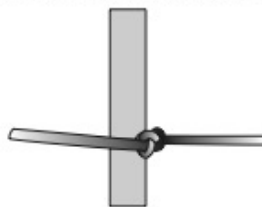
9. Connect the cables to the circuit breaker. Drill its mounting point. Seal the holes to prevent water ingress. Pull the cables through to where the breaker will be terminated on the battery and solenoid or Electronic Fast Fall System. Use cable ties, conduit or other method to secure the cables. Then mount the breaker.
10. Connect the winch's positive cable to the solenoid or Electronic Fast Fall System. Connect the winch's negative cable to the common negative point. These joins will usually require larger diameter cable with heat shrink. A double layer of heat shrink is recommended to minimize the risk of water ingress.
11. Mount the solenoid or Electronic Fast Fall System in a well-protected area, using the tabs attached to the box.
12. **Critical Step:** Attach all wires to the Up/Down switch, circuit breaker and winch as specified in the relevant circuit schematic. Failure to connect the terminals correctly will damage internal components and void your warranty. **If unsure, contact your nearest service agent/dealer or marine mechanic before proceeding.**
13. Once installation has been completed, it is important to test the direction of the drum rotation. Interchange the position of the cables from the solenoid or Electronic Fast Fall System to the motor terminals to reverse direction.

Fitting the Rope, Chain and Anchor

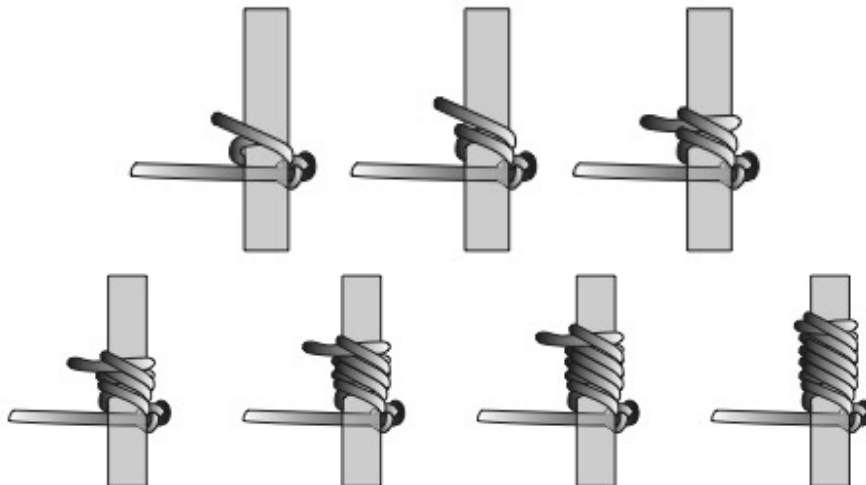
1. To install rope on the drum, refer to the figure and perform the following steps:



- a. Insert the rope through the hole located in the side of the shaft (from the side opposite the countersunk hole).
- b. Feed enough rope to tie a figure eight knot, leaving a tail of about 40in/101cm at the end of the rope.



- c. Pull the rope back until the knot is seated in the countersunk opening.



- d. Keeping tension on the rope, tie a series of rolling hitches (#1734 suggested) until all of the tail is used.

2. Check carefully that all mechanical and electrical connections are secure and correct. Tighten any loose fittings, bolts, etc. before placing the unit into service.
3. Check that everyone is safely clear of the winch and anchor line.
4. Reapply power to the vessel and activate the winch circuit breaker. Check that the breaker has not tripped and carry out a quick visual inspection to ensure that everything is in order before continuing.
5. Press the Up switch for one or two seconds to verify that the winch is operational. Then repeat this step by pressing the Down switch. If the winch fails to rotate in the right directions, re-check all connections. You may need to use a voltmeter to trace the power circuits. Continue fault diagnosis until you are able to resolve any issues.
6. **WARNING:** Treat the area close to the winch as a hazardous area, even if the winch does not appear to be operating.
7. Feed the rope onto the drum by running the anchor winch with the switch in the Up position. Correct rotation is essential for proper operation. Ensure the rope feeds correctly onto the drum (to the top or bottom of the shaft, as appropriate for your setup) without touching the decking.
8. Fit the anchor into the correct position on the bowsprit. Secure it temporarily so it can't fall.
9. Pass the rope through the hawsepipe (if applicable). Attach the thimble (which has been secured with an eye splice) on the end of the anchor rope to a shackle, chain, swivel and finally to the anchor. The shackle should be larger than the chain links but still able to run smoothly over the bowsprit. It's wise to wire the shackle pin (called 'mousing') or use a waterproof thread sealant such as Loctite, Threadlock, Nutlock, or Clessetite Thread Sealant to keep it from coming undone.
10. Once installation has been completed, isolate the winch from the battery supply. This may be done by tripping the circuit breaker and/or operating a manual winch isolation switch (if fitted).
11. **Once installation has been completed, remember to adjust your boat's compliance plate.** The plate should be amended to show the reduced carrying capacity due to the weight of the anchor system. While you will know to allow for this extra load, it is an important step to protect others operating your boat who may not know of this change.

Lowering the Anchor

To drop the anchor you must go over your mark, press the Down switch until your anchor reaches the sea bed, then put the boat into reverse and idle backward until the anchor digs in. Continue to idle backward away from the grounded anchor while slowly feeding out enough anchor rode.



WARNING Never apply power or operate the winch when anyone is on the foredeck.

1. If the anchor rope is attached to a samson post or security cable, detach the rope first.
2. Perform a visual inspection of the anchor and winch. Ensure everything is in order before continuing. The anchor winch should be operated from an Up/Down switch and circuit breaker located near the helm.
3. **Activate** the winch circuit breaker.



Note. The engine should be idling before starting this operation.

4. To lower the anchor, press and hold the switch in the Down position until the line feeding off the bow loses tension, indicating that the anchor has reached the sea bed. Release the Down switch.
5. Observe the operation and ensure there is adequate tension on the rope. Be sure not to overrun the rope coming off the drum.
6. Once the rope becomes loose or slack, stop the downward operation. Continue to feed more rope while reversing your boat to the position required. When satisfied with the position and the amount of rope released, switch off the engine.

Raising the Anchor

To retrieve the anchor, you must start your engine and idle forward while pushing the Up switch periodically to allow the rope to be wound cleanly onto the drum. **DO NOT** use the winch to pull the boat back to anchor. Once the rope is directly over the anchor, place the boat in neutral then use the winch to retrieve your anchor.

1. The anchor winch is simple to operate from an Up/Down switch operated from the helm. **Ensure safe operation. No one should be on the foredeck when power is applied to the winch.**
2. Perform a visual inspection of the anchor and winch. Ensure everything is in order before continuing. If the anchor rope is attached to a samson post or security cable, release this.
3. Activate the winch circuit breaker.



Note. The engine should be idling before starting this operation.

4. To raise the anchor, press the Up switch. You may need to release the switch every few seconds to slow the operation. Continue until the chain breaks the surface. To slow down the final stage of the lift, 'jog' (press then release) the Up switch for a few seconds at a time. Take extra care during the final part of the lift as the anchor passes over the bowsprit. If the anchor comes up too fast, it could damage the bow of your boat. This can be completely avoided by slowing down the final stage of the lift.
5. Observe the operation and be ready to stop as the anchor reaches the top of the bow roller. At this point jog or inch the anchor into lock position on the bow roller.
6. Go slowly with the last five meters of chain. Your winch is extremely powerful. Do not allow the anchor to fly up over the roller and bang hard into the bowsprit, putting excessive load onto the winch and foredeck.

7. If the anchor jams tight in the bowsprit, take the load off the gearbox by engaging the Down switch or reversing the winch. This should allow you to lower the anchor.
8. When satisfied with the position and the amount of rode winched out, take your finger off the Up/Down switch.

TROUBLESHOOTING AND MAINTENANCE

CAUTION If a problem occurs, such as a jammed rope, chain or anchor, trip the breaker and confirm that it has tripped before investigating. **Never apply power or operate the winch when anyone is on the foredeck.**

Always carry a spare rope and anchor in case of a power or winch failure.

Your winch does not require lubrication. However, the rope and chain should be checked periodically for abrasions or cuts. If the rope is frayed or cut, replace it immediately.

General Troubleshooting Guide

Symptom	Possible Cause	Corrective Action
Winch will not operate	<ol style="list-style-type: none"> 1. Disconnected or faulty wiring, or corroded termination 2. Faulty circuit breaker 3. Faulty solenoid or Electronic Fast Fall System 4. Faulty Up/Down switch 5. Improper rope rotation. 	<ol style="list-style-type: none"> 1. Visually check each electrical connection. If you are experienced in checking electrical circuits with a voltmeter, check each connection with the switch engaged. 2–4. Check that the circuit breaker, solenoid or Electronic Fast Fall System and switch are functioning correctly. Refer to rope installation instructions. Rope should feed from the top of the drum.
Anchor jams on bowsprit	<ol style="list-style-type: none"> 1. Excessive speed when lifting the anchor 2. Shackle or other component oversized 	<ol style="list-style-type: none"> 1. Reduce speed when lifting the anchor by pressing then releasing the Up switch in shorter bursts (jogging). 2. Determine which component jams, then replace it with a more appropriate size.
Anchor lifts slowly or not at all	Anchor and rode too heavy.	Refer to anchor selection guide.

9. Always have a spare rope and anchor in case of a power or winch failure.
10. Your winch motor and gearbox conform to the IP68 standard, which classifies the degree of protection provided against intrusion, dust, accidental contact, and water ingress of the mechanical casing and electrical enclosure. However, the drum and machine casings are exposed to abrasive materials such as mud, sand, salt, dirt and other environmental contaminants. To prolong its effective life, wash the winch and rode thoroughly after use and periodically spray it with Lanolin (such as Innox) or a similar lubricant.
11. Periodically check the tightness of mounting bolts and electrical connections. Remove any dirt or corrosion that may have accumulated on the electrical connections.
12. If the vessel is not being used for long periods of time, Savwinch recommends that you run the winch every three months to keep all moving parts lubricated.

The geardrive is filled and sealed at the factory with long-life synthetic oil and does not require replacement. Rinse your deck gear with fresh water after each excursion to reduce the effects of salt deposits and corrosion.

Corrosion Prevention

Remember that even 316 SS rusts, so clean your winch regularly to keep it in top condition. Surface rust is caused by entrapped de-oxygenated water. Periodically unwind the rope from the winch and wash the winch, thoroughly removing any sand and grit. Then dry it and give it a light spray of lanolin or a similar lubricant. This simple step will extend its life. Any damage to the external surface should be repaired immediately to prevent corrosion.

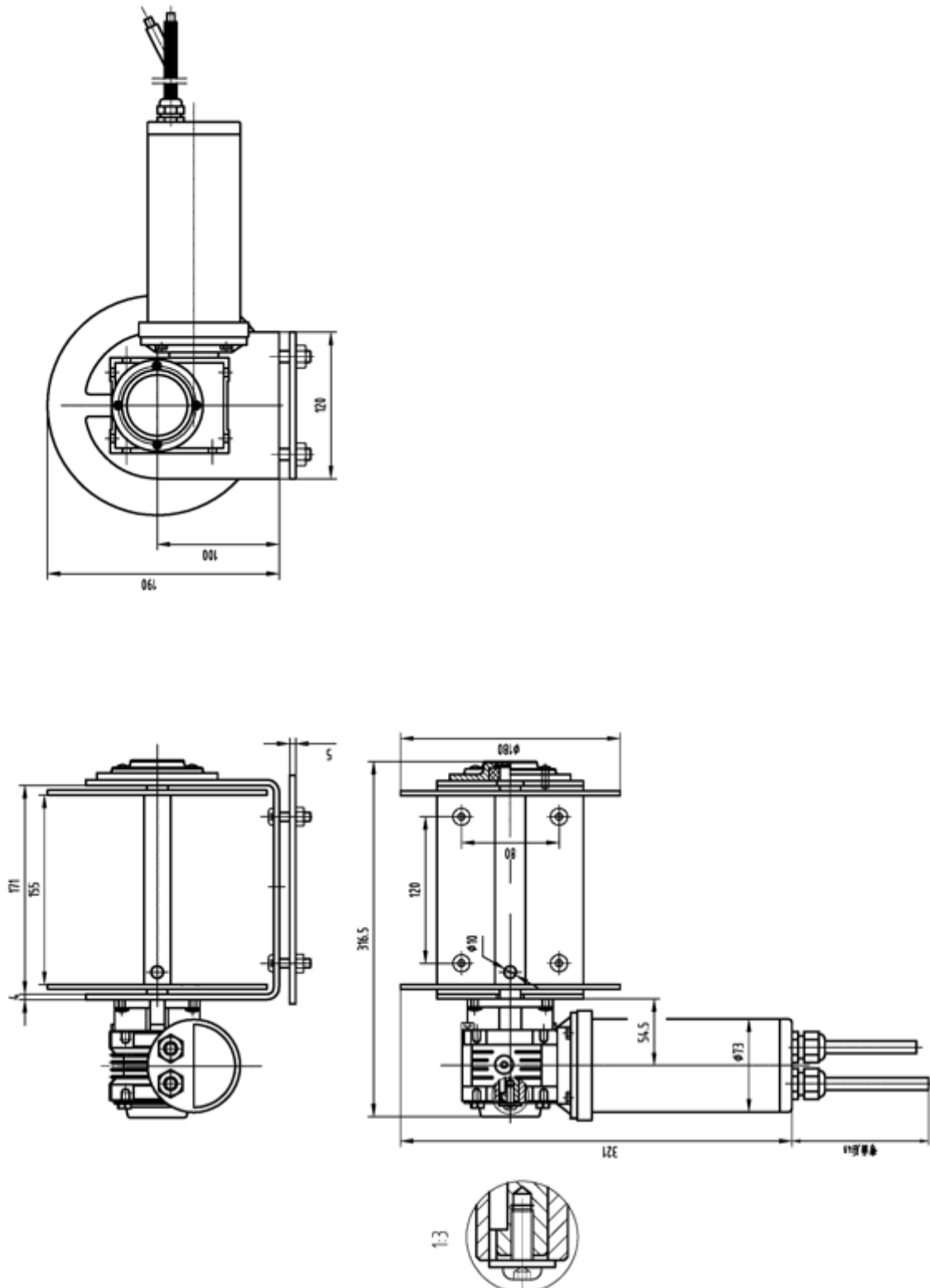
Savwinch recommends using a close-fitting cover when the winch is not in use.

Tips for extending the life of your winch

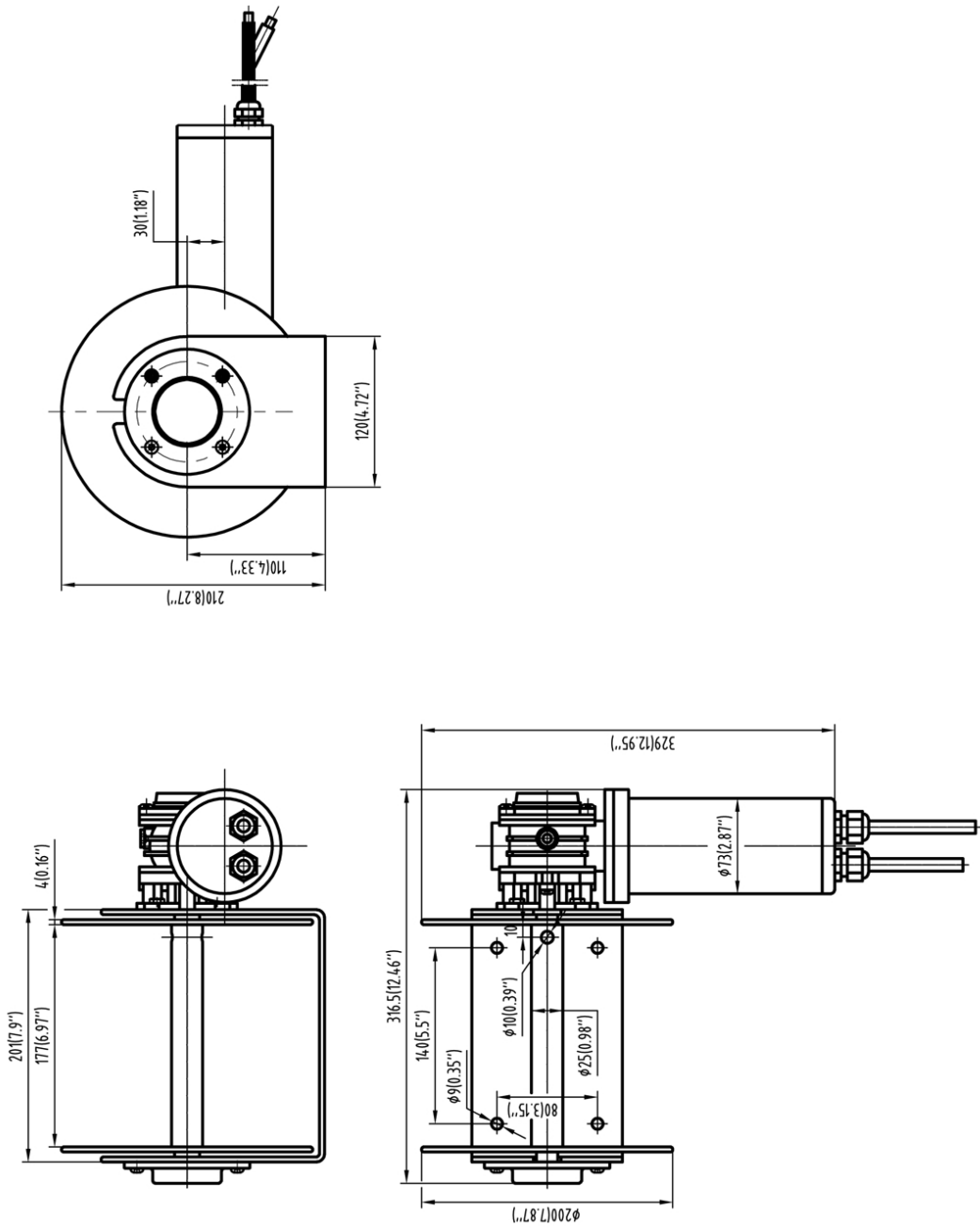
Ensure the winch doesn't overheat. During long or heavy pulls, the motor may get hot. At maximum design loads, avoid running for periods exceeding five minutes without a break (this is only if using the maximum anchor size and maximum chain length, see page 6).

Winch Repairs

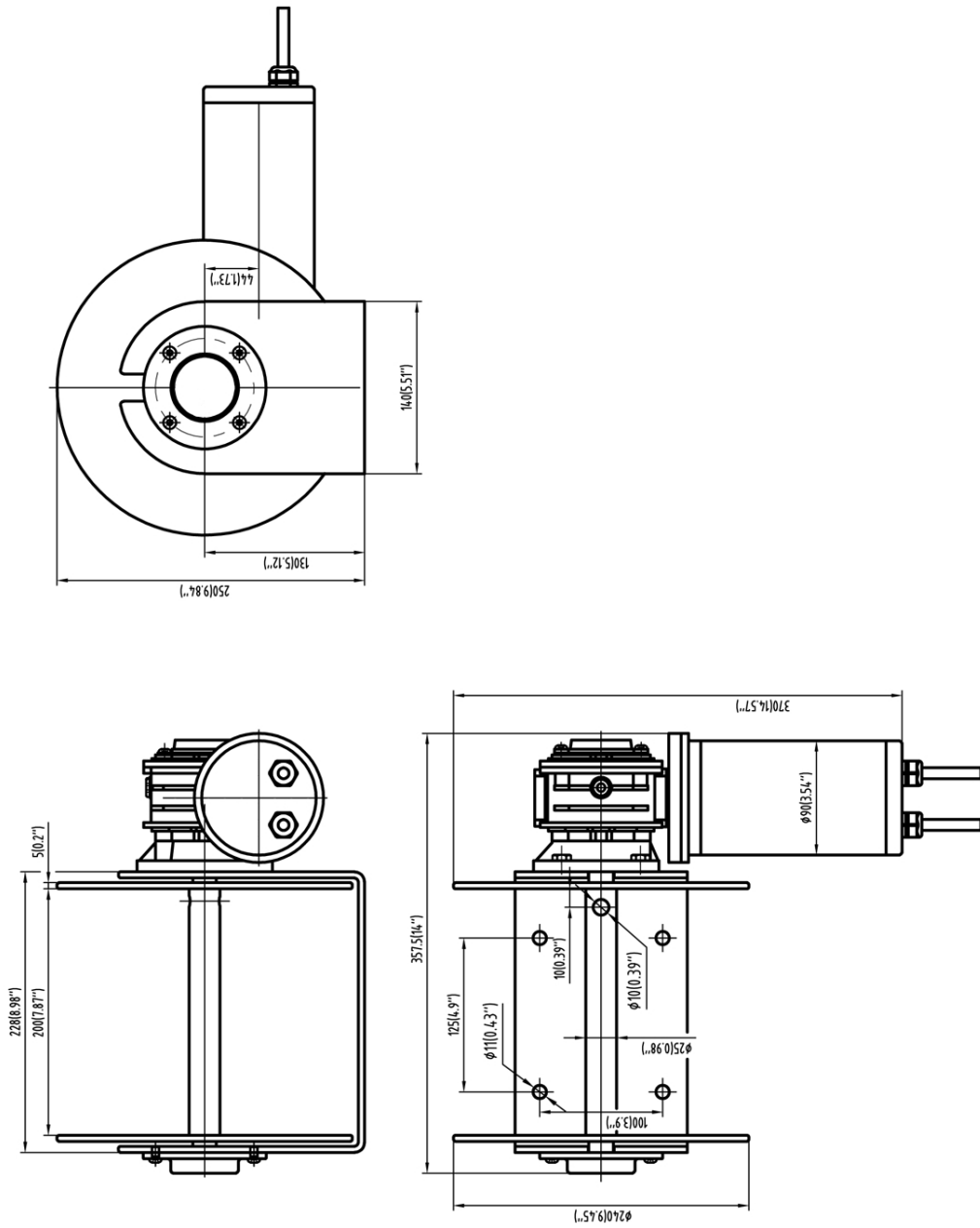
CAUTION Only authorized repair centers and marine mechanics are authorized to repair the winch and accessories. Do not attempt to disassemble the motor or gearbox. This will void your warranty.



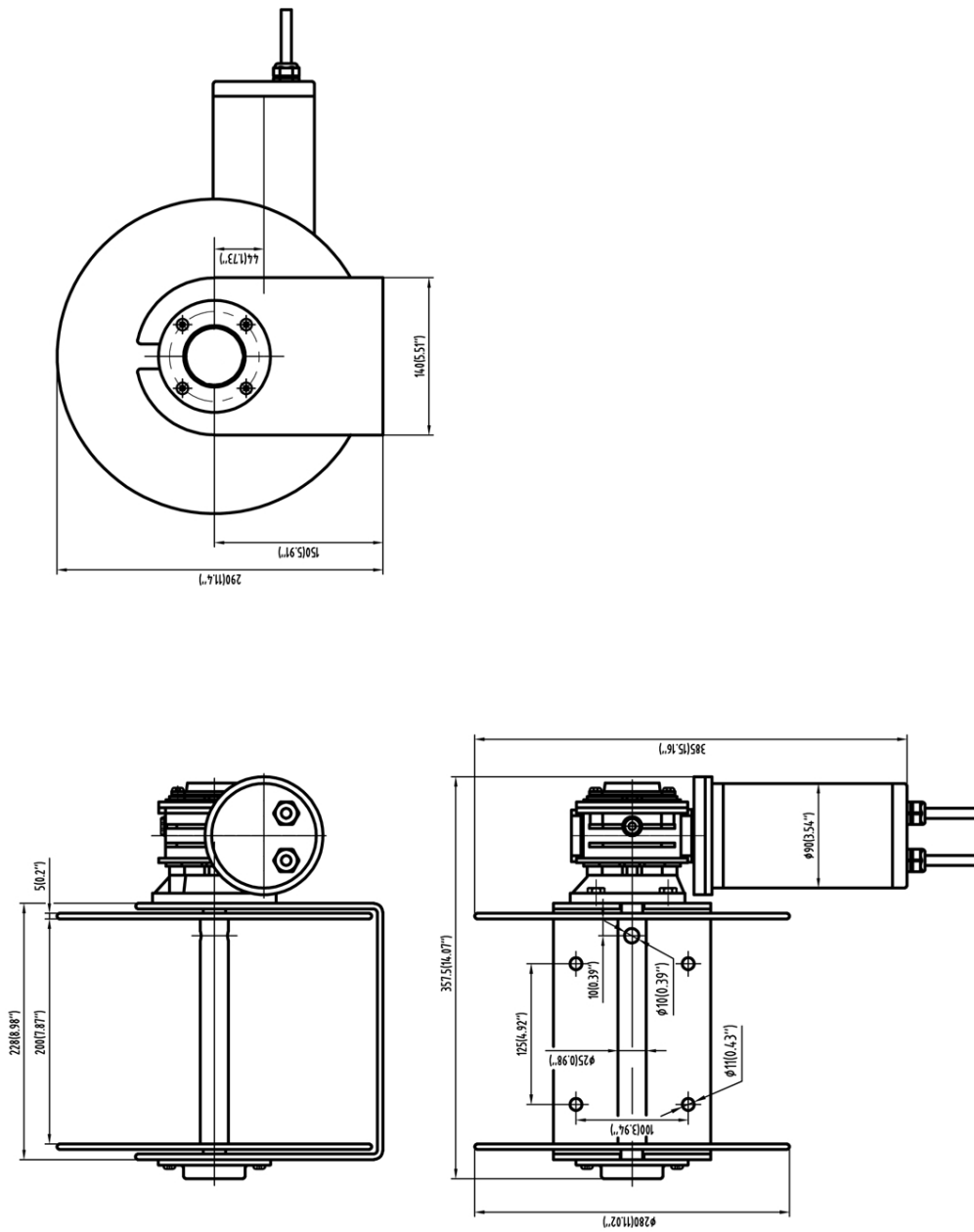
Dimensional Drawings for Savwinch 450CS/SS



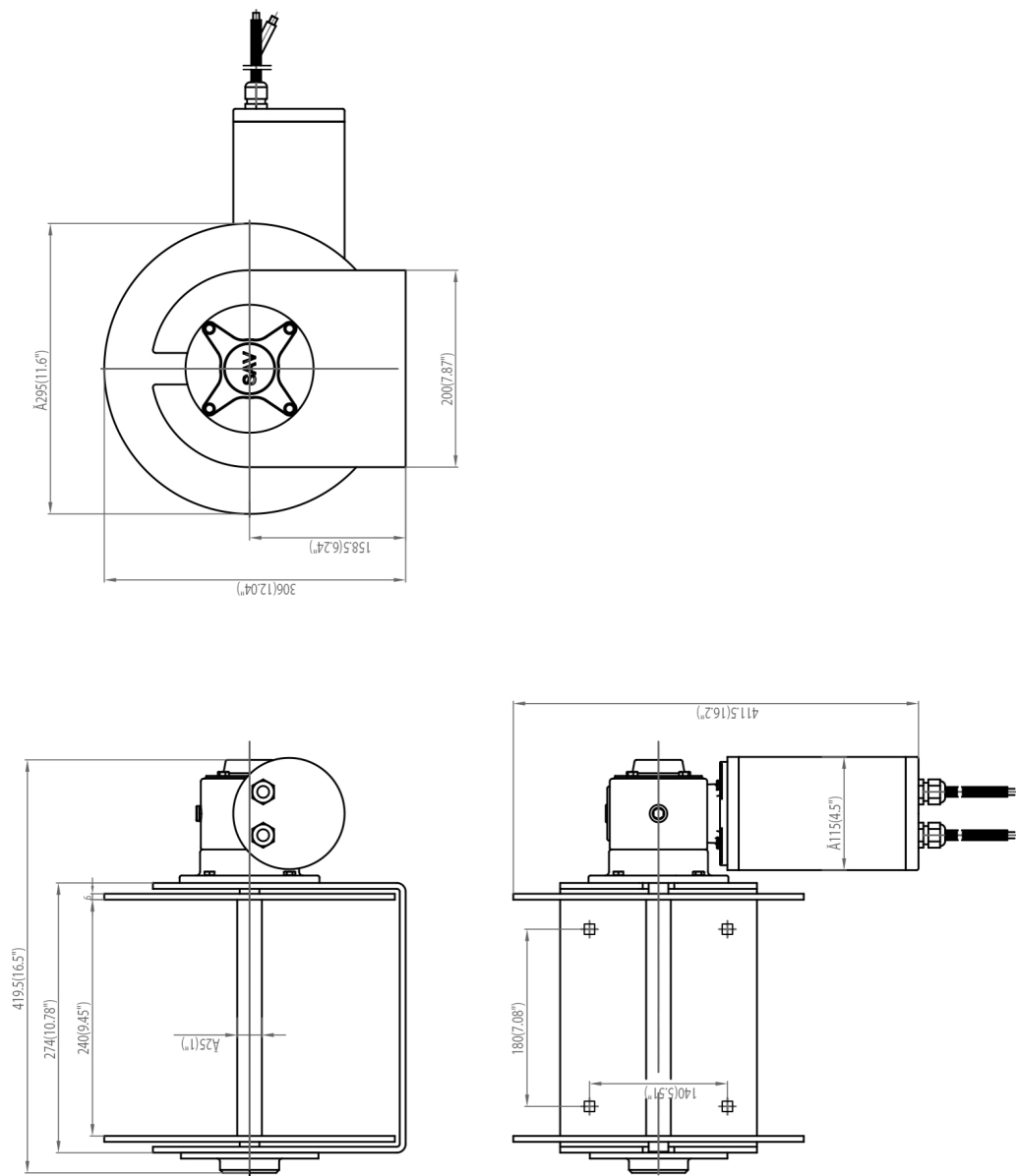
Dimensional Drawings for Savwinch 880CS/SS



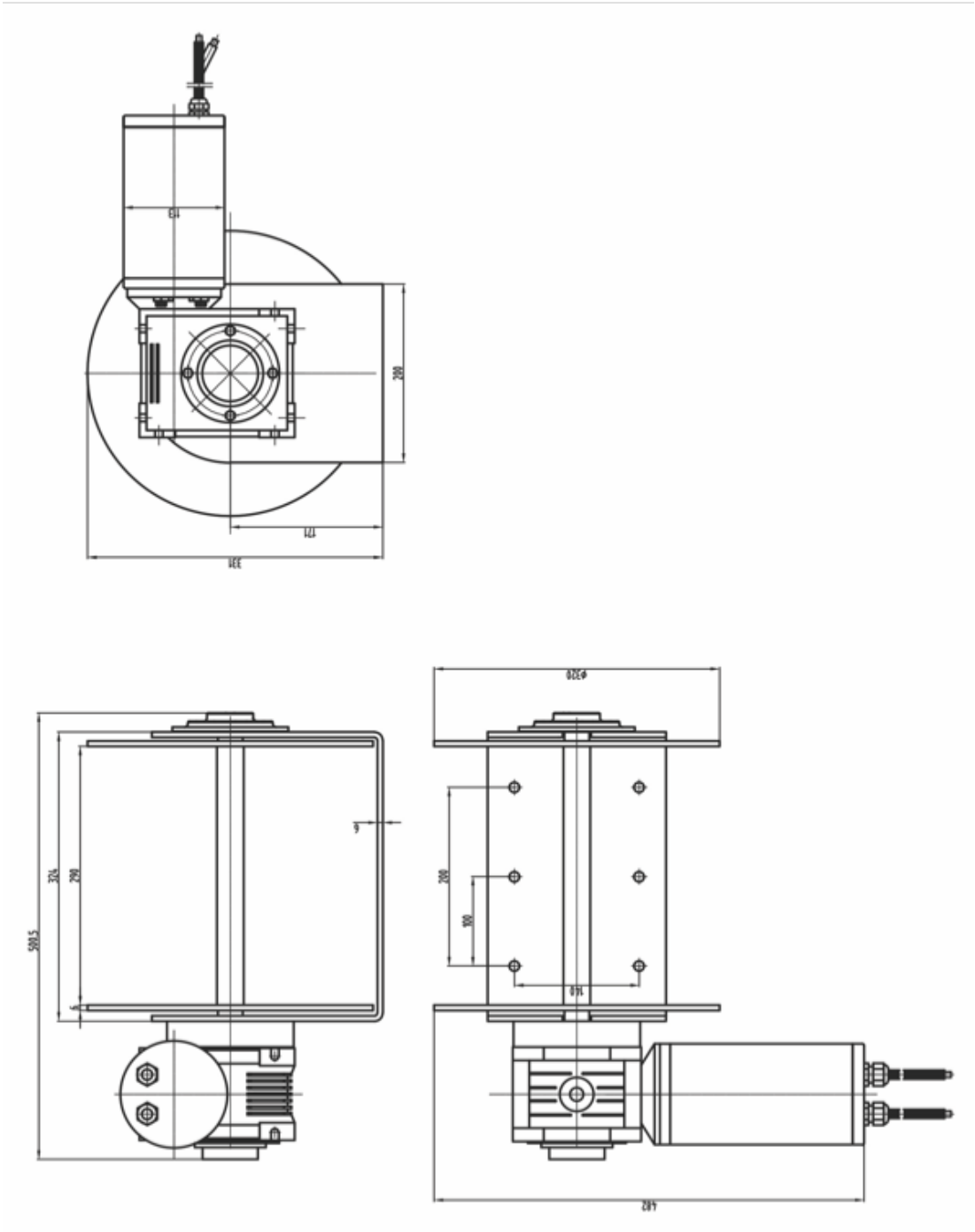
Dimensional Drawings for Savwinch 1000CS/SS/SSS



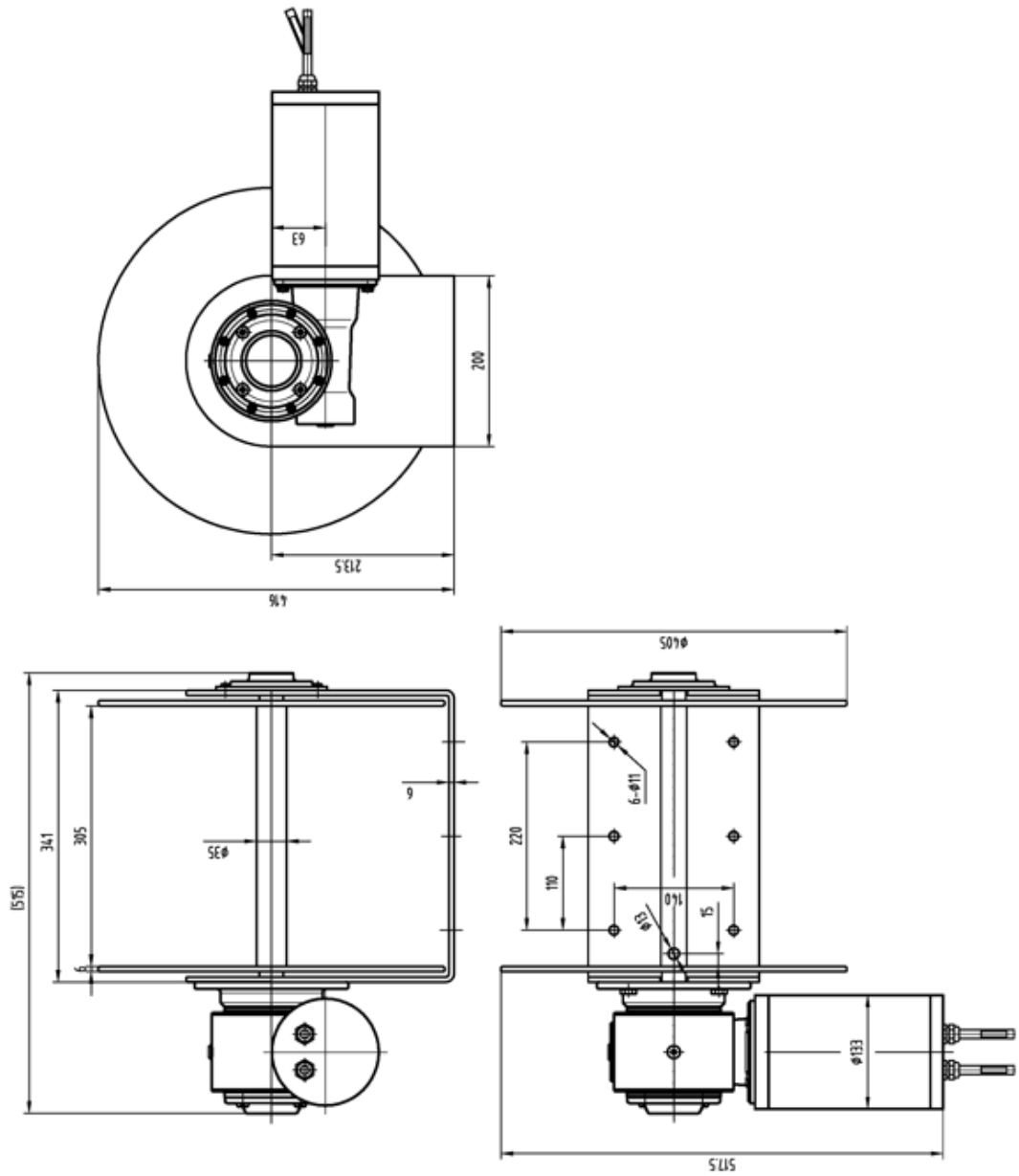
Dimensional Drawings for Savwinch 1500CS/SS/SSS



Dimensional Drawings for Savwinch 2000SS/SSS



Dimensional Drawings for Savwinch 3000SS/SSS



Dimensional Drawings for Savwinch 4000SS/SSS

