

HRC-FF
Rope/Chain Windlass

VETUS-MAXWELL APAC Ltd

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Always consult manual supplied with product as details may have been revised.

Illustrations and specifications are not binding as to detail.

INTRODUCTION

- Read this manual thoroughly before installation and using the windlass. Failure to adhere to the correct procedures, recommendations and guidelines described in this Owner's Manual may invalidate the warranty.
- Correct selection of windlass together with correct installation, care in use and maintenance, are essential for long life and reliable performance.
- In addition to this instruction manual, the following components should be included with the windlass:
 - Clutch Handle (10mm Hex Key)
 - 12V or 24V reversing solenoid
 - Deckplate Gasket
 - Deck Cutout Details (at rear of manual)
 - Spare pressure arm
 - Mounting Kit
 - Studs (3)
 - Nuts (3)
 - Flat washers (3)
 - Spring washers (3)

The following accessories may be required to complete your installation:

- Remote up/down control panel
- Circuit breaker/isolator panel (required – not supplied)

IMPORTANT INFORMATION

- The windlass must have a minimum pull capacity of three times the combined weight of the anchor and rope/chain.
- Keep hands, feet, loose clothing and hair well clear of the windlass and rope/chain during operation.
- Never operate the windlass from a remote station without having a clear view of the windlass.
- Do NOT use the windlass as a mooring point. When anchoring or mooring, secure the line directly to a bollard or deck cleat.
- Do NOT use the windlass to pull the boat forward when raising the anchor. Use the boat's engine to drive the boat up to the anchor.
- Do NOT attempt to break free a fouled anchor with the windlass. Secure the line to a bollard or cleat and use the boat's engine to break the anchor out.
- Always firmly tie down the anchor when under way or in heavy seas. Do not rely on the windlass as a securing device.
- Always turn the circuit breaker/isolator switch off when the windlass is not in use and before you leave the boat.
- Do NOT use the windlass to haul a person up a mast.

ROPE AND CHAIN SELECTION

Correct fit of rope and chain to chainwheel is essential for the windlass to operate properly.

The ground tackle should be selected taking into account:

- a) Boat size, displacement and windage.
- b) Conditions of operation such as maximum depth of water, type of bottom and likely weather conditions.
- c) Holding power and size of anchor, taking special note of the manufacturers recommendations.

Selection of chain / rope:

Each model is supplied with a chainwheel suitable for the following size of chain and rope

HRC-6 FF : 6mm chain /12mm (1/2") rope

HRC-7 FF : 7mm (1/4") chain / 12mm(1/2") rope

HRC-8 FF : 8mm (5/16") chain / 14mm (9/16") rope

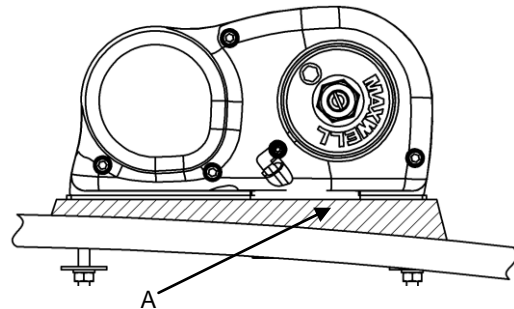
See Pg 7 for chainwheel identification.

INSTALLATION

- For automatic operation to be possible, the anchor must be self launching.
- Tie the end of the anchor rope/chain to a secure fixture in the rope/chain locker.

Foredeck layout

Ensure the deck is flat, if not; a plinth (A) will be required to ensure the windlass sits on a flat surface.



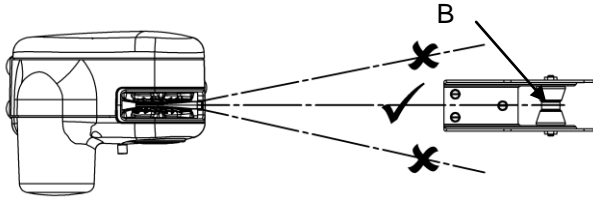
Required clearances

Identify any bulkheads, wiring or piping under the deck that should be avoided.

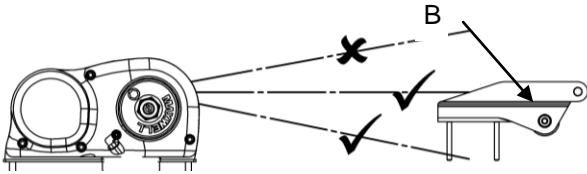
Position the windlass so the rope/chain falls directly into the rope/chain locker with at least 200mm (8") unobstructed fall from the bottom of the rode chute.

Aligning the windlass

The windlass must be positioned to allow the rope/chain to have a clear run from the bow roller (B) to the chainwheel without deflection.



The windlass must be mounted pointing in the direction of the incoming rope/chain. This arrangement allows the rope/chain to have maximum engagement with the chainwheel.



Installation Procedure

Use the Deck Cutout Details drawing, as a guide for marking and cutting the holes.

Tip: On GRP boats, running the drill in reverse first will reduce chipping of the gel coat.

Using hole saws, cut the holes for the electrical connections and rope/chain pipe.

On GRP or wooden decks, seal the edges of the holes with epoxy to avoid ingress of moisture.

Place the gasket onto the deck.

Fasten the windlass to the deck using the nuts and washers supplied. Tighten the nuts progressively and evenly. Do NOT use power tools. Make sure the installation is firm, but do not over tighten the nuts.

Important note to Boat Builders

Experience has shown that, on long ocean deliveries as deck cargo, sulphur from the ships exhaust and condensation can damage the chrome plating and stainless steel of the windlass.

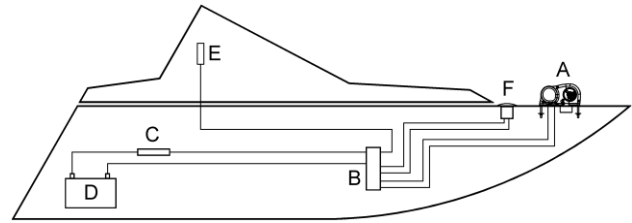
We recommend, after completing installation, you spray the top works of the windlass with CRC 3097 "long life" and wrap the windlass with plastic film and tape.

WIRING INSTRUCTIONS

Installation must be carried out in accordance with USCG, ABYC, NMMA or other relevant local electrical requirements.

We recommend that connection of the power lines and control circuitry to the windlass be done by qualified technicians, to ensure reliable and safe operation of the windlass.

After all connections have been made and system tested, seal terminals against moisture by spraying with: CRC2043 "Plasti-Coat", CRC3013 "Soft Seal" or CRC2049 "Clear Urethane".



Reversing Solenoid pack

The solenoid pack (B) should be located in a dry area close to the windlass, not in the rope/chain locker.

Note the MAXWELL reversing solenoid is required for greater control of the free fall function.

Circuit breaker/isolator (required – not supplied)

! FOR SAFETY - The winch circuit requires protection provided by an isolator switch and either a fuse or circuit breaker, rated as follows:

HRC-FF -12V : 70amp

HRC-FF -24V : 40amp

Note the circuit breaker is sized to prevent damage to the wiring on the boat and provides minimal protection for the motor, running the windlass for extended periods can overheat and damage the motor.

Position the circuit breaker/isolator (C) no further than 1.8 m (6 ft) away from the battery (D) in an accessible and dry location.

Remote control panel

The remote control panel (E) should be mounted in a convenient location (such as the bridge, helm or cockpit) so that the operator can see the windlass.

Footswitch (Optional).

For safe operation, the footswitch (F) should be approximately 500 mm (20") from the windlass (A).

The below-deck part of the footswitch must be in a dry environment and the breather holes must be kept clear. The arrows on the footswitch should be arranged to indicate the direction of operation.

Fit the switch according to the instructions supplied. Connect wiring as shown wiring diagram pg 9.

OPERATION

CAUTION:

Keep fingers, hair or other loose items clear of the chainwheel.

When operating the windlass:

- Do not switch immediately from one direction to the other. Wait for the windlass to stop in one direction before applying power in the other direction.
- Run the boat's motor(s) at sufficient rpm to activate the charging system.
- Always make sure the isolator switch is turned off when the system is not being used.

Lowering the Anchor

Operate the windlass by pressing the toggle switch down on the remote up/down control panel to pay out the rope/chain (or press the "Down" footswitch if fitted).

Pay out sufficient rope/chain to set the anchor.

Watch as the rope/chain is being fed out. Any jam might cause damage to the windlass.

Always use a chainstopper or cleat to tie off when anchoring. This will protect the windlass from shock loading.

Raising the Anchor

Operate the windlass by pressing the toggle switch up on the remote up/down control panel (or press the "Up" footswitch if fitted).

DO NOT use the windlass to pull the boat to the anchor. Motor up to the anchor while retrieving.

To avoid damaging the bow fitting, retrieve the last meter (3') of rope/chain slowly and take care when docking the anchor.

DO NOT use the windlass to secure the anchor into the bow roller. Use an appropriate tensioner or snubber.

Operating in Automatic Free Fall mode.

By engaging Automatic Free Fall, the windlass will Free Fall automatically when the windlass is lowered.

When raised the clutches will be automatically engaged and the rope/chain retrieved.

The windlass can be left in Automatic Free Fall mode if Free Fall is the desired mode of operation.

CAUTION:

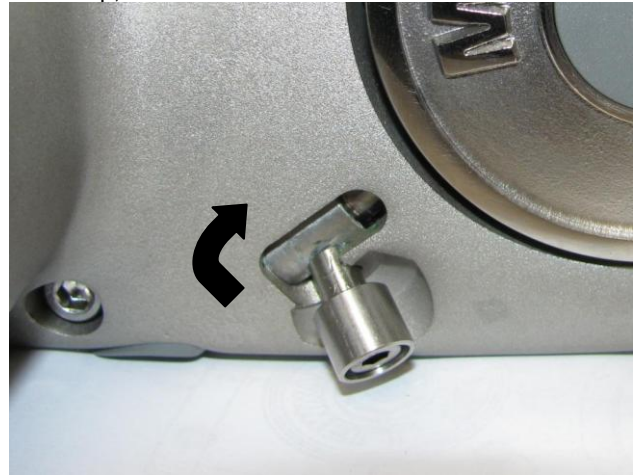
The Automatic Free Fall mode should only be activated or deactivated with the clutches fully engaged.

Allowing the rode to deploy at extreme speeds may cause the rode to tangle in the locker and cause a jam in the windlass.

A Maxwell reversing solenoid should always be used if using Automatic Free Fall mode. Alternative reversing solenoids may damage the windlass due to overrun of the motor.

Engaging / Disengaging Automatic Free Fall.

To engage Automatic Free Fall slide the lever to the left and lift up, as shown below



To disengage Automatic Free Fall slide the lever left and push down to secure.

Lowering the Anchor with Free Fall engaged.

To lower the anchor with Free Fall engaged pulse the down button on the remote up/down panel (or the "down" footswitch if fitted) until the anchor begins to fall freely.

When the anchor has reached the bottom and the desired amount of anchor rode is deployed press and hold the up button on the remote up/down panel (or the "up" footswitch if fitted) until the rode starts to retrieve (to re-engage the clutches).

WARNING: when the anchor rode is running out at high speed DO NOT hold the UP button to stop the windlass. Damage can occur due to shock loading.

Always use a chainstopper or cleat to tie off when anchoring. This will protect the windlass from shock loading.

Raising the Anchor with Free Fall lever engaged.

Operate the windlass by pressing the toggle switch up on the remote up/down control panel (or press the "Up" footswitch if fitted).

DO NOT use the windlass to pull the boat to the anchor. Motor up to the anchor while retrieving.

To avoid damaging the bow fitting, retrieve the last meter (3') of rope/chain slowly and take care when docking the anchor.

DO NOT use the windlass to secure the anchor into the bow roller. Use an appropriate tensioner or snubber.

Lowering the Anchor Manually (Release Clutch).

Insert the clutch handle tool into the clutch nut and loosen by turning the handle anticlockwise.

Tightening the clutch nut clockwise will control the rate of descent.

Remove the handle when finished.

CAUTION: Do not allow the chainwheel to free wheel uncontrolled as this will allow dangerously high speeds to build up.

MAINTENANCE

Every Trip

- Wash down with fresh water
- Check rope for wear and wash down with fresh water

Every 3 Months

- Remove chainwheel. Strip and grease clutch
- Spray motor and electrical connections with CRC Soft Seal.
- Clean and grease free fall lever mechanism.
- Clean the Windlass with a cloth damp with Kerosene (paraffin). Spray preferably with CRC3097 "Long Life" or alternatively, CRC6-66 or WD40. Polish off with a clean non-fluffy cloth.

Every Year

- The motor should be serviced by a qualified technician.
- Remove any rust build up from the casing and paint with a suitable coating

Every 3 Years

- The gearbox should be serviced by an authorised service agent.

Removing the chainwheel for maintenance.

Secure the anchor and line or remove to take the load off the windlass.

See Exploded View (pg 6) for further information.

Removing the clutch nut

- Engage the free fall lever in the clutch cone.
- Use power to 'lower' the windlass and disengage the clutch cones.
- Isolate power to the windlass.
- Remove plastic cap from clutch cone, remove central screw and washers.
- Disengage the free fall lever.
- The clutch cone can now be removed by turning counter clockwise.

Removing the chainwheel

- Remove the port case by unscrewing 4x cap screws
- Remove the chainwheel assembly including stripper by sliding off the main shaft

Reassembly

- Apply marine grease to clutch cone and shaft surfaces
- Assemble in reverse order

When reassembling ensure pressure arm and stripper are located correctly.

SPECIFICATIONS

Electric Motor : Direct Current motor
Voltage : HRC-FF 6: 12 V DC
: HRC-FF 7: 12 V DC
: HRC-FF 8: 12 V DC or 24 V DC

Rated Output : HRC-FF 6: 600W
: HRC-FF 7: 600W
: HRC-FF 8: 600W

Maximum Pull : HRC-FF 6: 410kg (900 lbs)
: HRC-FF 7: 410kg (900 lbs)
: HRC-FF 8: 410kg (900 lbs)

Haulage speed : HRC-FF 6: 33 m/min (108 ft/min)
(Dependant on : HRC-FF 7: 33 m/min (108 ft/min)
the load) : HRC-FF 8: 33 m/min (108 ft/min)

Rope size

8 plait rope is recommended for best operation.
If using 3 strand rope, nylon construction must be used.

: HRC-FF 6 or HRC-FF 7:
12mm – 3 strand
12mm – 8 plait
1/2" – 3 strand
1/2" – 8 plait

: HRC-FF 8:
14mm – 3 strand
14mm – 8 plait
9/16" – 3 strand
9/16" – 8 plait

Chain size : HRC-FF 6: 6mm short link
: HRC-FF 7: 7mm; 1/4"; short link
: HRC-FF 8: 8mm; 5/16" short link

Net weight : HRC-FF 6: 11kg (24lb)
: HRC-FF 7: 11kg (24lb)
: HRC-FF 8: 11.5kg (25lb)

Recommended lubricants:

Main shaft, and clutch surfaces:

Marine grease, Lithium or Lithium complex based (e.g. Duckhams Keenol or Castrol LMX). Do not use soap based greases.

Cable Lengths

HRC FF 12V Systems		
Cable Length	Cable Size	
	mm ²	AWG
Up to 10m (33')	16	5
10m - 17m (33' - 56')	26	3
17m - 27m (56' - 88')	42	1

HRC FF 24V Systems		
Cable Length	Cable Size	
	mm ²	AWG
Up to 17m (56')	6.5	9
17m - 27m (56' - 88')	10.5	7

Note: Cable size recommendations are based on a maximum 10% voltage drop when operating the windlass under load, smaller cables may be used however a drop in performance can be expected.

! NOTE: Cable length is the total length from battery to winch then back to battery.

Ordering Spare Parts

Always consult manual supplied with product as details may have been revised.

When ordering spare parts, please quote the following details.

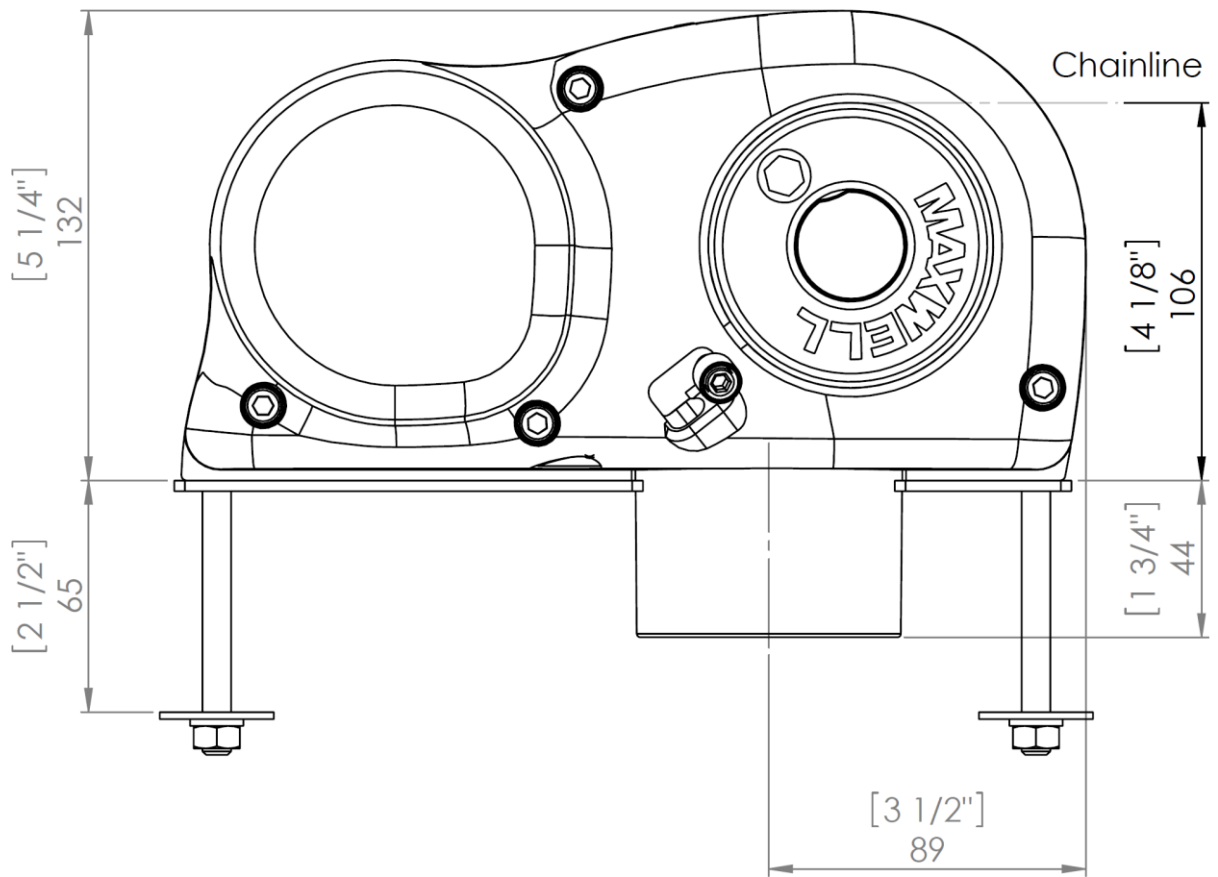
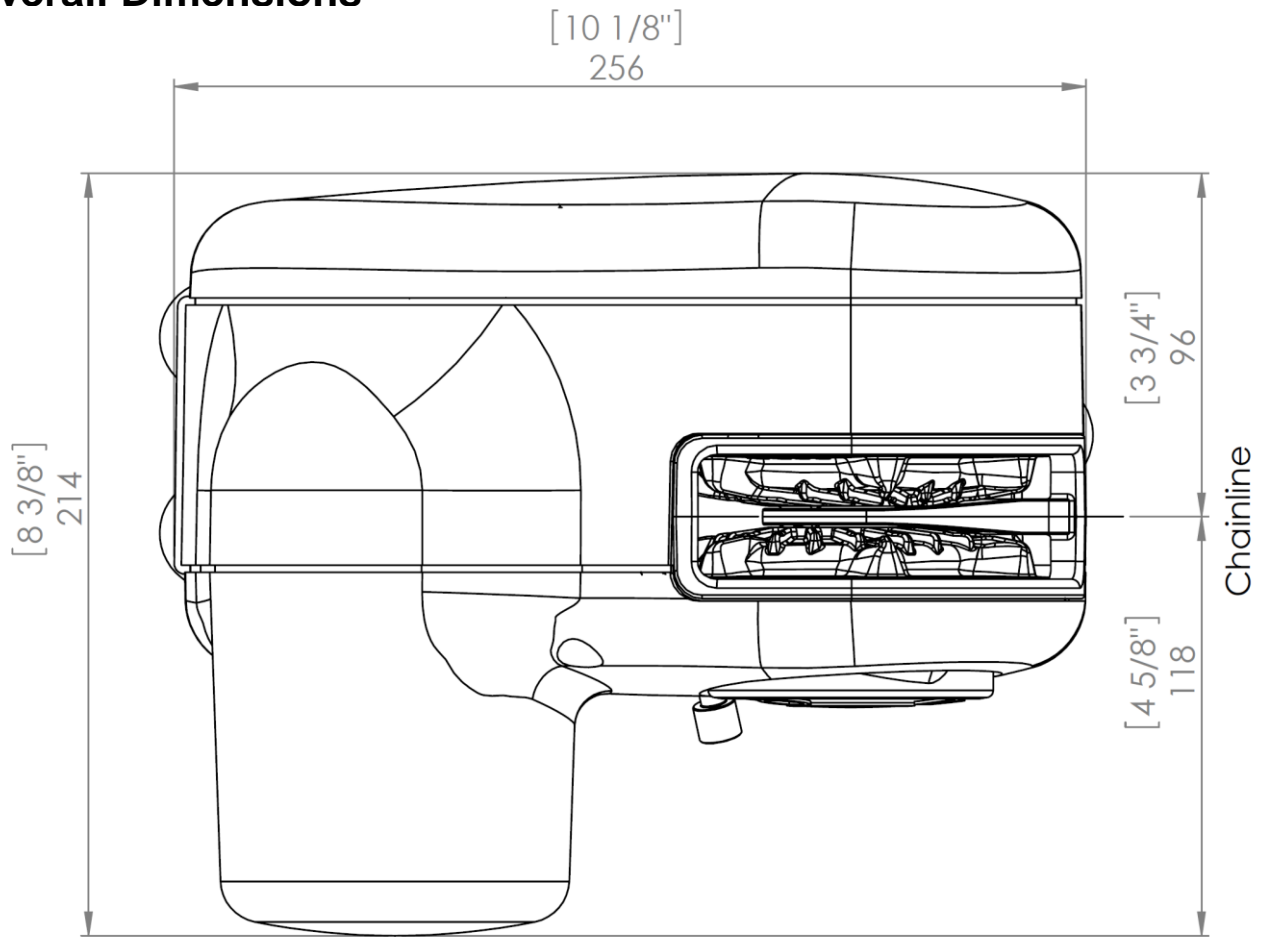
Windlass Model _____

Serial number _____

Power supply _____

Note: For your nearest retailer, service agent or representative please refer to our website www.maxwellmarine.com

Overall Dimensions



Electrical Schematic

- 1: Battery
- 2: Breaker/Isolator
- 3: Manually resettable 3 Amp breaker
- 4: Solenoid Pack
- 5: Up Foot Switch
- 6: Down Foot Switch
- 7: Remote control panel
- 8: Motor

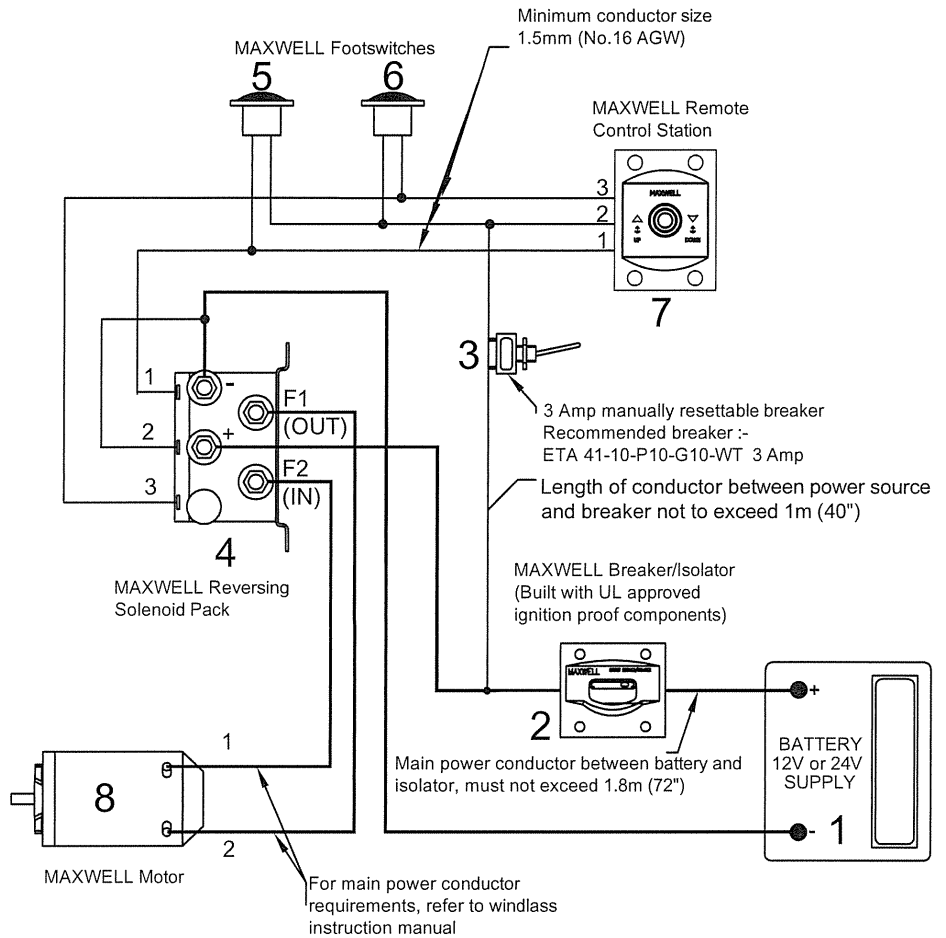
Note:

All installations should be carried out in accordance with USCG, ABYC, NMMA requirements.

All main power conductor terminals are to be of ring type and all terminations are to be sleeved to protect against accidental shorting.

After installation and all necessary tests - Seal terminals against moisture by spraying with CRC2403 "plasti-coat", CRC3013 "soft seal" or CRC2409 "clear urethane"

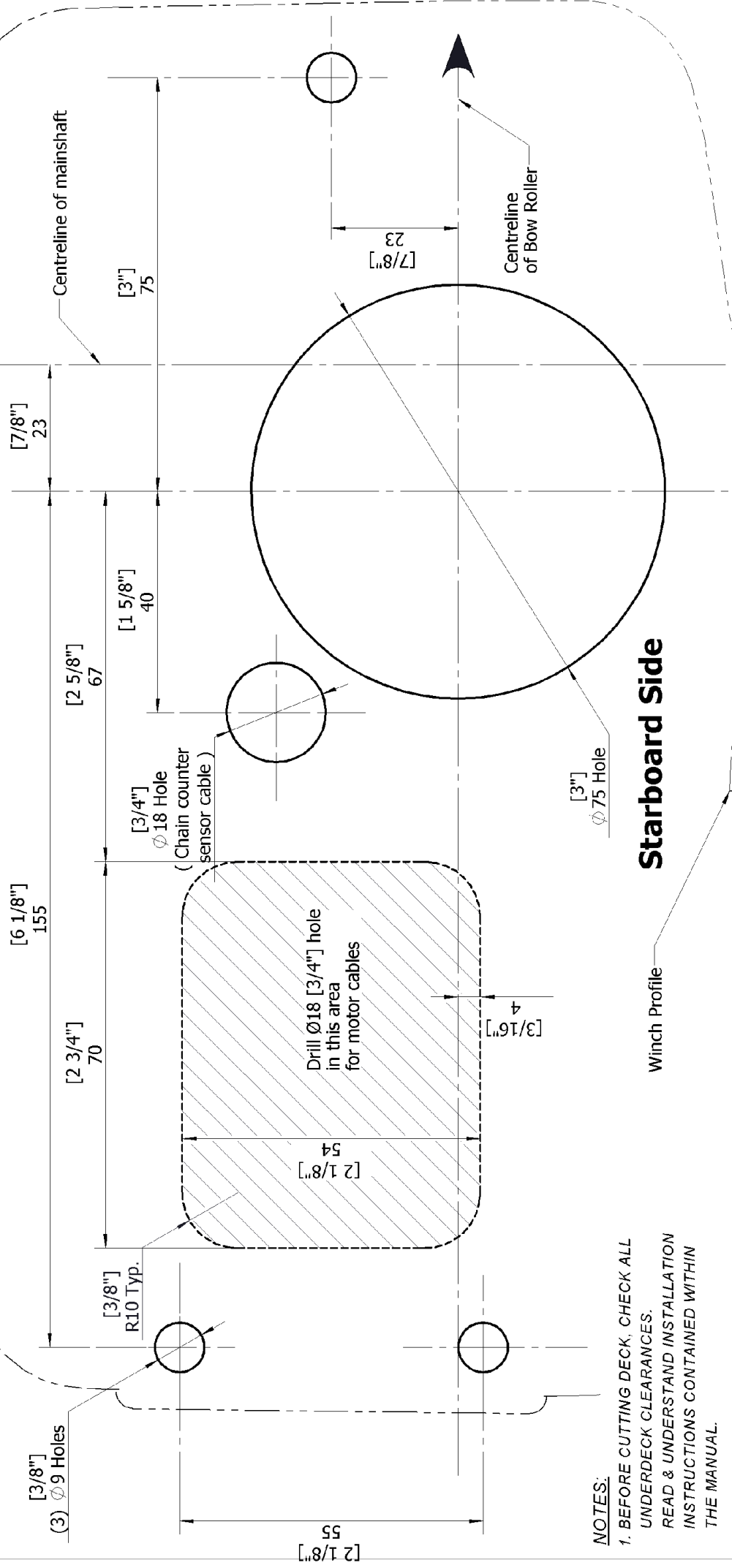
Check rotation of winch before application of chain/rope. Swapping F1 and F2 terminals or connection 1 and 3 on solenoid box will change the rotation of winch.



Permanent Magnet Motor

Rev.	1.00	Initial Issue	Change	Made on	Des/Drawn	Checked
				21/01/2010	RP	PC

Port Side



Starboard Side

NOTES:

- BEFORE CUTTING DECK, CHECK ALL UNDERDECK CLEARANCES. READ & UNDERSTAND INSTALLATION INSTRUCTIONS CONTAINED WITHIN THE MANUAL.
- CHECK YOUR MARKED OUT DIMENSIONS CAREFULLY, BEFORE CUTTING & DRILLING. DECK BOLT HOLES MUST BE DRILLED PARALLEL & SQUARE TO MOUNTING FACES.
- NO RESPONSIBILITY IS TAKEN FOR ANY INACCURATE DATA, DUE TO REPRODUCTION ERRORS OF FAX MACHINES, PRINTERS, PHOTOCOPIERS ETC.

**IF USED AS A TEMPLATE
PLEASE CHECK ACCURACY OF
DIMENSIONS ON DRAWING
BEFORE CUTTING OUT
(SEE NOTE 3)**

Description:	Deck Cutout Template - HRCFF	Drawing No:	7406	Revision No:	1.00
Tolerances if none specified		Sheet Size	A4	Sheet	1 of 1
0 DECIMAL (X) ± 0.5	ALL ANGLES +0.5°	Scale	1:1		
1 DECIMAL (X.X) ± 0.2	SURFACE FINISH 1.6				
2 DECIMAL (X.XX) ± 0.1					

File Location: W:\Product Data\components\7400-7499\7406_1_00_pt_Deck Cutout Details - HRC FF

LIMITED WARRANTY

Warranty: Vetus-Maxwell APAC Ltd provides a three year limited warranty on the Windlass for pleasure boat usage. Warranty, service and parts are available around the world. Contact your nearest Vetus-Maxwell office for a complete list of service centres and distributors.

This warranty is subject to the following conditions and limitations:

1. This Warranty will be null and void if (a) there is any neglect or failure to properly maintain and service the products.
 - (b) The products are serviced, repaired or maintained improperly or by unauthorised persons.
 - (c) Loss or damage is attributed to any act, matter or omission beyond the reasonable control of Vetus-Maxwell or the purchaser.
2. Vetus-Maxwell's liability shall be limited to repair or replacement (as determined by Vetus-Maxwell) of the goods or parts defective in materials or workmanship.
3. Determination of the suitability of the product and the materials for the use contemplated by the buyer is the sole responsibility of the buyer, and Vetus-Maxwell shall have no responsibility in connection with such suitability.
4. Vetus-Maxwell shall not be liable for any loss, damages, harm or claim attributed to:
 - (a) Use of the products in applications for which the products are not intended.
 - (b) Corrosion, wear and tear or improper installation.
 - (c) Improper use of the product.
5. This Warranty applies to the original purchaser of the products only. The benefits of the Warranty are not transferable to subsequent purchasers.
6. Vetus-Maxwell shall not be responsible for shipping charges or installation labour associated with any warranty claims.
7. There are no warranties of merchantability, fitness for purpose, or any other kind, express or implied, and none shall be implied by law. If any such warranties are nonetheless implied by law for the benefit of the customer they shall be limited to a period of three years from the original purchase by the user.
8. Vetus-Maxwell shall not be liable for consequential damages to any vessel, equipment, or other property or persons due to use or installation of Vetus-Maxwell equipment.
9. This Warranty sets out your specific legal rights allowed by Vetus-Maxwell; these may be varied by the laws of different countries. In addition, the purchaser may also have other legal rights which vary from country to country.
10. To make a claim under this Warranty, contact your nearest Vetus-Maxwell office or distributor. Proof of purchase and authorisation from Vetus-Maxwell will be required prior to any repairs being attempted.



To be eligible for warranty protection, please either complete the form below at the time of purchase and return it to the appropriate retailer or supplier of the goods, or fill out the electronic warranty form on our website, www.maxwellmarine.com

Purchaser

Name:	
Telephone:	Facsimile

Address:

Supplier / Dealer

Name:	
Telephone:	Facsimile

Address:

Windlass Model

Serial Number

Date of Purchase	Boat Type
Name	L.O.A.
Built by	

Windlasses Supplied	
<input type="checkbox"/>	With boat
<input type="checkbox"/>	Fitted by boat yard/dealer
<input type="checkbox"/>	Purchased from dealer/chandler



