



HFF 600S HORIZONTAL WINDLASS



WINDLASS SERIAL NUMBER:

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INTRODUCTION

Thank you for purchasing a Muir Windlass. Muir go to great lengths to develop anchoring systems that not only meet all your performance and safety requirements, but at the same time designed with a style and finish that enhances the aesthetics of your vessel. With Muir's commitment to quality and use of superior materials and processes we know you will be pleased with your investment, and rest assured that through the correct installation, operation and maintenance your new Muir Windlass will give you years of reliable performance.

IMPORTANT INFORMATION

To avoid damage to the gear drive, windlass or vessel when bringing the anchor up hard, it is a preferred practice to mark the chain at approximately 5-meter intervals from the anchor, to alert the operator to the anchor position. Alternatively an Auto Anchor can be used.

Under no circumstances should the windlass be operated if it is stalled or overloaded.

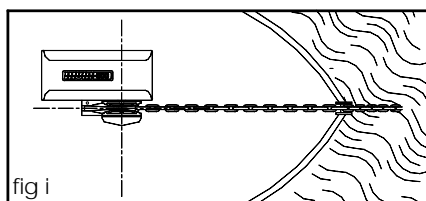
If anchor retrieval is impaired by high wind, heavy seas or the anchor is snagged, ease the load by either motoring or sailing slowly forward into the wind.

SAFE OPERATION

- Ensure that hands, feet, hair and clothing are kept clear of the windlass and other loose gear when in operation.
- Ensure no one is swimming nearby as anchor is lowered or retrieved.
- Keep hands well clear of capstan, gypsy, chain and rope.
- The windlass should never be used for lifting people aloft. Do not use a windlass as a bollard for mooring, towing or being towed.
- When the windlass is in use or the anchor stowed, always ensure the clutch is tightened with the clutch handle, and a Chain lock, Devils claw or Snubber Line is fitted to retain the anchor. The use of these accessories will prevent excessive loads on the geardrive and accidental release of the anchor.



INSTALLATION



Figure(i) Locate the windlass centrally fore and aft. Check that the chain leads unhindered to the anchor roller. The chain leads onto the starboard side of the gypsy, wraps around 180° and falls below deck through the chain pipe (hawser). Ensure there is sufficient room around the windlass to allow full rotation of the windlass manual/clutch handle (if supplied).

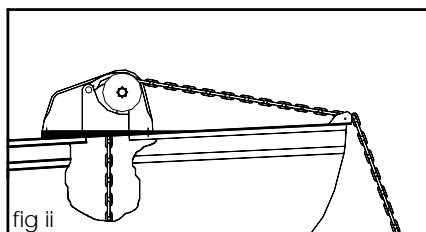


Figure (ii) The centre height of the gypsy must be in the same plane as the chain lead from the bow roller. If the deck is angled (fore & aft) or curved (port to starboard) a suitably shaped mounting block will be required to spread the load evenly over the deck surface and mount the windlass base on a level and even footing.

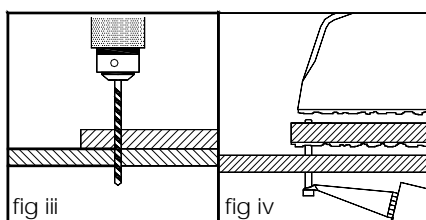


Figure (iii) Place the shaped mounting block (if required) onto the deck. Using the layout template supplied, mark the mounting centres and drill the holes, (Refer template).

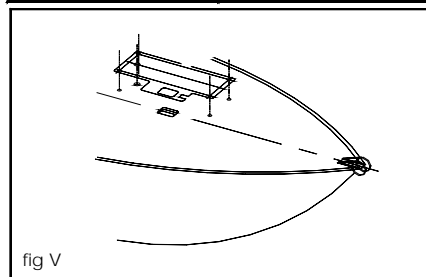


Figure (iv) Apply an appropriate sealant to the base plate and mounting block (if required) and carefully tighten the nuts & washers onto the threaded studs under the deck. Remove excess sealer.

For Aluminium or Steel hull vessels, it is important to insulate the windlass with a non-conductive gasket to avoid corrosion. This also applies below deck with the mounting bolts, nuts and washers.

Where the deck construction is light or of foam sandwich construction, a plywood stiffener of at least 16mm (5/8") should be fitted to the underside of the deck to spread the load and to prevent the bolts from pulling through the deck. Large diameter washers on the underside of the stiffener assists to spread the load.

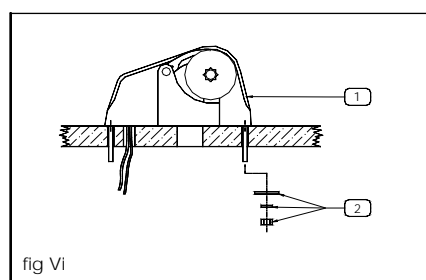


Figure (v)

1. Mount the windlass from above as shown.
2. From below, place washers and nut on each stud and tighten.

Figure (vi)

3. Locate adaptor and align holes.
4. Fasten using cap screws provided.

Figure (vii)

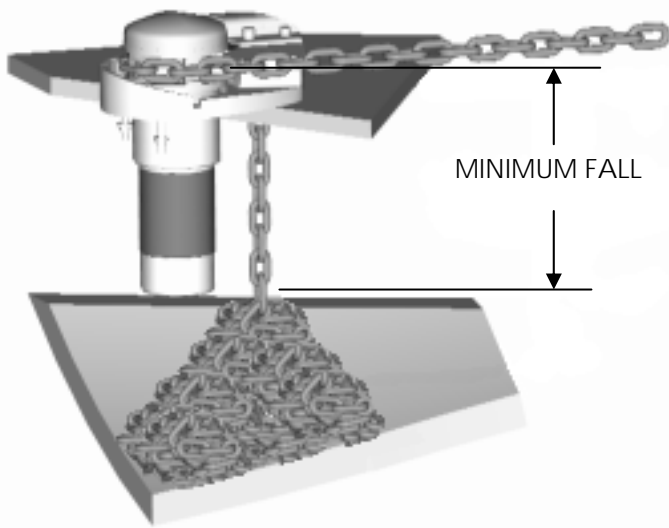
5. Grease shaft and key, slide geardrive onto shaft ensuring key is aligned. Rotate gearbox to preferred mounting position and secure with bolts provided.
6. Locate gearbox and bolt through adaptor.
7. Place washers and bolt in the end of the shaft and tighten / Fit circlip.

NOTE:

On assembly, grease all moving parts with a Lithium / Teflon based grease.

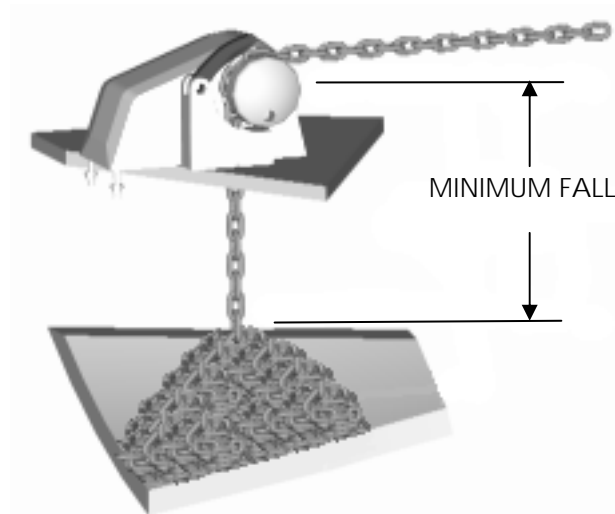
DEPTH OF THE CHAIN LOCKER

Measuring the vertical distance (minimum fall) underside of the deck and the top of the completely stored and heaped anchor rode in the locker will assist in determining the installation to suit your vessel. Refer to the fall depth diagrams to the left, and the options detailed below. It is also recommended that the chain be directed to the center of the chain locker.



Vertical Windlass:

The running gear, gypsy and capstan are positioned above the deck with the motor and gear drive below. Vertical windlasses operate at best with greater anchor rode fall than the horizontal windlass and a minimum fall of 300mm from top of stacked anchor rode is recommended. This is particularly important if using nylon line, which does not fold and stack as well as chain. Vertical windlasses minimise deck intrusion and the modern curved lines of the Muir windlass enhance the look of any vessel. A vertical windlass provides the advantages of a 180-degree wrap of the anchor rode around the gypsy.



Horizontal Windlass:

Fully enclosed, above deck, this style is usually preferred where locker space is limited or additional fall is required. The motor and gear drive is fully enclosed in the housing with nothing protruding below deck. The horizontal windlass operates with optimum anchor rode fall of at least 300mm from the top of the stacked anchor rode, and due to the horizontal orientation of the gypsy higher above the deck there is additional fall provided. These units are ideally suited for vessels with less locker space.

Vertical Windlass Model	Horizontal Windlass Model	Minimum Fall (Dist. Top of Pile)
VR/C 600	H 600S / 700 / 806 / 808	300 mm
VR/C 850 / 1250 / 2200	HR 1200	450 mm
VR/C 2500 / 3500	HR 2500 / 3500	650 mm
VR/C 4000	HR 4000/- 4200	800 mm

HANDY HINTS

It is a common mistake to locate the windlass too far forward, or too close to the bulk head, where there is insufficient room for chain and anchor stowing. The chain fall position should be in the centre of the chain locker. If the chain falls alongside a bulkhead or onto the stem it will pyramid and jam.

If the chain falls into an undesirable position, a metal tube can be fitted under the hawser to redirect the chain to a preferred position. This pipe should be at least 1 ½ times the width of the chain. It should also have as much vertical angle as possible. Position the windlass in the best location with the chain hawser facing forward. Ensure sufficient room to run electric cables to the windlass. Follow the instructions on page 4 including underdeck stiffening, deck camber, alignment, mounting blocks and sealing procedures.

ELECTRICAL

See Wiring Diagrams for wiring instructions.

Circuit breaker (must be fitted to ensure warranty)

If the windlass is overloaded or stalled the circuit breaker automatically cuts off power to the windlass and protects the wiring and motor. The circuit breaker should not be used as an isolating switch, purely for safety reasons.

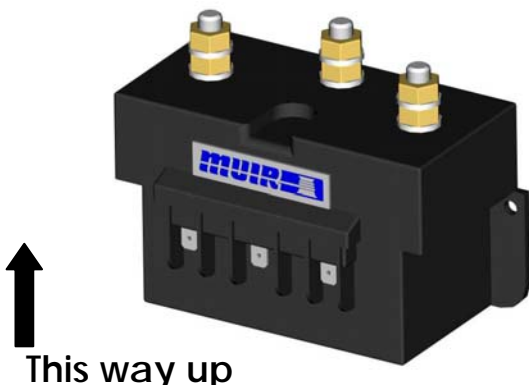
Deck Switches are best located out to either port or starboard or directly behind the windlass in a position where it can be easily reached with your foot or knee, preferably where you can view the anchor and chain coming aboard.

Isolating Switch should be fitted in an accessible position for safety, ideally close to the battery or switches. The isolating switch is not a circuit breaker.

Batteries are best located as close to the windlass as possible. Larger cables will reduce the voltage drop to the motor and the heat generated when running the windlass. Small diameter cables drop voltage considerably. Use the following table as a guide to your required wire size:

Distance from battery to motor (m)	Cable Size		Cable Diameter (mm)
	(mm ²)	AWG	
7 (23')	25	3	8 (5/16")
9 - 17 (30' - 55')	35	2	10 (3/8")

Rotation: Windlasses may be wired for single or dual direction, using single or dual deck switches for raising or lowering. Alternatively a remote control solenoid packages with Toggle Switch, Hand Pendant or Auto Anchors are available.



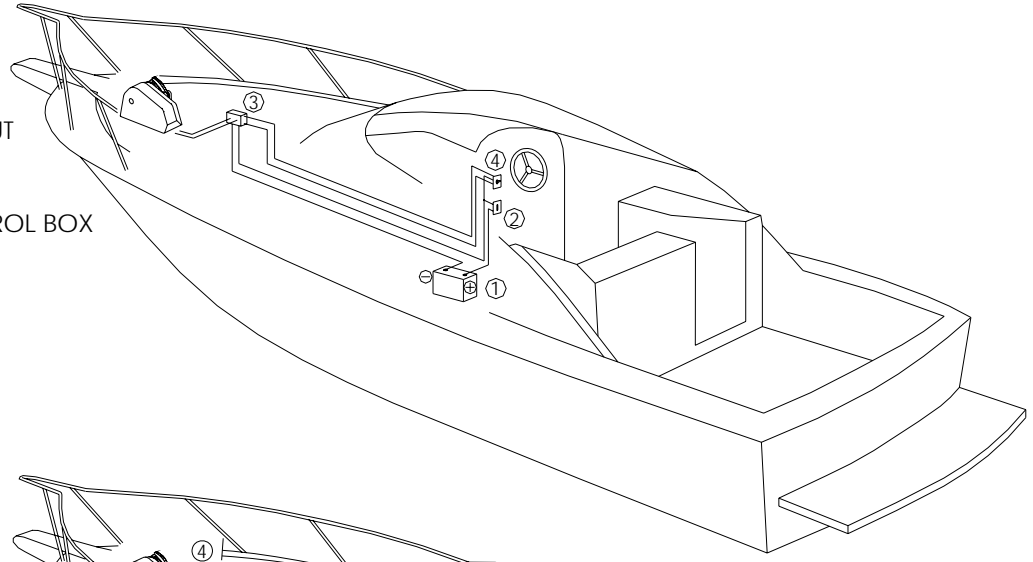
Solenoid Installation

We recommend that the solenoid is installed in an upright position, where it has minimal exposure to seawater and in close proximity to the electric motor of the windlass.

For wiring information, please refer to the appropriate wiring diagram.

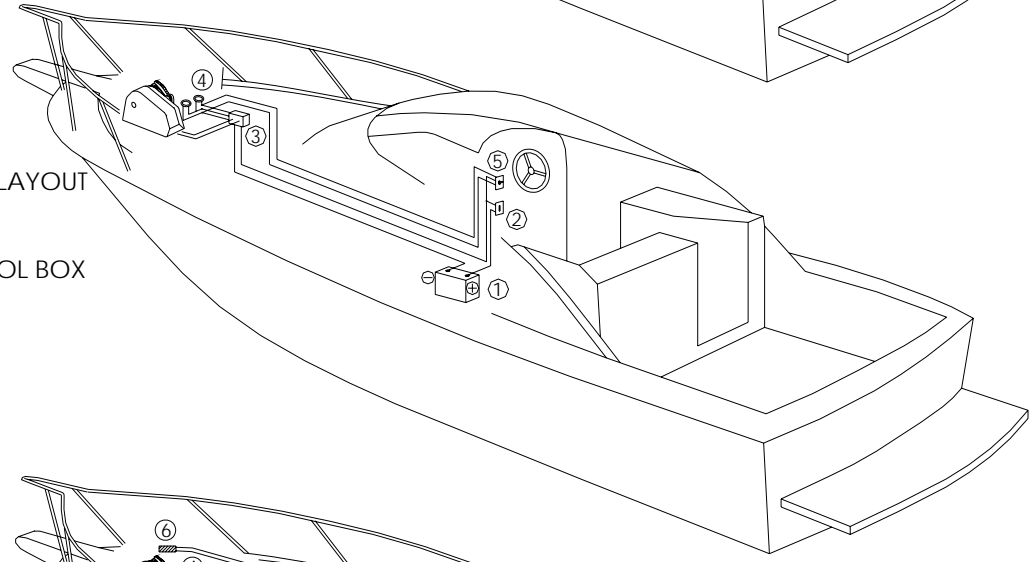
TOGGLE SWITCH LAYOUT

1. BATTERY
2. CIRCUIT BREAKER
3. SOLENOID/CONTROL BOX
4. TOGGLE SWITCH



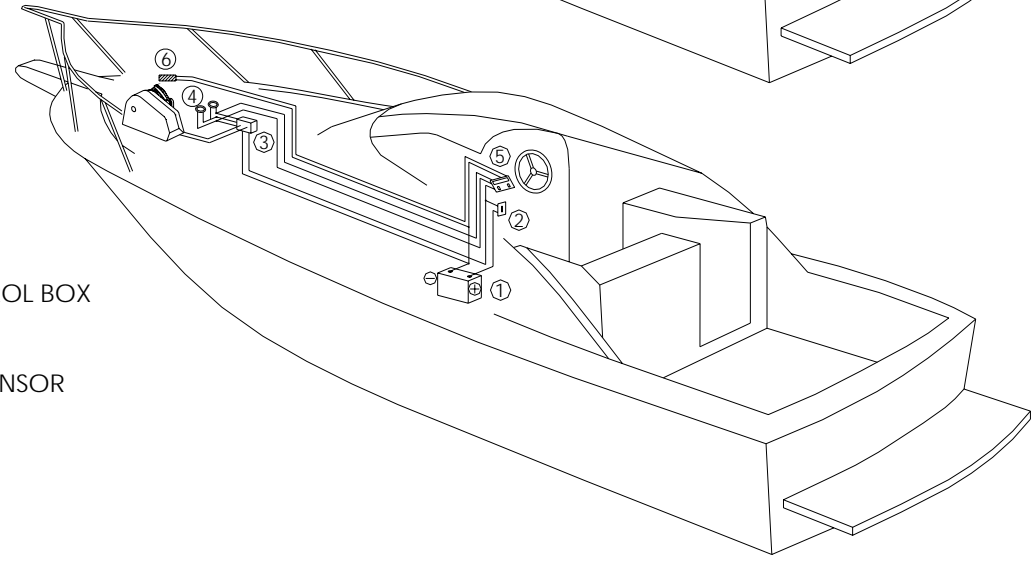
TOGGLE / DECK SWITCH LAYOUT

1. BATTERY
2. CIRCUIT BREAKER
3. SOLENOID/CONTROL BOX
4. DECK SWITCHES
5. TOGGLE SWITCH



AUTO ANCHOR LAYOUT

1. BATTERY
2. CIRCUIT BREAKER
3. SOLENOID/CONTROL BOX
4. DECK SWITCHES
5. AUTO ANCHOR
6. AUTO ANCHOR SENSOR



NOT TO BE USED AS WIRING DIAGRAMS

OPERATING INSTRUCTIONS

The concept of the Free Fall windlass is to deploy and freefall an anchor remotely from the helm station.

- 1) Engaging the down switch or reversing the windlass automatically releases the clutch released allowing the chain gypsy to free wheel thus launching the anchor.
- 2) Engaging the up switch of the windlass will automatically tighten the clutch allowing the winch to take up any slack in the anchor rode. **This must be done only when the anchor and all of the rode has touched the bottom and not whilst in freefall.**
- 3) Then release the switch when sufficient slack in the anchor rode has been taken up
- 4) To retrieve the anchor, operate the winch in the up direction. It is also recommended that the vessel is motored into the wind / towards the anchor rode to minimise excessive load on the windlass.
- 5) If necessary the windlass can be powered down without freefall, this can be done by removing the Declutching Pawl. (*see Maintenance and servicing step 2 Page 9*).
- 6) The clutch can also be operated manually after the above step has been performed. The clutch **has a right hand thread**, so to release the clutch insert & turn the handle (*see item 30 of exploded view K08-FREHFF0600*) in a anti-clockwise direction. To tighten turn the handle in a **clockwise direction**.
- 7) For the efficient operation of the windlass to periodically **apply grease to the Declutching Pawl** (*see item 25 of exploded view K08-FREHFF0600*) located on top of the chain pipe.
- 8) The RCMS Nylon Finger (P/N. R40-FGRPVC0600A) applies pressure to the line and splice and must be tightly tensioned onto the gypsy without line fitted by releasing the grub screw (P/N. S35-30406.35006) and adjusting the finger pin (P/N. P15-PIN30415.88X41) by tightening Anti Clockwise.

IMPORTANT

IT IS NECESSARY TO INSTALL AN ISOLATION SWITCH AS WELL AS A CIRCUIT BREAKER TO THE FREEFALL WINDLASSES TO ISOLATE THE WINDLASS WHEN NOT IN USE. This is to prevent the rope and chain from paying out if the winch is accidentally reversed

Maintenance & servicing - HFF 600 Free Fall Windlass



1. You will require the following tools to complete this procedure:
 - (i) Muir Clutch handle (P/N. F90-HANNYL0600)
 - (ii) Flat blade screwdriver
 - (iii) Phillips head screwdriver
 - (iv) 3/16" Allen key
 - (v) 1/8" Allen key
 - (vi) A Lithium/Teflon based marine grease.
 - (vii) HFF 600 Exploded view Dwg. K08-FREHFF



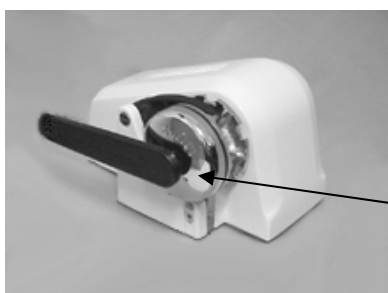
2. **Removing Declutching Pawl** (P/N. P13-PWL316HFF600) & SHC Screw (P/N. S45-30406.35019). Place 3/16" Allen key into (A) SHC Screw and turn anti-clockwise to remove. Now the Declutch can be removed.



- 3a. **Removing Clutch Nut** (P/N. P07-CLNBRZHFF600), SHC Screw (P/N. S45-30406.35013) & Retaining Washer (P/N. P21-304019.2007.012). Place 3/16" Allen key into (B) SHC Screw and turn anti-clockwise to remove.

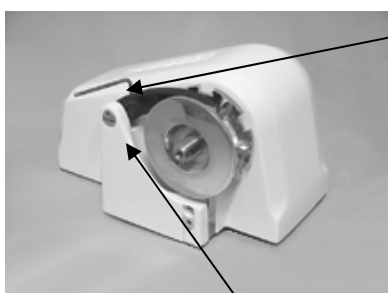
- 3b. Now place the Clutch Handle (P/N. F90-HANNYL0600) into (C) bi-square and turn anti-clockwise to remove.

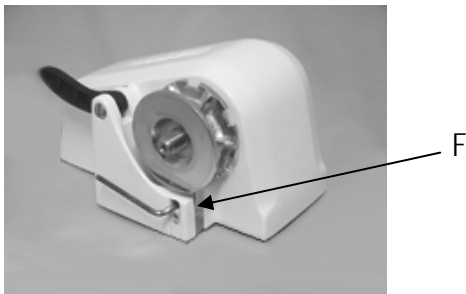
Note: After Declutcher and retaining washer has been removed the clutch can now be engaged and disengaged manually (if required).



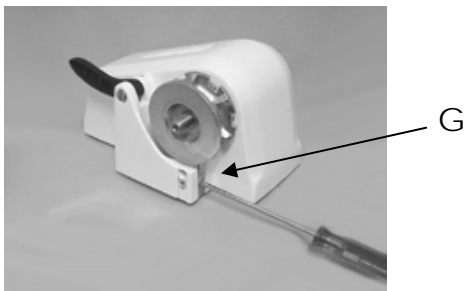
4. **Releasing Finger** (P/N. R40-FGRPVC0600A). Place 1/8" Allen key into (D) Grub screw (P/N. S35-3040635006) and turn anti-clockwise to release. With the tension released from the finger it can be pivoted out of the way.

*Note: upon re-assembly don't over tension the **Finger Pin** (P/N. P15PIN30415.88X41). With line removed from the gypsy, place Screwdriver (flat blade) into slot (E) and turn it a 1/4 turn in the clockwise direction then hold. Now place 1/8" Allen key into (D) Grub screw and turn clockwise to tighten.*

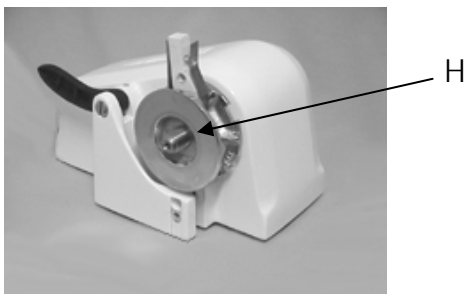




5a. Removing Peeler (P/N. P05PLRALL0600C) & Stripper (P/N. P19-STR3040600C). Place 3/16" Allen key into (F) SHC Screw and turn anti-clockwise to remove.



5b. Now place Screwdriver (Phillips head) into (G) and turn anti-clockwise to remove. Now the Peeler & Stripper can be removed.

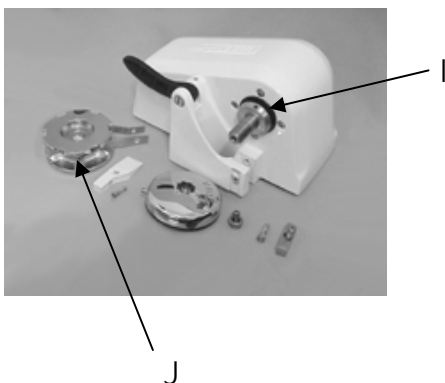


6. Removing Gypsy (P/N. P10-F0600BC). The Gypsy can now be taken off the main shaft (H).

To complete the service or replacement of parts reverse the above steps.

Note: We recommend the use of Lithium/Teflon based grease.

- Before re-assembly, grease the exposed Main Shaft/cone (I) & Gypsy bore (J).

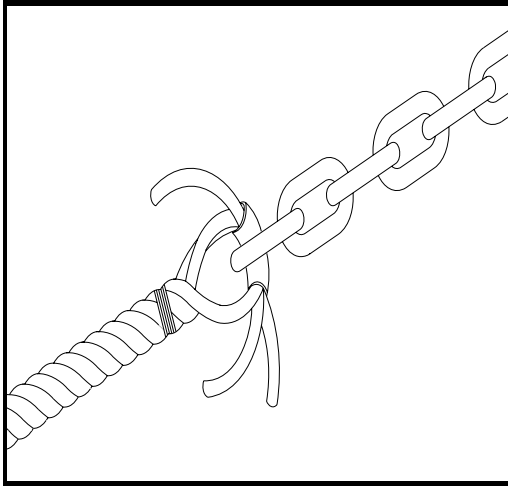


Line Care

Using the wrong type of line may cause the line to jam causing excessive line wear. Muir Windlasses are designed to run on 3-strand nylon line (supplied by Muir) which has been specially treated with fabric softener to prevent it from hardening. It is recommended to soak your rope in fresh water containing fabric softener every 3 months.

In case of a rope jam, slacken off the windlass clutch to free the jammed line. When retrieving the anchor rode do not continue to run the windlass if the anchor or chain is jammed, as line slippage in the gypsy will cause damage to the line.

Rope/Chain Splice.



1. To stop rope unravelling, seize rope 400mm(16") from end with whipping twine. Unlay strands.
2. After placing 20mm (3/4") of heat shrink sleeve tubing through the last link of chain, pass one strand of rope through sleeve and chain from one side and the other two strands of rope from the opposite side. (See illustration).
3. While pulling all three strands tight, shrink the sleeve tightly onto the rope using a hairdryer / fan heater or by immersing in boiling water.
4. Remove seizing and complete back splice in normal manner for two full tucks. With a hot knife pare down the

three strands by 1/3 and insert two further tucks. Pare down by another 1/3 and finish with two tucks. Cut any remaining tails.

TROUBLE SHOOTING

Electrical

1. Check the battery circuit breaker and ensure the isolating switch is on.
2. Check battery is charged up to 12 volts.
3. Check that the foot switch plunger is contacting (if fitted)
4. Check remote control solenoid is contacting, if this is clicking the problem may be low voltage, a faulty solenoid or a wire not properly connected.
5. Check wiring between controls, solenoid and motor are in-tact.

Mechanical

If the windlass running gear will not turn or operate check the following

1. Check that the clutch beside the chain gypsy is tightened to the chain gypsy drive using the manual handle supplied (see operating instructions).

Freefall Mechanism

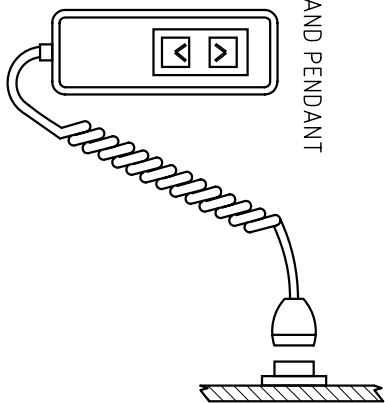
1. Check that the freefall plunger and spring can move freely.
2. Ensure that the declutcher pawl is in the correct position and that the grub screws holding this in place are tightened.

NORMALLY APPLIES TO THESE WINCHES AND MOTORS

MCI GP 12V	200W	600W
WIN II MODEL	VP / 600	VP / 600—50
	IIP/HFF 600	IIP/HFF 700

CHAIN METER

HAND PENDANT

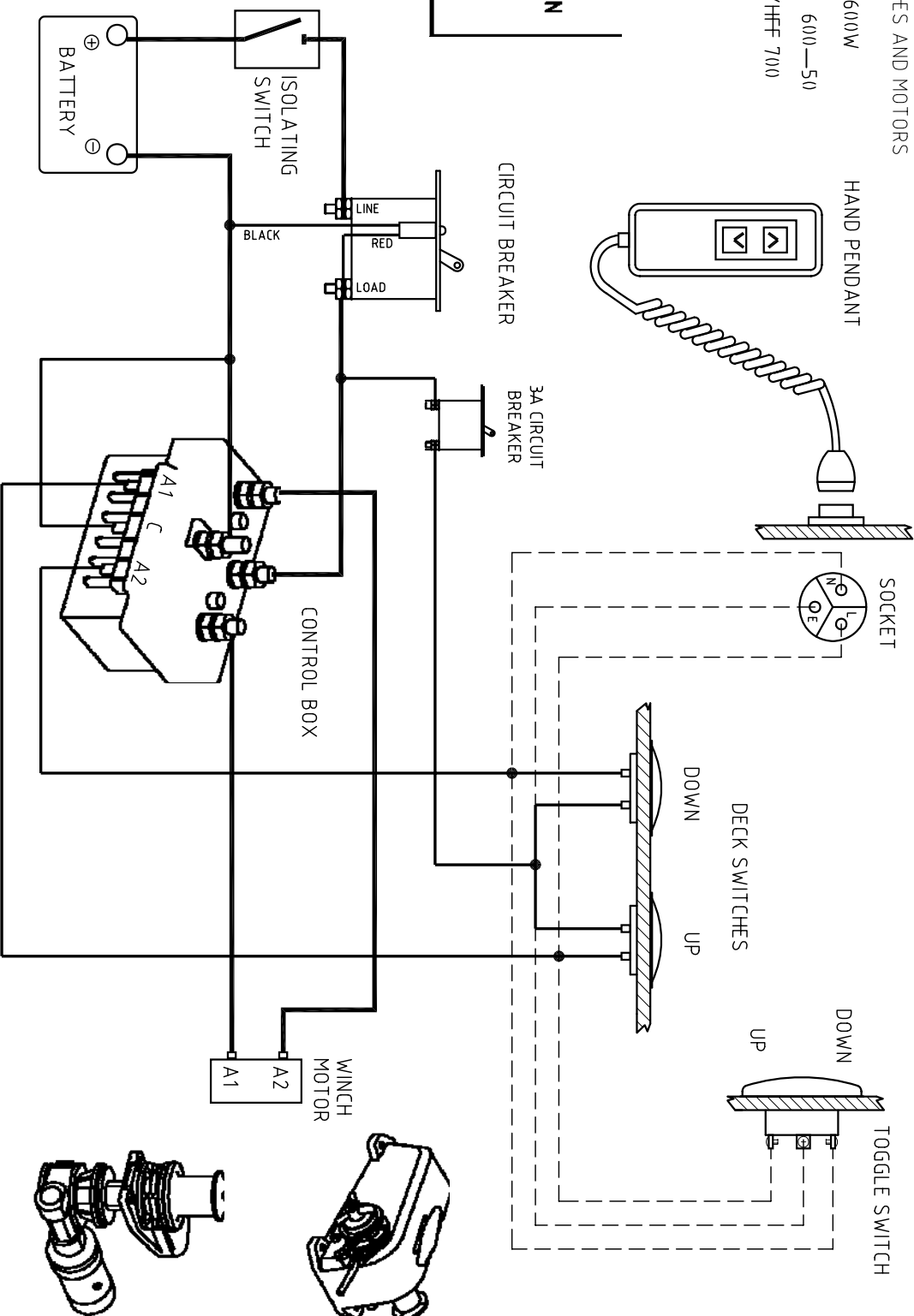


SOCKET

DECK SWITCHES
DOWN UP

DOWN UP
TOGGLE SWITCH

NOTE:
REFER TO MUIR AUTO ANCHOR
OPERATION MANUAL FOR CHAIN
METER INSTALLATION WIRING
DIAGRAMS. THESE ARE
SUPPLIED WITH MUIR AUTO
ANCHOR KIT.



- REFER TO MANUAL FOR WIRING INDICATED BY HEAVY LINES
- LIGHTER LINES INDICATE LIGHT WIRING.
- DASHED LINES INDICATE OPTIONAL WIRING.

MUIR WINDLASSES AUSTRALIA

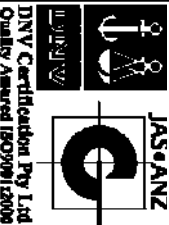
TITLE
TWO TERMINAL MOTOR (REVERSING)
WIRING DIAGRAM (POSITIVE ACTING SOLENOID)

TOLERANCES (mm)

X.	±
XX	±
XXX	±
XXX	±

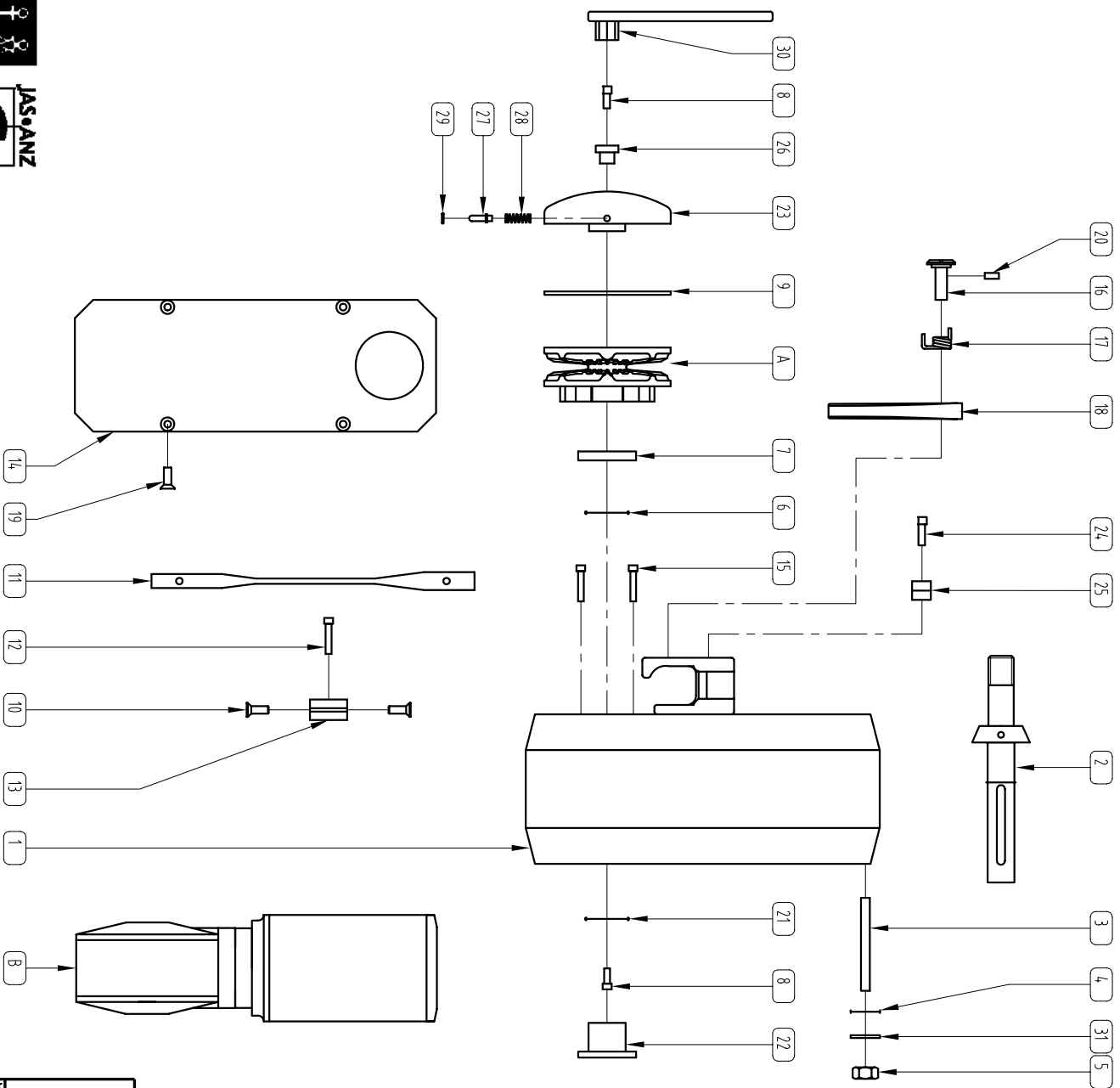
UNLESS OTHERWISE SPECIFIED

DRN	DATE	DRG No.	SCALE	SIZE
JK	25/11/02	WIRES1076	NTS	A4
PART No.		App1	App2	



DNV Certification Pty Ltd
Quality Assured ISO9001:2000

ITEM	PART NUMBER	DESCRIPTION	QTY
1	P22-HSGHFF600S	HOUSING ALLOY "SILVER" HFF600S FREEFALL	1
2	K06-SFTTH0600C	SHAFT ASSEMBLY H600 COMPACT	1
3	P24-STID3040600C	STUD SS304 H600C	4
4	S76-30407.94	WASHER SPRING SS304 5/16 INCH	4
5	S20-30407.94	NUT HEX SS304 0.5-1/16 INCH	4
6	R41-ORG02502201.8	O RING SEAL 1 X 7/8 X 1/16" (BS020)	1
7	R42-SEA052022.207.9	SEAL 52 X22 X 8 (TC12828)	1
8	S45-30406.35013	SCREW SHCS SS304 1/4 " X0-1/2 " UNC	2
9	R66-PVCFVFF600	WASHERS PVC VFF600 CLUTCH	1
10	S34-30404.76025	SCREW CSK X/R MT 304 0-3/16 X 1 INCH	2
11	P19-S TR3040600C	STRIPPER SS304 H600C	1
12	S45-30406.35025	SCREW SHCS SS304 1/4 INCH X 1 INCH	1
13	P05-PLRALL0600C	PEELER ALLOY H600C	1
14	P22-BP LALLH0600	BASE PLATE ALLOY H600 COMPACT	1
15	S45-30406.00025	SCREW SHCS SS304 6MM X 25MM	4
16	P15-PIN30415.88X41	PIN FINGER SS304 H600C	1
17	S36-SPR304FGRO600C	SPRING FINGER H600C	1
18	R40-FGRPVC0600A	FINGER PVC VRC600A	1
19	S33-30404.78013	SCREW CSK SL MT 304 0-3/16 X 0-1/2 INCH	4
20	S35-30406.35006	SCREW GRUB 304 0-1/4 X 0-1/4 INCH	1
21	P21-304025.006.403	WASHER 304 25MM X 1/4" X 1/8"	1
22	R44-PLG25H600C	PLUG H600C	1
23	P07-CLNBRZHFF600	CLUTCH NUT BRONZE HFF600	1
24	S45-30406.35019	SCREW SHCS SS304 1/4 INCH X 0-3/4 INCH	1
25	P13-PWL316HFF600	DECLUTCHER HFF600 FREEFALL	1
26	P21-304019.2007.009	WASHER 304 0D19.2 X ID 7 X 9 LG HFF 600	1
27	P15-PINA B209.52025	PIN- PLUNGER VFF600A	1
28	S36-SPR304VFF600B	SPRING PLUNGER VFF600 ATLANTICS	1
29	R41-ORG00900502.0	O RING 9 X ID5 X 2MM VFF600 PLUNGER	1
30	F90-HANNYL0600	HANDLE NYLON CLUTCH 600	1
31	S75-30408.0016	WASHER FLAT SS304 5/16" X 5/8"	4



A: GYPSY
 B: MOTOR / GEARBOX ASSEMBLY

MUIR WINDLASSES AUSTRALIA

TITLE
 600S ? ALL
 EXPLODED VIEW (SILVER)

TOLERANCES (mm)	±
X	±
XX	±
XXX	±
UNLESS OTHERWISE SPECIFIED	
MATERIAL	

PART No.	K08	DRG No.	K08-FREHFF0600S
DATE	19/05/09	SCALE	1:1
APPT		SIZE	A4

© COPYRIGHT MUIR ENGINEERING PTY. LTD.



WARRANTY

Limited for period of Three years (First Owner)

We warrant each new product manufactured by us to be free from defects in material and workmanship for a period of 3 years (first Owner).

This warranty shall become effective only upon receipt of a completed warranty registration, which shall identify the product so registered by serial number. This warranty shall remain in effect for a period of three (3) years from the date of purchase. For vessels in charter or hire the warranty is one (1) year due to various operators and overloading which may occur.

Conditions

While this warranty applies to defects in material and workmanship, it does not apply to:

- Normal worn parts or to damage caused by neglect, lack of maintenance, accident or improper service/installation or service by persons other than an authorised Muir representative.
- Muir shall not be responsible for failures due to products being used in applications that they are not intended for, or exceed the products performance specifications.
- For warranty claim, defective product must be returned to Muir for inspection.
- Muir will not be responsible for freight charges, removal or installation labour on warranty claims.
 - Damage due to unsatisfactory storage or use of equipment prior to installation in the approved/intended manner.

Exclusions

Warranty is limited to 12 months for:

- Electric motors / controls / equipment
- Hydraulic pumps / controls / valves
- Weather seals
- Use on charter/hire/commercial boats

All incidental and/or consequential damages are excluded from this warranty. Warranties of merchantability and fitness are excluded from this warranty. Implied warranties are limited to the life of this warranty. Some countries do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above may not apply to you.

We reserve the right to improve the design or materials used on any product without assuming any obligation to modify any product previously manufactured or used.

Liability

Muir Engineering liability under this warranty shall be to the exclusion of all other warranties or liabilities (to the extent permitted by law). In particular (but without limitation):

Muir Engineering shall not be liable for:

Any indirect or consequential loss including (without limitation) any loss of anticipated profits, damage to reputation or goodwill, loss of expected future business, damages, costs or expenses payable to any third party or any other indirect losses. Any damage to yachts or equipment. Death or personal Injury (unless caused by Muir Engineering negligence).



WARRANTY REGISTRATION CARD

Return To

MUIR ENGINEERING PTY. LTD.
100 Browns Rd, Kingston
Tasmania, Australia, 7050

**WARRANTY VOID UNLESS CIRCUIT
BREAKER OR RELIEF VALVE FITTED**

Customer / Company Name:
Contact (if Company):
Address:
Phone / Email:

Winch Model:
Serial Number:
Purchase Date: dd / mm / yyyy
Purchased From:
Invoice Number / Receipt Number / Proof of Purchase:



Head Office:

100 Browns Road
Kingston, Tasmania, 7050
Australia
Tel Int: +61 (0) 3 6211 8811
Fax Int: +61 (0) 6229 7030
Email: info@muir.com.au
www.muir.com.au

WINDLASS

SERIAL NUMBER

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