

MW-16



**INSTALLATION
AND USER'S
MANUAL**

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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. Be mindful that the correct selection of windlass for each application, together with correct installation, normal care in use and maintenance, are essential for long life and reliable performance.

Inspect your windlass carefully when unpacked. Any damage or lack of components should be reported immediately to your Italwinch distributor.

The windlass is supplied with chainwheel, as specified on purchase order. Make sure it is the appropriate one for the chain being used on board. Correct fit of the chain to chainwheel is essential for reliable and safe operation of the windlass. This can be guaranteed only when calibrated chain to a recognised international standard is used and the chain is correctly identified to MZ Electronic, or if a chain sample is provided to Italwinch to develop a custom chainwheel.

The windlass is designed for use in conjunction with chain stopper and tensioner of the appropriate size. Their use is an important safety feature.

For side pocket anchors, a chain roller should be installed above the hawse pipe to ensure smooth and quiet travel of the chain from deck to hawse pipe. The roller requires a central groove to align chain and flat faces (for stud length chains) to support and avoid bending the chain links.

The connection of the power lines and control circuitry to the windlass must be done by skilled technicians, to ensure reliable and safe operation of the windlass.

SAFETY INFORMATION

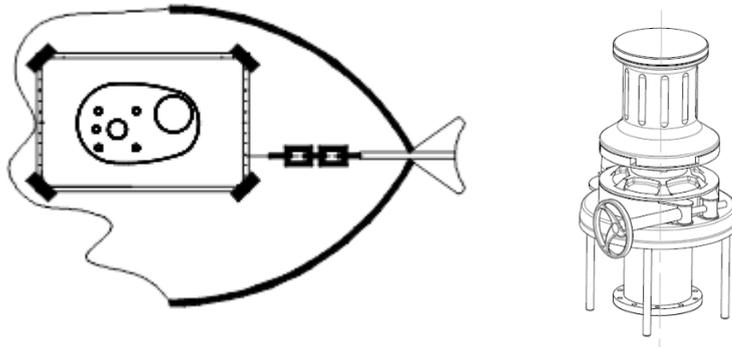
Safety standards and certifying bodies require peremptorily that, during the standing of the anchor, the load must be held by a chain stopper or a high resistance fixing point. The user is responsible for guaranteeing that during navigation the anchor is properly stowed and fixed. This precaution is more important when the navigation speed is higher and sea conditions are worse. Indeed, an anchor paid out by mistake during navigation can have very serious effects.

Considering its position and not always frequent use, the anchor windlass is particularly exposed to oxidation and corrosion risk; therefore, it is necessary to arrange a constant inspection of its parts and a due maintenance. Make sure to have read and understood every part of this manual before proceeding with installation and use. Only persons who know how to operate should be authorised to use the anchor windlass. Should there be doubts on its installation or use, refer always to a skilled consultant.

- Anchor windlasses used in an inappropriate way can cause damages to persons and/or things.
- Pay the utmost attention during the use of powerful equipment.
- Even the most careful use can be a source of damages, even serious.
- Italwinch products are supplied exclusively for recreational nautical use. Italwinch declines all responsibility for improper uses.
- Pay the utmost attention so that arms, legs, fingers, hair, and clothes do not get entangled in the chain or gipsy.
- Before operating the capstans, make sure that there are no persons in water in the vicinity.
- When the capstan is not used, the anchor must always be fixed to a solid point in order to avoid damages.
- The anchor windlass must never be used as mooring point. The load must always be held by a specific leat or solid point.
- The capstan must not be used for functions other than paying out or weighing the anchor.
- The chain must never be used on the warping drum.
- The system must always be protected by a suitable circuit breaker.
- Disconnect always the circuit through the circuit breaker when the anchor windlass is not in use.

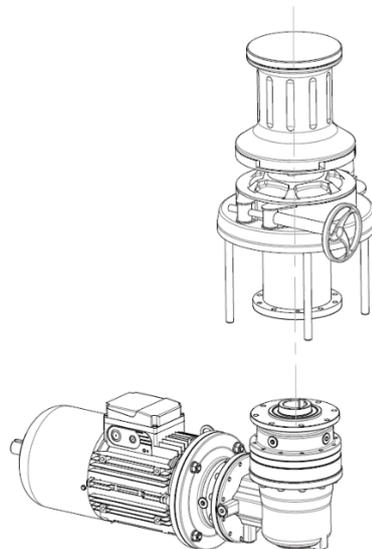
INSTALLING THE WINDLASS

Deck Installation:



- Place carefully the drilling template on the deck, by ensuring the correct alignment with the bow, after you have checked all the above and below deck requirements cut the following holes.
- When all the holes have been made, remove the template. To help avoid water absorption by the deck, apply an appropriate marine sealant to the freshly cut hole edges.
- Place carefully the upper part of anchor windlass on the deck.
- Fix the anchor windlass.

Under Deck Installation:



- Grease the main shaft
- Join the reducer to the upper part by aligning the motor far from the chain hole.
- Screw washers and related nuts to the studs by fastening them appropriately.
- Connect the cables coming from the battery to the electric motor by following the indications of the wiring diagram

WINDLASS CONNECTION

SELECTION OF MOTOR STARTER

Several windlass motor starter options are available, each with characteristic current demands and start load limitations. Italwinch recommends that selection of the best motor start system be entrusted to experienced persons familiar with anchoring procedures and the vessels generating capacity.

"Direct On Line" starter is the simplest way of starting the motor and it will allow the windlass to start under full rated load, but this method requires high momentary starting current, which the generators may not be able to supply. See specifications for current values at 400V and make sure to recalculate it for the voltage used on board. Start current may be limited to about half the above amount by using a "Star-Delta" starter. However, start torque is thereby limited to loads of about 25-30% of the windlass rated capacity.

"Star-delta" and "soft starters" are not recommended for starting windlass motors as the motor torque is severely limited during start up period. Since those motors often have to start under load (when retrieving the ground tackle), they might not be able to start under lower voltage at all. The benefit of starting at lower current would therefore be lost. Also, the motor brake would release immediately on start-up, which would cause short movement of the chain in opposite direction.

The Variable Frequency Drives (VFD) are recommended, as they offer accurate control of current during start up period while keeping high motor torque. They also offer various other benefits like:

- multiple speed control
- running the windlass over its nominal speed
- accurate current overload and thermal overload control

POWER CONNECTIONS TO AC MOTOR

Remove the motor terminal box cover and take care not to misplace the sealing gasket and screws.

Select a suitably sized, waterproof cable gland for the armoured supply cable. The selected gland fitting must fit the terminal box, be capable of anchoring the armoured cable, and allow an effective waterproof entry seal to be made.

Make the line connections to motor terminals as per motor nameplate or motor card. Fit link plates correctly, if required. Make also an effective earth connection.

Our AC motors are equipped with a disc brake to stop back winding when the windlass stops under load. The brake should be wired as follows:

'Direct on Line' start, single speed motor

On single speed motors, the brake rectifier is already connected to motor terminal block and no additional wiring is required.

'Direct on Line' start, dual speed motor

In case of using a two-speed, pole changing motor, a separate power supply for the brake is required. Remove the existing connection from motor terminals to the brake rectifier and bring in brake power supply from contactor in the starter unit.

VFD controller

If the VFD, controller is used, the brake also needs a separate power supply from the VFD unit to ensure appropriate timing of engaging and disengaging the brake. As above, remove the existing brake power supply and connect the brake to the appropriate terminals in the VFD unit (see wiring diagram of VFD unit, supplied with the unit).

Replace the terminal box cover and sealing gasket. Evenly tighten the four securing screws.

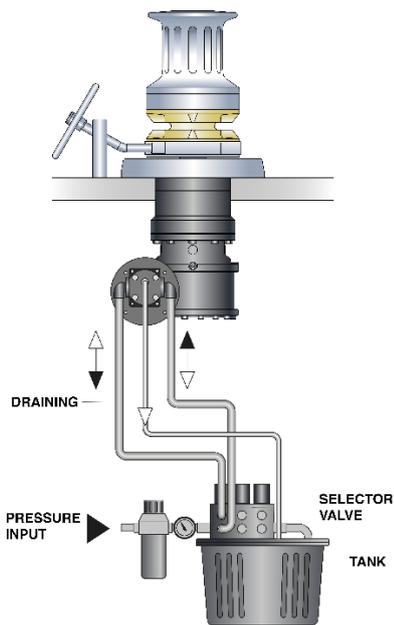
POWER CONNECTIONS TO HYDRAULIC MOTOR

Italwinch advises that only skilled hydraulic technicians should be entrusted with this installation. Check that the valve block assembly has not suffered any damage through handling and is correctly coupled to the hydraulic motor.

Make sure that hydraulic supply lines are fixed out of the path of chain.

The windlass is supplied with a valve block comprising a relief valve for lowering the ground tackle and a counterbalance valve to prevent overspeeding and to hold the chain when the motor is off (Appendix C).

Spray the hydraulic line connection fittings and valve cartridges after assembly with an anti-corrosive waterproof coating.



CHAINCOUNTER SENSOR (Optional)

Wiring connection:



USE OF THE WINDLASS

LOWERING THE ANCHOR UNDER POWER

- Ensure the clutch is fully engaged by inserting the clutch handle in the recess on top of the windlass, and turning clockwise firmly.
- Remove clutch handle.
- Ensure the band brake is released.
- Ensure the chain stopper is disengaged and the chain tensioner released. To disengage the chain stopper pawl the windlass may require momentary jogging in the up direction.

The windlass may now be lowered under power by operating with control, remote control or footswitch.

After lowering the anchor engage chain stopper and tensioner.

RETRIEVING THE ANCHOR UNDER POWER

- Ensure clutch is engaged and band brake is released.
- Remove clutch handle.
- Release chain stopper and tensioner.
- The windlass may now be operated to raise the anchor.
- After retrieving the anchor engage chain stopper and tensioner.

LOWERING THE ANCHOR UNDER MANUAL CONTROL

This method will normally be employed to lower the anchor quickly, to lower it in "quiet ship" and in emergencies (power loss or control failure).

Proceed as follows:

- Tighten the band brake.
- Release the chain stopper and chain tensioner.
- Fully disengage the clutch using the handle supplied. Then check that the teeth on the chainwheel are fully disengaged from the capstan
- Slowly release the band brake in a controlled manner. The chain should now release, the weight of self launching anchor being sufficient to draw out the chain. Regulate the chain speed by gradually engaging/disengaging the band brake.
- When the required amount of chain is out, tighten the band brake and engage the chain stopper.

OPERATING THE WARPING DRUM INDEPENDENTLY

The drum can be operated independently of the chainwheel and can be used to manage docking lines. To use it that way, proceed as follows:

- Engage both the chain stopper and the band brake.
- Fully disengage the clutch

The drum may now be rotated independently of the chainwheel. Italwinch recommends all warping operations be controlled by the footswitch. That makes it a one-person operation and offers better control of the capstan in case of emergency.

Take several turns of the warping line around the drum and pull on the rope tail with sufficient manual force to provide good grip of the line to the drum, whilst operating the footswitch.

Do not engage more turns on the drum than are necessary to accomplish the task. Whilst docking, wind and tide can impose sudden and excessive line tension, which it is often recommended to be managed by allowing slip to occur at the drum. This will protect the capstan, docking lines and vessel from damage.

WINDLASS MAINTENANCE

EVERY SIX MONTHS

Remove capstan and chainwheel from the Main Shaft

Inspect all the seals and replace if necessary.

Clean all components inspect them for damage and excessive wear, re-grease and reassemble.

Use Lithium complex base - waterproof grease for gear teeth and threads on Driven gear and Clutch Actuator, and

Res-Q-Steel for screw threads, Main Shaft and Key.

Clean and re-grease the thread on the band brake

Inspect under deck components, check particularly for corrosion, chipped paint etc, clean, and touch up the paint if necessary.

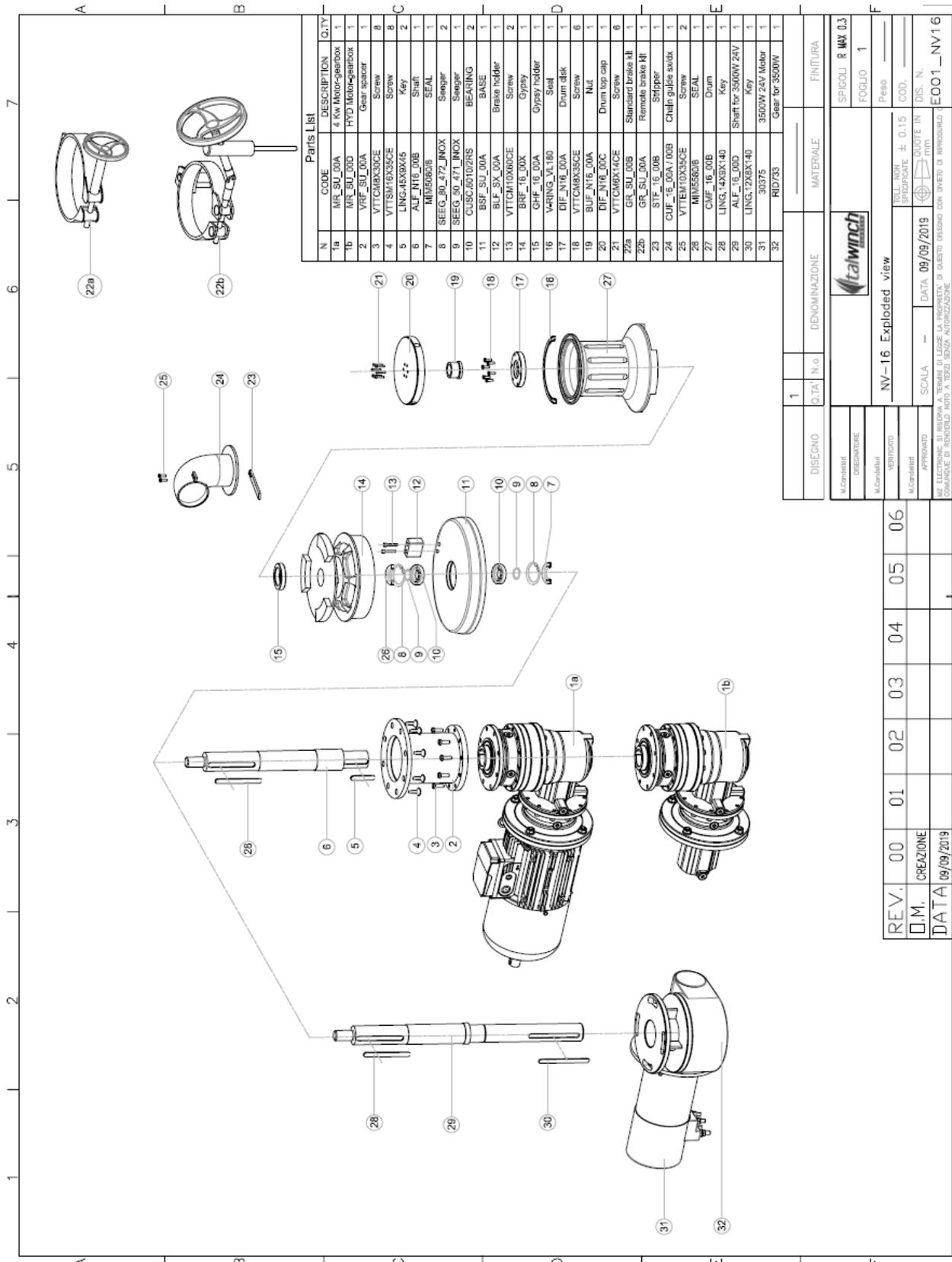
BAND BRAKE MAINTENANCE

The frequency of brake lining renewal will depend entirely on its usage. Should visual inspection reveal that the lining thickness has worn to below 2mm or if the ends of brake band can touch each other when tight, renewal of brake lining is necessary.

Grease the band brake lead screw at least every three months.

Avoid grease contamination of brake friction linings.

PART LIST



N	CODE	DESCRIPTION	Q.TY
1a	MR_SU_00A	4 Kw Motor- gearbox	1
1b	MR_SU_00D	HYD Motor-gearbox	1
2	VRF_SU_00A	Gear spacer	1
3	VTTCM8X3CE	Screw	8
4	VTTSM16X3CE	Screw	8
5	LING.45X9X45	Key	2
6	ALF_N16_00B	Shaft	1
7	MM566016	SEAL	1
8	SEEG_30L_472_INOX	Seagear	2
9	SEEG_30L_471_INOX	Seagear	1
10	CLUSC.6010/2RS	BEARING	2
11	BSF_SU_00A	BASE	1
12	BLF_3X_00A	Brake holder	1
13	VTTCM10X6DCE	Screw	2
14	BRF_16_00A	Gypsy	1
15	GHF_16_00A	Gypsy holder	1
16	V-RING_VL160	Seal	1
17	DIF_N16_00A	Drum disk	1
18	VTTCM8X3SCE	Screw	6
19	BUF_N16_00A	Nut	1
20	DIF_N16_00C	Drum top cap	1
21	VTTCM8X4CE	Screw	6
22a	GR_SU_00B	Standard brake kit	1
22b	GR_SU_00A	Remolds brake kit	1
23	SIF_16_00B	Stripper	1
24	CUF_16_00A/00B	Chain guide axidk	1
25	VTTM10X3SCE	Screw	2
26	MM566016	SEAL	1
27	CMF_16_00B	Drum	1
28	LING.45X9X140	Key	1
29	ALF_16_00D	Shaft for 3500W 24V	1
30	LING.12X8X140	Key	1
31	30375	3500W 24V Motor	1
32	RID/235	Gear for 3500W	1

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WARRANTY CONDITIONS

Italwinch warrants that in normal private pleasure boat usage and with proper maintenance its products will conform with their specification for a period of two years from the date of purchase by the end user, subject to the conditions, limitations and exceptions listed below. Any product which proves to be defective in normal usage during that two-year period, will be repaired or, as determined by MZ Electronic, replaced.

CONDITIONS AND LIMITATIONS:

Italwinch's liability shall be limited to repair or replacement of parts of the product which are defective in materials or workmanship.

Italwinch shall not be liable in any way for Product failure, or any resulting loss or damage that arises from:

- use of a product in an application for which it was not designed or intended
- corrosion, ultra violet degradation or wear and tear
- a failure to service or maintain the product in accordance with Italwinch's recommendations faulty or deficient installation of the product
- any modification or alteration of the product
- conditions that exceed the product's performance specifications or safe working loads

Product subject to a warranty claim must be returned to the Italwinch outlet that supplied the product for examination unless otherwise approved by Italwinch in writing.

This warranty does not cover any incidental costs incurred for the investigation, removal, carriage, transport or installation of product.

Service by anyone other than authorized Italwinch representatives shall void this warranty.

Italwinch's products are intended for use only in the marine environment. Italwinch accepts no liability arising from such other use.

EXCEPTIONS

Cover under this Warranty is limited to a period of one year from the date of purchase by the end user in the case of any of the following products or parts of products:

- Products used in commercial or charter applications

LIABILITY

Italwinch's 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): Italwinch shall not be liable for:

- Any loss of anticipated turnover or profit or indirect, consequential or economic loss
- Damages, costs or expenses payable to any third party
- Any damage to yachts or equipment
- Death or personal injury (unless caused by Italwinch's negligence).

This warranty sets out your specific legal rights allowed by MZ Electronic; these may be varied by the laws of different counties. In addition, the purchaser may have other legal rights which vary from country to country.

PROCEDURE

Notice of a claim for service under this warranty shall be made promptly and in writing by the end user to the Italwinch outlet that supplied the product or to Italwinch Via Bainsizza 2, 20900 Monza Italy. Proof of purchase and authorization from Italwinch 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 Mz Electronic. Or fill out the electronic warranty form on our website, www.mzelectronic.it or www.italwinch.com

PRODUCT IDENTIFICATION

Copy in this box the serial number written on the base of the winch as the most powerful and safe traceability.

Italwinch declines any liability for possible inaccuracies due to print errors in this manual and reserves the right to introduce any changes deemed appropriate.

For this reason, Italwinch does not guarantee the accuracy of the manual after the date of issue and declines all liability for possible errors and omissions.

PRODUCT COMPLIANT WITH EC REGULATIONS

Manufactured and distributed by:

MZ Electronic srl

info@mzelectronic.com

www.mzelectronic.com

