



Windlass V500 Owner's Manual



Nautilus Marine Group, LLC
916 8th Street
Anacortes, WA 98221
Phone : 360-588-4862
Fax : 360-899-5479
www.nautilusmarinegroup.com

Protech Ltd.
Россия, Санкт-Петербург
ул. Политехническая дом 1 корп.2
тел./факс +7(812)297-73-38
тел./факс +7(812)297-54-22
тел. +7(812)975-08-02
www.deel.ru

NAUTILUS WARRANTY REGISTRATION

Owner Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Country: _____

E-mail: _____

Dealership Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Country: _____

E-mail: _____

Windlass Model: _____

Mechanical Serial Number (located under windlass cover):

Electrical Serial Number (located on motor):

Boat Type:
 Sailboat Motorboat

Boat Brand: _____

Boat Model: _____

Boat Length:

- Under 9 m (Under 29.5 ft) 9 – 11 m (29.5 – 36.1 ft)
 11 – 13 m (36.1 – 42.7 ft) 13 – 18 m (42.7 – 59.1 ft)
 18 – 24 m (59.1 – 78.7 ft) Over 24 m (Over 78.7 ft)

Primary Use:

- Recreational Charter Work

How much time do you use your boat every year?

- Under 2 months 2 – 6 months Over 6 months

Anchor Type:

- Danforth CQR Delta
 Bruce Hall
 Other _____

Windlass Installer:

- Boat Manufacturer Qualified Installer
 Myself

How did you learn of Nautilus products?

- Boat Manufacturer Dealer
 Advertisement Friends
 Internet

Primary reason you chose a Nautilus Windlass (choose one):

- Saw it on another boat Quality
 Friend's suggestion Features
 Other _____

(Authorized dealer signature)

(Date)

Fill out and mail this warranty registration card or register online at www.nautilusmarinegroup.com/warrantyregistration



First-Class
Postage
Required
Post Office
will not deliver
without proper
postage

NAUTILUS MARINE GROUP, LLC
P.O. BOX 566
ANACORTES, WA 98221-0566



TABLE OF CONTENTS

Introduction	2
Congratulations	2
About This Manual.....	2
Nautilus Contact Information	2
Safety	3
Safety Statements	3
Specifications and Features	4
Features	4
Installation	5
Application Considerations	5
Considerations Before Installation.....	6
Installing the Windlass.....	8
Electrical Connections	10
Operation	13
General Safety Precautions.....	13
Clutch Operation.....	13
Casting the Anchor	14
Hauling In the Anchor	14
Maintenance	16
Safety Precautions	16
Periodic Maintenance	16
Troubleshooting	18
Diagrams	19
Parts Diagram - Windlass.....	20
Baseplate Template (Cutout).....	23
Warranty	25
Limited Warranty and Key Terms of Supply by Nautilus in USA, and by Marine Town in other countries	25
Warranty Registration.....	27



Section 1

INTRODUCTION

CONGRATULATIONS

Congratulations on purchasing your Nautilus Anchoring System Windlass. Your Nautilus Anchoring System Windlass is precision engineered with performance and functionality in mind to provide you with many years of safe and dependable anchoring operation.

**Thank You,
From everyone at Nautilus Marine Group**

ABOUT THIS MANUAL

This manual contains important warranty, safety, installation and operation information and should be stored in a safe place for future reference. Before attempting to install or operate this product, please read this manual completely and observe all safety messages.

NAUTILUS CONTACT INFORMATION

Nautilus products are supported worldwide. Our service network provides customers with expert sales and service of our high-quality anchoring systems. Should you have any questions about this product, please contact your local Nautilus dealer or use the following contact information to contact our support center.

International Distribution

USA East Coast
Nautilus Marine Group, LLC.
Telephone: 727 539 1100
Fax: 727 539 1151
Address: 12789 60th Street North Clearwater, FL 33760
Website: www.nautilusmarinegroup.com
Email: info@nautilusmarinegroup.com

USA West Coast
Marine Town Inc.
Telephone: 360 588 4862
Fax: 360 899 5479
Address: 916 8th Street Anacortes, WA 98221
Website: www.marinetown.com
Email: info@marinetown.com

Outside the United States of America
Marine Town Inc.
Telephone: 886 2 2957 9880
Fax: 886 2 2957 9882
Address: 21F-2, No. 33 Sec. 1, Min-sheng Road, Banqiao Dist., New Taipei City 220, Taiwan. R.O.C.
Website: www.marinetown.com
Email: info@marinetown.com



Section 2

SAFETY

SAFETY STATEMENTS

Before installing or operating your windlass, read this manual completely and observe all safety messages. Do not attempt any installation or operation that you are not confident or qualified to perform. Should you have any questions, contact your local dealer, a qualified technician or Nautilus for assistance.

This information contains general safety precautions and guidelines that must be followed to reduce risk to personal safety. Special safety precautions are listed in specific procedures. Read and understand all of the safety precautions before operation or performing repairs or maintenance.



Note: This safety alert symbol appears with most safety statements. It means attention, become alert, your safety is involved! Please read and abide by the message that follows the safety alert symbol.

DANGER

Indicates a hazardous situation which, if not avoided, *will* result in death or serious injury.

WARNING

Indicates a hazardous situation which, if not avoided, *could* result in death or serious injury.

CAUTION

Indicates a hazardous situation which, if not avoided, *could* result in minor or moderate injury.

NOTICE

Indicates a situation which can cause damage to the machine, personal property and/or the environment, or cause the equipment to operate improperly.



Section 3

SPECIFICATIONS AND FEATURES

NAUTILUS WINDLASS V500 - Stainless Steel 316					
Part No.	Motor Wattage	Voltage / Current Draw	Chain Size	Rope Size	Weight
NAL-512-006	500W	12V 40A	6 mm DIN 766 / Grade L	1/2 in. (12 mm)	12.2 kg (27 lbs)
NAL-512-007	500W	12V 40A	1/4 in. HT G4 / 7 mm DIN766	1/2 in. (12 mm)	12.2 kg (27 lbs)

FEATURES

- Manual free-fall system
- Bright polished and compact design
- Tensioning band and liner keep rope / chain splice in constant contact with chainwheels for smooth rope to chain transition
- Safety cover design prevents injury to hands and fingers
- Easy removal of windlass top allows ready access for service and maintenance
- Time-saving installation and minimum tools required
- Radius rope stripper allows windlass to use 3-strand or braided rope
- Gear motor can be easily installed in tight areas without tools
- Windlass includes clutch handle and solenoid



Section 4

INSTALLATION

APPLICATION CONSIDERATIONS

Nautilus recommends the use of only genuine Nautilus parts and accessories, such as rope/chain rodes, anchors, rollers, switches, controls and hardware, with your Nautilus windlass to ensure optimum performance. The use of unauthorized parts and accessories may also void your warranty.

Capacity Rating

Your Nautilus windlass must have a minimum rating of approximately 4 times the total combined weight of the anchor and chain assembly.

NOTICE: Ensure your windlass is properly rated for your application before installation. Windlasses are designed to cast and lift anchors. Never use the windlass for other purposes.

Typical factors in selecting an anchor and rope/chain rode for use with a windlass:

- Boat size, weight, displacement and design
- Operating conditions such as maximum depth of water, type of bottom and weather conditions

Anchor and Cleat Considerations

Anchors and cleats are available for various applications and come in many sizes, types and shapes. Boat weight and size are primary factors in choosing an anchor or cleat. Consult your boat manufacturer or other qualified marine authorities for additional information when choosing anchoring equipment.

The installation and use of a properly rated anchor rode cleat, chainstopper or device designed to hold the anchor rode fast to the deck must be used in conjunction with the windlass and anchor.

To ensure proper operation of the windlass, it is recommended that the anchor be of the self-launching type.

Rope/Chain Rodes

Nautilus rope/chain rodes are designed to work with Nautilus windlass systems to provide optimum performance. The use of aftermarket rope/chain rodes may require some experimentation to determine optimum size, as aftermarket rope/chain rodes exhibit wide variations in rating, stretch, diameter and quality. *See Specifications and Features on page 4 for chain and rope ratings. NOTICE: Ensure your rope/chain rode is properly sized and rated for use with your windlass and application before installation.*

For most applications, anchor line length should be at least seven times longer than the depth of the water in which you are anchoring.

When splicing your own rope to chain:

- Use 3-strand medium lay nylon rope.
- Use a length of chain that will not allow the splice to be positioned in the gypsy when the anchor sets at the roller.
- Ensure that the splice is not tighter than the rope.
- Do not use a hard splice.
 1. Attach whipping (twine) approximately 8 to 12 in. (200 to 300 mm) from the rope end.
 2. Separate the three loose rope strands.
 3. Pull two rope strands in the same direction through the last link of the chain.

Section 4



4. Pull the last strand in the opposite direction through the last link of the chain.
5. Remove the whipping (twine) from the rope.
6. Pull the three strands tight.
7. Using 3 or 4 tucks per strand, back-splice the three strands.
8. Pare down the three strands by one half of their diameter using a hot knife.
9. Add an additional 3 to 4 tucks to taper the back splice.
10. At approximately 1/2 in. (13 mm) from the end, cut the loose ends with a hot knife.
11. At the start of the taper, add whipping (twine) to secure the strands.

NOTICE: Anchor rope/chain rodes must be inspected periodically for wear and damage. Repair or replace any part of the rode immediately before use.

CONSIDERATIONS BEFORE INSTALLATION

When choosing a location to mount the windlass, review the following installation criteria to ensure the installation location is suitable for operation.

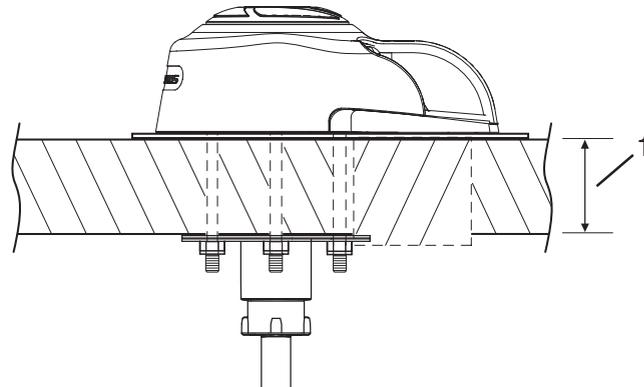
WARNING! Entanglement Hazard. If replacing an existing windlass, disconnect the electrical power to the windlass before installation of the new windlass. Always disconnect the electrical power to the windlass before servicing.

The safety messages that follow have CAUTION level hazards.

- The windlass must be installed and operated in accordance with the instructions within this manual and any other required regulations to comply with all local and USCG, ABYC and NMMA regulations.
- Do not attempt to install, service or operate the windlass without being totally familiar with the safe and proper procedures for doing so.

Deck Thickness

- The deck mount location must have a minimum solid core deck thickness of 1/2 in. (13 mm) (Figure 4-1, 1).



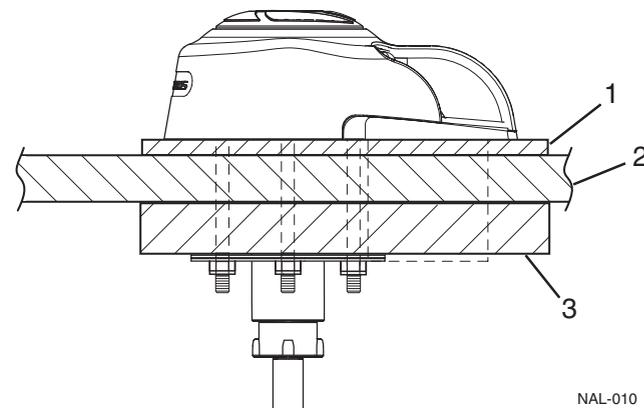
NAL-016

Figure 4-1

- If the deck thickness is greater than 3 in. (76 mm), please contact your boat dealer for suggestions on alternative mounting location and hardware.

NOTICE: Consult your boat manufacturer or local boat dealer for assistance in determining the strength or suitability of the windlass mounting location.

- If the deck (Figure 4-2, 2) does not meet the minimum thickness requirement or is constructed of non-solid type materials, such as foam or balsa core, additional reinforcement plates (Figure 4-2, 1 and 3) may be necessary. Contact your local Nautilus dealer or Nautilus Marine Group for recommendations.



NAL-010

Figure 4-2

- The standard threaded mounting studs supplied are designed for standard deck thickness up to 3 in. (76 mm) and are adequate for most installations.
- The area under the deck in the locker must have adequate space to allow for the motor and gearbox assembly.

Alignment

The windlass position must allow for proper alignment with the anchor roller and the anchor locker to operate normally.

- The windlass must be positioned on the deck in such a position to allow:
 - ◆ Alignment of the windlass chain/rope rode centerline of the gypsy with the anchor roller (**Figure 4-3**)

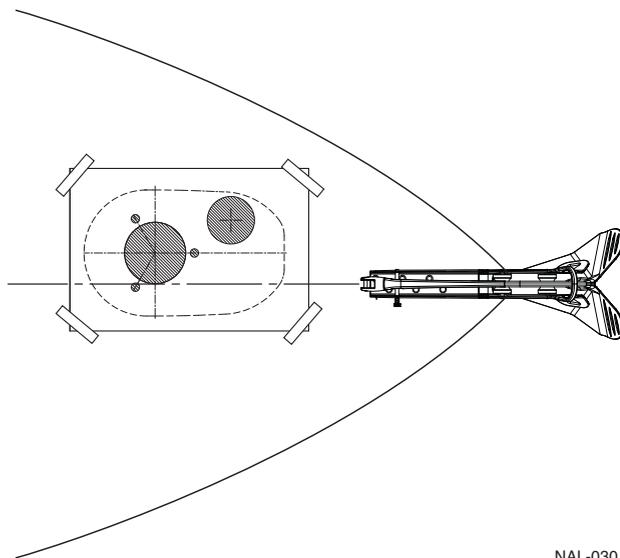


Figure 4-3

- ◆ For level alignment or up to 10° angle (**Figure 4-4, 1**) of the chain/rope rode from the gypsy across the deck to the anchor roller

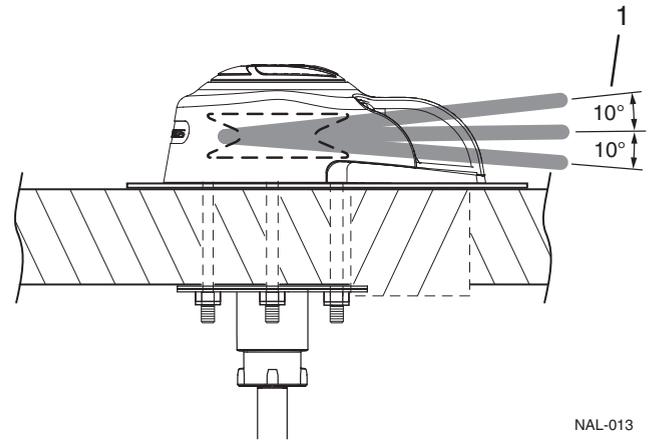


Figure 4-4

- ◆ For unrestricted movement of the chain/rope rode during operation
- The windlass must be positioned over the anchor locker in such a position to allow:
 - ◆ Maximum vertical (**Figure 4-5, 1**) unrestricted free-fall of the chain/rope rode into the locker from the gypsy when hauling in

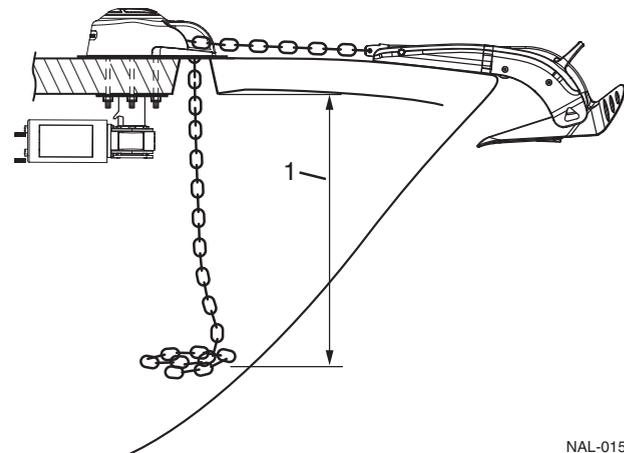


Figure 4-5

- ◆ Adequate space for the chain/rope rode to be stored. Rope tends to coil during haul-in, unlike chain, and will require the maximum locker space possible.
- ◆ Unrestricted chain/rope rode haul-out from the locker through the gypsy

Section 4



Exposure

Mount the windlass motor gearbox in a location to avoid exposure to the elements, harsh conditions and exposure to excessive water spray or submersion.

INSTALLING THE WINDLASS

Cutting the Deck Using the Template

1. Using adhesive tape, position and tape the supplied mounting template (**Figure 4-6**) on the deck or mounting pad in the desired position (see *Alignment on page 7*), ensuring to align the anchor rode from the bow roller into the windlass (**Figure 4-7**).

Also see *Baseplate Template (Cutout) on page 23*.

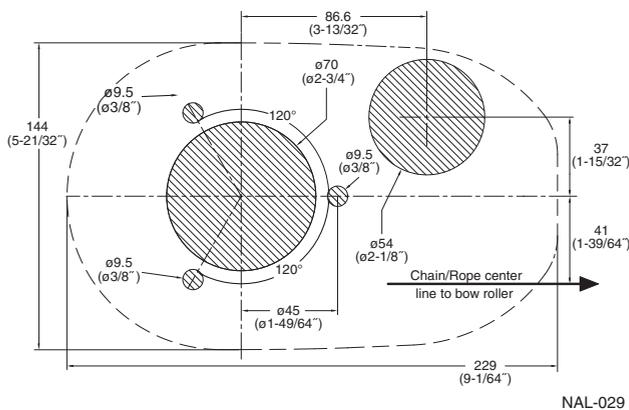


Figure 4-6

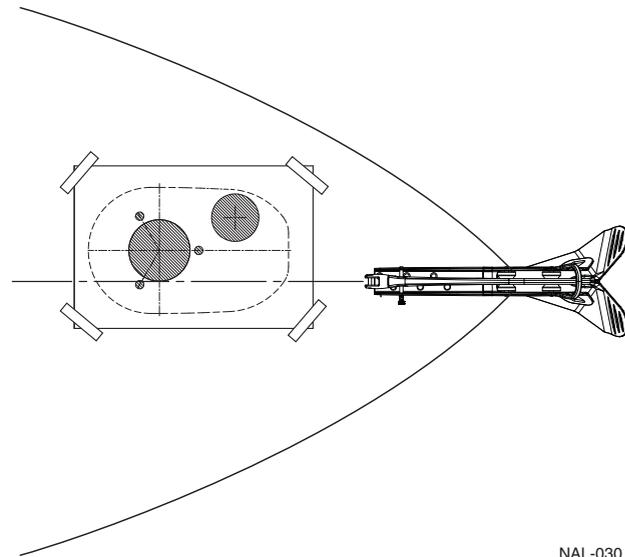


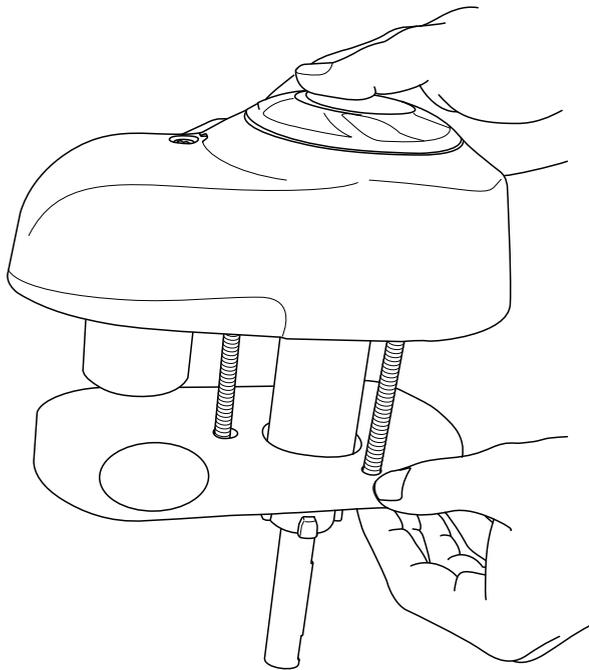
Figure 4-7

Note: To ensure accurate hole placement, drill all hole centers first using a smaller pilot drill.

2. Using a 2-1/8 in. (54.0 mm) diameter hole saw, drill the windlass shaft hole.
3. Using a 2-1/8 in. (54.0 mm) diameter hole saw, drill the chain/rope rode hole.
4. Using a 3/8 in. (9.5 mm) diameter drill bit, drill the 3 holes for the mounting studs.
5. Remove the template.
6. Clean the deck surface and the cut areas thoroughly.
7. Coat and seal the cut deck surfaces with appropriate marine sealant. Contact your boat manufacturer for sealant recommendations. The cut deck surfaces must be sealed to avoid water absorption by the deck. **NOTICE:** Always follow the manufacturer's instructions for applying sealant and proper curing time.

Mounting the Windlass to the Deck

1. Clean and prepare all surfaces to be sealed following the manufacturer's instructions.
2. Peel off liner from the adhesive gasket and apply gasket (**Figure 4-8**) to the base of the windlass. All gaps and openings must be sealed to avoid leaks and water absorption by the deck.
3. Install the windlass onto the deck.



NAL-011A

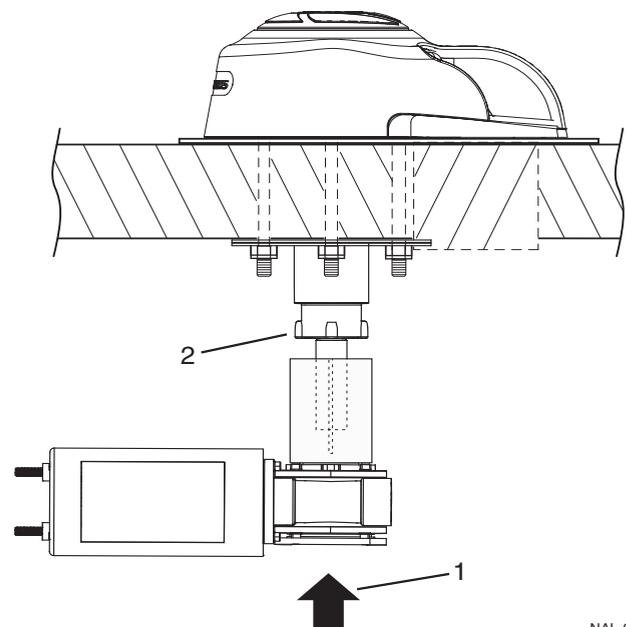
Figure 4-8

4. From the underside of the deck, install the large flange washer onto the 3 mounting studs.
5. Using 1 lock washer and 1 nut for each mounting stud, securely fasten the large flange washer and windlass. Do not over-tighten the mounting stud nuts.

Attaching the Motor Gearbox to the Windlass

Note: Lightly coat the windlass shaft with a marine-grade grease before installing the motor gearbox.

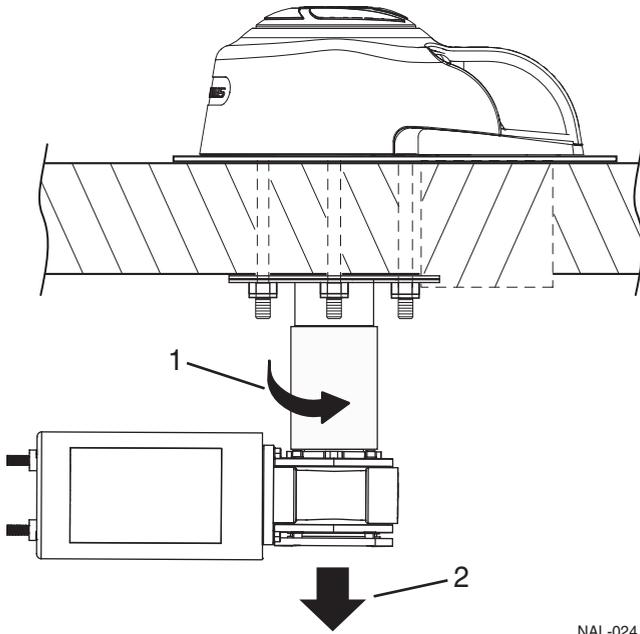
1. Align the motor gearbox shaft key with the windlass shaft keyway and slide the motor gearbox up onto the windlass shaft.
2. Rotate the motor gearbox to the desired position under the deck. *NOTICE: The motor gearbox must have adequate clearance completely around the unit to provide adequate cooling and to avoid damage from other equipment.*
3. Once the desired position has been located, continue to slide the motor gearbox up (**Figure 4-9, 1**) onto the windlass shaft to engage the locking cams (**Figure 4-9, 2**).



NAL-018

Figure 4-9

4. Once the locking cams engage, continue to push up on the motor gearbox, then rotate the motor gearbox 45° clockwise (**Figure 4-10, 1**) and allow the motor gearbox to slide down (**Figure 4-10, 2**) to lock into position.



NAL-024

Figure 4-10

Inverting the Motor Gearbox Housing

Refer to **Figure 8-1** on page 20 for parts list and component locations.

1. Remove the four socket-head capscrews securing the gearbox connector flange to the gearbox housing. Remove the gearbox connector flange from the gearbox housing.
2. Remove the four socket-head capscrews securing the lower flange to the gearbox housing and remove the lower flange with the worm gear assembly.
3. Flip the gearbox housing over so the motor is pointing in the opposite direction.
4. Install the gearbox connector and lower flanges to the gearbox housing and secure with the socket-head capscrews.

ELECTRICAL CONNECTIONS

CAUTION! *Read and observe all safety messages and equipment recommendations before attempting electrical installations. Ensure that all electrical connections and installations comply with all local and USCG, ABYC and NMMA regulations.*

WARNING! *Electrical Shock Hazard. Keep children away from any electrical cables or equipment and always ensure all electrical equipment is properly grounded.*

DC Electrical Cable

Windlass performance is directly related to electrical cable size and length. Voltage drop over the complete wiring run must not exceed 10%. The use of a larger diameter over long runs or shorter cable will increase performance.

WARNING! *Fire Hazard. Use of improperly rated cables and connectors can cause equipment damage and fires.*

The following table indicates wire current capacity for cable sizes of various lengths. Use this table as a guideline to choose the appropriate cable length and size for your application.

Only use fully insulated type III stranded tinned copper wire cable. All electrical cables should be routed securely to a fixed surface and in a manner to avoid damage, shorting and interference with other electrical equipment. All electrical connections must be created in a permanent manner and protected to avoid water, corrosion and shorting.

NOTICE: *To avoid unwanted electromagnetic disturbance in other electronic equipment installed in the vessel, it is recommended that the windlass be connected to the starting battery and not to the house battery. Isolating or shielding the windlass wiring will also help to reduce unwanted electromagnetic disturbance.*

American Wire Gauge / (AWG)										
Length (feet)	Current (amps) 12 Volts – 10% Drop Wire Sizes (gauge)									
	5	10	15	20	25	30	40	50	60	70
15	18	18	16	14	14	12	12	10	10	8
20	18	16	14	14	12	12	10	10	8	8
25	18	16	14	12	12	10	10	8	8	6
30	18	14	12	12	10	10	8	8	6	6
40	16	14	12	10	10	8	8	6	6	4
50	16	12	10	10	8	8	6	6	4	4
60	14	12	10	8	8	6	6	4	4	2
70	14	10	8	8	6	6	6	4	2	2
80	14	10	8	8	6	6	4	4	2	2
90	12	10	8	6	6	6	4	2	2	2

ISO Wire Gauge / (mm ²)										
Length (meters)	Current (amps) 12 Volts – 10% Drop Wire Sizes (gauge)									
	5	10	15	20	25	30	40	50	60	70
2.5	0.75	0.75	0.75	0.75	1	1.5	1.5	2.5	2.5	4
5	0.75	0.75	1.5	1.5	2.5	2.5	4	4	6	6
7.5	0.75	1.5	2.5	2.5	4	4	6	6	10	10
10	0.75	1.5	2.5	4	4	6	6	10	10	16
12.5	1	2.5	4	4	6	6	10	10	16	16
15	1.5	2.5	4	6	6	10	10	16	16	16
17.5	1.5	4	4	6	10	10	16	16	16	25
20	1.5	4	6	6	10	10	16	16	25	25
25	2.5	4	6	10	10	16	16	25	25	35
30	2.5	6	10	10	16	16	25	25	35	35

DC Circuit Breaker Size and Type

The use of a resettable, slow-blow type circuit breaker rated at 40 amps is recommended to prevent damage to the windlass from electrical overloading. The circuit breaker should be mounted in a solid, permanent manner in a readily accessible location free of water and other hazards.

WARNING! Fire Hazard. Use of improperly rated circuit breaker protection can cause equipment damage and fires. Do not overload the windlass circuit breaker with additional 12-volt equipment.

WARNING! Fire Hazard. Never reset a breaker that has been automatically tripped, or replace a burned out fuse, without first identifying and correcting the cause of the problem.

WARNING! Fire Hazard. A boat's electrical system is designed to protect you from electrocution, short circuits and overloads. Only allow a qualified electrician to perform modifications to the system such as adding or repairing electrical accessories or wiring.

Section 4



Windlass Solenoid Installation

Mount the windlass solenoid adhering to the following guidelines:

- Locate the windlass solenoid as close as possible to the windlass motor.
- Locate the windlass solenoid to avoid damage from the anchor chain/rode and other obstacles.
- Locate the windlass solenoid and windlass circuit breaker as close as possible to each other.

- The windlass solenoid must be located to avoid exposure to the elements, harsh conditions and exposure to excessive water spray or submersion.

1. Using an appropriate fastener, securely fasten the solenoid in the desired location.
2. Connect all electrical connections between the windlass motor, solenoid and control switch as shown in **Figure 4-11**. Refer to the tables on page 11 for proper wire gauge sizing.

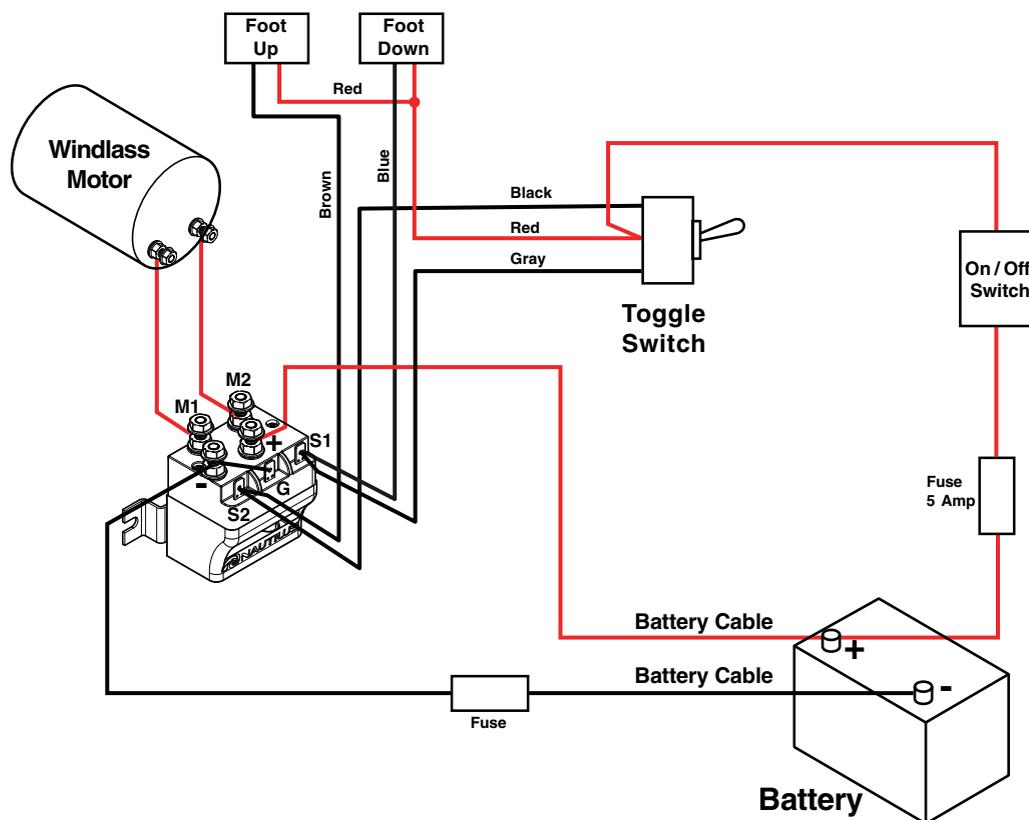


Figure 4-11

Control Switch Installation

Mount the windlass control switch in a location at the helm that allows the operator full helm control and a clear view of the windlass.

Route and secure the wiring harness to avoid damage to the harness.

Note: Multi-station installations may require additional special equipment and wiring considerations.

Connect the control switch leads to the relay as shown in **Figure 4-11** and as follows.

- **Blue (color) lead to terminal #3**
- **Green (color) lead to terminal #1**
- **Red (color) lead to terminal #5**



Section 5

OPERATION

Anchoring operations are an important part of safe seamanship and require the complete attention of the captain and crew to prevent personal injury or damage to the vessel.

GENERAL SAFETY PRECAUTIONS

WARNING! Entanglement and Impact Hazard. Ensure that there are no swimmers or divers near the vessel when casting out or hauling in the anchor.

WARNING! Entanglement Hazard. During windlass operation, keep all persons clear of the windlass and ensure that all body parts and clothing are kept clear of the anchor rode and windlass.

WARNING! Entanglement and Sudden Movement Hazard. Never operate the windlass from a remote station without a clear view of the windlass and having made sure that everyone is well away from the windlass.

WARNING! Impact and Sudden Movement Hazard. Before proceeding underway, ensure the winch clutch is fully engaged, and the anchor and rode are secured to the deck by a cleat or chainstopper.

NOTICE: Run the engine when raising or lowering the anchor to prevent a low battery condition.

NOTICE: Never use the anchor rode cleat or chainstopper or windlass as a mooring point.

NOTICE: When operating the windlass, do not switch directions without pausing for a minimum of 2 seconds.

NOTICE: Do not rely on the windlass to hold the anchor in the bow roller. Always secure the anchor rode to the deck by use of a cleat or chainstopper. As an added safety measure, a locking pin through the bow roller and the shank of the anchor can be used for securing the anchor.

CLUTCH OPERATION

The clutch connects the gypsy and the main shaft of the windlass. The clutch allows the manual release and connection of the gypsy to the main shaft in the event anchor rode slack is needed. The disengagement of the gypsy allows the gypsy to freewheel independently of the windlass geartrain.

A clutch winch handle is supplied to operate the clutch. Place the keyed end of the clutch handle into the gypsy cover and turn in the desired direction to engage or disengage the clutch.

The clutch is normally engaged (gypsy connected to main shaft).

- Turn clockwise: engages clutch
- Turn counterclockwise: disengages clutch

WARNING! Impact and Sudden Movement Hazard. Always remove the clutch handle from the windlass before operating the windlass.

CASTING THE ANCHOR

The anchor can be cast by using the electrical controls or manually.

When casting anchor, power out the rode partially after anchor set and allow the vessel to move away from the anchor stern way before fully casting the rode out. This practice will prevent the rode from becoming tangled on top of the anchor.

Electric Operation

1. Release any independent anchor locks.
2. Push the windlass control switch to the DOWN position to cast the anchor.
NOTICE: Allow slow movement at first to allow the anchor to clear the bow roller and enter the water.
3. Release the control switch to stop lowering.

Manual Operation

- To cast the anchor manually, the clutch must be disengaged, allowing the gypsy to spin free and letting the rope or chain fall into the water. *See Clutch Operation on page 13.*
- To slow the descent of the anchor, the handle must be firmly turned clockwise.

NOTICE: Once the anchor has been set and proper slack has been given, the anchor chain or rope must be secured to the deck using a cleat or chain lock. The windlass must not be used as the deck anchor point for the anchor rode. Vessels at anchor will snub on the rode and this can cause slippage or apply excessive loads that can damage the windlass.

Helpful Guidelines When Casting Out the Anchor and Anchoring

WARNING! Sinking Hazard. ALWAYS anchor from the bow; NEVER anchor from the stern.

- Head the boat into the wind or current over the spot where you want to lower the anchor.
- Stop the boat before lowering the anchor.
- Slowly lower the anchor until it hits bottom.
- Allow the boat to back away, keeping tension on the line.
- Release at least seven times as much line as the depth of the water.

- Secure the anchor line by a cleat or chainstopper.
- Occasionally check your position against a fixed point. If the anchor is dragging and the boat is drifting, reset the anchor.

HAULING IN THE ANCHOR

The anchor can be hauled in by using the electrical controls.

In some retrieval situations, it may be necessary to power the vessel toward the anchor for retrieval. Always proceed with extreme caution and never travel beyond or over the anchor.

WARNING! Impact and Sudden Movement Hazard. Always navigate cautiously under power up to the anchor while retrieving the anchor chain rode. Never use the windlass to pull the boat to the anchor.

WARNING! Impact and Sudden Movement Hazard. If the anchor is fouled on the sea bottom, do not use the windlass to free it, as the anchor rode may break or free suddenly. Where possible, use the anchor rode cleat or chainstopper to take the load, while using the boat's power to free the anchor.

Electric Operation

1. Turn on the engine.
2. Make sure the clutch is engaged and the clutch handle is removed.
3. Release the anchor rode from any independent locks or cleats.
4. Push the windlass control switch to the UP position to haul in the anchor. *NOTICE: If the windlass slows excessively or binds during haul-in, stop haul-in and investigate, and correct any problems before resuming.*
5. During haul-in, monitor the movement of the chain at all times and especially during the end of retrieval to avoid damage to the bow when the anchor surfaces and contacts the bow roller.
6. Release the control switch to stop haul-in when the anchor has set fully in the bow roller.

NOTICE: Once the anchor has been hauled in fully, the anchor chain or rope must be secured to the deck using a cleat or chain lock.

Helpful Guidelines When Hauling In the Anchor

- Start the engine(s).
- If necessary, move forward until enough tension is off the anchor line to allow for retrieval of the anchor. Avoid running over the anchor line; retrieve the line as you approach the anchor.
- Once the anchor line is straight up and down, lift the anchor from the bottom.
- If the anchor is stuck, attach the anchor line to the anchor cleat so that it is tight. The up-and-down motion of the bow from wave action may loosen the anchor from the bottom. If the anchor remains stuck, let out a few more feet of line and attach it to the anchor cleat. While keeping tension on the line, slowly maneuver the boat around the anchor to help loosen it. Avoid running over the anchor line.
- Always stow and secure the anchor and line before getting underway.
- Secure the anchor line by a cleat or chainstopper.



Section 6

MAINTENANCE

SAFETY PRECAUTIONS

The safety messages that follow have **WARNING** level hazards.

Entanglement Hazards:

- *Rotating or moving parts can entangle or sever body parts.*
- *Do not wear jewelry, unbuttoned cuffs, ties or loose-fitting clothing.*
- *Tie long hair back when working near moving or rotating parts such as the windlass or anchor.*
- *Keep hands, feet and tools away from all moving parts.*
- *Keep all guards in place when the windlass is operating.*
- *Use caution when working with anchor chains and lines so they do not become entangled with the propeller.*
- *Always disconnect electrical power from the windlass when performing any maintenance or service.*
- *Always secure the anchor rode and anchor to the deck cleat or lock before performing any service.*

Burn Hazard:

- *The windlass electric motor and gearbox can become hot to the touch during operation. Wear heat-resistant gloves when handling the motor or gearbox.*

PERIODIC MAINTENANCE

Perform the following maintenance procedures and checks a minimum of once per month or more frequently during periods of heavy use. Perform any corrective action needed immediately before proceeding with operation.

- Check for proper operation of complete system in all modes.
- Check the mounting nuts and hardware for damage and tightness.
- Check all electrical connections for damage and corrosion.
- Check all moving parts for sufficient lubrication. The bearings are pre-greased and do not require lubrication. The gearbox is sealed and does not require lubrication.
- Check all parts for corrosion and damage. Regularly wash down the exterior of your windlass with fresh, clean water.
- Check gypsy for wear and damage.
- Check anchor rode and any splices for wear and damage

Cleaning Stainless Steel

Stainless steel can oxidize over time. Cleaning and preventative maintenance of stainless steel is crucial in maintaining appearance and functionality. If the hardware is left unattended, it can corrode, causing the hardware to appear unsightly and cause structural integrity problems. When operating in salt water, the stainless steel hardware should be washed with mild soap and water after each use. Remove rust or corrosion promptly by cleaning the hardware using a high-quality stainless steel cleaner. Do not use any abrasive materials such as steel wool or sandpaper to clean the hardware. Do not use acids or bleach or any cleaners not intended for stainless steel, as types of cleaners can cause permanent damage.



Section 7

TROUBLESHOOTING

Typical troubleshooting symptoms and possible causes are listed below. Should you experience problems that are not listed, please contact your dealer or certified technician for assistance.

The windlass is an electrical device and typical problems that may arise are commonly caused by electrical-related problems. When troubleshooting electrical problems, always ensure the following:

- The minimum voltage must be between 11.5 and 13.5 volts. (Operation at constant low voltage will damage the motor.)
- Ensure that electrical cable meets the specifications. *See Electrical Connections on page 10.*
- Excessive current draw or voltage drop due to insufficient cable can cause poor or no performance.

Windlass has no power or does not move when UP / DOWN switches are pressed.

- Check DC battery power in circuit is sufficient.
- Check circuit breaker or reset.
- Ensure all wires and connections are secure and connected.
- Check for electrical shorts and opens in the circuit wiring and components.
- Check for mechanical failure of windlass or excessive binding.

The windlass appears to work normally, but does not retrieve the anchor.

- Check DC battery power in circuit is sufficient.
- Ensure all wires and connections are secure and connected.
- Check for mechanical failure of windlass or excessive binding.
- Ensure the gypsy is engaged and/or not slipping.
- Anchor rode is jammed in the anchor locker, not allowing haul-in
- Anchor rode is tied off to a secure fixture in anchor locker, i.e., eye bolt

The windlass appears to work normally, but does not cast out the anchor.

- Check DC battery power in circuit is sufficient.
- Ensure all wires and connections are secure and connected.
- Check for mechanical failure of windlass or excessive binding.
- Anchor rode is jammed in the anchor locker, not allowing cast-out
- Anchor rode is connected to deck cleat or lock

The windlass appears to work normally, but casts out the anchor when the windlass is not in use.

- Ensure the gypsy is engaged and/or not slipping



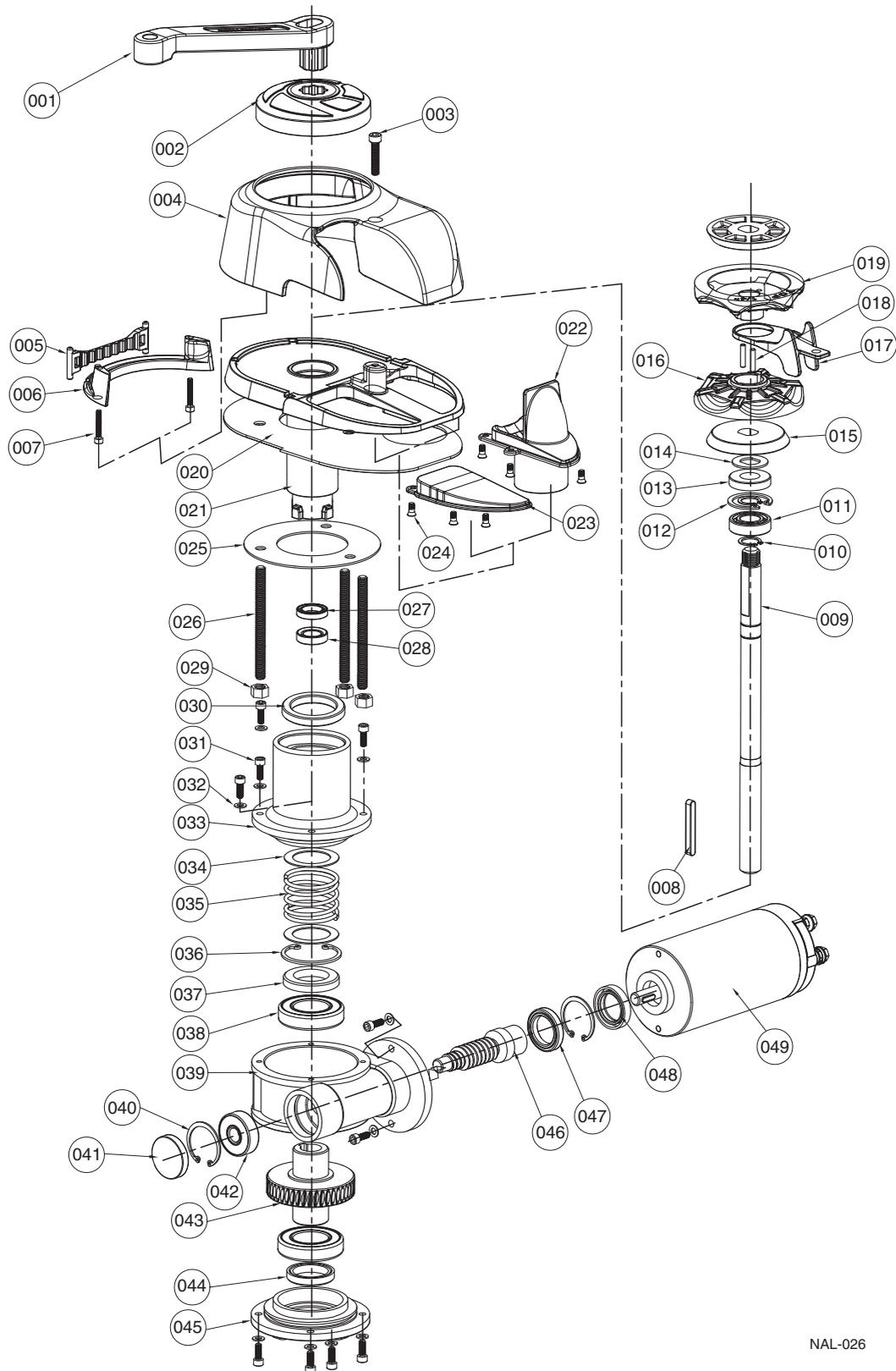
Section 8

DIAGRAMS

Section 8



PARTS DIAGRAM - WINDLASS



NAL-026

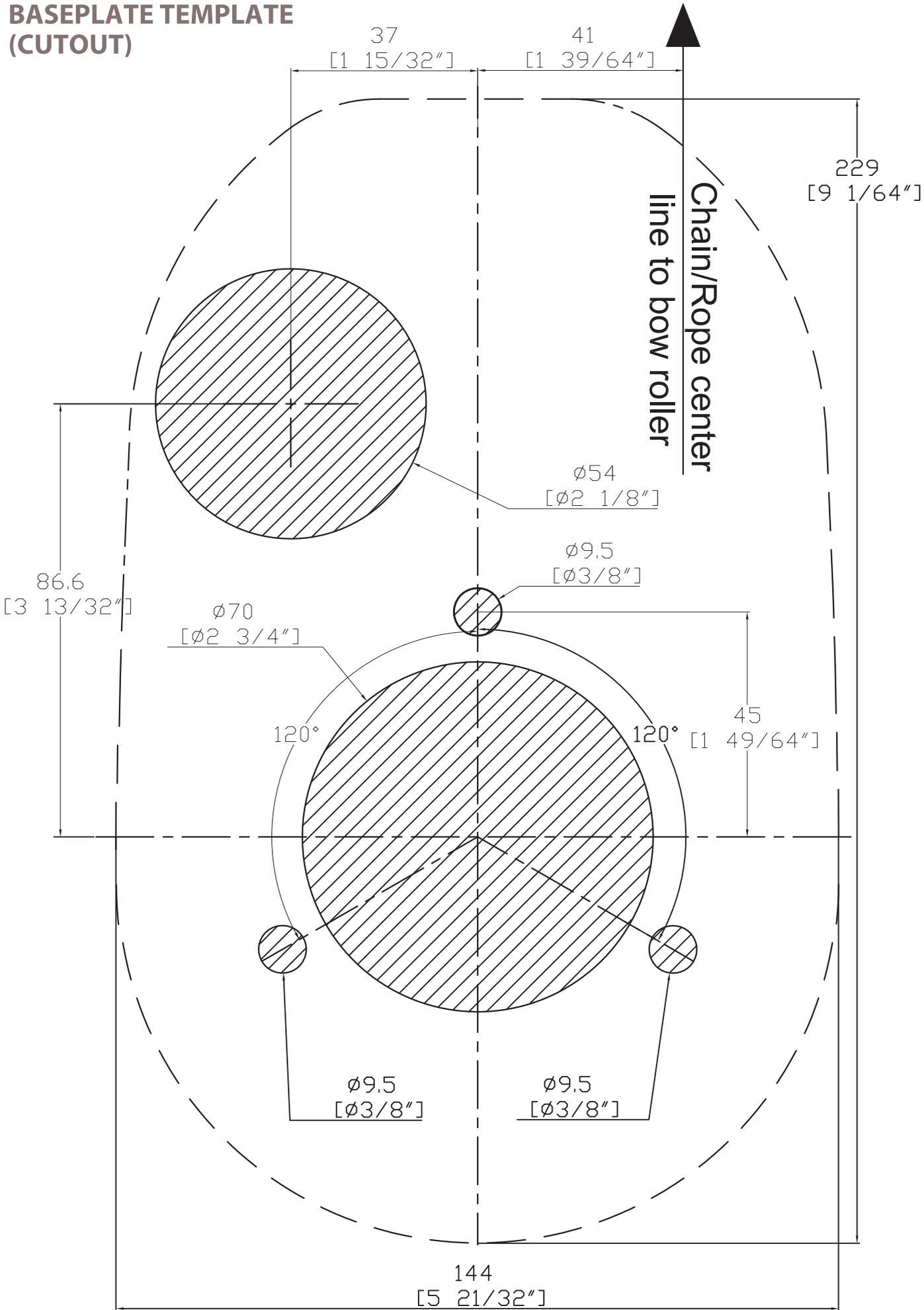
Figure 8-1

Item No.	Description	Part No.
1	Clutch Handle	NAL-512-007-001
2	Chainwheel Cap	NAL-512-007-002
3	Cap Allen Screw (M6X1P)	NAL-512-007-003
4	Windlass Cover	NAL-512-007-004
5	Pressure Band	NAL-512-007-005
6	Cage	NAL-512-007-006
7	Cage Allen Screw (M40X0.7P)	NAL-512-007-007
8	Key	NAL-512-007-008
9	Vertical Shaft	NAL-512-007-009
10	Snap Ring	NAL-512-007-010
11	Bearing (Ø35XØ17X10mm)	NAL-512-007-011
12	Snap Ring	NAL-512-007-012
13	Seal (Ø35XØ16X7mm)	NAL-512-007-013
14	D-Washer	NAL-512-007-014
15	Cone Clutch	NAL-512-007-015
16	Chainwheel - Bottom	NAL-512-007-016
17	Rope Stripper	NAL-512-007-017
18	Chainwheel Cap screw (M4X0.7P)	NAL-512-007-018
19	Chainwheel - Top	NAL-512-007-019
20	Translucent Gasket	NAL-512-007-020
21	Windlass Base	NAL-512-007-021
22	Hawse Liner	NAL-512-007-022
23	Entrance Liner	NAL-512-007-023
24	Countersunk Screws (#8-32T)	NAL-512-007-024
25	Backing Plate	NAL-512-007-025

Item No.	Description	Part No.
26	Mounting Stude (M8X1.25P)	NAL-512-007-026
27	Lower Bearing (Ø26XØ17X5mm)	NAL-512-007-027
28	Lower Seal (Ø26XØ17X7mm)	NAL-512-007-028
29	Mounting Nuts	NAL-512-007-029
30	Seal	NAL-512-007-030
31	Upper Flange Screw (M5X0.8P)	NAL-512-007-031
32	Upper Flange Washers (Ø10XØ5.5X1mm)	NAL-512-007-032
33	Gearbox Connector Flange	NAL-512-007-033
34	Washer	NAL-512-007-034
35	Spring	NAL-512-007-035
36	Snap Ring	NAL-512-007-036
37	Seal (Ø30XØ47X7mm)	NAL-512-007-037
38	Bearing (Ø55XØ30X13mm)	NAL-512-007-038
39	Gearbox Housing	NAL-512-007-039
40	Snap Ring	NAL-512-007-040
41	Worm Cap	NAL-512-007-041
42	Bearing (Ø37XØ12X12mm)	NAL-512-007-042
43	Worm Gear	NAL-512-007-043
44	Seal (Ø30XØ40X7mm)	NAL-512-007-044
45	Lower Flange	NAL-512-007-045
46	Worm Shaft	NAL-512-007-046
47	Bearing (Ø37XØ25X7mm)	NAL-512-007-047
48	Seal (Ø37XØ24.5X7mm)	NAL-512-007-048
49	Motor	NAL-512-007-049

This Page Intentionally Left Blank

BASEPLATE TEMPLATE (CUTOUT)



This Page Intentionally Left Blank



Section 9

WARRANTY

LIMITED WARRANTY AND KEY TERMS OF SUPPLY BY NAUTILUS IN USA, AND BY MARINE TOWN IN OTHER COUNTRIES

Nautilus provides a three year limited warranty on Nautilus Anchoring Systems for pleasure boat usage and a one year limited warranty for those systems used on commercial or charter vessels, subject to the conditions, limitations and exceptions listed below. Any product which proves to be defective in normal usage during the three-year period will be repaired or, at Nautilus' option, replaced.

EXCEPTIONS

In the case of any of the following products or parts of products, coverage under this Warranty is limited to a period of one year from the date of delivery from Nautilus.

- Electric motors and associated electrical equipment
- Electronic products
- Anchor and roller
- Hardware accessories
- Products used in "Grand Prix" racing application
- Products used in commercial or charter applications

CONDITIONS AND LIMITATIONS

- I. Nautilus' liability shall be limited to the repair or replacement of any parts of the product which are defective in materials or workmanship.
- II. Responsibility for the selection of products appropriate for the use intended by the Agents shall rest solely with the Agents, and Nautilus accepts no responsibility for any such selection.
- III. Nautilus shall not be liable in any way for product failure, or any resulting loss or damage that arises from:
 - a. Use of a product in an application for which it was not designed or intended;
 - b. Corrosion, ultra violet degradation or wear and tear;
 - c. A failure to service or maintain the product in accordance with Nautilus' recommendations;
 - d. Faulty or deficient installation of the product;
 - e. Any modification or alteration of the product;

Section 9



- f. Conditions that exceed the product's performance specification or safe working loads.
 - g. Abuse
- IV. Product subject to a warranty claim must be approved by Nautilus.
- V. This warranty does not cover any incidental costs incurred for the investigation, removal, carriage, and transport or installation.
- VI. Nautilus' products are intended for use only in the marine environment. Buyers intending to use them for any other purpose should seek independent professional advice as to their suitability. Nautilus accepts no liability arising from such other use.

LIABILITY

Nautilus' 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) Nautilus shall not be liable for:

- Any loss of un-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

SEVERANCE CLAUSE

If any clause of this warranty is held by any court or other competent authority to be invalid or unenforceable in whole or in part, the validity of the remaining clauses of this warranty and the remainder of the clause in question shall not be affected.



