NABRICO

DF-629 BARGE CONNECTING WINCH Owner's Manual

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NABRICO

DF-629-40-HL-6 BARGE CONNECTING MANUAL WINCH
Owner's Manual

CONTENTS

NABRICO
1250 GATEWAY DRIVE
GALLATIN, TN 37066
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SAFETY INFORMATION

CAUTION

Prior to installing and operating the winch, please read this manual thoroughly and carefully. Keep this manual and all other instructions accessible at all times.

The Occupational Safety and Health Act of 1970 states that it is the employer's responsibility to provide a workplace free of hazard. To this end, all equipment should be installed, operated and maintained in compliance with applicable trade, industrial, federal, state and local regulations. It is the equipment owner's responsibility to obtain copies of these regulations and to determine the suitability of the equipment for the equipment owner's intended use.

Although this manual will help you become familiar with the basic operation of the winch, it is by no means a substitute for proper training by your company in the safe use of winches, barge rigging and other marine equipment. This manual suggests methods of operation, but ultimately, the owners and operators of the equipment are responsible for determining whether a particular method of operation is safe and appropriate for the equipment being operated. Only individuals trained in the proper use of winches, barge rigging and other marine equipment should operate these winches.

The typical operating environment of barge and towboat winches often includes very high forces, and the potential hazards associated with these high forces should not be underestimated. Improper installation or incorrect or unsafe use could result in injury or death to persons or cause equipment failure or damage.

Recommended Information for Safe Operation:

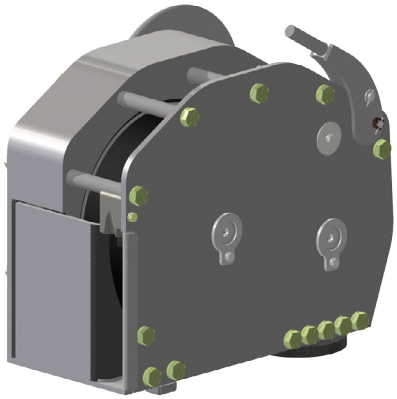
CAUTION

- Check lubrication before use.
- Do not apply tension to the wire until the wire rope button has been fully installed in the winch drum.
- Do not operate the equipment unless you have a firm stance on a non-slippery surface.
- Do not wrap the wire rope around the load. This will damage the wire rope and could cause the load to escape. Rigging connectors are strongly recommended to secure the wire rope to the load.
- Keep fingers, loose clothing and any foreign objects away while operating the equipment.
- Do not divert attention away while operating the equipment. Stay alert to the possibility of accidents and try to prevent them from happening.
- Always remain to the side of the equipment while in operation.
- Never operate the equipment from the front or when bystanders are in front of it.
- Operators and bystanders should stay clear of any load and the wire rope while the equipment is operating.
- Avoid shock loads by starting and stopping the equipment smoothly. Shock loads can over load the equipment which may cause damage.
- Under no circumstances should any equipment be used to move, raise or lower a person(s) or equipment.

NOTICE
Inspect the equipment carefully at least once a month for loose fasteners, worn gears and pawls, cracked welds and other damaged parts. If any worn, cracked or damaged parts are found, stop use immediately and remove equipment from service until all appropriate repairs are completely made.

1.1 GENERAL INFORMATION

DF-629 MANUAL WINCH



Features & Specifications

- Large D over D ratio 20:1 ANSI/ASME minimum is 15:1 for pulling and 18:1 for lifting.
- Hard chrome plated shafts, SS hardware and galvanized winch body.
- Patent pending, large, single layer drum.
- Tapered drum design eliminates multi-layer spooling causing crushing and inconsistent wire tensioning.
- Fully enclosed drivetrain to help protect the operator, wire and gearing.
- Simple operation, wire pulls out easily, takes up very little deck space.
- Requires almost no retightening with only one layer of wire.
- Open design drum allows for 100 percent wire inspection and no damaged wire overfilling the drum cavity.
- Patented drum and high load release dog with automatic brake make this winch easy to use and appreciate.
- Patented/Patent Pending (Publication # US 20140124719 A1)

MODEL NO.	DOG HOLDING	LINE PULL - RATCHET	CABLE CAPACITY (FT.)		WEIGHT
	LBS.	LBS.	7/8"	1"	LBS.
DF-629	80,000	15,000	30	25	1177

nabrico-marine.com 615.442.1300

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1.2 INSTALLATION OF EQUIPMENT

NOTICE
It is the responsibility of the customer, not the winch manufacturer, to properly locate and install the winch with regard to the safety of those operating the machinery.

CAUTION
Install the equipment in an area where there is ample room to operate the unit without the operator becoming entangled in the cable, lines, chains, winch mechanisms or other nearby equipment.

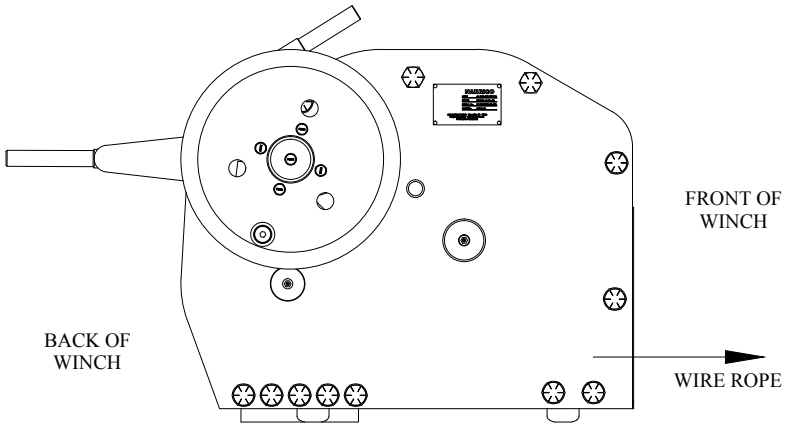
1.2.1 All winches must be installed on a flat, rigid and non-slippery surface. Deck and structure must be strong enough to withstand the weight and holding capacity of the winch and ultimate capacity of the wire, and the forces likely to occur during operation. A qualified professional should inspect or design the foundation to insure that it will provide adequate support.

1.2.2 Locate the winch in a suitable area free of traffic and obstacles. The winch should also be visible during entire operation. Keep in mind that the winch needs to be accessible for proper lubrication, maintenance and operation.

1.2.3 Mounting direction must be in line with the desired direction of cable pull. The front of the winch must face in the direction from which the cable is reeled (see fig. #1). The winch drum, when properly used, will reel the wire rope onto the bottom of the drum.

1.2.3.1 If the direction of the wire rope is not indicated on the winch, determine as follows: Engage the locking pawl and disengage the brake system. Rotate the winch drum using either the handwheel or hand ratchet. The only allowable direction for the drum to rotate is to reel in the wire rope onto the drum at the bottom.

FIGURE #1 - MOUNTING POSITION



1.2.4 Check to ensure that there is enough clearance between winch drum and mounting surface. Check to make sure there is enough clearance for proper operation of the hand ratchet and ratchet extension. With the ratchet extension on the hand ratchet, rotate the handle back and forth checking for clearance issues.

1.2.5 Using sufficient tack welds, secure the winch's mounting fixture to the deck.

1.2.6 Next apply a seal weld to the mounting fixture to permanently secure it to the deck. The seal weld will prevent corrosion from occurring between the mounting fixture and mounting surface.

1.2.7 Inspect the winch immediately following installation. This inspection will give a good starting record of the winch condition so that future inspections can be compared.

CAUTION
Remember that the weld has to be strong enough to withstand loads equal to or greater than the capacity of the winch and ultimate capacity of the wire.

1.3 INSTALLATION OF WIRE ROPE

1.3.1 Rotate the drum of the winch so that the rope attachment slot and socket insert are easily accessed.

1.3.2 Using a standard socket wrench with an extension, remove both the socket insert and wire guide capture block (see fig. #2a). Set aside both parts for later use.

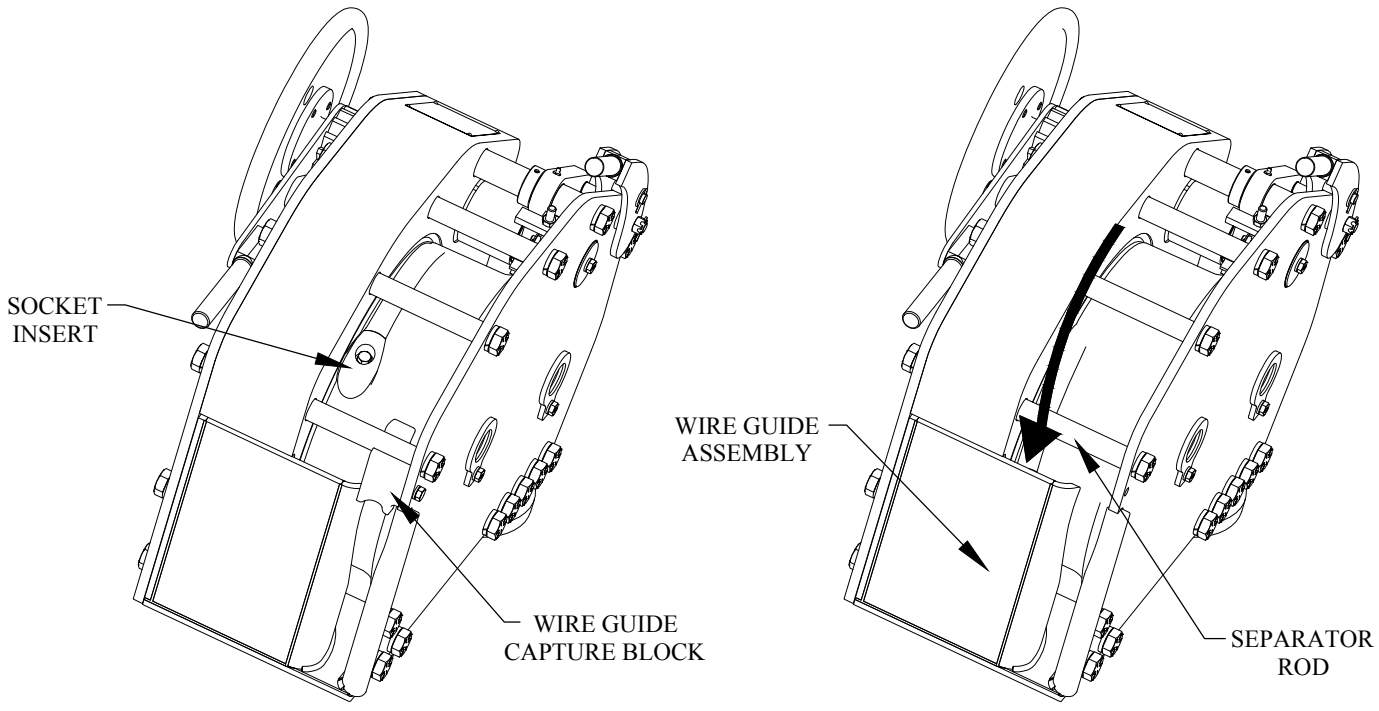
1.3.3 Rotate the winch drum so that the rope connection slot is at the front of the winch directly behind the wire guide assembly.

1.3.4 Install the rope by inserting the button end between the winch separator rod and the top of the wire guide assembly (see fig. #2b). Place the rope button into the connection slot and rotate the winch drum so that the rope is reeled onto the bottom of the drum.

CAUTION
Remember to always wear the proper protective equipment when handling the wire rope.

1.3.5 Continue to rotate the winch drum until you are back to the starting position where the socket insert was removed.

FIGURE #2 - INSTALLING THE WIRE ROPE



a) Drum Initial Position

b) Rope Connection

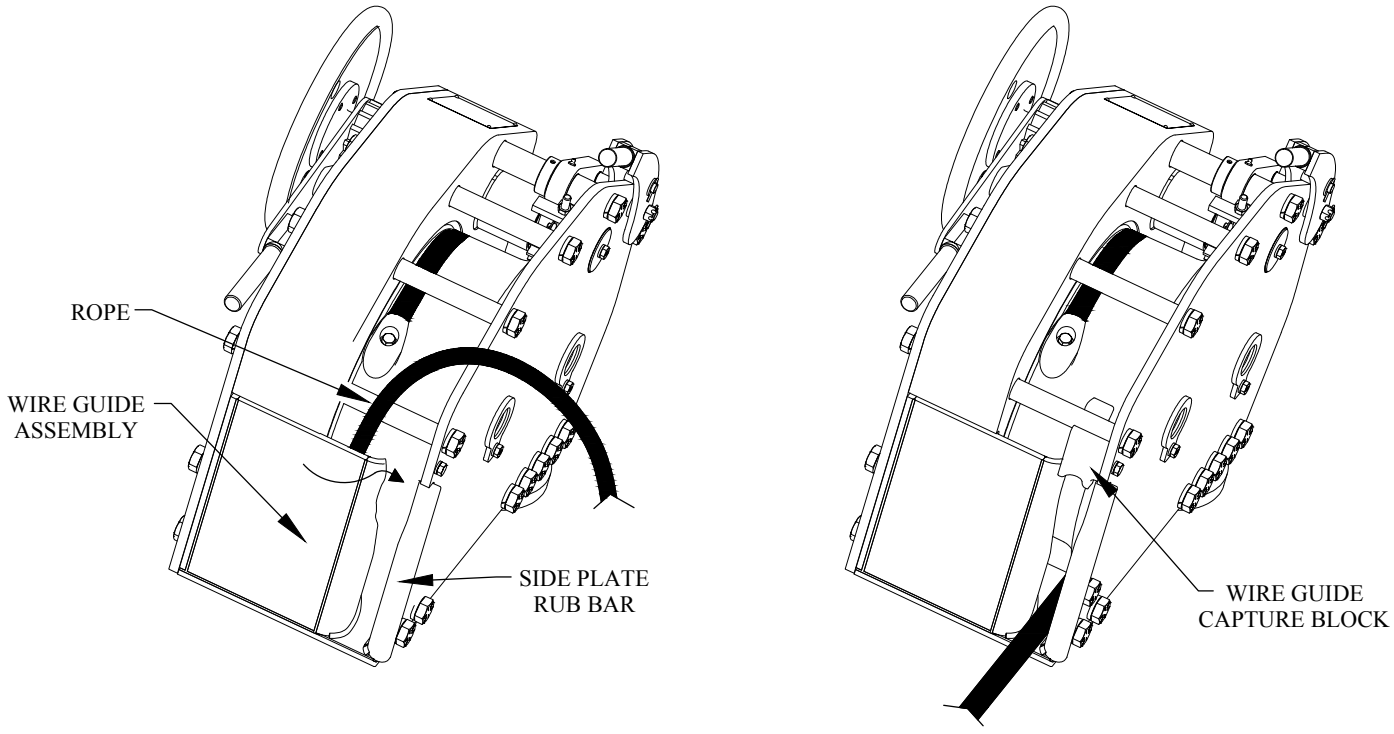
1.3.6 If using 1" rope with standard button end attachment, replace the hex bolt only and not the socket insert. The bolt will prevent the rope button from escaping from the drum connection slot. If using 1" rope with a half button or a smaller sized rope, install the socket insert.

1.3.7 Guide the free end of the rope over to the side and around the wire guide assembly so that the rope is positioned between the guide and winch side plate rub bar (see fig. #3a).

1.3.8 Install the wire guide capture block (see fig. #3b).

1.3.9 Rotate the winch drum until the remainder of the desired rope length is installed onto the winch.

FIGURE #3 - INSTALLING THE WIRE ROPE



a) Rope Threading

b) Rope Final Position

2.1 OPERATING THE WINCH

The DF-629 Barge Connecting Manual Winch is operated by using either the hand wheel or hand ratchet system. The winch is also equipped with a band braking system and locking pawl. The following operating instructions will help you become familiar with these basic operating components of the winch. These instructions are not a substitute for proper training by your company in the safe use of winches, barge rigging and other marine equipment.

2.1.1 Handwheel Operation

2.1.1.1 Normally the winch is shipped with the handwheel attached to the unit. If not attached, bolts are included for mounting.

2.1.1.2 Use the handwheel to turn the winch drum in either a clockwise or counter-clockwise motion. The drum rotation, which is the same as the handwheel rotation, will spool wire rope onto or off the bottom of the winch drum. If the winch drum will not rotate freely refer to operation instructions for the brake and locking pawl systems to ensure that nothing is locked down.

WARNING
Do not use the handwheel as a brake or anchor for a load.

2.1.1.3 The handwheel assembly is equipped with a speed handle that can be used for faster operation.

2.1.1.4 When operating the winch, always maintain tension on the wire rope to keep it tightly and evenly wound on the winch drum.

NOTICE
Breaking-in the winch occurs during the first 10 hours of normal operation. During break-in, mating surfaces become polished and clearances increase. This is desired for efficient operation of the bearings and gears.

2.1.2 Hand Ratchet Operation

2.1.2.1 The winch is equipped with a gravity operated hand ratchet system for use when additional wire rope tightening is needed. The hand ratchet is located on the same side as the hand wheel and should be in the rest position when not being used.

2.1.2.2 To use the hand ratchet, lift the ratchet handle off the ratchet rest (see fig. #4). This will allow the ratchet pawl to engage thus creating a simple lever that can be used to apply tension to the wire rope. With the hand ratchet in use, the only allowable direction the winch drum will turn is in a motion that reels the wire rope onto the winch drum.

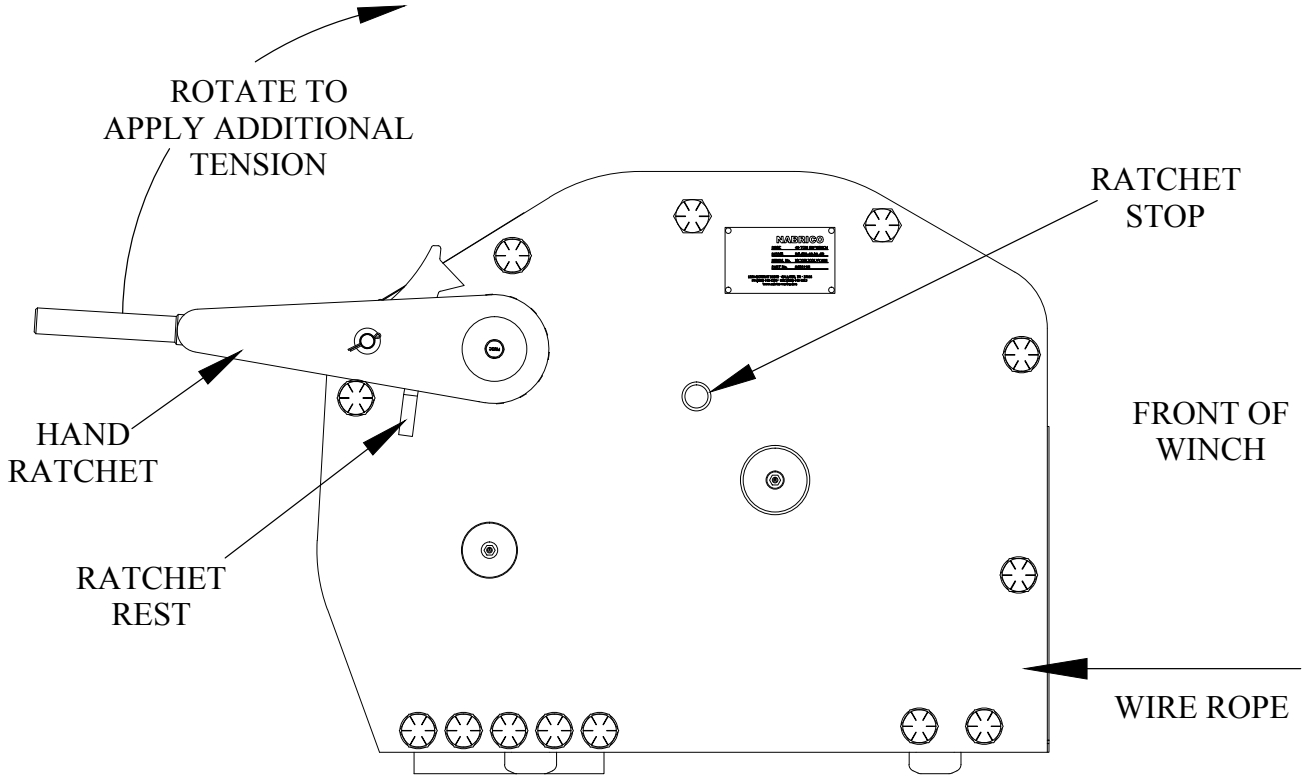
WARNING
Do not engage the hand ratchet while the winch gears are turning. Do not stand on or within the travel area of the hand ratchet. Serious injury or even death may result.

2.1.2.3 Rotate the ratchet handle around to the front of the winch and then reverse direction which will allow the ratchet pawl to disengage from its gear. The hand ratchet can now be rotated back to a desirable location to repeat the tightening until the proper wire rope tension is achieved.

2.1.2.4 The hand ratchet is designed to be equipped with a ratchet extension pipe that can be used to apply an even greater amount of tension to the wire rope. The extension pipe fits onto the ratchet handle but should always be kept off and secure when not being used.

2.1.2.5 Upon completion of using the hand ratchet, return it to its resting position with the handle positioned to the back of the winch.

FIGURE #4 - RATCHET HANDLE MECHANISM



2.1.3 Locking Pawl and Band Brake Operation

The DF-629 manual winch uses a combination locking pawl and band brake assembly to secure the wire rope that is either being loaded or unloaded under tension. The locking pawl prevents the load from releasing while tension is being applied to the wire rope. The band brake is used to control the release of the rope under tension.

2.1.3.1 To engage the locking pawl, position the pawl release handle in the forward working position. While the handle is in this position the locking pawl is free to interact with the pawl gear (see fig. #5a). This position of the handle also disengages the band brake.

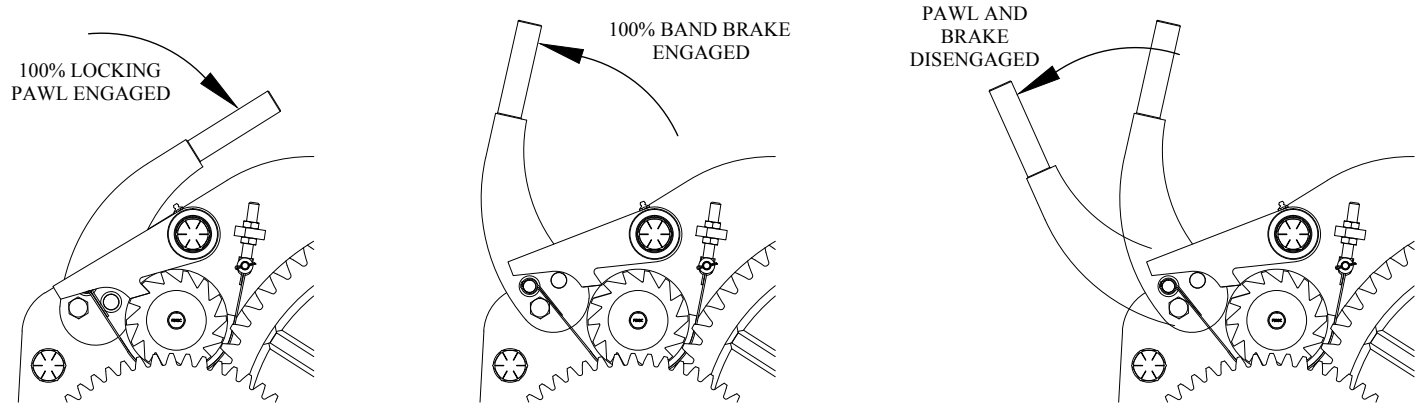
2.1.3.2 To disengage the locking pawl, pull the pawl release handle to the back working position (see fig. #5b). As the locking pawl is lifted out of the pawl gear, the release handle will engage the band brake.

2.1.3.3 Using the pawl release handle, the operator can now safely control the wire rope pay out speed and relieve tension.

2.1.3.4 The pawl release handle can also be positioned so that both the locking pawl and band brake are completely disengaged simultaneously. This is accomplished by pulling the release handle to the absolute back position (see fig. #5c).

CAUTION
The band brake is not a substitute for securing a load. It is to only be used to assist the operator in disengaging the locking pawl and controlling wire rope pay out speeds.

FIGURE #5 - LOCKING PAWL MECHANISM



a) Forward Working Position

b) Back Working Position

c) Disengage All Position

3.1 EQUIPMENT INSPECTION

NOTICE
An inspection program should be started as soon as any equipment is put into service. A qualified person should be appointed the responsibility of regularly inspecting the equipment. Written records of inspections are recommended by the manufacturer.

3.1.1 Frequent Inspection

3.1.1.1 Visually inspect the equipment before each use. Check the equipment for cracks, bending, wear, rust, corrosion and any other damage. If any problems are discovered, stop use immediately and remove the equipment from service until all appropriate repairs are completely performed.

3.1.1.2 **ENSURE THAT EQUIPMENT IS PROPERLY LUBRICATED.**

3.1.1.3 Check to ensure that the foundation is in good condition. Make sure that mounting fasteners and other hardware are tightened securely.

3.1.1.4 Ensure that the wire rope is installed correctly and anchored securely to the drum. Also, check to make sure the wire rope is in good condition.

3.1.2 Periodic Inspection

3.1.2.1 Periodic inspections should occur every 6 months, whenever equipment is returned to service from storage, more frequently if an inspection discovers any damage or poor operation, or in any case where the winch may have been over loaded or operationally abused.

3.1.2.2 Visually inspect the equipment checking the finish for wear, flaking or other damage as listed in the frequent inspection plan. Disassembly is recommended in order to properly inspect individual components.

3.1.2.3 Check the winch drum by moving it with your hands. Check for excessive movement that may be the result of worn or loose gears, bearings or shafts. Some play is normal while excessive play may be the result of overloading.

3.1.3 Wire Rope Inspection

3.1.3.1 Wire rope inspection should be conducted according to the manufacturer's recommendations or accepted industry standards.

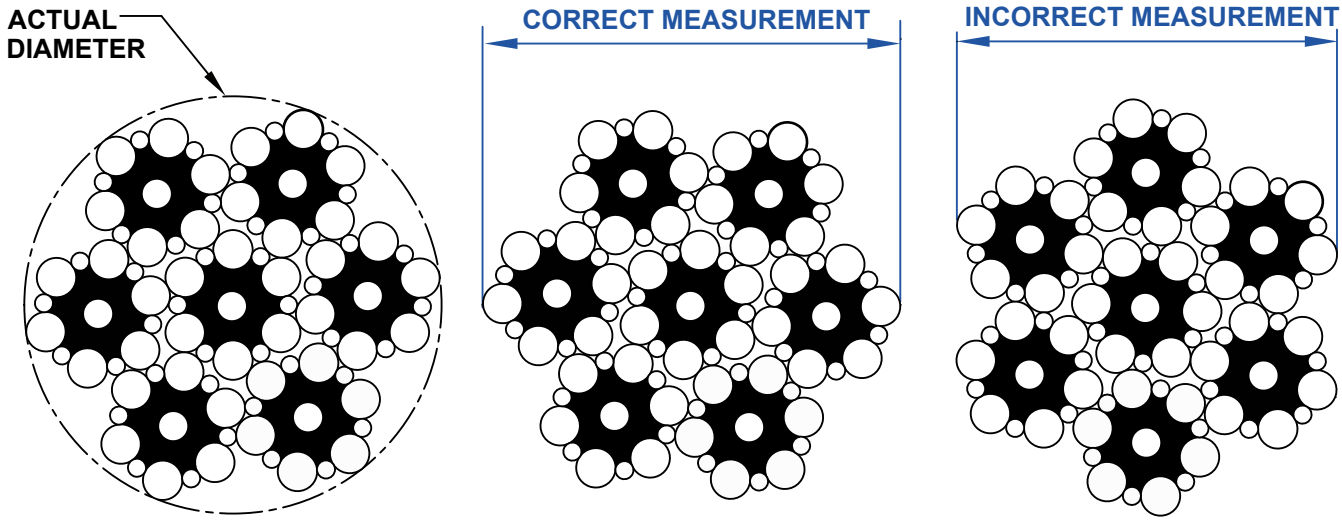
CAUTION
Remember to always wear the proper protective equipment when handling the wire rope.

3.1.3.2 Inspect the entire length of wire cable for bent or crushed areas, broken or cut wires, corrosion and other damage. If any defect or damage is found the cable must be replaced.

3.1.3.3 Inspect end connections and fittings for corrosion, kinking, crushing or other damage. If any corrosion or damage is found the cable must be replaced.

3.1.3.4 Check the wire rope diameter for signs of decreased area (see fig. #6). Diameter decrease may be signs of wear and internal degradation in the wire rope. Generally, wire ropes are manufactured larger than nominal diameter. When placed in service for the first time, diameter can reduce slightly. Minimum diameter specifications can be obtained from the rope manufacturer.

FIGURE #6 - WIRE ROPE DIAMETER



THE WIRE ROPE MUST BE REPLACED IF THE DIAMETER MEASURES LESS THAN THE MINIMUM DIAMETER GIVEN BY THE ROPE MANUFACTURER

EXAMPLE - A $\frac{3}{4}$" WIRE ROPE HAS A MINIMUM DIAMETER OF $\frac{45}{64}$" (0.7031")

3.2 EQUIPMENT LUBRICATION

3.2.1 All grease fittings and external gearing should be lubricated using NABRICO's suggested lubricants or similar.

3.2.2 Drive shaft and drum shaft grease fittings should be lubricated at least once a month under normal conditions and at least once a day under adverse conditions. Lubricate while gears are rotating slowly.

3.2.3 Drive gear teeth should be coated at least once a month. Application with an aerosol can is recommended for uniform coverage. Graphite or other dry type lubricant should be used instead of gear grease when the winch is subjected to large amounts of foreign material such as coal dust. Always keep gear teeth as free of foreign material as possible.

RECOMMENDED LUBRICANT FOR USE WITH NABRICO DECK MACHINERY	
HYDRAULIC OIL (OPEN LOOP)	MOBIL DTE-26M
SPUR, HELICAL GEARS	MOBIL GEAR632
PLANETARY REDUCERS	MOBILUBE HD 80W 90
ALL WORM GEARS (INCLUDING CONE DRIVE)	ENDURATEX EP 220 MIL-L-15019C SYMBOL 6135 MOBIL SCH-634 SYNTHETIC LUBRICANT
OPEN GEARING (SPRAY CAN)	MOBILTAC E LUBRIPLATE OPEN GEAR SHIELDING
GREASE FITTINGS	MOBILAX EP #2 LUBRIPLATE MARINE LUBE "A"
PRESERVATIVE TREATMENT	MOBILARMA 524
Note: Lubricant manufacturers shown are not exclusive recommendations. Consult your lubricant source for more detailed information about oil selection.	

3.3 CLEANING AND STORAGE

3.3.1 Cleaning the Equipment

3.3.1.1 The equipment should be regularly cleaned to remove dirt and to help prevent rust and corrosion.

3.3.1.2 When cleaning, be sure to leave a light film of oil on all surfaces to protect them against the elements of nature. Wipe off excessive amounts of oil to avoid the accumulation of dirt.

3.3.1.3 Remove all unnecessary objects from the area surrounding the equipment to prevent hazardous situations from occurring.

3.3.2 Storing the Equipment

3.3.2.1 Lubricate the equipment as necessary to help prevent rust and corrosion during storage. Add a rust preventive for long term storage.

3.3.2.2 Seal the equipment in plastic, if possible, to help prevent rust, corrosion and other damage.

3.3.2.3 Store the equipment upright in a cool clean place away from corrosive chemicals and moisture.

3.3.2.4 Rotate the drum periodically to keep bearing and gear surfaces from becoming lacquered.

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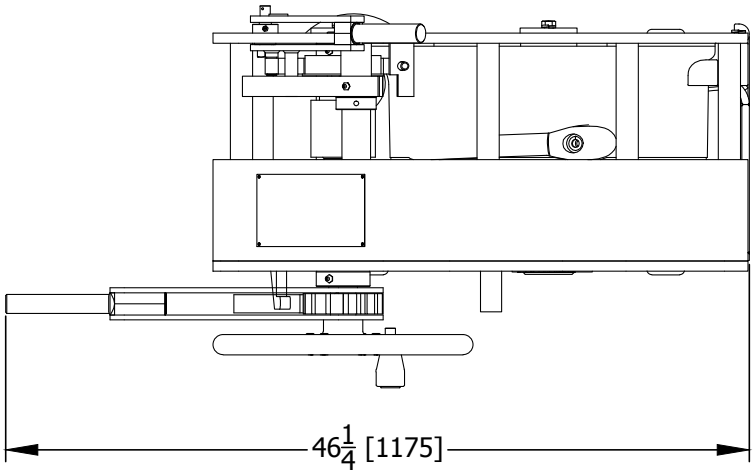
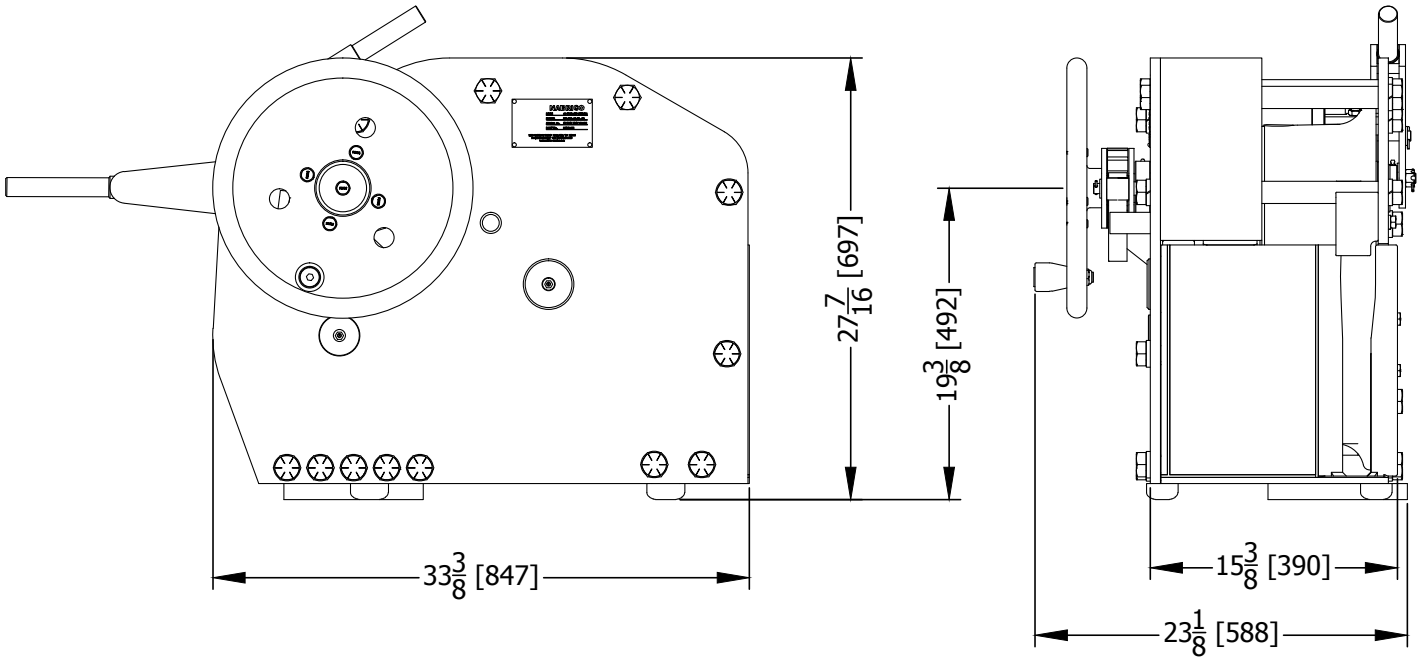
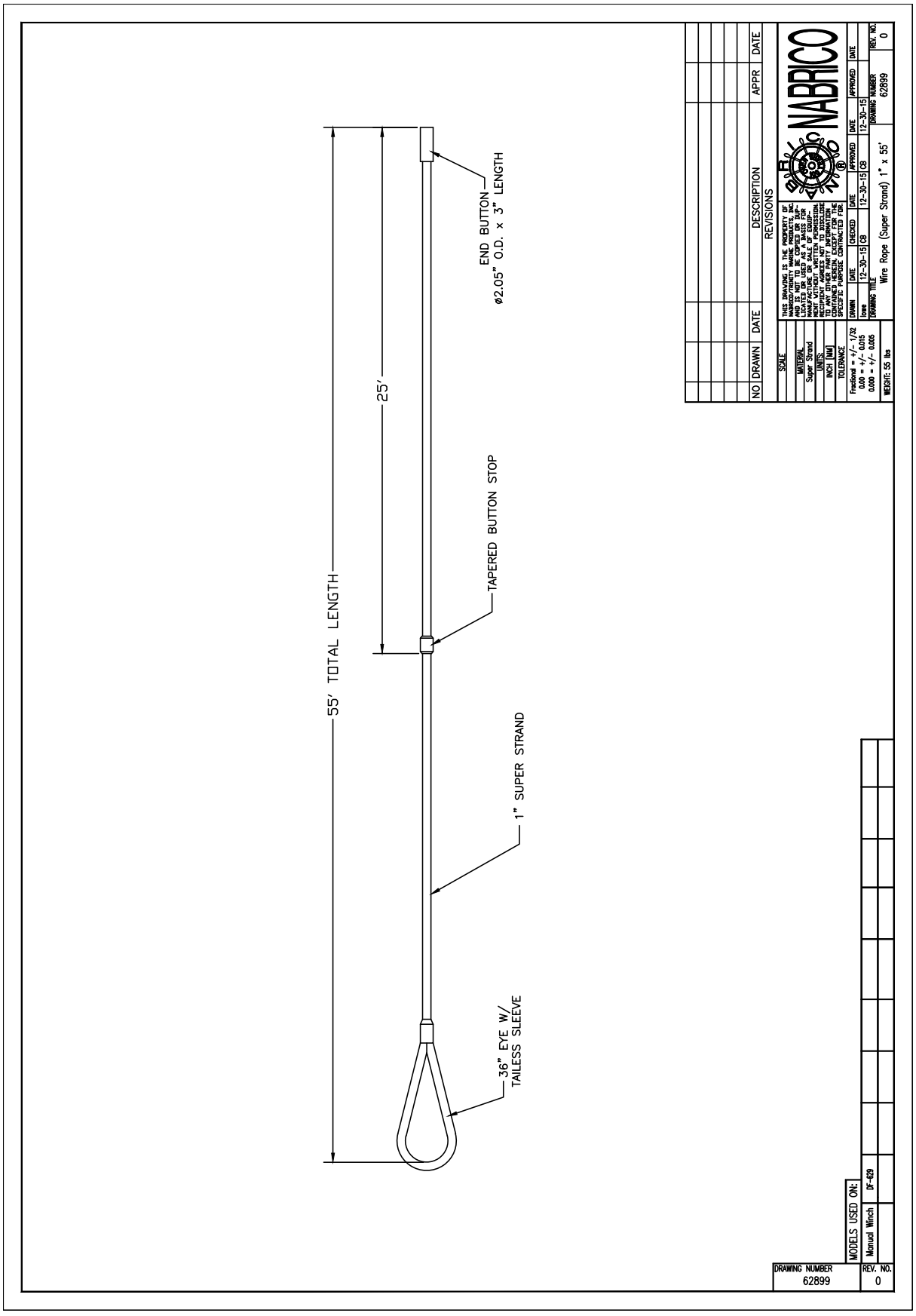
A.1 DIMENSIONAL

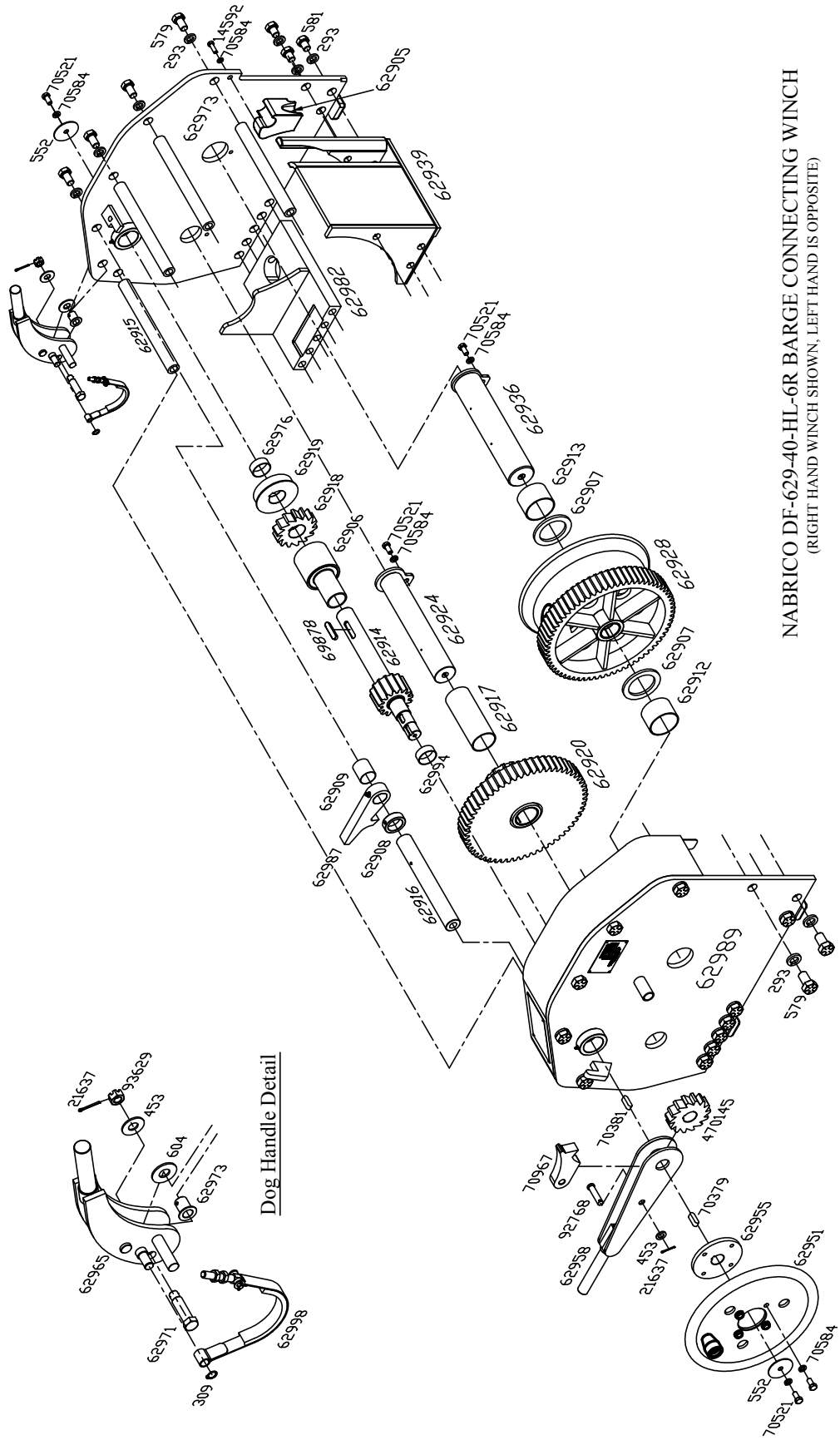




A.2 EQUIPPED WIRE ROPE



A.3 PARTS BREAKDOWN



A.4 PARTS LIST

DF-629-40-HL Manual Winch Parts List		
PART DESCRIPTION	**QNT'Y**	**PART #'s**
Drive Shaft Spacer	1	62906
Drum Washer	2	62907
Locking Pawl Collar	1	62908
Locking Pawl Spacer	1	62909
Drum Spacer (Gear Side)	1	62912
Drum Side Spacer	1	62913
Drive Shaft w/ Pinion	1	62914
Separator Rod	4	62915
Locking Pawl Post	1	62916
Intermediate Shaft Spacer	1	62917
Locking Pawl Gear	1	62918
Friction Brake Drum	1	62919
Intermediate Gear Assembly	1	62920
Intermediate Shaft Assembly	1	62924
Drum Shaft Assembly	1	62936
Handwheel Assembly	1	62951
Handwheel Hub	1	62955
Locking Pawl	1	62987
Brake Band Assembly	1	62998
Key 14 x 9 x 63mm	1	69878
Key 10 x 8 x 35mm	1	70379
Key 12 x 8 x 32mm	1	70381
Ratchet Pawl	1	70967
Ratchet Pawl Gear	1	470145
Miscellaneous Parts Not Shown in Parts Breakdown Drawing		
Button Assembly	1	90080
BUSHINGS	**QNT'Y**	**PART #'s**
Intermediate Gear Bushing	1	62923
Drum Bushing	2	62932
Drive Shaft Bushing (Pawl Side)	1	62976
Locking Pawl Handle Bushing	1	62978
Locking Pawl Bushing	1	62986
Drive Shaft Bushing (Handwheel Side)	1	62994

HAND SPECIFIC PARTS	**QNT'Y**	**PART #'s**
Right Hand Winch		
Wire Guide Capture Block	1	62905
Drum Assembly	1	62928
Wire Guide Assembly	1	62939
Hand Ratchet Assembly	1	62958
Pawl Handle Assembly	1	62965
Side Ass'y (Pawl Side)	1	62973
Button Strap Assembly	1	62982
Side Ass'y (Handwheel Side)	1	62989
Left Hand Winch		
Drum Assembly	1	62927
Wire Guide Assembly	1	62938
Hand Ratchet Assembly	1	62957
Pawl Handle Assembly	1	62964
Side Ass'y (Pawl Side)	1	62972
Button Strap Assembly	1	62949
Side Ass'y (Handwheel Side)	1	62988
Wire Guide Capture Block	1	62999
HARDWARE	**QNT'Y**	**PART #'s**
Lock Washer 1"	24	293
Ext. Snap Ring 16mm	1	309
Flat Washer 5/8"	2	453
Washer 13mm x 75mm x 3mm	2	552
HH Bolt 1-8NC x 1-3/4"	20	579
HH Bolt 1-8NC x 1-1/4"	3	581
Flat Washer 3/4" (brass)	1	604
HH Bolt 1/2-13NC x 1-1/2"	1	14592
Cotter Pin 1/8" x 1-1/4"	2	21637
Locking Pawl Handle Bolt	1	62971
HH Bolt 1/2-13NC x 1"	8	70521
Lock Washer 1/2"	9	70584
Clevis Pin 5/8" x 2-1/2"	1	92768
Slotted Nut 5/8-11NC (brass)	1	93629

NOTES

PRODUCT WARRANTY

NABRICO warrants that all NABRICO products shall be free from defects in material and workmanship during the Warranty Period (as herein defined); provided, however that NABRICO's warranty hereunder shall not apply to any equipment, material, or component that is not manufactured by NABRICO, and NABRICO makes no expressed or implied warranty that any such equipment, material, or component is free from manufacturer or supplier defects. To the extent permitted, NABRICO agrees to transfer and assign to a Buyer or End User any warranties extended by the manufacturer or supplier of such equipment, material or components. NABRICO shall have no obligation or responsibility to repair or replace any defective NABRICO product if a notice of defect is not reported in writing to NABRICO within 180 days from the date of shipment of any NABRICO Winch Products and 90 days from the date of shipment of any other NABRICO Products (such 180 day and 90 day periods are hereinafter referred to as "Warranty Period").

In the event Buyer or End User timely notifies NABRICO in writing of any claim of defect covered by this warranty, NABRICO shall correct the nonconforming work by making repairs or replacements, at NABRICO's option and at NABRICO's expense, if NABRICO's examination shall disclose to its satisfaction that all or a portion of the NABRICO Product is defective. However, this warranty is conditional upon compliance by the Buyer or End User with the loading, use, and handling in accordance with good commercial practices of the trade, and NABRICO shall not be responsible for defects caused by misloading, overheating, improper cleaning, misapplication, physical abuse or from normal wear and tear. This warranty is void where any NABRICO Product has been altered or repaired by anyone other than NABRICO or its authorized agent.

THE WARRANTY AND REMEDIES SET FORTH HEREIN ARE IN SUBSTITUTION OF AND IN LIEU OF ANY AND ALL OTHER WARRANTIES AND REMEDIES EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE CONSTRUCTION, DELIVERY AND SALE OF A NABRICO PRODUCT, AND NABRICO SHALL, FOLLOWING SAID DELIVERY AND SALE, IN NO EVENT BE LIABLE TO BUYER OR ANY END USER FOR THE BREACH OF ANY WARRANTY, GUARANTEE, OR REMEDY, EXPRESSED OR IMPLIED, IN FACT OR IN LAW, EXCEPT AS SPECIFICALLY SET FORTH ABOVE. EXCEPT AS PROVIDED HEREIN, NABRICO SHALL AT NO TIME AND IN NO EVENT BE LIABLE TO BUYER OR ANY END USER OR TO ANYONE CLAIMING TO, UNDER OR THROUGH BUYER OR ANY END USER FOR LOSS OR DAMAGE OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, ANY ACT, ERROR, OMISSION, NEGLIGENCE, STRICT LIABILITY, TORT, PRODUCT LIABILITY, OR OTHERWISE OF NABRICO, ITS EMPLOYEES OR SUBCONTRACTORS.

PRODUCT NOTICES

Proprietary Information. The information and sketches shown in this owner's manual are proprietary to NABRICO. Duplication, reproduction, or manufacture from data contained herein is strictly prohibited.

Usage Warnings. All NABRICO Products must be correctly sized, properly located, and installed to serve their intended functions and it is the responsibility of Buyer or End User to insure such action is taken. Please note and consider the following warnings: Improper installation can result in failure of a NABRICO Product. NABRICO Products that have failed because of overloads, or which have been dislodged from foundations, or have fractures and/or deformations should be repaired or replaced immediately. Loads to bitts must be applied to the posts between the base and the midpoint in a horizontal or downward direction. Properly placed chocks will prevent line chafing. Kevels should be installed horizontally on foundation bases of sufficient size, and forces to kevels must be direct to the trunk and not the horns. Horns will fail when exposed to direct loads. And, NABRICO Products are not designed for use to lift a vessel.

Dimensions. All dimensions shown in this catalog are in feet and inches. Weights are in English pounds. Capacities are in short tons of 2,000 pounds. Please note that dimensions and weights are nominal and are subject to standard variations. Maximum test pressure on hatches, doors, and enclosures is 2 PSI unless advised in writing by NABRICO of a higher allowance. Product details and specifications are subject to change without notice.

NABRICO

1250 GATEWAY DRIVE
GALLATIN, TN 37066
615.442.1300
615.442.1313 fax
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WINCHES
ELECTRIC
HYDRAULIC
MANUAL

HATCHES
WATERTIGHT
TWIST LOCK
QUICK ACTING

BITTS
DOUBLE BITT
SINGLE BITT
THRU-DECK BITT

CAPSTANS
HYDRAULIC
ELECTRIC
CUSTOMIZABLE

DOORS
6 DOG MANUAL
QUICK ACTING
4 DOG MANUAL

KEVELS
KEVEL CHOCK
KEVEL
THRU-DECK KEVEL

SIGNS
WARNING
CUT-OFF
OIL POLLUTION

CHOCKS
CAST STEEL
BUTTON
ROLLER BUTTON

BARGE CRANES
ELECTRIC OPERATION
MANUAL OPERATION

OIL TANKS
300 GALLON
600 GALLON
CUSTOM SIZES

OCEAN DOMES
MILD STEEL
STAINLESS STEEL

SUCTION BELLMOUTHS
6” SIZE
8” SIZE
10” SIZE