

500 VW
OWNERS MANUAL

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Manual Product
Code No: P103114
11/02/10

500 VW
OWNERS MANUAL

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INSTALLATION, OPERATING INSTRUCTIONS AND SERVICE MANUAL
500VW WINDLASS

INTRODUCTION

You now own a Windlass from **MAXWELL'S** premier range, designed for automatic anchor handling.

Used in conjunction with MAXWELL'S Remote Control, you will have complete command of the anchor raising or lowering.

The compact deck saving vertical design allows 180-degree wrap of the chain ensuring maximum engagement with the chainwheel, and allows working of mooring or docking lines from any direction.

A clutch allows manual control for lowering the anchor under free fall and independent operation of the drum.

**** IMPORTANT ****

FAILURE TO ADHERE TO THE CORRECT APPLICATION, INSTALLATION, OPERATION AND TO CARRY OUT THE MAINTENANCE SERVICE AS DESCRIBED HEREIN, COULD JEOPARDISE YOUR SAFETY AND INVALIDATE THE WARRANTY.

Your **MAXWELL** Windlass is a precision engineered product. Please read these instructions carefully.

SPECIFICATIONS

PULL AT CHAINWHEEL	225 kg Max (500 lbs)
CHAIN SIZE	Short Link Max 6mm (¼")
RATE AT NO LOAD	25 m/min (80 Feet/min)
RATE AT NORMAL WORKING LOAD	18-21 m/min (60-70 Feet/min)

POWER OPTIONS	<u>Product Code</u>
	P100457 12 V D.C.
	P100458 24 V D.C.

CURRENT		
Normal Working Load	12 V	80 -120 Amps
	24 V	40 - 60 Amps

SUPPLY CABLES	See Page 11
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WEIGHT (Nett)	<u>Product code</u>		
	P100457	10.20 kg	22.50 lb
	P100458	10.20 kg	22.50 lb

IMPORTANT
PERSONAL SAFETY WARNINGS

WHEN USING YOUR WINDLASS AT ALL TIMES PRACTICE GOOD SEAMANSHIP AND AVOID ANY LIKELIHOOD OF INJURY OR ACCIDENT BY ADHERING TO THE FOLLOWING RULES.

AT ALL TIMES KEEP HANDS, FEET, LOOSE CLOTHING AND HAIR WELL CLEAR OF THE WINDLASS.

NEVER USE THE WINDLASS UNDER POWER WITH THE LEVER INSERTED IN THE CLUTCH NUT.

WHEN THE WINDLASS IS NOT IN USE, MAKE SURE THE WINDLASS IS ISOLATED FROM THE POWER SUPPLY BY TURNING THE WINDLASS ISOLATOR SWITCH TO "OFF".

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.

IF YOUR WINDLASS DOES NOT HAVE A REMOTE CONTROL STATION AND IS OPERATED FROM THE FOOTSWITCHES ONLY, ALWAYS IMMEDIATELY AFTER USE, TURN THE WINDLASS ISOLATOR SWITCH TO "OFF". THIS WILL PREVENT ACCIDENTAL WINDLASS OPERATION IF YOU OR PASSENGERS ACCIDENTALLY STAND ON FOOTSWITCHES.

**** IMPORTANT HINTS FOR SAFE USE OF WINDLASS ****

BE SURE YOUR WINDLASS HAS BEEN CORRECTLY SPECIFIED AND INSTALLED, YOURS AND OTHERS SAFETY MAY DEPEND ON IT. THE WINDLASS SHOULD BE USED IN CONJUNCTION WITH A CHAINSTOPPER OF THE APPROPRIATE SIZE. FOR AUTOMATIC OPERATION TO BE POSSIBLE, THE ANCHOR MUST BE SELF LAUNCHING.

MAXWELL WILL NOT IN ANY WAY BE HELD RESPONSIBLE FOR SELECTION OF A WINDLASS BY OTHERS, INCLUDING DISTRIBUTORS AND AGENTS. IF IN DOUBT, SEND FULL DETAILS OF YOUR CRAFT TO OUR SALES DEPARTMENT FOR APPRAISAL AND WRITTEN RECOMMENDATION.

- 1. Run the engine whilst raising or lowering the anchor. Not only is this a safety precaution, it also helps minimise the drain on the batteries.**
- 2. Always motor up to the anchor while retrieving the chain. Do not use the Windlass to pull the boat to the anchor.**
- 3. If the anchor is fouled, do not use the Windlass to break it out. With the chainstopper taking the load, use the boats engine to break the anchor loose.**
- 4. Do not use the Windlass as a Bollard.
In all but the lightest conditions, engage the chainstopper after completing the anchoring manoeuvre.**
- 5. In heavy weather conditions, always use a heavy anchor snub from the chain directly to a Bollard or Sampson Post.**
- 6. DO NOT USE THE CHAINSTOPPER OR WINDLASS AS A MOORING POINT.**
- 7. ALWAYS TURN THE ISOLATOR SWITCH “OFF” BEFORE LEAVING BOAT.**
- 8. When using the Windlass DO NOT SWITCH IMMEDIATELY FROM ONE DIRECTION TO THE OTHER WITHOUT WAITING FOR THE WINDLASS TO STOP AS THIS COULD DAMAGE THE WINDLASS. Abuse is not covered by Warranty.**
- 9. The Circuit Breaker and Isolator Switch Panel provides high current protection for the main supply cables and also the means to isolate the circuit. When the Isolator Switch is “ON” (red indicator light shows) the system can be activated at either the footswitches or the remote control station. When the system is not being used, ensure that the Isolator Switch is turned “OFF”.**
- 10. Never proceed at speed with a bow mounted self launching anchor in position, without first ensuring that your winch clutches are fully engaged, and having made fast the anchor and engaged your chainstopper.**

DO NOT DEPEND ON THE WINDLASS TO HOLD THE ANCHOR IN ITS BOW ROLLER. A NYLON LINE SHOULD BE USED TO SECURE THE ANCHOR INTO ITS STOWED POSITION WHEN UNDERWAY AND WILL NEED TO BE REMOVED BEFORE OPERATION OF THE WINDLASS. ALTERNATIVELY, A PIN THROUGH THE BOW ROLLER AND THE SHANK OF THE ANCHOR CAN BE USED FOR SECURING.

Most Windlass models have clutches for the manual pay out of ground tackle in the event of a loss of power. It is therefore prudent to secure the anchor to the boat by the means described above.

APPLICATION

THE MAXWELL 500 VW WINDLASS IS DESIGNED FOR ALL CHAIN SYSTEMS USING UP TO A MAXIMUM CHAIN SIZE OF 6MM (1/4") SHORT LINK CHAIN.

**** WARNING ****

BE SURE YOUR WINDLASS HAS BEEN CORRECTLY SPECIFIED BEFORE INSTALLATION, YOURS AND OTHERS SAFETY MAY DEPEND ON IT.

MAXWELL WILL NOT IN ANY WAY BE HELD RESPONSIBLE FOR SELECTION OF A WINDLASS BY OTHERS, INCLUDING DISTRIBUTORS AND AGENTS. IF IN DOUBT, SEND FULL DETAILS OF YOUR CRAFT TO OUR SALES DEPARTMENT FOR APPRAISAL AND WRITTEN RECOMMENDATION.

Your Windlass should have a rating of approximately 3 times total combined weight of the anchor and chain.

The ground tackle should have been selected taking into account:

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

CHAIN FIT

CORRECT FIT OF CHAIN TO CHAINWHEEL IS ESSENTIAL FOR THE WINDLASS TO OPERATE PROPERLY.

A range of chainwheels is available to suit your Windlass.

The correct fit can only be guaranteed where a standard chain known to us is used. Alternatively a 450mm (18") or 12 links (whichever is longer) sample must be forwarded to us to match fit.

Where patterns to suit are not held by us we are able to manufacture to instructions and reserve the right to charge cost thereof.

CHAINSTOPPER

THE WINDLASS SHOULD BE USED IN CONJUNCTION WITH A MAXWELL CHAINSTOPPER OF THE APPROPRIATE SIZE.

INSTALLATION

WHERE TO LOCATE THE WINDLASS

The MAXWELL 500 VW Windlass operates in dual direction power UP/DOWN.
“UP” is clockwise rotation when looking down on the Windlass.

The deck plate should be mounted pointing in the direction of the incoming chain. This arrangement allows the chain to have maximum engagement with the chainwheel.

The Windlass must be positioned to allow the chain to have a clear run from the fairlead or bow roller on to the chainwheel.

The bow roller should have a vertical groove to suit the profile of the chain. This will align the chain so that it enters the chainwheel without twisting.

If it can be arranged the chain locker bulkhead should pass between the chain outlet in the deckplate and the Windlass gearbox. This will keep the gearbox, motor and wiring away from flaying chain. Access for servicing from inside the cabin area can usually be arranged through a locker.

The chain locker must be of such a size that the chain will heap up and feed out naturally without fouling.

NOTE: Make sure you securely fasten the end of the chain to the boat.

**** IMPORTANT ****

FOR AUTOMATIC OPERATION TO BE POSSIBLE, THE ANCHOR MUST BE SELF LAUNCHING. That is, once the Windlass is operated to reverse out the chain, the anchor must free fall, or the bow roller arrangement be such that the anchor is automatically launched.

Allow access for conveniently connecting the supply lines under deck after the Windlass is bolted in position.

It should be noted that the gearbox can be indexed through different positions in relation to the deckplate (refer overall dimensions drawing). Be sure to select the most convenient position and allow for the best run for the chain to clear the motor.

WHERE TO LOCATE THE FOOTSWITCHES

Careful consideration should be given to the possibility of accidental operation of footswitches whilst operating the Windlass, particularly in Capstan warping of anchor rope or mooring line. It is therefore recommended that footswitches are placed well beyond “arms reach” from the Windlass, say a minimum of ¾ metre (30”).

THE BELOW DECK PORTION OF THE FOOTSWITCH SHOULD NOT BE EXPOSED TO WATER OR WET ENVIRONMENT AND THE BREATHER HOLES MUST BE KEPT CLEAR.

Ideally, they should be external to the chain locker.

The arrows on the footswitches should be arranged to indicate the direction of operation.

WHERE TO LOCATE THE REVERSING SOLENOID

This unit is used ONLY when a Dual Direction control system is being installed. (Refer drawing P101842/P101841). **The Reversing Solenoid should be located in a dry area in close proximity to the Windlass.**

IT MUST NOT BE LOCATED IN THE WET ENVIRONMENT OF THE CHAINLOCKER.

Locating close by the Windlass considerably shortens the total length of the main power supply conductors required.

WHERE TO LOCATE THE BREAKER/ISOLATOR PANEL

The Maxwell Breaker/Isolator Panel is used when either the Dual Direction system (Refer drawing P101842/P101841) or the “Single Direction” System (Refer drawing P101844) is used.

The Breaker/Isolator Panel is selected to provide limited protection only for the motor and full protection for the supply cables.

This unit also provides the means for isolating the electrical system from the battery (refer Drawing P101841, P101842 and P101844).

This should be mounted in a convenient and accessible dry location within 1.8 metres (72”) of cable length from battery.

This equipment or equivalent is mandatory to meet U.S.C.G. requirements.

WHERE TO LOCATE THE CONTROLS

The remote control stations can be positioned as required, i.e. Bridge, Helm, Cockpit or Foredeck to suit your requirements.

Mount the panels where the terminals project into a dry area and if mounted in an area where the face is exposed to the weather, i.e. Fly Bridge, the mounting must be bedded down with sealant.

They may be wired directly to, or linked together in series to the Reversing Solenoid (Refer P101841/P101842).

CONTROL CIRCUITS

Footswitches (if required) and remote control circuits are to be wired using 1.5mm² (16AWG) cable.

A manually resettable ignition proof fuse or breaker is to be fitted within 1 metre (40") of the power source on line 2 of the control cable conductor.

The above requirements are mandatory to meet USCG, ABYC, and NMMA.

After all connections have been made and system tested, seal terminals against moisture by spraying with CRC2043 "Plasti-Coat", CRC3013 "Soft Seal" or CRC2049 "Clear Urethane". Refer to drawing P101842, P101841 or P101844 for wiring details.

MAIN ELECTRICAL SYSTEM

Cable lengths given are from the battery terminal to the terminal on the windlass motor via the solenoid box and back to the battery.

Where a portion of cable runs through the engine room, a size increase should be made as indicated.

After all connections have been made and system tested, seal terminals against moisture by spraying with: CRC2043 "Plasti-Coat", CRC3013 "Soft Seal" or CRC2049 "Clear Urethane". All installations must be carried out in accordance with USCG, ABYC, NMMA or other local electrical requirements.

Recommended conductor sizes allow for a maximum 10% voltage drop over the total length

<u>12v systems</u>				
Total Cable Length From Battery to Winch Back to Battery	Cable Length		Engine room Size Correction	
	mm²	AWG	mm²	AWG
Up to 10 m (33')	14	6	22	4
10m – 15m (33' – 49')	22	4	-	-
7m – 20m (49' – 65')	26	3	-	-
10m – 25m (65' – 82')	34	2	-	-

<u>24v systems</u>				
Total Cable Length From Battery to Winch Back to Battery	Cable Length		Engine room Size Correction	
	mm²	AWG	mm²	AWG
Up to 25 m (82')	8.5	8	-	-

* Engine Room size correction is based on the ambient temperature of the engine room to be 60° C.

PREPARATION OF MOUNTING

Standard units will accommodate deck thickness up to 55mm (2 1/6").

**** IMPORTANT ****

- 1. IT IS IMPERATIVE THAT THE DESIGNER/INSTALLER ENSURES THAT THE DECK AND UNDERDECK PAD ARE OF SUFFICIENT THICKNESS AND STRUCTURAL STRENGTH TO SUSTAIN THE LOADS CAPABLE OF BEING IMPOSED ON OR BY THE WINDLASS. THE UNDERDECK PAD SHOULD SPREAD THE LOADS AS WIDELY AS POSSIBLE AND IF USE CAN BE MADE OF A BULKHEAD OR CROSS MEMBER TO PROVIDE STIFFENING, THIS SHOULD BE DONE.**
- 2. IT IS VERY IMPORTANT THAT THE ABOVE DECK PAD TOP SURFACE OR DECK AREA COVERED BY THE GASKET SUPPLIED, AND THE UNDERDECK AREA AGAINST WHICH THE LOAD WASHERS SEAT, ARE SMOOTH, FLAT AND GENERALLY PARALLEL.**
3. The gasket supplied with the Windlass can be used for accurately spotting the mounting holes and marking the cut outs. After spotting, bore the necessary holes. These must be drilled parallel to each other and square to the mounting face.

DON'T SPOT THROUGH THE GASKET WITH THE DRILL. THIS WILL DAMAGE THE GASKET.

NOTE: For boats of steel or aluminium construction, it is very important that the deckplate is insulated from the deck with the non conductive gasket provided that the mounting studs pass through insulators and that the underdeck fixings are insulated from the deck. It is also important that the anchor and chain is insulated from the hull, including rubber lining, the chain locker and insulating the fixing for the end of the chain to the hull.

Without these precautions severe electrolysis can occur.

It is not necessary to separately earth the Windlass, as the electric motor is of the isolated earth type.

PREPARING THE WINDLASS

4. Remove the Windlass from the packaging.

Refer to the appropriate assembly drawing provided for the Windlass being installed and proceed as follows:

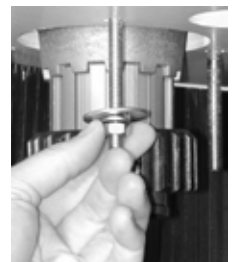
5. Remove deckplate studs, washer and nuts.

MOUNTING THE WINDLASS

**** ATTENTION ****

Please note, when installing winch and in particular the chain wheel. The shaft and bronze clutch cones *MUST* be coated in Shell Nautilus NLG12 Marine Grease, Castrol Boating Grease, Valvoline Val Plex EP or equivalent grease. See “Typical Greasing Instructions”.

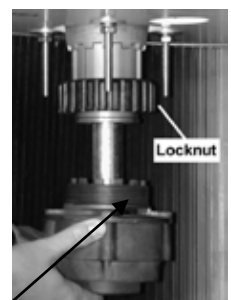
6. Clear the underside of the deckplate. Make sure the mounting area on the deck is properly prepared and is clean.
7. Use the Deck Cutout Details drawing as a guide for marking and cutting the holes.
Tip: On GRP boats, running the drill in reverse first will reduce chipping of the gel coat.
Using hole saws, cut the holes for the spacer tube and chain pipe.
8. On GRP or wooden decks, seal the edges of the holes with epoxy to avoid ingress of moisture.
9. Remove the gearbox from the spacer tube by undoing the Locknut and quick-release clip. With gearbox held horizontally, check that oil is showing half way up the sight glass. If necessary, top up with SAE 90 (Shell Omala 320, Castrol Alpha SP320 or equivalent), by removing the sight glass and adding the required amount. **DO NOT OVER FILL!**
10. Use the gasket supplied to seal the windlass to the deck. For aluminium boats fit a non-conductive gasket to insulate the deckplate from the deck to prevent electrolysis.
11. Fasten the windlass to the deck using the nuts and washers supplied. Tighten the nuts progressively and evenly. **Do NOT use power tools.** Make sure the installation is firm, but do not over tighten the nuts.



12. Smear a coating of grease on the shaft and spacer tube. Fit the gearbox/motor assembly to the bottom of the spacer tube to engage with the teeth on the spacer tube. Orientate the motor away from the incoming chain and then tighten the plastic locknut by hand.

Note:

If the unit is going to be mounted in such a way, that it may be tilted, ensure the drainage slot on the gearbox is at the lowest point to prevent excess water etc. sitting around the seals. (See also gearbox assembly drawing)



Drainage Slot

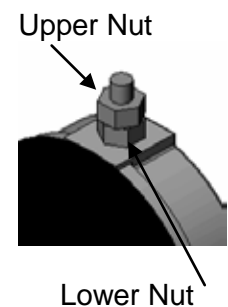
-
13. Rotate the shaft by hand (or by using the manual crank handle) to align the keyway in the shaft with the keyway in the gearbox. Insert the key into the keyway.



14. Fit the quick-release clip into the groove in the bottom of the shaft to secure the key. Make sure the eyelets are facing down and away from the keyway.



15. When tightening the cables to the motor, ensure the lower nut is secure against turning when tightening the upper nut. This will prevent damage occurring within the motor.



ASSEMBLING THE CHAIN WHEEL

Refer Fig 2 – 500 VW windlass assembly drawing

1. With a pen knife or similar, carefully remove the cap.
2. Remove the screw and retaining washer.
3. Remove the clutch nut, drum and upper clutch cone.
4. Remove the chain wheel.
5. Grease the two clutch faces of the chain wheel.
6. Assemble the components in the reverse order they were removed and ensure the side of the chain wheel with the two holes facing upward.

IMPORTANT NOTE TO BOAT BUILDERS

After completing installation we suggest that you spray the top works of the winch with CRC3097 "Long Life".

Also protect the winch by wrapping with plastic film and tape.

Experience has shown that on long ocean deliveries as deck cargo sulphur from the ships exhausts settles and severely damages the chrome plating and stainless steel by breaking down the chrome oxide protective film.

PLEASE LET YOUR CUSTOMER RECEIVE THE WINDLASS FROM YOU IN THE SAME TOP QUALITY CONDITION THAT YOU RECEIVED IT FROM US.

OPERATION OF THE CONTROL SYSTEM

DUAL DIRECTION SYSTEM (Refer drawing P101842 or P101841)

This system provides means of controlling the Windlass via a Reversing Solenoid which is actuated by a self centering UP/DOWN toggle switch type remote control or the footswitches. An indicator light on the remote control glows when the power is "ON" and the system can be operated.

SINGLE DIRECTION SYSTEM (Refer drawing P101844)

Turning the Isolator Switch "ON", on the panel, readies the system for use. The windlass can now be operated by the footswitch.

WARNING: When using the Windlass **DO NOT SWITCH IMMEDIATELY FROM ONE DIRECTION TO THE OTHER WITHOUT WAITING FOR THE WINDLASS TO STOP AS THIS COULD DAMAGE THE WINDLASS.** Abuse is not covered by Warranty. The Breaker/Isolator Panel provides protection for the main supply cables and means to isolate the circuit.

WARNING: When the Isolator Switch is "ON" the system can be activated at either the footswitches or the remote. When the system is not being used, ensure that the Isolator Switch is turned "OFF".

WARNING: This system provides protection for the motor from excessive current and short circuit. It does not provide protection against excessive heat build up due to prolonged operation or repeated operation under overload conditions. Make sure you give the motor time to cool. Abuse is not covered by Warranty.

OPERATING THE WINDLASS

LOWERING THE ANCHOR UNDER POWER

Proceed as follows:

1. Insert the lever into the clutch nut and check that the clutches are tightened down firmly by turning the nut clockwise.

REMOVE THE LEVER

2. The Windlass may be operated under power by using the switch on the Remote Control Station. Hold the switch "DOWN" until the required amount of chain is out.

RAISING THE ANCHOR UNDER POWER

Proceed as follows:

1. Carry out step 1 above.
2. The Windlass may be operated under power by using the switch on the Remote Control Station. Hold the switch "UP" until the required amount of chain has been brought in.

Care should be taken when docking the anchor. Jog in the last metre (few feet) carefully seating the anchor home.

LOWERING THE ANCHOR UNDER MANUAL CONTROL

This method is generally used in tight anchorages or an emergency situation, where a fast dump is required.

Proceed as follows:

1. Insert the lever into the clutch nut.
Standing well clear, slowly back off the clutch nut. This will release the chain. Regulate the speed at which the chain goes out by tightening to slow, or easing to increase.

**** CAUTION ****

DO NOT ALLOW THE CHAINWHEEL TO FREE WHEEL AS THIS WILL ALLOW DANGEROUSLY HIGH CHAIN SPEEDS TO BUILD UP.

2. When the required amount of chain is out, tighten the clutch nut firmly, **remove the lever and stow.**

USING THE WARPING DRUM

The vertical Capstan can be used independently of the chainwheel.
This is ideal for handling mooring lines, docking lines or a second anchor.

To use proceed as follows:

1. Insert the lever into the clutch and back off in a counter clockwise direction until it stops.

The capstan will now operate whilst the chainwheel remains stationary.

2. Take several turns of line around the drum in a clockwise direction.

Whilst pulling on the tail have someone operate the Remote Control Station by holding the switch "UP". The capstan will rotate in a clockwise direction.

Increasing or decreasing the load on the tail, whilst the Remote switch is held, will increase/decrease the rate at which the line will be hauled in.

Extra turns around the drum will increase the grip and require less load on the tail.

CAUTION: ENSURE THAT FOOTSWITCH IS NOT OPERATED ACCIDENTALLY WHILST EXTRA TURNS ARE BEING TAKEN. KEEP FINGERS CLEAR.

DON'T PUT SO MANY TURNS ON THE DRUM THAT EASING THE LOAD ON THE TAIL WILL NOT ALLOW THE ROPE TO SLIP ON THE DRUM.

MAINTENANCE

Carrying out the following simple maintenance procedures will provide years of trouble-free service from the windlass and will ensure that the warranty remains valid.

Service Intervals

	Every trip	3 monthly	12 monthly	3 yearly
Ensure clutch is adjusted correctly				
Strip and grease clutch				
Remove windlass components, grease with suitable lubricant				
Split gearbox from spacer tube, clean and re-grease mating faces				
Spray fresh water into drainage slot on gearbox, to breakdown and flush away any build up of salt/debris, that may have accumulated				
Service motor				
Remove gearbox, replace oil and seals				

Recommended Lubricants

Gearbox Oil: **Capacity:** 70ml (2.4 fl oz)
 Type: SAE viscosity grade 90 -110,
 (e.g. Shell Omala 320, Castrol Alpha SP 320 or other approved equivalent)

Mainshaft & Bearing: Marine Grease, Lithium based or Lithium complex based, e.g. Duckhams 'Keenol'; 'Castrol LMX'. Do not use soap based grease.

Above deck components: CRC 3097 Spray.

Topworks

The above-deck parts of the windlass should be washed down with fresh water regularly. Every three months, remove the chainwheel set and lubricate the clutch faces and shaft bore inside the deckplate with marine grease.

Gearbox

The gearbox is a self-contained sealed unit.

We recommend that the gearbox be removed and serviced by an authorised Maxwell service technician every three years. Visit our website (www.maxwellmarine.com) for a list of service centres and agents.

Check the gearbox oil level every six months using the sight glass.

Motor

For maximum protection, we recommend that the motor and electrical connections be sprayed periodically with CRC Soft Seal.

The motor should be serviced by a qualified electrician annually (or more frequently in commercial applications).

ORDERING SPARE PARTS AND TECHNICAL SUPPORT

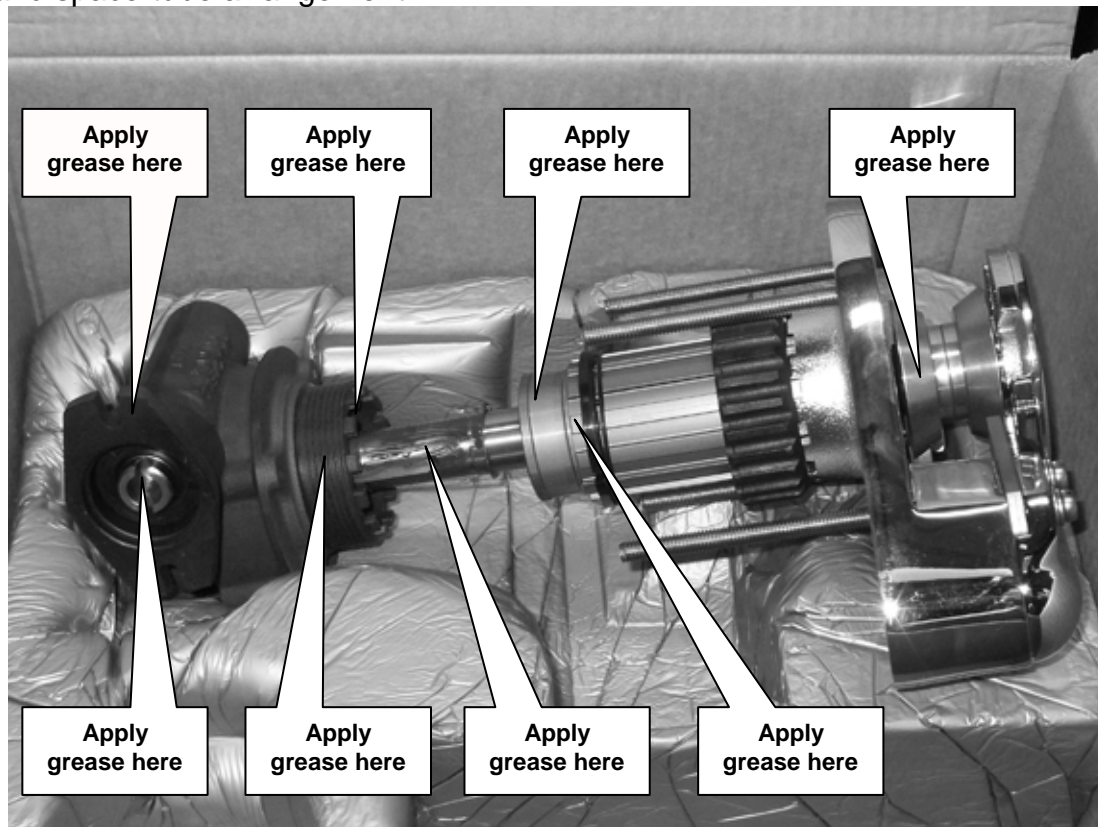
Please refer back cover for your nearest MAXWELL distributor or visit our website www.maxwellmarine.com.

When ordering spare parts and for technical support, please quote the following:

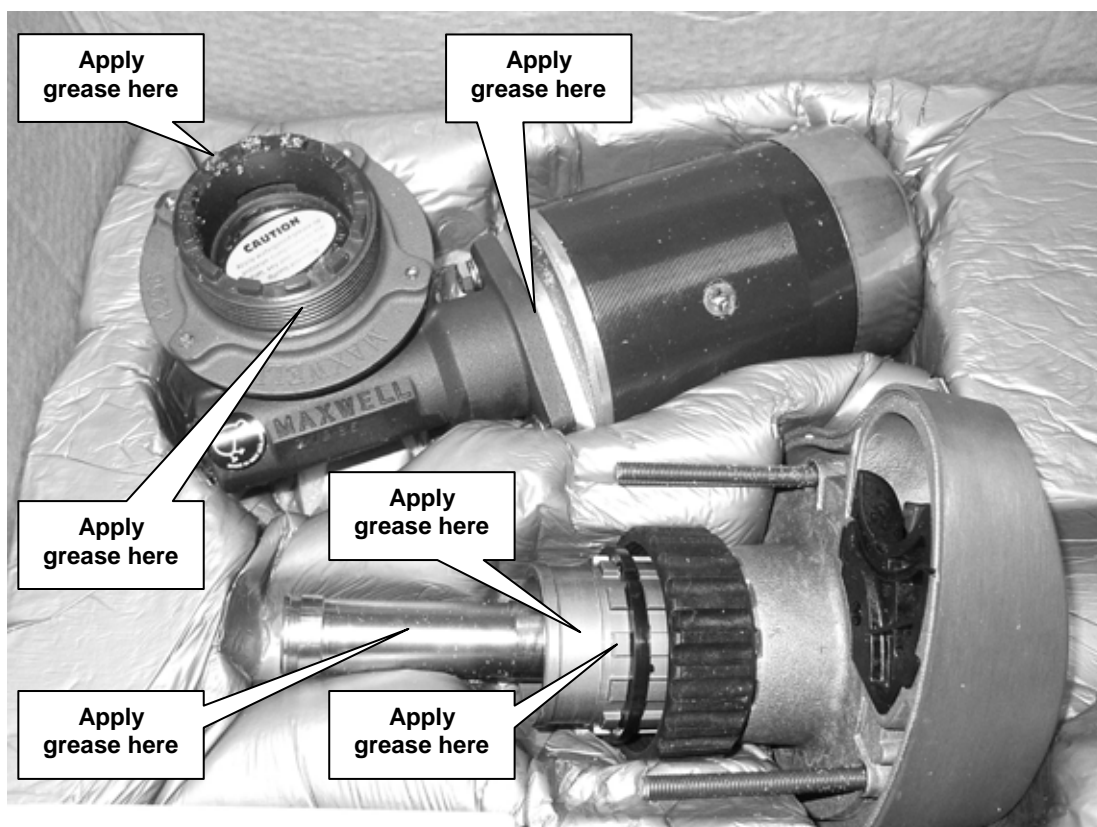
- Windlass Model.....**
- Serial Number.....**
- Power Supply 12V, 24V**
- Drawing Reference Number.....**
- Item No.....**
- Part No.....**
- Description.....**
- Quantity Required.....**

Typical Greasing Instructions

Note: Picture shows typical winches, greasing instructions apply to all types using this motor gearbox and spacertube arrangement.

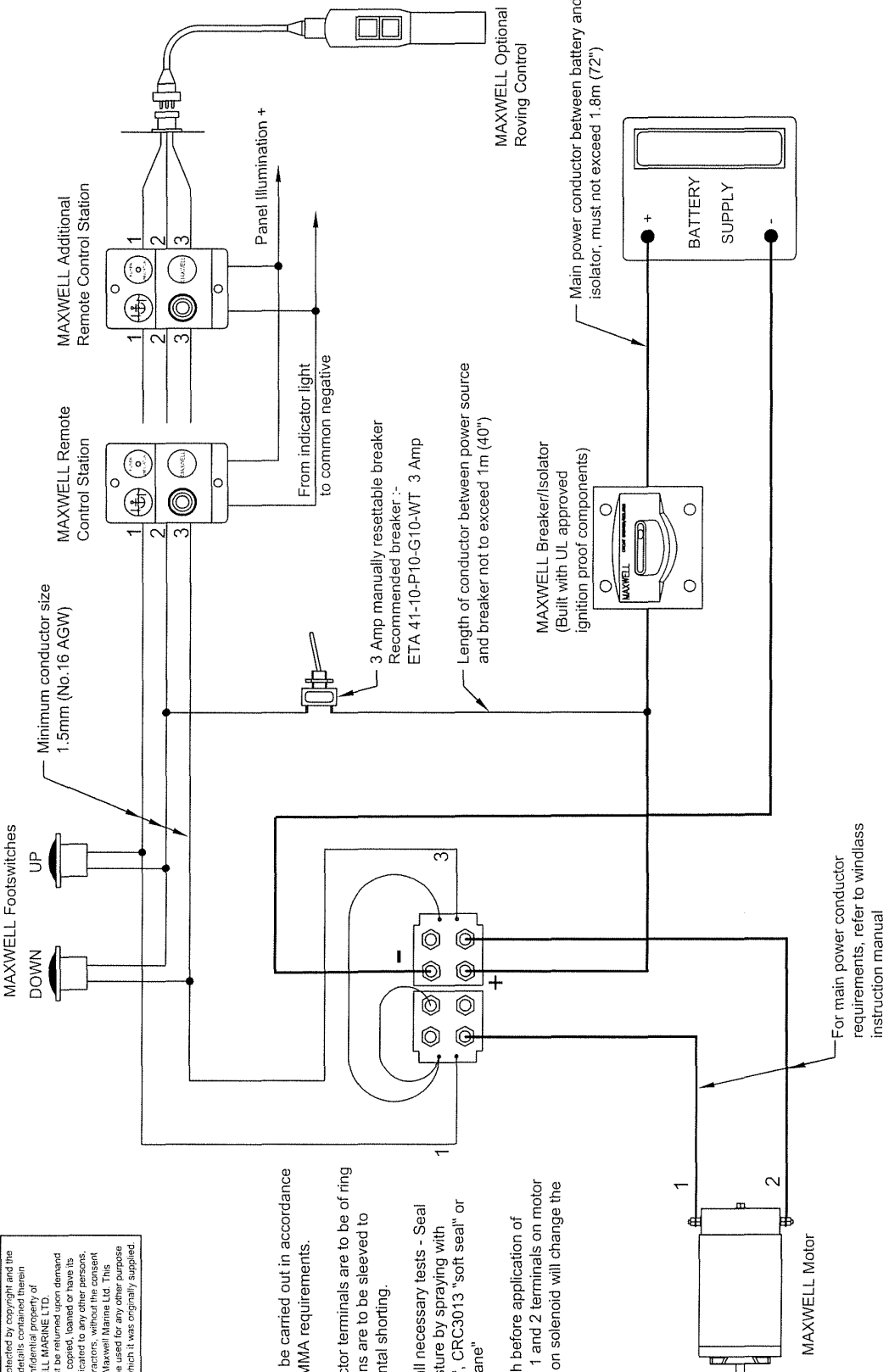


Grease must be applied to motor face, gearbox locating lugs, spacer tube, gearbox thread, shaft and clutch cone faces where shown. Use CRC 3097 (or equivalent) spray to coat all under deck components to help guard against corrosion. ***Failure to do so will void warranty.***



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Note:
 All installations should be carried out in accordance with USCG, ABYC, NMMA requirements.
 All main power conductor terminals are to be of ring type and all terminations are to be sleeved to protect against accidental shorting.
 After installation and all necessary tests - Seal terminals against moisture by spraying with CRC2403 "plasti-coat", CRC3013 "soft seal" or CRC2409 "clear urethane"
 Check rotation of winch before application of chain/rope. Swapping 1 and 2 terminals on motor or connection 1 and 3 on solenoid will change the rotation of winch.



Revision	Change	Made On	Des/Drawn	BYT/Dwg No.	Description	Assy No.
1.00	Initial issue	21/7/04	DI/RP	N/A	Wiring Diagram - Typical For Permanent Magnet Motors-24v	P101842
				BYT View		
				N/A		
				Sheet Size	Scale	
				A4	NTS	
				Sheet 1 of 1		



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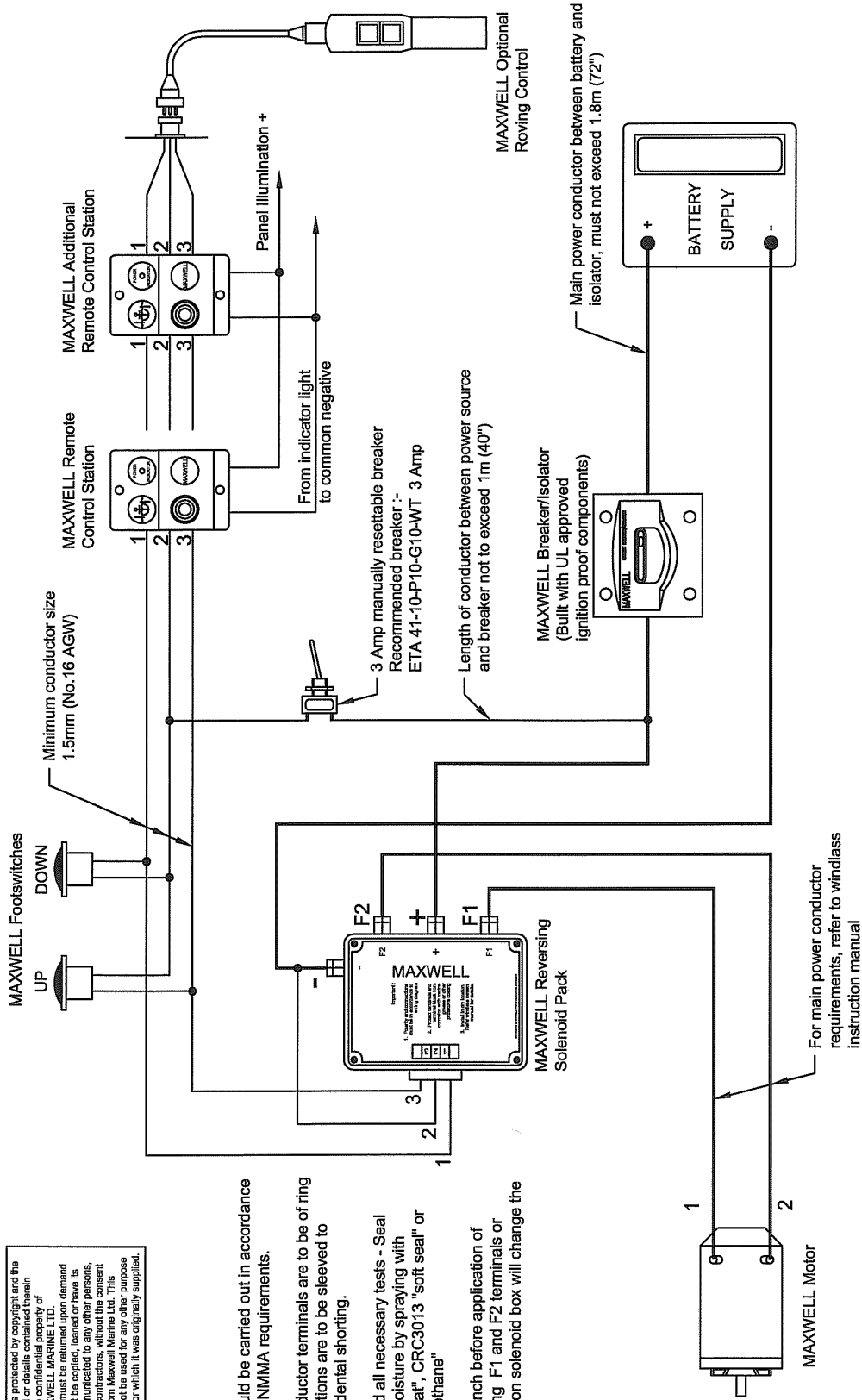
Note:

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

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

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



Revision	Change	Made On	Des/Drawn	BVT/Dwg No.	Description	Assy No.
1.00	Initial Issue	21/7/04	DJ/RP	N/A	Wiring Diagram - Typical For Permanent Magnet Motors	P101841
				BVT View		
				N/A		
				Sheet Size	Scale	
				A4	NTS	
				Sheet 1 of 1		



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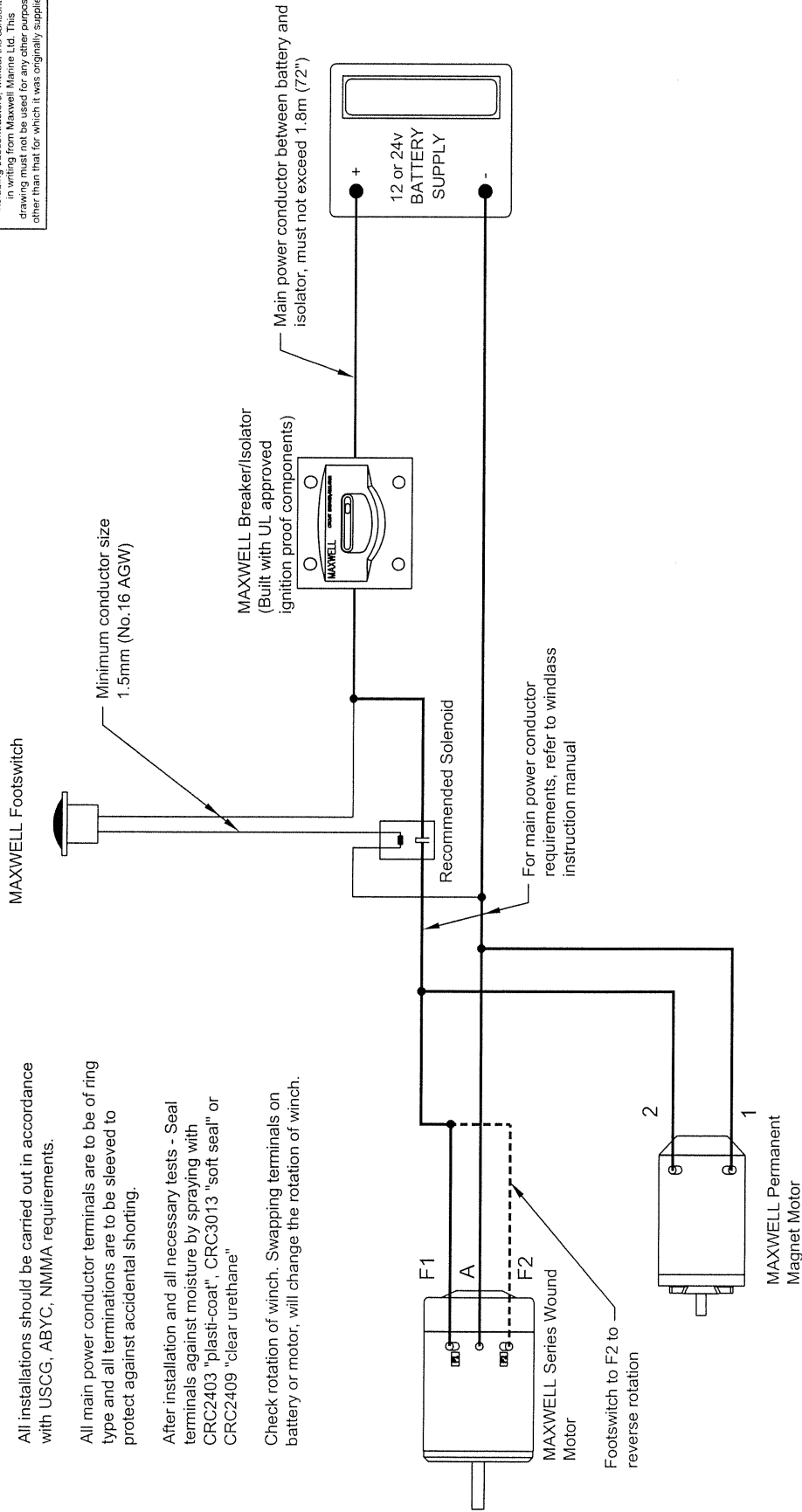
Note:

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

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

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

Check rotation of winch. Swapping terminals on battery or motor, will change the rotation of winch.



Revision	Change	Made On	Des/Drawn	BVT/Dwg No.	Description	Assy No.
1.00	Initial Issue	2/17/04	DI/RP	N/A	Wiring Diagram - Typical For Single Direction	P101844
				BVT View		
				N/A		
				Sheet Size	Scale	
				A4	NTS	
				Sheet 1 of 1		



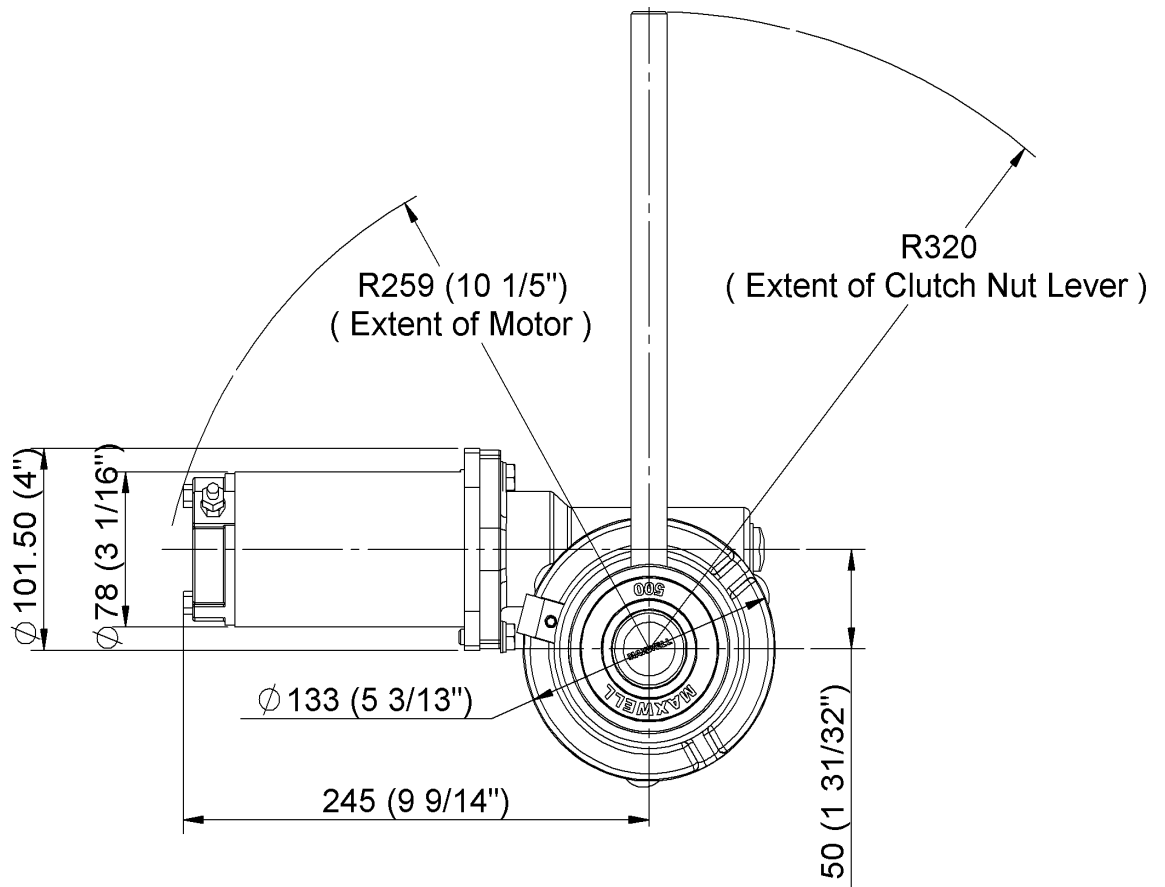


Figure 1 - 500 VW Windlass Overall Dimensions

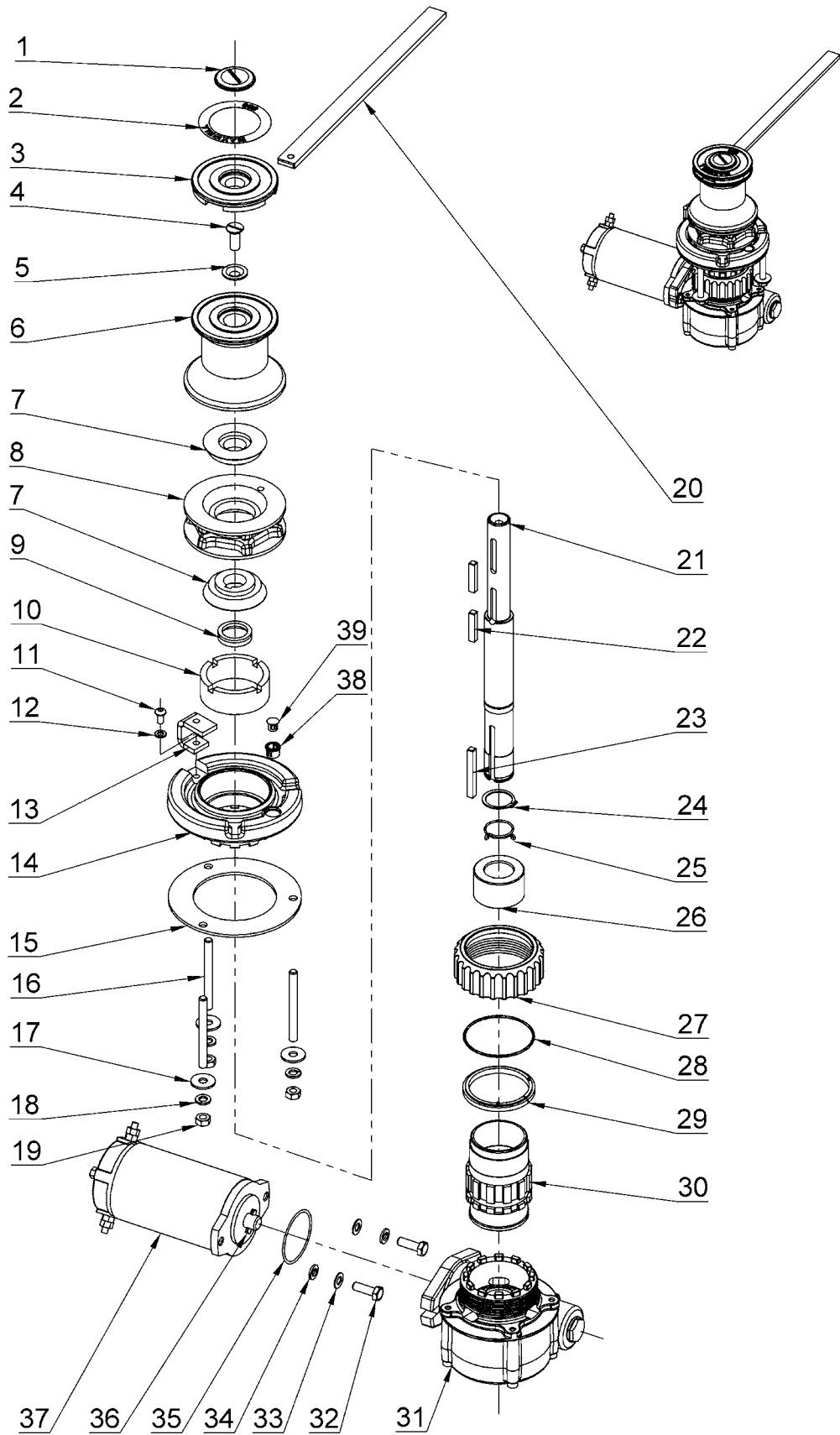


Figure 2 - 500 VW Windlass Assembly Drawing

500 VW Windlass Parts

Item No.	Component description	Qty	Part to order	Includes items
1	Cap	1	P101651	1,4,5,9,22(x2),
2	Label - 500	1	3356	2
3	Clutch Nut 500	1	P101652	2,3
4	Screw - 3/8" x 1"	1	P101651	1,4,5,9,22(x2)
5	Washer	1	P101651	1,4,5,9,22(x2)
6	Drum 300 500 VC VW	1	6016	6
7	Clutch Cone	2	P101653	7(x2)
8	Chain Wheel	1	3132	8
9	A Ring Seal V28	1	P101651	1,4,5,9,22(x2)
10	Retaining Collar	1	P101663	10,26,30
11	Screw M6x12	1	P101654	10,11,12,13,14,16(x3),17(x3),18(x3),19(x3),26,30
12	Spring Washer M6	1	P101654	10,11,12,13,14,16(x3),17(x3),18(x3),19(x3),26,30
13	Stripper Arm 500 VW	1	P101654	10,11,12,13,14,16(x3),17(x3),18(x3),19(x3),26,30
14	Deckplate 300 500 VC VW	1	P101654	10,11,12,13,14,16(x3),17(x3),18(x3),19(x3),26,30
15	Gasket 300 500 VC VW	1	6474	15
16	Stud M8x83	3	P101654	10,11,12,13,14,16(x3),17(x3),18(x3),19(x3),26,30
17	Washer	3	P101654	10,11,12,13,14,16(x3),17(x3),18(x3),19(x3),26,30
18	Spring Washer	3	P101654	10,11,12,13,14,16(x3),17(x3),18(x3),19(x3),26,30
19	Nut M8	3	P101654	10,11,12,13,14,16(x3),17(x3),18(x3),19(x3),26,30
20	Clutch Nut Lever	1	3381	20
21	Shaft 500 VW 50TDC	1	6475	21
22	Key	2	P101651	1,4,5,9,22(x2),
23	Key 6.35x6.35x57	1	P101619	23,24,25,35
24	Circlip	1	P101619	23,24,25,35
25	Quick Change Clip	1	P101619	23,24,25,35
26	Bearing	1	P101663	10,26,30
27	Locknut	1	P100088	27,28,29
28	O-Ring	1	P100088	27,28,29
29	Collar	1	P100088	27,28,29
30	Spacer Tube 300 500 50TDC	1	P101663	10,26,30
31	Gearbox 500 1500 56:1	1	P102730	31
32	Bolt - Hex Hd M8x25	2	P12487	32(x2),33(x2),34(x2),35(x1)
33	Washer - Spring - M8	2	P12487	32(x2),33(x2),34(x2),35(x1)
34	Washer - Flat - M8	2	P12487	32(x2),33(x2),34(x2),35(x1)
35	O-Ring	1	P12487	32(x2),33(x2),34(x2),35(x1)
36	Tension Pin	1	P101619	23,24,25,35
37	PM Motor DM717M 12V	1	P10068	36
	PM Motor DM718M 24V	1	P10069	36
38	Bush	1	SP3518	38
39	Plug	1	SP3519	39

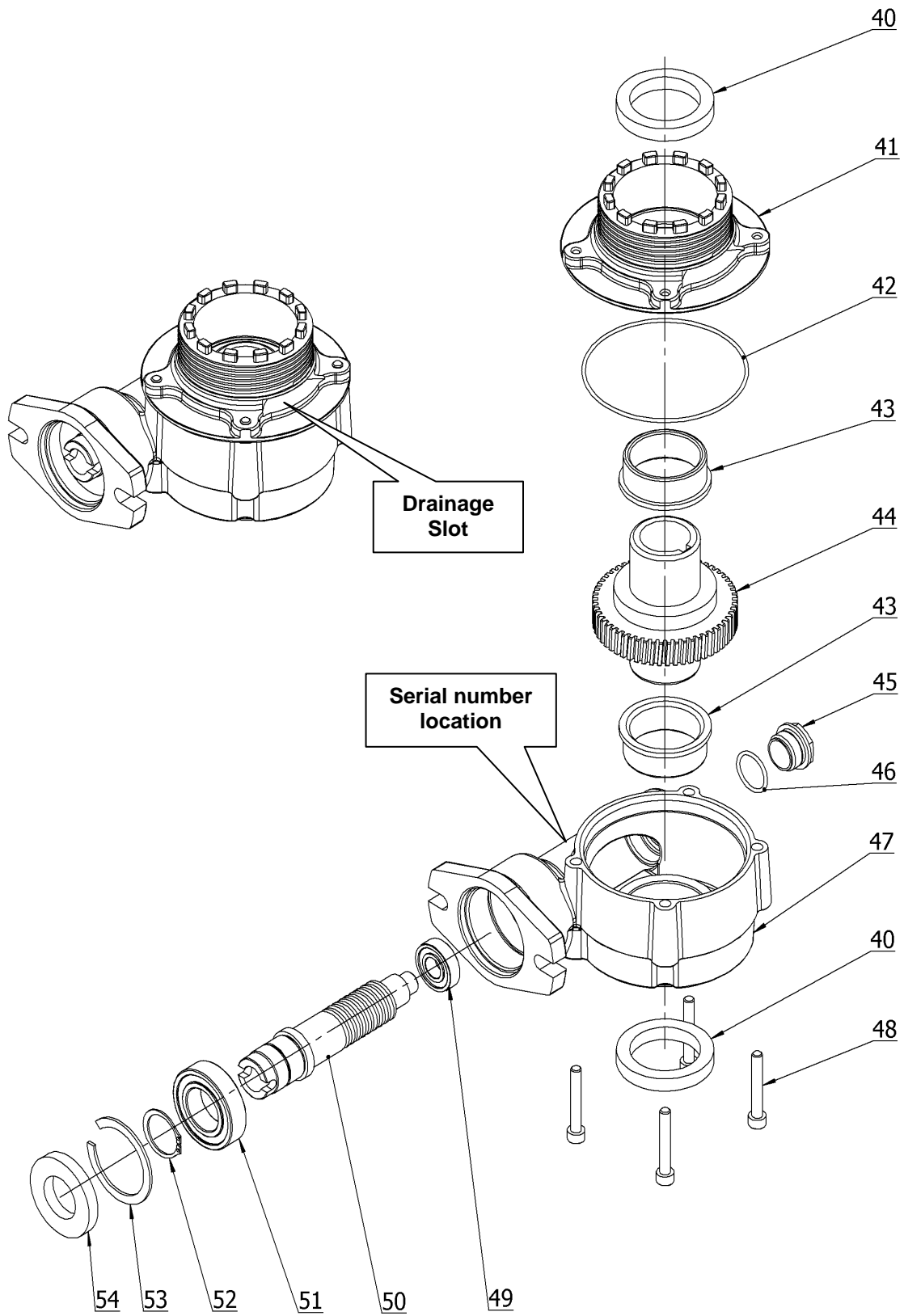
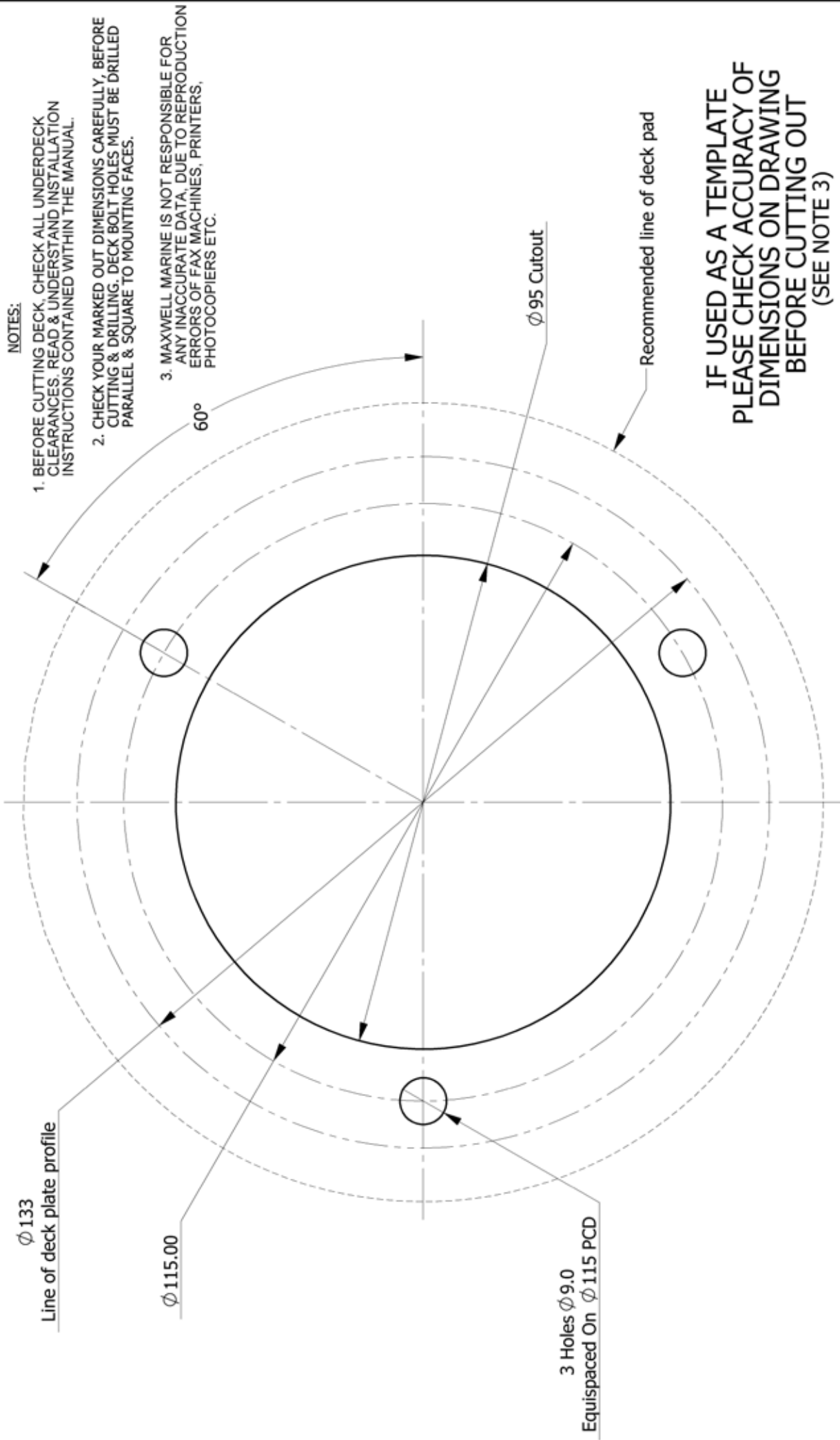


Figure 3 - Gearbox 56:1 Assembly Drawing

Gearbox 56:1 Parts

Item No.	Component description	Qty	Parts to order	Includes items
40	Oil Seal	2	P90006	40(x2),42,45,46,54
41	Gearbox Top	1	P101624	41,43
42	O - Ring	1	P90006	40(x2),42,45,46,54
43	Bush	2	3145	43
44	Worm Wheel 56T	1	3584	44
45	Sight Glass	1	P90006	40(x2),42,45,46,54
46	O-Ring	1	P90006	40(x2),42,45,46,54
47	Wormbox	1	P101625	43,47
48	Capscrew - M6 x 40	4	SP0159	38
49	Bearing	1	P90007	49,51,52,53
50	Worm 56:1	1	3400	50
51	Bearing	1	P90007	49,51,52,53
52	Circlip	1	P90007	49,51,52,53
53	Circlip	1	P90007	49,51,52,53
54	Oil Seal	1	P90006	40(x2),42,45,46,54



Φ 133

Line of deck plate profile

Φ 115.00

3 Holes Φ 9.0
Equispaced On Φ 115 PCD

Φ 95 Cutout

Recommended line of deck pad

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

NOTES:

1. BEFORE CUTTING DECK, CHECK ALL UNDERDECK CLEARANCES, READ & UNDERSTAND INSTALLATION INSTRUCTIONS CONTAINED WITHIN THE MANUAL.
2. CHECK YOUR MARKED OUT DIMENSIONS CAREFULLY, BEFORE CUTTING & DRILLING. DECK BOLT HOLES MUST BE DRILLED PARALLEL & SQUARE TO MOUNTING FACES.
3. MAXWELL MARINE IS NOT RESPONSIBLE FOR ANY INACCURATE DATA, DUE TO REPRODUCTION ERRORS OF FAX MACHINES, PRINTERS, PHOTOCOPIERS ETC.

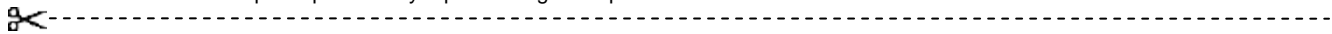
Rev.	Change	Made on Des/Drawn Checked	Description:	Drawing No:	Revision No:
1.00	Initial Issue	16/05/06	Deck Drilling Template - 300 500 VC VW	6156	2.00
2.00	New layout and notes for drawing to be used as a template	24/10/07			
			Material: n/a	Sheet Size A4	Sheet 1 of 1
			Tolerances if none specified	Scale 1:1	
			0 DECIMAL (X) ±0.5	ALL ANGLES ±0.5°	
			1 DECIMAL (X.X) ±0.2	SURFACE FINISH 1.6	
			2 DECIMAL (X.XX) ±0.1		

LIMITED WARRANTY

Warranty: Maxwell Marine International Ltd provides a three year limited warranty on all windlasses for pleasure boat usage, and a one year limited warranty for those systems used on commercial or charter vessels. Warranty, service and parts are available around the world. Contact your nearest Maxwell office for a complete list of service centres and distributors.

This warranty is subject to the following conditions and limitations:

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



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

Purchaser

Name:

Address:

Telephone:

Facsimile

Supplier / Dealer

Name:

Address:

Telephone:

Facsimile

Windlass Model

Serial Number

Date of Purchase

Boat Type

Windlasses Supplied

Name

L.O.A.

With boat

Fitted by boat yard/dealer

Purchased from dealer/chandler

Built by



