1000 VC

OWNERS MANUAL

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1000 VC
OWNERS MANUAL

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Note: For your nearest retailer, service agent or representative please refer to our website www.maxwellmarine.com

INSTALLATION, OPERATING INSTRUCTIONS AND SERVICE MANUAL
1000 VC CAPSTAN

INTRODUCTION

You now own a Capstan from **MAXWELL'S** premier range, designed for all types of rope line hauling.

Mounted vertically, the compact design allows working of mooring or docking lines from any direction.

The unit is also suitable for horizontal mounting.

**** 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** Capstan is a precision engineered product. Please read these instructions carefully.

SPECIFICATIONS

PULL	454 kg Max (1000 lbs)	
RATE AT NORMAL WORKING LOAD	20m/min (65ft/min)	
RECOMMENDED MAX LINE SIZE	14MM	
POWER OPTIONS	Product Code	
50mm (2”) Deck Clearance	P102784	12 Volt DC
	P102785	24 Volt DC
	P102786	Hydraulic
100mm (4”) Deck Clearance	P102787	12 Volt DC
	P102788	24 Volt DC
	P102789	Hydraulic
150mm (6”) Deck Clearance	P102790	12 Volt DC
	P102791	24 Volt DC
	P102792	Hydraulic
ELECTRIC MODELS		
Current at Normal Working Load	12 Volt	120-160 Amps
	24 Volt	100-140 Amps
SUPPLY CABLES	See Page 8	
HYDRAULIC MODELS		
Recommended Flow	20 Litre/min (5.3 US Gal/min)	
Recommended Press	100 BAR 1450 p.s.i.)	
Hydraulic Supply Lines	12mm (½”) diameter	
Hydraulic Motor Ports	¾” U.N.F.	
Oil	Viscosity ISO 32 - ISO 68 @ 20 - 50º Suitable oils: Shell Rimula x 15W-40; Shell Myrina M15W-40; Penzoil SAE 10W-40; Texaco 1814 SAE 10W-40. BP HLPHM 32-68; Castrol Hyspin AWS 32-68; BP Autrans T0410.	

WEIGHT (Nett)	Product code	KGS	LBS
50mm (2”) Deck Clearance	P102784	15.85	34.90
	P102785	15.85	34.90
	P102786	10.15	22.35
100mm (4”) Deck Clearance	P102787	16.0	35.24
	P102788	16.0	35.24
	P102789	10.30	22.70
150mm (6”) Deck Clearance	P102790	16.15	35.57
	P102791	16.15	35.57
	P102792	10.45	23.00

IMPORTANT

PERSONAL SAFETY WARNINGS

WHEN USING YOUR CAPSTAN 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 CAPSTAN.

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

NEVER OPERATE THE CAPSTAN FROM A REMOTE STATION WITHOUT A CLEAR VIEW OF THE CAPSTAN AND HAVING MADE SURE THAT EVERYONE IS WELL AWAY FROM THE CAPSTAN.

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

** IMPORTANT HINTS FOR SAFE USE OF CAPSTAN **

BE SURE YOUR CAPSTAN HAS BEEN CORRECTLY SPECIFIED AND INSTALLED, YOURS AND OTHERS SAFETY MAY DEPEND ON IT.
MAXWELL WILL NOT IN ANY WAY BE HELD RESPONSIBLE FOR SELECTION OF A CAPSTAN 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 using the Capstan. Not only is this a safety precaution when using the Capstan for anchor handling, it also helps minimise the drain on the batteries.**

2. **When using the Capstan or an anchor winch, always motor up to the Anchor while retrieving, i.e. do not use the Capstan to pull the boat to the anchor.**

3. **If the anchor is fouled, do not use the Capstan to break it out. With a Bollard or Sampson Post taking the load, use the boat's engine to break the anchor loose.**

4. **Do not use the Capstan as a Bollard.**

5. **When at anchor or at the dock always tie off directly to a Bollard or Sampson Post.**

6. **DO NOT USE THE CAPSTAN AS A MOORING POINT.**

7. **ALWAYS TURN THE ISOLATOR SWITCH "OFF" BEFORE LEAVING BOAT.**

8. **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 lights shows) the system can be activated at either the foot switches or the remote control station. When the system is not being used, ensure that the Isolator Switch is turned "OFF".**

APPLICATION

THE MAXWELL 1000 VC CAPSTANS ARE DESIGNED FOR ALL TYPES OF ROPE LINE HAULING OPERATIONS. REFER TO SPECIFICATIONS PAGE FOR RECOMMENDED MAXIMUM LINE SIZE.

Short link chain can be run on the drum when anchor hauling, however in such applications the bronze drum version is recommended.

They are suitable for both vertical and horizontal mounting.

Mounted vertically, the Capstan provides an ideal way to handle anchor and mooring lines.

On sail boats the snag free design offers minimum obstructions to sail handling.

As an anchor winch, mounting the Capstan horizontally in the anchor locker will leave the deck unobstructed.

Horizontal mounting is also suitable for use on davits or as a cargo handling winch.

**** WARNING ****

BE SURE YOUR CAPSTAN HAS BEEN CORRECTLY SPECIFIED BEFORE INSTALLATION.

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

INSTALLATION

Where to Locate the Capstan

The MAXWELL 1000 VC Capstan can operate in either clockwise or counter clockwise rotation depending on how the electrical connections are made. Normally the winch should be wired for clockwise rotation when looking down on the drum (refer Wiring Diagram).

NOTE: Use only clockwise rotation for handling 3 ply twisted rope, otherwise problems will occur in laying the rope.

The Capstan should be positioned to allow the rope to have a clear run from the bow roller or turning block, on to the drum. The bow roller should have a concave radius or vee to centralise the rope.

NOTE: When using the Capstan for hauling an anchor line, make sure you securely fasten the end of the line to the boat.

When positioning the Capstan, allow access for conveniently connecting the supply lines under deck after it is bolted in position.

Where to Locate the Footswitch

THE FOOTSWITCH SHOULD BE POSITIONED FAR ENOUGH AWAY FROM THE CAPSTAN TO ENSURE THE OPERATION CAN SAFETY TAIL FROM THE WARPING DRUM.
The footswitch should be at least 500mm (20") from the Capstan.
THE BELOW DECK PORTION OF THE FOOTSWITCH SHOULD NOT BE EXPOSED TO WATER OR WET ENVIRONMENT AND THE BREAKER HOLES MUST BE KEPT CLEAR.
Ideally, the footswitch should be external to the rope/anchor locker. The arrow on the footswitch should be arranged to indicate the direction of operation.

Where To Locate The Breaker/Isolator Panel (Electric Capstan Only)

This should be mounted in a dry place within 1.8 metres (72") of cable length from battery.
This equipment or equivalent is mandatory to meet U.S.C.G. requirements.

CONTROL CIRCUITS

The footswitch is used directly in the circuit to control the Electric 12 and 24 Volt Capstans (refer wiring drawing). Cable sizes should be selected as suitable from the table on page 8.

When the footswitch is used to control a Hydraulic Capstan by activating the solenoid valve, the footswitch circuit should be wired using 1.5mm² (16 AWG) cable.

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 wiring drawing 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

12v systems				
Total Cable Length From Battery to Winch Back to Battery	**Cable Size**		**Engine room Size Correction**	
	mm²	**AWG**	**mm²**	**AWG**
Up to 12 m (39’)	26	3	34	2
12m – 16m (39’ – 52’)	34	2	-	-
16m – 19m (52’ – 62’)	42	1	-	-
19m – 25m (62’ – 82’)	54	0	-	-
25m – 31m (82’ – 102’)	68	00	-	-

24v systems				
Total Cable Length From Battery to Winch Back to Battery	**Cable Length**		**Engine room Size Correction**	
	mm²	**AWG**	**mm²**	**AWG**
Up to 14 m (46’)	14	6	14	6
14m – 17m (46’ – 56’)	14	6	-	-
17m – 27m (56’ – 88’)	22	4	-	-

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

HYDRAULIC SYSTEMS

Pressure/flow quoted in specification on page 3 assumes operation at rated capacity with standard motor fitted. Levels below that specified can be accommodated, by a motor change, with a corresponding change to stall torque and/or speed.

Two levels of supply and control are possible.

BASIC SYSTEM

This covers applications where the Capstan is supplied from an engine driven pump or single function power pack.
In the case of a single function power pack control of the capstan is via a hydraulic solenoid valve which is operated by the footswitch.
In the case of supply from an engine driven pump the footswitch directly controls the electric clutch.

MAXWELL LINK-SYSTEM MULTI-FUNCTION ELECTRO-HYDRAULIC POWER PACKS

See separate manual for these multi-function, multi-purpose systems.

PREPARATION OF MOUNTING

Standard units will accommodate deck thickness up to 100mm (4”). Extra clearance models are available to accommodate deck thickness in the range of 50mm (2”) to 150mm (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 CAPSTAN. 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 Capstan can be used for accurately spotting the mounting holes and marking the cut out. 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 a 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 electrolysis can occur.
It is not necessary to separately earth the Capstan, as the electric motor is of the isolated Earth type.

PREPARING THE CAPSTAN

***** ATTENTION*****

Please note, when installing the capstan. The shaft *MUST* be coated in Shell Nautilus NLG12 Marine Grease, Castrol Boating Grease, Valvoline Val Plex EP or equivalent grease. See "Typical Greasing Instructions".

Remove the Capstan from the packaging.
Subject to the type of packaging used, the Capstan will be either completely assembled or with the motor separated from the gearbox.

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

4. If the motor is not fitted to gearbox assemble it as follows:
   For Electric Motors
   Offer motor up to gearbox aligning drive pin with slot in the worm.
   Insert and tighten two bolts and washers (refer to Assembly Drawing Electric Models).
   For Hydrualic Motors
   Offer motor up to gearbox aligning drive pin with slot in the worm.
   Insert and tighten two bolts, washers and nuts (refer to Assembly Drawing Hydraulic Models).

MOUNTING THE CAPSTAN

5. 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.

6. On GRP or wooden decks, seal the edges of the holes with epoxy to avoid ingress of moisture.

7. 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!

8. 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.

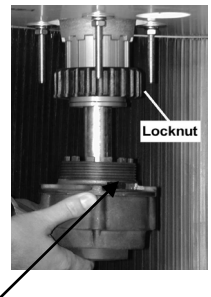
9. Fasten the windlass to the deck using the nuts and washers supplied. Tighten the nuts progressively and evenly. Do NOT use power tools. Make sure the installation is firm, but do not over tighten the nuts.



10. 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 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

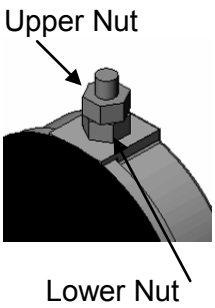
11. Rotate the shaft by hand (or by using the manual crank handle) to align the keyway in the shaft with the keyway in the gearbox. Insert the key into the keyway.



12. 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.



13. 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.



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 CAPSTAN FROM YOU IN THE SAME TOP QUALITY CONDITION THAT YOU RECEIVED IT FROM US.

OPERATION OF THE CONTROL SYSTEM

The MAXWELL Breaker/Isolator Panel provides protection for the main supply cables and means to isolate the circuit.

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

WARNING: When the Isolator Switch is “ON” the system can be activated at the footswitch.
When system is not being used, ensure that 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.

USING THE CAPSTAN

The vertical capstan is ideal for handling mooring lines, docking lines or a rope anchor line. To use proceed as follows:

1. Check that the main power supply is “ON” at the Breaker/Isolator Panel.

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

   Whilst pulling on the tail press the footswitch. The capstan will rotate in a clockwise direction.

   Increasing or decreasing the load on the tail, whilst holding the footswitch down 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.

   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
Wash down Capstan				
Remove capstan 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 equivalents)

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 capstan should be washed down with fresh water regularly.
Every three months, remove the drum and lubricate the shaft and 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 be sprayed periodically with CRC Soft Seal.
For Electric motors spray also around electrical connections
The electric motors should be serviced by a qualified electrician annually (or more frequently in commercial applications).

ORDERING SPARE PARTS AND TECHNICAL SUPPORT

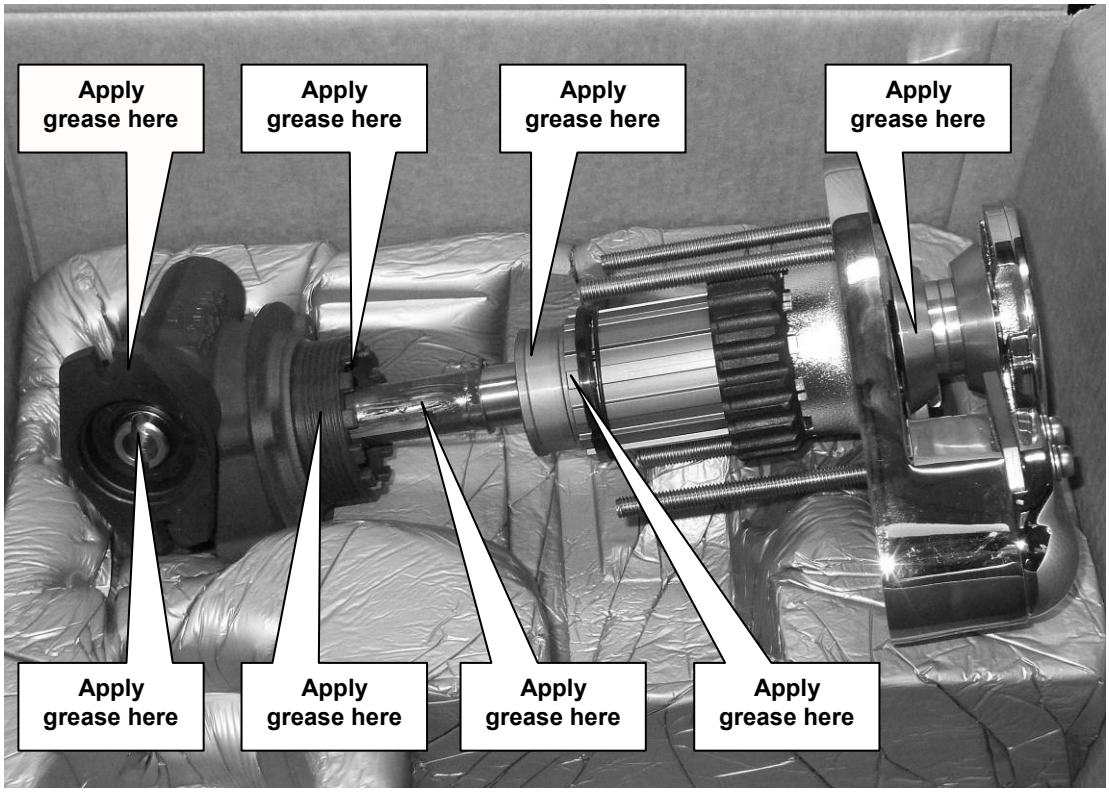
Please refer back cover for your nearest MAXWELL distributor or visit our website www.maxwellmarine.com.

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

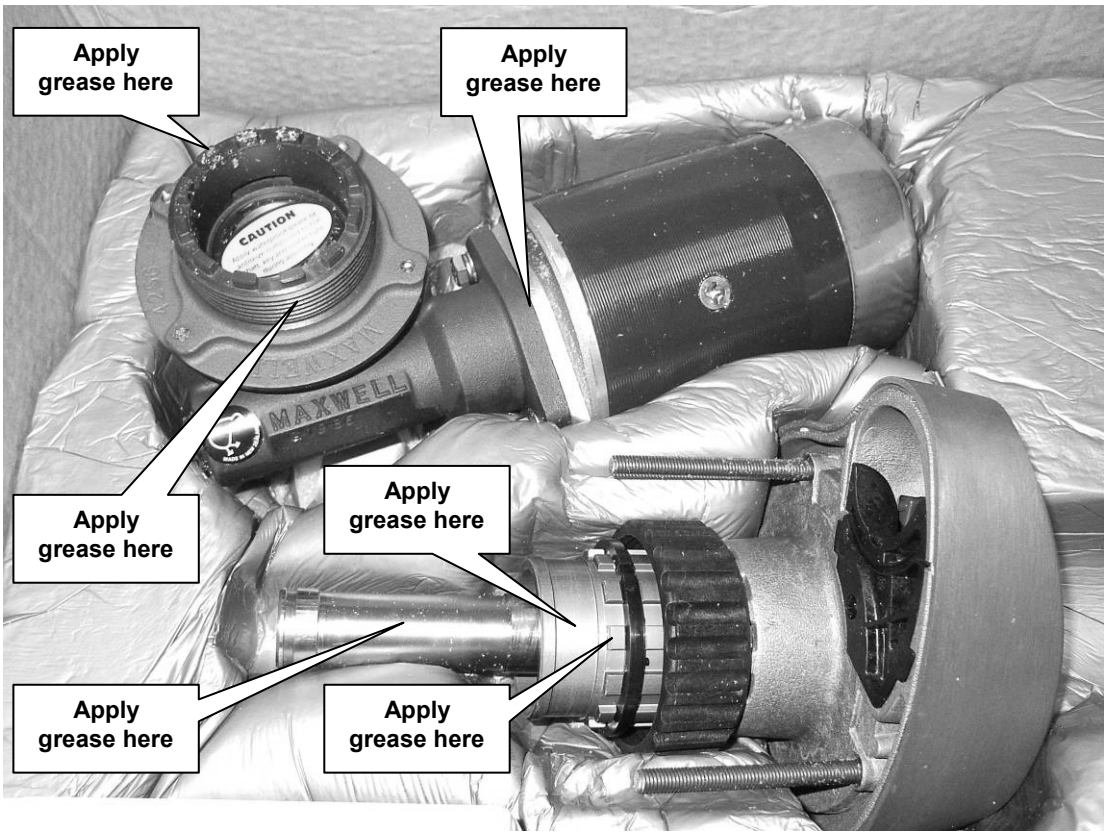
Windlass Model…….
Serial Number……
Power Supply 12V, 24V or Hydraulic
Drawing Reference Number……..
Item No……
Part No……
Description……
Quantity Required……

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 applicable.
Use CRC 3097 (or equivalent) spray provided to coat all under deck components to help guard against corrosion. ***Failure to do so will void warranty***.



This drawing is protected by copyright and the design and or details contained therein are the confidential property of MAXWELL MARINE LTD. This drawing must be returned upon demand and must not be copied, loaned or have its contents communicated to any other persons, including subcontractors, without the consent in writing from Maxwell Marine Ltd. This drawing must not be used for any other purpose other than that for which it was originally supplied.

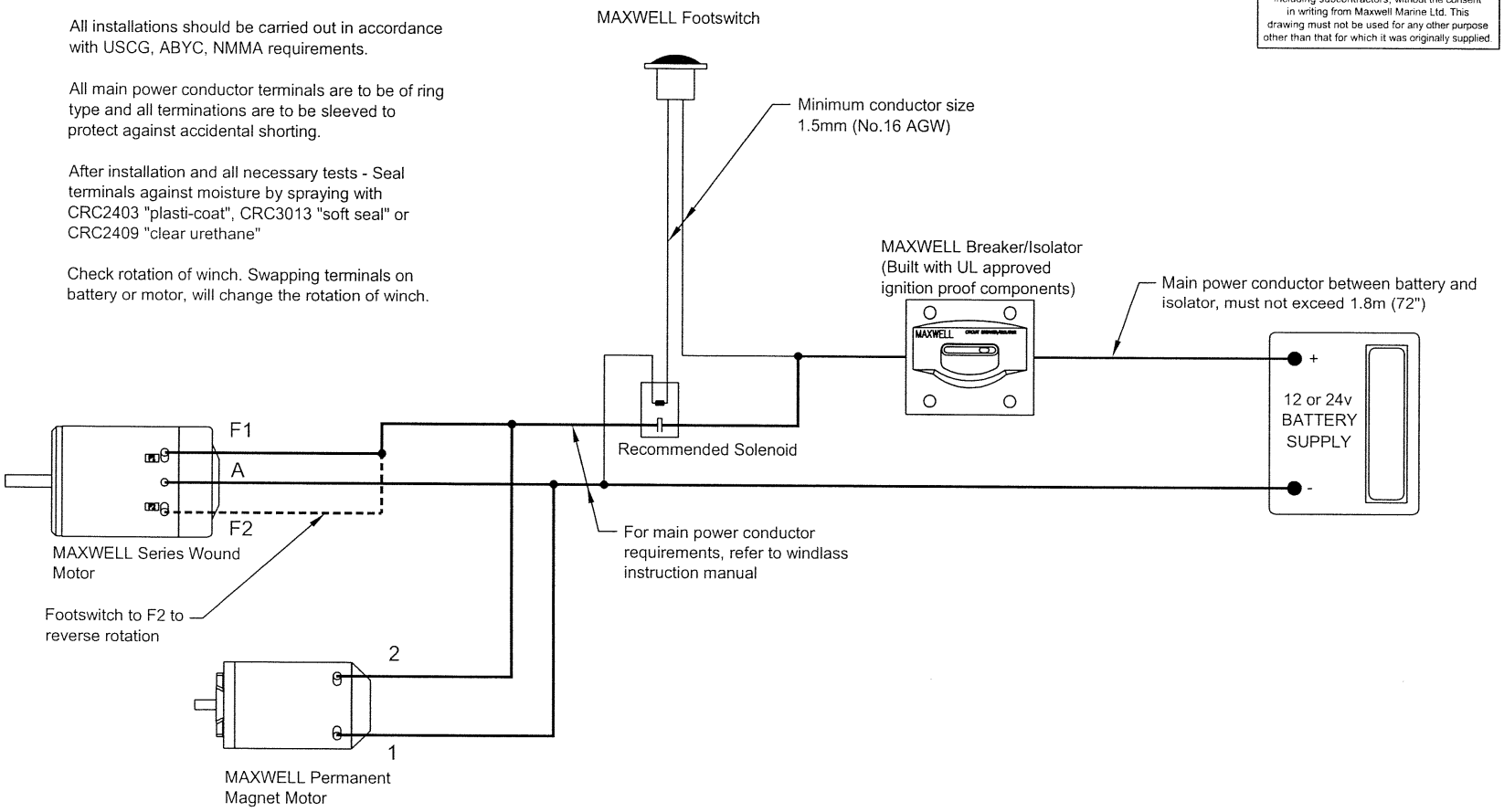
Note:

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

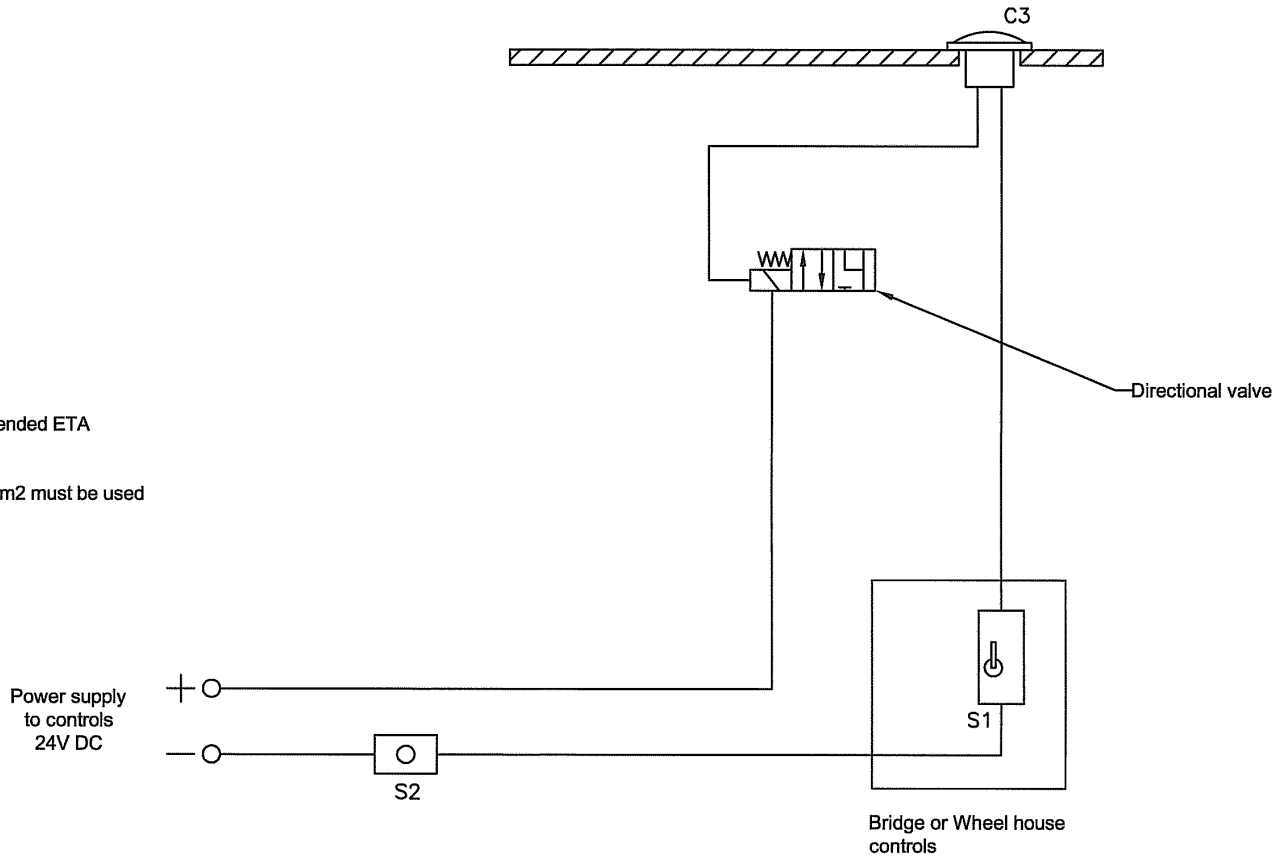


Revision	Change	Made On	Des/Drawn	BVT/Dwg No.	Description	Assy No.
1.00	Initial Issue	21/7/04	DI/RP	N/A	Wiring Diagram - Typical For Single Direction	P101844
				BVT View		
				N/A		
				Sheet Size / Scale		
				A4 / NTS		
				Sheet 1 of 1		

LEGEND:

C3	Footswitch
S1	Isolator switch for power supply to the controls
S2	Manually resetable circut breaker 3A, recommended ETA 41-10-P10-G10-WT

Tinned multistrand conductors of at least 1.5mm2 must be used for all control circuits

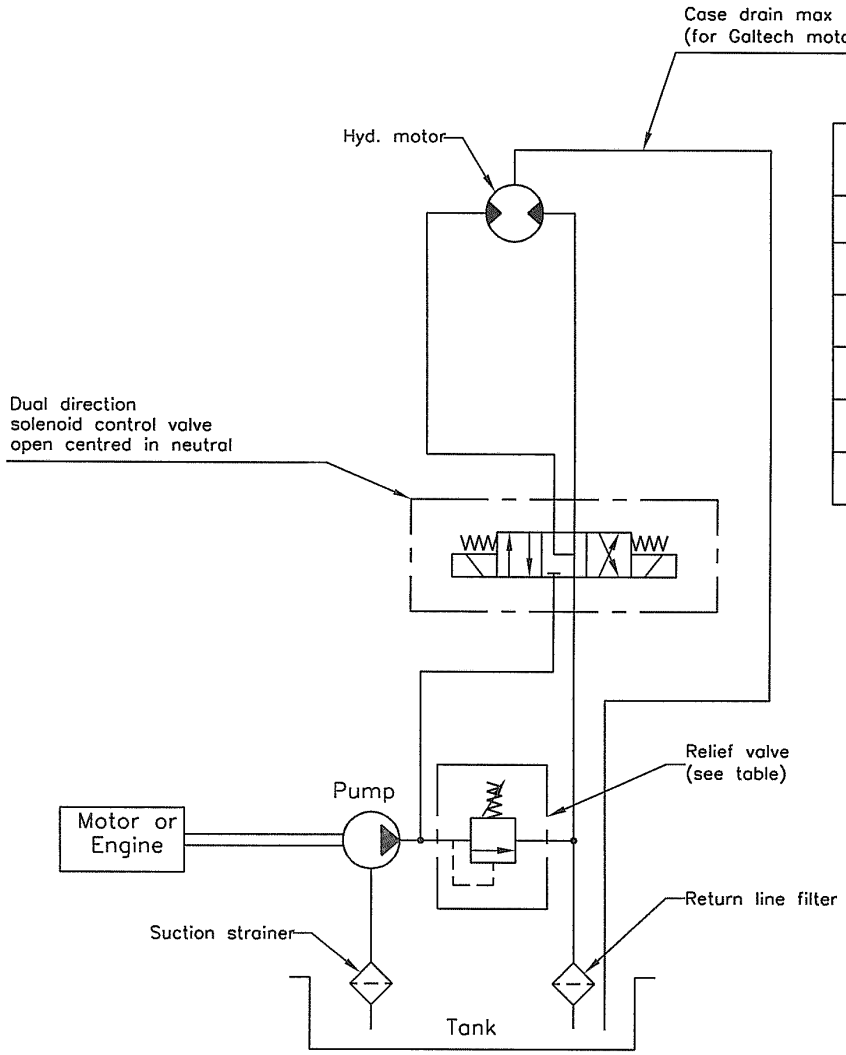


Revision	Description	Date	Name
1.00	Initial issue	09.08.2004	JM

CONTROL SCHEMATIC FOR HYDRAULIC CAPSTAN – UP TO VC 4000

MAXWELL MARINE LTD
AUCKLAND NEW ZEALAND

P101833



CAPSTAN			Recommended flow		Relief valve pressure setting	
Series	Motor		l/min	US gal/min	bar	PSI
1000	P14366	Gresen 20016	20	5.3	100	1450
2200	P14369	Gresen 20030	20	5	135	1958
3500	P14368	Gresen 20025	40	11	138	2000
4000	SP2250	Galtech 2sm–A–19–R	50	13.2	103.4	1500
6000	SP2253	Galtech 3sm – 29cc	48.0	12.7	170	2466

Chart refers to MAXWELL "standard builds". Alternate flow and pressure can be accommodated - consult MAXWELL.

Ensure that selected hydraulic components are adequate for recommended flow rate. Case drain can be connected to return line if the pressure in it is not higher than 1.7 bar (25 psi. otherwise it has to go directly to the tank.

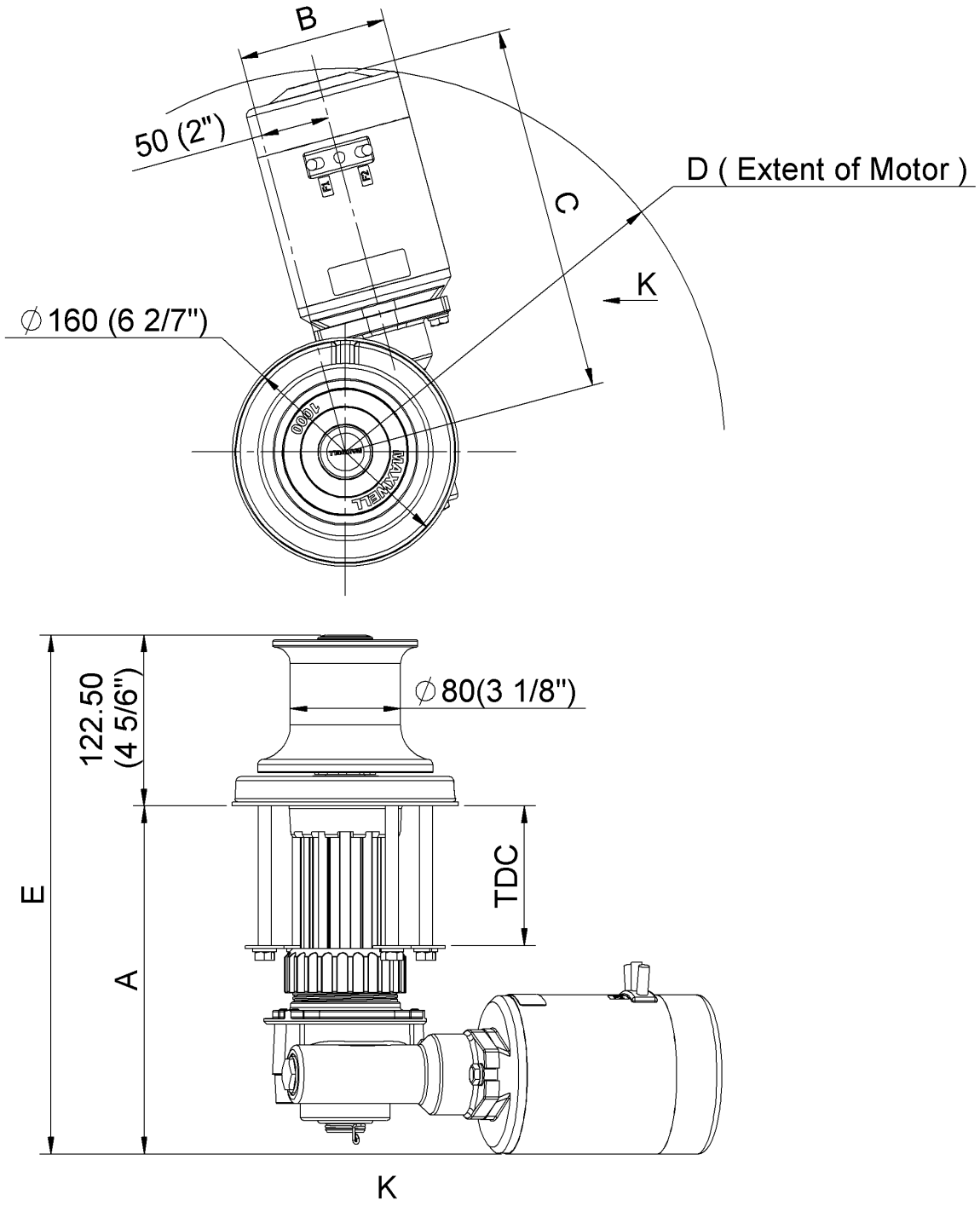
Rev.	Description	Date	Des/Dwg	Checked
1.00	Initial issue	24/03/09	JE	GB

HYDRAULIC SCHEMATIC
CAPSTAN 1000–6000VC
DUAL DIRECTION

MAXWELL WINCHES LTD.
AUCKLAND NEW ZEALAND

P101861

Figure 1 - 1000 VC Winch Overall Dimensions



12V or 24V Motor			
	50TDC	100TDC	150TDC
A	200(7 7/8")	250(9 7/8")	300(11 4/5")
B	107(4 1/4")	107(4 1/4")	107(4 1/4")
C	262(10 1/3")	262(10 1/3")	262(10 1/3")
D	275(10 7/8")	275(10 7/8")	275(10 7/8")
E	322.50(12 2/3")	372.50(14 2/3")	422.50(16 2/3")

Hydraulic Motor			
	50TDC	100TDC	150TDC
A	186(7 1/3")	236(9 1/3")	286(11 1/3")
B	95(3 3/4")	95(3 3/4")	95(3 3/4")
C	191(7 1/2")	191(7 1/2")	191(7 1/2")
D	212(8 1/3")	212(8 1/3")	212(8 1/3")
E	308.50(12 1/7")	358.50(14 1/9")	408.50(16 1/12")

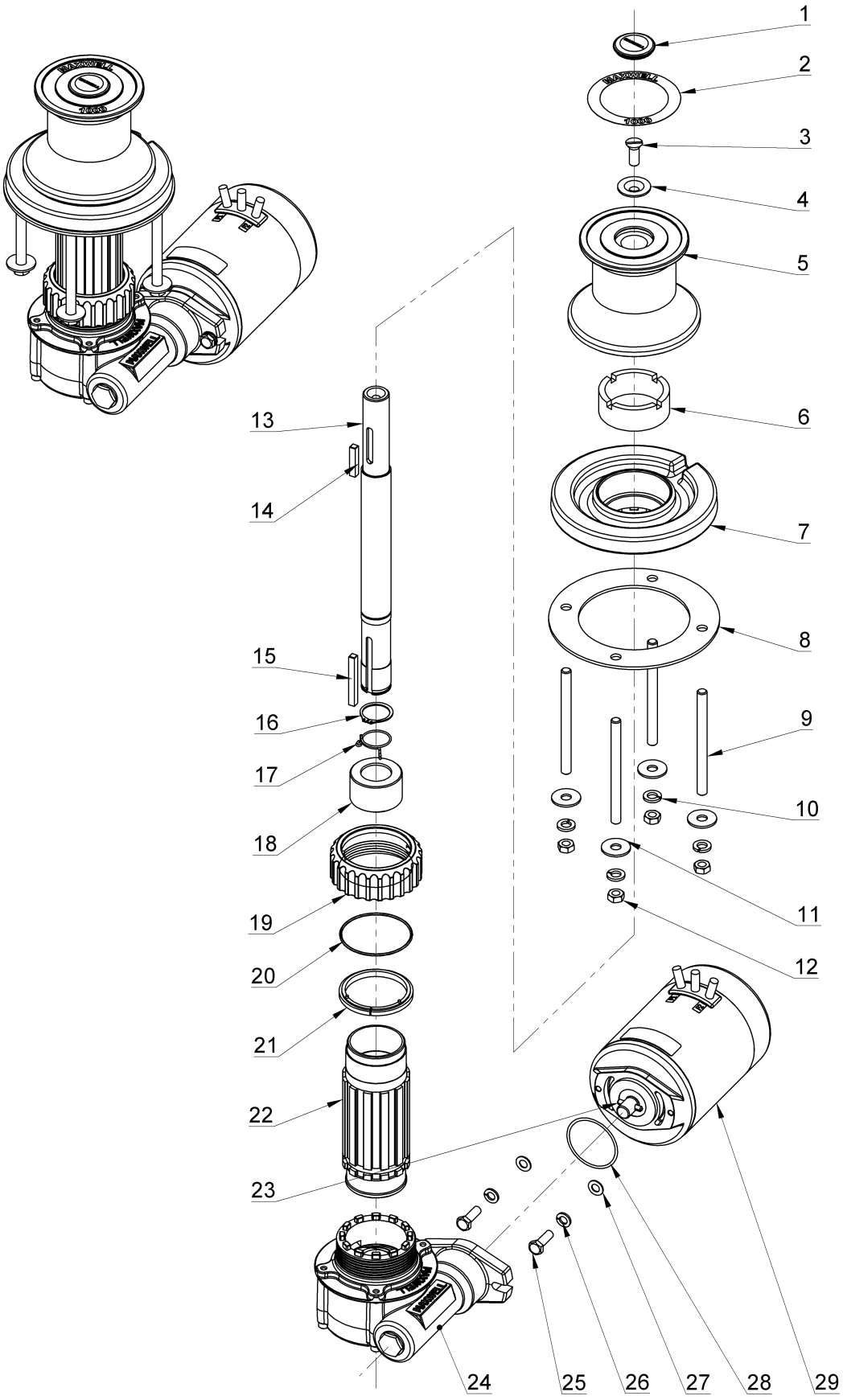


Figure 2 - 1000 VC Winch Assembly Drawing (Electric Models)

1000 VC Windlass Parts (Electric Models)

Item No.	Component Description	Qty	Part to Order	Includes Items
1	Cap	1	P101642	1,3,4,14
2	Label - 1000	1	6424	2
3	Screw - 3/8" x 1"	1	P101642	1,3,4,14
4	Washer	1	P101642	1,3,4,14
5	Drum – VC VWC VW	1	P101655	2,5
6	Retaining Collar	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
7	Deckplate 1000VC	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
8	Gasket	1	3472	8
9	Stud - 50TDC	4	P101612	9,10,11,12
	Stud - 100TDC	4	P101613	9,10,11,12
	Stud - 150TDC	4	P101614	9,10,11,12
10	Spring Washer	4	**P101612 or P101613 or P101614	9,10,11,12
11	Washe	4	**P101612 or P101613 or P101614	9,10,11,12
12	Nut - 3/8"	4	**P101612 or P101613 or P101614	9,10,11,12
13	Shaft - 1000VC - 50TDC	1	6200	13
	Shaft - 1000VC - 100TDC	1	6201	13
	Shaft - 1000VC - 150TDC	1	6202	13
14	Key	1	P101642	1,3,4,14
15	Key 6.35x6.35x57	1	P101619	15,16,17,23
16	Circlip	1	P101619	15,16,17,23
17	Quick Change Clip	1	P101619	15,16,17,23
18	Bearing	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
19	Locknut	1	P100088	19,20,21
20	O-Ring	1	P100088	19,20,21
21	Collar	1	P100088	19,20,21
22	Spacer Tube - 50TDC	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
	Spacer Tube - 100TDC	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
	Spacer Tube - 150TDC	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
23	Tension Pin	1	P101619	15,16,17,23
24	Gearbox - 1000 - 44:1	1	P100900	
25	Bolt - Hex Hd M8x25	2	P12487	25(x2),26(x2),27(x2),28(x1)
26	Washer - Spring - M8	2	P12487	25(x2),26(x2),27(x2),28(x1)
27	Washer - Flat - M8	2	P12487	25(x2),26(x2),27(x2),28(x1)
28	O-Ring	1	P12487	25(x2),26(x2),27(x2),28(x1)
29	Motor - 12v - 1000W Motor	1	P11112	28
	Motor - 24v - 1000W Motor	1	P11114	28

**P101643 = 50mm TDC, P101644 = 100mm TDC, P101645 = 150mm TDC

**P101612 = 50mm TDC, P101613 = 100mm TDC, P101614 = 150mm TDC

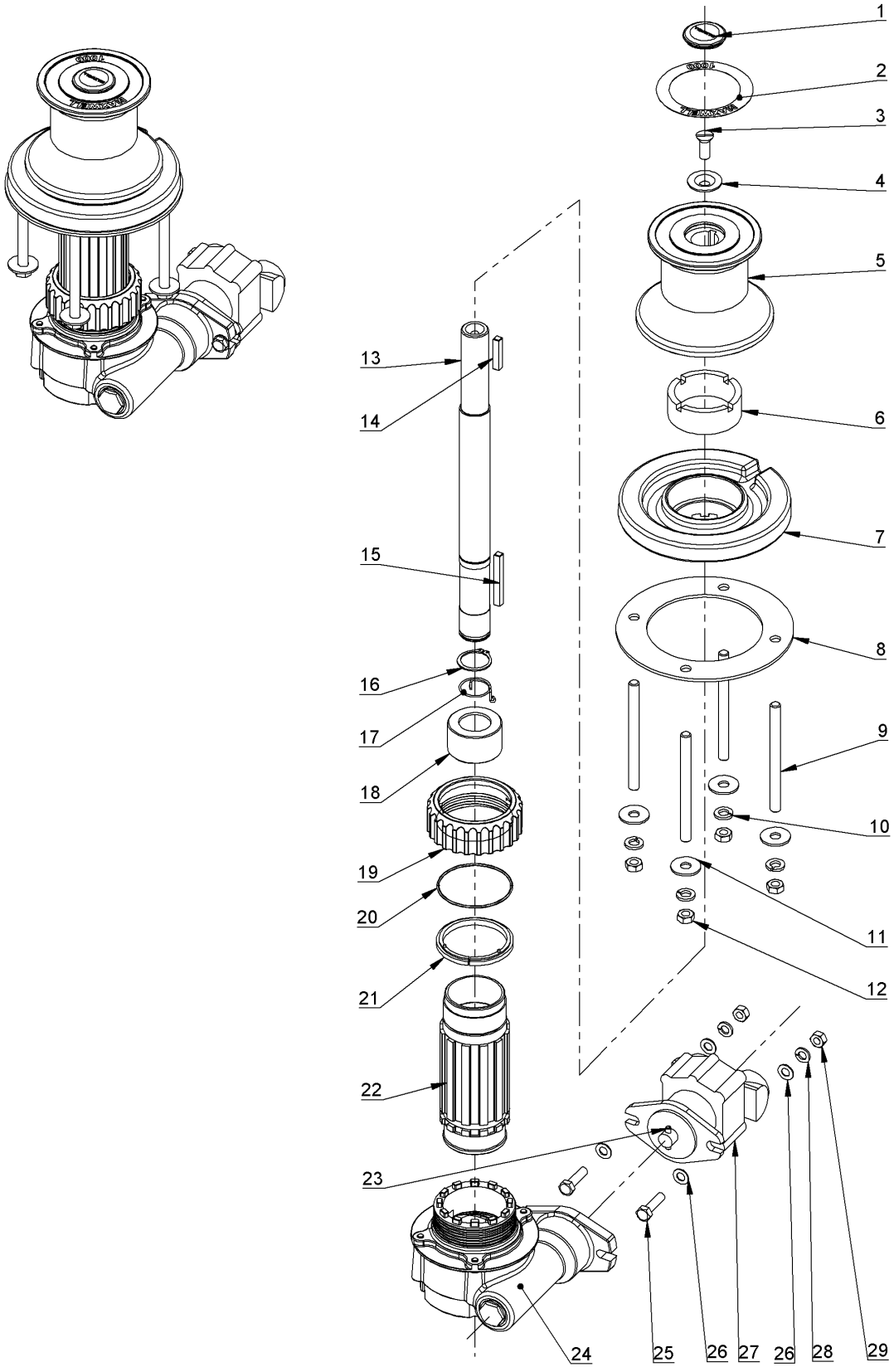


Figure 3 - 1000 VC Winch Assembly Drawing (Hydraulic Models)

1000VC Windlass Parts (Hydraulic Models)

Item No.	Component Description	Qty	Part to Order	Includes Items
1	Cap	1	P101642	1,3,4,14
2	Label - 1000	1	6424	2
3	Screw - 3/8" x 1"	1	P101642	1,3,4,14
4	Washer	1	P101642	1,3,4,14
5	Drum – VC VWC VW	1	P101655	2,5
6	Retaining Collar	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
7	Deckplate 1000VC	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
8	Gasket	1	3472	8
9	Stud - 50TDC	4	P101612	9,10,11,12
	Stud - 100TDC	4	P101613	9,10,11,12
	Stud - 150TDC	4	P101614	9,10,11,12
10	Spring Washer	4	**P101612 or P101613 or P101614	9,10,11,12
11	Washe	4	**P101612 or P101613 or P101614	9,10,11,12
12	Nut - 3/8"	4	**P101612 or P101613 or P101614	9,10,11,12
13	Shaft - 1000VC - 50TDC	1	6200	13
	Shaft - 1000VC - 100TDC	1	6201	13
	Shaft - 1000VC - 150TDC	1	6202	13
14	Key	1	P101642	1,3,4,14
15	Key 6.35x6.35x57	1	P101619	15,16,17,23
16	Circlip	1	P101619	15,16,17,23
17	Quick Change Clip	1	P101619	15,16,17,23
18	Bearing	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
19	Locknut	1	P100088	19,20,21
20	O-Ring	1	P100088	19,20,21
21	Collar	1	P100088	19,20,21
22	Spacer Tube - 50TDC	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
	Spacer Tube - 100TDC	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
	Spacer Tube - 150TDC	1	**P101643 or 101644 or 101645	6,7,9(x4),10(x4),11(x4),12(x4),18,22
23	Tension Pin	1	P101619	15,16,17,23
24	Gearbox - 1000 - 44:1	1	P100900	24
25	Bolt - Hex Hd M8x30	2	P12488	25(x2),26(x4),28(x2),29(x2)
26	Washer - Flat - M8	4	P12488	25(x2),26(x4),28(x2),29(x2)
27	Motor - Hydraulic	1	P14366	27
28	Washer - Spring	2	P12488	25(x2),26(x4),28(x2),29(x2)
29	Nut - M8	2	P12488	25(x2),26(x4),28(x2),29(x2)

**P101643 = 50mm TDC, P101644 = 100mm TDC, P101645 = 150mm TDC

**P101612 = 50mm TDC, P101613 = 100mm TDC, P101614 = 150mm TDC

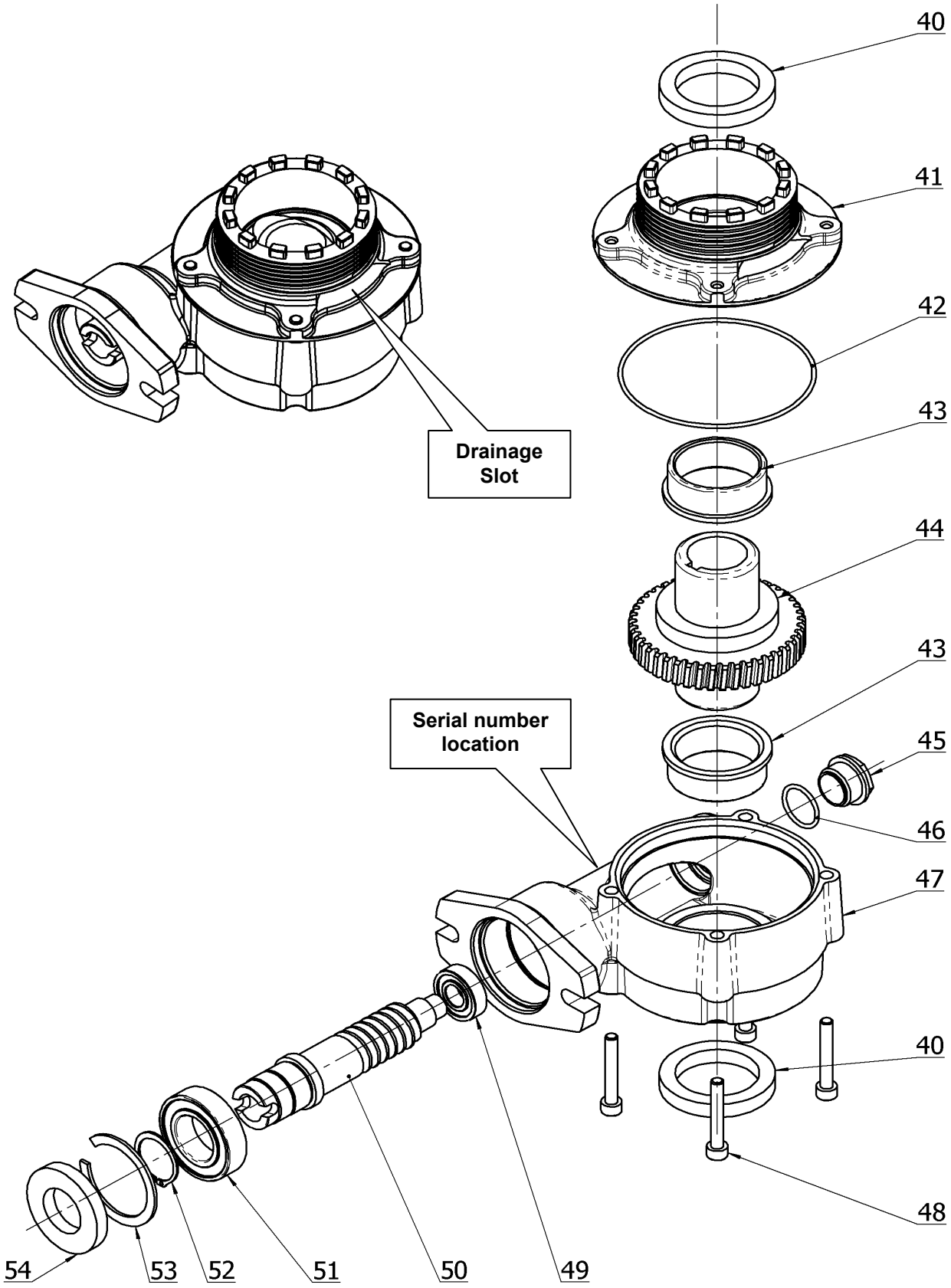
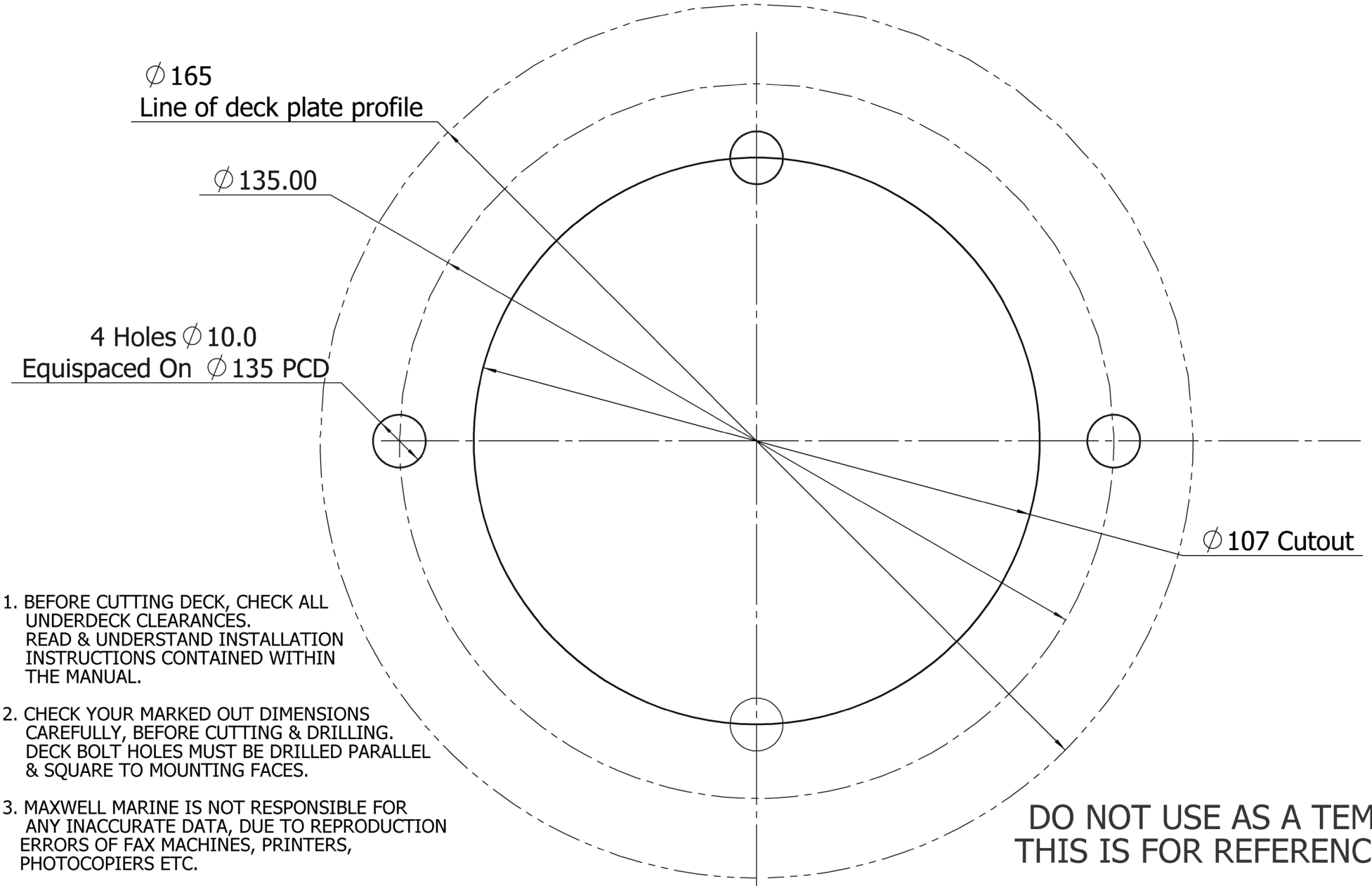


Figure 4 - Gearbox 44:1 Assembly Drawing

Gearbox 44:1 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	Wormwheel 44:1	1	3403	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	48
49	Bearing	1	P90007	49,51,52,53
50	Worm 44:1	1	5950	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

* ALL DIMENSIONS IN MILLIMETRES * >>IF IN DOUBT ASK<< * REMOVE ALL BURRS AND SHARP EDGES * ALL FINISHES SPECIFIED BY DRAWING NOTE * Copyright Maxwell Winches Limited 1998 *



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.

DO NOT USE AS A TEMPLATE
THIS IS FOR REFERENCE ONLY

Rev.	Change	Made on	Des/Drawn	Checked
1.00	Initial issue	04/05/06	CX	

Description:

Deck Cutout Details - 1000 VC

Description:

Drawing No: 6162

Revision No: 1.00

Material:

Tolerances if none specified
0 DECIMAL (X) ±0.5
1 DECIMAL (X.X) ±0.2
2 DECIMAL (X.XX) ±0.1

ALL ANGLES ±0.5°

SURFACE FINISH 1.6

Sheet Size A4

Scale 1:1

Sheet 1 of 1

File Location: W:\Product Data\components\6100-6199\6162_1.00_prt_Deck Cutout Details - 1000 VC

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

☐ With boat

☐ Fitted by boat yard/dealer

☐ Purchased from dealer/chandler

Name L.O.A.

Built by