

VW 500

JULY 1995

ISSUE 3

MAXWELL



CAPSTANS

WINCHES

WINDLASSES

VW 500

JULY 1995

ISSUE 3

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Mike M.

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VW 500
OWNERS MANUAL

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INSTALLATION, OPERATING INSTRUCTIONS AND SERVICE MANUAL
VW 500 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	275 kg Max (650 lbs)
STATIC LOAD CAPACITY	450 kg Max (1000 lbs)
CHAIN SIZE	Short Link Max 6mm (¼")
RATE AT NO LOAD	25 Metres/min (80 Feet/min)
RATE AT NORMAL WORKING LOAD	18-21 Metres/min (60-70 Feet/min)

POWER OPTIONS

VW 500

57mm (2 ¼") Deck Clearance

108mm (4¼") Deck Clearance

Product Code

P12440	12 Volt D.C.
P12441	24 Volt D.C.
P12443	12 Volt D.C.
P12444	24 Volt D.C.

CURRENT

Normal Working Load

12 Volt 80-120 Amps

24 Volt 40-60 Amps

At Stall

12 Volt 305 Amps

24 Volt 150 Amps

SUPPLY CABLES

See Page 12

WEIGHT (Nett)

VW 500

57mm (2 ¼") Deck Clearance

108mm (4 ¼") Deck Clearance

<u>Product code</u>	<u>KGS</u>	<u>LBS</u>
P12440	10.0	22
P12441	10.0	22
P12443	10.0	22
P12444	10.0	22

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 VW 500 WINDLASS IS DESIGNED FOR ALL CHAIN SYSTEMS USING UP TO A MAXIMUM CHAIN SIZE OF 6MM (¼") 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 VW 500 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 (refer Drawing B200663).

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 4 different positions in relation to the deckplate (refer drawing B200663). This can be achieved on installation by referring to the assembly drawing and indexing at the top end of the Spacer Tube (item 22) on bolts (item 11). 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 B3385). **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 B3385) or the "Single Direction" System (Refer drawing D3553) 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 B3385).

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 B3385).

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 B3385 for wiring details.

MAIN ELECTRICAL SYSTEM

The main electrical system is a two cable ungrounded fully insulated negative return system.

The motor is of the isolated earth type.

This system is used to minimise electrolytic and corrosion problems.

The system should be wired as per drawing B3385, having taken into consideration the best location for the main elements as previously discussed.

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".

The main supply cables should be selected from the table below.

RECOMMENDED MAIN CABLE CONDUCTOR SIZE 12 VOLT D.C. SYSTEMS

Conductor Length Battery to Winch		Conductor Size		Engine Room Size Correction	
Metres	Feet	MM ²	A.W.G	MM ²	A.W.G
3.1	10	14	6	22	4
4.6	15	14	6	22	4
6.2	20	22	4	-	-
7.7	25	26	3	-	-
9.2	30	34	2	-	-
10.8	35	34	2	-	-

24 VOLT D.C. SYSTEMS

Metres	Feet	MM ²	A.W.G	MM ²	A.W.G
3.1	10	8.5	8	-	-
4.6	15	8.5	8	-	-
6.2	20	8.5	8	-	-
7.7	25	8.5	8	-	-
9.2	30	8.5	8	-	-
10.8	35	8.5	8	-	-

NOTE

- Conductor length means the actual length of the conductor between the battery and Windlass.
- Recommendations allow for a maximum 10% voltage drop approximately over the conductor length.
- Where portion of cable runs through the engine room a size increase should be made as indicated.
- Recommendations assume cable insulation has a minimum thermal rating of 90°C.
- The above recommendations are in accordance with the requirements of USCG, ABYC AND NMMA.

PREPARATION OF MOUNTING

Standard units will accommodate deck thickness up to 57mm (2¼"). Extra clearance models are available to accommodate deck thickness in the range of 57mm to 108mm (4¼").

**** 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 item 43 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

Remove the Windlass from the packaging.

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

4. **With Windlass held vertically, check that oil is showing half way up the sight glass in the gearbox.**
If necessary, top up with SAE90 (Shell Omala 320, Castrol Alpha SP320 or equivalent). DON'T OVER FILL.
5. With a pen knife or similar, carefully remove cap, item 1.
Remove screw, item 2 and retaining washer, item 3.
Unscrew clutch nut, item 4.
Lift drum, item 41 from shaft.
Undo bolt, item 14, and remove stripper arm item 7, from deck plate item 10.
Lift clutch cone, and chainwheel, items 5 and 8 from the shaft.
Remove two keys, item 18 from shaft item 17.
Lift ring seal item 37 from shaft item 17.
NOTE: Before lifting lower clutch cone item 45 remove grub screw item 46.
6. Remove four bolts item 11 with spring washers item 12 and lift deckplate 10 from gearbox assembly.
7. Remove washers items 12 and 15, by undoing four nuts item 16.

MOUNTING THE WINDLASS

8. Clear the underside of the deckplate item 10.
Make sure the mounting area on the deck is properly prepared, as per step 3 above and is clean.
Using the gasket item 43 between the deckplate and the deck, lower the deckplate to the deck, guiding the mounting studs 13 through the pre drilled mounting holes and bed the deckplate down.
9. From the underside of the deck offer up the washers items 12 and 15 and replace four nuts, item 16.
IMPORTANT
Tighten the nuts progressively and evenly.
DO NOT USE POWER TOOLS.
Do not overtighten. Ensure installation is firm.
10. Lightly grease shaft item 17, using Shell Alvania R2, Castrol AP2 or equivalent grease.
Holding the gearbox assembly, feed the shaft through the deckplate from below and locate the spacer tube item 22 on the spigot of the deckplate item 10. Rotate the gearbox assembly to the most appropriate of the four positions available.
Replace four bolts and spring washers items 11 and 12 and removed in step 6 above.
Tighten bolts evenly and firmly - DON'T USE POWER TOOLS.

11. Ensure parts removed in step 5 above are clean along with the top area of the deckplate.
12. Use grease (specified in step 10 above) and with the aid of a clean brush or non-fluffy rag, **lightly grease the thread** on the top end of shaft item 17 and **the bores and clutch faces of the parts removed** in step 5 above, reassemble them as you go in reverse order.
IMPORTANT - care must be taken to ensure that the key/keys, item 18 are properly seated in shaft.

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 B3385)

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.

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 item 40 into the clutch nut item 4 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 item 40 into the clutch nut item 4.
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 item 40 in the clutch nut item 4 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

**** IMPORTANT ****

Failure to carry out the maintenance and service as described herein will invalidate warranty.

Recommended Lubricants

Gearbox Oil: SAE 90, e.g. Shell Omala 320, Castrol Alpha SP 320.

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.

1. **Prior to Season** - the above deck components should be removed and greased following the instructions under steps 5, 12, 13 and 14 of the installation instructions.

Check level of oil in gearbox. If necessary top up as per step 4 of the installation instructions.

The underdeck components should be sprayed, preferably with CRC3097 "Long Life" or alternatively, CRC6-66 or WD40.

Particular attention should be paid to the motor on electric units, including the motor terminals, footswitch terminals, terminals on the Reversing Solenoid plus the battery and isolator terminals.

2. **Six-monthly** - repeat procedure under item 1 above.
3. **End of Season** - before storage carry out procedure under item 1.
4. **Above deck components** - clean the Windlass with a cloth damp with Kerosene (paraffin). Spray preferably with CRC3097 "Long Life" or alternatively, CRC6-66 or WD40. Polish off with a clean non-fluffy cloth.

Regular use of CRC3097 "Long Life" will assist maintaining the bright chrome finish.

Natural lustre of bronze units can be restored by polishing with mild abrasive liquid polish. **Don't use on chrome units.**

SERVICING OF GEARBOX

The gearbox is a totally self contained sealed unit. Providing the Windlass is not abused this unit should give years of trouble free service.

Every three years the gearbox should be removed, oil drained, cleaned and oil replaced with SAE 90, e.g. Shell Omala 320, Castrol Alpha SP 320.

If further maintenance is required, refer to drawing B200664 and accompanying parts list, for disassembly.

SERVICING OF MOTOR

If necessary, the motor can be removed from the gearbox without draining the gearbox oil as the gearbox is a sealed unit.

The motor is removed by undoing two bolts item 35 and washers items 36 and 12 (Refer to assembly drawing B200664).

A replaceable drive pin item 38 is a press fit in the output end of the drive shaft. This pin engages the slot in the worm item 31.

Providing the Windlass is properly installed with the Maxwell Reversing Solenoid and Breaker/Isolator Panel, and the Windlass is not abused, trouble free operation can be expected.

ORDERING SPARE PARTS

When ordering spare parts, please quote the following:

- Windlass Model.....
- Serial Number.....
- Power Supply 12V, 24V or Hydraulic
- Drawing Reference Number
- Item Number
- Part Number.....
- Description
- Quantity Required.....

TECHNICAL ASSISTANCE

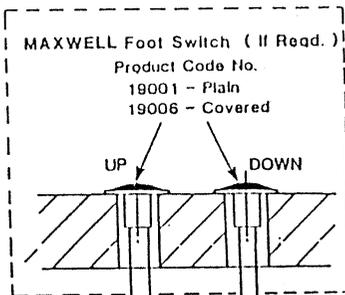
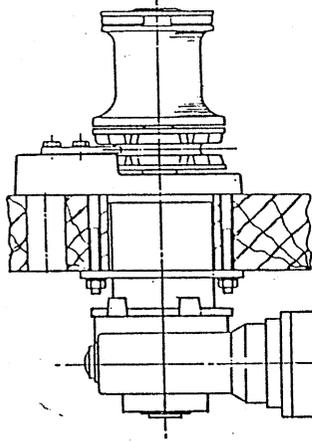
WE ARE ALWAYS AT YOUR SERVICE. IF YOU REQUIRE FURTHER INFORMATION OR ASSISTANCE CONTACT:

**MAXWELL WINCHES LTD
P O BOX 100-703
NORTH SHORE MAIL CENTRE
NORTH SHORE CITY
NEW ZEALAND
PHONE: (64)9-444-7396
FAX: (64)9-444-0090**

**MAXWELL WINCHES INC
1610 BABCOCK STREET
COSTA MESA
CALIFORNIA 92627
U.S.A.
PHONE: (1)714-631-2634
FAX: (1)714-631-2846**

SERVICE RECORD

VWC 500



MAXWELL Remote Control Station
Product Code No.
19220 - 12v
19221 - 24v.

ADDITIONAL
REMOTE CONTROL STATIONS
Arrange To Suit

Minimum Conductor Size
1.5 mm² (No. 18 AWG)
(USCG, ABYC, NMMA
Requirement)

MAXWELL Reversing Solenoid
Product Code No.
11041 12v
11042 24v

3 Amp Manually Resettable Breaker.
To be Selected and Installed to
USCG, ABYC, NMMA, Requirements.
Recommended Breaker :-
ETA 41-10-P10-G10-WT 3 Amp.

Main Power Conductor Between
Battery & Isolator Panel Must Not
Exceed 1.8 m (72")
(USCG, ABYC, NMMA
Requirement.)

MAXWELL Breaker/Isolator Panel
Product Code No.
19034 - 80 Amp (12v)
19033 - 40 Amp (24v)

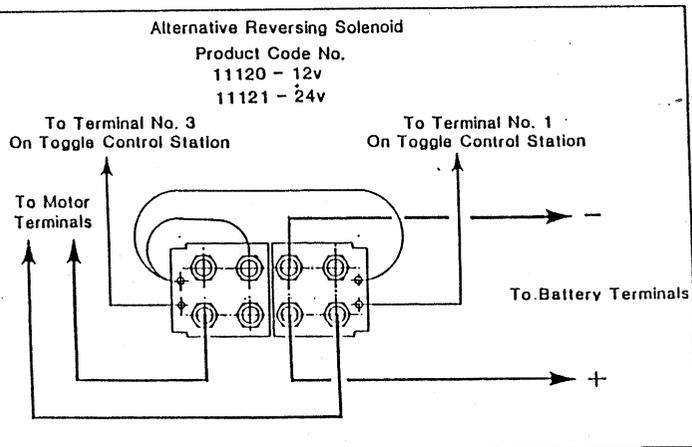
Battery
12v or 24v Supply

ALL INSTALLATIONS SHOULD BE CARRIED
OUT IN ACCORDANCE WITH
USCG, ABYC, NMMA, REQUIREMENTS.

AFTER THIS ACCESSORY HAS BEEN INSTALLED CORRECTLY, ALL
CONNECTIONS MADE AND SYSTEM TESTED. SEAL TERMINALS
AGAINST MOISTURE BY SPRAYING WITH CRC2043 "PLASTI-COAT"
CRC3013 "SOFT SEAL" OR CRC2049 "CLEAR URETHANE"

Conductor
To Rear Terminal
Hidden In This View

Conductor To Front
Terminal As Viewed



This Unit Is Built With
UL Approved Ignition
Proof Components
(USCG, ABYC, NMMA,
Requirement)

Length of Conductor Between Power Source
and Breaker Not to Exceed 1m (40")
(USCG, ABYC, NMMA, Requirement)

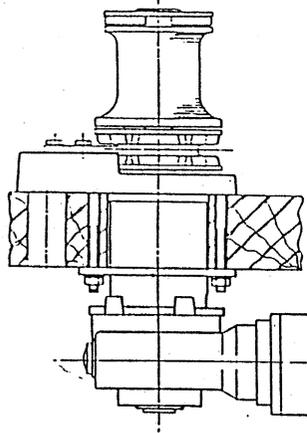
NOTE:-

All Main Power Conductor Terminations Are
To Be Of Ring Type. All Terminations Are To Be
Sleeved To Protect Against Accidental
Shorting.
(USCG, ABYC, NMMA Requirement)
For Main Power Conductor Requirements
Refer To Instruction Manual

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MAXWELL Winches Ltd. AUCKLAND NEW ZEALAND		SCALE	---	TOL UNLESS SPECIFIED
DUAL DIRECTION WIRING DIAGRAM For VW, VWC & VWCLP 500		MATERIAL	---	
		FINISH	---	
		DRAWN	D.J.I	REV 5
		DATE	8-2-90	B 3385

VWC 500



MAXWELL Foot Switch
 Product Code No.
 19001 — Plain
 19006 — Covered



ALL INSTALLATIONS SHOULD BE CARRIED OUT IN ACCORDANCE WITH USCG, ABYC, NMMA, REQUIREMENTS.

AFTER THIS ACCESSORY HAS BEEN INSTALLED CORRECTLY, ALL CONNECTIONS MADE AND SYSTEM TESTED. SEAL TERMINALS AGAINST MOISTURE BY SPRAYING WITH CRC2043 "PLASTI-COAT" CRC3013 "SOFT SEAL" OR CRC2049 "CLEAR URETHANE"

Main Power Conductor Between Battery & Isolator Panel Must Not Exceed 1.8 m (72") (USCG, ABYC, NMMA Requirement)

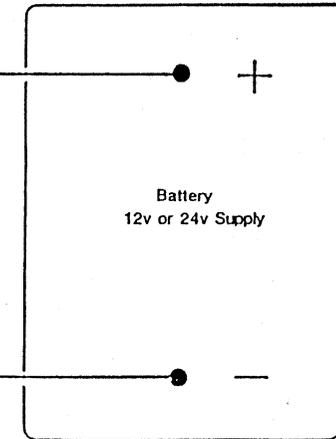
For Main Power Conductor Requirements Refer To Instruction Manual

MAXWELL Breaker/Isolator Panel
 Product Code No.
 19034 — 80 Amp (12v)
 19033 — 40 Amp (24v)

This Unit is Built With UL Approved Ignition Proof Components (USCG, ABYC, NMMA, Requirement)



From Indicator Light
 To Common Negative



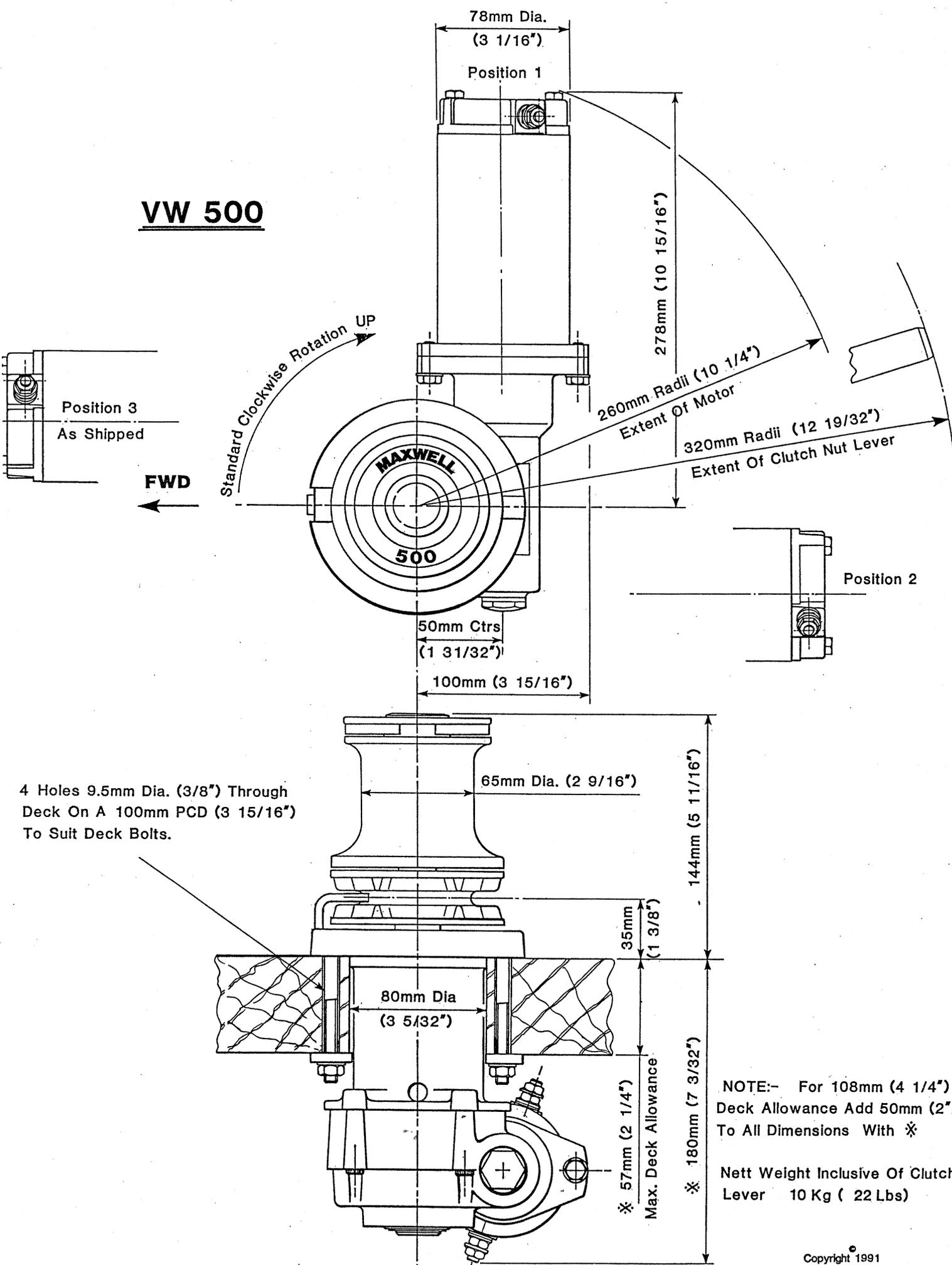
NOTE-

All Main Power Conductor Terminations Are To Be Of Ring Type. All Terminations Are To Be Sleeved To Protect Against Accidental Shorting. (USCG, ABYC, NMMA Requirement)

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MAXWELL Winches Ltd. AUCKLAND NEW ZEALAND	SCALE	---	TOL. UNLESS SPECIFIED	
	MATERIAL	---		
SINGLE DIRECTION WIRING DIAGRAM For VW, VWC & VWCLP 500.	FINISH	---		
	DRAWN	D.J.I.	D 3553	REV 2
	DATE	1-5-91		

VW 500



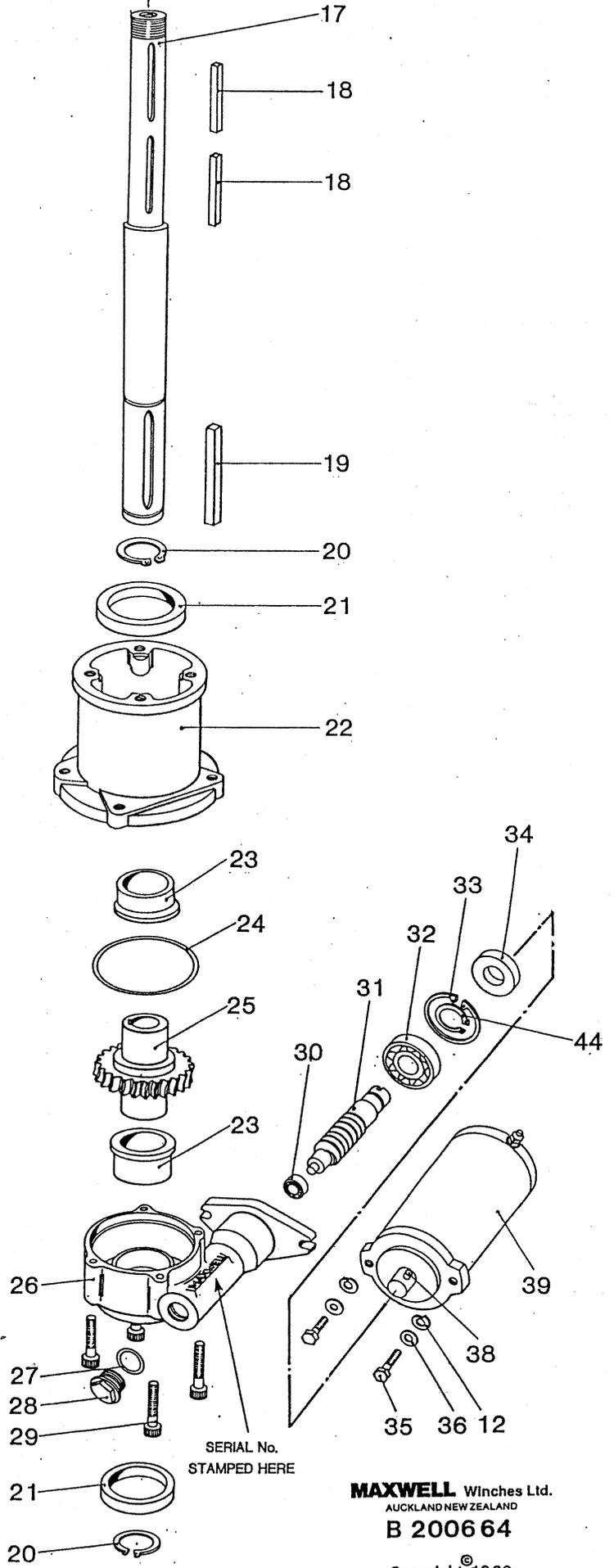
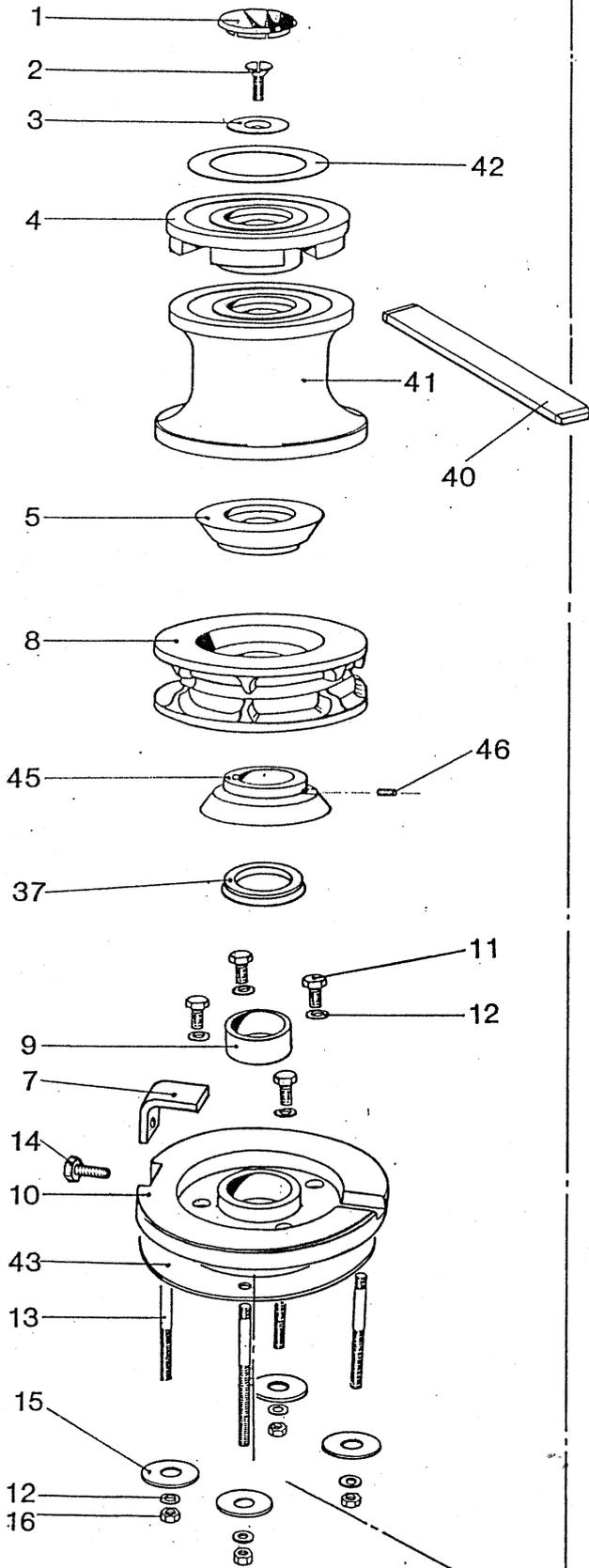
4 Holes 9.5mm Dia. (3/8") Through Deck On A 100mm PCD (3 15/16") To Suit Deck Bolts.

NOTE:- For 108mm (4 1/4") Deck Allowance Add 50mm (2") To All Dimensions With *

Nett Weight Inclusive Of Clutch Lever 10 Kg (22 Lbs)

Copyright 1991

VW 500



SERIAL No.
STAMPED HERE

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AUCKLAND NEW ZEALAND
B 2006 64
Copyright © 1990

VW 500 ELECTRICB200664

ITEM	PART NO.	DESCRIPTION	QTY
1	D3386	CAP	1
2	SP40	SCREW	1
3	E3333	RETAINING WASHER	1
4	D3357	CLUTCH NUT	1
5	E3358	CLUTCH CONE- UPPER	1
6	-		
7	E3645	STRIPPER ARM	1
8	D3132	CHAINWHEEL	1
9	SP660	BUSH	1
10	D3634	DECKPLATE	1
11	SP254	BOLT	4
12	SP467	WASHER	10
13A	E3367	STUD (2¼" TDC)	4
13B	E3419	STUD (4¼" TDC)	4
14	SP292	BOLT	1
15	E3625	WASHER	4
16	SP366	HEX NUT	4
17A	D3363	MAINSHAFT (2¼" TDC)	1
17B	D3414	MAINSHAFT (4¼" TDC)	1
18	E2049	KEY	2
19	E3315	KEY	1
20	SP848	CIRCLIP	2
21	SP724	SEAL	2
22A	C3334	SPACER TUBE (2¼" TDC)	1
22B	C3417	SPACER TUBE (4¼" TDC)	1
23	E3145	BUSH	2
24	SP726	'O' RING	1
25	D3397	WORM WHEEL	1
26	C3133	WORM BOX	1
27	SP720	'O' RING	1
28	D3223	SIGHT GLASS	1
29	SP159	SCREW	4
30	SP643	BEARING	1
31	D3400	WORM	1
32	SP642	BEARING	1
33	SP844	CIRCLIP	1
34	SP721	SEAL	1
35	SP288	BOLT	2
36	SP413	WASHER	2
37	SP738	V. 25A RING SEAL	1
38	SP530	ROLL PIN	1
39A	P10068	MOTOR 12 V	1
39B	P10069	MOTOR 24 V	1
40	D3381	LEVER	1
41	D3359	DRUM	1
42	E3356	LABEL 500	1
43	D3398	GASKET	1
44	SP838	CIRCLIP	1
45	E3552	CLUTCH CONE - LOWER	1
46	SP108	GRUB SCREW	1

MAXWELL™

3 YEAR LIMITED WARRANTY

Warranty: MAXWELL warrants its products, in normal usage, to be free of defects in materials and workmanship for a period of three true years from the date of original purchase subject only to the conditions and limitations below. Any part which proves to be defective in normal usage during that three year period will be repaired or replaced by MAXWELL, at its option.

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 attributable 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 attributable to:
 - a) use of products in applications for which they are not intended.
 - b) corrosion, wear and tear or improper installation.
 - c) improper use of the product.
5. MAXWELL shall not be responsible for shipping charges or installation labour associated with any warranty claims
6. 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 consumer they shall be limited to a period of three years from original purchase by the user.
7. MAXWELL shall not be liable for consequential damages to yachts, equipment, or other property or persons due to use or installation of MAXWELL equipment.
8. 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.
9. To make a claim under this warranty, contact your nearest MAXWELL WINCHES office or distributor. Proof of purchase and authorisation from MAXWELL will be required prior to any repairs being attempted.

Designed and manufactured by

MAXWELL WINCHES LTD

65 VIEW ROAD, GLENFIELD, AUCKLAND, P O BOX 100-703 NORTH SHORE MAIL CENTRE, AUCKLAND 9, NEW ZEALAND
TELEPHONE: 64-9-444 7396 FACSIMILE: 64-9-444 0090

MAXWELL™

To be eligible for warranty protection please complete the form below at the time of purchase and send to the address on the reverse side of this form.

PURCHASER

Name:	
Address:	
Telephone:	Fax:

SUPPLIER/DEALER

Name:	
Address:	
Telephone:	Fax:

WINCH MODEL	SERIAL NUMBER/S

Date of Purchase _____

Winches Supplied

With Boat Fitted by boat yard/dealer Purchased from dealer/chandler

Boat Type: _____ Name: _____ L.O.A.: _____

Built By: _____

©

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**MAXWELL WINCHES reserve
the right to make engineering
refinements on all products
without notice.
Illustrations and specifications
not binding as to detail.**

Please complete the other side of this Warranty
Registration and return as follows.

If your winch/winches or new boat with winch/winches
installed was purchased in either

NORTHERN HEMISPHERE

Return to:

MAXWELL WINCHES INC.,
1610 Babcock Street
Costa Mesa
California, 92627

SOUTHERN HEMISPHERE

Return to:

MAXWELL WINCHES LTD,
P O Box 100-703
North Shore Mail Centre
Auckland 10
New Zealand

Maxwell Winches Ltd
PO Box 100-703
N.S.M.C.,
New Zealand
Ph 64 9 444 7396
Fax 64 9 444 0090

Maxwell Winches Inc.
1610 Babcock Street
Costa Mesa,
California 92627, USA
Ph 71 4 631 2634
Fax 71 4 631 2846

Maxwell Winches Ltd
 65 View Road, Glenfield
 PO Box 100-703
 NSMC, Auckland
 New Zealand
 Ph 64 9 444 7396
 Fax 64 9 444 0090

Maxwell Winches Australia
 PO Box 228, Carina
 4152, Queensland
 Australia
 Ph 61 7 3843 5755
 Fax 61 7 3843 5909

Maxwell Winches Inc
 1610 Babcock Street
 Costa Mesa
 California 92627
 United States of America
 Ph 949 631 2634
 Fax 949 631 2846

LIMITED WARRANTY

Warranty: MAXWELL 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. MAXWELL shall not be responsible for shipping charges or installation labour associated with any warranty claims.
6. 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.
7. 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.
8. 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.
9. To make a claim under this warranty, contact your nearest MAXWELL Winches 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 above address, or fill out the digital warranty form on our website: www.maxwell-winch.com

Purchaser

Name:

Address:

Telephone:

Facsimile

Supplier/Dealer

Name:

Address:

Telephone:

Facsimile

Winch Model

Serial Number

Date of purchase

Boat type

Winches Supplied

Name

L.O.A

With boat

Fitted by boat yard/dealer

Built by

Purchased from dealer/chandler



FOOT SWITCH-PLAIN.

Product Code 19001

WHERE TO LOCATE

Footswitches should be positioned far enough away from the Windlass to ensure operator safety.

To allow the operator to fall from the warping drum, footswitches should be at least 500mm (20") from the Windlass.

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.

INSTALLATION

The switch is mounted from the top surface of the deck irrespective of the deck thickness.

NOTE: If deck is less than 38mm (1 1/2") through, the wiring connections can be made after the switch is installed.

A 65mm (2 1/2") diameter hole should be bored through the deck where the switch is to be located.

Bring the electrical cables through the hole in the deck.

Make the electrical connections in accordance with the wiring diagram supplied in the Winch Owners Manual.

NOTE: All terminations should be of Ring type and should be sleeved to protect against accidental shorting.

After all connections have been made, seal terminals against moisture by spraying with CRC 2043 "Plasti-Coat", CRC 3013 "Soft Seal" or CRC 2049 "Clear Urethane".

Ensure that the support washer is in place on the plunger shaft.

Locate the hole in the underside of the rubber diaphragm item 2, over the plunger shaft.

Rotate the diaphragm to align the screw mounting holes in the diaphragm with the holes in the switch flange.

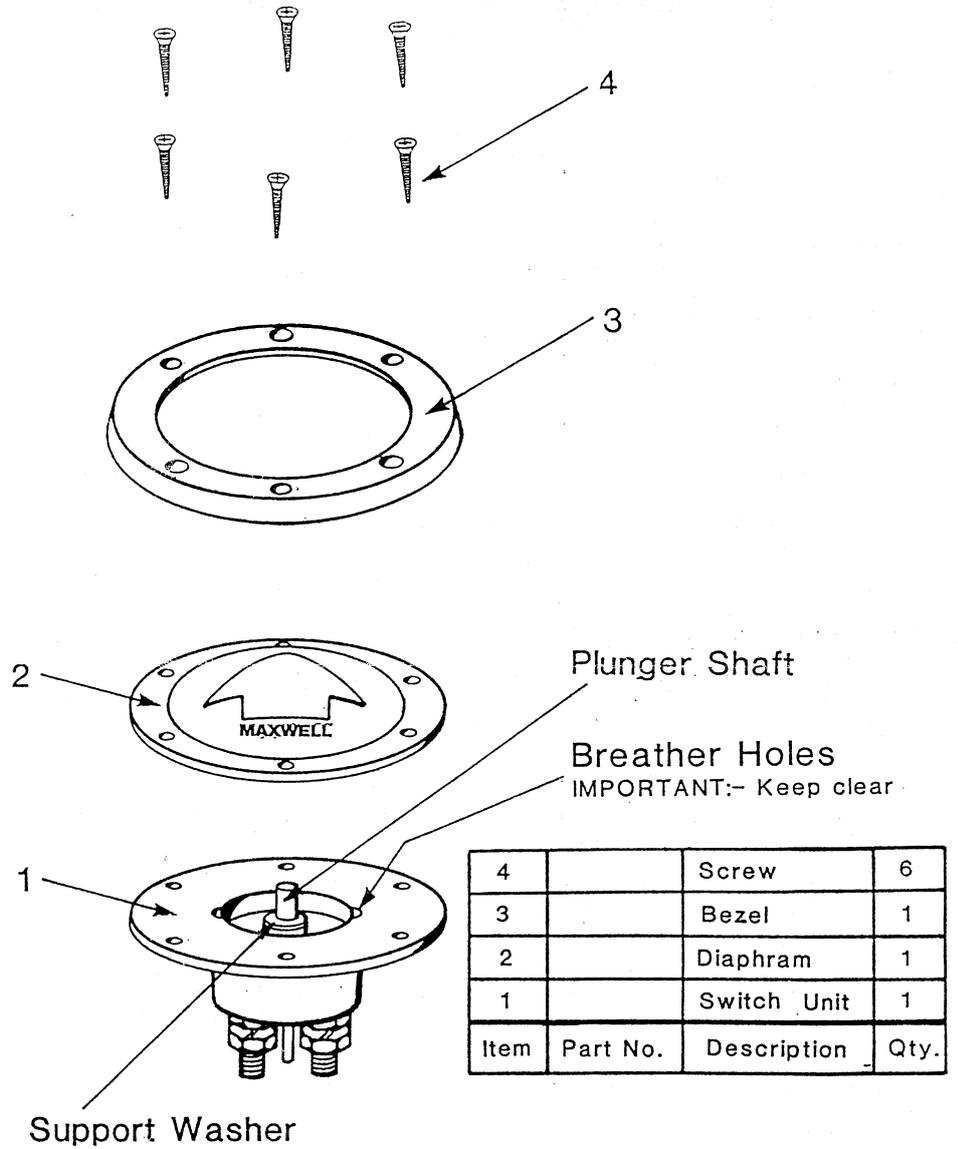
Spread a quantity of sealant/bedding compound evenly around the underside of the switch flange and sparingly around the top face of the flange to ensure diaphragm to switch seal.

Align the switch so that the arrow on the rubber indicates the direction of operation of the winch and bed the switch down on to the deck.

Place the bezel, item 3, over the switch aligning the mounting holes. **Screw down firmly and evenly** using six self-tapping screws item 4.

WARNING: Make sure the breather holes are clear of sealant/bedding compound.

FOOT SWITCH - PLAIN



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AUCKLAND NEW ZEALAND

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AUCKLAND NEW ZEALAND

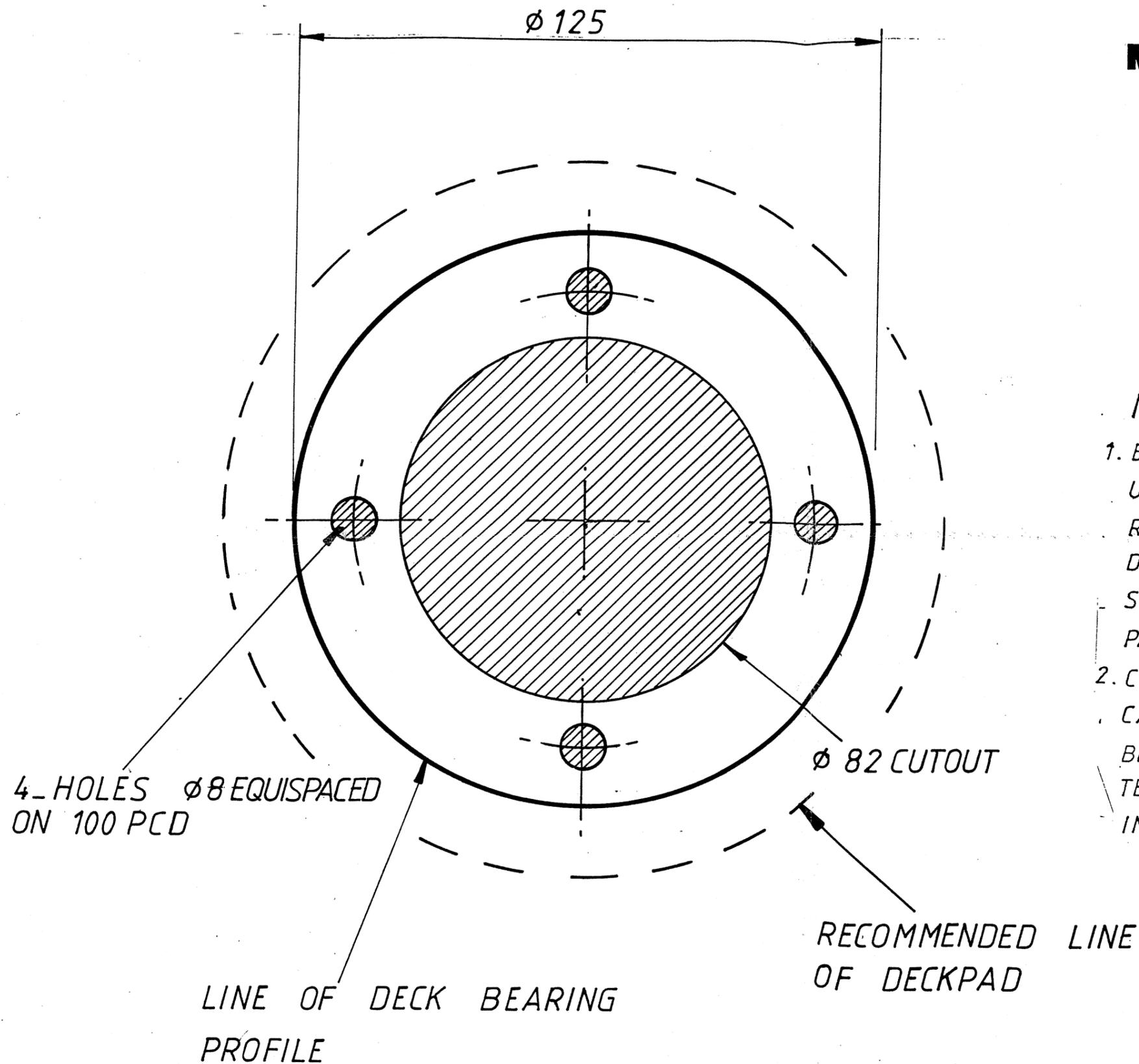
P.O. BOX 100-703

NORTH SHORE MAIL CENTRE

AUCKLAND

NOTE:-

1. BEFORE CUTTING DECK CHECK ALL UNDERDECK CLEARANCES & FULLY READ & UNDERSTAND INSTRUCTIONS. DECK BOLT HOLES MUST BE DRILLED SQUARE TO MOUNTING FACES & PARALLEL.
2. CHECK YOUR MARKED OUT DIMENSIONS CAREFULLY FOR DIMENSIONAL ACCURACY BEFORE CUTTING & DRILLING. THIS TEMPLATE IS SUPPLIED TO ASSIST IN MARKING OUT ONLY.



VW/VC 500	DRAWN	D.J.I.	D3379	REV.
	DATE	12-12-89		2