VW 800

OWNERS MANUAL

MAXWELL

WINDLASSES & CAPSTANS • SOUTHERN OCEAN ROPES • BOAT HATCHES & PORTLIGHT

VW 800
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INSTALLATION, OPERATING INSTRUCTIONS AND SERVICE MANUAL
VW 800 WINDLASS

INTRODUCTION

You now own a Windlass from **MAXWELL'S** premier range, designed for vertical or horizontal mounting.

Used in conjunction with MAXWELL'S control equipment, you will get system protection and control of 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 override when using the emergency crank 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	364 kg Max (800 lbs)	
STATIC LOAD CAPACITY	682 kg Max (1500 lbs)	
CHAIN SIZE	Short Link Max 8mm (5/16")	
RATE AT NORMAL WORKING LOAD	20 Metres/min (65 Feet/min)	
POWER OPTIONS	Product Code	
VW800		
100mm (4") Deck Clearance	P12325	12 Volt D.C.
	P12326	24 Volt D.C.
	P14379	Hydraulic
150mm (6") Deck Clearance	P12365	12 Volt D.C.
	P12366	24 Volt D.C.
	P12395	Hydraulic
ELECTRIC MODELS		
Current at Normal Working Load	12 Volt	80-120 Amps
	24 Volt	40-60 Amps
Current at Stall	12 Volt	305 Amps
	24 Volt	150 Amps
SUPPLY CABLES	See Pages 13-14	
*** HYDRAULIC MODELS**		
Max. recommended Flow	20 Litre/min (5.3 US Gal/min)	
Max. recommended Pressure	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 @ 20-50°C Suitable oils: Shell Rimula X 15W-40; Shell Myrina M 15W-40; Penzoil SAE 10W-40; Texaco 2109 SAE 15W; Texaco 1814 SAE 10W40. BP HLPHM 32-68; Castrol Hysin AWS 32-68; BP Autrans T0410.	

*** Levels of flow/pressure below that specified can be accommodated with a motor change - see options page 5.**

Motor Option	Max Flow/Min Lt	US Gal	Max Pressure Bar	P.S.I.	Max Pull Kg	Lbs	Normal Rate/Min Metres	Feet
P14365	15	4.0	138	2000	273	600	25	81.0

WEIGHT (Nett including Emergency Crank)

	Product code	KGS	LBS
VW 800			
100mm (4") Deck Clearance	P12325	19.35	42.57
	P12326	19.35	42.47
	P14379	13.08	28.78
150mm (6") Deck Clearance	P12365	19.75	43.45
	P12366	19.75	43.45
	P14395	13.48	29.65

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 OR EMERGENCY CRANK COLLAR.

WHEN OPERATING THE CHAINWHEEL PAWL, KEEP FINGERS AWAY FROM THE INCOMING CHAIN.

WHEN THE WINDLASS IS NOT IN USE, OR WHEN USING THE EMERGENCY CRANK, 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 boat's 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 800 WINDLASS CAN BE MOUNTED EITHER VERTICALLY ON THE DECK OR HORIZONTALLY IN THE ANCHOR LOCKER AND IS DESIGNED TO HANDLE ROPE ANCHOR LINES WITH A CHAIN LEADER.
WHEN HORIZONTALLY MOUNTED THE WINCH CAN ALSO BE USED FOR ALL CHAIN SYSTEMS.
THE MAXWELL VW 800 WINDLASS IS DESIGNED FOR CHAIN UP TO A MAXIMUM CHAIN SIZE OF 8MM (5/16") SHORT LINK CHAIN.
On all chain systems a smaller size High Tensile Chain may be used to save weight.

Your Windlass should have a rating of approximately 3 times total combined weight of the anchor and chain.
For calculation purposes assume that all chain rode is being used.

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. ON ROPE/CHAIN SYSTEMS THE CHAINSTOPPER IS A NECESSITY FOR PROPER OPERATION.

INSTALLATION

WHERE TO LOCATE THE WINDLASS

The MAXWELL VW 800 Windlass operates in dual direction power UP/DOWN.
"UP" is clockwise rotation when looking down on the windlass.

The deckplate should be mounted with its orientation in relation to the incoming line for vertical installations as per drawing D200827 and for horizontal installations as per drawing D200843.

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

For combination rope/chain anchor rodes the bow roller should have a vee groove to suit the size of both the rope and chain. This will help align the chain as it enters the chainwheel.

For all chain rodes the bow roller should have a vertical groove to suit the profile of the chain and a swivel shackle should be fitted between the end of the chain and the anchor.

On horizontal installations the chain should have at least 600mm (2 ft) clear fall into the locker to allow the chain to straighten before passing through the windlass.

If it can be arranged a bulkhead should pass between the Windlass gearbox and the anchor locker. This will keep the gearbox, motor and wiring or hydraulic hoses dry and away from flaying rope or chain. Access for servicing from inside the cabin area can usually be arranged through a locker.

The locker must be of such a size that the rope/chain will heap up and feed out naturally without fouling.
NOTE: Make sure you securely fasten the end of the rope or chain to the boat.

**** IMPORTANT ****

WHEN THE WINDLASS IS HORIZONTALLY MOUNTED AND AN ALL CHAIN RODE IS USED AUTOMATIC OPERATION IS POSSIBLE, BUT 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.

When positioning the Windlass, make sure that there is room to swing the emergency crank so that it will clear the pulpit and life lines or Bulwark (refer drawing D200827 or D200843 dependant on installation).

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 D200827 or D200843). This can be achieved on installation by referring to the appropriate assembly drawing and indexing at the top end of the Spacer Tube (item 33) on bolts (item 15). 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 CHAINSTOPPER

The chainstopper should be positioned and aligned in a convenient position between the Windlass and the bow roller, so that it clears the anchor stock. The chain should pass through the stopper without being deflected.

WHERE TO LOCATE THE FOOTSWITCHES

FOOTSWITCHES SHOULD BE POSITIONED FAR ENOUGH AWAY FROM THE WINDLASS TO ENSURE OPERATOR SAFETY.
To allow the operator to tail 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.

WHERE TO LOCATE THE REVERSING SOLENOID (Electric Windlass Only)

This unit is used ONLY when a Dual Direction Control System is being installed. (Refer drawing B3431). **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 CHAIN LOCKER.
Locating close by the Windlass considerably shortens the total length of the main power supply conductors required.

WHERE TO LOCATE THE BREAKER/ISOLATOR PANEL (Electric Windlasses Only)

The Maxwell Breaker/Isolator Panel is used when either the Dual Direction system (refer drawing B3431) or the Single Direction system (refer drawing D3554) 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.
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

Both remote control stations and roving control stations are available.
These 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, ie Fly Bridge, **the mounting must be bedded down with sealant.**
They may be wired directly to, or linked together in series.

CONTROL CIRCUITS

Maxwell Windlasses may be installed for single direction or dual direction operation. The control circuits are detailed in Drawings D3554 and B3431.

These systems should be wired throughout using 1.5mm² (16 AWG) cable.
A manually resettable ignition proof 3 amp fuse or breaker should be fitted within one metre (40") of the Breaker/Isolator Panel as shown on Drawing B3431.
The above requirements are mandatory for this system 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".

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 B3431 or D3554, 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**	**MM²**	**A.W.G**	**MM²**	**A.W.G**
3.1	10	26	3	34	2
4.6	15	26	3	34	2
6.2	20	26	3	34	2
7.7	25	34	2	-	-
9.2	30	42	1	-	-
10.8	35	54	0	-	-
12.3	40	54	0	-	-
15.4	50	67	00	-	-

24 VOLT D.C. SYSTEMS

Metres	Feet	MM²	A.W.G	MM²	A.W.G
3.1	10	14.0	6	14	6
4.6	15	14.0	6	14	6
6.2	20	14.0	6	14	6
7.7	25	14.0	6	-	-
9.2	30	14.0	6	-	-
10.8	35	14.0	6	-	-
12.3	40	22.0	4	-	-
15.4	50	22.0	4	-	-

NOTE

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

HYDRAULIC SYSTEMS

Pressure/flow quoted in specification on page 4 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. (Refer chart page 5).

Several levels of supply and control are possible.
BASIC SYSTEM (Refer drawing B203101 and B203103).
This covers applications where the Windlass is supplied from an engine driven pump or single function power pack. Control of the Windlass is via a hydraulic bi-directional solenoid valve which is operated by a self centering UP/DOWN toggle switch type remote control or the footswitches.
Use of MAXWELL'S Hydraulic Single Function Controller will enhance the system and allow the interfacing of self centering UP/DOWN toggle switch control and footswitches, with the hydraulic bi-directional solenoid valve controlling the oil flow to the Windlass. This unit also provides for remote controlling the electric clutch of a main engine pump or the hydraulic power pack motor starter.
The controller must be located in a dry area.
IT MUST NOT BE LOCATED IN THE WET ENVIRONMENT OF THE CHAINLOCKER.

MARINE 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 or bulkhead thickness in the range of 100mm to 150mm (6").
It should be noted that keeping the thickness to no more than 100mm (4") and 150mm (6") respectively, will considerably enhance serviceability. This will allow access to the gearbox mounting bolts, allowing the gearbox to be removed as a sealed unit, without dismantling the top works.

** IMPORTANT **

1. **IT IS IMPERATIVE THAT THE DESIGNER/INSTALLER ENSURES THAT THE MOUNTING IS OF SUFFICIENT THICKNESS AND STRUCTURAL STRENGTH TO SUSTAIN THE LOADS CAPABLE OF BEING IMPOSED ON OR BY THE WINDLASS. A BACKING 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 MOUNTING SURFACE OR DECK AREA COVERED BY THE GASKET SUPPLIED, AND THE UNDERSIDE AREA AGAINST WHICH THE LOAD WASHERS SEAT, ARE SMOOTH, FLAT AND GENERALLY PARALLEL.**

3. The gasket item 22 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 boat with a non conductive gasket, that the mounting studs pass through insulators and that the underside fixings are 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.
Subject to the type of packaging used, the Windlass will be either completely assembled or with the motor separated from the gearbox.
Refer to the appropriate assembly drawing provided for the Windlass 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 item 42.
   Insert and tighten two bolts item 47 and washers items 48, 49 provided (refer to Assembly Drawings B200832).
   For Hydraulic Motors
   Offer motor up to gearbox aligning drive pin with slot in the worm item 42.
   Insert and tighten two bolts item 47, washers items 48, 49 and nuts item 52 provided (refer to Assembly Drawing B200833).

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 5.
   Lift drum, item 54 from shaft.
   Undo two screws, item 9, and remove stripper arm item 10, from deckplate item 14.
   Lift clutch cones and chainwheel, item 6 and 7 from the shaft.
   Remove two keys, items 29 from shaft item 27.
   Lift ring seal, item 53 for electric / item 18 for hydraulic from shaft, item 27.

6. Remove four bolts item 15 with spring washers item 16 and lift deckplate 14 from gearbox assembly.

   With gearbox held horizontally, check that oil is showing half way up the sight glass in the gearbox upper half.
   If necessary, top up with SAE90 (Shell Omala 320, Castrol Alpha SP320 or equivalent. **DON'T OVER FILL**

7. Remove washers items 24 and 16, by undoing four nuts item 26.

MOUNTING THE WINDLASS

8. Clean the underside of the deckplate item 14.
   Make sure the mounting area is properly prepared, as per step 2 above and is clean.
   Using the gasket item 22 between the deckplate and the mounting surface lower the deckplate, guiding the mounting studs 23 through the pre drilled mounting holes and bed the deckplate down.

9. From the underside of the deck offer up the washers items 24 and 16 and replace nuts, item 26.

   IMPORTANT
   Tighten the nuts progressively and evenly.
   DO NOT USE POWER TOOLS.
   Do not overtighten. Ensure installation is firm.

10. Lightly grease shaft item 27, 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 33 on the spigot of the deckplate item 14. Rotate the gearbox assembly to the most appropriate of the four positions available.
    Replace four bolts and spring washers items 15 and 16 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 27 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 keys, items 29 and 30 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 ship's 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 B3431)

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 55 into the clutch nut item 5 and check that the clutches are tightened down firmly by turning the nut clockwise.
   REMOVE THE LEVER.

2. Check that the chainstopper is open.
   NOTE: This may require jogging the Windlass "UP" by momentarily operating the footswitch.

3. **If you have a rope/chain anchor rode,** the Windlass may be operated under power by using the "DOWN" footswitch.

   Great care must be taken as the chain to rope transition approaches the chainwheel.

   Marking the chain for a few feet prior to the transition by painting the chain a bright colour, will assist by providing a warning indicator.
   Stop the powered outward run short of the transition.

   Engage the chainstopper and remove the chain from the chainwheel.

   Taking the weight on the rope open the chainstopper and proceed to pay out the required amount of rope.
   Easing the rope out around the drum will assist in heavy conditions.

   When the required scope is reached, cleat the rope off on the bollard or sampson post.

   If you have an all chain system the Windlass may be operated under power by either using the "DOWN" footswitch or the "DOWN" button on the Remote Control Station. Hold until the required amount of chain is out.

RAISING THE ANCHOR UNDER POWER

Proceed as follows:

1. Carry out step 1 above.

2. **If you have a rope/chain anchor rode** the Windlass may be operated under power by using the "UP" footswitch.

   Take several wraps of the rope anchor line around the warping drum in a clockwise direction.

Whilst pulling on the tail, press the "UP" footswitch. The Windlass 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.

Continue to haul the line in until one full wrap of chain is around the Capstan.

Engage the chainstopper and transfer the chain to the chainwheel.

Continue to bring the anchor aboard by operating the "UP" footswitch.

If you have an all chain system, the Windlass may be operated under power by using the "UP" footswitch or the "UP" button on the Remote Control Station. Hold 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.

NOTE: It is not necessary to open the chainstopper to operate the Windlass in the "UP" direction.

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 55 into the clutch nut item 5 and check that the clutches are tightened down firmly by turning the nut clockwise. **REMOVE THE LEVER.**

2. Check that the chainstopper is open.
   NOTE: This may require jogging the Windlass "UP" under power.

3. **Standing well clear,** insert the lever into the clutch nut.
   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.
If you have a rope/chain anchor rode great care must be taken as the chain to rope transition approaches the chainwheel. Stop the outward run short of the transition by fully tightening the clutches.
Engage the chainstopper and remove the chain from the chainwheel.

Taking the weight on the rope open to the chainstopper and proceed to pay out the required amount of rope.

Easing the rope out around the drum will assist in heavy conditions.
When the required scope is reached, cleat the rope off on the Bollard or Sampson Post.

If you have an all chain system, when the required amount of chain is out, tighten the clutch nut firmly, **remove the lever and stow.**
Engage the chainstopper.

RAISING THE ANCHOR MANUALLY IN AN EMERGENCY

An emergency crank facility for raising the anchor is provided.

To use proceed as follows:

1. Check that the chainstopper is engaged.

2. With a pen knife, or similar, carefully remove cap, item 1.
   Remove screw, item 2 and retaining washer, item 3.
   Unscrew clutch nut, item 5.
   Lift drum, item 54.

3. Place the lever on chainwheel inserting drive pin into hole as shown below and ensure lever is engaged against shaft.

   Replace drum item 54 and clutch nut, tighten **lightly**.

4. Take the weight by pulling the lever in a clockwise direction, preferably the lever should be rotated slowly and continuously but it may be necessary to reposition if deck obstructions should prevent full rotation of the emergency crank.
   When 'eased off' the chainstopper will take the load.

USING THE WARPING DRUM

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

To use proceed as follows:

1. Check that the chainstopper is engaged.

2. Insert the lever item 55 in the clutch nut item 5 and back off in a counter clockwise direction until it stops.

   The Capstan will now operate whilst the chainwheel remains stationary, being held by the chain.

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

   Whilst pulling on the tail press the "UP" 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

** **IMPORTANT** **

Failure to carry out the maintenance and service as described herein will invalidate the 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, 11 and 12 of the installation instructions.

   Check level of oil in gearbox. If necessary top up as per step 6 of preparing the windlass 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 Solenoids 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 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 B200832 (Electric Models) or B200833 (Hydraulic Models) and accompanying parts list, for disassembly.

SERVICING OF MOTOR - Electric Units

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 47 and washers items 48 and 49 (refer to assembly drawing B200832).
A replaceable drive pin item 50 is a press fit in the output end of the drive shaft. This pin engages the slot in the worm item 42.
Providing the Windlass is properly installed with the Maxwell Breaker/Isolator Panel, and the Windlass is not abused, trouble free operation can be expected.
Replacement brush sets are available - order Part No. SP 1383 - 12 Volt, Part No. SP 1384 - 24 volt.

SERVICING OF MOTOR - Hydraulic Units

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 47, washers items 48 and 49, and nuts item 52. (Refer to drawing B200833).

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 No.....
Part No.....
Description.....
Quantity Required.....

TECHNICAL ASSISTANCE

We are always at your service. If you require information or assistance contact:

Head Office:

MAXWELL MARINE LTD

Street Address:
42 Apollo Drive
Mairangi Bay
Auckland
NEW ZEALAND

Postal address:
P O Box 100-703
North Shore Mail Centre
North Shore City
NEW ZEALAND

PHONE: (64) 9-477-0900
FAX: (64) 9-476-0555

EMAIL : info@maxwellmarine.com
WEBSITE: www.maxwellmarine.com

Australia

MAXWELL MARINE AUSTRALIA

Street Address:
Unit 1
10 Neumann Street
Capalaba 4157
Queensland
AUSTRALIA

Postal Address:
P O Box 1292
Capalaba 4157
Queensland
AUSTRALIA

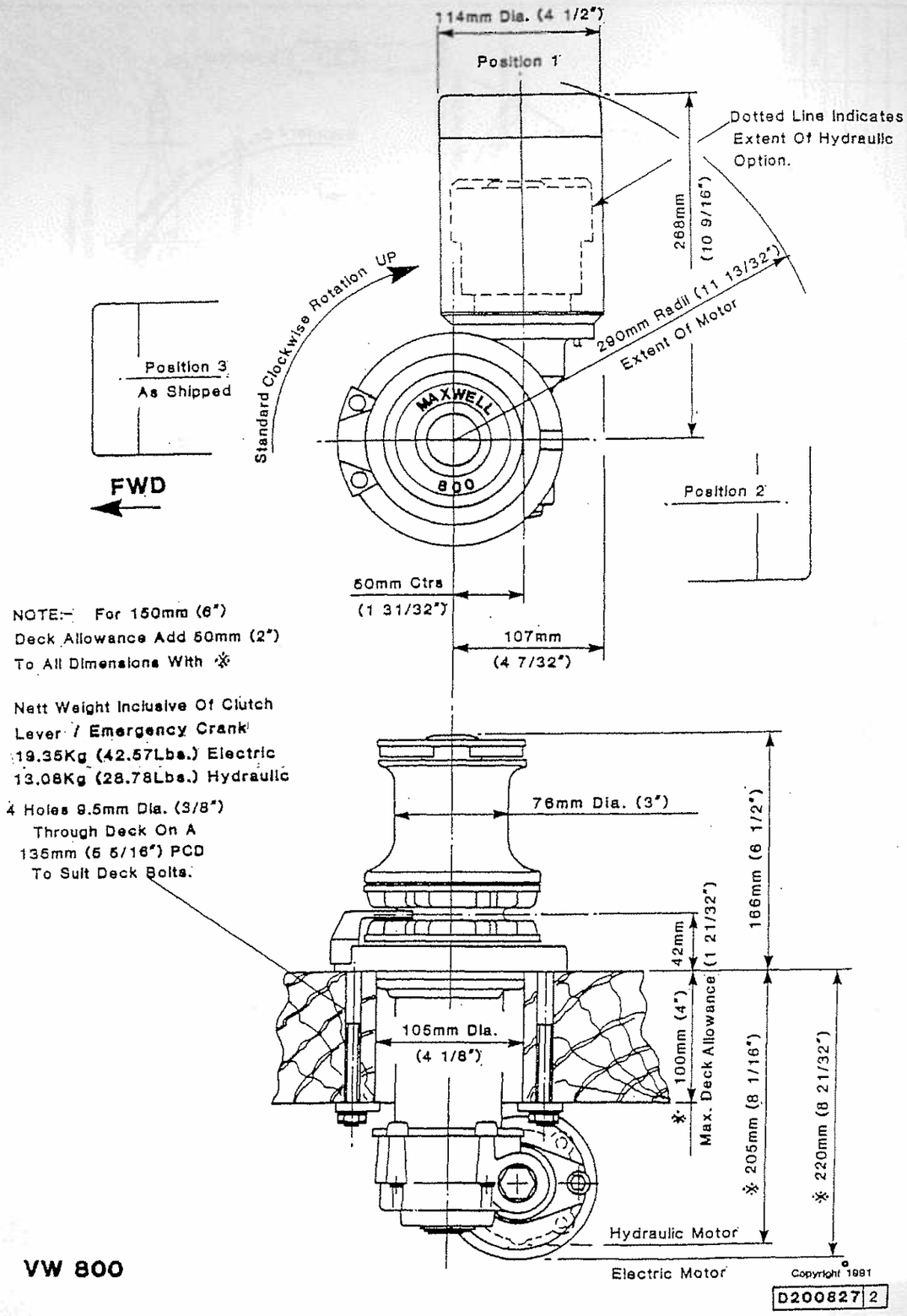
PHONE: (61) 7-3245-4755
FAX: (61) 7-3245-5906

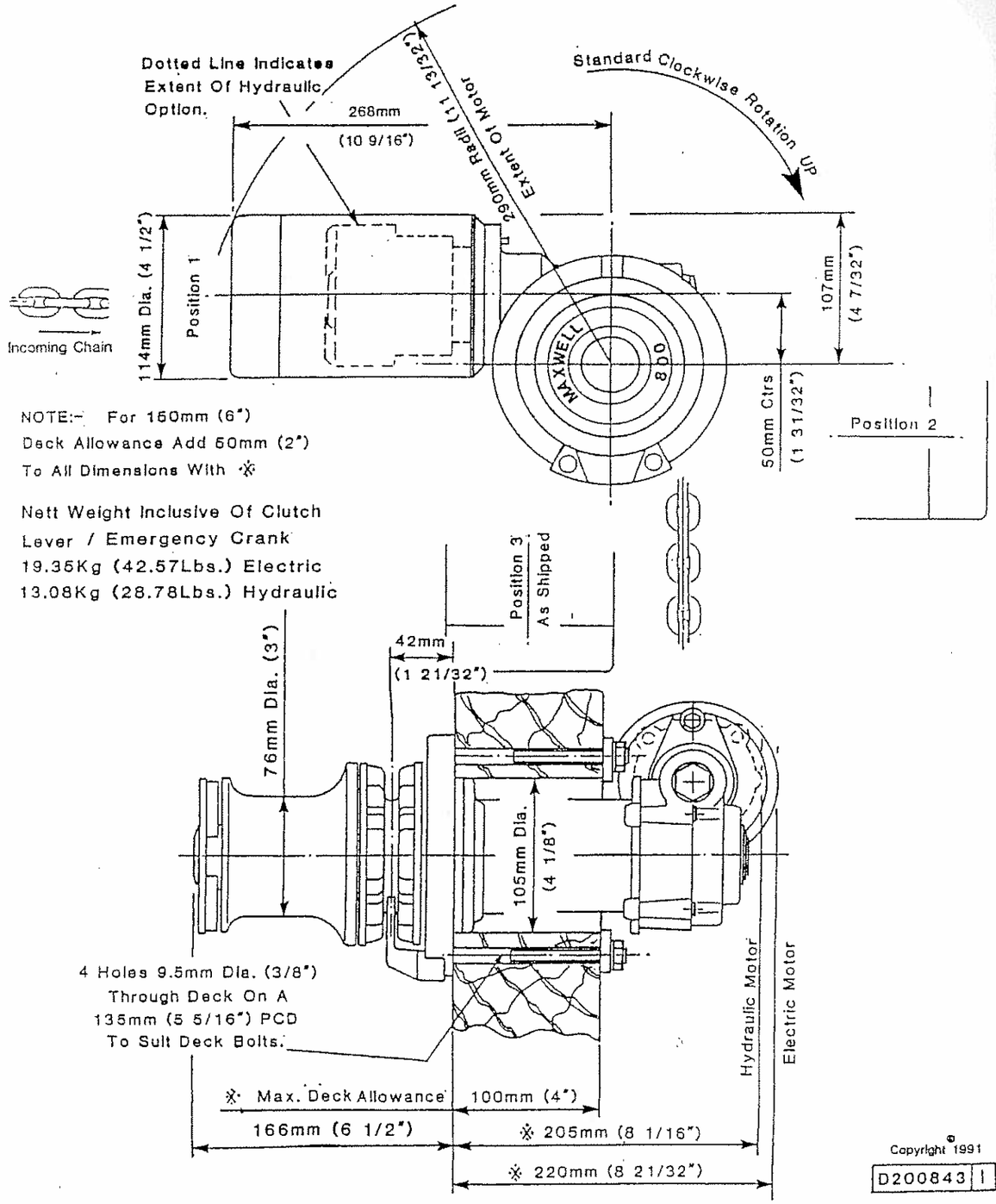
America

MAXWELL MARINE INC:

Street Address:
2907 South Croddy Way
Santa Ana, CA 92627-6302
USA

PHONE: (1) 714 689 2900
FAX: (1) 714 689 2910





NOTE:- For 150mm (6")
Deck Allowance Add 50mm (2")
To All Dimensions With ※

Nett Weight Inclusive Of Clutch
Lever / Emergency Crank
19.35Kg (42.57Lbs.) Electric
13.08Kg (28.78Lbs.) Hydraulic

VW 800

HORIZONTAL APPLICATION

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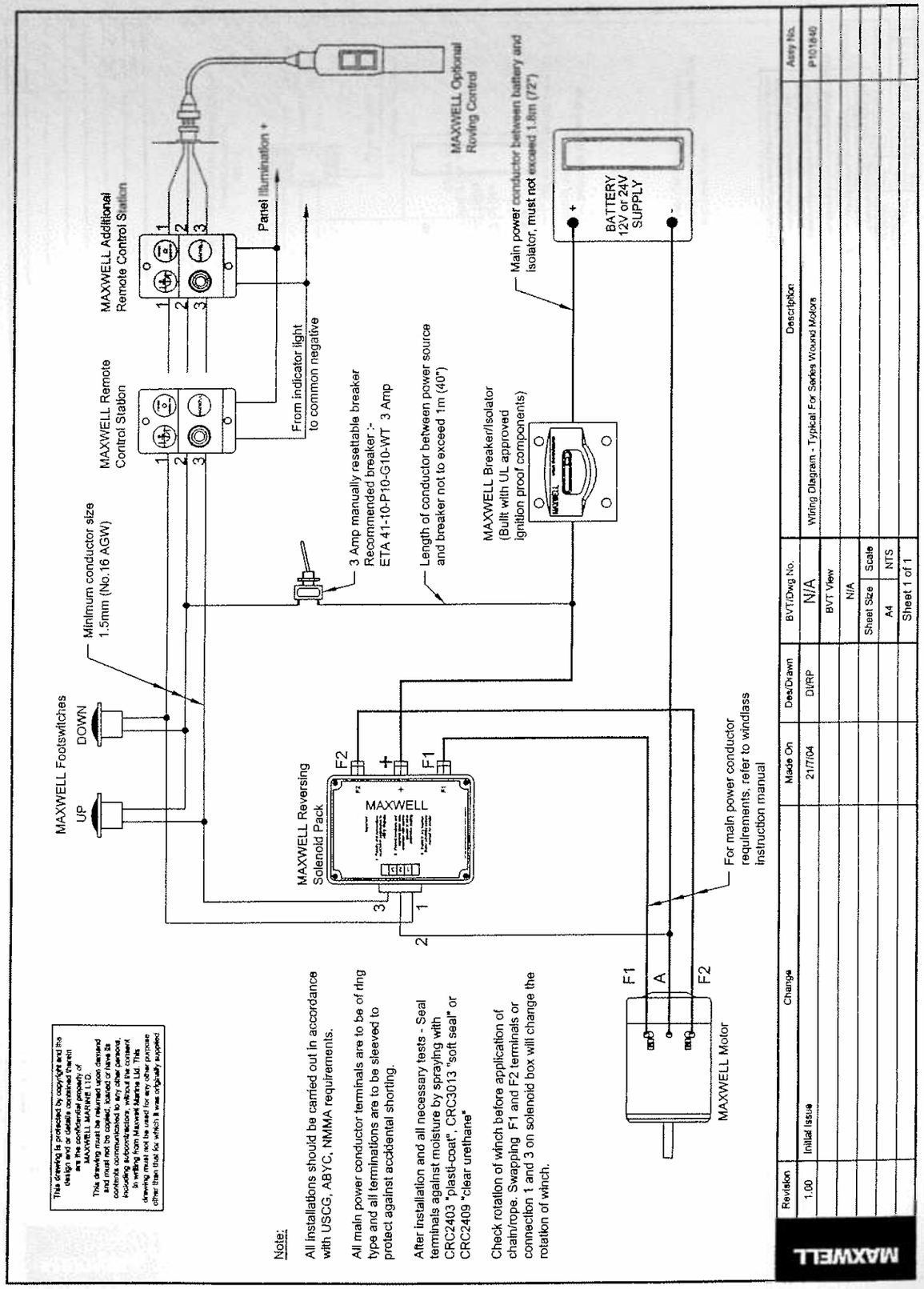

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Note:

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 F1 and F2 terminals or connection 1 and 3 on solenoid box will change the rotation of winch.

Revision	Change	Made On	Des/Drawn
1.00	Initial issue	21/7/04	DI/RP

Description	Assy No.
Wiring Diagram - Typical For Series Wound Motors	P101640

BVT/Dwg No.	
N/A	
BVT View	
N/A	
Sheet Size	Scale
A4	NTS
Sheet 1 of 1	

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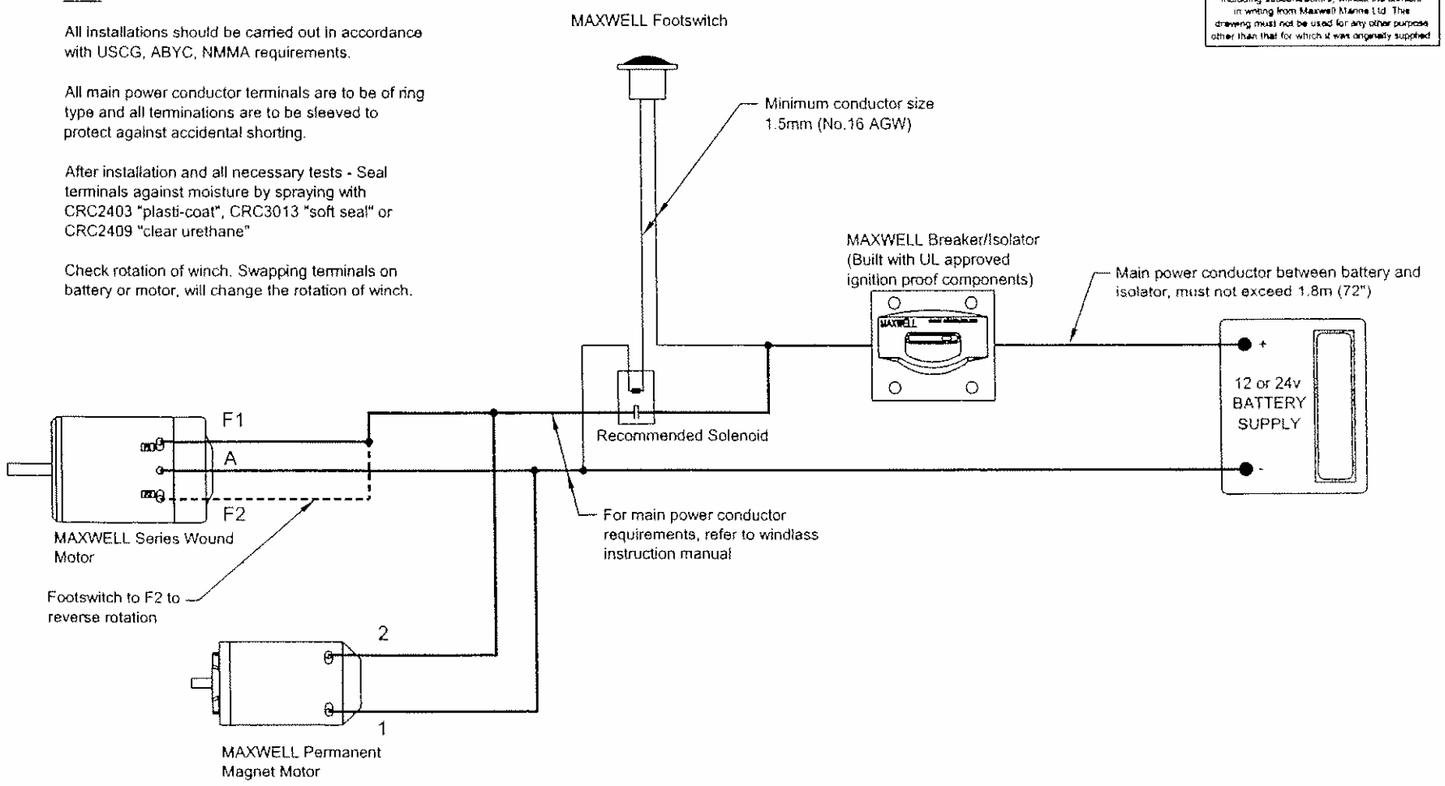
Note:

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

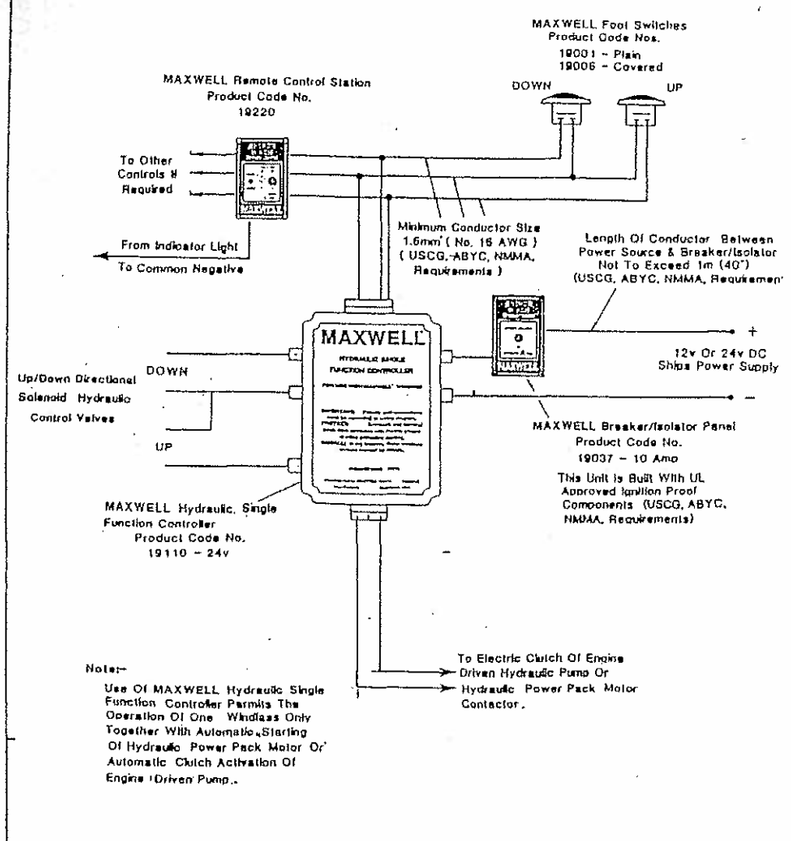
After installation and all necessary tests - Seal terminals against moisture by spraying with CRC2403 "plasti-coat", CRC3013 "soft seal" or CRC2409 "clear urethane"

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



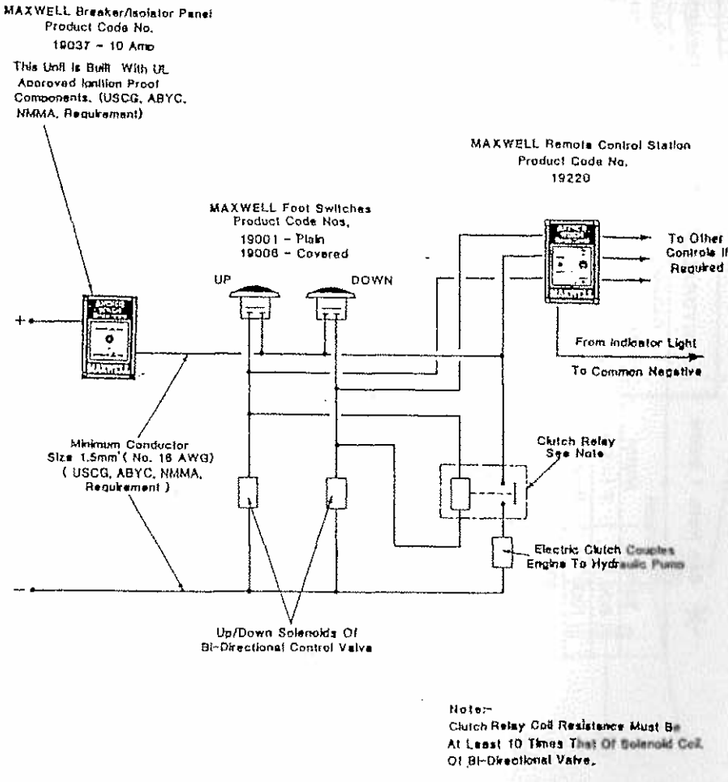
Revision	Change	Made On	Des/Drawn	BVT/Dwg No.		Description	Assy No.
1.00	Initial Issue	21/7/04	DI/RP	N/A		Wiring Diagram - Typical For Single Direction	P101844
				BVT View			
				N/A			
				Sheet Size	Scale		
				A4	NTS		
				Sheet 1 of 1			

MAXWELL



Note:-
Use Of MAXWELL Hydraulic Single Function Controller Permits The Operation Of One Windlass Only Together With Automatic Starting Of Hydraulic Power Pack Motor Or Automatic Clutch Activation Of Engine Driven Pump.

ELECTRIC CONTROL WIRING UTILISING MAXWELL HYDRAULIC SINGLE FUNCTION CONTROLLER



Note:-
Clutch Relay Coil Resistance Must Be At Least 10 Times That Of Solenoid Coil Of Bi-Directional Valve.

ELECTRIC CONTROL WIRING FOR BASIC SYSTEM

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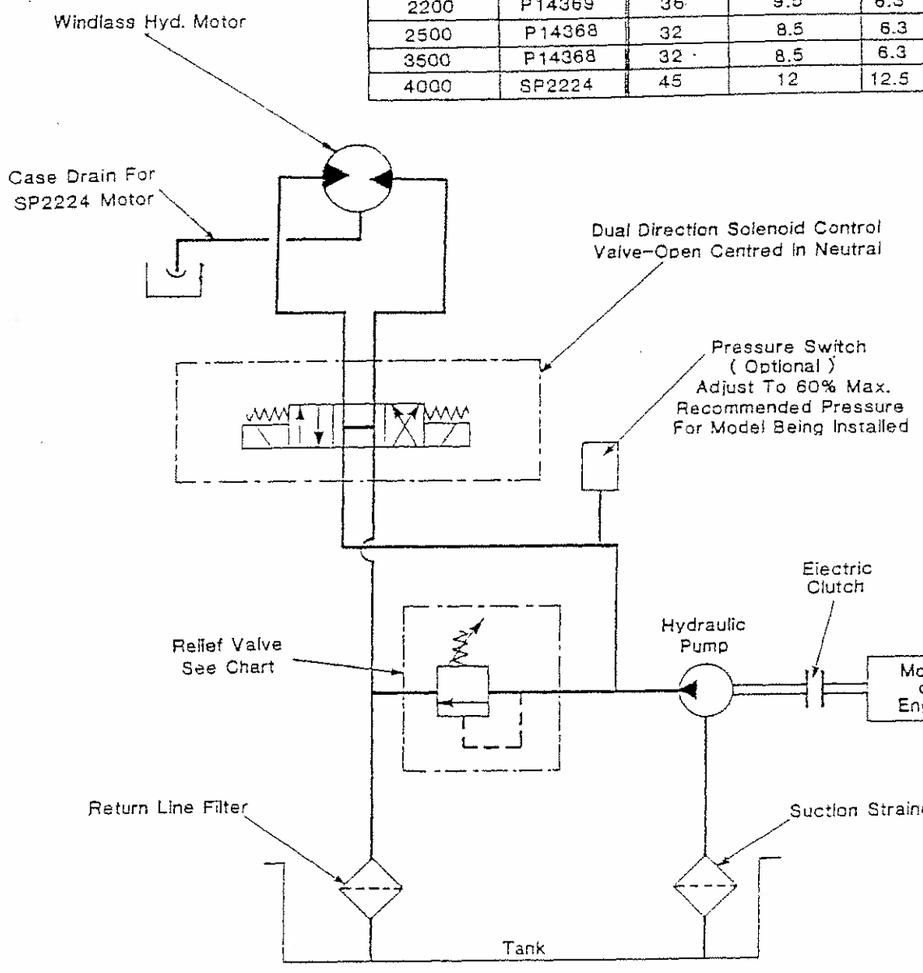
ALL INSTALLATIONS SHOULD BE CARRIED OUT IN ACCORDANCE WITH USCG, ABYC, NMMA OR CLASSIFICATION SOCIETY REQUIREMENTS.

MAXWELL AUCKLAND NEW ZEALAND	SCALE	—	TOL UNLESS SPECIFIED
ELECTRIC CONTROL WIRING DIAGRAM FOR HYDRAULIC WINDLASSES:- TYPE VW, VWC, VWCLP & HWC	DRAWN	D.L.	B 203101 2
	DATE	7-7-98	

✳ See Note 1 Below

Winch Series	Winch Motor	HYDRAULIC SUPPLY REQUIREMENTS Delivery Ltrs/min	Delivery US Gals/min	Power KW	Power HP	Relief Setting psi	Relief Setting bar
800	P14366	20	5.3	3.3	4.5	1450	100
1200	P14366	20	5.3	4.5	6	2000	138
2200	P14369	36	9.5	6.3	8.5	1800	124
2500	P14368	32	8.5	6.3	8.5	1700	117
3500	P14368	32	8.5	6.3	8.5	1700	117
4000	SP2224	45	12	12.5		2400	165



HYDRAULIC SCHEMATIC INSTALLATION
UTILISING ENGINE DRIVEN MAIN PUMP

Note:-

✳ 1/ Chart Refers To MAXWELL "Standard Build" Levels Of Flow/Pressure Below That Specified Can Be Accommodated Refer Manual Or Consult MAXWELL

2/ Ensure Selected Hydraulic Components Are Adequate For Recommended Flow Rate.

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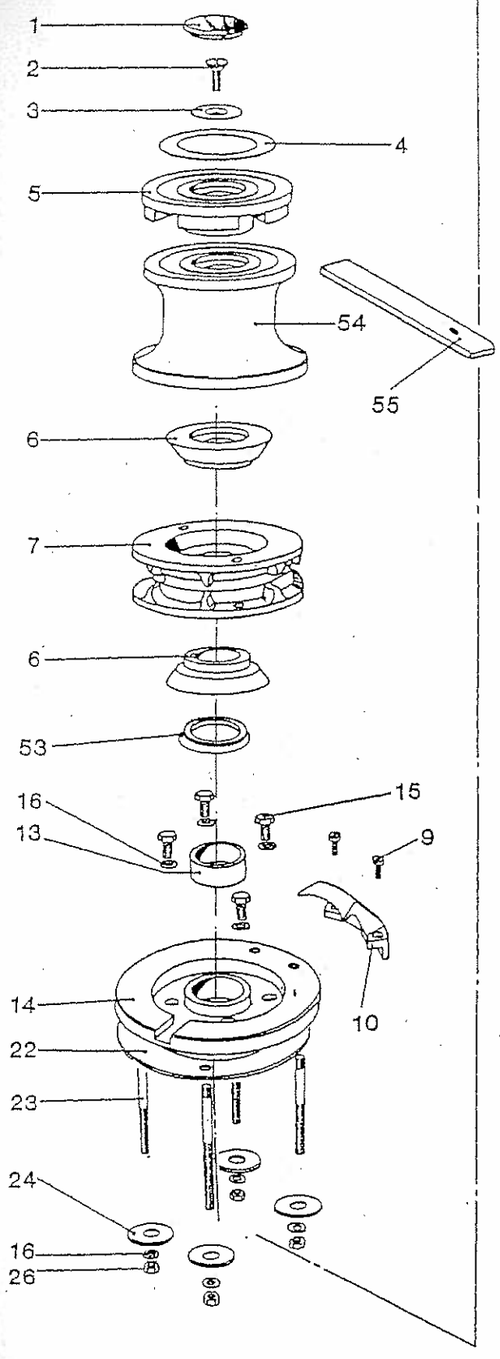
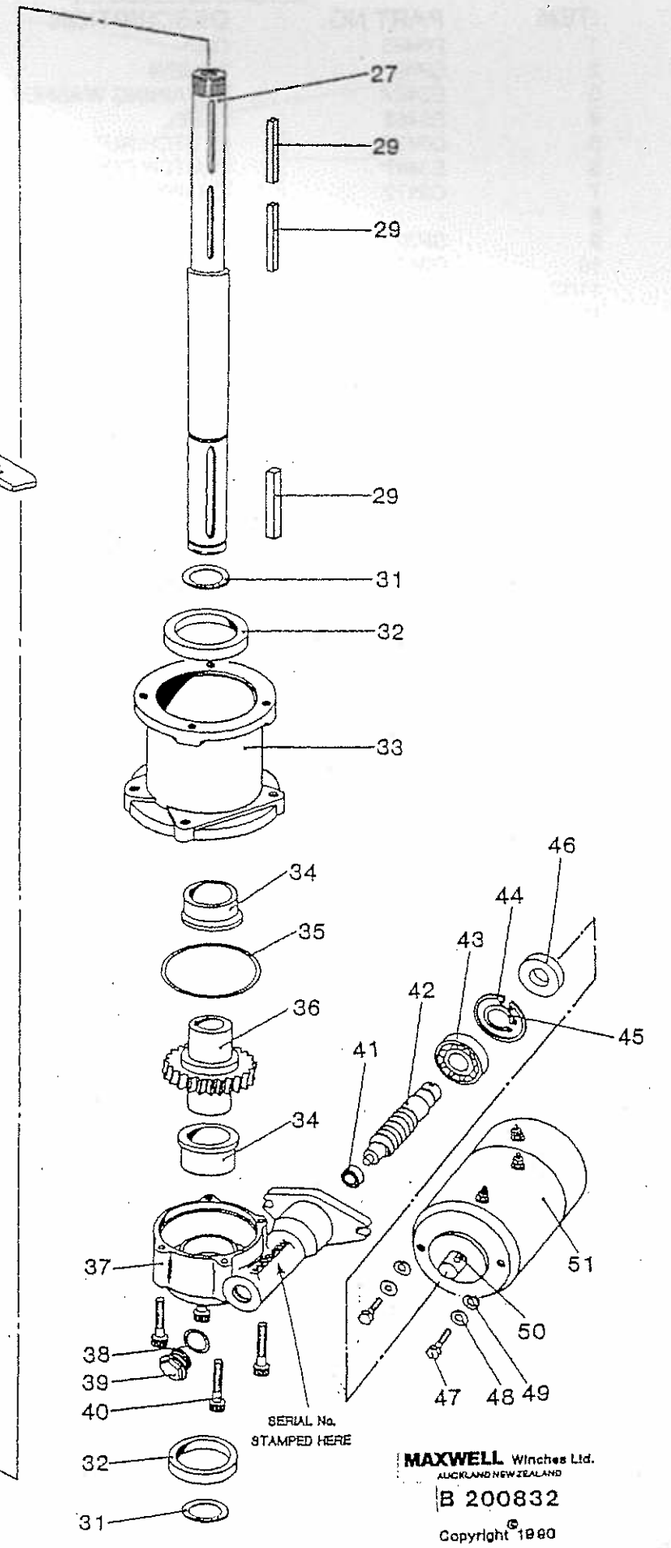
MAXWELL Winches Ltd. AUCKLAND NEW ZEALAND	SCALE	—	TOL UNLESS SPECIFIED
	MATERIAL	—	
HYDRAULIC SCHEMATIC FOR WINDLASSES TYPES:- VW, VWC, VWCLP & HWC	FINISH	—	
	DRAWN	D.J.I	B 203103 REV Z
	DATE	2-7-90	

VW 800
ELECTRIC





MAXWELL Winches Ltd.
AUCKLAND NEW ZEALAND
B 200832

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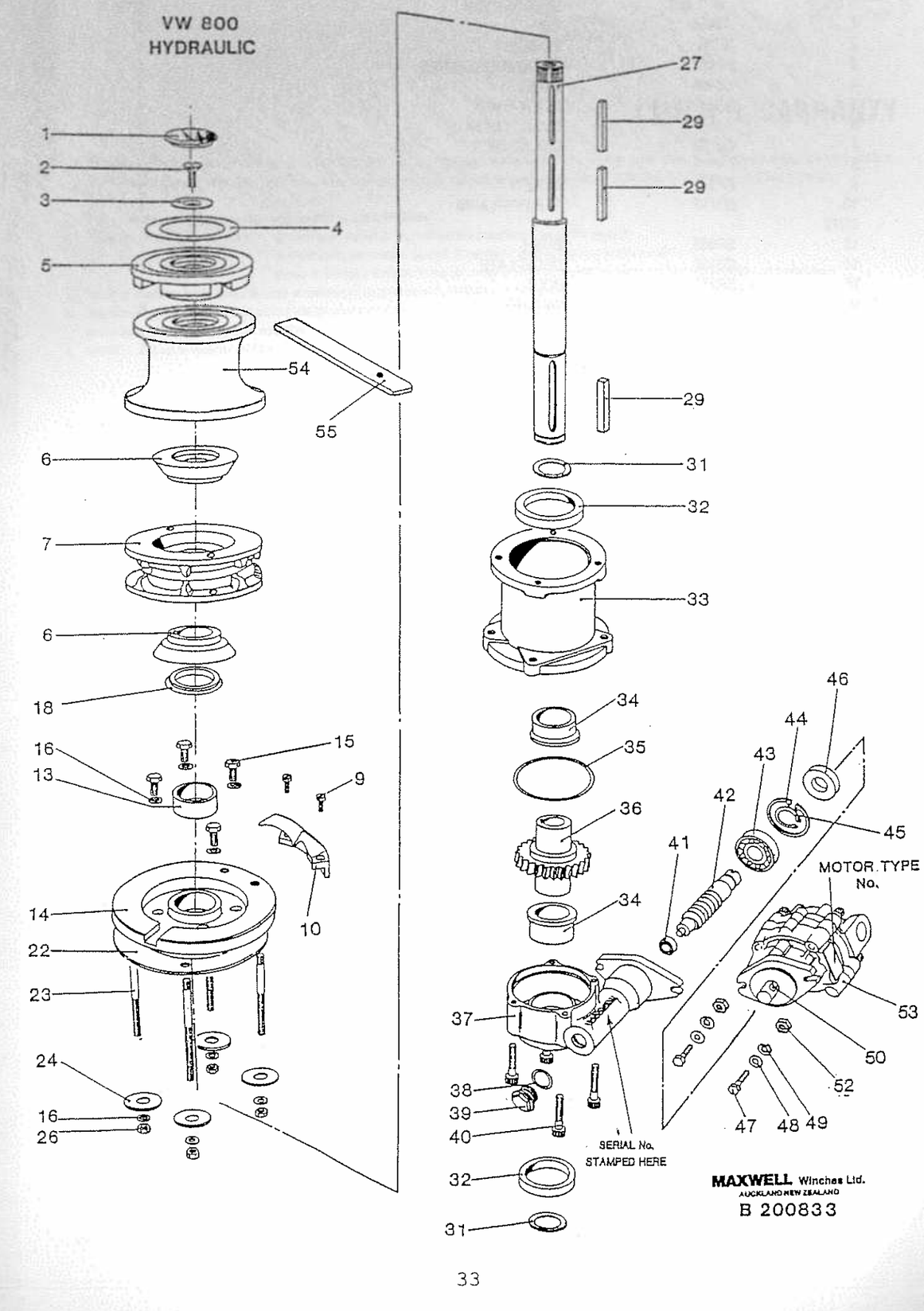
VW 800 ELECTRIC — B200832

ITEM	PART NO.	DESCRIPTION	QTY
1	D3465	CAP	1
2	SP40	SCREW	1
3	E3467	RETAINING WASHER	1
4	E3468	LABEL	1
5	D3438	CLUTCH NUT	1
6	E3497	CLUTCH CONE	2
7	C3172	CHAINWHEEL	1
8	-		
9	SP37	SCREW	2
10	D3477	STRIPPER ARM	1
11/12	-		
13	SP663	BUSH	1
14	C3458	DECKPLATE	1
15	SP287	BOLT	4
16	SP457	WASHER	8
17	-		
18	-		
19	-		
20/21	-		
22	D3472	GASKET	1
23/A	E3174	STUD 4" TDC	4
23/B	E3471	STUD 6" TDC	4
24	E3843	WASHER	4
25	-		
26	SP322	HEX NUT	4
27/A	C3450	MAINSHAFT 4" TDC UP TO SERIAL NO. 65849	1
27/B	C3455	MAINSHAFT 6" TDC UP TO SERIAL NO. 64849 ON	1
27/C	D3561	MAINSHAFT 4" TDC FROM SERIAL NO. 65850	1
27/D	D3562	MAINSHAFT 6" TDC FROM SERIAL NO. 65850 ON	1
28	-		
29	E3462	KEY	3
30	-		
31	SP878	CIRCLIP	2
32	SP724	SEAL	2
33/A	C3183	SPACER TUBE 4" TDC	1
33/B	C3418	SPACER TUBE 6" TDC	1
34	E3145	BUSH	2
35	SP726	'O' RING	1
36	D3403	WORMWHEEL	1
37	C 3133	WORM BOX	1
38	SP720	'O' RING	1
39	D3223	SIGHT GLASS	1
40	SP159	SCREW	4
41	SP643	BEARING	1
42	D3404	WORM	1
43	SP642	BEARING	1
44	SP844	CIRCLIP	1
45	SP838	CIRCLIP	1
46	SP721	SEAL	1
47	SP288	BOLT	2
48	SP413	WASHER	2
49	SP467	WASHER	2
50	SP530	ROLL PIN	1
51/A	P11112	ELECTRIC MOTOR 12 V	1
51/B	P11114	ELECTRIC MOTOR 24V	1
52	-		
53	SP708	V-28 A RING SEAL	1
54/A	D3436	DRUM UP TO SERIAL NO. 65849	1
54/B	D3563	DRUM FROM SERIAL NO. 65850 ON	1
55	P20044	LEVER	1



VW 800 HYDRAULIC — B200833

ITEM		PART NO.	DESCRIPTION	QTY
1		D3465	CAP	1
2		SP40	SCREW	1
3		E3467	RETAINING WASHER	1
4		E3468	LABEL	1
5		D3438	CLUTCH NUT	1
6		E3497	CLUTCH CONE	2
7		C3172	CHAINWHEEL	1
8		-		
9		SP37	SCREW	2
10		D3477	STRIPPER ARM	1
11/12		-		
13		SP663	BUSH	1
14		C3458	DECKPLATE	1
15		SP287	BOLT	4
16		SP457	WASHER	8
17		-		
18		SP708	V.28A RING SEAL	1
19/20				
21		-		
22		D3472	GASKET	1
23/A		E3174	STUD 4" TDC	4
23/B		E3471	STUD 6" TDC	4
24		E3843	WASHER	4
25		-		
26		SP322	HEX NUT	4
27/A		C3450	MAINSHAFT 4" TDC UP TO SERIAL NO. 65849	1
27/B		C3455	MAINSHAFT 6" TDC UP TO SERIAL NO. 64849 ON	1
27/C		D3561	MAINSHAFT 4" TDC FROM SERIAL NO. 65850	1
27/D		D3562	MAINSHAFT 6" TDC FROM SERIAL NO. 65850 ON	1
28		-		
29		E3462	KEY	3
30		-		
31		SP878	CIRCLIP	2
32		SP724	SEAL	2
33/A		C3183	SPACER TUBE 4" TDC	1
33/B		C3418	SPACER TUBE 6" TDC	1
34		E3145	BUSH	2
35		SP726	'O' RING	1
36		D3403	WORMWHEEL	1
37		C 3133	WORM BOX	1
38		SP720	'O' RING	1
39		D3223	SIGHT GLASS	1
40		SP159	SCREW	4
41		SP643	BEARING	1
42		D3404	WORM	1
43		SP642	BEARING	1
44		SP844	CIRCLIP	1
45		SP838	CIRCLIP	1
46		SP721	SEAL	1
47		SP279	BOLT	2
48		SP413	WASHER	4
49		SP467	WASHER	2
50		SP530	ROLL PIN	1
51		-		
52		SP366	HEX NUT	2
53	*	P14366	HYDRAULIC MOTOR (STANDARD MGG - 200-16)	2
54/A		D3436	DRUM UP TO SERIAL NO. 65849	1
54/B		D3563	DRUM FROM SERIAL NO. 65850 ON	1
55		P20044	LEVER	1

* OPTIONAL (SEE SPECIFICATIONS) - P14365 MGG - 200-10

MAXWELL

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Santa Ana, California
92704-6302, USA
Ph +1 714 689 2900
Fax +1 714 689 2910

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. 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 adress above or fill out the digital warranty form on our website www.maxwellmarine.com

Purchaser

Name:

Address:

Telephone:

Facsimile

Supplier/Dealer

Name:

Address:

Telephone:

Facsimile

Winch Model

Serial Number

Date of purchase

Boat type

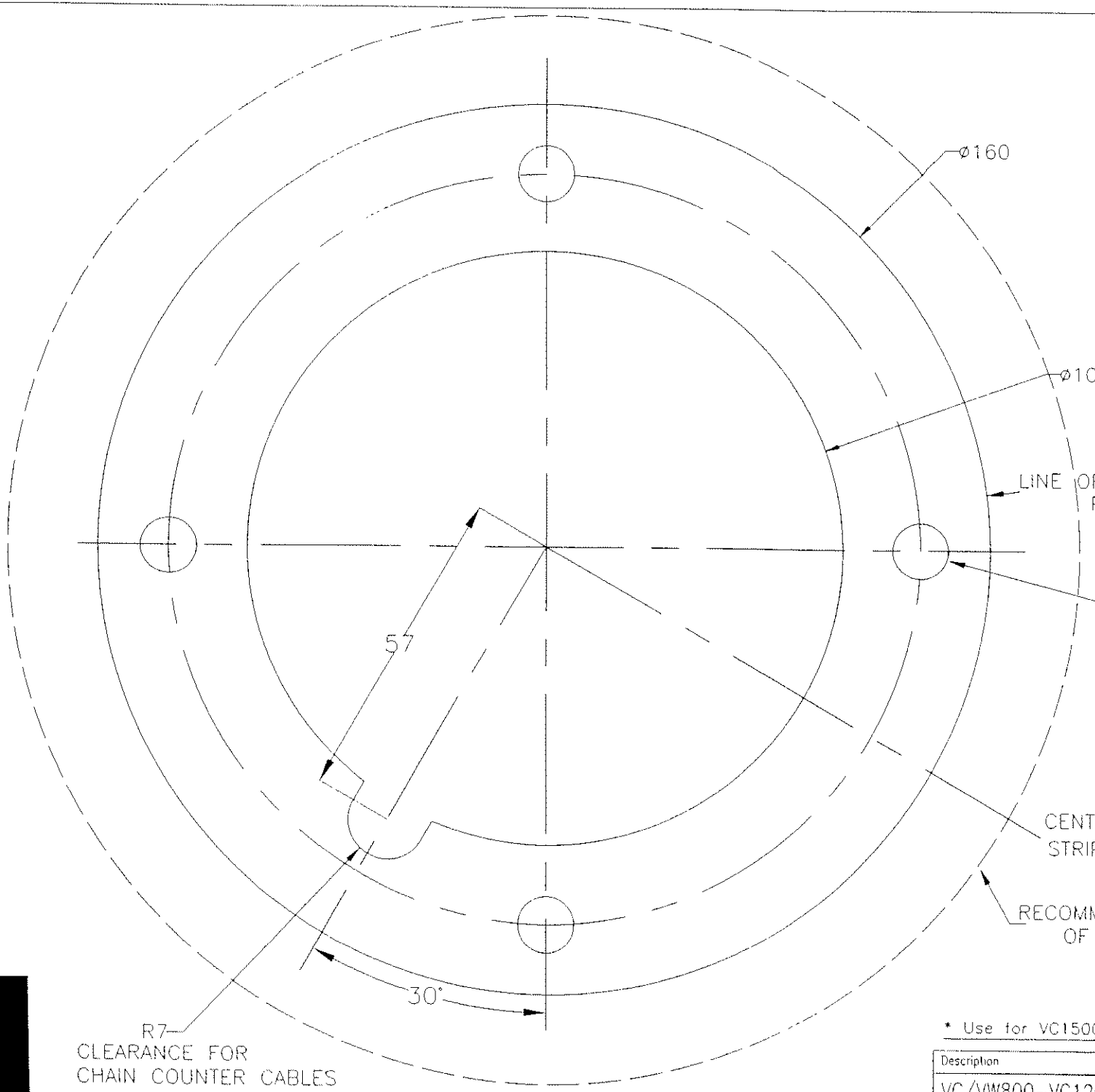
Name

L.O.A

Built by

Winches Supplied

- ☐ With boat
- ☐ Fitted by boat yard/dealer
- ☐ Purchased from dealer/chandler



1. *BEFORE CUTTING DECK CHECK ALL UNDERDECK CLEARANCES & FULLY READ & UNDERSTAND INSTALLATION INSTRUCTIONS CONTAINED WITHIN MANUAL.*
   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.

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* Use for VC1500 with tall drum and 3445 deckplate

Description	Scale	Drawn By	Date	Drawing No:	Rev. No.
VC/VW800-VC1200/1500	A4=1:1	D.J.I.	21/9/90	3484	3.00

MAXWELL