VWC, VWCLP 2200

OWNERS MANUAL

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Product Manual
Code P19070
12/03/08

VWC, VWCLP 2200
OWNERS MANUAL

IMPORTANT

PERSONAL SAFETY WARNINGS

When using your winch at **all times** practice good seamanship and adhere to the following rules in order to avoid any likelihood of injury or accident.

1. At all times keep hands, feet, loose clothing, cordage and your hair **WELL CLEAR.**

2. Never operate the winch from a remote station without maintaining a **clear view** of the winch and having made sure that **everyone is well clear of the winch.**

3. Your winch will probably be equipped with deck mounted footswitches. **ALWAYS** immediately after use turn the winch power supply isolator off (or footswitch isolator to off). This will prevent accidental winch operation should you or passengers accidentally stand on the footswitch.

4. Ensure that your footswitch is mounted sufficiently distant from your winch that when warping line on the drum it is not possible to accidentally trap hands or fingers between the line and the drum.

5. Never use your winch under power with the clutch engagement lever in position. **Always remove clutch lever and stow before operating windlass.**

6. 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

7. Always motor up to the anchor while retrieving the chain. Do not use the windlass to pull up to the chain.

8. 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.

9. When your winch is not in use, make sure the power supply is isolated - accidental operation is thereby impossible.

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.

PRE INSTALLATION NOTES

1. Please inspect your winch carefully when unpacked. Any damage should be reported immediately to your Maxwell Marine Distributor.

2. Please be mindful that the correct selection of winch for each application, together with correct installation, and normal care in use and maintenance, are essential for long life and reliable performance.

3. Failure to adhere to the correct procedures, recommendations and guidelines described in this owner's manual will invalidate your warranty.

4. As with all load carrying equipment, the consequences of heavy overload, neglect or misuse may be unexpected failure and exposure of crew and/or vessel to risk.

5. **Be sure your windlass is correctly specified before installation.**
Important factors to be considered are: prevailing weather conditions, size, displacement and windage of vessel. Maxwell Marine recommends the Classification Society Rules (Lloyds; A.B.S; D.N.V etc) as reliable and proven guidelines to specification.

6. The windlass is designed for use with a chain size of 9-11mm (5/16" – 3/8") short link chain. To save weight, a smaller size High Tensile Chain may be used.
Correct fit of chain to chainwheel is essential for reliable operation. This can be guaranteed only when **calibrated chain to a recognised international standard** is selected and the chain is correctly identified to Maxwell Marine.

7. Special chainwheels can be manufactured for non standard chains but a 1½ metre sample of chain must be made available in good time.
Care must be taken when Kenter type shackles are used. These must be arranged so that they pass though the chainwheel in the vertical plane. In accordance with good practice an anchor swivel shackle should be fitted between the anchor and chain. The bow/chain roller should properly align the chain so that it enters the chainwheel squarely..

8. The use of "bow rollers" is recommended. Bow rollers when fitted should have a central groove to accommodate and align the chain links. This will help prevent twisting of chain between the bow and the chainwheel.

9. The windlass is designed for use in conjunction with a chainstopper of the appropriate size. Their use is considered an important safety feature.

10. Do not use the windlass as a Bollard. Engage your chainstopper or chainclamp when the windlass is not in use.

11. The hydraulic connections to your windlass together with the hydraulic circuitry to your control valves and pump is best entrusted to skilled hydraulic technicians who will be aware of the need for scrupulous cleanliness and the appropriate system flushing procedures.

SPECIFICATIONS

PULL AT CHAINWHEEL	1000 kg Max (2200 lbs)	
STATIC LOAD CAPACITY	1590 kg Max (3500 lbs)	
CHAIN SIZE	Short Link 9 - 11mm (5/16” - 3/8”)	
RATE AT 100kg (220lbs) LOAD/MIN	16-18 Metres/min (52-59 Feet/min)	
POWER OPTIONS	Product Code	
VWC 2200		
100mm (4”) Deck Clearance	P10102	12 Volt D.C.
	P10104	24 Volt D.C.
	P14113	Hydraulic
200mm (8”) Deck Clearance	P10113	12 Volt D.C.
	P10115	24 Volt D.C.
	P14119	Hydraulic
VWCLP 2200		
100mm (4”) Deck Clearance	P10107	12 Volt D.C.
	P10109	24 Volt D.C.
	P14116	Hydraulic
200mm (8”) Deck Clearance	P10118	12 Volt D.C.
	P10120	24 Volt D.C.
	P14122	Hydraulic
ELECTRIC MODELS		
Current at 100kg (220lbs) Load	12 Volt	100 Amps
	24 Volt	60 Amps
Current at 500kg (1100lbs)	12 Volt	180 Amps
	24 Volt	80 Amps
SUPPLY CABLES	See Pages 13-14	
*** HYDRAULIC MODELS** P14369		
Max. recommended Flow	36 Litre/min (9.5 US Gal/min)	
Max. recommended Pressure	124 BAR (1800 p.s.i.)	
Hydraulic Supply Lines	16mm (5/8”) diameter	
Hydraulic Motor Ports	7/8” U.N.F.	
Oil	Viscosity ISO 32 - ISO 68 @ 20-50ºC 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 Hyspin A.W.S. 32-68; BP Autrans T0410.	

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

Motor	Max Flow/Min		Max Pressure		Max Pull		Rate at 100kg (220lbs)/Min	
Option	Lt	US Gal	Bar	P.S.I.	Kg	Lbs	Metres	Feet
P14368	31	8.2	152	2200	1000	2200	16-18	52-59

WEIGHT (Nett including Emergency Crank)

	Product Code	KGS	LBS
VWC 2200			
100mm (4”) Deck Clearance	P10102	41.2	90.7
	P10104	41.2	90.7
	P14113	34.8	76.6
200mm (8”) Deck Clearance	P10113	42.2	92.9
	P10115	42.2	92.9
	P14119	35.8	78.8
VWCLP 2200			
100mm (4”) Deck Clearance	P10107	38.1	83.9
	P10109	38.1	83.9
	P14116	31.7	69.8
200mm (8”) Deck Clearance	P10118	39.1	86.0
	P10120	39.1	86.0
	P14122	32.7	72.0

INSTALLATION

WHERE TO LOCATE THE WINDLASS

The MAXWELL VWC and VWCLP 2200 Windlasses operate in dual direction power UP/DOWN.

On standard installations "UP" is clockwise rotation when looking down on the Windlass.
The deckplate should be mounted pointing in the direction of the incoming chain and with the left hand side parallel to the line of the incoming chain (refer drawing B202019 VWC types and B202023 VWCLP types). This arrangement allows the chain to have maximum engagement with the chainwheel.

The Windlass must be positioned to allow the chain to have a clear run from the fairlead or bow roller on to the chainwheel.
The bow roller should have a vertical groove to suit the profile of the chain. This will align the chain so that it enters the chainwheel without twisting.

Ideally the outlet from the chainpipe should be directly over the chain locker and the chain should have at least 600mm (2ft) clear fall to allow the chain to straighten before passing through the windlass.

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

The chain must gravity feed into the locker. If the chainpipe cannot be positioned directly over the locker, heavy wall flexible plastic pipe can be used to direct the chain to the required area.
It is important that the chain slips through easily, completely unaided. It may be necessary to provide the pipe with a bell mouth or to bell mouth the entrance to the chainpipe from the locker to assist the free flow of the chain from the 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.

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

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 B202019 VWC types and B202023 VWCLP types). This can be achieved on installation by referring to the appropriate assembly drawing and indexing at either end of the spacer tube (item 35) on bolts (item 22). Be sure to select the most convenient position.

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 B3424). **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 or the "Single Direction" System is used. (Refer electrical diagrams).

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

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 Wiring Diagrams).

CONTROL CIRCUITS (Refer electrical diagrams)

MAXWELL Windlasses may be installed for single direction or dual direction operation.

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.**
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

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 Then Back to Battery	**Cable Length**		**Engine room Size Correction**	
	mm²	**AWG**	**mm²**	**AWG**
Up to 14 m (46')	34	2	42	1
14m – 16m (46' – 52')	42	1	-	-
16m – 21m (52' – 69')	54	0	-	-
21m – 26m (69' – 85')	67	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 24 m (79')	14	6	16	5
24m – 38m (79' – 124')	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 6 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 6).

Several levels of supply and control are possible.

BASIC SYSTEM (Refer Hydraulic diagrams).

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 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.

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 100mm to 200mm (8”).
It should be noted that keeping the deck thickness to no more than 75mm (3”) and 175mm (7”) 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 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 TEMPLATE SUPPLIED, AND THE UNDERDECK AREA AGAINST WHICH THE LOAD WASHERS SEAT, ARE SMOOTH, FLAT AND GENERALLY PARALLEL.**

3. A deck cutout guide drawing is supplied with these instructions 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.

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, 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 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.
   Insert and tighten two bolts item and washers provided (refer to assembly Drawings).

   For Hydraulic Motors
   Offer motor up to gearbox aligning drive pin with slot in the worm.
   Insert and tighten two bolts, washers and nuts provided (refer to assembly Drawing).

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 42 from shaft (VWC models only).
   Undo two bolts, item 6, with washers item 38 and remove stripper arm item 8, from chainpipe item 13.
   Lift outer clutch cone, item 5, chainwheel, item 9 and inner clutch cone, item 10 complete with springs and plungers items 45 and 46 from shaft.
   Remove two keys, item 31 and retaining circlip (two halves), item 32 from shaft, item 30. Lift wavey washer item 11 and emergency crank collar item 12 from shaft.

6. Remove washers items 27 and 23, by undoing four nuts item 29.

7. Remove top set of four bolts item 22 with spring washers item 23 and lift deckplate 14 from gearbox. Remove shaft item 30 from gearbox.
   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. To do that remove sight glass item 25 and fill with oil.

MOUNTING THE WINDLASS

***** ATTENTION*****

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

8. Clean the underside of the deckplate item 14.
   Make sure the mounting area on the deck is properly prepared, as per step 3 above and is clean.
   Using a sealant/bedding compound between the deckplate and the deck, lower the deckplate to the deck, guiding the mounting studs 26, through the pre-drilled mounting holes and bed the deckplate down.

9. From the underside of the deck offer up the washer, items 27 and 23 and replace four nuts, item 29.
   IMPORTANT
   Tighten the nuts progressively and evenly.
   DO NOT USE POWER TOOLS.
   Do not overtighten. Ensure installation is firm.

10. Lightly grease shaft, item 30 using Marine grease, Lithium based or Lithium complex based, example Duckhams 'Keenol'; Castrol LMX'. Do not use soap based grease. Feed shaft through the deckplate from below and hold in place by inserting key item 31.
    NOTE: If space doesn't permit access from below, then shaft may be replaced from the top. This will involve removing key, item 33 and other circlip, item 34. Replace these from the underside once the shaft is installed.
    Make sure that circlip is properly located in the upper groove and that the key is properly seated.

11. Slide the gearbox assembly up on the shaft aligning the keyway (this will lift shaft) and locating the spacer tube, item 35 on the spigot of the deckplate, item 14. Rotate the gearbox assembly to locate on dowels, items 21 and 25 in the most appropriate position available.
    Replace four bolts and spring washers, items 22 and 23 removed in step 7 above.
    Tighten bolts evenly and firmly - DON'T USE POWER TOOLS.
    Replace circlip item 34, removed in step 4, in bottom end of shaft, making sure it is properly seated in groove.
    Remove key, item 31 from shaft.

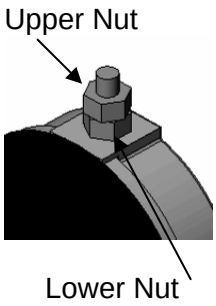
12. Ensure parts removed in step 5 above are clean along with the top area of the deckplate.

13. Using a grease gun charged with grease (specified in 10 above) apply to grease nipple item 24 and grease main bearing.

14. 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 30 and **the bores and clutch faces of the parts removed** in step 5 above, reassemble them as you go in reverse order.

<u>IMPORTANT</u> - care must be taken to ensure that keys, item 31 are properly greased and seated in shaft and that circlip halves, item 32 are properly seated and captivated by inner clutch cone, item 10 on re-assembly.

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



<u>IMPORTANT NOTE TO BUILDERS</u>

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 Electrical Drawings)

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 41 into the clutch nut item 4 and check that the clutches are tightened down firmly by turning the nut clockwise.
   REMOVE THE LEVER.

2. Check that the chainstopper is open and the pawl, item 17 is disengaged from the chainwheel.
   NOTE: This may require jogging the Windlass "UP" by momentarily operating the footswitch.

3. If clutches are tightened down and the chainstopper and pawl are disengaged, 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 the clutches are tightened down, the Windlass may be operated under power by either using the "UP" footswitch or the "UP" position 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 disengage the pawl or 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 41 into the clutch nut item 4 and check that the clutches are tightened down firmly by turning the nut clockwise.
   REMOVE THE LEVER.

2. Check that the chainstopper is open and the pawl, item 17 is disengaged from the chainwheel.
   NOTE: This may require jogging the Windlass "UP" under power or in an emergency by using the emergency crank lever.

IF JOGGING UNDER POWER, MAKE SURE THAT THE LEVER IS REMOVED FIRST.

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.

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

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.

   If a chainstopper is not fitted ensure that the pawl, item 17 is engaged with the chainwheel.

2. Insert the lever in the clutch nut and release clutches by backing off the clutch nut in a counter clockwise direction.

3. Insert the lever into the emergency crank collar, item 12, pin end first, with pin uppermost, until the pin engages with one of the dogs in the chainwheel in the furthermost counter clockwise position.

4. Take the weight by pulling the lever in a clockwise direction as far as possible, bring in the chain.
   Ease off and the chainstopper will take the load.
   Pull the lever out until the pin disengages the chainwheel dog.
   Push lever to furthermost counter clockwise position and re-engage with the chainwheel.
   Repeat cycle, progressively bring in the anchor.

   NOTE: If a chainstopper is not fitted, or if found more convenient, the pawl, item 17 may be engaged with the chainwheel after each upward (clockwise) movement to hold the chainwheel from reversing.
   Engage pawl by using lever under the chainpipe.

USING THE WARPING DRUM (VWC Models only)

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. Check that the pawl item 17 is engaged with the chainwheel.

2. Insert the lever item 41 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.

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

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

MAINTENANCE

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

Service Intervals

	Every trip	3 monthly	12 monthly	3 yearly
Ensure clutch is adjusted correctly				
Strip, clean and grease clutch cone.				
Remove topwork components, clean and grease with suitable lubricant.				
Service motor				
Remove gearbox/spacer tube. Ensure drainage slots are free from debris by flushing with fresh cold water.				
Remove gearbox, replace oil and seals				

Recommended Lubricants

Gearbox Oil: **Capacity:** 800ml (27 fl oz)
Type: 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.

Topworks

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

Gearbox

The gearbox is a self-contained sealed unit.
We recommend that the gearbox be removed and serviced by an authorised Maxwell service technician every three years. Visit our website (www.maxwellmarine.com) for a list of service centres and agents.
Check the gearbox oil level every six months using the sight glass.

To remove the gearbox, proceed as follows:

1. **Remove both sets of running gear** as per step 9 of installation instructions above.

2. Remove the two circlips from shaft either side of the gearbox and slide shaft from case.

3. **On port side proceed as follows:**
   Remove four bolts and washers .
   Gently tap gearbox assembly releasing it from the case.

4. For disassembly of gearbox refer to gearbox assembly drawing and accompanying parts list.

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).

Replacement brush sets are available - order Part No. P100807 - 12 Volt, Part No. P100808 - 24 Volt.

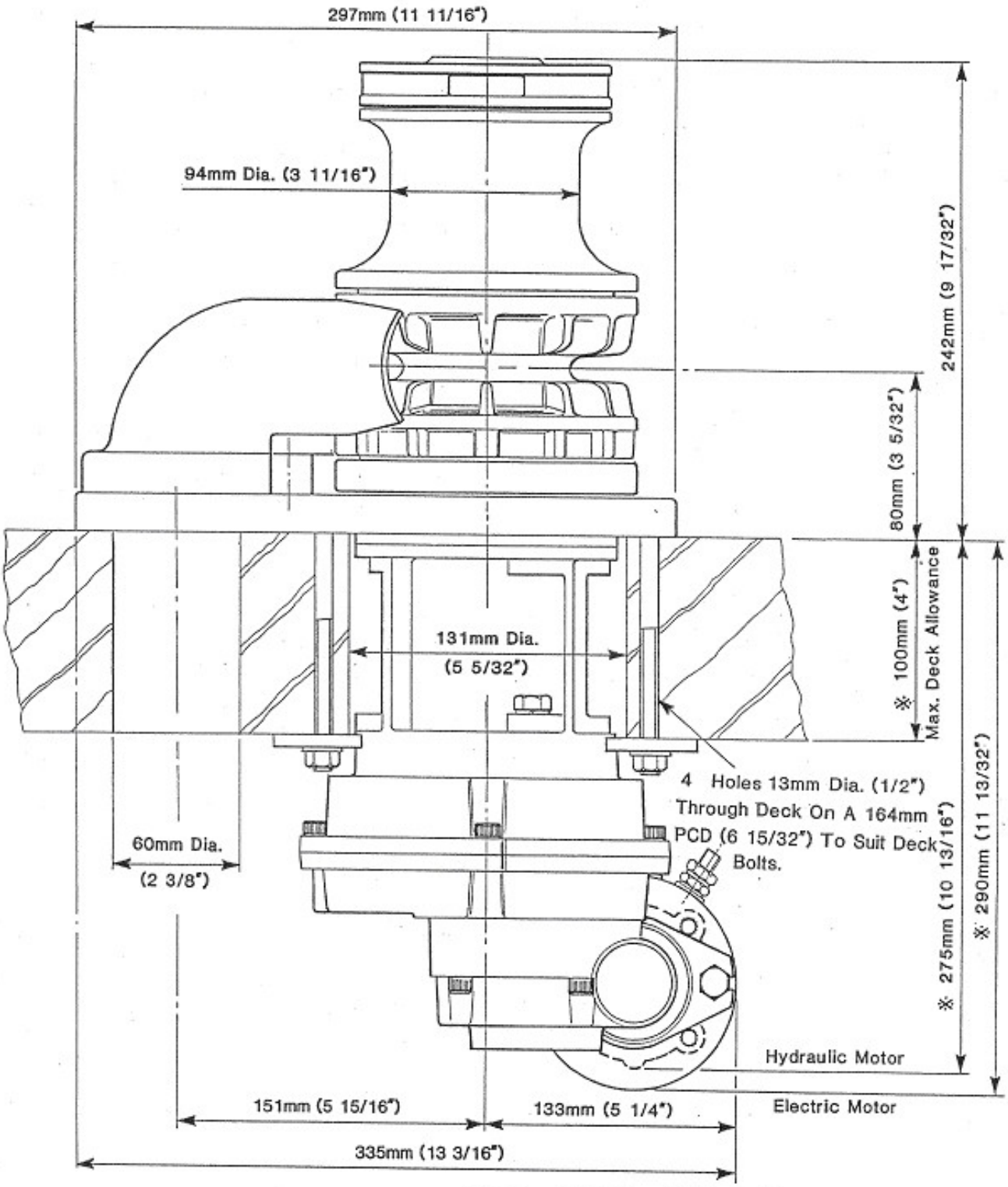
ORDERING SPARE PARTS AND TECHNICAL SUPPORT

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……

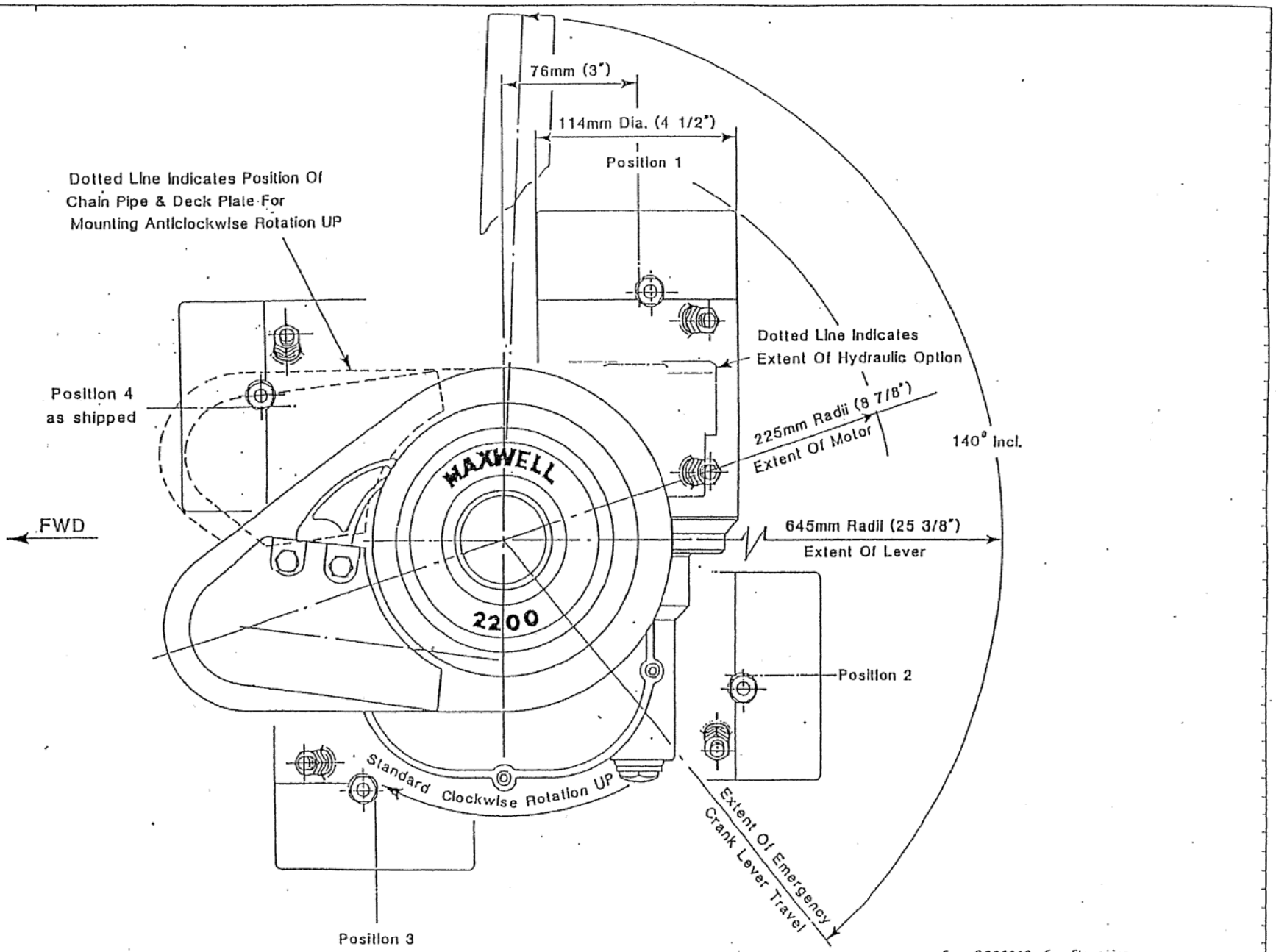
INSTALLATION DRAWINGS



NOTE:- For 200mm (8") Deck Allowance
Add 100mm (4") To All Dimensions
Shown With ※
Motor/Gearbox Shown In Position 1
Nett Weight Incl. Of Emergency Crank
41.5 kg (91.3Lbs)

VWC 2200
ELEVATION

B 202018 | 3



See B202018 For Elevation

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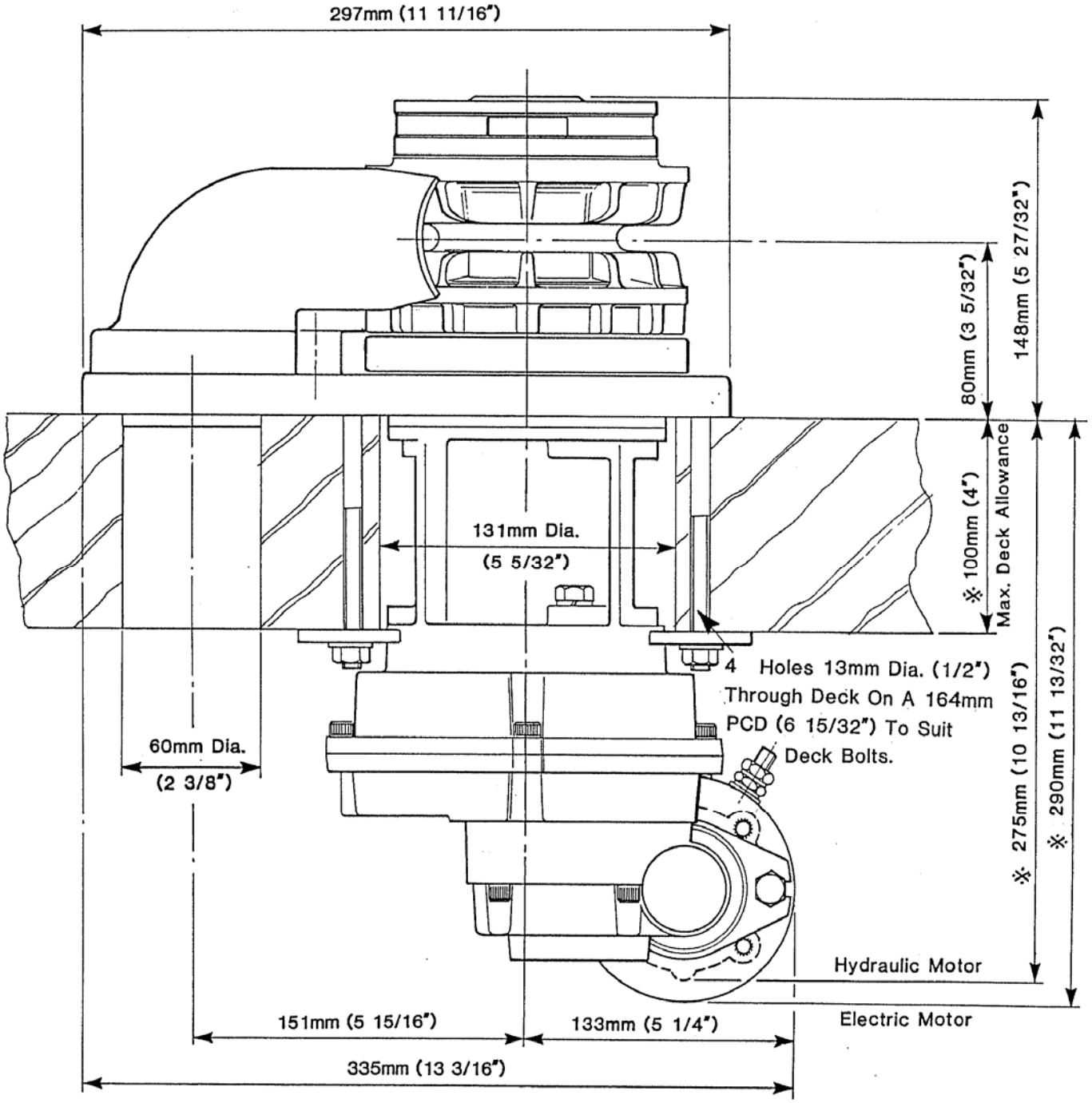
VWC 2200
Plan

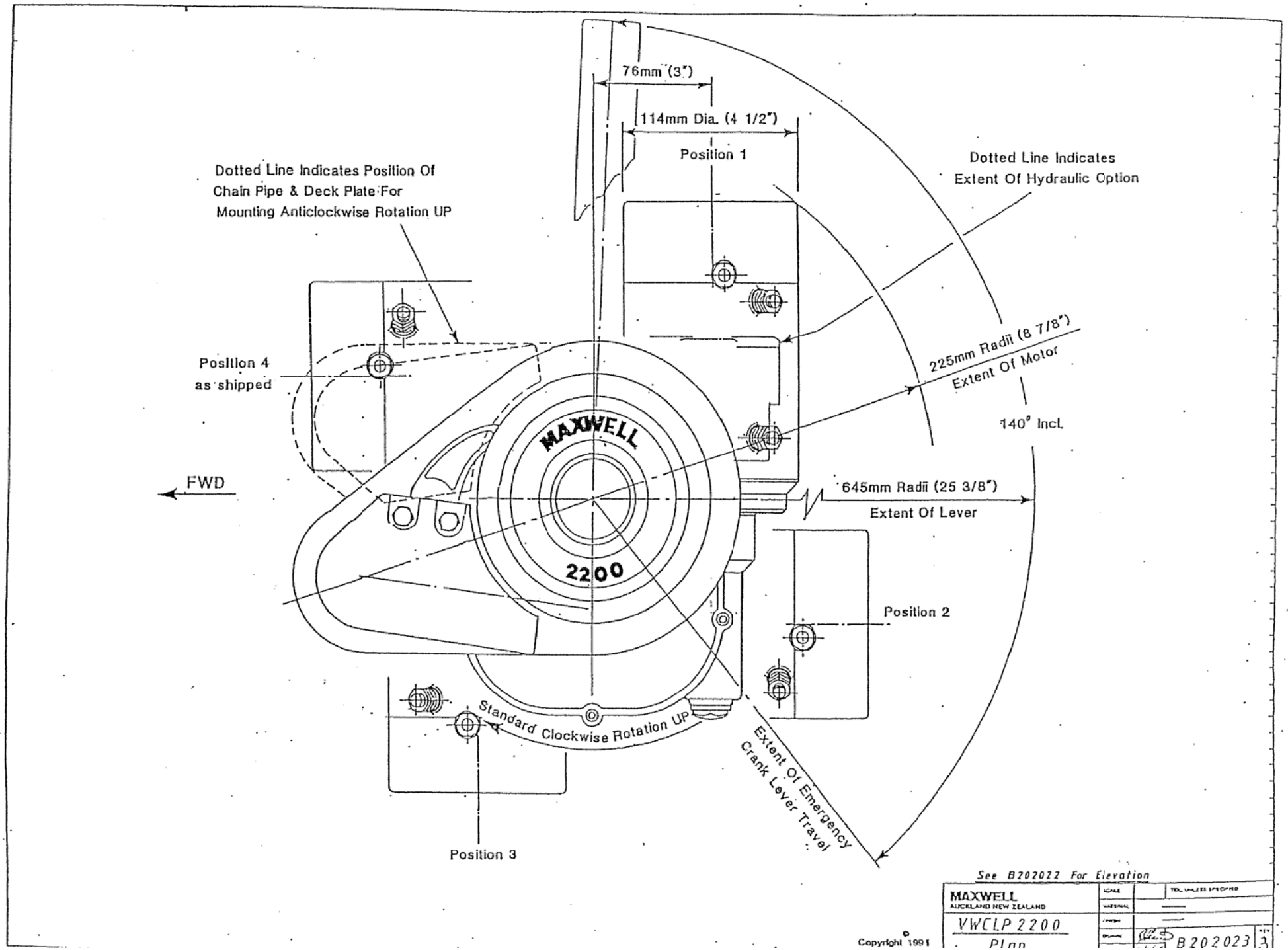
B202019



NOTE:- For 200mm (8") Deck Allowance Add 100mm To All Dimensions Shown With ※
Motor/Gearbox Shown In Position 1
Nett Weight Inclusive Of Emergency Crank 38.7 Kg (85.14 Lbs)

VWCLP 2200
ELEVATION

B 202022 | 3


76mm (3")
114mm Dia. (4 1/2")
Position 1
Dotted Line Indicates Position Of
Chain Pipe & Deck Plate For
Mounting Anticlockwise Rotation UP
Dotted Line Indicates
Extent Of Hydraulic Option
225mm Radii (8 7/8")
Extent Of Motor
140° Incl.
Position 4
as shipped
FWD
MAXWELL
2200
645mm Radii (25 3/8")
Extent Of Lever
Position 2
Standard Clockwise Rotation UP
Extent Of Emergency
Crank Lever Travel
Position 3
See B202022 For Elevation
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VWCLP 2200
Plan
B202023
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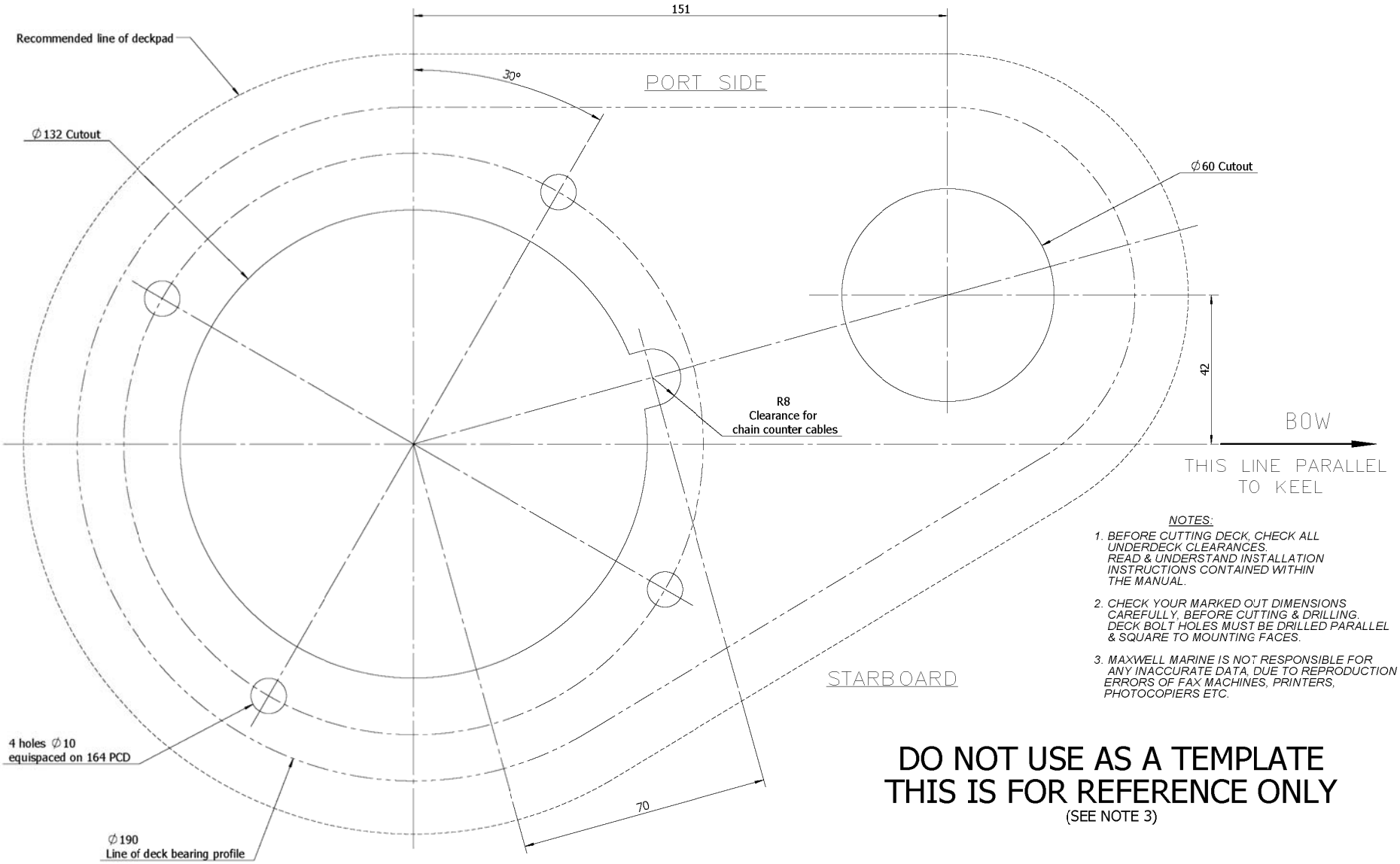


NOTES:

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

DO NOT USE AS A TEMPLATE
THIS IS FOR REFERENCE ONLY
(SEE NOTE 3)

MAXWELL

Revision	Change	Made on	Des/Drawn
4.00	Dia. 60 was 58 - Issued in CAD	8-03-02	DW
5.00	Template note added. Notes revised	29/3/06	RP

Description: **Deck Cutout Details - 2200 2500 VWC-VWCLP**

Drawing No: **3328**

Revision No: **5.00**

Material: *N/A*

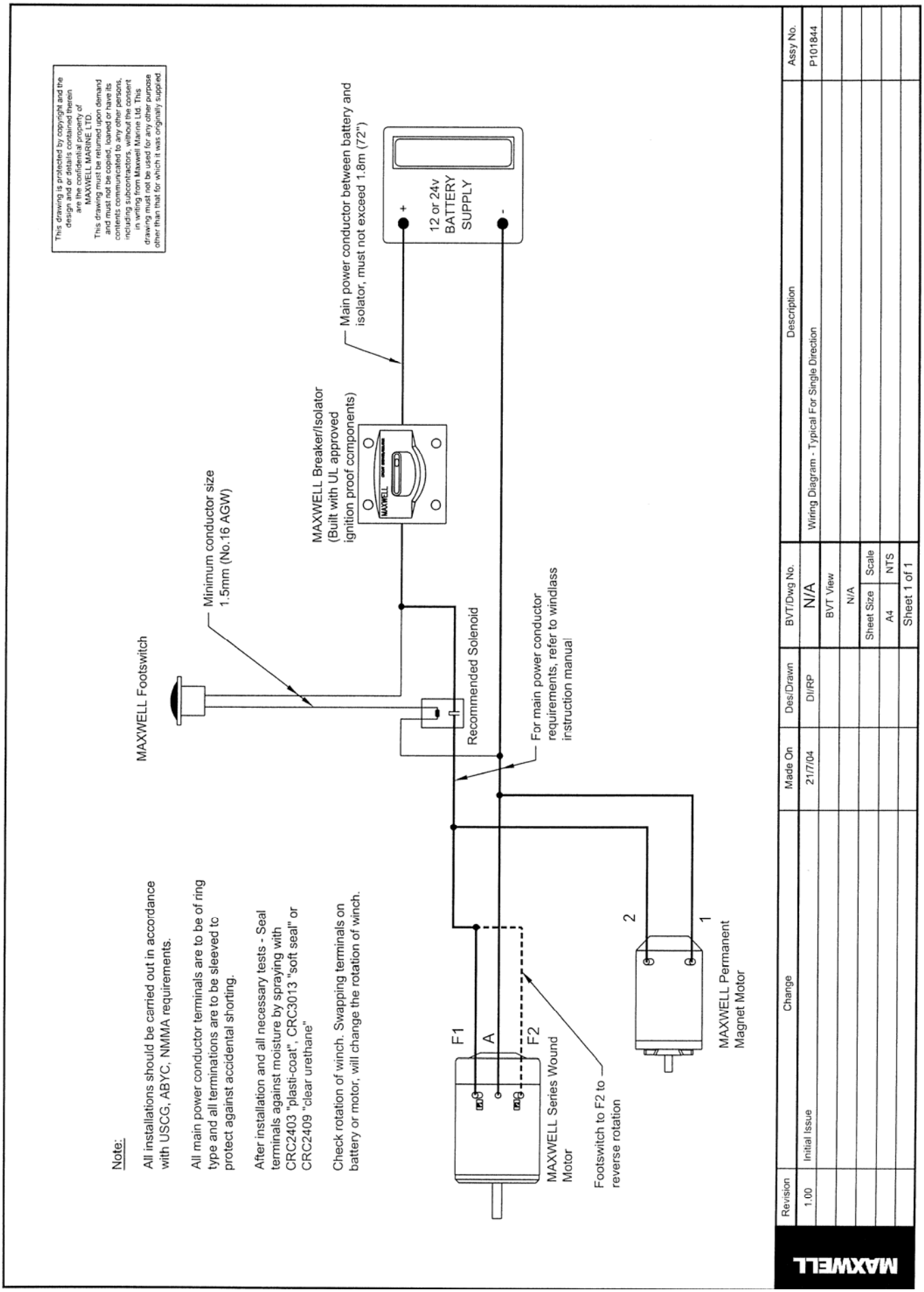
Tolerances if none specified
0 DECIMAL (X) ±0.5
1 DECIMAL (X.X) ±0.2
2 DECIMAL (X.XX) ±0.1
ALL ANGLES ±0.5°

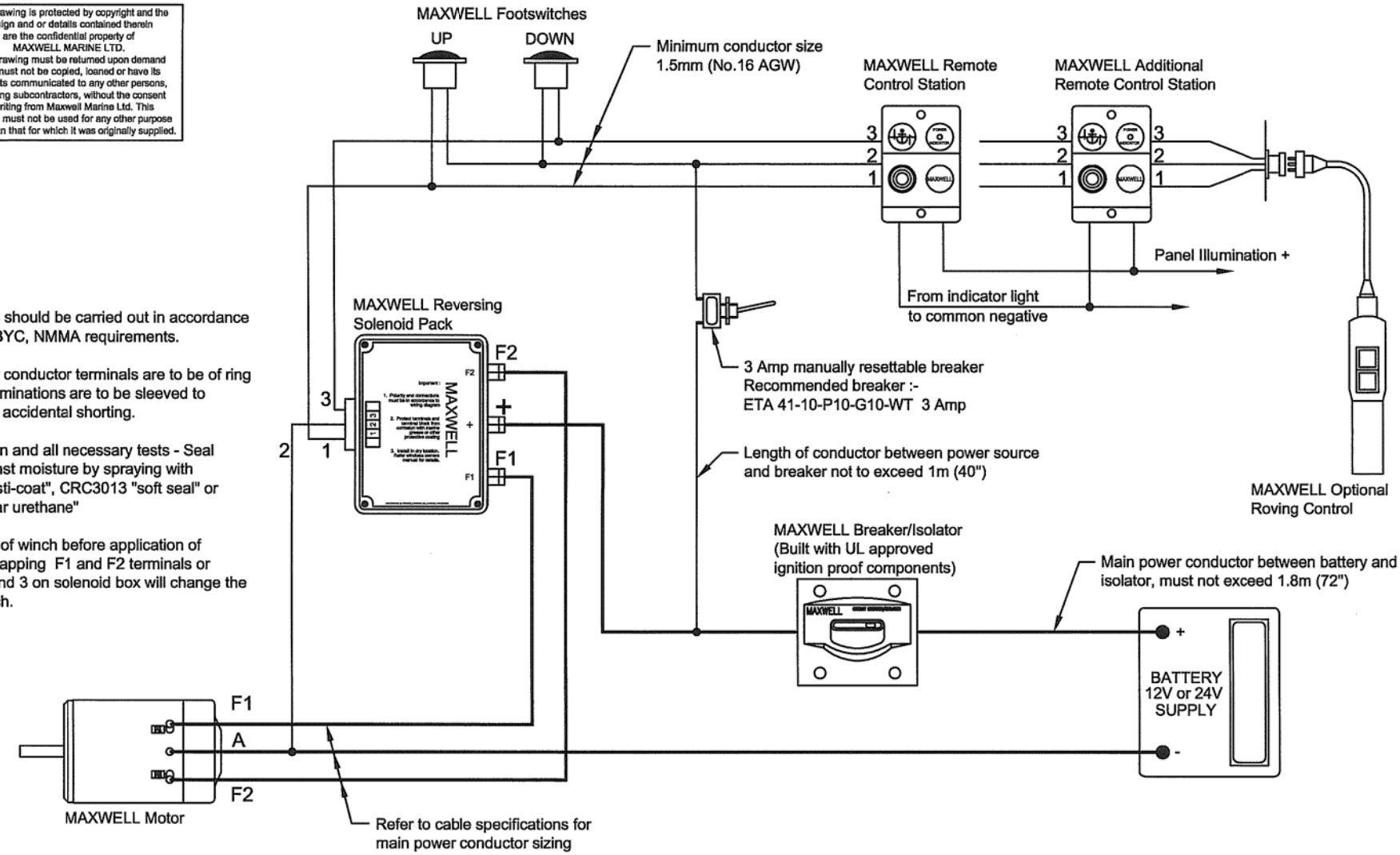
Sheet Size A3

Scale *1.1*

Sheet 1 of 1

INSTALLATION DRAWINGS





Note:

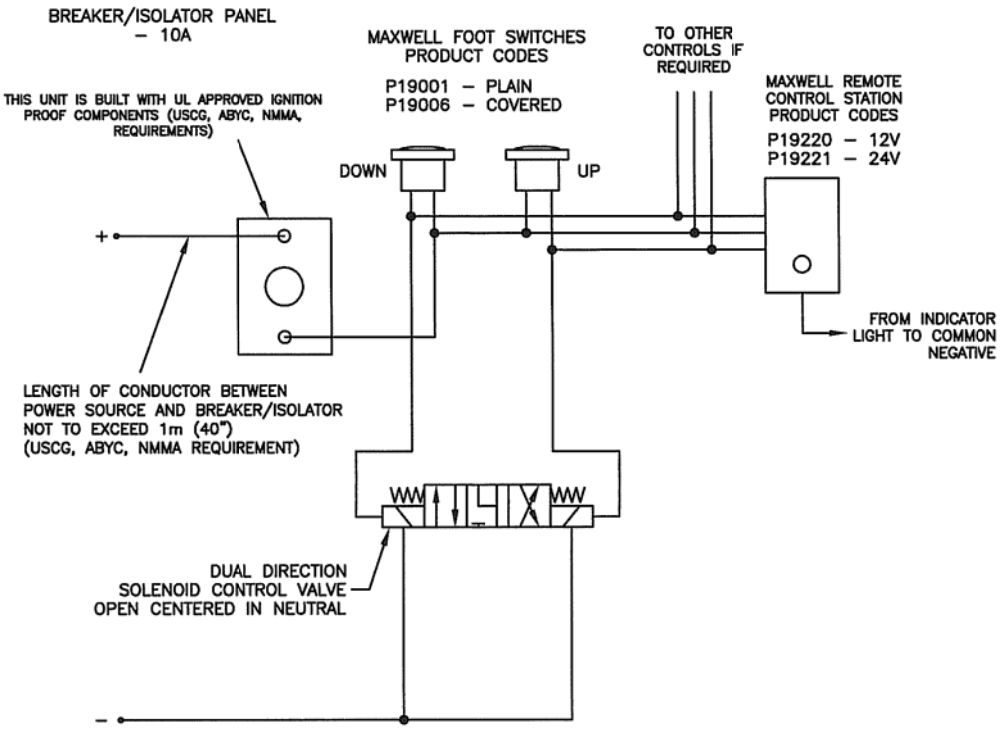
All installations should be carried out in accordance with USCG, ABYC, NMMA requirements.

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	Checked	BVT/Dwg No.	Description	Assy No.
1.00	Initial Issue	21/7/2004	DI/RP		N/A	Wiring Diagram - Typical For Series Wound Motors	P101840
2.00	Terminal 3 routing from solenoid box corrected	25/05/2005	RP	GB	BVT View		
					N/A		
					Sheet Size / Scale		
					A4 / NTS		
					Sheet 1 of 1		



MINIMUM CONDUCTOR SIZE 1.5mm² (AWG 16)
(USCG, ABYC, NMMA REQUIREMENT)

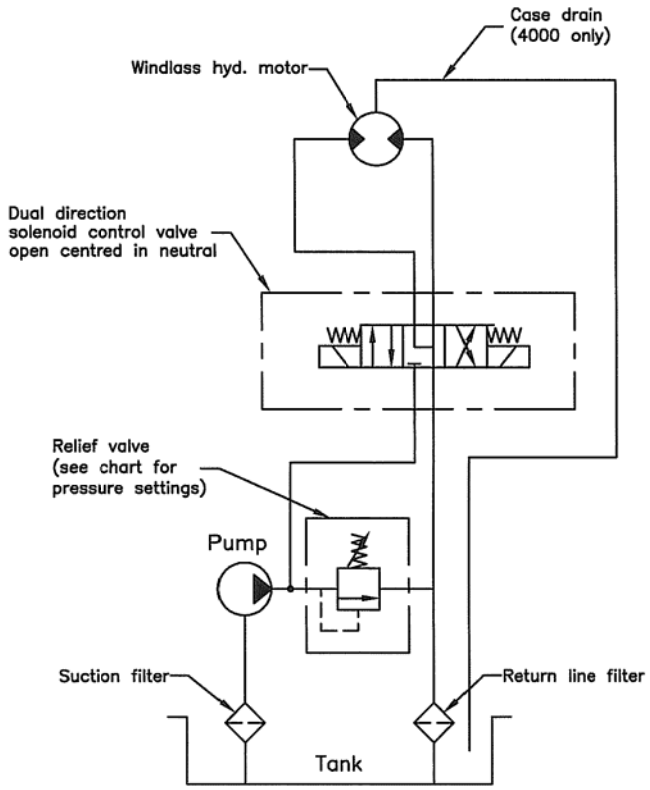
ALL INSTALLATIONS SHOULD BE CARRIED OUT IN ACCORDANCE WITH USCG, ABYC, NMMA, OR CLASSIFICATION SOCIETY REQUIREMENTS.

Rev.	Description	Date	Name	Checked
3.00	Removed clutch relay	29/04/03	DRW	
4.00	Control Station Codes corrected	07/06/07	RP	JE

ELECTRIC CONTROL WIRING DIAGRAM FOR HYDRAULIC WINDLASSES

MAXWELL WINCHES LTD.
AUCKLAND NEW ZEALAND

P101821



Windlass			Recommended flow		Relief valve pressure setting	
Series	Motor		l/min	US gal/min	PSI	bar
1000	P14366	GRESEN MGG2–16	20	5.3	1450	100
1500	P14366	GRESEN MGG2–16	20	5.3	2000	138
2200	P14369	GRESEN MGG2–30	36	9.5	1800	124
2500	P14368	GRESEN MGG2–25	32	8.5	2000	138
Liberty	P14368	GRESEN MGG2–25	32	8.5	2000	138
3500	P14368	GRESEN MGG2–25	40	11	2000	138
4000	SP2250	Galtech 2SM–A–19	50	13.2	1500	103

Chart refers to MAXWELL "standard build". Lower flow or lower pressure can be accommodated – refer to manual or consult MAXWELL.

Ensure that selected hydraulic components are adequate for recommended flow rate.

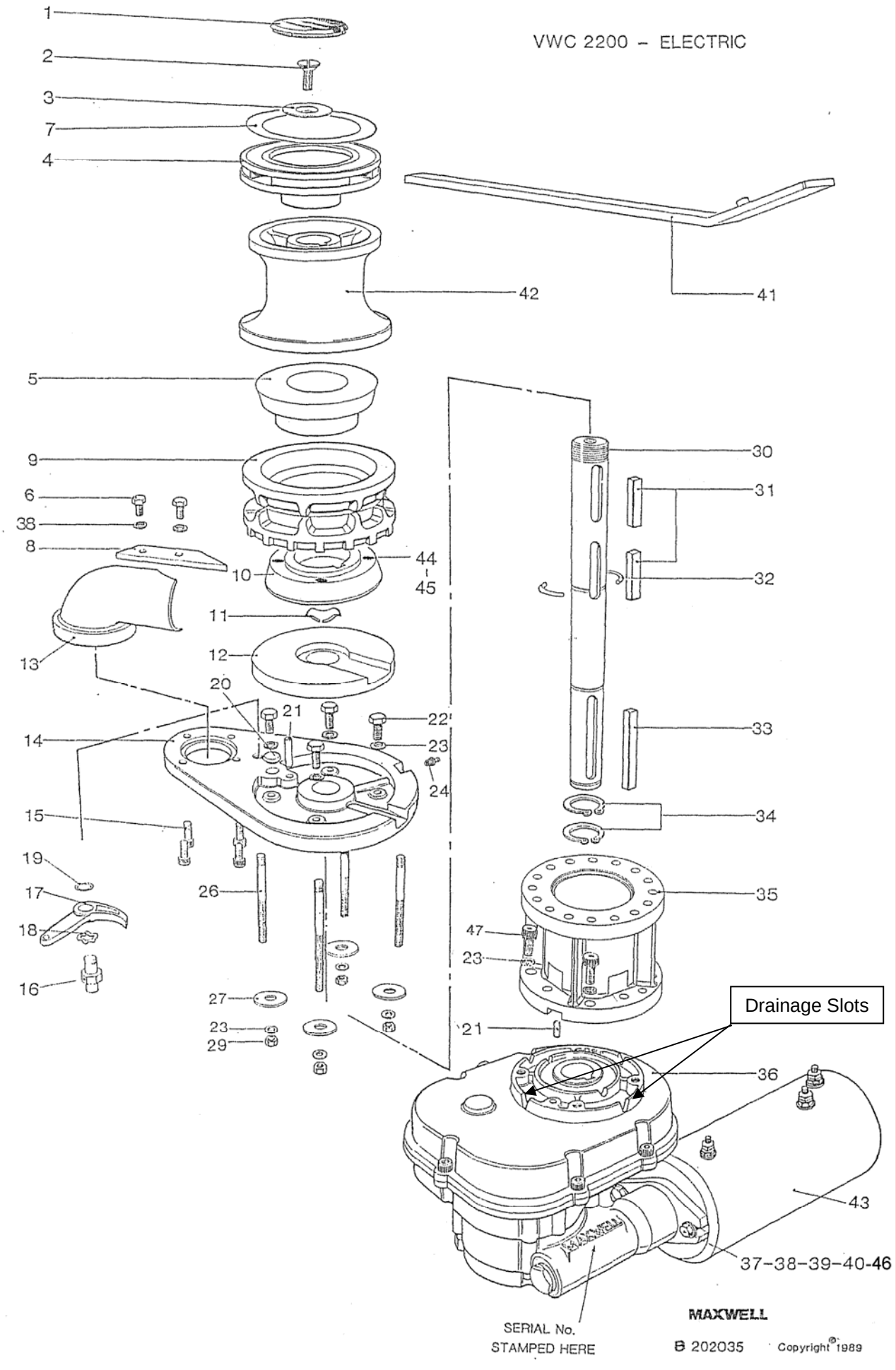
Case drain can only connect to return line if return line pressure is below 25 PSI. Oherwise case drain must connect to tank

Revision	Description	Date	Name
7.00	Removed pressure switch, Added liberty	29/04/03	DRW
8.00	Directional control valve changed back	22/10/04	JE
9.00	4000 motor changed from SP2224 to SP2250	20/03/07	JE

HYDRAULIC SCHEMATIC
WINDLASSES
1000 – 4000

MAXWELL WINCHES LTD.
AUCKLAND NEW ZEALAND

P101820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Drainage Slots
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37-38-39-40-46
SERIAL No.
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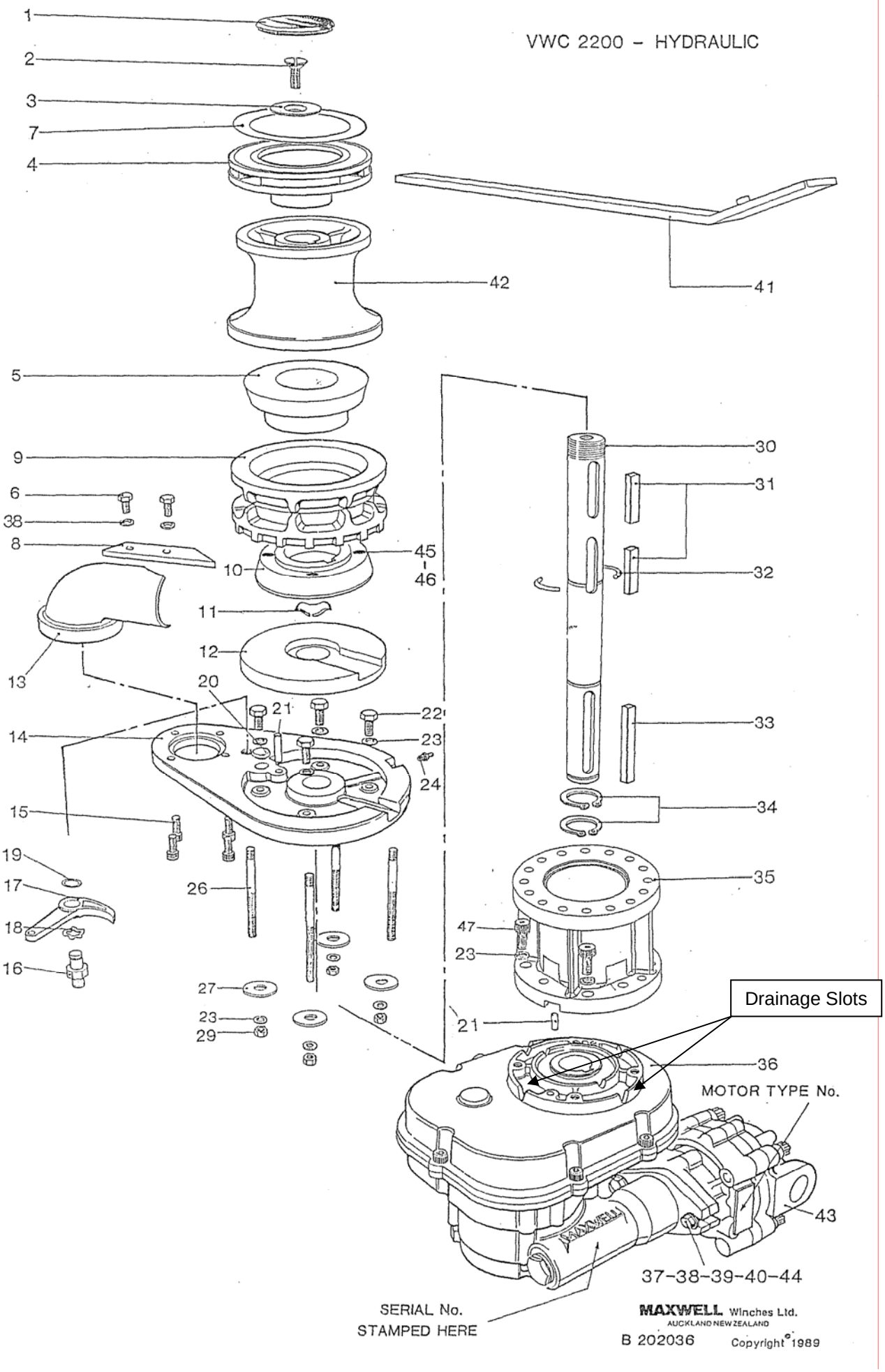
VWC 2200 ELECTRIC B202035

ITEM	PART NO.	DESCRIPTION	QTY
1	D3227	CAP	1
2	SP40	SCREW - CSK ST. ST. 3/8” x 1” LG	1
3	E3267	RETAINING WASHER	1
4	C3228	CLUTCH NUT	1
5	D3185	CLUTCH CONE - OUTER	1
6	SP254	BOLT - HEX HD M8 X 20 LG ST. ST.	2
7	E3860	LABEL	1
8	E3246	STRIPPER ARM	1
9	C3231	CHAINWHEEL	1
10	C3184	CLUTCH CONE INNER	1
11	SP468	WAVE SPRING WASHER SSR-0187-S17	1
12	D4233	EMERGENCY CRANK COLLAR	1
13/A	D3245	CHAINPIPE - CLOCKWISE UP - STD. AS SHOWN	1
13/B	D3466	CHAINPIPE - ANTICLOCKWISE - OPTIONAL	1
14/A	C3233	DECKPLATE - CLOCKWISE UP - STD. AS SHOWN	1
14/B	C3489	DECKPLATE - ANTICLOCKWISE - OPTIONAL	1
15	SP167	CAP SCREW SOC. HD. M8 X 20 LG ST. ST.	4
16	E3459	PAWL PIN	1
17	E3244	PAWL	1
18	SP463	WAVE SPRING WASHER SSR -0100-S17	1
19	SP871	SPIRAL RETAINING WASHER	1
20	E3205	PLUG	1
21	SP0544	DOWEL	3
22	SP287	BOLT - HEX HD 3/8” X 1 ¼” LG ST. ST.	4
23	SP457	WASHER - SPRING 3/8” ST. ST.	12
24	E2048	GREASE NIPPLE	1
26/A	E3174	STUD (4” TDC)	4
26/B	E3217	STUD (8” TDC)	4
27	E3843	WASHER	4
28	-		
29	SP322	NUT - HEX 3/8” ST. ST.	4
30/A	C3236	MAINSHAFT (4” TDC)	1
30/B	C3237	MAINSHAFT (8” TDC)	1
31	E3207	KEY	2
32	E2311	CLUTCH RETAINING CIRCLIP	1
33	E3150	KEY	1
34	SP846	CIRCLIP - EXT. DIAM. 1½” SHAFT ST. ST.	2
35/A	C3169	SPACER TUBE (4” TDC)	1
35/B	C3204	SPACER TUBE (8” TDC)	1
36	P9508022	GEARBOX ASSY	1
37	SP288	BOLT - HEX HD M8 X 25 LG ST. ST.	2
38	SP413	WASHER - 5/16” ST. ST.	4
39	SP467	WASHER - SPRING 8MM ST. ST.	2
40	SP530	ROLL PIN	1
41	P20040	EMERGENCY CRANK LEVER	1
42	C3230	DRUM	1
43/A	P11165	MOTOR 12V	1
43/B	P11166	MOTOR 24V	1
44	E3569	PLUNGER	4
45	E3570	SPRING	4
46	SP2787	O-Ring	1
47	SP2484	CAP SCREW	4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Drainage Slots
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MOTOR TYPE No.
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37-38-39-40-44
SERIAL No.
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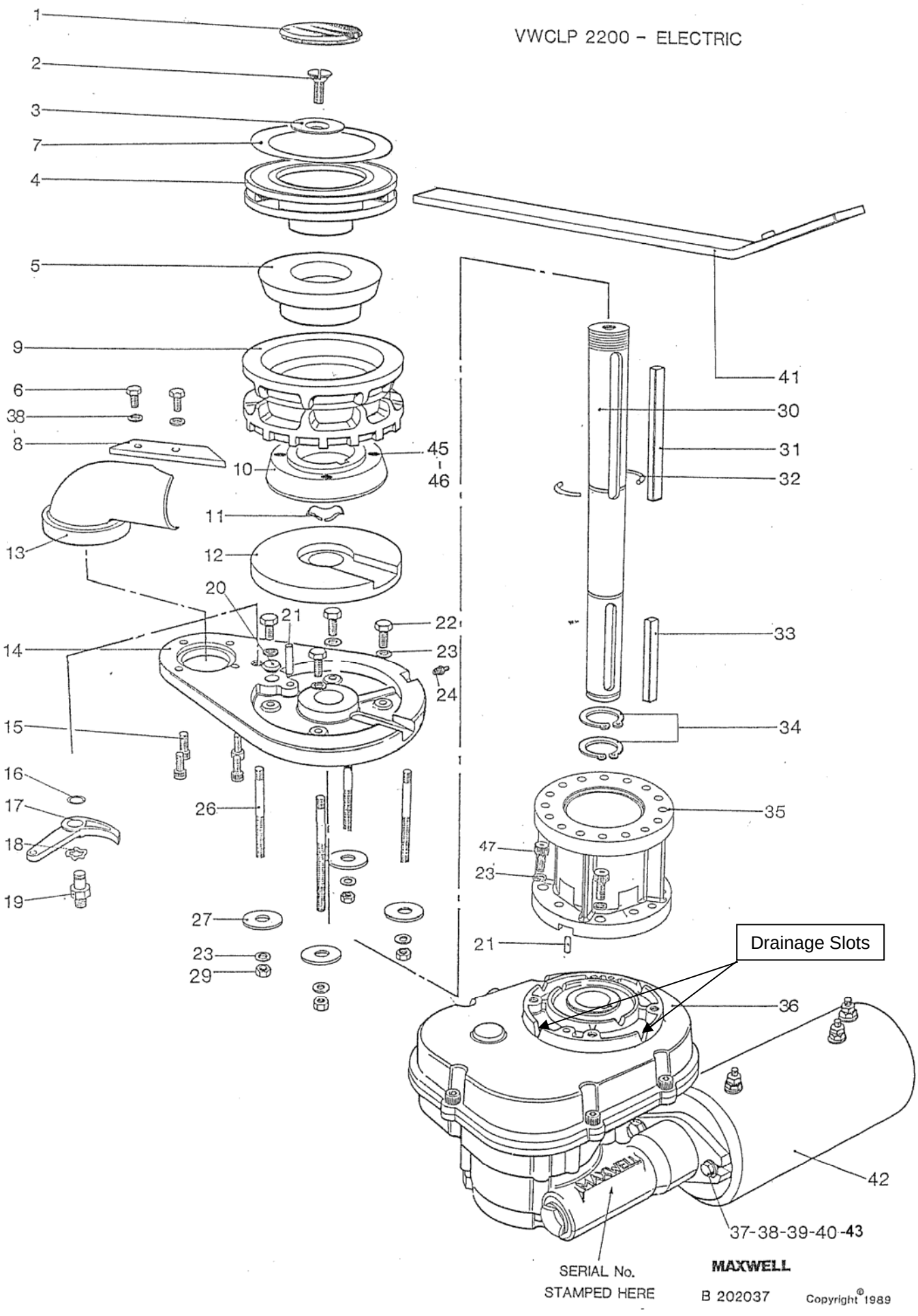
VWC 2200 HYDRAULIC B202036

ITEM		PART NO.	DESCRIPTION	QTY
1		E3227	CAP	1
2		SP40	SCREW - CSK ST. ST. 3/8" X 1" LG	1
3		E3267	RETAINING WASHER	1
4		C3228	CLUTCH NUT	1
5		D3185	CLUTCH CONE - OUTER	1
6		SP254	BOLT - HEX HD M8 X 20 LG ST. ST.	2
7		E3860	LABEL	1
8		E3246	STRIPPER ARM	1
9		C3231	CHAINWHEEL	1
10		C3184	CLUTCH CONE INNER	1
11		SP468	WAVE SPRING WASHER SSR-0187-S17	1
12		D4233	EMERGENCY CRANK COLLAR	1
13/A		D3245	CHAINPIPE - CLOCKWISE UP - STD. AS SHOWN	1
13/B		D3466	CHAINPIPE - ANTICLOCKWISE - OPTIONAL	1
14/A		C3233	DECKPLATE - CLOCKWISE UP - STD. AS SHOWN	1
14/B		C3489	DECKPLATE - ANTICLOCKWISE - OPTIONAL	1
15		SP167	CAP SCREW SOC. HD. M8 X 20 LG ST. ST.	4
16		E3459	PAWL PIN	1
17		E3244	PAWL	1
18		SP463	WAVE SPRING WASHER SSR-0100-S17	1
19		SP871	SPIRAL RETAINING WASHER	1
20		E3205	PLUG	1
21		SP0544	DOWEL	3
22		SP287	BOLT - HEX HD 3/8" X 1¼" LG ST. ST.	4
23		SP457	WASHER - SPRING 3/8" ST. ST.	12
24		E2048	GREASE NIPPLE	1
26/A		E3174	STUD (4" TDC)	4
26/B		E3217	STUD (8" TDC)	4
27		E3843	WASHER	4
28		-		
29		SP322	NUT - HEX 3/8" ST. ST.	4
30/A		C3236	MAINSHAFT (4" TDC)	1
30/B		C3237	MAINSHAFT (8" TDC)	1
31		E3207	KEY	2
32		E2311	CLUTCH RETAINING CIRCLIP	1
33		E3150	KEY	1
34		SP846	CIRCLIP - EXT DIAM. 1½" SHAFT ST. ST.	2
35/A		C3169	SPACER TUBE (4" TDC)	1
35/B		C3204	SPACER TUBE (8" TDC)	1
36		P9508022	GEARBOX ASSY	1
37		SP279	BOLT	2
38		SP413	WASHER - 5/16" ST. ST.	6
39		SP467	WASHER - SPRING 8MM ST. ST.	2
40		SP530	ROLL PIN	1
41		P20040	EMERGENCY CRANK LEVER	1
42		C3230	DRUM	1
43	*	P14369	MOTOR HYDRAULIC (STANDARD MGG -200-30)	1
44		SP366	NUT - HEX M8 ST. ST.	2
45		E3569	PLUNGER	4
46		E3570	SPRING	4
47		SP2484	CAP SCREW	4

* OPTIONAL (SEE SPECIFICATIONS)
P14368 MGG - 200-25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Drainage Slots
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SERIAL No.
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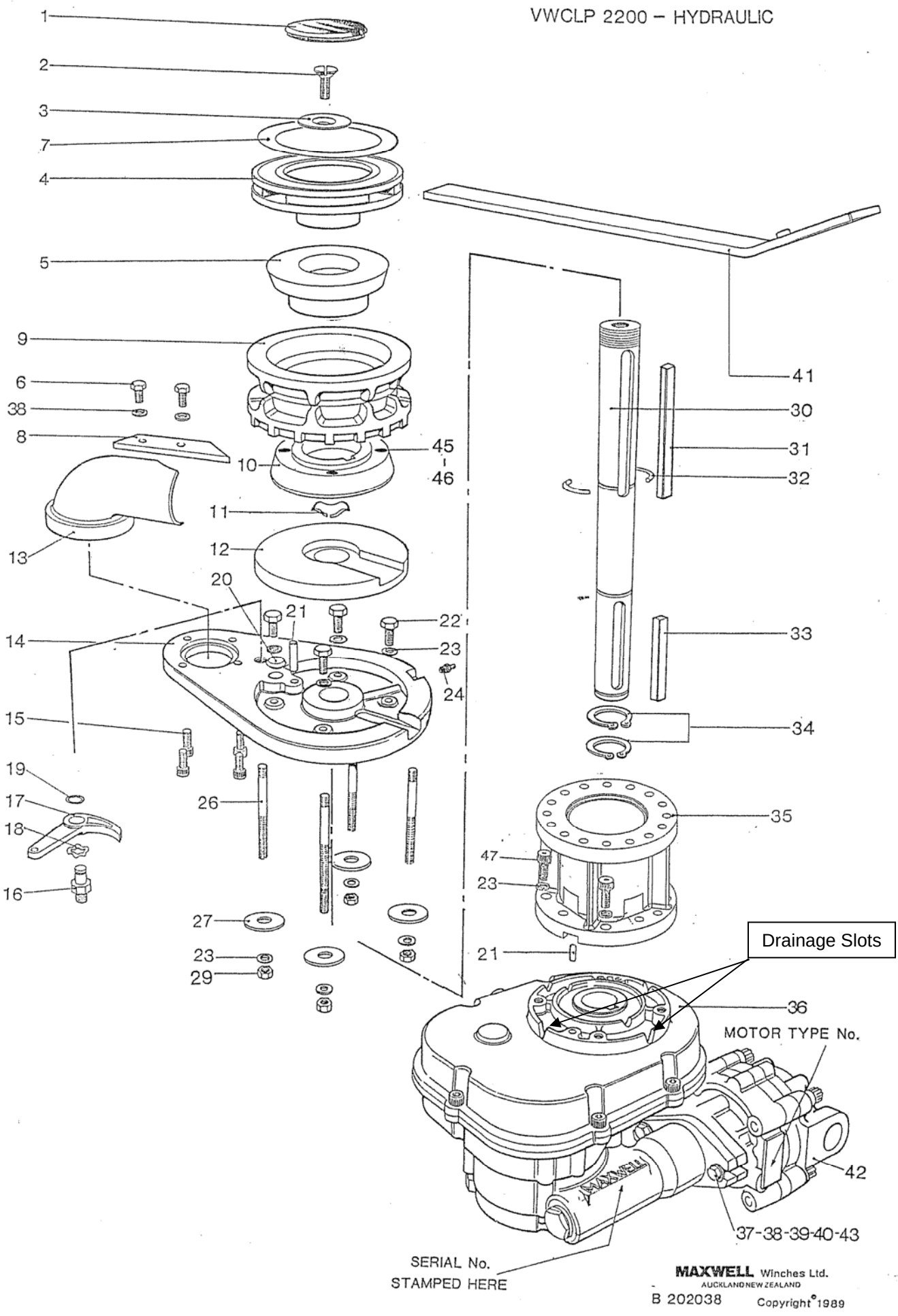
VWCLP 2200 ELECTRIC **B202037**

ITEM	PART NO.	DESCRIPTION	QTY
1	E3227	CAP	1
2	SP40	SCREW - CSK ST. ST. 3/8” X 1” LG	1
3	E3267	RETAINING WASHER	1
4	C3228	CLUTCH NUT	1
5	D3185	CLUTCH CONE - OUTER	1
6	SP254	BOLT - HEX HD M8 X 20 LG ST. ST.	2
7	E3860	LABEL	1
8	E3246	STRIPPER ARM	1
9	C3231	CHAINWHEEL	1
10	C3184	CLUTCH CONE INNER	1
11	SP468	WAVE SPRING WASHER SSR-0187-S17	1
12	D4233	EMERGENCY CRANK COLLAR	1
13/A	D3245	CHAINPIPE - CLOCKWISE UP - STD. AS SHOWN	1
13/B	D3466	CHAINPIPE - ANTICLOCKWISE - OPTIONAL	1
14/A	C3233	DECKPLATE - CLOCKWISE UP - STD. AS SHOWN	1
14/B	C3489	DECKPLATE - ANTICLOCKWISE - OPTIONAL	1
15	SP167	CAP SCREW SOX. HD. M8 X 20 LG ST. ST.	4
16	E3459	PAWL PIN	1
17	E3244	PAWL	1
18	SP463	WAVE SPRING WASHER SSR-0100-S17	1
19	SP871	SPIRAL RETAINING WASHER	1
20	E3205	PLUG	1
21	SP0544	DOWEL	3
22	SP287	BOLT - HEX HD 3/8” X 1¼” LG ST. ST.	4
23	SP457	WASHER - SPRING 3/8” ST. ST.	12
24	E2048	GREASE NIPPLE	1
26/A	E3174	STUD (4” TDC)	4
26/B	E3217	STUD (8” TDC)	4
27	E3843	WASHER	4
28	-		
29	SP322	NUT - HEX 3/8” ST. ST.	4
30/A	C3206	MAINSHAFT (4” TDC)	1
30/B	C3218	MAINSHAFT (8” TDC)	1
31	E3207	KEY	1
32	E2311	CLUTCH RETAINING CIRCLIP	1
33	E3150	KEY	1
34	SP846	CIRCLIP - EXT. DIAM. 1½” SHAFT ST. ST.	2
35/A	C3169	SPACER TUBE (4” TDC)	1
35/B	C3204	SPACER TUBE (8” TDC)	1
36	P508022	GEARBOX ASSY	1
37	SP288	BOLT - HEX HD M8 X 25 LG ST. ST.	2
38	SP413	WASHER - 5/16” ST. ST.	2
39	SP467	WASHER - SPRING 8MM ST. ST.	2
40	SP530	ROLL PIN	1
41	P20040	EMERGENCY CRANK LEVER	1
42/A	P11165	MOTOR 12V	1
42/B	P11166	MOTOR 24V	1
43	SP2787	O-Ring	1
44	-		
45	E3569	PLUNGER	4
46	E3570	SPRING	4
47	SP2484	CAP SCREW	4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Drainage Slots
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MOTOR TYPE No.
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37-38-39-40-43
SERIAL No.
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B 202038
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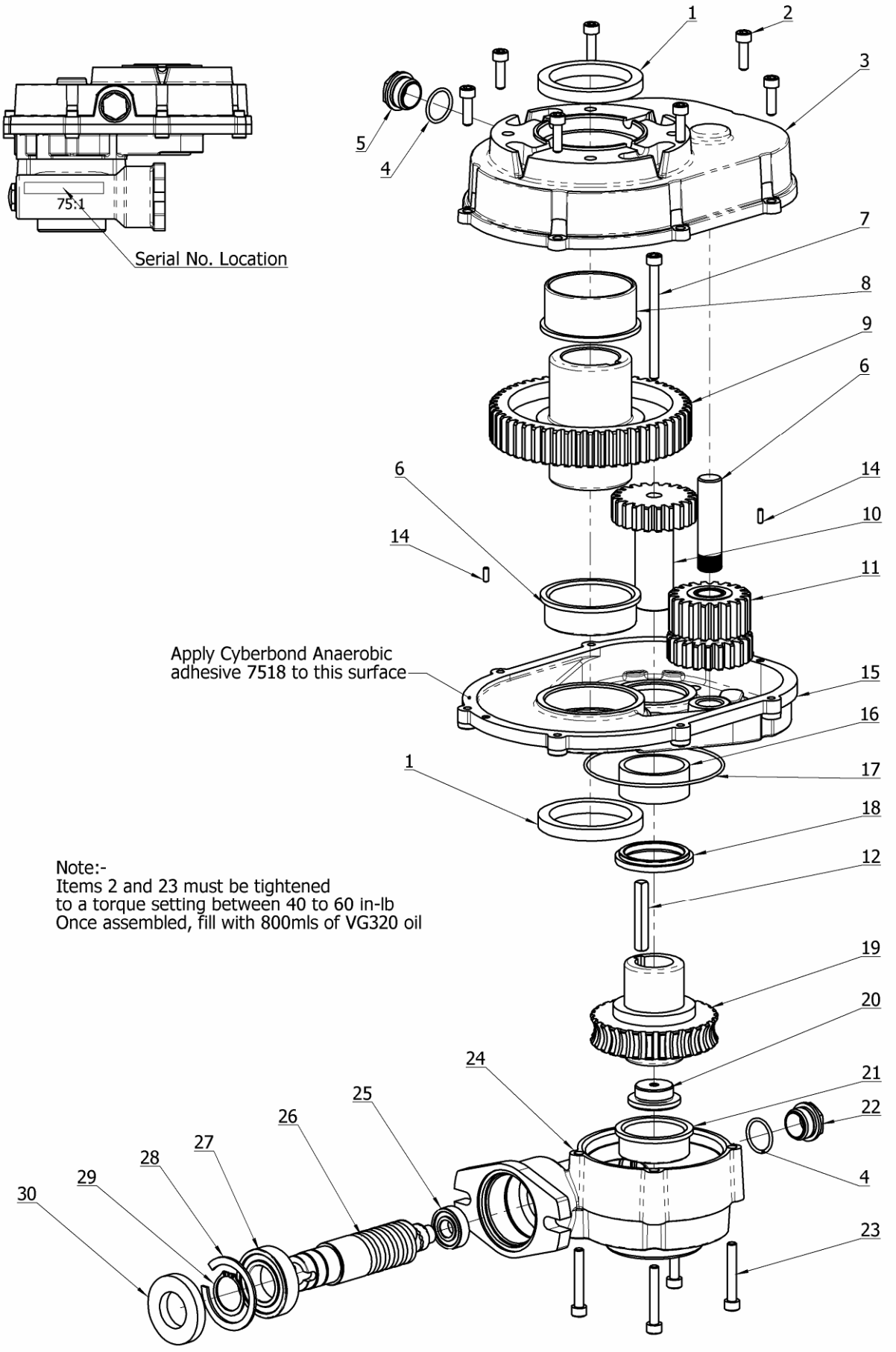
VWCLP 2200 HYDRAULIC **B202038**

ITEM		PART NO.	DESCRIPTION	QTY
1		E3227	CAP	1
2		SP40	SCREW - CSK ST. ST. 3/8" X 1" LG	1
3		E3267	RETAINING WASHER	1
4		C3228	CLUTCH NUT	1
5		D3185	CLUTCH CONE - OUTER	1
6		SP254	BOLT - HEX HD M8 X 20 LG ST. ST.	2
7		E3860	LABEL	1
8		E3246	STRIPPER ARM	1
9		C3231	CHAINWHEEL	1
10		C3184	CLUTCH CONE INNER	1
11		SP468	WAVE SPRING WASHER SSR-0187-S17	1
12		D4233	EMERGENCY CRANK COLLAR	1
13/A		D3245	CHAINPIPE - CLOCKWISE UP - STD. AS SHOWN	1
13/B		D3466	CHAINPIPE - ANTICLOCKWISE - OPTIONAL	1
14/A		C3233	DECKPLATE - CLOCKWISE UP - STD. AS SHOWN	1
14/B		C3489	DECKPLATE - ANTICLOCKWISE - OPTIONAL	1
15		SP167	CAP SCREW SOC. HD. M8 X 20 LG ST. ST.	4
16		E3459	PAWL PIN	1
17		E3244	PAWL	1
18		SP463	WAVE SPRING WASHER SSR-0100-S17	1
19		SP871	SPIRAL RETAINING WASHER	1
20		E3205	PLUG	1
21		SP0544	DOWEL	3
22		SP287	BOLT - HEX HD 3/8" X 1¼ ST. ST.	4
23		SP457	WASHER - SPRING 3/8" ST. ST.	12
24		E2048	GREASE NIPPLE	1
26/A		E3174	STUD (4" TDC)	4
26/B		E3217	STUD (8" TDC)	4
27		E3843	WASHER	4
28		-		
29		SP322	NUT - HEX 3/8" ST. ST.	4
30/A		C3206	MAINSHAFT (4" TDC)	1
30/B		C3218	MAINSHAFT (8" TDC)	1
31		E3207	KEY	1
32		E2311	CLUTCH RETAINING CIRCLIP	1
33		E3150	KEY	1
34		SP846	CIRCLIP - EXT. DIAM. 1½" SHAFT ST. ST.	2
35/A		C3169	SPACER TUBE (4" TDC)	1
35/B		C3204	SPACER TUBE (8" TDC)	1
36		P9508022	GEARBOX ASSY	1
37		SP279	BOLT	2
38		SP413	WASHER - 5/16" ST. ST.	6
39		SP467	WASHER - SPRING 8MM ST. ST.	2
40		SP530	ROLL PIN	1
41		P20040	EMERGENCY CRANK LEVER	1
42	*	P14369	MOTOR HYDRAULIC (STANDARD MGG -200-30)	1
43		SP366	NUT - HEX M8 ST. ST.	2
44		-		
45		E3569	PLUNGER	4
46		E3570	SPRING	4
47		SP2484	CAP SCREW	4

* OPTIONAL (SEE SPECIFICATIONS)
P14368 MGG -200-25

P9508022 Gearbox



P9508022 Gearbox

Item	Part No.	Description	Qty
1	SP0722	55 x 70 x 8 oil seal	2
2	SP0172	M6 x 20 cap screw	7
3	3135	gearcase upper	1
4	SP0720	20 x 2 O-ring	2
5	3223	Sight glass	1
6	3141	Lay shaft	1
7	SP2482	M6 x 80 SS cap screw	1
8	3168	Bush	1
9	3226	Final drive gear 2200 3500 series	1
10	4183	21 tooth pinion 75 to 1 gearbox	1
11	P9508023	Intermediate gear assembly - 20T 21T	1
	Consists of	4182 Intermediate gear 20t 21t 2200	1
		SP0650 Bush .625in x .75in x 1.5in bronze	1
12	3287	Key	1
13	3146	Bush	1
14	SP0542	1-8 x 3-8 lg tension pin	2
15	3134	Gearcase lower 2200 3500 series	1
16	SP0644	40 x 47 x 20 needle roller bearing	1
17	SP0726	O-ring ID 90mm section dia 2mm	1
18	3170	Thrust washer	1
19	3137	Wormwheel 29T 2000 3500 series	1
20	4188	Pinion stop	1
21	3145	Bush	1
22	3263	Plug	1
23	SP0159	M6 x 40 cap screw	4
24	3136	Worm box 2200 3500 series	1
25	SP0643	12 x 28 x 8 ball bearing	1
26	3140	Worm	1
27	SP0642	25 x 12 x 47 ball bearing	1
28	SP0838	1in Ext circlip	1
29	SP0844	47 x 1.85 Int circlip	1
30	SP0721	25 x 47 x 7 oil seal	1

LIMITED WARRANTY

Warranty: Maxwell Marine 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 address above, 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