

MAXWELL MARINE

WELL MARINE LTD, P.O. 33-401, TAKAPUNA, AUCKLAND 9, NEW ZEALAND, TELEPHONE 444-7396, TELEX NZ 600

INSTALLATION AND OPERATING INSTRUCTIONS

MAXWELL-NILSSON VERTICAL ANCHOR WINDLASS

MODEL V1000 12 VOLT AND 24 VOLT

REVISED
JUNE 1986

LOCATION: Position windlass to allow a clear run from fairlead to winch drum and chain wheel. Chain must be able to be fed into the chain locker via the chain pipe. Standard rotation is clockwise when viewed from above. The windlass must be positioned so that the footswitch can be conveniently operated whilst tailing when using the warping drum. The footswitch should be positioned in a dry location preferably outside the chain locker. Also make sure when positioning the winch that the emergency crank clears the pulpit and life lines.

INSTALLATION: A deck template is supplied with these instructions and is used to position all necessary holes accurately. It is possible to position the gearbox in a number of ways under the deck and thought must be given to the best run for the chain. If the chain pipe cannot be positioned directly over the chain locker, heavy wall flexible plastic tube can be used to direct the chain to the required area. If the plastic tube system is to be used, a trial run should be made to ensure that the chain will slip through completely unaided to avoid jamming. The chain locker must be of such size that the chain will heap up and feed out naturally without fouling. Allowance must be made for electric supply line conductors to be conveniently connected under the deck after installation.

A nominal 5" (125mm) deck allowance is provided on standard units. To check the exact deck allowance, slide the deck flange up the shaft to within 1/4" (6mm) of the chain wheel and carefully measure the distance between the underside of the deck flange and the top surface of the gearbox mounting flange. Deck thickness must be built up to match this measurement.

An above deck spacer (optional order P/No. 20002) of 3/4" (18mm) is ideally suited as it allows fitting of the optional fibreglass cover (order P/No. 20101). The above deck spacer top surface or deck area covered by the template supplied, should be level and accurately parallel to the underdeck mounting surface. Depending on the deck construction, care must be taken that the underdeck spacer provides sufficient stiffening to sustain the pull of the windlass. The chain pipe is also positioned by the template. The chain stripper is attached to the chain pipe. Due to wide variations in chain sizes used on this type of windlass, the centre groove of the chain wheel will vary in height above the deck and in root diameter. It may be necessary to pack up (or sometimes lower) the height of the chain pipe so that the stripper aligns correctly with the centre line of the chain wheel. Ensure that there is clearance between the end of the stripper and the bottom of the groove. This adjustment is made after bolting down of the windlass and care should be taken to ensure that the anchor chain will peel off smoothly.

CHAIN FIT: Correct fit of chain to chain wheel is essential and can only be guaranteed where a standard chain known to us is used or a 12" (300mm) or 8 links (whichever is longer) sample has been forwarded to us to match fit. Exchange can be made at any time for a charge based on the condition of the unit returned.

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PREPARING WINDLASS: To fit the windlass, all above deck components must be removed from the main shaft. Examination of Drawing B201001 supplied herewith will show what is necessary combined with these instructions.

1. Unfold clutch nut handles on clutch nut assembly (1)
2. Remove centre screws (16) and washer (17)
3. Unscrew clutch nut - anticlockwise.
4. Carefully remove all components from the shaft down to the lower clutch cone noting which way each item is fitted.
5. Remove deck bolts and woodscrew
6. Remove plungers and springs from lower clutch.
7. Unscrew the grubscrew (10) in the clutch cone (26) (using a soft hammer or wood chock if necessary) tap the underside of the clutch cone until it is free of the key and split clutch retainer ring. Remove all items from the shaft.
8. Remove deck flange with seal and chain meter fitted (if supplied).

FITTING WINDLASS:

9. Clean Shaft thoroughly.
10. Grip shaft and memorise "feel" of backlash built into box.
11. Offer up gearbox from under deck and position deck flange above deck using suitable rubber sealant between flange and deck.
12. Fit deck bolts and woodscrew and lightly screw up nuts under deck. Check that "feel" of backlash is the same as noted at step 10. Tighten deckbolt nuts progressively and evenly ensuring that final backlash is unchanged. This is very important.
13. Fit all components in reverse order to that used in steps 1 to 8 inclusive. Lightly grease shaft after fitting deck flange and seal (14) which should lightly press onto top of deck flange.
14. Thoroughly grease clutch cone faces and all grease nipples using a medium to light grade of water repellent grease.

ELECTRICAL WIRING INSTRUCTIONS:**Recommend Supply Line Conductor Size and Insulation****12 Volt D.C. Systems - Rating 190 Amps Max.**

d feet	AWG Gauge	x	Min. Insulation	Y
0-10	4	4	200°C	-
0-15	3	2	125	200°C
0-20	2	1	105	125
0-25	1	00	75	105
0-30	0	-	60	80
0-35	00	-	60	75
0-50	000	-	60	75
0-60	000	-	60	75

24 Volt D.C. Systems - Rating 95 Amps Max

d feet	AWG Gauge	x	Min Insulation	Y
0-20	8	8	200	200
0-25	7	6	105	125
0-30	6	4	75	105
0-40	5	3	75	90
0-50	4	1	60	75
0-60	3	1	60	75
0-80	2	1	60	75
0-100	1	1	60	60
0-125	0	1 or 0	60	60

Where "d" = total conductor length from battery to winch.

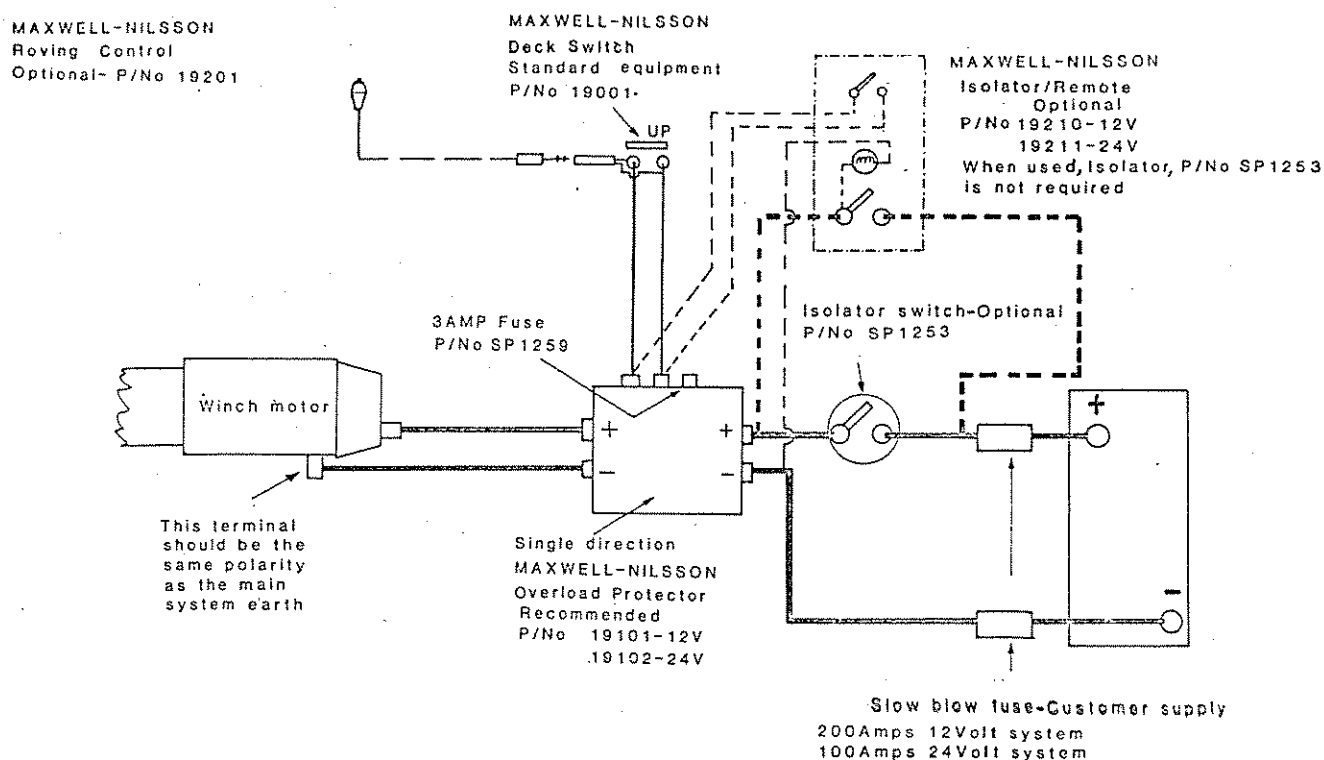
- NOTE:
- a) Any conductor running through the engine space should either
 - (i) have a gauge increase "x" or
 - (ii) have a insulation upgrade "y" for the length in engine space.
 - b) The gauge allows a 10% voltage drop approximately over the corresponding length "d"
 - c) The current used to determine the above table was that of the maximum continuous working current. Any excess of current is subjected to the time related automatic cut out.

Control line conductors should be N.E.C. or Automotive Engineering type wire or equivalent to size 16 for runs up to 50 feet. For runs over 50 feet use size 14.

Ordinary fuses are not supplied nor recommended. We recommend that a slow blow fuse be installed in the conductor at the power source and this is mandatory to meet U.S. Coast Guard, ABYC and BIA Regulations. For 12 volt systems this should have a rating of 200 amps and for 24 volt systems this should have a rating of 100 amps. We recommend installation of the MAXWELL-NILSSON Overload Protector to provide complete protection of the winch motor and gearbox. This unit also protects the control circuits. Non compliance with this recommendation may invalidate your warranty.

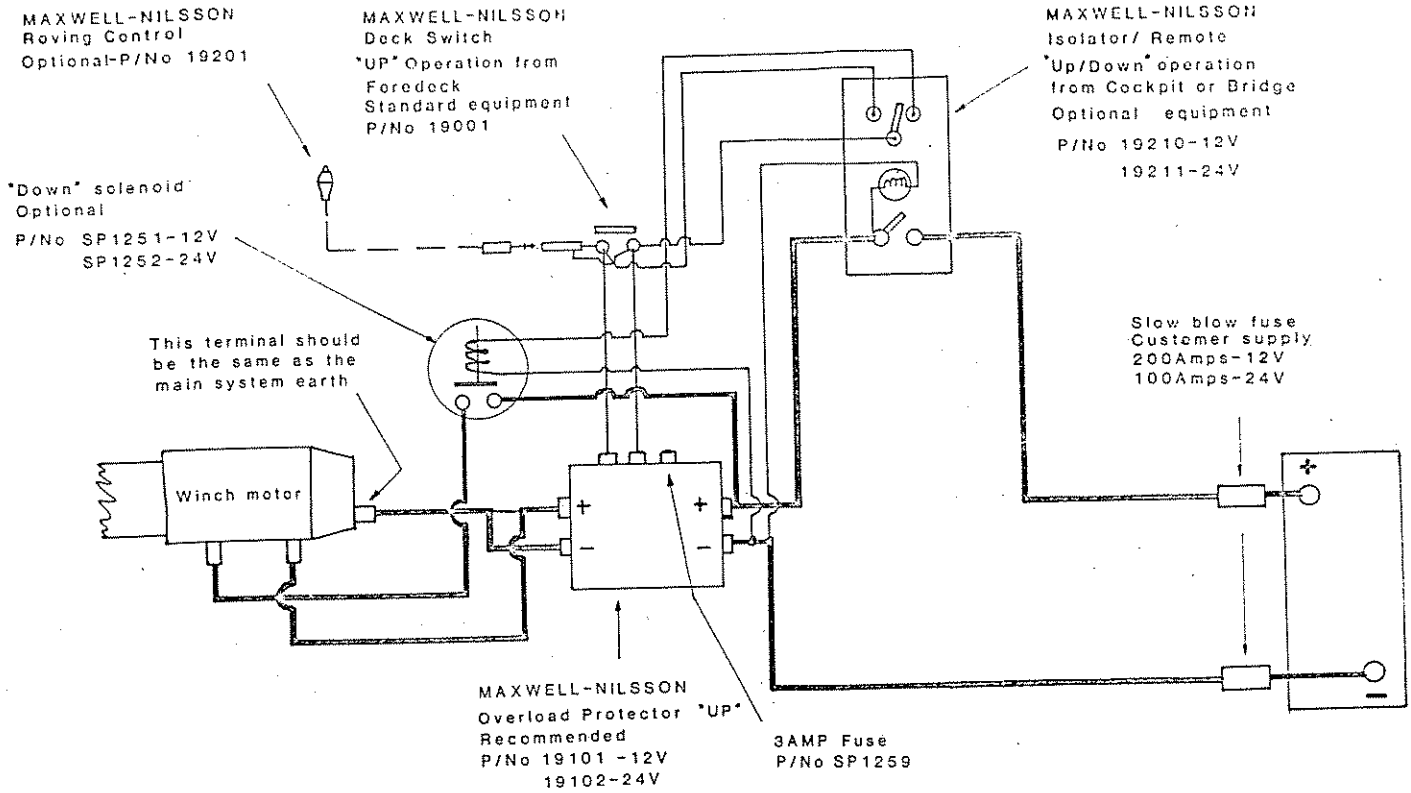
Standard motors fitted are high torque, short rated and are not intended for continuous operation or stalled loads. The MAXWELL-NILSSON Overload Protector provides complete protection under such conditions.

CIRCUIT with overload protection - Single Direction



Use cablesizes as recommended in table supplied

CIRCUIT with Overload Protection "UP" - Dual Direction



Use cable sizes as recommended in table supplied

OPTIONAL EXTRAS:

1. Fibreglass "bluewater" cover. Ideal for long term protection of your windlass. (Order P/No.20101)
2. Chain counter gives indication of length of chain let out or recovered. May be fitted to installed units easily. (Order P/No.20202)
3. Overload protector gives protection when hauling in anchor surge conditions without nuisance tripping. Fully automatic and self resetting.(For P/No. refer wiring diagrams herein).
4. Roving Control Kit allows free movement about the foredeck for better visual control of anchor recovery. (Order P/No.19201)
5. Chain stoppers mounted between winch and bow fitting the stopper will align chain correctly and positively hold chain whenever winch is stopped.(For size and model consult catalogue)

OPERATION:

Chain - Haul In: Unfold clutch handles and tighten clutch nut clockwise tightly. Depress footswitch or actuate control valve. If anchor is fouled and windlass is stalled or nearly stalled stop immediately and use engine power to free anchor.

Chain - Holding Anchor: Snap in chain wheel ratchet at the right moment and release clutch nut so that all weight is on the ratchet pawl.

Chain - Letting Go Anchor: Release pawl by applying power to winch briefly if necessary. Release clutch nuts carefully and use clutches as a brake to control run of chain. When the anchor is out release clutches and engage ratchet pawl to avoid transmission of stock loads back through gearing.

Warping Drum: May be operated at any time by releasing clutches and applying power to winch motor.

ALWAYS tie off or cleat anchor chains or warps to main bollard or cleats.
NEVER use the anchor windlass as a bollard.

Emergency Hand Crank: Remove centre screw, clutch nut, capstan, capstan key and upper clutch cone. Engage emergency hand crank and using ratchet pawl to hold weight of chain between pulls, haul in the anchor.

MAINTENANCE Refer separate instructions for deckswitch. The gearbox (refer drawing B201002) is a sealed unit and should never require lubrication except if opened up. Use Castrol TC fluid grease or equivalent. Regularly grease nipple provided and oil ratchet pawl pin. On annual maintenance, check that all parts including clutch faces are well lubricated and remove any hardened grease or other deposits. Oil chain meter regularly.

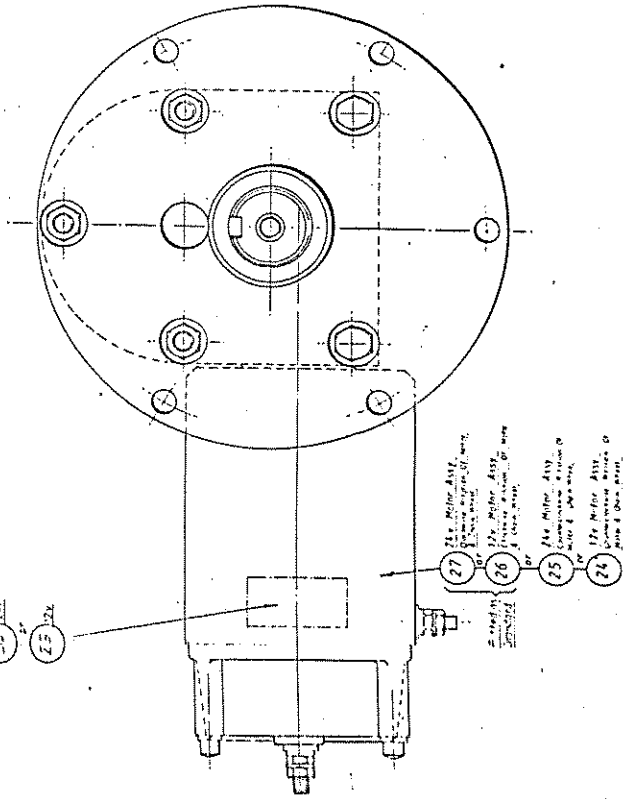
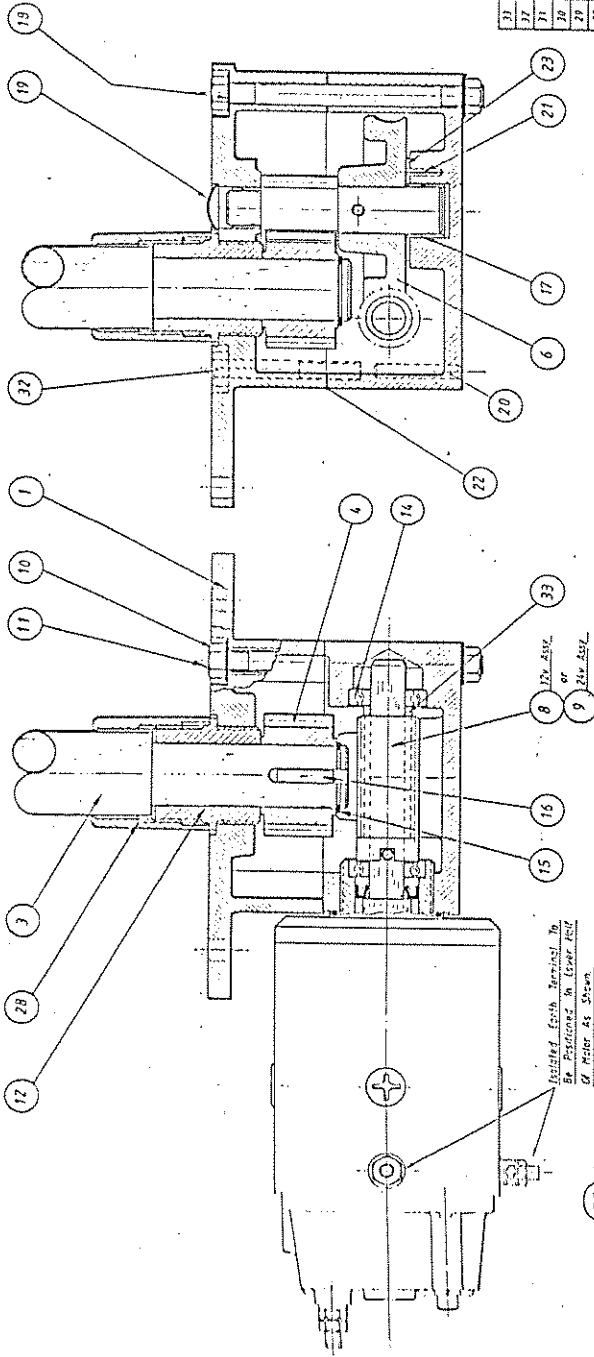
Attached Drawings
B201001
B201002

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

PRODUCT CODE Nos

12037 - 12v
12038 - 24v

ISSUED 26 MAY 1988



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NOTE
Gearbox Filled With
350cc Of Castrol TC
Grease SP-1442

Item	Part No	Description	Qty
1	12037	Motor End Flange Spacer	1
2	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
3	12038	Motor End Flange Spacer	1
4	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
5	12037	Motor End Flange Spacer	1
6	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
7	12038	Motor End Flange Spacer	1
8	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
9	12037	Motor End Flange Spacer	1
10	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
11	12038	Motor End Flange Spacer	1
12	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
13	12037	Motor End Flange Spacer	1
14	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
15	12038	Motor End Flange Spacer	1
16	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
17	12037	Motor End Flange Spacer	1
18	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
19	12038	Motor End Flange Spacer	1
20	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
21	12037	Motor End Flange Spacer	1
22	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
23	12038	Motor End Flange Spacer	1
24	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
25	12037	Motor End Flange Spacer	1
26	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
27	12038	Motor End Flange Spacer	1
28	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
29	12037	Motor End Flange Spacer	1
30	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
31	12038	Motor End Flange Spacer	1
32	SP 258	Hex Bolt 1/2" x 1 1/2" 24v	2
33	12037	Motor End Flange Spacer	1

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1	12037	Motor End Flange Spacer	1
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9	12037	Motor End Flange Spacer	1
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11	12038	Motor End Flange Spacer	1
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15	12038	Motor End Flange Spacer	1
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31	12038	Motor End Flange Spacer	1
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B 201002

PRODUCT CODE Nos

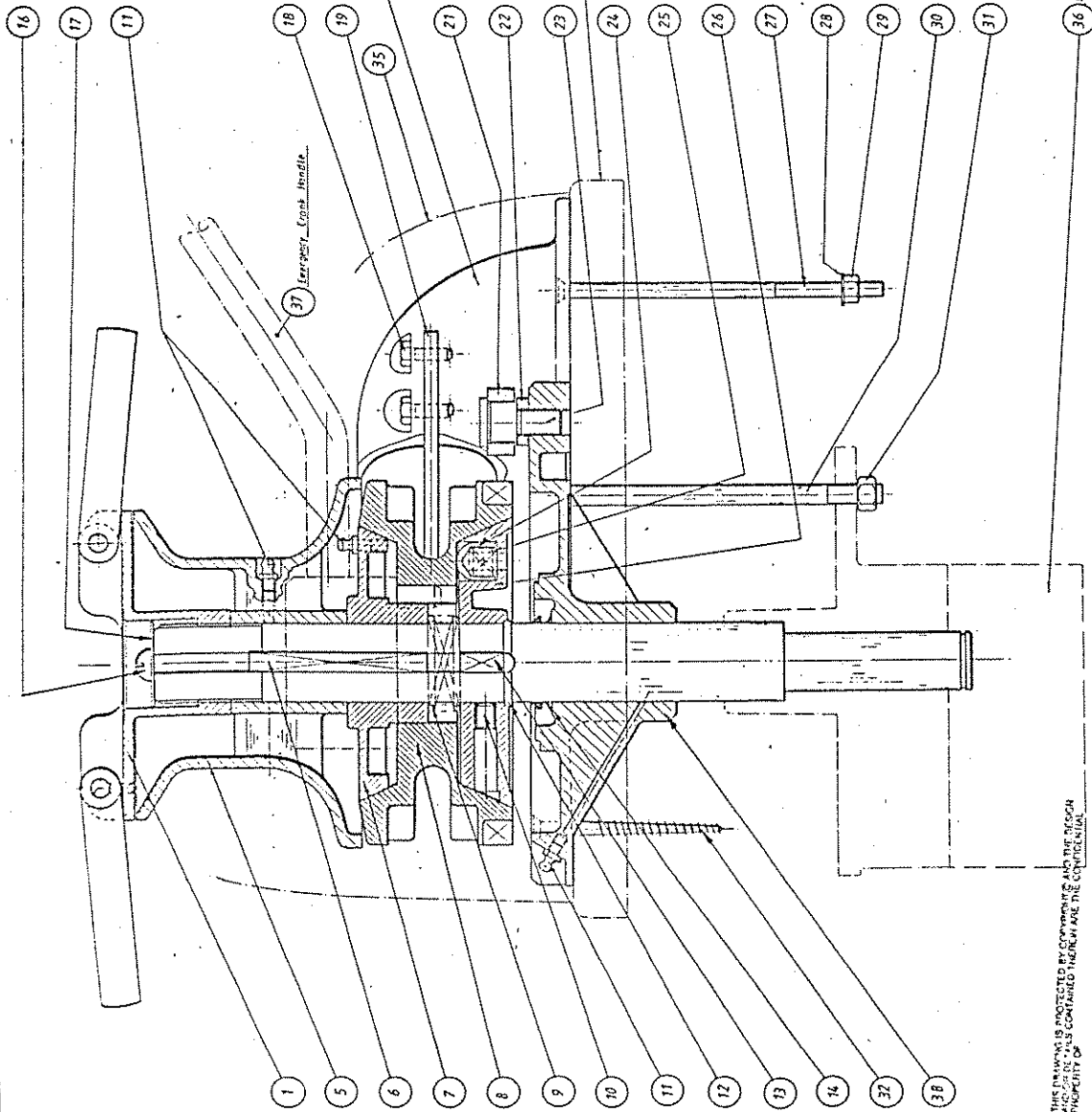
12031/B - 12V
12032/C - 12V
12033/B - 24V
12034/C - 24V

MAXWELL MARINE LTD

ISSUED 23 MAY 1988

23 MAY 1988

* Designate /B For Bronze or /C For Chrome



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No	Part Name	Qty
18	Clutch Bearing	2
19	Emergency Clutch Handle Assy	1
20	Gearbox Assy	1
21	Foregear Deck Cover (Optional)	1
22	Teak Deck Pad (Optional)	1
23	Chain Pipe L.H.	1
24	Washdown No 16 x 3/8" Ip	1
25	Washdown No 16 x 3/8" Ip	1
26	Deck Bolt 4.55 [1/2"]	5
27	Deck Bolt 4.55 [1/2"]	5
28	Washer Plate 1/2" Dia Brass	5
29	Washer Plate 1/2" Dia Brass	5
30	Deck Bolt 4.55 [1/2"]	5
31	Deck Bolt 4.55 [1/2"]	5
32	Bottom Clutch Case	1
33	Plunger Spring	1
34	Plunger - Grey Lift	1
35	Bottom Foot Pin	1
36	Screw - Foot Pin	1
37	Bottom Foot Pin	1
38	Bottom Foot Pin	1
39	Strut	1
40	Hex Bolt 1/2" UNC x 1 1/2" St. St.	1
41	Retaining Washer	1
42	Screw - 1/2" BSW x 1 1/2" 6-Hz	1
43	Y-Ring - V28	1
44	Lower Key	1
45	Clutch Retaining Circlip	1
46	Grease Nozzle	1
47	Clutch Lock Screw	1
48	Spring - Grey Lift	1
49	Chain Wheel To Sail	1
50	Upper Clutch Case	1
51	Upper Key	1
52	Clutch	1
53	Clutch Nut Assy	1
54	Clutch Nut Assy	1
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