



Installation & Operation Manual
Type C Straight Line Wiper - Inside Motor
With
Series 1000 Control Unit
Issue 10

WARNING: A suitably qualified person should perform all installation and maintenance. All electrical wiring should be carried out in accordance with relevant regulations. Ensure all products are correctly earthed and all connections are made in accordance with the wiring diagram. Non-compliance may result in damage, malfunction or personal injury. Before commencing any installation or maintenance work, ensure that the electrical supply is disconnected.

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GENERAL INFORMATION AND SAFETY SUMMARY

As we will have no influence on the installation of complete windscreen wiper systems if installation is to be carried out by the customer, we are unable to accept liability for installation errors.

If you require any additional information or any special problems arise which the installation/maintenance instructions do not treat in sufficient detail please contact Customer Service at B. Hepworth and Co Ltd directly.

Safety Precautions

CAUTION! BEWARE OF INJURY!

BEFORE WORKING ON THE WIPER SYSTEM, OBSERVE THE FOLLOWING REMARKS WITHOUT FAIL!

Most wiper motors have a park setting, which permits them to default to the parked position if connected to the vessel electrical system, even when the wiper is switched off. FOR THIS REASON, AT THIS POINT IN TIME, NEITHER MAY THE WIPER ARM BE MOUNTED, NOR MAY ANY PERSON HAVE HANDS, FINGERS, ETC ANYWHERE NEAR THE WIPER SYSTEM. Even small wiper motors can neither be braked nor stopped by hand.

NEVER REACH INTO THE AREA OF THE DRIVE BELT WHEN THE SYSTEM IS RUNNING!

When putting into service (i.e. when connecting the wiper motor to the vessel electrical system, even if the wiper switch is in the off position), never leave any loose items such as screwdrivers in the area of the wiper system, as flying objects could lead to injury.

Please ensure the equipment is handled with care. Do not drop or bang the equipment down on a hard surface taking extra care around the area where the motor shaft is situated. Do not hammer the motor shaft when installing the equipment, as this will cause the motor gear plate to deform causing premature failure of the unit.

Introduction

The Windscreen Wiper system utilised is detailed on the following pages. The primary components that form the Windscreen Wiper System are the wiper case assembly and motor, the wiper arm assemblies and the wiper blades.

TYPE C WIPER DESCRIPTION AND SPECIFICATION

The 'Type C' is a Heavy Duty Straight Line Wiper with an electric motor mounted internally. The wiper can be mounted either above or below the window. The motor can be positioned at either end simply by reversing the front cover of the wiper case.

All electric motors incorporate a worm reduction gearbox. Windings are to Class F insulation.

The DC motor option is suitable for single speed operation. Complies with the EMC Directive according to the following: EN 60945:2002

The AC 1-phase motor option is single speed operation. Complies with the EMC Directive according to the following: EN 60945:2002

The standard AC 3-phase motor option is for either 1 or 2 speed operation. Complies with the EMC Directive according to the following: EN 60945:2002

The variable frequency AC 3-phase motor option is for 3 speed operation and must be used with the 8000 Series Controller. Complies with the EMC Directive according to the following: EN 60945:2002

Motor Specifications

Motor	Type	Nominal Voltage	Full load current at 50/60 Hz	Fusing Value 50/60 Hz	Speed	Compass Safe Distance	Protection Rating
PM3M	Permanent Magnet	24V DC	4.5 A	6.0 A	1.4 m/s	2.4 m	IP54
PM3M (L)	Permanent Magnet	24V DC	4.5 A	6.0 A	0.7 m/s	2.4 m	IP54
PM5M	Permanent Magnet	24V DC	7.1 A	10.0 A	1.4 m/s	3.0 m	IP54
PARV65	1 Phase Induction	115 V	2.3/2.6 A	2.5/3.15 A	1.4 m/s	0.5 m	IP20
PARV65L	1 Phase Induction	115 V	1.5/1.6 A	2.5/3.15 A	0.7 m/s	0.5 m	IP20
PARV64-T	1 Phase Induction	230 V	1.2/1.6 A	2.5/3.15 A	1.4 m/s	0.5 m	IP20
PARV64L	1 Phase Induction	230 V	0.75/0.95 A	1.0/1.6 A	0.7 m/s	0.5 m	IP20
PARV61	3 Phase Induction	115V AC	1.3/1.1 A	2.0/1.6 A	0.7/1.4 m/s	0.5 m	IP20
PARV62D+	3 Phase Induction	220V AC	0.6/0.6 A	1.0/1.0 A	0.7/1.4 m/s	0.5 m	IP20
PARV81	3 Phase Induction	115V AC	1.5 A	8000 Controller	0.7/1.1/1.4	0.5 m	IP20
PARV82	3 Phase Induction	220V AC	1.1 A	8000 Controller	0.7/1.1/1.4	0.5 m	IP20

For protection it is recommended that the wiper system have fuses fitted. The fuses will not blow in normal conditions, however if the wiper is jammed, then the fuses are designed to blow before the motor is damaged. Each wiper requires its own fuse. Fuse values shown above.

Compass safe distances, BSH (Germany) certified, have the values shown above. The distance quoted is the maximum figure for 'Magnet-Regelkompass'.

Drive shaft lengths are optional. These are available in standard and gas tight versions. The standard length is 84 mm. Other lengths available are 35mm, 140mm, 200mm and 220mm. The Certificate of Conformity will advise which option has been fitted.

Spray nozzles & water connections

A fresh water supply can be plumbed directly to the wiper into a 6mm overall diameter compression fitting. On stroke lengths below 1015mm, 1 nozzle is fitted, above 1015mm, 2 nozzles are fitted at ¼ stroke + 137mm from either end. The installer needs to provide pressurised water supply and the interconnecting plumbing. When the wash option is installed, the maximum pressure for the system is 8 bar or 118 PSI and the minimum pressure for adequate spray reach is 1 bar or 15 PSI. Example flow rates for a single spray jet are shown below.

Water System Pressure And Flow Rates

Pressure		Flow rate	
Bar	Psi	Litres/min	Gallons/min
1.0	15	0.95	0.20
1.5	22	1.20	0.25
2.0	29	1.40	0.30
3.0	44	1.75	0.40

De-icing Heaters

Optional de-icing heaters may be fitted inside the wiper case to ensure effective operation in cold conditions. Standard cable length is 2M. Optional lengths are 5M, 10M, 15M and 20M. Power consumption is according to the wiper stroke length, shown below.

Heater Power Ratings – Single Wipers

STROKE (mm)	STROKE (inch)	HEATER SIZE	WATTS (24VDC)	STROKE (mm)	STROKE (inch)	HEATER SIZE	WATTS (24VDC)
305 up to 430	12	1	97	1500 up to 1800	67	8	390 (186)
457 up to 735	24	2	135	1930 up to 2100	83	10	485 (150)
760 up to 1065	36	4	211	2260	89	12	574 (123)
1095 up to 1450	51	6	301 (238)				

Quoted Power is for nominal 115 or 230 Volts (bracketed values are for 24 Volts). For stroke lengths up to 1065 mm, power ratings are the same for all voltages.

Heater Power Ratings – Twin Wipers

OVERALL STROKE (mm)	STROKE (inch)	HEATER SIZE	WATTS (24VDC)	OVERALL STROKE (mm)	STROKE (inch)	HEATER SIZE	WATTS (24VDC)
585 up to 735	2 x 12	2	135	1855 up to 1800	2 x 37	10	485 (150)
789 up to 1041	2 x 16	4	211	2211 up to 2100	2 x 44	12	574 (123)
1091 up to 1445	2 x 22	6	301 (238)	2645 and above	2 x 53	14	663 (106)
1495 up to 1805	2 x 30	8	390 (186)				

Quoted Power is for nominal 115 or 230 Volts (bracketed values are for 24 Volts). For stroke lengths up to 1041 mm, power ratings are the same for all voltages.

TYPE C WIPER INSTALLATION

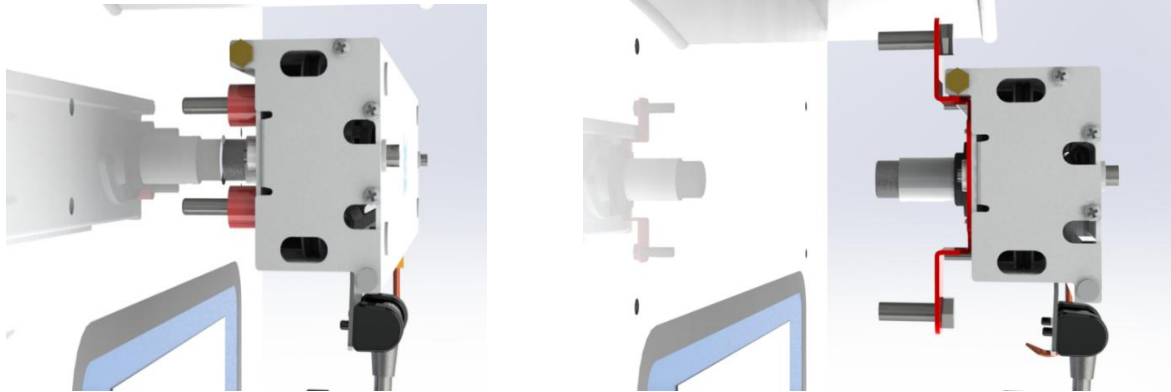


CAUTION: Ensure that the correct wiper, blade and arms are selected for each window.

CAUTION: Before drilling, ensure that there are no obstructions / hazards at the chosen mounting position. The main frame should be mounted on a flat surface that will not bend or twist the casing, as this will prevent correct operation of the wiper.

CAUTION: Where more than one wiper unit is to be mounted close together, allow a distance of 70mm minimum between the wiper units.

Stud or bracket mounting



Stud Mounting

Bracket Mounting

1. Locate the self-adhesive template in the correct mounting position on the outside of bulkhead

NOTE: For motors mounted at the opposite end, the template should be inverted.

2. Drill the wiper 2 off fixing holes (11 mm diameter) and the drive shaft housing hole (57mm diameter).
3. Hold the wiper casing in the required position and mark-out the remaining fixing holes, or calculate their position from the drawing i.e. stroke length plus 266 mm.
4. Drill the remaining wiper fixing & cable holes for the heater and park sensor, ensuring that all holes are circular and carefully de-burred. Treat bare metal to prevent corrosion.
5. Fit the wiper case into position and secure with M10 bolts. Ensure that the bolts are sealed where they pass through the bulkhead.
6. Push the drive shaft seals into place. It is advisable to use a suitable sealant to prevent water ingress.
7. Using the supplied M6 x 10mm screws, secure the blade arm to the carriage plate.



CAUTION: Ensure the correct length screws are used, as supplied. Longer screws will cause the carriage assembly to jam.

8. Bolt the front case to the back case using the 2 off M8 bolts fitted.
9. If necessary, slacken the screws on the blade attachment clip, move the blade up or down for optimum position and then retighten screws.
10. Move the blade assembly over its full stroke and check that there is no restriction to movement (the motor will offer some resistance, but should not jam the wiper). Investigate

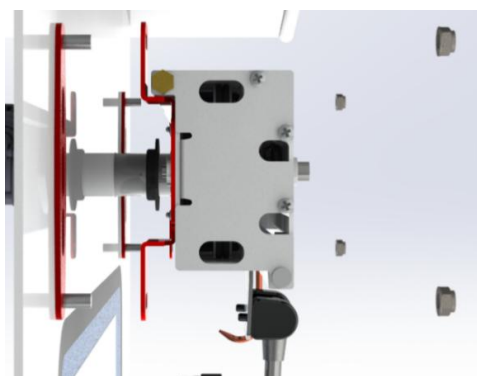
and rectify any restrictions. If necessary adjust the blade up or down on the arm to avoid the window frame.

11. Pass the cables through the bulkhead, leaving sufficient spare cable to allow the front assembly to be lifted away from the rear case during the maintenance period. Ensure the wiper is correctly earthed.

NOTE: If a heater is fitted pass the heater cable through the bulkhead, leaving a loop as required, and seal.

12. Ensure that wherever the cable passes through the bulkhead a suitable cable gland or seal is used to prevent water ingress and cable chaffing.
13. Fit the motor to the drive shaft.

Universal bracket mounting



Universal Bracket Mounting

1. Carefully mark the position of the drive shaft housing hole and 2 (3 for longer wipers) universal carrier plates.
2. Drill the drive shaft housing hole (57mm diameter).
3. Prepare the bulkhead and universal carrier plates carefully and weld the 2 (or 3 for longer wipers) universal mounting brackets into position. Treat bare metal to prevent corrosion.
4. Drill the remaining wiper fixing & cable holes for the heater and park sensor, ensuring that all holes are circular and carefully de-burred. Treat bare metal to prevent corrosion.
5. Fit the wiper case into position and secure with supplied M10 washers and nuts.
6. Push the drive shaft seals into place. It is advisable to use a suitable sealant to prevent water ingress.
7. Using the supplied M6 x 10mm screws, secure the blade arm to the carriage plate.



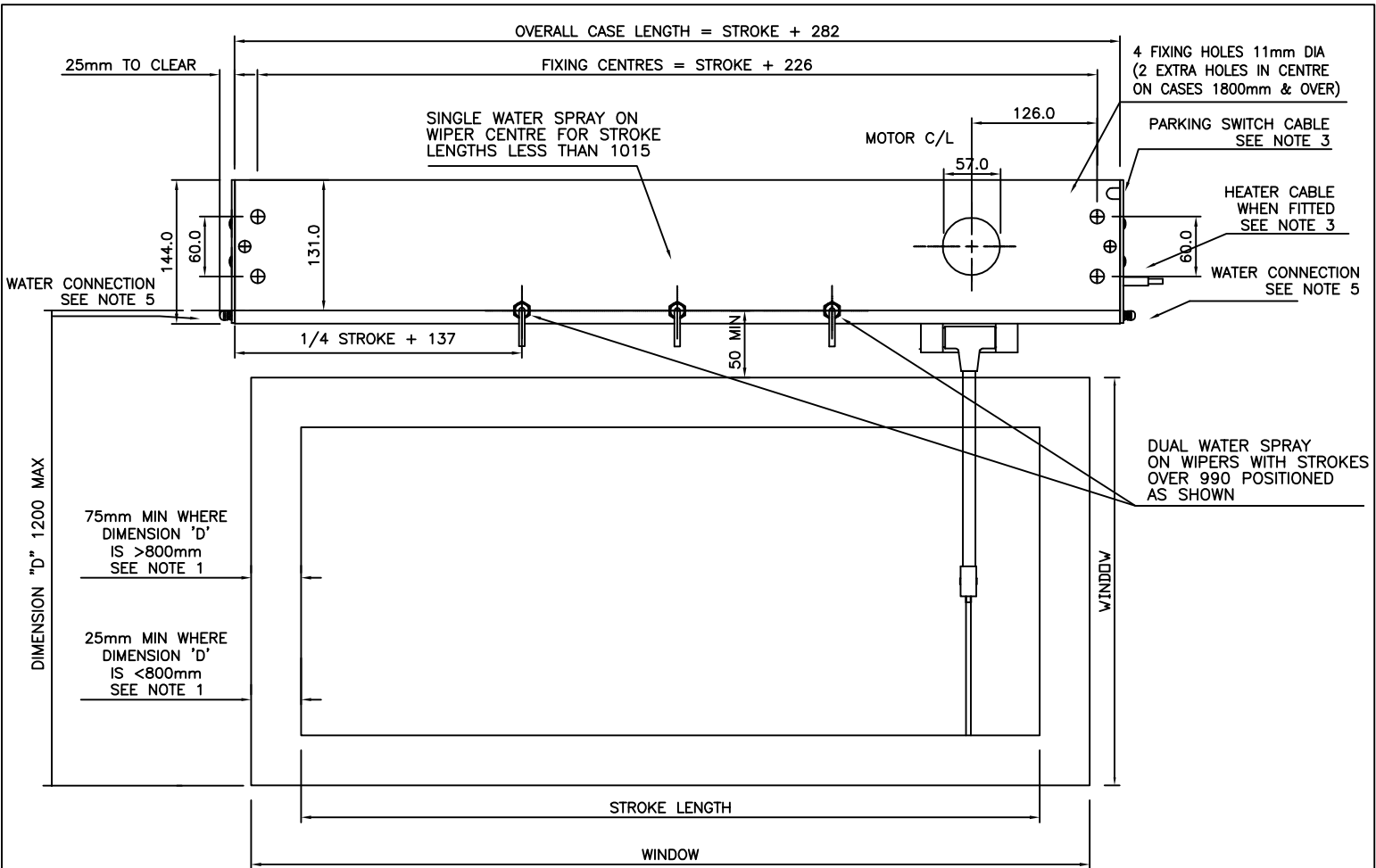
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8. Bolt the front case to the back case using the 2 off M8 bolts fitted.
9. If necessary, slacken the screws on the blade attachment clip, move the blade up or down for optimum position and then retighten screws.

10. Move the blade assembly over its full stroke and check that there is no restriction to movement (the motor will offer some resistance, but should not jam the wiper). Investigate and rectify any restrictions. If necessary adjust the blade up or down on the arm to avoid the window frame.
11. Pass the cables through the bulkhead, leaving sufficient spare cable to allow the front assembly to be lifted away from the rear case during the maintenance period. Ensure the wiper is correctly earthed.

NOTE: If a heater is fitted pass the heater cable through the bulkhead, leaving a loop as required, and seal.

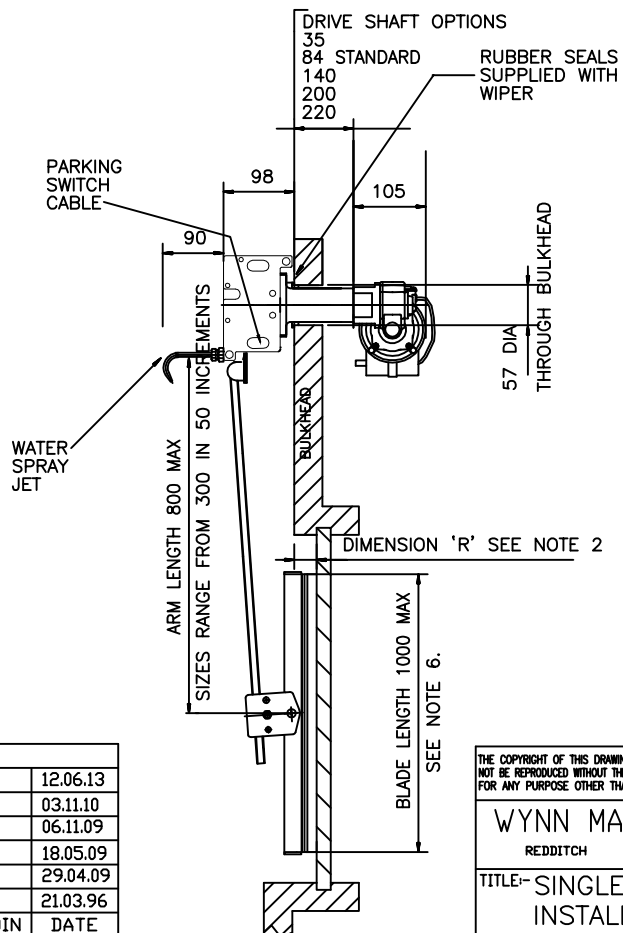
12. Ensure that wherever the cable passes through the bulkhead a suitable cable gland or seal is used to prevent water ingress and cable chaffing.
13. Fit the motor to the drive shaft.



NOTES

1. THESE MINIMUM DIMENSIONS ARE LIMITED BY THE SIZE OF THE CORNER RADII ON THE WINDOW.
2. THE BLADE ARM MAY BE CRANKED WHERE DIMENSION "R" IS GREATER THAN 75.
3. OPTIONAL HEATER AND PARKING SWITCH STANDARD CABLE LENGTH 2 METRES. PARKING SWITCH POSITIONED AT MOTOR END WHEN FITTED.
4. THE HEATER AND PARK SWITCH CABLING TO RUN THROUGH THE BULKHEAD.
5. THE WATER CONNECTION BLANKING PLUG CAN BE FITTED AT EITHER END.
6. RIGID WIPER BLADE LENGTHS RANGE FROM 300 TO 800 AND ARTICULATED WIPER BLADE LENGTHS RANGE FROM 500 TO 1000 BOTH IN 50 INCREMENTS.
7. SEE MANUAL HEATER POWER RATINGS TABLE FOR STROKE OPTIONS AND HEATER DETAILS.
8. THE MOTOR CAN BE POSITIONED RADIALY THROUGH 360 DEGREES AROUND THE DRIVE SHAFT CENTRE-LINE TO SUIT THE INSTALLATION. ENSURE THAT THE ACCESS SPACE AROUND THE MOTOR SHOWN ON THE DRAWING IS MAINTAINED.

ALL DIMENSIONS IN MM FOR REFERENCE ONLY



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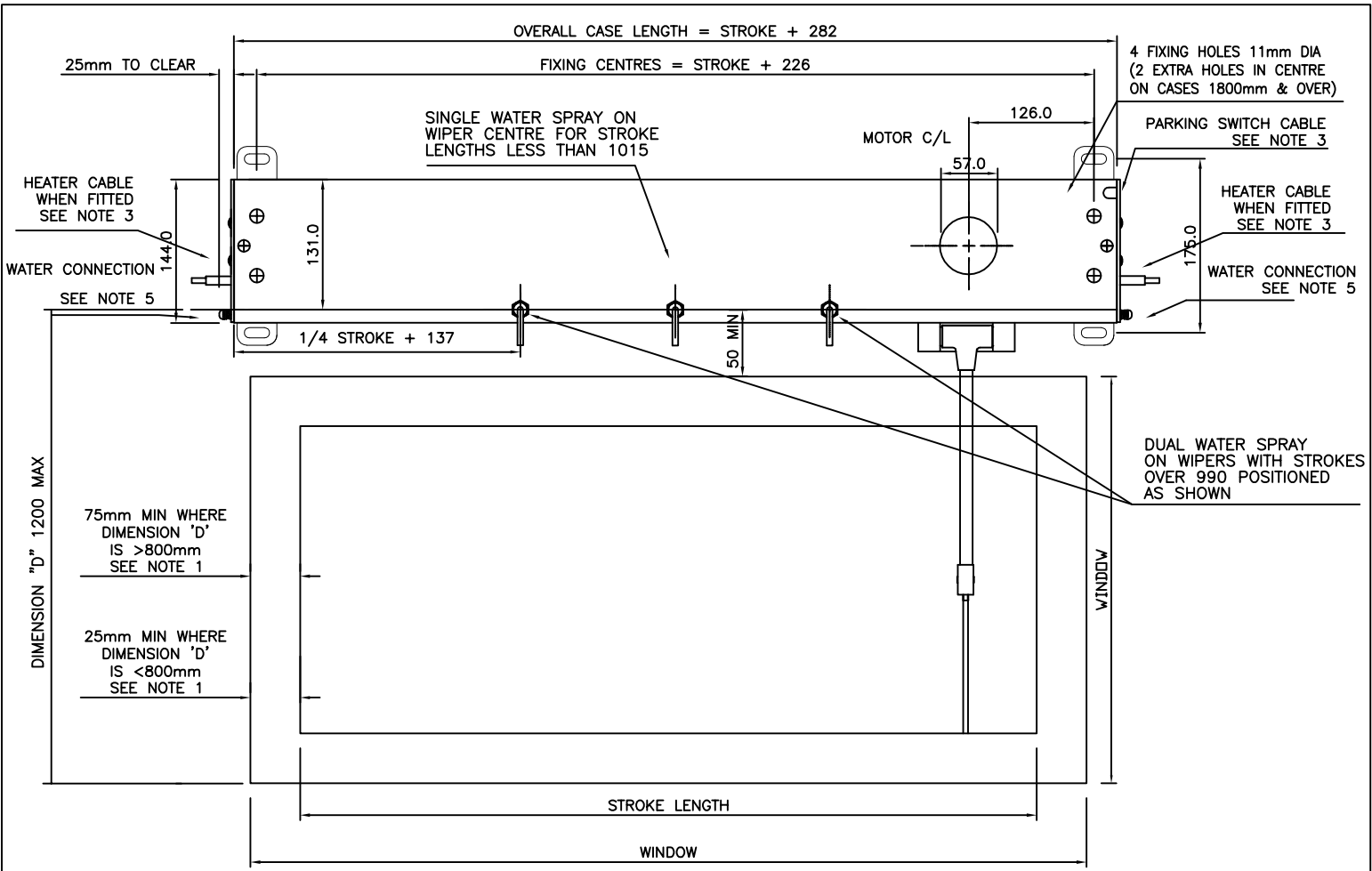
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WYNN MARINE LIMITED

REDDITCH ENGLAND

TITLE-SINGLE TYPE C INSTALLATION DRG.

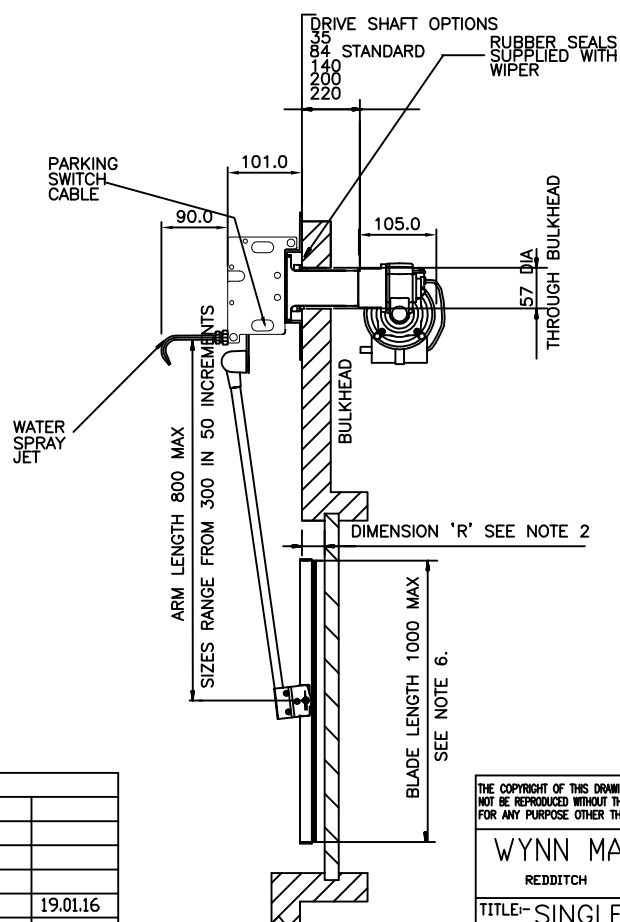
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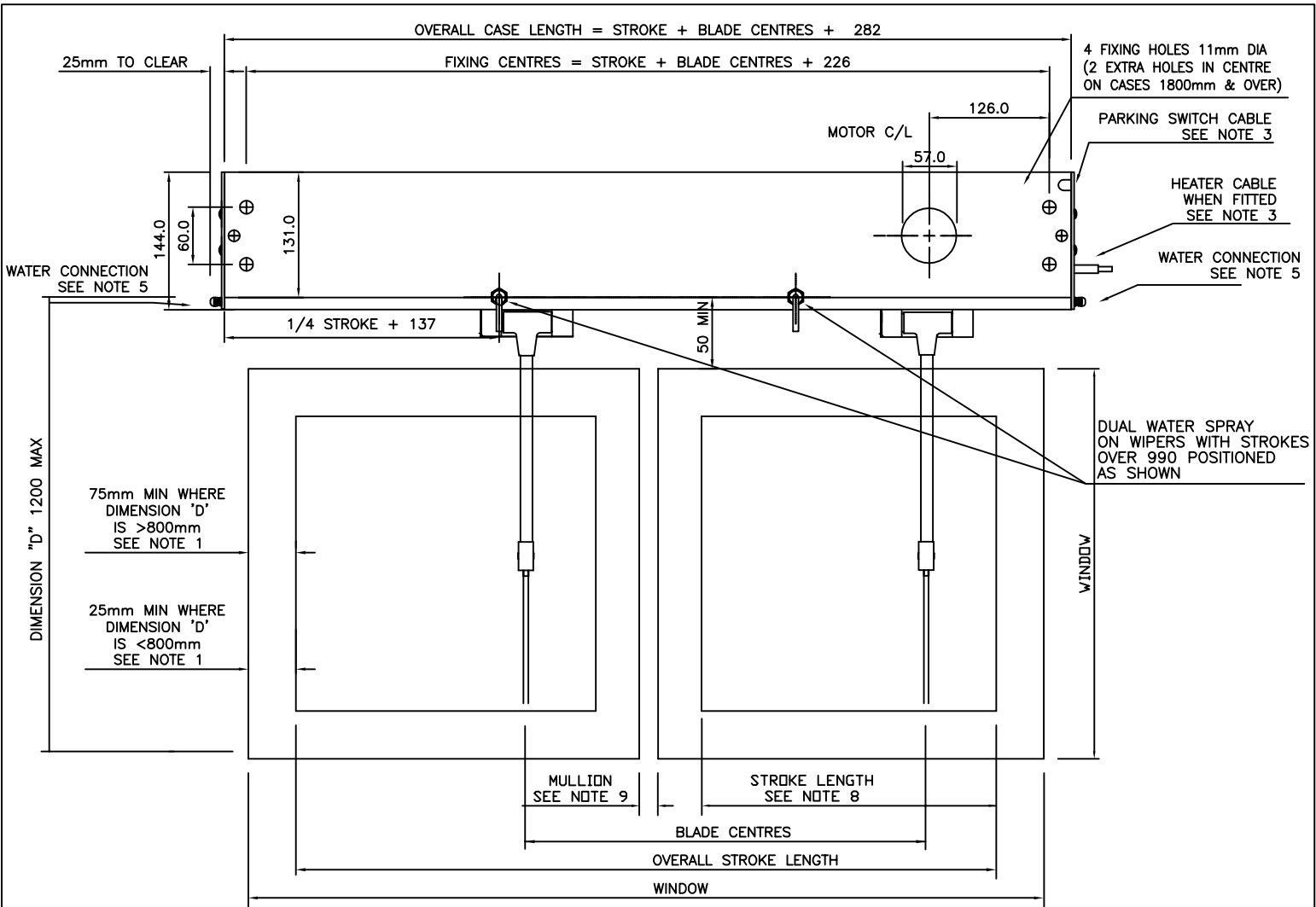
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ANGLES ± 1°							
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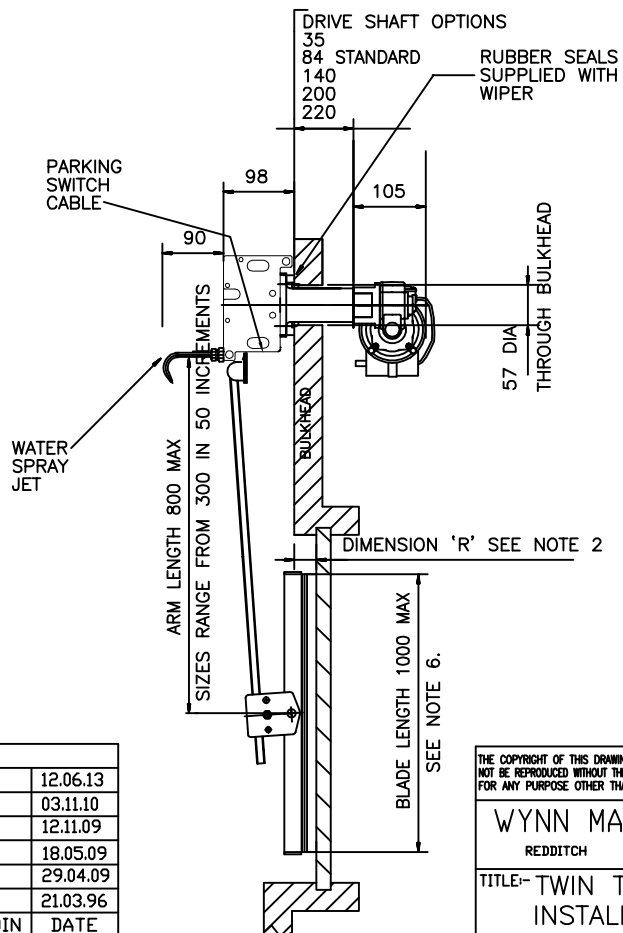
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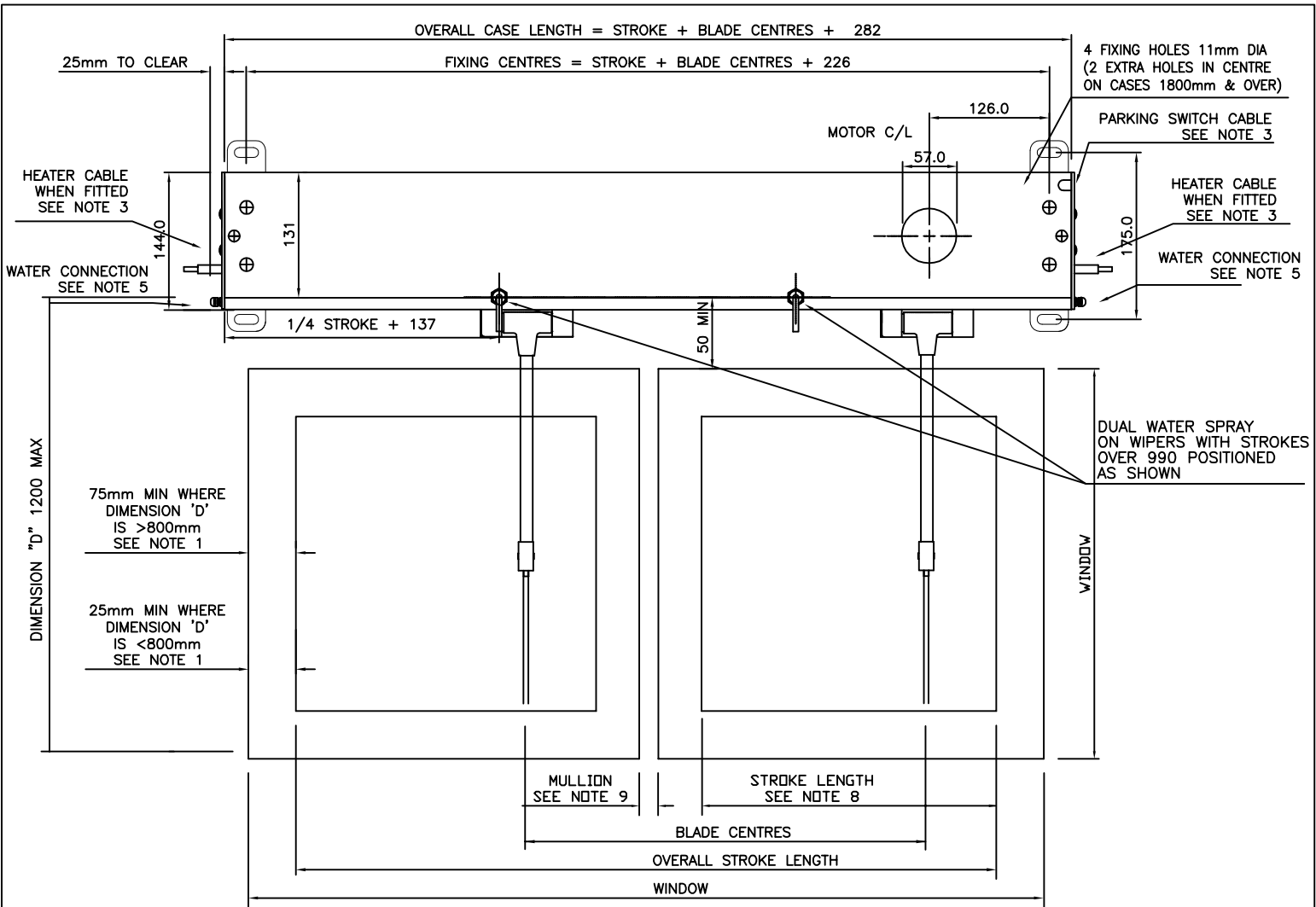
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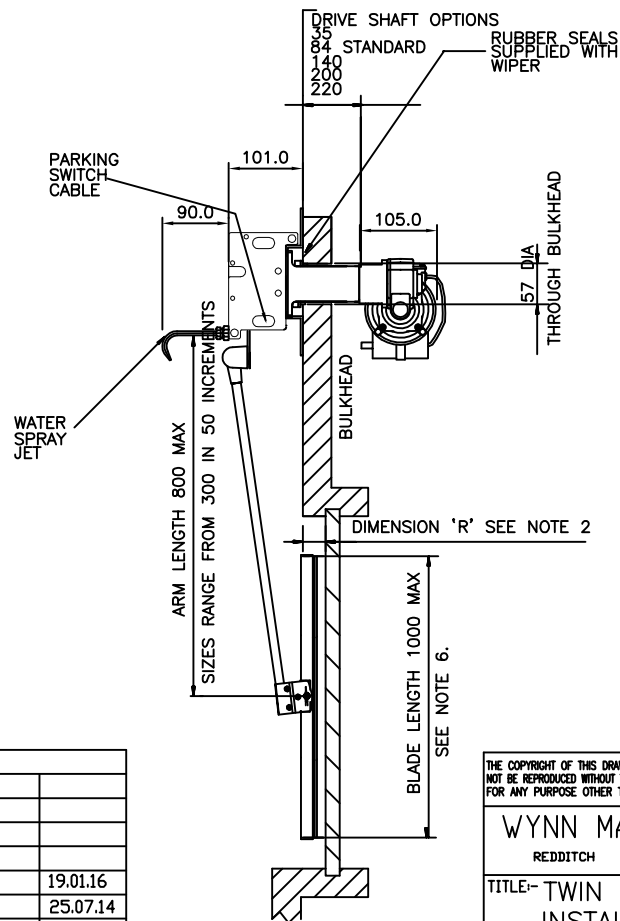
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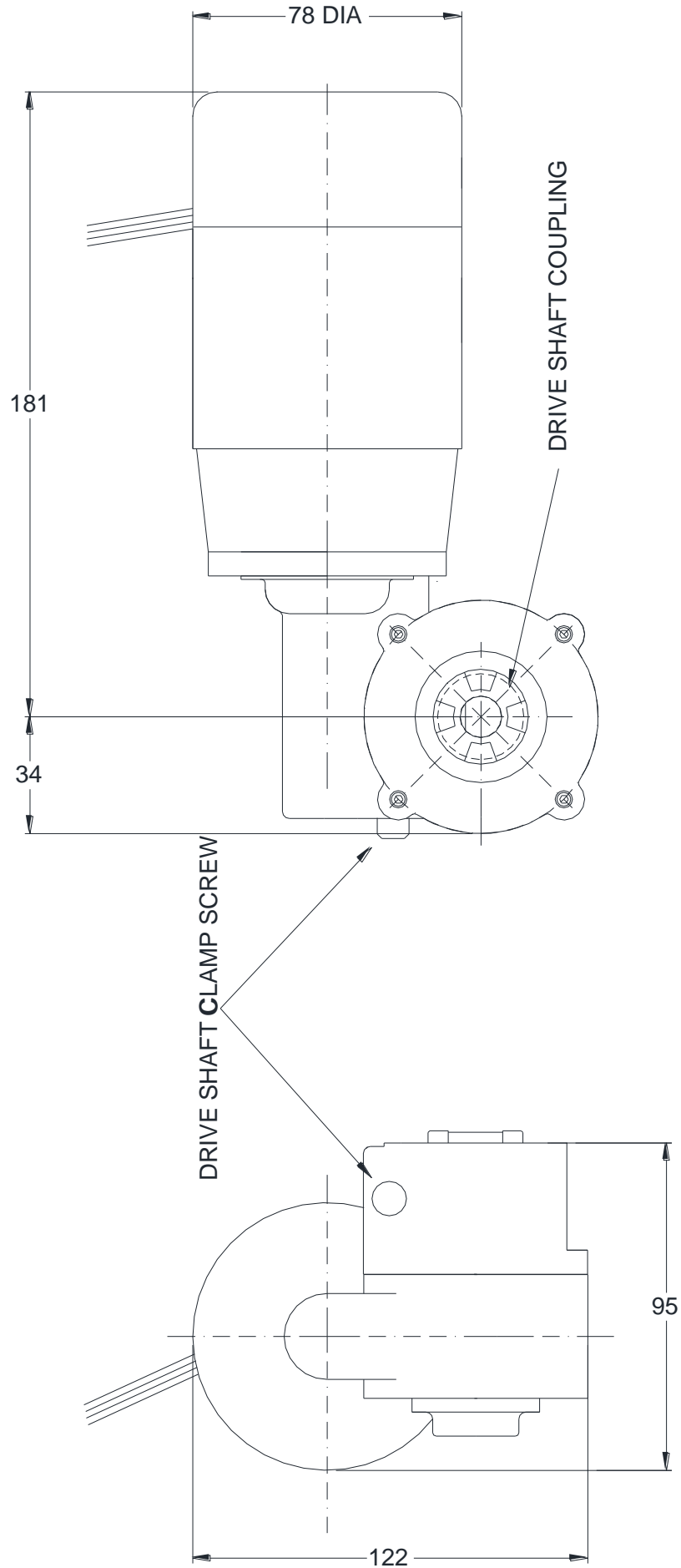
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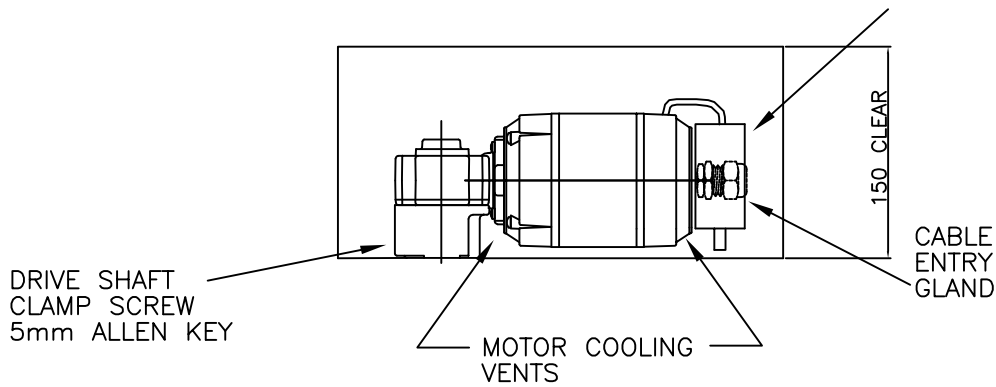
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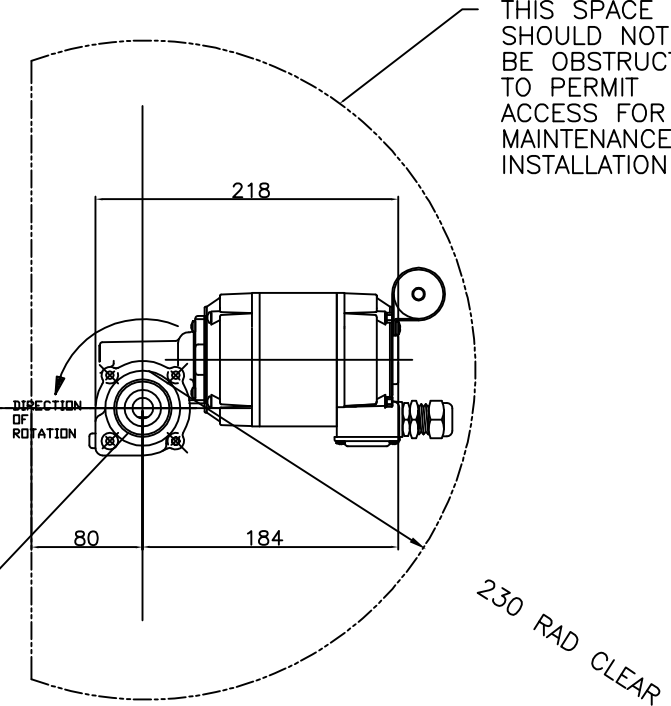
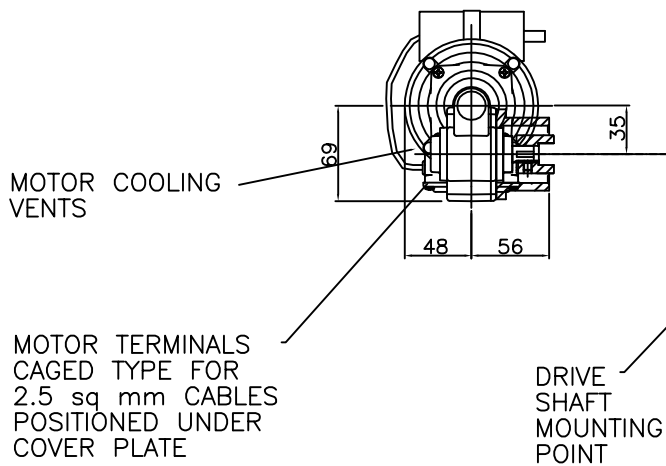
DC MOTOR DIMENSIONS



CAPACITORS FITTED TO SINGLE PHASE MOTORS ONLY



THIS SPACE SHOULD NOT BE OBSTRUCTED TO PERMIT ACCESS FOR MAINTENANCE & INSTALLATION



NOTES

1. USE T RATED FUSES.
2. EARTH BONDING TO CONFORM TO APPROPRIATE NATIONAL CODES AND STANDARDS.
3. CUSTOMER TO WIRE FROM MOTOR CABLES OR TERMINATIONS TO TERMINALS ON THE CONTROLLER WHEN SUPPLIED.
4. ALL MOTORS CAN BE ROTATED THROUGH 360 DEGREES AROUND THE DRIVE SHAFT CENTRE-LINE. NOTE THE ACCESS SPACE WILL ROTATE WITH THE MOTOR.

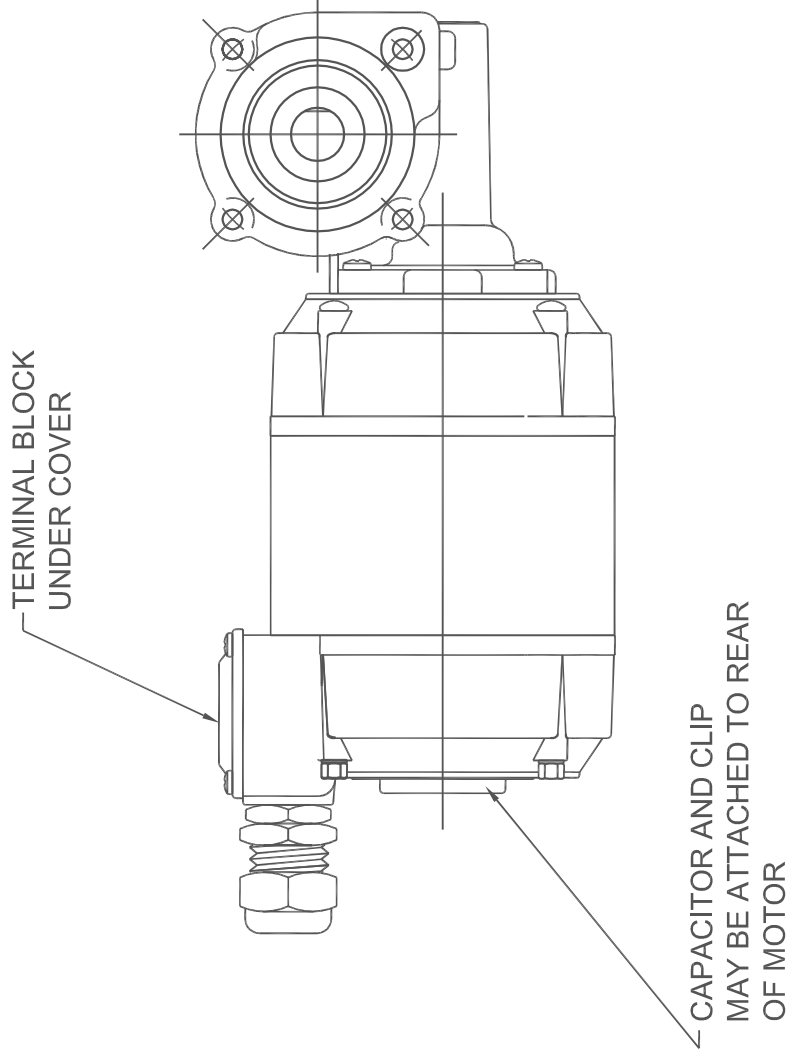
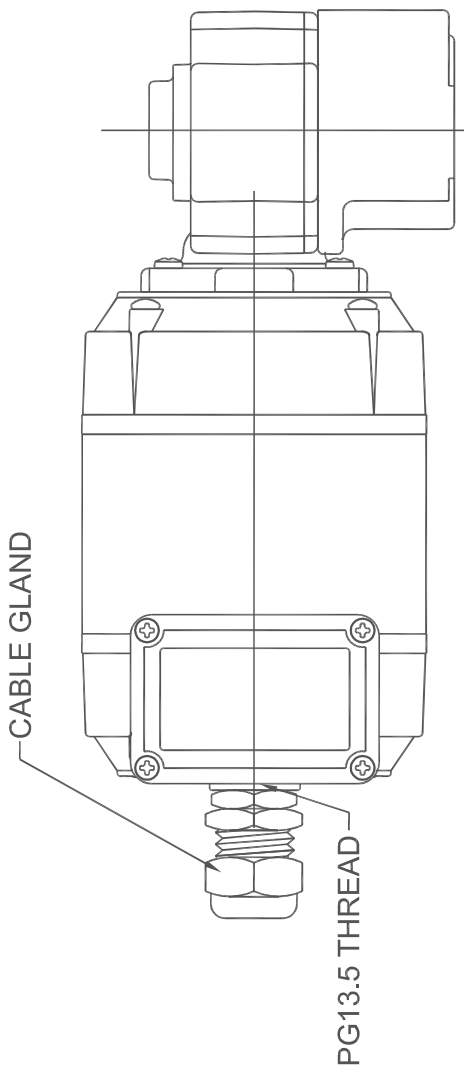
PARVALUX MOTORS WEIGHT 4.5Kg

MOTOR OPTIONS

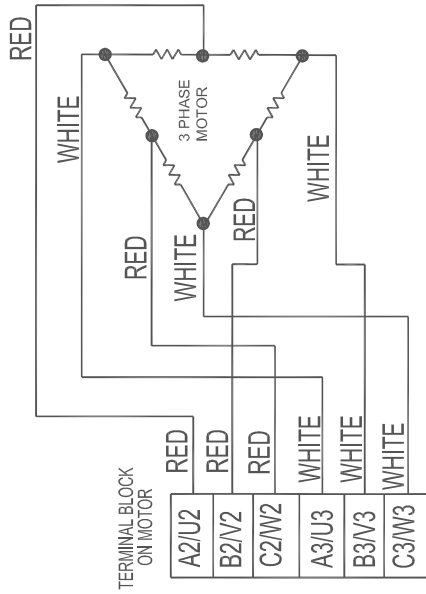
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						50Hz	60Hz	50Hz	60Hz	
PARV61	115AC	50/60	3	2	0.5M	1.3A	1.1A	2.0A	1.6A	-
PARV62D	230AC	50/60	3	2	0.5M	0.6A	0.6A	1.0A	1.0A	-
PARV64	230AC	50/60	1	1	0.5M	1.2A	1.6A	1.6A	2.0A	8.4uF M-MISC-098PARV
PARV64L	230AC	50/60	1	1	0.5M	0.75A	0.95A	1.0A	1.6A	5uF M-MISC-095PARV
PARV65	115AC	50/60	1	1	0.5M	2.3A	2.6A	2.5A	3.15A	28uF M-MISC-099PARV
PARV65L	115AC	50/60	1	1	0.5M	1.5A	1.6A	2.0A	3.15A	28uF M-MISC-099PARV
PARV81	115AC	50	3	V	0.5M	1.5A		CONTROLLER		-
PARV82	220AC	50	3	V	0.5M	1.1A		CONTROLLER		-

ALL UNSPECIFIED UNITS OF LENGTH IN mm's

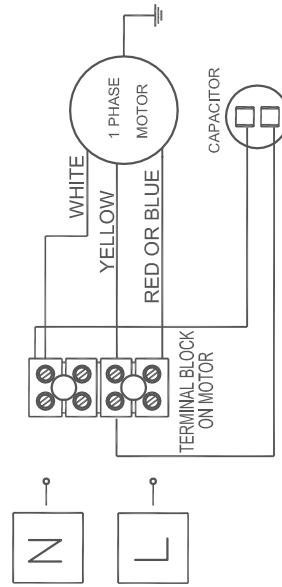
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WIRING DIAGRAM FOR PARVALUX TYPE AC MOTORS
FOR WYNN TYPE C STRAIGHT LINE WIPER



MOTOR TERMINAL BLOCK WIRING DIAGRAM
3 PHASE PARVALUX TYPE MOTORS



WIRING DIAGRAM
FOR A PARVALUX TYPE 1 PHASE MOTOR
FIT CAPACITORS AS SUPPLIED

GENERAL FAULT FINDING GUIDE

NOTE: This fault finding guide assumes a reasonable level of technical ability and should be carried out by a suitably qualified person.

Problems: Control panel does not operate wiper.

Possible Cause	Solution
No Power.	Check power supply is on and working.
Power not reaching motor	Check ship's incoming supply fuses or circuit breakers. Check for wiring fault, broken wire or loose terminal. If possible confirm (with voltmeter) power is present at motor input and output terminals of control module.
Connections to motor incorrect.	Check wiring according to the appropriate electrical installation drawing.
Ship's voltage too low.	Check voltage as close to the motor as possible, with motor running. See relevant tables for acceptable values.
Motor Thermal Cut Out tripped. Single Phase AC motors only.	The 1 Ø AC motors have a thermal cut out embedded into the stator winding. If the motor gets too hot the thermal cut out disconnects the supply to the motor. Switch off and allow the motor to cool down. About 20 minutes later the cut out will reset allowing normal operation.
Motor brushes or commutator worn (DC motor only)	Check motor commutator and brushes
Motor burned out.	This should not be possible - could happen by incorrect voltage of motor, or a motor fault. The motor needs a reasonable amount of free space to provide sufficient cooling airflow – check. The motor should be protected by fuses, check type and rating.
Wiper motor not fully engaged on coupling.	Slacken pinch bolt, move motor and/or wiper arm to align coupling and push motor into engagement with coupling. Retighten pinch bolt. Make sure that the rubber coupling is fitted
Carriage motion jammed.	It should be possible by pushing the blade arm to move the mechanism over the stroke length. Remove cover and check for obstructions. Check the Blade Arm Screws.
Drive pulley turning but belt slipping.	Excessive friction - Check carriage rollers and motor drive coupling. Replace as required. Idler pulley springs broken or missing. Replace.
Drive belt broken or damaged.	Inspect belt for slip or burn damage. Belt at end of life. Replace.
Idler pulley jammed.	Damaged by impact, or bearing system failed. Replace assembly.
Corrosion.	If corroded, check for water ingress through seals and tightness of connections, Replace wiper unit if necessary

Problem: Wiper runs but at wrong speed

Possible Cause	Solution
Ship's voltage incorrect.	Check voltage as near as possible to the motor, with motor running.
Motor brushes worn (DC Only)	Inspect brushes and replace as necessary.
High / Low speed wiring incorrect (3 Phase 2 Speed models only)	Check wiring complies with appropriate drawing.
One phase missing (3 Phase 2 Speed models only)	Check controller. Check ships fuses.

Problem: Wiper runs but is noisy

Possible Cause	Solution
Wiper arm is obstructed by: - Window frame, spray jets, etc.	If necessary gently bend arms or spray jets out of path of wiper arm.
Incorrect arm attachment screws.	These must not be longer than the 10mm screws provided by Wynn
Vibration of wiper unit	Check the front cover fixing screws are secure.
Arm attachment plate fouling on wiper case	Attachment screws not fully tightened - check. Blade arm or bracket bent out of place - check.

Problem: Wiper does not clean the screen properly.

Possible Cause	Solutions
Blade not in contact with screen.	Blade or arm bent - inspect and replace. Arm pivots seized due to corrosion - replace. Heaters ineffective allowing ice build up.
Weak springs on blade arm.	Stronger springs may be required. Contact Agent/Distributor
Broken springs on blade arm.	Investigate reason of failure and replace. Springs are good down to -40°C.
Blade rubber missing or damaged.	Maintenance item. Replace as required.

Problem: Wiper does not park correctly

Possible Cause	Solution
Park Sensor failed.	Check reed sensor action, will need tester (meter).
Park Sensor Actuator missing.	Check magnet/spacer arrangement on carriage.

Problem: If fitted, heater does not become warm when switched on

Possible Cause	Solutions
Fuse blown or circuit breaker tripped (if fitted).	Check for short-circuited heater, will need tester (meter). Check for wiring damage or loose wires. Check connections are good.
Heater failed.	Check for continuity, will need tester (meter).
Earth leakage circuit breaker trips.	It is common for earth leakage to rise if a heater has not been used for a while - if possible allow heater the warm up so to dry out. The heater's water seal or cable may be damaged allowing ingress of water - check and replace.
No power.	Check Controller.

Problem: If fitted, little or no washer water comes out when button pressed.

Possible Cause	Solution
Pump or supply pressure too low.	Check Ship's water supply, or pump for output pressure.
On reservoir systems, empty.	Check - refill.
Water control valve faulty or not operating.	Check solenoid valve continuity. Replace if open circuit.
Supply lines or jets blocked.	Try air purge, if available. Dismantle and flush pipes.
Water frozen.	Switch on heaters.

TYPE C WIPER MAINTENANCE

Wynn products have been proven over many years to perform well under the harshest condition of use. To maintain their performance the following schedule is recommended:

Every 6 Months

DC motors only

1. Inspect the motor brushes. Remove motor end cover. Prevent brushes from running down to less than 6mm height in service. Brushes can be lifted out of their holder after lifting off the springs. Replace brushes back into same holder and in the same orientation. Ensure that the brush 'pig tails' is free and that the springs are correctly replaced.
2. When replacing brushes, carefully clear out any residual carbon dust from the motor.



WARNING: DO NOT INHALE THE CARBON DUST.

3. Inspect the motor commutator – it should still be bright. If it is blackened the motor should be replaced or serviced. This can be done with light cleaning with 'flour' paper, but not 'emery' paper.

Every 12 Months

1. Check condition of the Articulated/Rigid Wiper Blade. Replace if necessary.
2. Check Heaters if fitted. If these have not been used for some time, then leave them on for approximately 2 hours.

NOTE: If not used for long periods, some mineral insulated heaters will take up moisture and begin to show current leakage to ground. By running them for the stated time this process can be reversed and the insulation returned to near infinity values. When dry, insulation resistance is > 100 M ohm at 500V.

3. Check the drive belt for deterioration. Replace if necessary.
4. Check carriage is smooth and all guide rollers are free to rotate. Inspect 'tyres' on the guide rollers for splitting / perishing. Replace complete roller if necessary.



Caution: Guide rollers have an integral dry bearing and **MUST NOT** be oil or grease lubricated.

5. Check for free movement of idler pulleys in response to belt tension. Lubricate as necessary with water resistant grease.
6. Ensure free movement of drive pulley. Replace if damaged or when showing signs of excessive wear.

NOTE: The drive pulley is jig assembled and should not be dismantled.

7. Check for free blade arm spring movement. Dismantle, re-grease or replace if necessary.

TYPE C WIPER INSPECTION / RENEWAL OF PARTS



WARNING: To ensure health & safety, remove power from the control unit, before working on any parts of the wiper either inside or outside.

Blade Replacement

1. Loosen the 2 x 7mm nuts on the blade attachment clip.
2. Slide the blade attachment clip and blade assembly off the wiper arm.
3. Re-assembly is reversal of above instructions.

Arm Replacement

1. If Heaters are fitted disconnect from terminals to allow the cover to be removed from the wiper.

OUTSIDE

2. Remove any pipework fittings / blanking plugs from both ends of the wiper.
3. Slacken cable glands and withdraw heater cable from bulkhead.
4. Remove the 2 x M8 Cap head bolts at each end of the cover and set aside.
5. Carefully remove the cover and set aside.
6. Remove the 4 x M6x10mm screws securing the arm to the carriage plate. The arm and blade assembly is now free from the wiper, set both assembly and fasteners aside.
7. Slacken the blade clip bolts and remove blade. Set aside for reuse.
8. Re-assembly is reversal of above instructions.

Drive Belt

1. If Heaters are fitted disconnect from terminals to allow the cover to be removed from the wiper.

OUTSIDE

2. Remove any pipework fittings from both ends of the wiper.
3. Slacken cable glands and withdraw heater cable from bulkhead.
4. Remove the 2 x M8 Cap head bolts at each end of the cover and set aside.
5. Carefully remove the cover and set aside.
6. Remove the 4 x M6x10mm screws securing the arm to the carriage plate. The arm and blade assembly is now free from the wiper, set both assembly and fasteners aside.
7. Slip the belt off the spring-loaded pulleys then slide the carriage/belt assembly out of the end of the case at the idler pulley end. Note: The assembly can be removed from the drive pulley end, but the park sensor will then need to be detached first (where fitted).

8. In multi wiper installations, if there is insufficient space between adjacent wipers to remove the carriage, then it will be necessary to draw the carriage / belt assembly through adjacent wiper cases, detaching park sensors where necessary.
9. Inspect the drive belt and replace if damaged or worn. To detach the drive belt, note how the parts are assembled, then undo the 2 small nuts securing the belt to the clip.
10. Fit a new belt. Spare belts are supplied with nuts and clip plate. Refit and tighten nuts to the same height as the original and secure with Loctite thread lock (or similar).
11. Fit the carriage & belt assembly back into the casing and slip the belt onto the drive & idler pulleys.
12. Move the carriage by hand and ensure that it travels the full stroke length freely and without any obstruction. (Motion will feel restricted because the motor is being rotated if in doubt discount the motor). Refit the blade assembly with special screws removed.
13. Refit the front cover and secure with the 2 off M8 cover bolts. Reconnect any pipework fittings removed in para 2, and heater cable if removed at para 1.

Guide Rollers

1. Follow the Drive Belt renewal instructions 1 to 7 above.
2. Remove the roller stub shaft securing the guide roller and remove the guide roller.
3. Fit the new guide roller and secure with the roller stub shaft. Ensure that roller stub shaft is tightened firmly.
4. Re-assembly is reversal of above instructions.



Caution: Guide rollers have an integral dry bearing and MUST NOT be oil or grease lubricated.

Drive Shaft and Pulley Assembly

1. Slacken the clamping bolt securing the motor to the drive shaft assembly, withdraw the motor from the shaft and set aside ensuring the black coupling is kept with the motor.
2. Follow the Drive Belt renewal instructions 1 to 6 above.
3. Remove the 2 screws securing the park switch to the wiper case, withdrawing the cable through the slot in the case. Keep screws and fittings safe.
4. Dismount wiper from bulkhead and set aside fixings.
5. Unbolt drive shaft and pulley assembly from the main body of the wiper and set the fixings aside.
6. Withdraw the assembly from the wiper body and discard.
7. Insert the new assembly onto the body. Re-assembly is reversal of the above instructions and in accordance with the standard wiper installation instructions elsewhere in the manual.

Wiper Motor Replacement

1. Disconnect motor wiring and make a note of the connections.
2. Loosen motor pinch bolt and remove motor.
3. Ensure new motor has a rubber coupling fitted to the dog gear. Line up motor dog gear with drive shaft dog gear and slide motor into position. Tighten pinch bolt.
4. Wire to motor terminal connections.

Type C Common Cover Wiper Spares List

Ident	Description	Quantity	Part Number
1	Heavy Duty Blade Assembly	1	SP1688-001-***
	Articulated Blade Assembly	1	SP1279-553-***
2	Blade Attachment Clip (Stainless Steel)	1	SP1279-443
3	Blade Arm Assembly	1	CC**#R
4	Blade Arm Torsion Spring	1	SP1292-221
4a	Arm Spring(s) - where fitted at top of arm ‡	A/R	1279-157
5	Blade Arm Pivot Blocks	1 Kit/arm	SP1279-486-#.#
6	Arm Attachment Screws	Set of 4	SP1588-488
7	Carriage Plate Assembly – Single Blade	1	SP1588-005-M
	Carriage Plate Assembly – Twin Blade	1	SP1588-312-***
8	Guide Rollers c/w with Tyre & spanner	Set of 8	SP1588-117
	Guide Rollers c/w with Tyre	1	SP1588-006
9	Roller Stub Shaft	Set of 8	SP1588-113
10	Connecting Rod Assembly – Single	1	SP1588-474
	Connecting Rod Assembly – Twin Blade	1	SP1588-474T
11	Vee-Belt	1	SP1279-106-###
12	Idler Pulley Assembly c/w Springs (Single Blade)	1	SP1588-452
	Idler Pulley Assembly c/w Spring (Twin Blade)	1	SP1588-452T
13	Idler Pulley Tension Spring (Single Blade)	Set of 2	SP1279-157
	Idler Pulley Tension Spring (Twin Blade)	Set of 2	SP1279-496
14	Idler Pulley Guide Assembly	1	SP1588-490
15	Drive Shaft and Pulley Assembly - 84mm Std	1	SP1588-009-117
	Drive Shaft and Pulley Assembly - 140mm	1	SP1588-009-173
	Drive Shaft and Pulley Assembly - 200mm	1	SP1588-009-233
	Drive Shaft and Pulley Assembly - 220mm	1	SP1588-009-253
	Drive Shaft and Pulley Assembly - 240mm	1	SP1588-009-273

Ident	Description	Quantity	Part Number
	Drive Shaft and Pulley Assembly - 310mm	1	SP1588-009-310A
	Drive Shaft and Pulley Assembly - 35mm	1	SP1642-003
	Gas Tight Drive Shaft and Pulley Assembly Std	1	SP1588-030-117
	Gas Tight Drive Shaft and Pulley Assembly 140mm	1	SP1588-030-173
	Gas Tight Drive Shaft and Pulley Assembly 200mm	1	SP1588-030-233
17a	Parvalux 61, 115V AC, 50/60Hz, 3-Ph, 2 Speed	1	SP1490-000GA61
	Parvalux 62D+, 230V AC, 50/60Hz, 3-Ph, 2 Speed	1	SP1490-000GA62D
	Parvalux 64-T, 230V AC, 50/60Hz, 1-Ph, 1 Speed	1	SP1490-000GA64
	Parvalux 64L, 230V AC, 50/60Hz, 1-Ph, Low Speed	1	SP1490-000GA64L
	Parvalux 65, 115V AC, 50/60Hz, 1-Ph, 1 Speed	1	SP1490-000GA65
	Parvalux 65L, 115V AC, 50/60Hz, 1-Ph, Low Speed	1	SP1490-000GA65L
	Parvalux 81, 115V AC, 3-Ph, 3 Speed	1	SP1490-000GA81
	Parvalux 82, 220V AC, 3-Ph, 3 Speed	1	SP1490-000GA82
17b	SD11AM 115V AC, 50 Hz Variable Speed	1	SP1279-347
	SD11AM 115V AC, 60 Hz Variable Speed	1	SP1279-348
	SD11AM 230V AC, 50/60 Hz Variable Speed	1	SP1279-349
17c	PM3M 24Vdc Motor	1	SP1279-558-24
	PM3M 24Vdc Motor Slow Speed	1	SP1279-558L-24
	PM5M 24Vdc Motor	1	SP1279-513
18	Front Cover - Less Heater	1	See calculator 1681-161
19	Heater - Single Wiper	1	SP1588010\$\$\$^^
19a	Heater Clip	A/R	SP1588-056
20	Spray Tube Assembly	1	SP1588-418
21	Cover Bolts	each	zA0008-090S
22	End Cover Left Hand	each	SP1588-058L*
	End Cover Right Hand	each	SP1588-058R*
23a	Fixing Screw	6	zP00012S-1.0S

Ident	Description	Quantity	Part Number
23b	Blanking Plug	2	1588-062
23c	Metric Pipe Fitting	1	1588-038
23d	Tubing Plug	1	1588-037
24	Self-Parking Assembly (Reed sw and magnet) 2m	1	SP1588-012-1
	Self-Parking Assembly (Reed sw only) 2m	1	SP1587-034-1
25	Main Frame	1	See calculator 1681-161
26	Motor Housing Nut	each	10015100
27	Motor Housing Washer	each	10025306B
28	Motor Housing Bolt	each	zA0006-020S
29	Pivot Block Securing Nut	2	zNL0.25F-S
not shown	Wash Fittings SLW Single	1	SP1588-672
not shown	Wash Fittings SLW Twin	1	SP1588-673
not shown	Wash Fittings SLW Single Long	1	SP1588-674
not shown	Drive Coupling – fitted inside Drive Shaft	1	SP1279-250
not shown	L050 Rubber Spider – fitted to Drive Coupling	1	SP1279-252
not shown	Sealing Grommet – fitted around Drive Shaft	1	SP1279-137
not shown	Sealing Grommet Spacer– fitted around Drive Shaft	1	SP1588-745

*** In the Part Number means length in mm.

**# In the Part Number means length in mm and arm spring pressure code.

In the Part Number means spring pressure in lb/ft. This is determined by Wynn according to arm and blade dimensions, together with any window rake angle from the vertical. This value can also be obtained from the original order documentation. See Wynn Agent for more details.

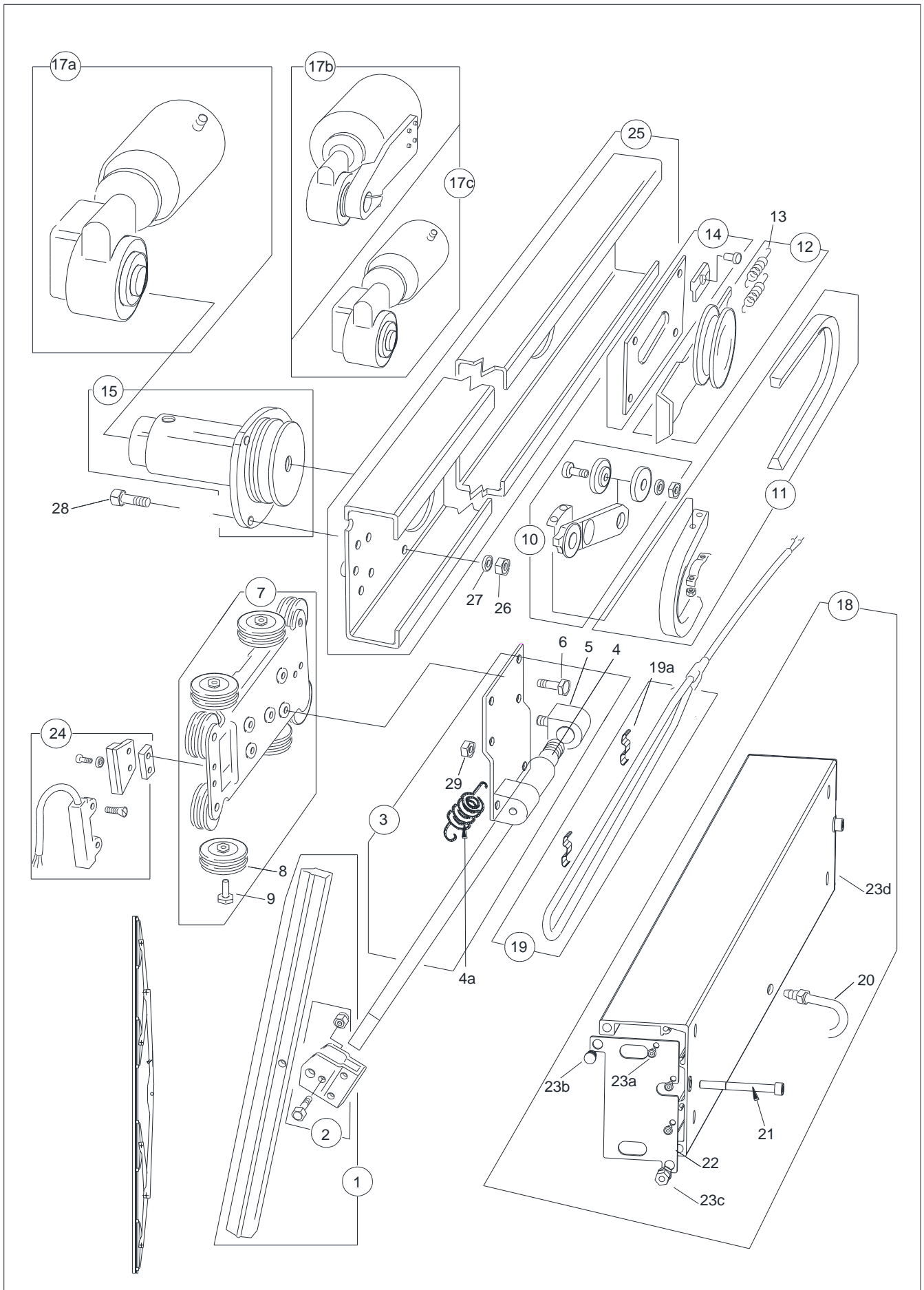
Belt length (written on belt as A###) in Inches.

‡ Where required, extra spring pressure is obtained by the addition of 1 or 2 springs to the wiper arm. Where fitted, order 1 or 2 as required. Contact Wynn Agent for more details.

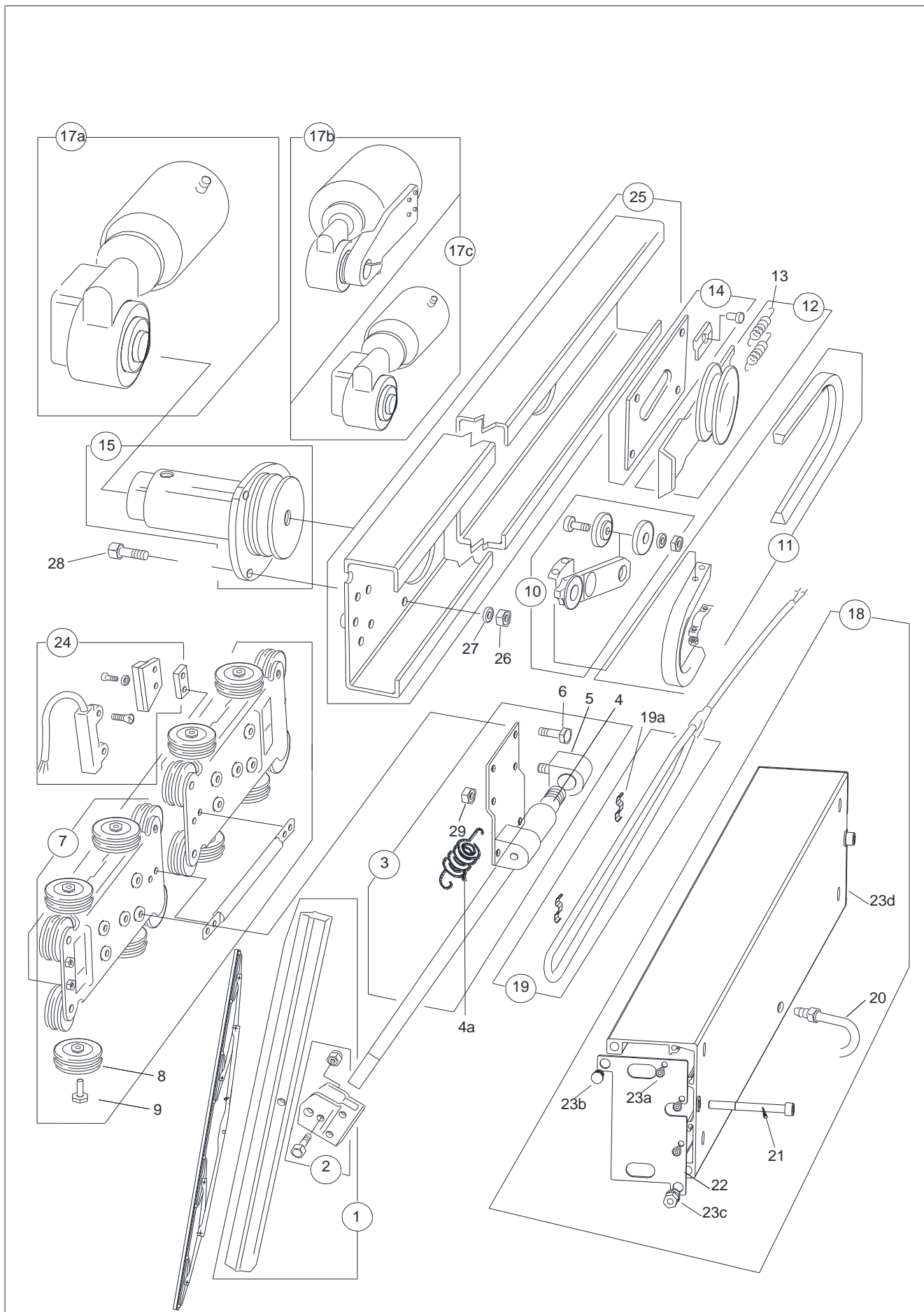
\$\$\$ Where \$\$\$ is voltage (220,115 or 024)

^^ Where ^ is heater length code.

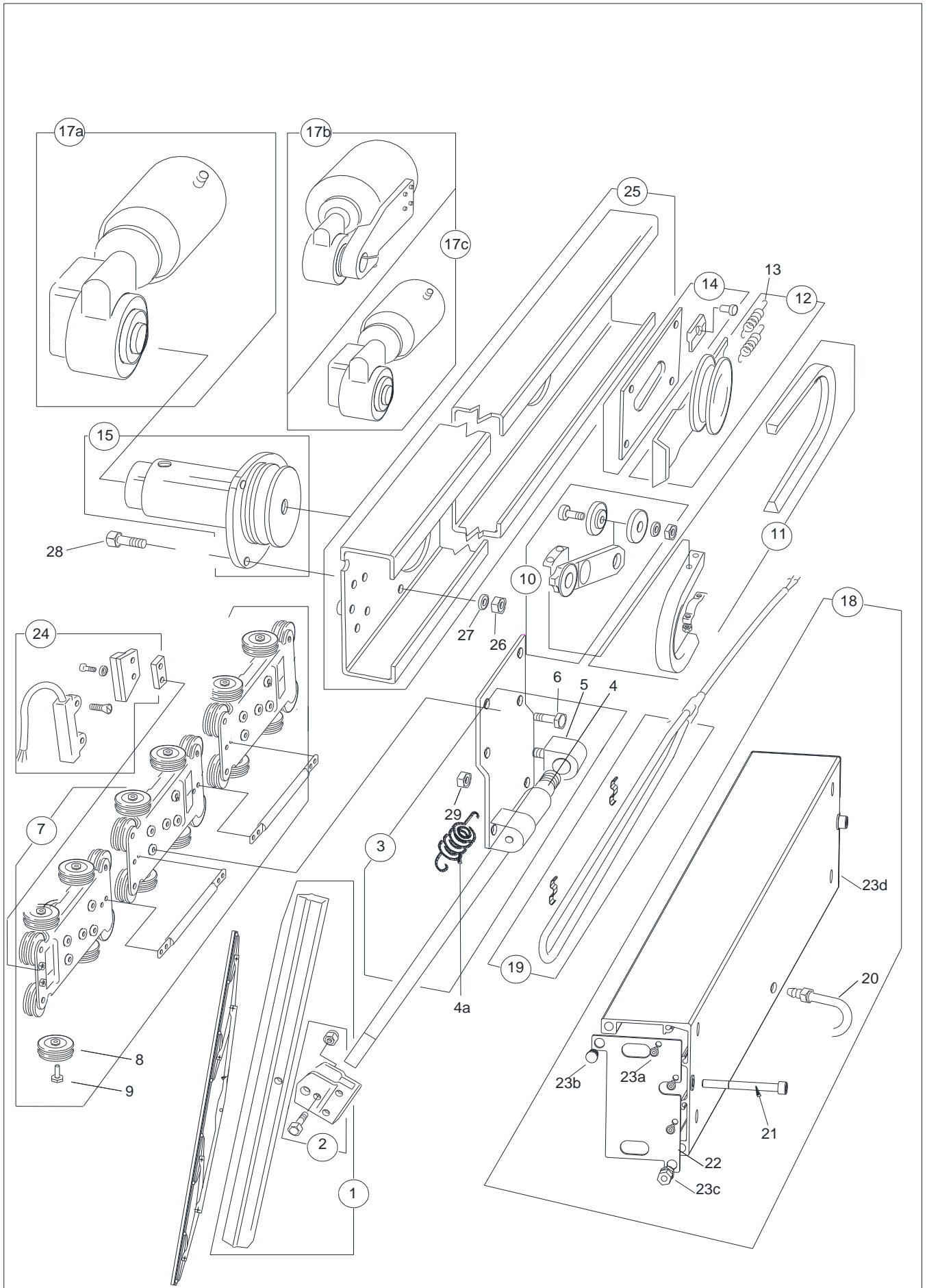
Type C Common Cover Single Spare Parts Drawing



Type C Common Cover Twin Spare Parts Drawing (Short)



Type C Common Cover Twin Spare Parts Drawing (Long)



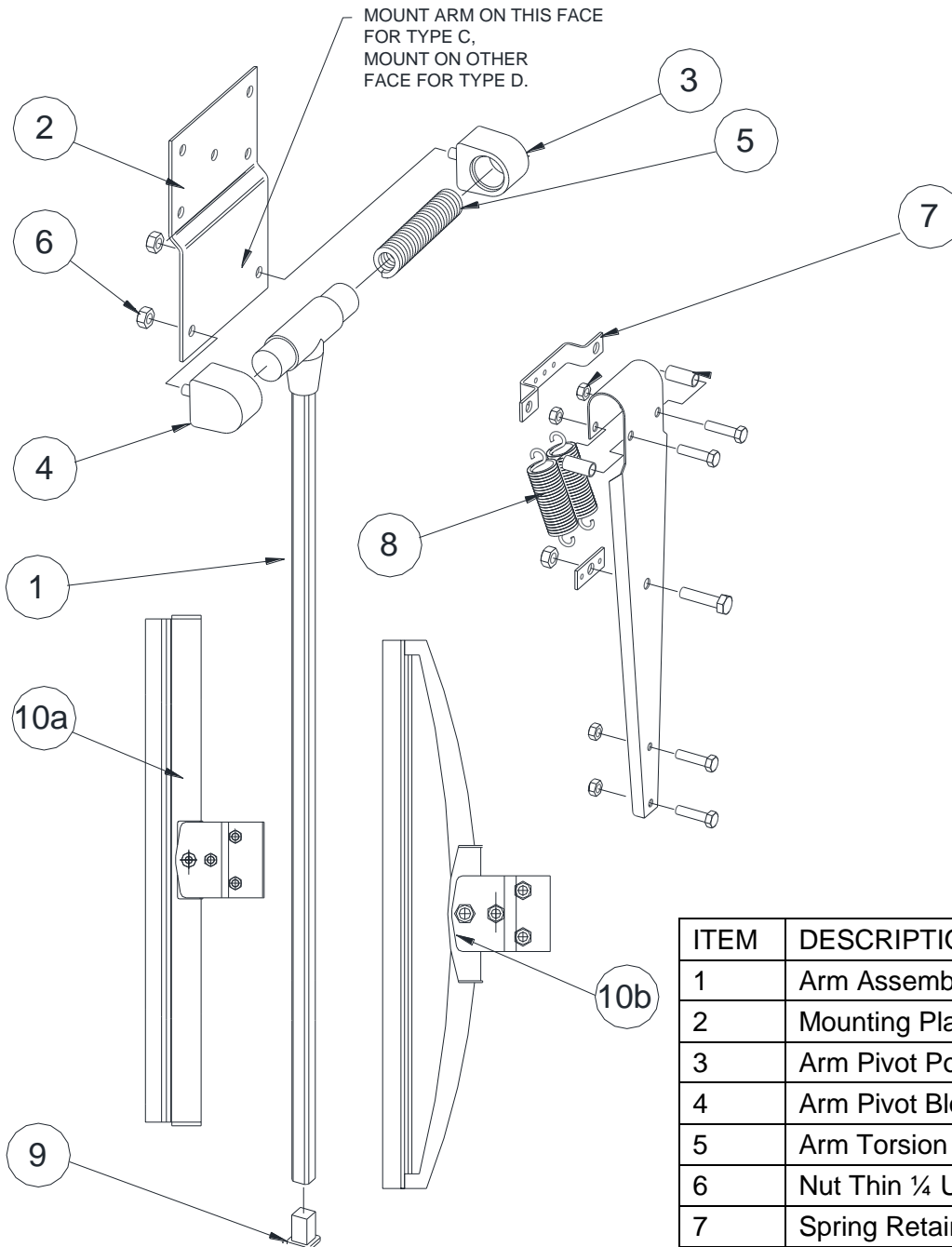
SLW Wiper Arm

The wiper arm is manufactured from stainless steel.

The wiper arm is shown below. One wiper arm assembly is used on a single bladed wiper, two wiper arm assemblies on a twin bladed wiper and three wiper arm assemblies on a triple bladed wiper unit.

The wiper arm assembly mounts on to the wiper assembly carriage plate. The wiper arm is secured to the carriage plate via four 10mm long mounting bolts.

The blade is secured to the arm assembly using the blade clip arrangement fitted to the wiper blade.



ITEM	DESCRIPTION	QTY
1	Arm Assembly	1
2	Mounting Plate	1
3	Arm Pivot Poundage Block	1
4	Arm Pivot Block	1
5	Arm Torsion Spring	1
6	Nut Thin ¼ UNF	2
7	Spring Retainer	1 (A/R)
8	Additional Spring	(0, 1, 2)
9	Sealing Plug	1
10a	Rigid Blade	1
10b	Articulated Blade	

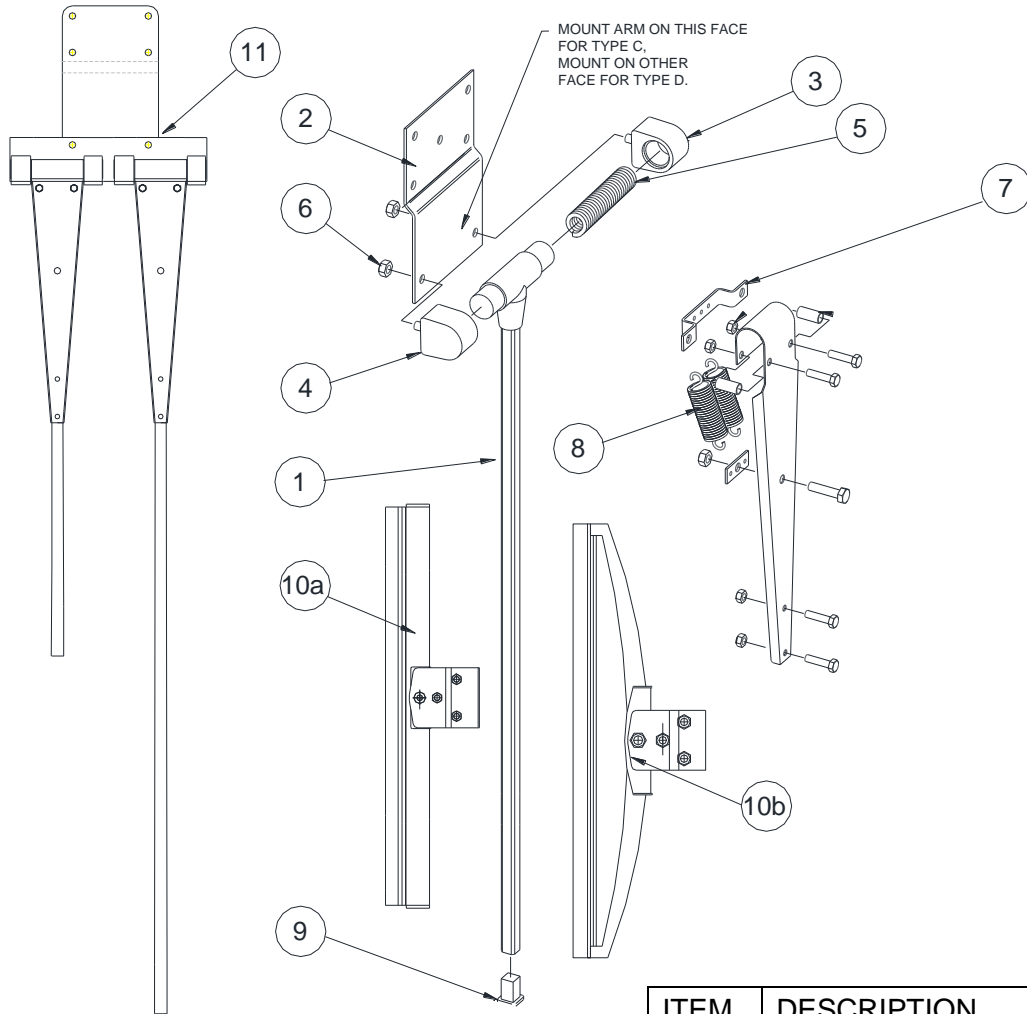
SLW Double Wiper Arm Assembly

The wiper arm is manufactured from stainless steel.

The wiper arm is shown below. One wiper arm assembly is used on a single bladed wiper, two wiper arm assemblies on a twin bladed wiper.

The double wiper arm mounting plate is secured to the wiper arm mounting plate with two bolts, washers and nuts. The complete wiper arm assembly mounts on to the wiper assembly carriage plate. The wiper arm is secured to the carriage plate via four 10mm long mounting bolts.

The blade is secured to the arm assembly using the blade clip arrangement fitted to the wiper blade.



OUTSIDE LOOKING IN

ITEM	DESCRIPTION	QTY
1	Arm Assembly	2
2	Mounting Plate	1
3	Arm Pivot Poundage Block	2
4	Arm Pivot Block	2
5	Arm Torsion Spring	2
6	Nut Thin ¼ UNF	4
7	Spring Retainer	2(A/R)
8	Additional Spring (per arm)	(0, 1, 2)
9	Sealing Plug	2
10a	Rigid Blade	2
10b	Articulated Blade	
11	Double Arm Mtg Plate	2

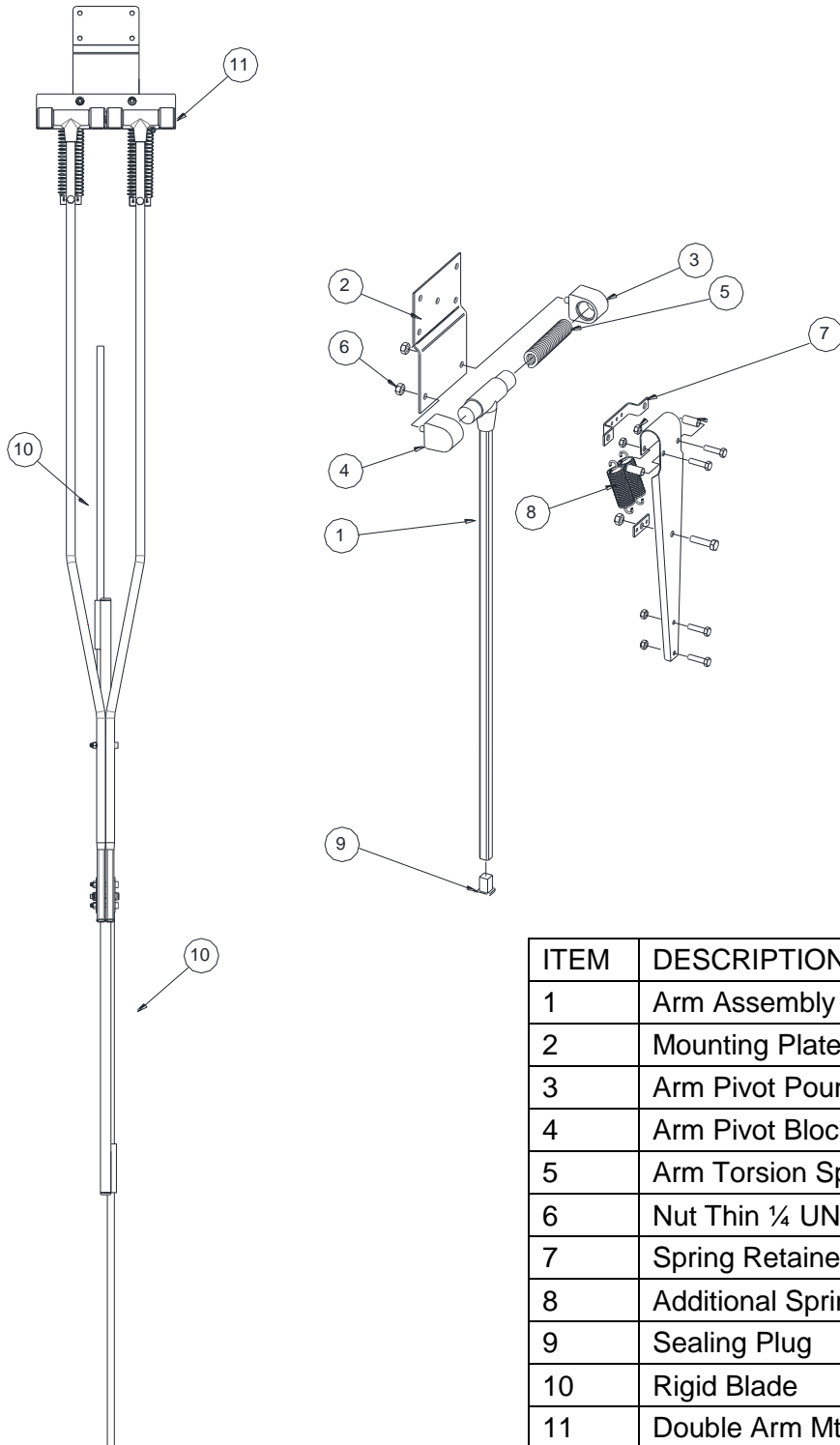
SLW Double Wiper Arm Assembly

The wiper arm is manufactured from stainless steel.

The wiper arm is shown below. One wiper arm assembly is used on a single bladed wiper.

The double wiper arm mounting plate is secured to the wiper arm mounting plate with two bolts, washers and nuts. The complete wiper arm assembly mounts on to the wiper assembly carriage plate. The wiper arm is secured to the carriage plate via four 10mm long mounting bolts.

The blade is secured to the arm assembly using the blade clip arrangement fitted to the wiper blade.



OUTSIDE LOOKING IN

ITEM	DESCRIPTION	QTY
1	Arm Assembly	2
2	Mounting Plate	1
3	Arm Pivot Poundage Block	2
4	Arm Pivot Block	2
5	Arm Torsion Spring	2
6	Nut Thin ¼ UNF	4
7	Spring Retainer	2(A/R)
8	Additional Spring (per arm)	(0, 1, 2)
9	Sealing Plug	2
10	Rigid Blade	2
11	Double Arm Mtg Plate	2

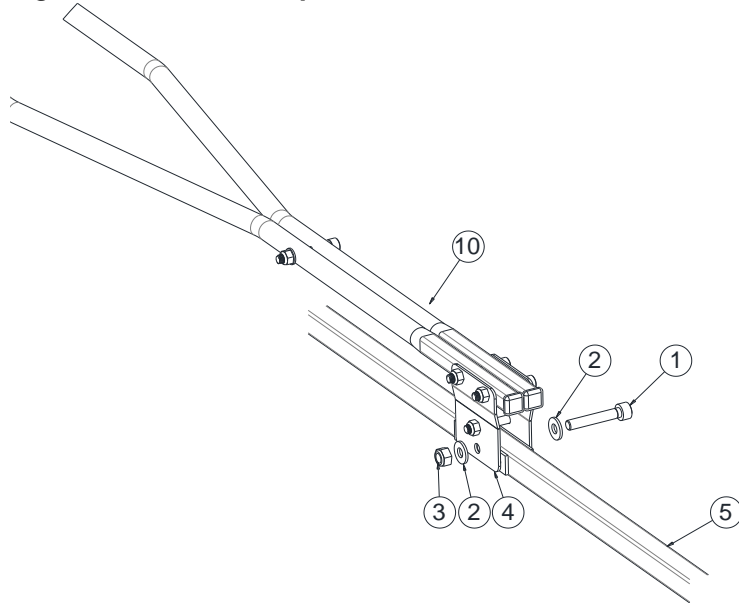
FITTING THE WIPER BLADE CARRIER

The wiper blades should be changed every 12 months but this is dependent on use and operating conditions

Ref Figure – Dual Blade Clip

1. Remove one M6 blade retaining bolt (1), two M6 flat washers (2), and M6 Nylock nut (3), from blade clip on double wiper arm assy (10).
2. Place dual blade carrier assy (5), into blade clip on Arm (10).
3. Ensure that all fixing holes align.
4. Secure in place with one M6 blade retaining bolt (1), two M6 flat washers (2), and M6 Nylock nut (3).

Figure – Dual Blade Clip

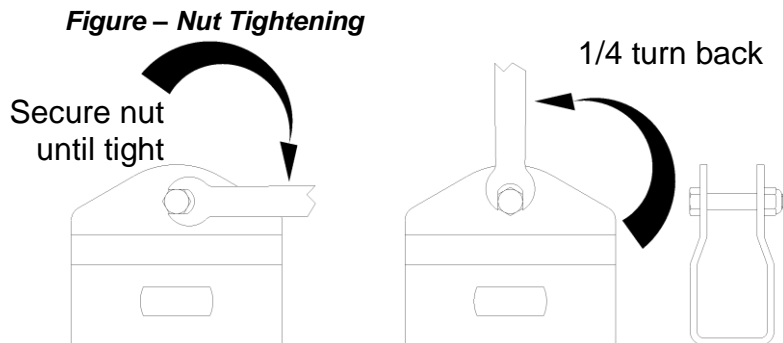


IMPORTANT

DO NOT over tighten blade carrier retaining bolt and nut, as blade carrier is required to pivot on glass.

Ref Figure – Nut Tightening

5. Secure nut until tight – then 1/4 turn back.



EXAMPLE NUMBER

D 5 1 1 1 9 B 1 A 1 C E B A 1 A -

WIPER TYPE

CODE	D1	D2	D3	D4	D5	C1	C2	C3	C4	C5	C6	C7	C8	C9
DESCRIPTION	C-35mm Drive Shaft	C-40mm Drive Shaft	C-45mm Drive Shaft	C-50mm Drive Shaft	C-55mm Drive Shaft	C-60mm Drive Shaft	C-65mm Drive Shaft	C-70mm Drive Shaft	C-75mm Drive Shaft	C-80mm Drive Shaft	C-85mm Drive Shaft	C-90mm Drive Shaft	C-95mm Drive Shaft	C-100mm Drive Shaft

STROKE TYPE

CODE	1	2	3	4	5	6	7
DESCRIPTION	Single	Twin	Special Twin Case (Non-std crs)	Special Single (See Instructions)	Special Twin (See Instructions)	Type C Single Old Style Cse/Cvr	Type D Single Old Style Cse/Cvr

PARKING

CODE	0	A	B	J
DESCRIPTION	Parking Not Fitted	Standard Drive End Parking	Normally open Reed Switch (TYPE D)	Normally open Reed Switch (TYPE C)

Wiper Type

Code	MO	00	CA	CB	CE	CF	CG	CH	CJ	CL	CM	CN	CS	CW	CX	CY	CZ
DESCRIPTION	MOTOR NOT SUPPLIED	NO POD	115vac 1ph 50/60hz 1Sp	115vac 1ph 50/60hz Low Sp	115vac 3ph 50/60hz 2Sp	115vac 3ph 50/60hz 2Sp IP23	115vac 3ph 50/60hz 1Sp	230vac 1ph 50/60hz 1Sp	230vac 1ph 50/60hz Low Sp	230vac 1ph 50/60hz 1Sp	230vac 1ph 50/60hz 2Sp	230vac 3ph 50/60hz 2Sp	24vac 320rpm 90W	230vac 3ph 50/60hz 2Sp	100vac 1ph 1Sp	24vac SLOW	110V 360RPM

PAINT FINISH

CODE	A	B	C	D	E	F	G	H	A												
DESCRIPTION	Standard White	Ad Light Grey	Munsell Green	R84890 Haze Grey	Storm Grey	Int Paint H725	French Gry J724	Light Grey BS381C/631	RAL 7000 Navy Grey	(Bruno Peter Type 76)	Cream 20320	Yellow RAL 1003	Int Paint E459	Black Dull RAL 9005	Canadian Grey CL1647	LI Work Grey BS381C/676	SWEDISH NAVY GREY	NC S5005-R808	LIGHT GREY RAL 7035	Special Paint	(see special instructions)

TWIN STROKE LENGTH STANDARD

INCHES	2 X 13	2 X 14	2 X 15	2 X 16	2 X 17	2 X 18	2 X 19	2 X 20	2 X 21	2 X 22	2 X 23	2 X 24	2 X 25	2 X 26	2 X 27	2 X 28	2 X 29	2 X 30	2 X 31	2 X 32	2 X 33	2 X 34	2 X 35	2 X 36	2 X 37	2 X 38	2 X 39	2 X 40	2 X 41	2 X 42	2 X 43	2 X 44	2 X 45	2 X 46	2 X 47	2 X 48	2 X 49	2 X 50	2 X 51	2 X 52	2 X 53	2 X 54	2 X 55	2 X 56	2 X 57	2 X 58	2 X 59	2 X 60
STROKE OVERLAP	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

HEATER CODE

CODE	0	A	B	C	S
DESCRIPTION	No Heater	24v Heater	115v Heater	220v Heater	SEE INST

HEATER CABLE LENGTH

CODE	0	1	2	3	4	5	6
DESCRIPTION	Not Supplied	2 Metres	3 Metres	5 Metres	8 Metres	10 Metres	15 Metres

MOTOR POSITION

CODE	A	B	C	D	E	F	G	H
DESCRIPTION	Above Window Left	Above Window Right	Below Window Left	Below Window Right	Left Side Window Top	Left Side Window Bottom	Right Side Window Top	Right Side Window Bottom

MOUNTING

CODE	-	B	C	D	E	F	G	H	A
DESCRIPTION	Std Boss - 24 O/A	Boss - 26 O/A	Bracket	Universal Carrier	Boss - 64 O/A	Quick Release - No Plug	Quick Release and CVN Plug	Quick Release + (A-ELEC-701)	QUICK RELEASE ONLY

SPRAY

CODE	0	1	2	3	4	S
DESCRIPTION	No Spray	Std Spray Fitted	Spray Std + Banjo	Spray Jet S/Steel	150mm Spray Jet	SEE INST

MOTOR POSITION

CODE	A	B	C	D	E	F	G	H
DESCRIPTION	Above Window Left	Above Window Right	Below Window Left	Below Window Right	Left Side Window Top	Left Side Window Bottom	Right Side Window Top	Right Side Window Bottom

MOTOR POSITION

CODE	A	S	G	T	Z	U	J	V	W
DESCRIPTION	Not Supplied	2 Metres	3 Metres	5 Metres	8 Metres	10 Metres	15 Metres	20 Metres	25 Metres

MOTOR POSITION

CODE	A	S	G	T	Z	U	J	V	W
DESCRIPTION	Not Supplied	2 Metres	3 Metres	5 Metres	8 Metres	10 Metres	15 Metres	20 Metres	25 Metres

MOTOR POSITION

CODE	A	B	C	D	E	F	G	H
DESCRIPTION	Above Window Left	Above Window Right	Below Window Left	Below Window Right	Left Side Window Top	Left Side Window Bottom	Right Side Window Top	Right Side Window Bottom

USED ON:

MOD STATUS	21.08.13
ISS. DATE	18.04.13
ISS. DATE	07.03.13
ISS. DATE	16.03.12
ISS. DATE	15.02.12

USED ON:

MOD STATUS	21.08.13
ISS. DATE	18.04.13
ISS. DATE	07.03.13
ISS. DATE	16.03.12
ISS. DATE	15.02.12

USED ON:

MOD STATUS	21.08.13
ISS. DATE	18.04.13
ISS. DATE	07.03.13
ISS. DATE	16.03.12
ISS. DATE	15.02.12

USED ON:

MOD STATUS	21.08.13
ISS. DATE	18.04.13
ISS. DATE	07.03.13
ISS. DATE	16.03.12
ISS. DATE	15.02.12

USED ON:

MOD STATUS	21.08.13
ISS. DATE	18.04.13
ISS. DATE	07.03.13
ISS. DATE	16.03.12
ISS. DATE	15.02.12

COMPLETE WIPER PART NUMBERS

CAD FILENAME + DIRECTORY M:\DRAWING\1681\1681-161.DWG

3rd ANGLE PRO.	30	\$1702	17.10.11	25	10-454	30.11.10	35	\$7760	21.08.13
TOLERANCES UNLESS OTHERWISE STATED	29	\$618	10.05.11	24	6478	13/09/10	34	\$6646	18.04.13
DECIMAL DIMS. TO 2 PLACES ± 0.1mm.	28	\$448	19.04.11	23	NONE	18.11.05	33	\$6249	07.03.13
DECIMAL DIMS. TO 1 PLACE ± 0.25mm	27	\$1134	08.03.11	37	\$15178	30.07.2015	32	\$2930	16.03.12
NO DECIMAL PLACES ± 0.5mm	26	\$953	08.03.11	36	\$11968	16.10.2014	31	\$2641	15.02.12
ANGLES ± 1°	ISS. DATE	DIN	DATE	ISS. DATE	DIN	DATE	ISS. DATE	DIN	DATE
MAT'L:-	SCALE:-	DRAWN:-	DD	CHKD:-	CHANGED:-	DD	DD	DD	DD
FINISH:-									

WYNN

MARINE LIMITED

CHELLENHAM ENGLAND

TITLE: STRAIGHT LINE WIPER UNIT

PART NUMBER OPTIONS

DRAWING No. 1681-161

SHEET 1 OF 2

SPARES ORDERING

EXAMPLE NUMBER

D

5

*

1

1

1

*

1

*

9

*

B

1

*

A

1

*

1

*

A

1

*

1

*

1

-

WIPER TYPE

CODE

D1 -D1

D2 -D2

D4 -D4

D5 -D5

C -C1

STROKE TYPE

CODE

1

2

Special Twin Case (Non-std ctrs) Q

Special Single (See Instructions) S

Special Twin (See Instructions) T

TWIN STROKE LENGTH STANDARD

INCHES	MILLIMETRES	CODE
2 X 13	2 X 330	13
2 X 14	2 X 356	14
2 X 15	2 X 380	15
2 X 16	2 X 407	16
2 X 17	2 X 430	17
2 X 18	2 X 457	18
2 X 19	2 X 480	19
2 X 20	2 X 510	20
2 X 21	2 X 533	21
2 X 22	2 X 558	22
2 X 23	2 X 585	23
2 X 24	2 X 610	24
2 X 25	2 X 635	25
2 X 26	2 X 660	26
2 X 27	2 X 685	27
2 X 28	2 X 710	28
2 X 29	2 X 735	29
2 X 30	2 X 760	30
2 X 31	2 X 787	31
2 X 32	2 X 810	32
2 X 34	2 X 865	34
2 X 36	2 X 915	36
2 X 40	2 X 1015	40
2 X 41	2 X 1040	41
2 X 43	2 X 1095	43
2 X 45	2 X 1145	45
2 X 47	2 X 1195	47
2 X 49	2 X 1245	49
2 X 52	2 X 1335	52
2 X 57	2 X 1450	57
2 X 61	2 X 1560	61
2 X 67	2 X 1700	67
2 X 71	2 X 1800	71
2 X 76	2 X 1930	76
2 X 79	2 X 2005	79
SPECIAL TWIN		ST

(for twins, eg: 2x24" is shown as 24 with the 2 being stated at the previous part number digit)

SINGLE STROKE LENGTH

CODE	MM	INCHES
12	305	
15	350	
17	430	
19	480	
21	533	
23	585	
25	635	
27	685	
29	735	
31	787	
33	840	
35	890	
37	940	
39	990	
41	1040	
43	1095	
45	1145	
47	1195	
49	1245	
51	1295	
53	1335	
55	1400	
57	1450	
59	1500	
61	1560	
63	1605	
67	1700	
71	1800	
76	1930	
79	2005	
89	2260	

COVER / CASE

CODE

COVER -1

CASE -2

COVER -3

old style C

COVER 4

old style D

HEATER

CODE

No Heater -0

24v Heater -A

115v Heater -B

220v Heater -C

SEE INST -S

NOTE: HEATERS FITTED TO COVERS ONLY

HEATER CABLE LENGTH

CODE

Not Supplied -0

2 Metres -1

3 Metres -7

5 Metres -8

6 Metres -8

8 Metres -9

10 Metres -3

15 Metres -A

20 Metres -4

25 Metres -5

Terminated in Enclosure -6

PARKING CABLE LENGTH

CODE

Not Supplied -0

2 Metres -1

3 Metres -7

5 Metres -2

6 Metres -8

8 Metres -9

10 Metres -3

15 Metres -A

20 Metres -4

25 Metres -5

PARKING

CODE

Parking Not Fitted 0

Standard Drive End Parking

Normally open) - A

Reed Switch (Type D)

Normally open) - B

Reed Switch (Type C)

Proximity Switch (Type D) - J

Non-Standard Drive End Parking

Proximity Switch (Type D) - G

Reed Switch Change over - C (Special Type C)

Standard Idler End Parking

Normally open) - D

Reed Switch (Type D)

Normally Open) - E

Reed Switch (Type C)

Non-Standard Idler End Parking

Proximity Switch (Type D) - H

Reed Switch c/over (Special Type C) - F

PAINT FINISH

Standard White

Admiralty Light Grey

Munsell Green N7.5

R84890 Haze Grey

RAL 7001

Storm Grey

Int Paint H725

French Grey J724

Light Grey BS381C

RAL 7000 Navy Grey

(Bruno Peter Type 76)

Cream 20320

Yellow RAL 1003

Int Paint EA59

Black Dull RAL 9005

Canadian Grey CL1647

RAL 7037 Dusky Grey

SWEDISH NAVY GREY

NC S5005-R808

LIGHT GREY RAL 7035

Special Paint (see special instructions)

SPRAY

CODE

No Spray -0

Std Spray Fitted -1

Spray Std + Banjo -2

Spray Jet S/Steel -3

150mm Spray Jet -4

SEE INST -S

NOTE: SPRAY FITTED TO COVERS ONLY.

NO SPRAY ON 80, B OR 48

WINDOW HANDING

Not Supplied -0

LEFT -1

RIGHT -2

(above window)

MOUNTING

CODE

Std Boss - 24 O/A (1588-057)

Boss - 26 O/A (1588-020)

Bracket (1588-070 - Type C) (1642-570 - Type D)

Universal Carrier (1588-071 & BRACKET)

Boss - 64 O/A (1588-057-80)

Quick Release - No Plug (1642-468)

Quick Release and CVN Plug (1642-468) + (A-ELEC-701)

QUICK RELEASE ONLY (1588-647)

WIPER SPARE CASE/COVER PART NUMBERS

CAD FILENAME + DIRECTORY M:\DRAWING\1681\1681-161.DWG

3rd ANGLE PRO.	30	s1702	17.10.11	25	10-454	30.11.10	35	S7760	21.08.13	MOD STATUS
TOLERANCES UNLESS OTHERWISE STATED	29	S618	10.05.11	24	6478	13/09/10	34	S6646	18.04.13	
DECIMAL DIMS. TO 2 PLACES ± 0.1mm.	28	S448	19.04.11	23	NONE	18.11.05	33	s6249	07.03.13	
NO DECIMAL PLACES ± 0.25mm	27	11-134	08.03.11	37	s15178	30.07.2015	32	s2930	16.03.12	
ANGLES ± 1°	26	6953	08.03.11	36	s11968	16.10.2014	31	S2641	15.02.12	
	ISS.	DIN	DATE	ISS.	DIN	DATE	ISS.	DIN	DATE	
	SCALE:1-	DRAWN:-	DD	CHKD:-	CHANGED:-					

TOLERANCES UNLESS OTHERWISE STATED

DECIMAL DIMS. TO 2 PLACES ± 0.1mm.

NO DECIMAL PLACES ± 0.25mm

ANGLES ± 1°

MAT'L:-

FINISH:-

USED ON:

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Wynn

MARINE LIMITED

CHELLENHAM ENGLAND

TITLE:- STRAIGHT LINE WIPER COVER/CASE SPARES PART NUMBER OPTIONS

DRAWING NO. 1681-161

SHEET 2 OF 2

SERIES 1000 CONTROL UNIT

Series 1000 controllers are available in units from 1 – 4 ways. They allow direct connection to the wiper motor without the need for intermediate power supplies. Wipers are controlled in continuous or variable intermittent modes. Switches are fitted for Spray and Heater control. A park sensor allows the wiper to park at the motor end when it reaches the end of stroke.

The system complies with all relevant safety and EMC regulations.

Installation of Controller



Installation of the control unit and wiper must be done by a competent electrician.

1. Cut out and de-burr a hole in the console, relevant to the sizes shown in the table below.

Controller Type	Panel cut out (mm)	Overall size (mm)
1-way	45 x 91	48 x 96
2-way	91 x 91	96 x 96
3-way	139 x 91	144 x 96
4-way	186 x 91	192 x 96

2. Remove the 2 fixing brackets from the side of the controller case, noting how these fit.
3. Fit the unit into the mounting hole and secure with the fixing brackets.
4. Connect the wiring as shown in the wiring diagram.

Functional Check of Controller

The wiper switch has 6 positions. Fully anti-clockwise parks the wiper, next are four settings are for Intermittent wipe and finally continuous speed operation when turned fully clockwise.

1. Set wiper switch to the off position (fully anti-clockwise) & apply power to the system. Check each wiper switch in turn as follows.
2. Turn wiper switch fully clockwise. The wiper should start and run continuously.
3. Turn the wiper switch fully anticlockwise. The wiper should park at the motor end of its stroke.
4. Turn the wiper switch clockwise one position. The wiper will make one wipe and park again. This position gives the longest intermittent time (20 seconds).
5. Turn the wiper switch clockwise one position at a time. Each time the switch is turned the wiper should wipe once and park again. At the last position, just before fully clockwise, the intermittent interval should be around 4 seconds.
6. Heater. Switch on and ensure that the wipers begin to heat up.
7. Wash. Switch on and hold down, ensure water is sprayed through the system.
8. Multi-way grouped controllers with only one control switch has all the wipers operating together.

Fusing

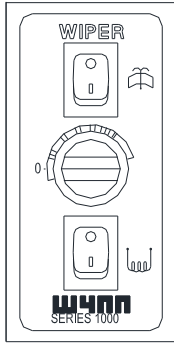


Remove power prior to working on controller.

The controller has fuses to protect the motor, wiring and controller. The fuses will not blow in normal use; however, if the wiper is jammed, then these fuses are designed to blow before the motor will sustain any damage. The fuses are located behind the front panel inside the control unit. To replace a fuse:

1. Use a small screwdriver to carefully lever off the front panel bezel.
2. Holding the control knob, carefully pull out the controller front panel.
3. Undo the fuse holder which is located at the bottom right of the relevant controller PCB.
4. Renew the fuse and carefully refit the fuse holder. Avoid excessive force. Refit front panel and bezel.

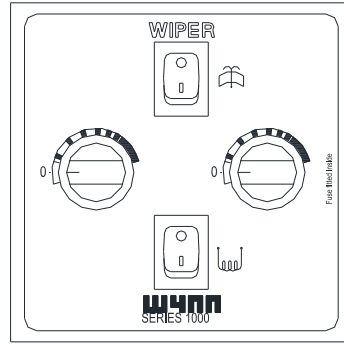
SERIES 1000 FRONT PANEL LAYOUTS



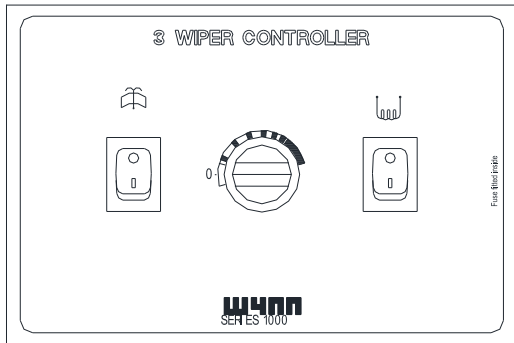
1 WAY



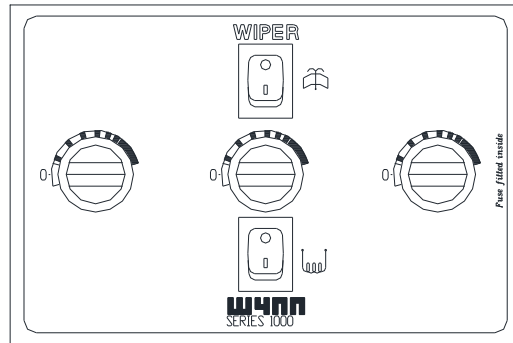
2 WAY GROUPED



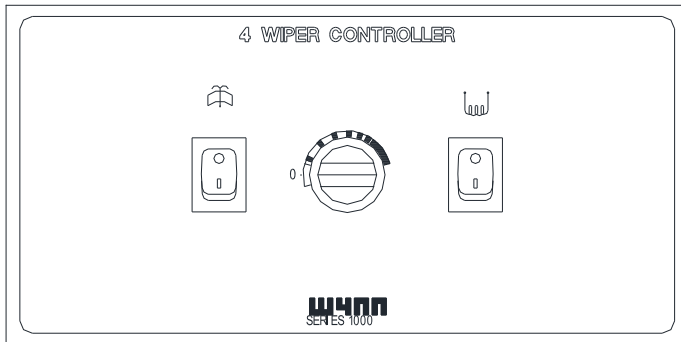
2 WAY INDEPENDENT



3 WAY GROUPED



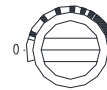
3 WAY INDEPENDENT



4 WAY GROUPED



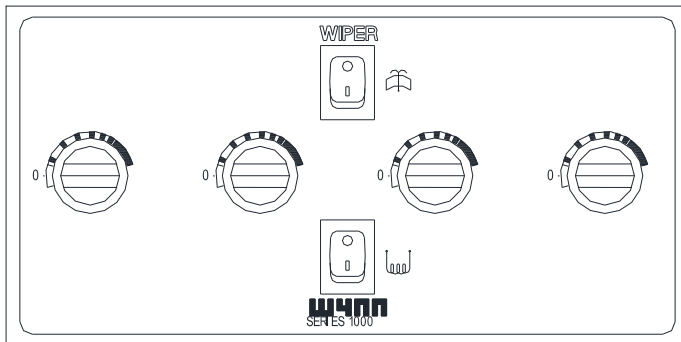
WASHER SWITCH



WIPER OPERATION
MODE SWITCH

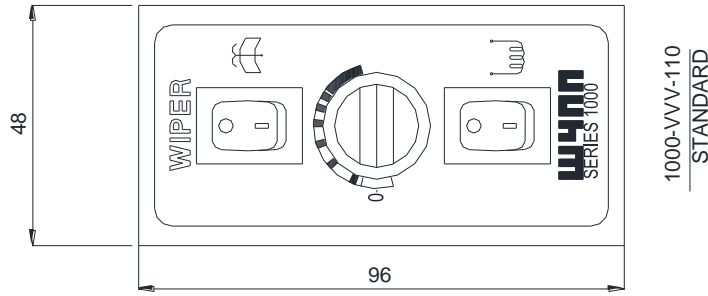


HEATER SWITCH

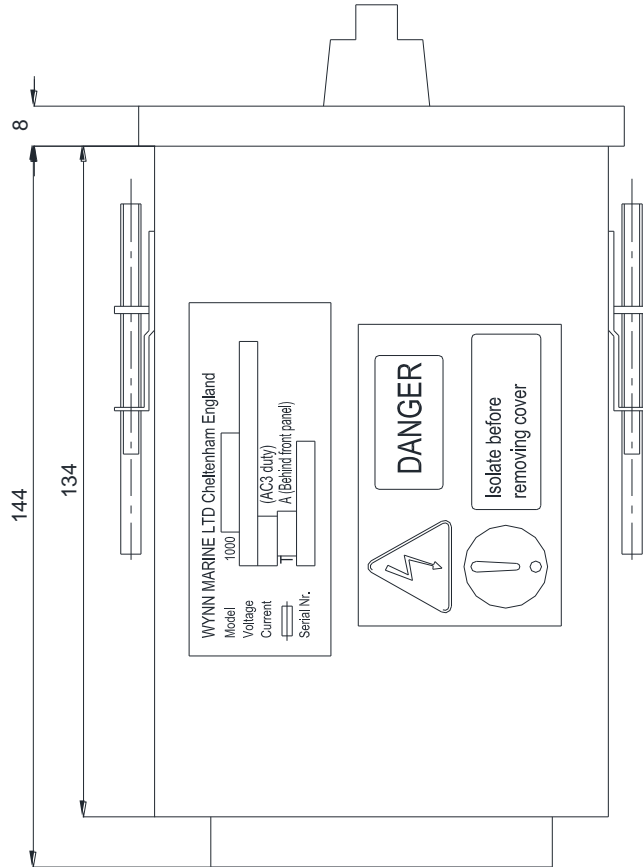


4 WAY INDEPENDENT

SERIES 1000 CONTROLLER SINGLE WAY DIMENSIONS

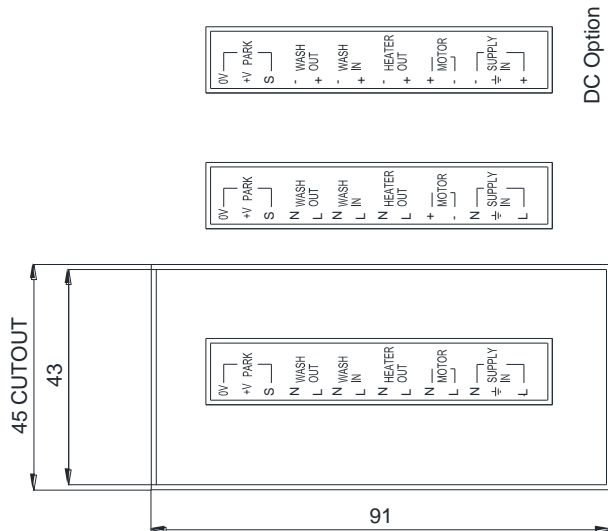


1000-VVV-110
STANDARD



CONTROLLER OPTION			SWITCH FITTED AS DRAWN	BLANKING PLUG FITTED
1000-VVV-110	✓	✓	✓	✓
1000-VVV-111	✓	✓	✓	✗
1000-VVV-112	✓	✓	✓	✗
1000-VVV-113	✓	✓	✗	✗

WEIGHT OF UNIT - 0.4 KG



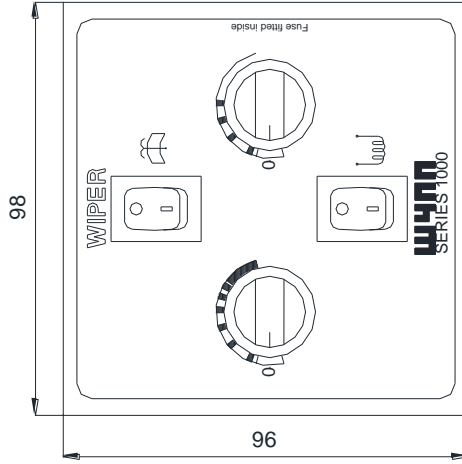
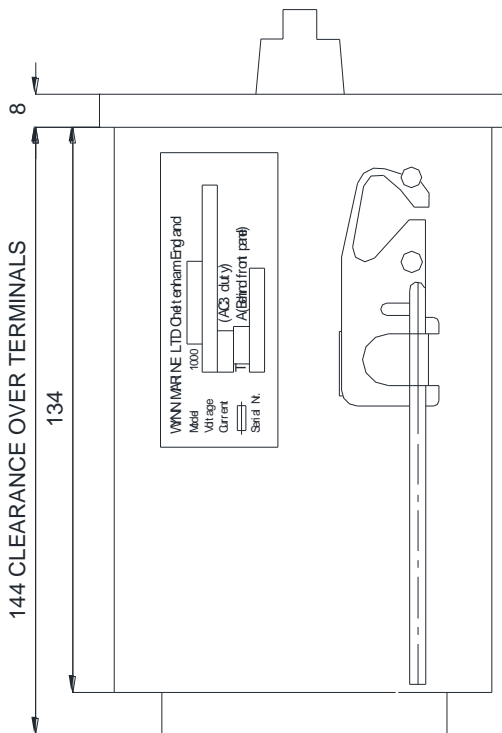
AC Option

ACin/DC out Option

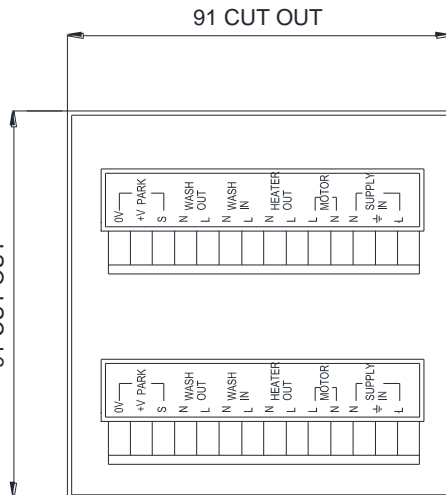
DC Option

Date:- 03.09.01
Path:- Draw\1000\Manual\10-i6

SERIES 1000 CONTROLLER TWO WAY DIMENSIONS



91 CUT OUT



LABEL FOR
DC UNIT



LABEL FOR
AC/DC UNIT

1000-VVV-220-M STANDARD

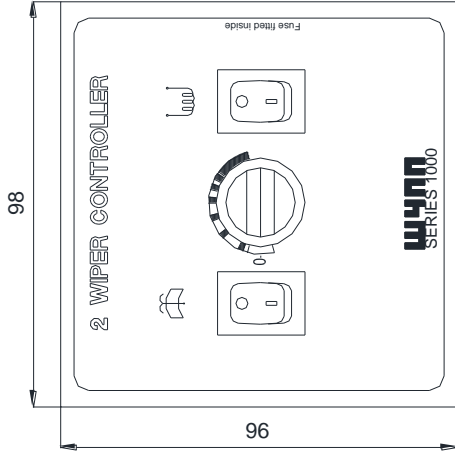
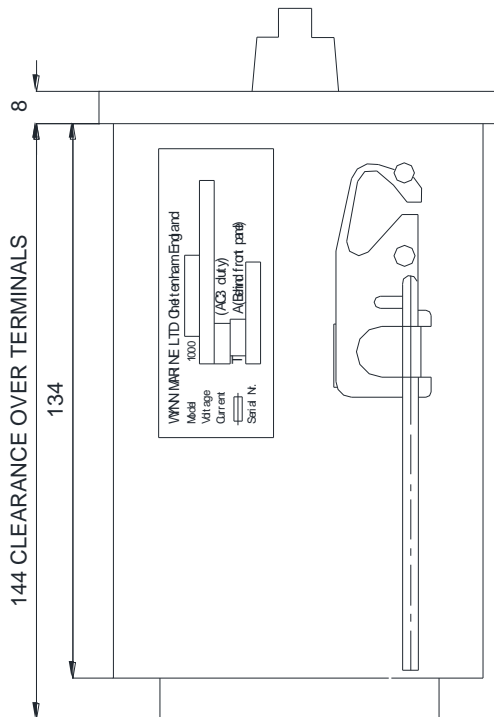
CONTROLLER OPTION	WIPER SUPPLY	-M	WIPER SUPPLY
1000-VVV-220-M	✓	-1	STANDARD
1000-VVV-221-M	✗	-2	AC IN DC OUT
1000-VVV-222-M	✓		
1000-VVV-223-M	✗		

✗ BLANKING PLUG
FITTED

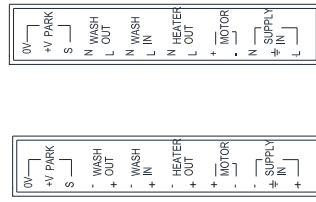
✓ SWITCH FITTED
AS DRAWN

WEIGHT OF UNIT - 0.6KG

SERIES 1000 CONTROLLER TWO WAY DIMENSIONS



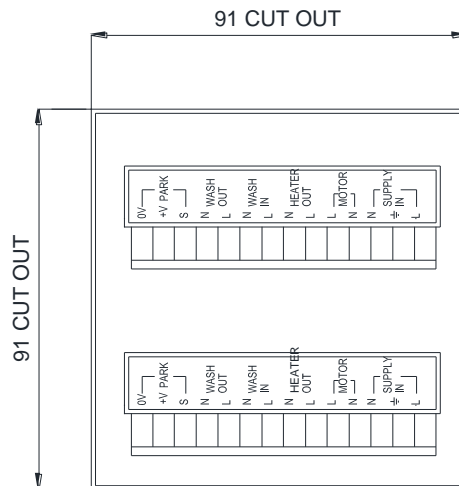
1000-VVV-210-M STANDARD



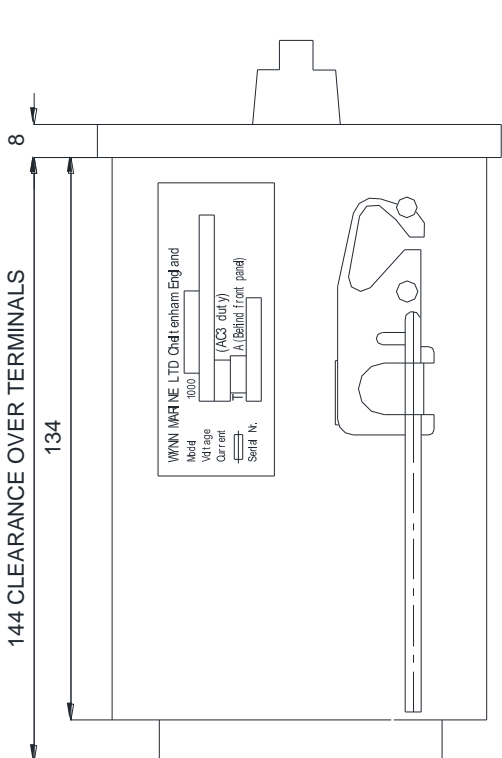
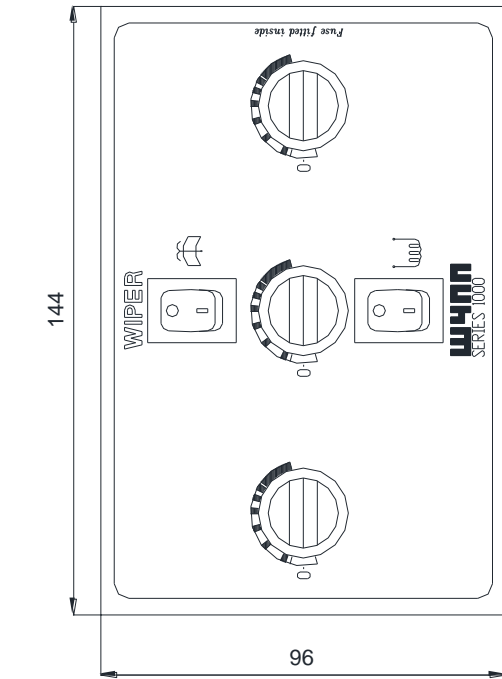
CONTROLLER OPTION	✓	✗	WIPER SUPPLY
1000-VVV-210-M	✓	✗	STANDARD
1000-VVV-211-M	✗	✓	AC IN/DC OUT
1000-VVV-212-M	✓	✗	
1000-VVV-213-M	✗	✓	

✗ BLANKING PLUG FITTED
 ✓ SWITCH FITTED AS DRAWN

WEIGHT OF UNIT - 0.6KG



SERIES 1000 CONTROLLER THREE WAY DIMENSIONS



1000-VVV-330-M STANDARD

CONTROLLER OPTION			-M	WIPER SUPPLY
1000-VVV-330-M	✓	✓	-1	STANDARD
1000-VVV-331-M	✓	✓	-2	AC IN DC OUT
1000-VVV-332-M	✓	✓		
1000-VVV-333-M	✓	✓		

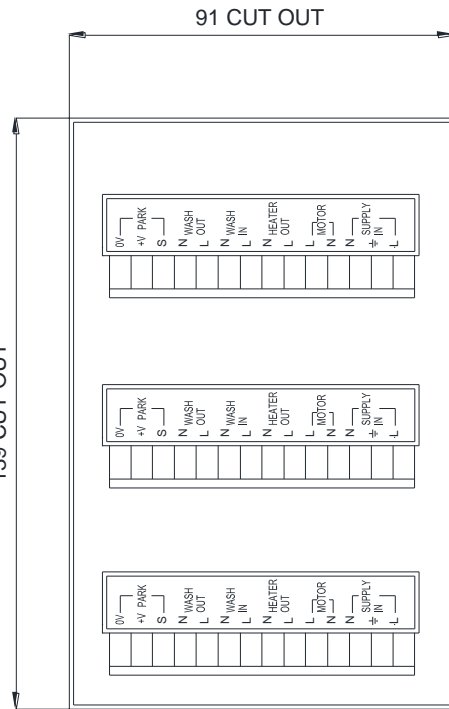
X BLANKING PLUG FITTED
 ✓ SWITCH FITTED AS DRAWN



LABEL FOR AC/DC UNIT



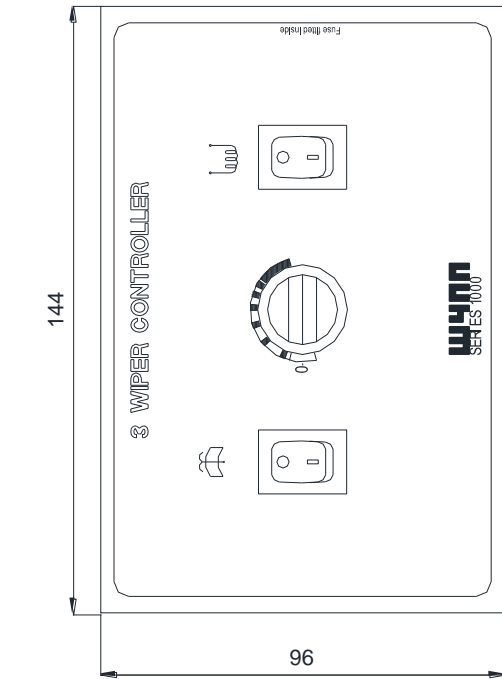
LABEL FOR DC UNIT



REAR OF AC UNIT

WEIGHT OF UNIT - 0.9KG

SERIES 1000 CONTROLLER THREE WAY DIMENSIONS

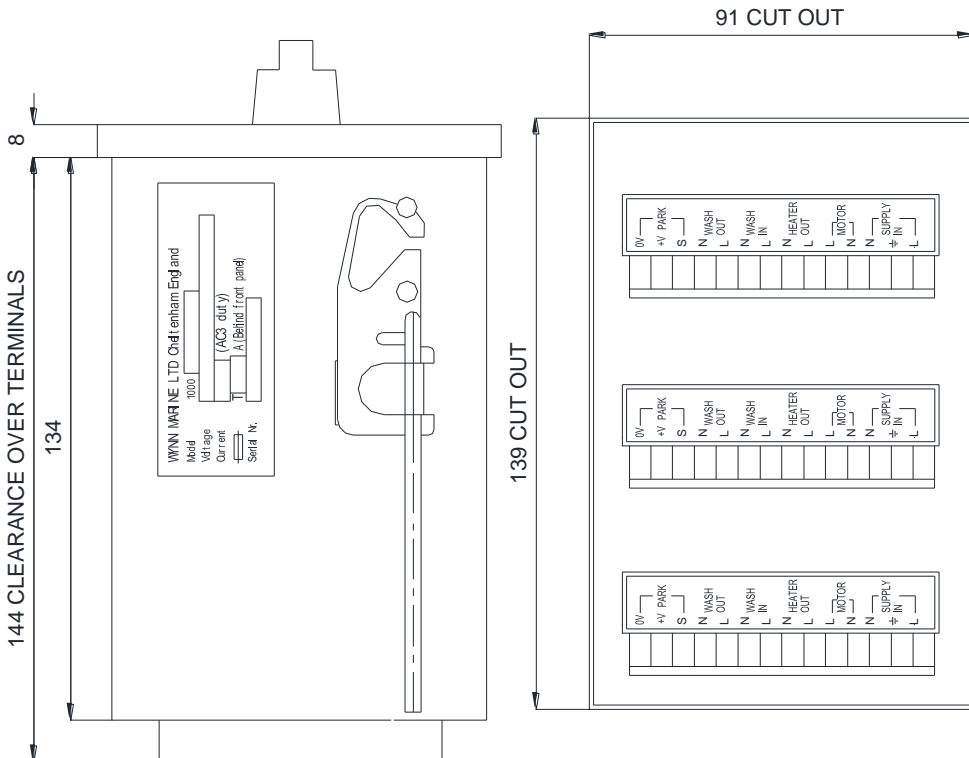


1000-VVV-310-M STANDARD

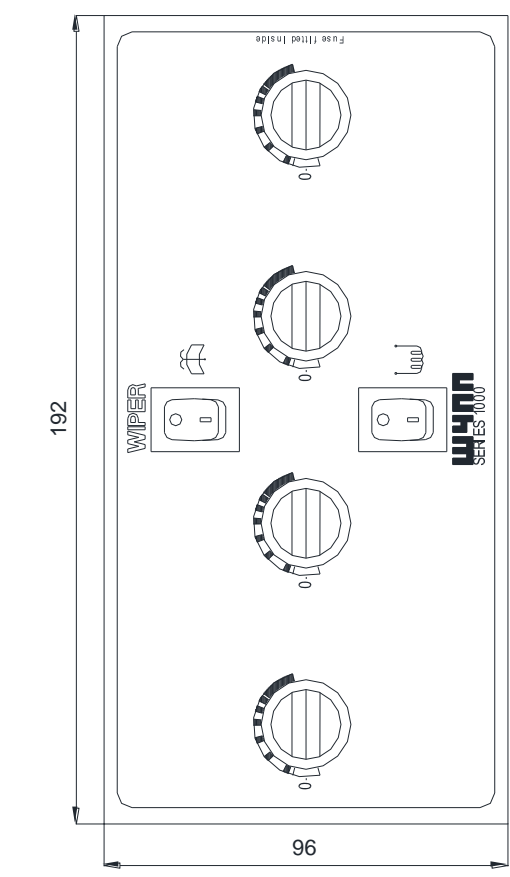
CONTROLLER OPTION			-M	WIPER SUPPLY STANDARD
1000-VVV-310-M	✓	✓	-1	AC IN DC OUT
1000-VVV-311-M	✓	✓	-2	
1000-VVV-312-M	✓	✓		
1000-VVV-313-M	✓	✓		

BLANKING PLUG FITTED
 SWITCH FITTED AS DRAWN

WEIGHT OF UNIT - 0.9KG



SERIES 1000 CONTROLLER FOUR WAY DIMENSIONS

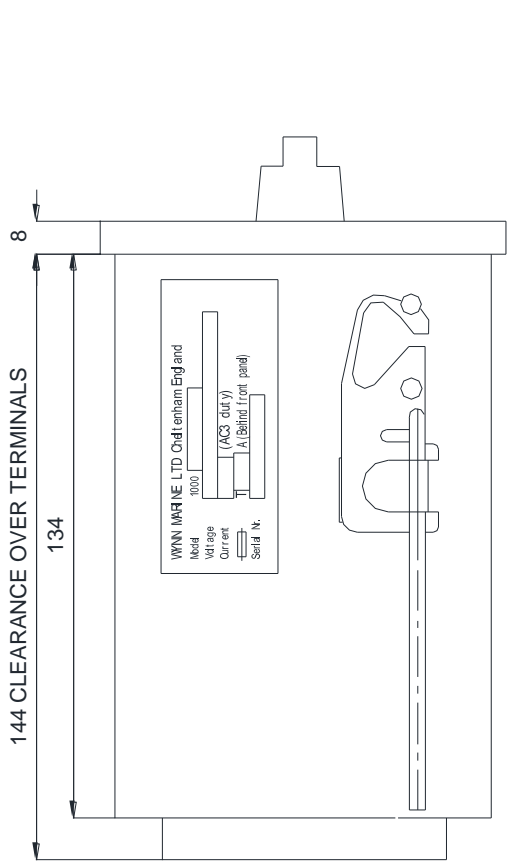


1000-VVV-440-M STANDARD

CONTROLLER OPTION	Blanking Plug Fitted	Switch Fitted	-M	WIPER SUPPLY
1000-VVV-440-M	✓	✓	-1	STANDARD
1000-VVV-441-M	✗	✗	-2	AC IN DC OUT
1000-VVV-442-M	✓	✓		
1000-VVV-443-M	✗	✗		

✗ BLANKING PLUG FITTED
✓ SWITCH FITTED AS DRAWN

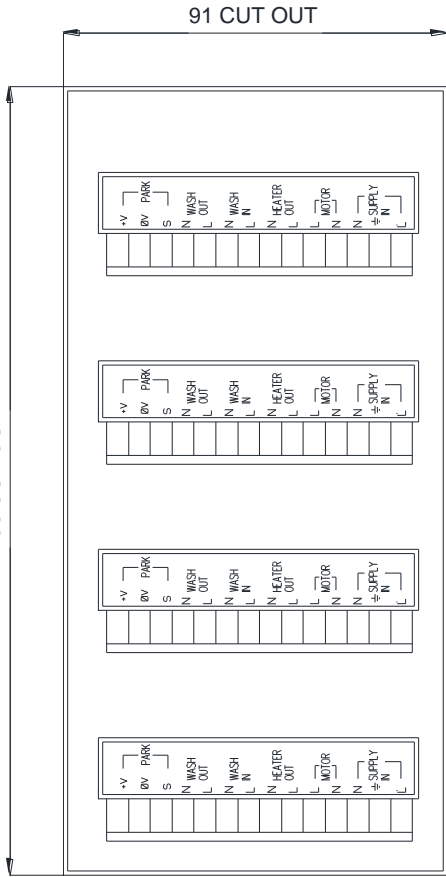
WEIGHT OF UNIT - 1.2KG



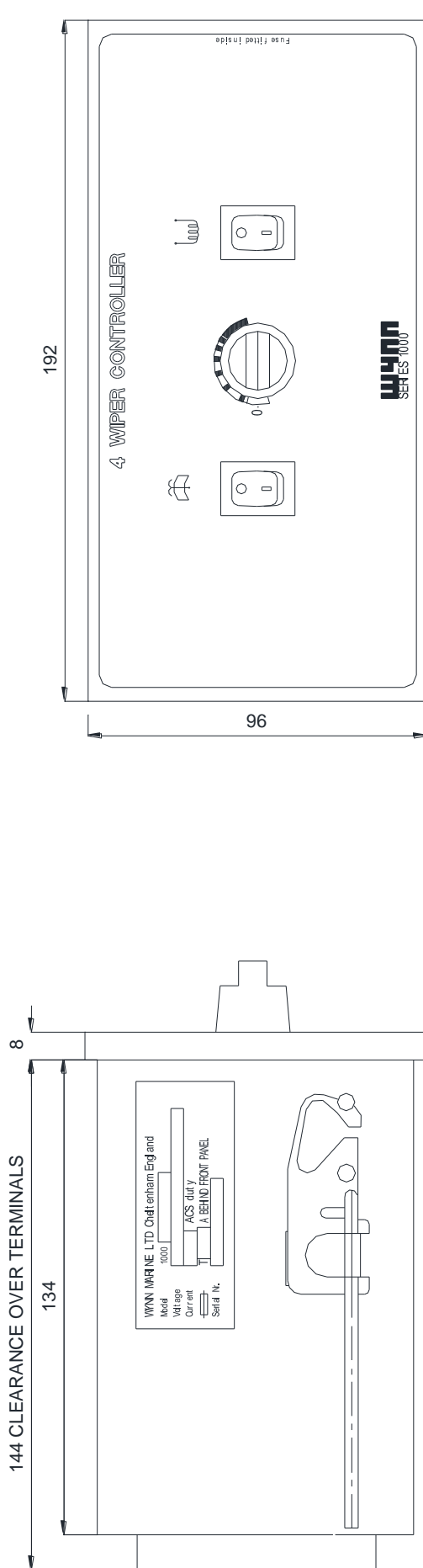
LABEL FOR AC/DC UNIT



LABEL FOR DC UNIT



SERIES 1000 CONTROLLER FOUR WAY DIMENSIONS



1000-VVV-410-M STANDARD

CONTROLLER OPTION			-M	WIPER SUPPLY STANDARD
1000-VVV-410-M	✓	✓	-1	AC IN DC OUT
1000-VVV-411-M	✗	✓	-2	
1000-VVV-412-M	✓	✗		
1000-VVV-413-M	✗	✗		

✗ BLANKING PLUG FITTED
✓ SWITCH FITTED AS DRAWN

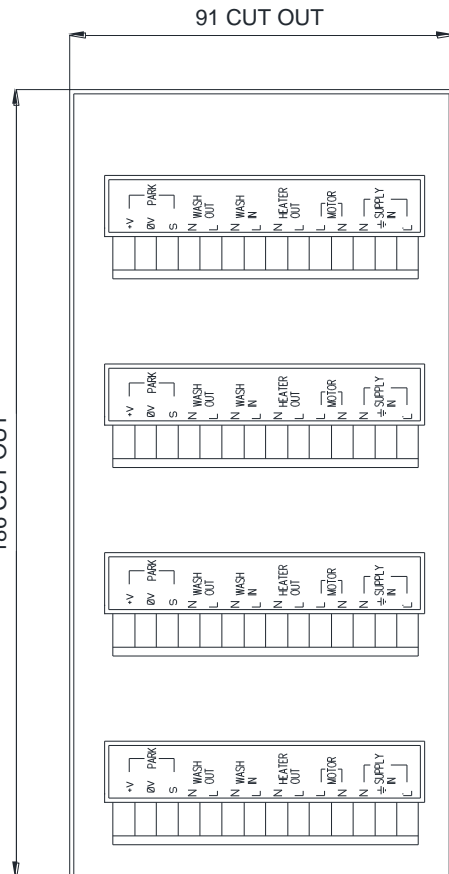
WEIGHT OF UNIT - 1.2KG

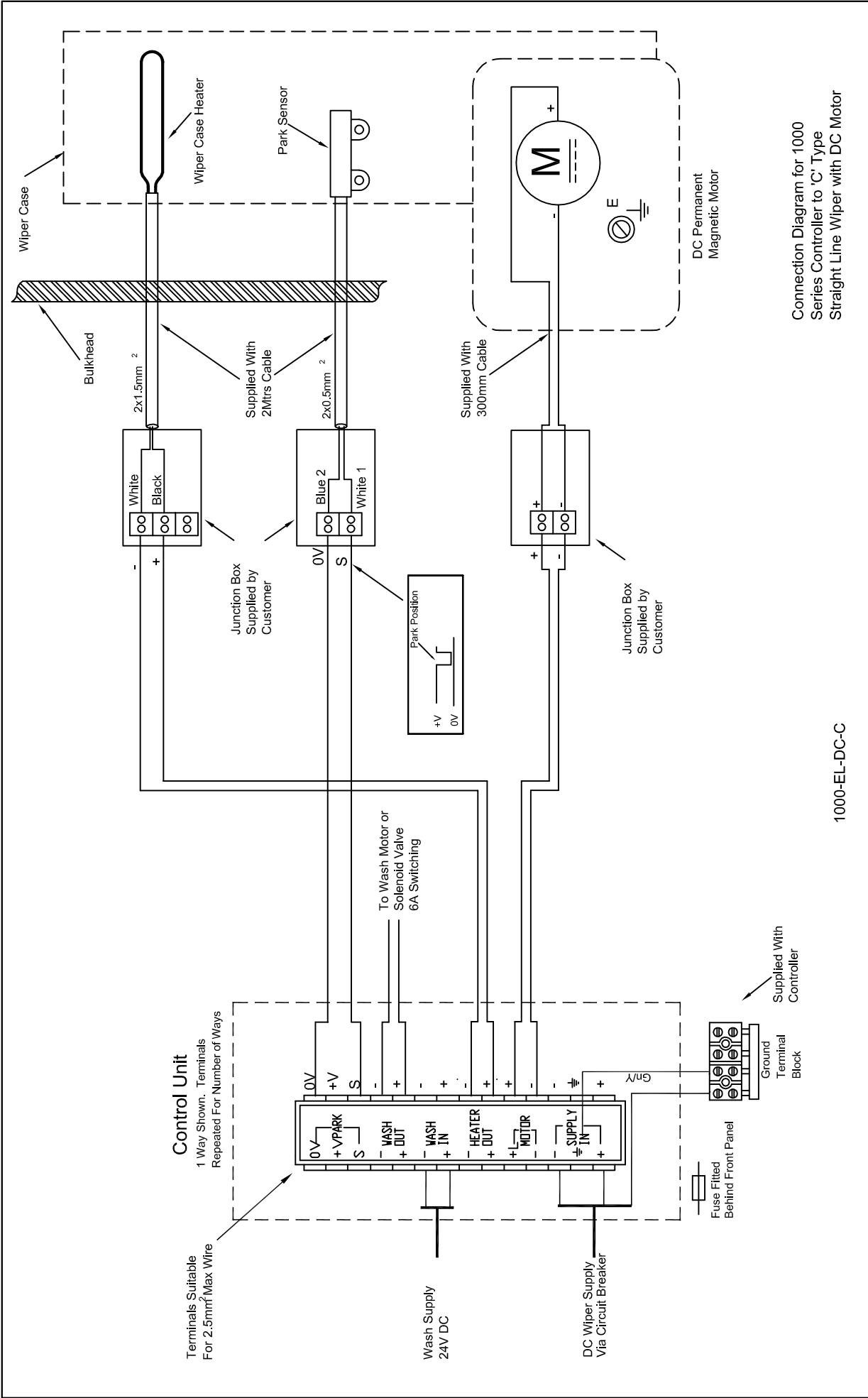


LABEL FOR AC/DC UNIT



LABEL FOR DC UNIT

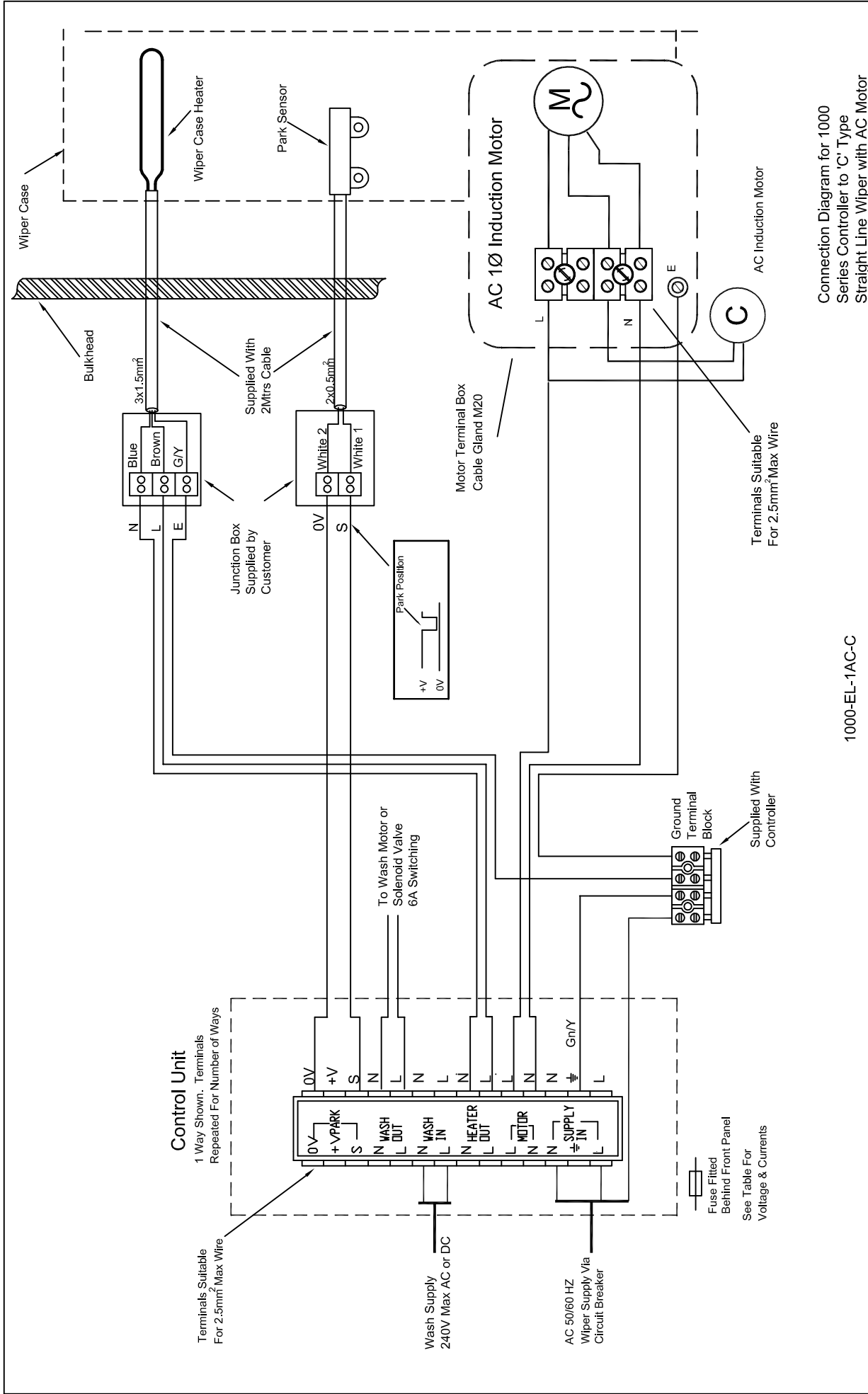




Connection Diagram for 1000 Series Controller to 'C' Type Straight Line Wiper with DC Motor

1000-EL-DC-C

3rd ANGLE PRO. 	MOD STATUS						
	5	04.10.12					
	4	02.3.09					
	3	May.8.01					
	2	1454 15.4.99					
MAJ. REV. 15.4.99 1000\EL\DC-C_12	ISS.	DIN	DATE	ISS.	DIN	DATE	
	2			1		3.12.97	
TOLERANCES UNLESS OTHERWISE STATED DECIMAL DIMS. TO 2 PLACES ± 0.1mm. DECIMAL DIMS. TO 1 PLACE ± 0.25mm NO DECIMAL PLACES ± 0.5mm ANGLES ± 1°		DRAWN:- DCT		CHKD:-		CHANGED:-	
WYNN MARINE LIMITED CHELTENHAM ENGLAND		DRAWING No. 1000-EL-DC-C		Sht 1/3		TITLE:- Connection Diagram for 1000 Series Controller to 'C' Type Straight Line Wiper with DC Motor	
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3rd ANGLE PRO.

TOLERANCES UNLESS OTHERWISE STATED
 DECIMAL DIMS. TO 2 PLACES $\pm 0.1mm$.
 DECIMAL DIMS. TO 1 PLACE $\pm 0.25mm$
 NO DECIMAL PLACES $\pm 0.5mm$
 ANGLES $\pm 1^\circ$

ISS.	DIN	DATE	ISS.	DIN	DATE	MOD STATUS
			1	1327	3.12.97	
			2	1454	15.4.99	
			3		May.8.01	
			4	2286	21.10.02	
			5		30.06.08	
			6		04.10.12	

MAT'L:-

1000\EL\1AC-C-13-sht1

SCALE:- NTS

DRAWN:- DCT

CHKD:-

CHANGED:- cable type

Connection Diagram for 1000 Series Controller to 'C' Type Straight Line Wiper with AC Motor

1000-EL-1AC-C

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WYNN MARINE LIMITED
 CHELTENHAM ENGLAND

TITLE:- Connection Diagram for 1000 Series Controller to 'C' Type Straight Line Wiper with AC Motor

DRAWING No. 1000-EL-1AC-C Sht: 1/3

DOCUMENTATION

Whilst every effort is made to provide accurate information in good faith, no responsibility can be accepted by Wynn for inaccuracies and Wynn reserves the right to alter and amend specifications and designs without prior notice in line with our policy of continued improvement.

Spares Parts

To enable technical troubleshooting and ordering of spare parts, this manual should be kept in a safe place on board. It is also advisable to keep one set of spare parts on board for emergency use. Please contact Wynn directly or your local distributor / service centre for all order requirements.

Maintenance Schedules

Plan your maintenance work according to the schedule in this manual.

Our Commitment

We are committed to a 10 year product support programme. This ensures that any spare part will be available for any wiper at least 10 years after its purchase. It is strongly recommended that only genuine replacement parts manufactured by WYNN be used. This will guarantee that only suitable materials have been used and will ensure interchangeability of parts.

Quality and Testing

We are committed to the principles of Total Quality Management, ISO 9000. We manufacture our range of marine products to the highest standard and quality. We therefore maintain an ongoing schedule of product improvement and testing. To help us sustain such standards we maintain a salt-water test rig on which our products are taken, at random from the production line, and subjected to 3,000 hour continuous testing. We are sure you will receive many years trouble-free service from your Wynn product and hope you find this information pack comprehensive.

Guarantee

All Wynn equipment is tested before despatch from our works. The Windscreen Wiper System supplied has a 1 year warranty period provided the installation of the system and the subsequent maintenance is in accordance with the installation/maintenance instructions.

We cannot accept any responsibility for the installation of equipment, or damage to the equipment during installation, or normal wear and tear. The guarantee is negated if the equipment is not installed strictly observing the instructions set out in this manual, or not maintained as specified.

The Wiper System is very reliable but to ensure its continued smooth running we recommend that the following guidelines are adhered to:-

Monthly

- Check for wear on all parts subject to friction
- Visual inspection should be made of the blades to ensure that they are still in good condition and replace as soon as there are signs of wear or damage

Annually

- It is recommended that the blades are changed every 12 months

After the Wiper System has been operating in severe weather conditions it is advisable to thoroughly check the unit for signs of wear or damage.

This warranty excludes the wiper blades which are a consumable item and any replacements that are detailed in the manual as part of any regular maintenance requirement.

This guarantee is expressly in lieu of all other guarantees expressed or implied and of all other obligations or liabilities on our part, and we neither assume nor authorise any other person to assume for us any other liability in connection with the sale of our equipment. Faulty equipment must be returned, carriage paid, to our works for examination. Any legal action must be settled in the English courts under English law.

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North West Marine Distributors Ltd

26940 26th Avenue

Aldergrove, BC V4W 4A4, Canada

Phone: (604) 607-7901

Email: info@northwestmarine.ca

www.northwestmarine.ca