THE COMPANY
CHARTER

LEADERS IN THE FIELD
As the leading designers, manufacturers and suppliers of the highest quality ships bridge window wiping/wash systems for the Worlds Maritime Industries our aim is to continually look to and improve the way we work.

CUSTOMER SERVICE
We value our customers. The equipment and service we offer will continue to be at the forefront of the Marine Industry, together with delivery, specification, reliability and value for money.

DESIGN AND ENGINEERING
Our design and engineering philosophy is founded on the pursuit of supplying the products and services that meet the stringent requirements our customers demand.

QUALITY SYSTEMS
To ensure we achieve your standards, we make the effort to keep our quality systems above all the internationally accepted standards.

ABS APPROVED

Clear View Screens 300/343, 350/393 & 400/443 accepted for Lloyds class vessels when glass conforms to BS MA - 25.

NES 501 DEF Stan 61 - 12 pt 18 - 2 and 3
Design & Application Service ............ 4
Units custom designed to utilise any combination of wipers, heaters and windows.

2 Nm ............................................. 5
Small, compact unit for light duty applications.

20 Nm .......................................... 6
Medium duty unit.

30 Nm .......................................... 7
For when rapid and efficient clearing of windows is essential.

50 Nm .......................................... 8
Heavy duty - proven throughout the Marine Industry.

80 Nm Compact ................................. 9
Outstanding performance for high speed vessels.

110 Nm .......................................... 10
For the largest windows on the largest vessels.

20, 30, 50, 80 and 110Nm Electrics .... 11
Circuit diagrams and connections.

Straightline ................................... 12
Parallel wiping system.

Washer Equipment ............................ 14

Clear View Screens ............................ 15
Circular rotating wiper system.

Visi-Plus Sunblinds .......................... 15
Major aid to visibility.

Wiper Arm Extractor Kit ...................... 15

Multi-Function Wiper Switch .............. 15
The alternative to the rotary switch.
Meeting the challenges of rapidly developing technology alongside the stringent demands of the modern Marine Industry, we have a reputation at home and abroad synonymous with quality and reliability.

With the need for good clear visibility an essential safety consideration, ship owners and builders worldwide rely on over seventy years experience in the design and manufacture of wiper systems to meet their specific and individual needs.

We provide a design and application facility second to none. Regardless of the type or size of vessel, our team of design engineers offer clients the best advice and assistance. Whether a craft is in its early stages on the drawing board, or refitting, they will help to achieve considerable savings in installation costs and obtain greatly improved window clearing efficiency.

With improved technology in ship design, the quality and reliability of components is critical for peak performance. Continual sourcing of materials of the highest quality for each purpose built wiper system we engineer, ensures that critical performance levels are always maintained and improved.

With this expertise and approach to meet your specific requirements, choosing us is clearly the best choice for the Marine Industry worldwide.

- Straight Line Wipers
- Pantograph Wipers
- Pendulum Wipers
- Linkage Systems
- Clear View Screens
- Control Panels
- Fresh Water Spray Jets
- Fresh Water Spray Pumps

Call us now.
It can never be too soon to see where you’re going.
Newly introduced the 2Nm is a compact light unit, aimed at the small boat market, where efficient clearing of windows is essential.

This unit is supplied as a fixed arc model which is adjustable after the motor is installed. A single speed motor, 12 and 24 volt DC, it has a self parking facility which can be operated by a toggle switch. Extremely robust, this motor is an ideal alternative to the imports. Construction is of 316 stainless steel.

Pantograph and pendulum arm with blades up to 20 ins. (510mm) are available.

## Wiper Arms and Blades

### Pantograph Arms
- **P5**
  - **Light Duty**
  - **Lengths**
    - 12” to 20” (310mm to 510mm) nom
  - **Drive Head**
    - 12mm
  - **Idler Head**
    - 10mm
  - **Blade Clip**
    - 14mm

### Pendulum Arms
- **F6**
  - **Light Duty**
  - **Lengths**
    - 10” to 20” (260mm to 510mm) nom
  - **Drive Head**
    - 12mm
  - **Blade Clip**
    - 14mm

### Blades
- **B140**
  - **Curved Blade**
  - **Lengths**
    - 12” to 20” (310mm to 510mm) nom

For use with arm types:
- Pendulum: F6
- Pantograph: P5

## Specifications

- **Unit type**: 2Nm
- **Voltage**: 24
- **Arc of Wipe**: 0VA
- **Liner Length**: 075
- **Standard Details**: 1 Speed; Self Parking. 12v and 24v
- **Angles of Arc**: Variable - at stated angles
- **Pantograph Units**: 40º; 55º; 65º; 75º; 90º
- **Pendulum Units**: 40º; 55º; 65º; 75º; 90º; 105º
- **Spindle Centres**: Between Drive Liner & Idler = 50mm
- **Drive Liner**: M20 - Brass Liner / 12mm SS Spindle
- **Liner Overall Length**: Bulkhead Thickness + 65mm
- **Idler Liner**: SS Hex Spacer / 10mm SS Spindle
- **Bracket**: No notation used for Bracket
- **Unit Weight**: Allowing for the maximum arm and blade lengths; 1.4Kgs (3.0 lbs)
- **Optional**: Insulated Earth Return

## Switch Information

### 2Nm Motor Unit

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Starting Current</th>
<th>Running Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>12v DC</td>
<td>2.5 amps</td>
<td>1.5 amp</td>
</tr>
<tr>
<td>24v DC</td>
<td>1.1 amps</td>
<td>0.6 amps</td>
</tr>
</tbody>
</table>

### Wiring the Motor Unit to a 1 Pole / 2 Throw Switch

- **Motor**: Switch
- **31 Black Wire**: position 1
- **53 Blue Wire (single speed)**: position 2
- **53a Grey Wire**: position 3
- **Non Insulated Earth Return**: and negative ship’s supply
- **Insulated Earth Return**: and positive ship’s supply

Current readings are for guidance only.
The 20Nm is a compact unit, aimed at the small boat market, where efficient clearing of windows is essential.

This unit is supplied as a fixed arc or variable arc model, for 12 & 24 volt DC. The standard motor has two speeds and self parking facility which can be operated by a rotary switch, toggle switch or a multi speed/function control switch. Insulated earth return and EMC filter are standard.

Pantograph and pendulum arm with blades up to 24ins. (610mm) are available.

### Wiper Arms and Blades

#### Pantograph Arms

- **P613**
  - Medium Duty
  - **Lengths**
    - Drive Head 12mm
    - Idler Head 10mm
    - Blade Clip 14mm

#### Pendulum Arms

- **F63**
  - Medium Duty
  - **Lengths**
    - Drive Head 12mm
    - Blade Clip 14mm

#### Blades

- **B140**
  - Curved Blade
  - **Lengths**
    - 12” to 24” (310mm to 610mm) nom

For use with arm types:

- Pendulum F63
- Pantograph P613

### Specifications

<table>
<thead>
<tr>
<th>Unit type</th>
<th>Arc of Wipe</th>
<th>Liner Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>20Nm</td>
<td>0VA</td>
<td>OVA 057</td>
</tr>
</tbody>
</table>

- **Standard Details**: 2 Speed; Self Parking; Insulated Earth Return; 12v and 24v
- **Angles of Arc**: Variable - at stated angles
- **Pantograph Units**: 40º; 50º; 60º; 70º; 80º; 90º
- **Pendulum Units**: 40º; 50º; 60º; 70º; 80º; 90º
- **Spindle Centres**: Between Drive Liner & Idler = 50mm
- **Drive Liner**: M20 - Brass Liner/12mm SS Spindle
- **Liner Overall Length**: Bulkhead Thickness + 65mm
- **Idler Liner**: M20 - Brass Liner/20mm SS Spindle
- **Bracket**: No notation used forBracket
- **Unit Weight**: Allowing for the maximum arm and blade lengths; 3.5Kgs (7.7 lbs)
The 30Nm is a compact medium duty unit, aimed at the small boat market, where efficient clearing of windows is essential.

This unit is supplied as a fixed arc or variable arc model, for 12 & 24 volt DC. The standard motor has two speeds and self parking facility which can be operated by a rotary switch, toggle switch or a multi speed/function control switch. Insulated earth return and EMC filter are standard.

Pantograph and pendulum arm with blades up to 28ins. (710mm) are available.

### Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit type</td>
<td>30Nm</td>
</tr>
<tr>
<td>Voltage</td>
<td>24</td>
</tr>
<tr>
<td>Arc of Wipe</td>
<td>090</td>
</tr>
<tr>
<td>Liner Length</td>
<td>125</td>
</tr>
<tr>
<td>Idler</td>
<td>12</td>
</tr>
<tr>
<td>Bracket</td>
<td>C</td>
</tr>
<tr>
<td>Spindle Centres</td>
<td>Between Drive Liner &amp; Idler =50mm</td>
</tr>
<tr>
<td>Drive Liner</td>
<td>M20 - Brass Liner/12mm SS Spindle</td>
</tr>
<tr>
<td>Idler Liner</td>
<td>M20 - Brass Liner/12mm SS Spindle</td>
</tr>
<tr>
<td>Bracket</td>
<td>C - Compact Bracket</td>
</tr>
<tr>
<td>Unit Weight</td>
<td>Allowing for the maximum arm and blade lengths; 4Kgs (8.8lbs)</td>
</tr>
</tbody>
</table>

### Wiper Arms and Blades

#### Pantograph Arms
- **P613**
  - Medium Duty
  - Lengths: 12” to 28” (310mm to 710mm) nom
  - Drive Head: 12mm
  - Idler Head: 10mm
  - Blade Clip: 14mm

#### Pendulum Arms
- **F63**
  - Medium Duty
  - Lengths: 12” to 28” (310mm to 710mm) nom
  - Drive Head: 12mm
  - Blade Clip: 14mm

#### Blades
- **B140**
  - Curved Blade
  - Lengths: 12” to 24” (310mm to 610mm) nom

For use with arm types:
- Pendulum: F63
- Pantograph: P613
For its size the 50Nm is a very powerful unit, adaptable for high speed vessels, workboats and leisure craft, where compact design and outstanding performance are paramount.

This unit is supplied as a fixed arc or variable arc model, for 12 & 24 volt DC. The standard motor has two speeds and self parking facility which can be operated by a rotary switch, toggle switch or a multi speed/function control switch. Insulated earth return and EMC filter are standard.

Pantograph and pendulum arms and blades up to 34ins. (1000mm) are available.

**Specifications**

<table>
<thead>
<tr>
<th>Unit type</th>
<th>50Nm</th>
<th>Liner Length</th>
<th>125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>24</td>
<td>Idler</td>
<td>12</td>
</tr>
<tr>
<td>Arc of Wipe</td>
<td>090</td>
<td>Bracket C</td>
<td></td>
</tr>
</tbody>
</table>

**Pantograph Arms**

- P615
  - Lengths: 12" to 34" (310mm to 860mm) nom
  - Drive Head: 12mm
  - Idler Head: 12mm
  - Blade Clip: 14mm
- P620
  - Lengths: 12" to 34" (310mm to 860mm) nom
  - Drive Head: 12mm
  - Idler Head: 12mm
  - Blade Clip: 20mm

**Pendulum Arms**

- F63
  - Lengths: 12" to 34" (310mm to 860mm) nom
  - Drive Head: 12mm
  - Blade Clip: 14mm
- F63 Medium Duty
  - Lengths: 12" to 34" (310mm to 860mm) nom
  - Drive Head: 12mm
  - Blade Clip: 20mm

**Blades**

- B140 Curved Blade
  - Lengths: 12" to 32" (310mm to 810mm) nom
  - For use with arm types: Pendulum F63, Pantograph P615

**Pendulum Arms**

- F63 Medium Duty
  - Lengths: 12" to 34" (310mm to 860mm) nom
  - Drive Head: 12mm
  - Blade Clip: 14mm

**Angles of Arc**

- Fixed - Compact and Handed Units
- Pendulum Units: 25° to 90° (in 5° increments only)
- Pendulum Units: 25° to 115° (in 5° increments only)

**Spindle Centres**

- Between Drive Liner & Idler =50mm
- Pantograph Units only

**Drive Liner**

- M20 - Brass Liner / 12mm SS Spindle
- Pantograph & Pendulum Units

**Idler Liner**

- M20 - Brass Liner / 12mm SS Spindle
- Pantograph Units only

**Bracket**

- L - Left Hand Bracket; R - Right Hand Bracket;
  - C - Compact Bracket

**Unit Weight**

- Allowing for the maximum arm and blade lengths; 4Kgs (8.8 lbs)

**Standard Details**

- 2 Speed; Self Parking; Insulated Earth Return; 12v and 24v

**Dimensions**

- Liner Overal Length: Bulkhead Thickness + 115/120mm (Compact Units) or 45mm (Handed Units)
- Liners over 125mm are available at extra cost

- Drive Liner: M20 - Brass Liner / 12mm SS Spindle
- Pantograph Units only

- Idler Liner: M20 - Brass Liner / 12mm SS Spindle
- Pantograph Units only

- Bracket: L - Left Hand Bracket; R - Right Hand Bracket;
  - C - Compact Bracket

**50NM Linkage configurations**

- When very wide or multiple windows are to be swept we offer a comprehensive range of swept area solutions utilising the 50NM drive unit operating either two or three arms and blades off one motor.
- This offers customers the benefit of simpler installations as well as cost saving.
80Nm Heavy Duty Compact Wiper Motor

With the ever increasing need for speed and the 24 hour day operation of today's shipping the 80Nm model gives outstanding performance. To ensure a good swept window albeit travelling at 60 knots, the wiper arm design needed to ensure a good blade contact has necessitated the development of the extra heavy duty model.

Supplied as fixed and variable arc models and available for 24 volt DC, the standard motor has two speeds and self parking facility which can be operated by a rotary switch, toggle switch or a multi speed/function control switch. Insulated earth return is standard. Where a higher on board voltage is used, we offer a number of solutions which will utilise this extremely reliable wiper and still offer a competitive package. Pantograph and pendulum arms up to 60 inches (1525mm) are available and blades up to 39 inches (1000mm).

Wiper Arms and Blades

- **Pantograph Arms**
  - **P84** Heavy Duty
  - Lengths: 24” to 60” (610mm to 1525mm) nom
  - Drive Head: 16mm
  - Idler Head: 16mm
  - Blade Clip: 14mm & 20mm

- **Pendulum Arms**
  - **F80** Heavy Duty
  - Lengths: 24” to 60” (610mm to 1525mm) nom
  - Drive Head: 16mm
  - Blade Clip: 14mm
  - **F81** Heavy Duty
  - Lengths: 24” to 60” (610mm to 1525mm) nom
  - Drive Head: 16mm
  - Blade Clip: 20mm

Blades

- **B140** Curved Blade
  - Lengths: 12” to 28” (3105mm to 710mm) nom

  For use with arm types:
  - **Pendulum**: F80, P84
  - **Pantograph**: P84

- **F81** Heavy Duty
  - Lengths: 32” (810mm), 36” (915mm) & 39” (1000mm)

  For use with arm types:
  - **Pendulum**: F81
  - **Pantograph**: P84

Specifications

<table>
<thead>
<tr>
<th>Unit type</th>
<th>80Nm</th>
<th>Liner Length</th>
<th>057</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>24</td>
<td>Idler</td>
<td>16</td>
</tr>
<tr>
<td>Arc of Wipe</td>
<td>090</td>
<td>Bracket</td>
<td>C</td>
</tr>
</tbody>
</table>

- **Standard Details**
  - 2 Speed; Self Parking; Insulated Earth Return; 12v and 24v

- **Angles of Arc**
  - **Fixed** - Compact and Handed Units
    - Pantograph Units: 25º to 90º (in 5º increments only)
    - Pendulum Units: 25º to 115º (in 5º increments only)
  - **Variable** - Compact and Handed Units
    - Pantograph Units: 40º to 90º (in 5º increments only)
    - Pendulum Units: 40º to 90º (in 5º increments only)

- **Spindle Centres**
  - Between Drive Liner & Idler = 60mm

- **Drive Liner**
  - M26 - Brass Liner/16mm SS Spindle

- **Liner Overall Length**
  - Bulkhead Thickness + 55mm

- **Idler Liner**
  - M20 - Brass Liner/16mm SS Spindle

- **Bracket**
  - L - Left Hand Bracket; R - Right Hand Bracket; C - Compact Bracket

- **Unit Weight**
  - Allowing for the maximum arm and blade lengths; 8Kgs (17.6 lbs)

When very wide or multiple windows are to be swept we offer a comprehensive range of swept area solutions utilising the 80NM drive unit operating either two or three arms and blades off one motor. This offers customers the benefit of simpler installations as well as cost saving.
The power of this system is awesome. Designed for the very largest ship windows, the 110Nm gives near silent continual performance.

Supplied as a fixed arc model and available for 24 volt DC, this high powered motor has two speeds and self parking facility which can be operated by a rotary switch, toggle switch or a multi speed/function control switch.

Pantograph and pendulum arms up to 72 inches (1829mm) are available and blades up to 78 inches (1981mm).

### Wiper Arms and Blades

- **Pantograph Arms**
  - **P84**
  - **Heavy Duty**
  - **Lengths**: 24” to 72” (610mm to 1830mm) nom
  - **Drive Head**: 16mm
  - **Idler Head**: 16mm
  - **Blade Clip**: 14mm & 20mm

- **Pendulum Arms**
  - **F80**
  - **Heavy Duty**
  - **Lengths**: 24” to 72” (610mm to 1830mm) nom
  - **Drive Head**: 16mm
  - **Blade Clip**: 14mm

  - **F81**
  - **Heavy Duty**
  - **Lengths**: 24” to 72” (610mm to 1830mm) nom
  - **Drive Head**: 16mm
  - **Blade Clip**: 20mm

- **Blades**
  - **B140**
  - **Curved Blade**
  - **Lengths**: 12” to 28” (310mm to 710mm) nom

  For use with arm types:
  - **Pantograph** P84
  - **P84**

  - **B140**
  - **Curved Blade**
  - **Lengths**: 32” (810mm), 36” (915mm), 39” (1000mm), 52” (1320mm), 56” (1420mm), 64” (1625mm), 72” (1830mm), 78” (1980mm)

  For use with arm types:
  - **Pantograph** P81
  - **P84**

### Specifications

- **Unit type**: 110Nm
- **Liner Length**: 057
- **Voltage**: 24
- **Arc of Wipe**: 090
- **Idler**: 16
- **Bracket**: R
- **Spindle Centres**: Between Drive Liner & Idler = 60mm

- **Drive Liner**
  - **M26 - Brass Liner/16mm SS Spindle**

- **Idler Liner**
  - **M26 - Brass Liner/16mm SS Spindle**

- **Bracket**
  - **L - Left Hand Bracket; R - Right Hand Bracket**

- **Unit Weight**
  - Allowing for the maximum arm and blade lengths; 9.2Kgs (20.0 lbs)

- **Standard Details**
  - 2 Speed; Self Parking; Insulated Earth Return; 24v

- **Angles of Arc**
  - **Fixed - Compact and Handed Units**
  - **Pantograph Units**: 45º to 90º (in 5º increments only)
  - **Pendulum Units**: 45º to 115º (in 5º increments only)

- **Drive Liner**
  - **M26 - Brass Liner/16mm SS Spindle**

- **Pantograph & Pendulum Units**

- **Liner Overall Length**
  - Bulkhead Thickness + 55mm

- **Idler Liner**
  - **M26 - Brass Liner/16mm SS Spindle**

- **Bracket**
  - **L - Left Hand Bracket; R - Right Hand Bracket**

- **Unit Weight**
  - Allowing for the maximum arm and blade lengths; 9.2Kgs (20.0 lbs)
Non-intermittent Rotary Switch
12v:24v 10094800

Wiring the Motor Unit to a Rotary Switch
Motor Switch
31b (self park reversal feed) position P
53 (low speed) position L
53a (self park) position 8 and positive DC ship’s supply
53b (high speed) position H
31 (earth connection) the negative ship’s supply
Washer Pump position W

Toggle Switch & Plate.
Dimensions: w20 h38
12v:24v 90041400

Wiring the Motor Unit to a Toggle Switch
Motor Switch
31b (self park reversal feed) position 8
53 (low speed) position 4
53a (self park) position 6 and positive DC ship’s supply
53b (high speed) position 2
31 (earth connection) the negative ship’s supply

Multi Speed Control Switch and Plate.
Dimensions: w83 h66
12v - 90041000
24v - 90041100

Wiring the Motor Unit to a Multi Speed Control Switch
Motor Switch
31b (self park reversal feed) to the BLUE wire
53 (low speed) to the YELLOW wire
53a (self park) both RED wires and positive DC ship’s supply
53b (high speed) to the WHITE wire
31 (earth connection) to the BLACK wire
Washer Pump to BROWN wire

20Nm Motor Unit
Voltage Starting Current Running Current
12v DC 5 amps 3 amp
24v DC 3 amps 2 amp

30Nm Motor Unit
Voltage Starting Current Running Current
12v DC 5 amps 3 amp
24v DC 3 amps 2 amp

50Nm Motor Unit
Voltage Starting Current Running Current
12v DC 5 amps 3 amp
24v DC 3 amps 2 amp

80Nm Motor Unit
Voltage Starting Current Running Current
12v DC 9 amps 5 amp
24v DC 5 amps 2 amp

110Nm Motor Unit
Voltage Starting Current Running Current
24v 5 amps 2 amp

Current readings are for guidance only.
The Seawiper now incorporates the improved MKIII drive system which allows for smoother running at higher speed and relieves strain off the drive belt thus ensuring longer life. The main frame is a heavy gauge aluminium extrusion to provide maximum rigidity. Stroke lengths have been calculated to suit most windows. The wiper casing has been centrally located around the mechanism. This is a great advantage where wipers are being fitted adjacent to each other across a bank of bridge windows. The carriage assembly is driven by a unique attachment that does NOT weaken the drive belt. M.O.D.(N) approval of self regulating De-icers. De-Icer output 49W/ft @ OºF (average). De-icers are contained within the wiper casing to provide maximum heat. Voltages 24v DC, 110/120v and 220/240v AC available. Wiper motor and gearbox fit onto the drive shaft in any position through 360º.

Wipers can be mounted above or below the window. Finish: white on anodised marine grade aluminium. All materials used are highly resistant to the corrosive effects of sea water.

Straight Line Arms and Blades

<table>
<thead>
<tr>
<th>Straightline Arms</th>
<th>SLA</th>
<th>RSLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lengths</td>
<td>10” to 28” (260mm to 710mm)</td>
<td>12” to 28” (310mm to 710mm)</td>
</tr>
<tr>
<td>Drive Head</td>
<td>12mm</td>
<td>12mm</td>
</tr>
<tr>
<td>Blade Clip</td>
<td>14mm</td>
<td>14mm</td>
</tr>
</tbody>
</table>

Blades

<table>
<thead>
<tr>
<th>FB</th>
<th>Flat Blade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lengths</td>
<td>10” to 28” (260mm to 710mm) max</td>
</tr>
<tr>
<td>Drive Head</td>
<td>12mm</td>
</tr>
<tr>
<td>Blade Clip</td>
<td>14mm</td>
</tr>
</tbody>
</table>

For use with arm types:

- Straightline SLA & RSLA

Standard Duty Straightline Wiper

To meet the needs of customers who only require medium duty straight line wipers, we now offer our normal heavy duty without:- Control Unit, Water Spray Jets or De-Icing Heater.

This provides for a standard duty wiper at a very economical price whilst retaining all the advantages of a heavy duty system.

Naval Type M.O.D. (N) SLS or SLT

NES 501 DEF Stan 61 - 12pt 18 - 2 and 3

Special M.O.D. (N) Heavy Duty Naval Type Straight Line Bridge Window Wipers are available for front line ships.

SLS Single arm/blade unit

Details on request.

SLT Twin arm/blade unit

Details on request.

MOD (N) LPH Helicopter Carrier built by V.S.E.L fitted with Hepworth naval type straight line wipers. Photo: V.S.E.L.

One of the Type 23 frigates fitted with Hepworth straight line wipers. Photo: Yarrow Shipbuilders.
Specifications

Heavy Duty Unit Details: SLS and SLT
EMC filter; fitted with de-icer and fresh water spray jets

Standard Duty Unit Details: SLD and SLT
As Heavy Duty but no de-icer or fresh water spray jets

Bulkhead Thickness:
The SLD, SLS and SLT units fit bulkheads of minimum 5mm thick to maximum 15mm thick. For thicker bulkheads, special connectors are available at extra cost. Details on request.

Unit Weight:
Allowing for the maximum arm and blade lengths:
SLD unit: 8.0 Kgs (17.6 lbs)
SLS unit: 9.0 Kgs (19 lbs)
SLT unit 11.4 Kgs (25 lbs)

Electrical Details

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Starting Current</th>
<th>Running Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>24v DC</td>
<td>4 amps</td>
<td>2 amp</td>
</tr>
<tr>
<td>110v DC</td>
<td>2 amps</td>
<td>0.5 amps</td>
</tr>
<tr>
<td>220v DC</td>
<td>2 amps</td>
<td>0.5 amps</td>
</tr>
</tbody>
</table>

Note: Current readings are for guidance only.

Voltage Starting Current Running Current
24v DC 4 amps 2 amp
110v DC 2 amps 0.5 amps
220v DC 2 amps 0.5 amps

SLS & SLD single blade
- 300 375 430 490 560 640 755 835 920 1070
SLDT & SLT twin blade
- - - - - - - - - - 1150 1350 1525 1675 1850 2185
O/A cover length
505 555 655 705 755 855 955 1055 1105 1255 1355 1505 1755 1905 2055 2355
Wash pipe endings
1 1 1 1 1 1 1 2 2 2 2 2 2

Specifications

Note: Straightline cover lengths must not exceed the window width, as the distance between the windows may not be enough to allow for longer units.

SLT 45"- 84" Twin Installation

<table>
<thead>
<tr>
<th>Nominal Stroke</th>
<th>Fixing Crs</th>
<th>O/A Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>45&quot;</td>
<td>1150</td>
<td>526 1355</td>
</tr>
<tr>
<td>52&quot;</td>
<td>1300</td>
<td>603 1505</td>
</tr>
<tr>
<td>60&quot;</td>
<td>1525</td>
<td>717 1755</td>
</tr>
<tr>
<td>66&quot;</td>
<td>1675</td>
<td>768 1905</td>
</tr>
<tr>
<td>72&quot;</td>
<td>1830</td>
<td>879 2055</td>
</tr>
<tr>
<td>84&quot;</td>
<td>2135</td>
<td>1027 2355</td>
</tr>
</tbody>
</table>

SLS 12"- 42" Single Installation

<table>
<thead>
<tr>
<th>Nominal Stroke</th>
<th>Fixing Crs</th>
<th>O/A Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>12&quot;</td>
<td>300</td>
<td>386 505</td>
</tr>
<tr>
<td>15&quot;</td>
<td>375</td>
<td>436 555</td>
</tr>
<tr>
<td>17&quot;</td>
<td>430</td>
<td>536 655</td>
</tr>
<tr>
<td>19&quot;</td>
<td>490</td>
<td>586 705</td>
</tr>
<tr>
<td>22&quot;</td>
<td>560</td>
<td>636 755</td>
</tr>
<tr>
<td>25&quot;</td>
<td>640</td>
<td>736 855</td>
</tr>
<tr>
<td>30&quot;</td>
<td>755</td>
<td>836 955</td>
</tr>
<tr>
<td>33&quot;</td>
<td>835</td>
<td>936 1055</td>
</tr>
<tr>
<td>36&quot;</td>
<td>920</td>
<td>986 1105</td>
</tr>
<tr>
<td>42&quot;</td>
<td>1070</td>
<td>1134 1255</td>
</tr>
</tbody>
</table>

Unit type
SLD SLS SLT
Stroke Length
12 12 45
Voltage
24 110 220

Externally mounted motors are also available
A complete range of electric water pumps are available for single or multiple outlets. For use with ships own supplies, a range of electric or pneumatic solenoids are also offered. For the harsh environment, the heated water jet can be supplied.

### Accessories

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>602504</td>
<td>Nylon Bulkhead Connector (state bulkhead thickness)</td>
</tr>
<tr>
<td>900747</td>
<td>Stainless Steel Bulkhead Connector (state bulkhead thickness)</td>
</tr>
<tr>
<td>15000500</td>
<td>Nylon T-Piece</td>
</tr>
<tr>
<td>80200400</td>
<td>Rubber Tube Ø3 Bore</td>
</tr>
<tr>
<td>15012001</td>
<td>Connector for Submersible Pump</td>
</tr>
<tr>
<td>15001400</td>
<td>Non Return Valve</td>
</tr>
</tbody>
</table>

Also available:

- 90017000 Non Heated Water Jet
- Electrically Heated Water Jet
  - 90017501 24v
  - 90017502 110v
  - 90017503 220v
- Water Bottle
  - Available in 5 litre (illustrated), 10, 15 and 90 litre capacities.
  - 15010000 Bottle Only.
  - 150100/1 C/W 24v Pump
  - 150100/3 C/W 12v Pump

### 15011600 Heavy Duty Pump

- Voltage: 24v DC
- Amps: 2.1A
- Fuse: 5 amps
- Max. Output: 10 litre/min. 2.2 gal./min.
- Weight: 1.93 kilograms 4lb. 4oz
- Material: Glass filled polypropylene; fire retardant polyester; nitrile and EPDM rubber; zinc plated steel; sintered alloy. *at 20FT (6M) Head.

### 15011400 Submersible Pump

- Voltage: 12v DC
- Amps: 2.3A
- Fuse: 5 amps

### 15011500 Submersible Pump

- Voltage: 24v DC
- Amps: 1.2A
- Fuse: 3 amps
- Max. Output: 12 ltr./min. 2.6 gal./min.
- Weight: 150 grams 5.25 oz.
- Material: ABS; Stainless steel; Neoprene rubber.

### 15012300 In-Line Pump

- Voltage: 24v DC
- Amps: 2.3A
- Fuse: 5 amps

### 15031000 In-Line Pump

- Voltage: 12v DC
- Amps: 1.2A
- Fuse: 3 amps
- Max. Output: 1000cc/min. 13.2 gal.hour.
- Material: Glass re-inforced nylon; Brass BS 265.

### 15079800 Bottle Pump

- Voltage: 12v DC
- Amps: 2.3A
- Fuse: 5 amps

### 15029900 Bottle Pumps

- Voltage: 24v DC
- Amps: 1.2A
- Fuse: 3 amps
- Max. Output: 1000cc/min. 13.2 gal./hour.
- Material: Glass re-inforced nylon; Brass BS 265.
Additional Products Available

Clear View Screens
A range of well proven and superior clear view screens of the highest quality.
With or without de-icing heater these screens can be supplied with or without window glass if required.
Gas tight also available.

Wiper Arm Extractor Kit
We now have available a neat gadget - officially referred to as a Wiper Arm Extractor.
This remarkably simple device allows you to remove all the wiper arms within our range with absolutely minimal effort and no damage to the wiper assembly or arm.

Visi-Plus Sunblinds
Visi-Plus Sunblinds have been specially developed to improve visibility and safety for all ships and rivercraft.
Visi-Blinds are available using grey / grey transparent film which reflects heat, ultraviolet light and the sun’s glare.
Installation is extremely simple; the brackets supplied are fixed directly above each window and the complete blind is then locked into position.

Multi-Function Wiper Switch
A Standard Rocker Size Switch, the Multi-Function Wiper Switch has all the functions of our Standard Rotary Switch.
24 volt DC.

This brochure is offered as a guide to the range of products we supply. Descriptions, illustrations, photographs and specifications are intended only as a guide. The manufacturer reserves the right to alter design or specification without prior notice, and add or delete products as necessary. E. & O. E.

Many products are simple to install (detailed installation instructions are available on our website www.b-hepworth.com), but certain items must be installed, or the installation inspected by, a competent, qualified engineer or technician.