A. POWER BOATS

i. Reversing Pumps

   How To Order

   **OCT-AF-12-12-1706-HK**

   - **Product Code** (not always used)
   - **Market Code**
     - AF = Aftermarket
     - OE = OEM
   - **Max Flow Per Min**
     - 10 = 1000 cc (60 ci)
     - 12 = 1200 cc (73 ci)
     - 20 = 2000 cc (120 ci)
   - **Volts DC**
     - 12 = 12v
     - 24 = 24v
     - 32 = 32v

   **Type of Accessory**
   - HK = SAE Hose Kit
   - UB = Unbalanced Valve**

   **Type of Manifold - Ports**
   - 1703 = ¼ NPT *
   - 1704 = ¼ SAE
   - 1714 = ½ NPT – Shut Off
   - 1706 = ¾ SAE – Shut Off
   - BP12 = 12v # 8 Bypass Valve
   - BP24 = 24v # 8 Bypass Valve

* 1703 Manifold includes 3/8 dia compression fittings
** UB - Unbalanced Valve fits to pump to adapt flow to unbalanced steering cylinder

ii. Type A Continuous Running Pumps

   How To Order

   **OCT-AF-CRA-02-12-P**

   - **Product Code** (not always used)
   - **Market Code**
     - AF = Aftermarket
     - OE = OEM
   - **Model Type**
   - **Flow Per Min**
     - 02 = 2000 cc (120 ci)
     - 03 = 3000 cc (180 ci)
     - 04 = 4000 cc (240 ci)
   - **Volts DC**
     - 12 = 12v
     - 24 = 24v
     - 32 = 32v

   **Type of Accessory**
   - P = Pressure Gauge
   - F = Flow Control*
   - R = Relief Valve

* Flow Control Option only available on 2000cc (120 ci) flow models
ii. Type B Continuous Running Pumps

- How To Order

**OCT-AF-CRB-02-12-12-A**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Market Code</th>
<th>Options</th>
<th>Solenoid Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(not always used)</td>
<td>AF = Aftermarket</td>
<td>A = Single Speed</td>
<td>12 = 12v dc</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B = Single Speed with Flow Control**</td>
<td>24 = 24v dc</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C = 2 Speed with Flow Control on Low Speed**</td>
<td>32 = 32v dc</td>
</tr>
</tbody>
</table>

**Flow Rates are approximate depending upon motor selection**

**Option B & C not available on all Flow Rates – Consult Factory**

B. SAIL BOATS

i. 38mm Bore Linear Drives

- How To Order

**OCT-AF-12-12-LAR-12**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Market Code</th>
<th>Stroke</th>
<th>Model Style</th>
<th>Volts DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>(not always used)</td>
<td>AF = Aftermarket</td>
<td>7 = 7 in (18cm)</td>
<td>LAR = Remote Style</td>
<td>12 = 12v</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 = 12 in (30 cm)</td>
<td>LAM= Mounted Style</td>
<td>24 = 24v</td>
</tr>
</tbody>
</table>

**Max Flow Per Min**

- 10 = 1000 cc (60 ci)
- 12 = 1200 cc (73 ci)

**Flow Rates**

- 02 = 2000 cc (120 ci)
- 03 = 3000 cc (180 ci)
- 04 = 4000 cc (240 ci)
- 06 = 6000 cc (365 ci)
- 08 = 8000 cc (488 ci)
- 10 = 10,000 cc (610 ci)
- 12 = 12,000 cc (732 ci)

- Motor Voltage
  - 12 = 12v dc
  - 24 = 24v dc
  - 32 = 32v dc
  - 11S = 110/220 v ac
  - 22T = 220/440/575 v ac

**Solenoid Voltage**

- 12 = 12v dc
- 24 = 24v dc
- 32 = 32v dc
- 11 = 110 v ac
- 22 = 220 v ac

**Model Type Options**

- A = Single Speed
- B = Single Speed with Flow Control**
- C = 2 Speed with Flow Control on Low Speed**

**CRB Pump**

**38mm BORE - SPECIFICATIONS AND DIMENSIONS**

<table>
<thead>
<tr>
<th>Stroke</th>
<th>Tiller Radius for +/- 35 degrees</th>
<th>Peak Thrust</th>
<th>Stroke Time</th>
<th>Common Vessel Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>in</td>
<td>cm</td>
<td>lbs</td>
<td>Seconds</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>18</td>
<td>15</td>
<td>8</td>
<td>Up to 45ft (14m)</td>
</tr>
<tr>
<td>12</td>
<td>30</td>
<td>25</td>
<td>14</td>
<td>Up to 60 ft (18m)</td>
</tr>
</tbody>
</table>

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S & I HYDRAULICS & ACCESSORIES.doc Page 2 of 12 Subject to change without notice
ii. 45mm Bore Linear Drive

- How To Order

**OCT-AF-20-12-LAR-12**

<table>
<thead>
<tr>
<th>Product Code (not always used)</th>
<th>Stroke</th>
<th>Volts DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF = Aftermarket</td>
<td>12 in (30 cm)</td>
<td>12 = 12v, 24 = 24v</td>
</tr>
</tbody>
</table>

**Max Flow Per Min**

20 = 2000 cc (120 ci)

**Market Code**

AF = Aftermarket

**Model Style**

LAR = Remote Style

### 45mm BORE - SPECIFICATIONS AND DIMENSIONS

<table>
<thead>
<tr>
<th>Stroke</th>
<th>Tiller Radius for +/- 35 degrees</th>
<th>Peak Thrust</th>
<th>Stroke Time</th>
<th>Common Vessel Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>in</td>
<td>cm</td>
<td>in</td>
<td>cm</td>
<td>lbs</td>
</tr>
<tr>
<td>12</td>
<td>30</td>
<td>10</td>
<td>25</td>
<td>1320</td>
</tr>
</tbody>
</table>

iii. Heavy Duty 45mm Bore Linear Drive

- How To Order

**OCT-AF-CRA-02-12-LAR-12**

<table>
<thead>
<tr>
<th>Product Code (not always used)</th>
<th>Stroke</th>
<th>Volts DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF = Aftermarket</td>
<td>12 in (30 cm)</td>
<td>12 = 12v, 24 = 24v</td>
</tr>
</tbody>
</table>

**Flow Per Min**

20 = 2000 cc (120 ci)

**Market Code**

AF = Aftermarket

**Model Type**

LAR = Remote Style

### HEAVY DUTY - 45mm BORE - SPECIFICATIONS AND DIMENSIONS

<table>
<thead>
<tr>
<th>Stroke</th>
<th>Tiller Radius for +/- 35 degrees</th>
<th>Peak Thrust</th>
<th>Stroke Time</th>
<th>Vessel Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>in</td>
<td>cm</td>
<td>in</td>
<td>cm</td>
<td>lbs</td>
</tr>
<tr>
<td>12</td>
<td>30</td>
<td>10</td>
<td>25</td>
<td>1320</td>
</tr>
</tbody>
</table>
C. MODULAR ACCESSORY KITS

i. For Reversing Pumps

a. Manifolds
   • How To Order
     
     For ¼ NPT Ports – Order OC17SUK12
     For ¼ SAE Ports – Order OC17SUK13

b. Shut Off Valve Manifolds
   • How To Order
     
     For ¼ NPT Ports – Order OC17SUK04
     For ¼ SAE Ports – Order OC17SUK05

c. # 8 Bypass Valve Manifolds
   • How To Order
     
     For 12 volts dc – Order OC17SUK01
     For 24 volts dc – Order OC17SUK02

d. Unbalanced Valve
   • How To Order
     
     For All Reversing Pump – Order OC17SUK03
ii. For Linear Drives

a. 38mm Bore Cylinder Assemblies

- How To Order

  For 7 inch (18cm) stroke – Order OC16SUK05
  For 12 inch (30cm) stroke – Order OC16SUK06

b. 45mm Bore Cylinder Assemblies

- How To Order

  For 12 inch (30cm) stroke – Order OC16SUK07

38mm Bore Cylinder Assembly

45mm Bore Cylinder Assembly

c. 3/8 Bore - SAE Hose Assemblies
   (rotatable SAE female fittings both ends)

- How To Order

  For 10 inch (26cm) long – Order OC1623
  For 12.5 inch (31.5cm) long – Order OC1622
  For 24 inch (61cm) long – Order OC1621

3/8 Bore - SAE Hose Assembly
iii. Miscellaneous

a. Constant Flow Regulator Valve (for adding autopilot steering control to ‘Orbitrol’ style steering systems)

- How To Order

  For 600 cc (0.15 gal) nominal flow – 12v – Order OC17SUK19
  For 600 cc (0.15 gal) nominal flow – 24v – Order OC17SUK20
  For 2000 cc (0.50 gal) nominal flow – 12v – Order OC17SUK17
  For 2000 cc (0.50 gal) nominal flow – 24v – Order OC17SUK18
  For 4000 cc (1.00 gal) nominal flow – 12v – Order OC17SUK21
  For 4000 cc (1.00 gal) nominal flow – 24v – Order OC17SUK22

b. #10 Bypass Valve (for direct mount onto steering cylinder)

- How To Order

  For 12 volts dc - Order OC17SUK15
  For 24 volts dc – Order OC17SUK16

c. ¼ Hose Assemblies (for use with reversing pump manifolds)

- How To Order

  SAE male fixed – SAE female rotatable x 18” (48cm) - Order OC17SUK06
  NPT male fixed – NPT female fixed x 18” (48cm) - Order OC17SUK07
  NPT male fixed – NPT female fixed x 6” (16cm) - Order OC17SUK08
D. SERVICE PARTS

i. For Reversing Pumps

a. Motor Brush Kit (for all reversing pumps)
   - How To Order
     - For Standard Motor Brush Assy Kit – Order OC17SUK10
     - For CE (Europe) Motor Brush Assy Kit – Order OC17SUK11

b. Pump Module
   - How To Order
     - For 1000cc/minute Pumpset – Order OC14SUK23
     - For 1200cc/minute Pumpset – Order OC14SUK24
     - For 2000cc/minute Pumpset – Order OC14SUK25

c. Motor Module
   - How To Order
     - Type 1 - CE (Europe) 12 volt 1000cc/minute Pumpset – Order OC14SUK20
     - Type 1 - CE (Europe) 12 volt 1200cc/minute Pumpset – Order OC14SUK20
     - Type 2 - CE (Europe) 24 volt 1000cc/minute Pumpset – Order OC14SUK21
     - Type 2 - CE (Europe) 24 volt 1200cc/minute Pumpset – Order OC14SUK22
     - Type 2 - CE (Europe) 24 volt 2000cc/minute Pumpset – Order OC14SUK22
     - Type 2 - 32 volt 1000cc/minute Pumpset – Order OC14SUK19
     - Type 2 - 32 volt 1200cc/minute Pumpset – Order OC14SUK19
     - Type 2 - 32 volt 2000cc/minute Pumpset – Order OC14SUK19

d. Seal Kit (for all reversing pumps)
   - How To Order
     - For Reversing Pump Seal Kit – Order OC14SUK26

e. Motor Mount Assembly (“Omega” rubber feet - all reversing pumps)
   - How To Order
     - For Motor Mount Assembly Kit – Order OC14SUK27
### ii. Type A Continuous Running Pumps

a. Motor Brush Kit (for all CRA pumps)
   - How To Order
     
     For Motor Brush Assy Kit – Order OC17SUK11

b. Motor Module
   - How To Order
     
     For 12 volt CRA Pumpset – Order OC19SUK01
     For 24 volt CRA Pumpset – Order OC19SUK02
     For 32 volt CRA Pumpset – Order OC19SUK03

c. Pump Module
   - How To Order
     
     For 2000cc/minute Pumpset – Order OC19SUK06
     For 3000cc/minute Pumpset – Order OC19SUK07
     For 4000cc/minute Pumpset – Order OC19SUK08

d. Starter Relay
   - How To Order
     
     For 12 volt – Order OC1912
     For 24 volt – Order OC1913
     For 32 volt – Order OC1913

e. Steering Cartridge Valve
   - How To Order
     
     For All Pumps – Order OC1920
f. Steering Control Solenoid Coil
   - How To Order
     For 12 volt – Order OC1713
     For 24 volt – Order OC1714
     For 32 volt – Order OC1715


g. Electrical Circuit Breaker
   - How To Order
     For 10 amp – Order OC1915
     For 15 amp – Order OC1916
     For 20 amp – Order OC1917
     For 25 amp – Order OC1918
     For 30 amp – Order OC1919


h. Oil Reservoir Tank - Electrical Cover
   - How To Order
     For Oil Reservoir Tank – Order OC1906
     For Electrical Cover – Order OC1906A

i. Seal Kit (for all Type A continuous running pumps)
   - How To Order
     For CRA Seal Kit – Order OC19SUK09

iii. Type B Continuous Running Pumps
   a. Consult Factory For All Service Items

iv. For 38mm Bore Linear Drives
   a. Motor Brush Kit
   b. Motor Module
   c. Pump Module
   d. Pump Seal Kit
   e. Motor Mount Assembly

   \[ \text{Same as Reversing Pump} \]
f. # 8 Bypass Cartridge Valve
   - How To Order
     Standard # 8 Valve – Order OC1712

38mm Bore Linear Drive
Bypass Cartridge Valve


g. # 8 Bypass Control Solenoid Coil
   - How To Order
     For 12 volt – Order OC1713
     For 24 volt – Order OC1714

38mm Bore Linear Drive
Bypass Control Solenoid Coil

h. Motor Mount Assembly ("figure 8" rubber feet -for Mounted Style)
   - How To Order
     For Motor Mount Assembly Kit (figure 8” – Order OC16SUK11

38mm Bore Linear Drive
Motor Mount Assembly (figure 8)

i. 38mm Bore Cylinder Seal Kit
   - How To Order
     Order OC16SUK08

j. # 8 Bypass Valve Seal Kit
   - How To Order
     Order OC17SUK14

v. For 45mm Bore Linear Drive
   a. Motor Brush Kit
   b. Motor Module
   c. Pump Module
   d. Pump Seal Kit
   e. Motor Mount Assembly

   Same as Reversing Pump
f. #8 Bypass Cartridge Valve
   - How To Order
     Standard #8 Valve – Order OC1712

---

#8 Bypass Cartridge Valve

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g. #8 Bypass Control Solenoid Coil
   - How To Order
     For 12 volt – Order OC1713
     For 24 volt – Order OC1714

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#8 Bypass Control Solenoid Coil

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h. 45mm Bore Cylinder Seal Kit
   - How To Order
     Order OC16SUK09

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i. #8 Bypass Valve Seal Kit
   - How To Order
     Order OC17SUK14

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vi. For Heavy Duty 45mm Bore Linear Drive

   a. Motor Brush Kit
   b. Motor Module
   c. Pump Module
   d. Starter Relay
   e. Steering Cartridge Valve
   f. Steering Control Solenoid Coil
   g. Electrical Circuit Breaker
   h. Oil Reservoir – Electrical Cover
   i. Seal Kit – CRA Pumpset

| Same as Type A Continuous Running Pump |

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j. # 10 Bypass Cartridge Valve
   - How To Order
     Standard # 10 Valve – Order OC1753

k. # 10 Bypass Control Solenoid Coil
   - How To Order
     For 12 volt – Order OC1754
     For 24 volt – Order OC1756

l. 45mm Bore Cylinder Seal Kit
   - How To Order
     Order OC16SUK09