INDUSTRIAL FLUID POWER COMPONENTS
AND SYSTEMS

RS SERIES

Rotor Shear™ Zero Leakage Rotary Valves

RS12-M

RS12-A
RS Series
Rotor Shear™ Zero Leakage Rotary Valves

Standard Features
- Original Rotor Shear™ Technology
- High Velocity Flow
- Tolerates Contaminates
- Low Handle Load at High Pressures
- Spring Return Option
- Low Pressure Drop

Applications
- Land-Based and Offshore Drilling Equipment
- Steel Mills
- Nitrogen Charging Panels
- Refineries and Chemical Processing Plants
- Power Generation Facilities

Specifications
- **Working Pressure**: 3,000 psi (207 bar) Hydraulic Oil or Lubricated Water
- **Flow Capacity**: 75 gpm (284 l/min)
- **Back Pressure**: Must not exceed 250 psi (17.2 bar) at return port for satisfactory operation
- **Pressure Drop**: 14 psi (0.96 bar) at 20 ft/sec
- **Proof Pressure**: 1-1/2 times working pressure except at return port
- **Burst Pressure**: 2-1/2 times working pressure except at return port
- **Media Temperature Range**: -40° to +250°F (-40° to +121°C)

Materials
- **Rotor**: Stainless Steel
- **Pressure Seals**: Stainless Steel
- **Shaft**: Stainless Steel
- **Body**: Bronze
- **Housing**: Ductile Iron
- **Standard O-ring**: Buna N
- **Weight**: 21.5 lbs (9.8 kg)
### Dimensional Data

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G Dia.</th>
<th>H</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4” &amp; 1”</td>
<td>116.8 (4.6)</td>
<td>254.0 (10.0)</td>
<td>221.0 (8.7)</td>
<td>91.4 (3.6)</td>
<td>121.9 (4.8)</td>
<td>33.0 (1.3)</td>
<td>25.4 (1.0)</td>
<td>132.1 (5.2)</td>
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</table>

Units: mm (inches)

### Rotor Flow Patterns

**B Rotor**
- Blocked Center
- 4-Way 3-Position
- Closed Center
- 3 position detent
  (Also called Selector)

**C Rotor**
- Tandem Center
- 4-Way 3-Position
- 3 position detent

**D Rotor**
- Selector
- 3-Way 3-Position
- Bypass
- 3 position detent
  (Also called Diverter)

**F Rotor**
- Vented Center
- 4-Way 3-Position
- 3 position detent
  (Also called Manipulator)

**T Rotor**
- Pressure Center
- 4-Way 3-Position
- 3 position detent
# RS Series
## Rotor Shear™ Zero Leakage Rotary Valves
### RS 12A - Parts

#### See Following Page for Part#’s

<table>
<thead>
<tr>
<th>No.</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>RS12-A</td>
<td>Actuated Housing Assembly</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>RS12B-16FP</td>
<td>Actuated Housing Assembly</td>
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<tr>
<td>3</td>
<td>RS12-SS</td>
<td>Rotor Seal 3000 psi</td>
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<tr>
<td>4</td>
<td>RS12-WW</td>
<td>Wave Washer</td>
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<tr>
<td>5</td>
<td>243B70</td>
<td>O’Ring RS12B</td>
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<tr>
<td>6</td>
<td>117B70</td>
<td>O’Ring RS12SS</td>
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<td>7</td>
<td>117ST</td>
<td>TFE Back Up RS12</td>
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<tr>
<td>8</td>
<td>339B70</td>
<td>O’Ring H Rotor</td>
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<tr>
<td>9</td>
<td>1/2-13NUT</td>
<td>GR8 Zinc</td>
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<tr>
<td>10</td>
<td>1/2LCKWASHER</td>
<td>GR8 Zinc</td>
<td>4</td>
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<td>11</td>
<td>1/2-13x3.5HHC</td>
<td>GR8 Zinc PL</td>
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<tr>
<td>12</td>
<td>RS12-BH</td>
<td>Blocked H Rotor (Assembly)</td>
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<td>13</td>
<td>RS12-BR-H</td>
<td>Blocked H Rotor (Rotor Only)</td>
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<tr>
<td>14</td>
<td>RS12-BB</td>
<td>Blocked B Rotor (Assembly)</td>
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<td>15</td>
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<td>Blocked B Rotor (Rotor Only)</td>
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<tr>
<td>16</td>
<td>AS-4565</td>
<td>Washer (Inner)</td>
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<tr>
<td>17</td>
<td>NTB-4565</td>
<td>Needle Bearing (Inner)</td>
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<td>AS-6590</td>
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<td>Roller Bearing</td>
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<td>21</td>
<td>212B70</td>
<td>O’Ring Shaft</td>
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<td>22</td>
<td>115B70</td>
<td>O’Ring Shaft</td>
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<td>23</td>
<td>RS12-MS</td>
<td>Mounting Stud</td>
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<td>RS12-MSS</td>
<td>Mounting Stud Short</td>
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<td>25</td>
<td>1/4-20x1/3</td>
<td>Full Dog Plated</td>
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<tr>
<td>26</td>
<td>RS12-AMP</td>
<td>A32DA Mounting Plate</td>
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<td>27</td>
<td>RS12-NW</td>
<td>Nylon Washer</td>
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<tr>
<td>28</td>
<td>A32DA</td>
<td>Pneumatic Actuator</td>
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<td>SVXN-604-543SF</td>
<td>Expl. Proof Sol. Valve w/ 24 DC coils</td>
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<tr>
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<td>Expl. Proof Sol. Valve w/ Atex coils</td>
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<td>30</td>
<td>DA32-OP</td>
<td>Orifice Plate</td>
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<td>31</td>
<td>RS12-AHDL</td>
<td>Actuated Handle w/ Grip</td>
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<td>32</td>
<td>RS12-MHDL</td>
<td>Manual Handle w/ Grip</td>
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Above Rotor Seal Assembly as well as Items 5, 20, 21 & 22 are included in kit RS12-SK
CRESCENT MOON PLATES

NAMEPLATES

SWITCH BRACKETS, WING PLATES, SENSOR PLATES
RS Series
Rotor Shear™ Zero Leakage Rotary Valves

Ordering Information

**RS12 M - B - B - OMIT - 16FP - AN 24D**

- **Port Size**
  - 12FP = 3/4” FNPT
  - 16FP = 1” FNPT

- **Type of Operator**
  - A = Pneumatic Actuated
  - M = Manual
  - AS = Pneumatic Actuated/ Spring Return
  - MS = Manual/ Spring Return

- **Rotor Flow Patterns**
  - B = Blocked
  - D = Diverter (Bypass)
  - F = A&B to T, P Blocked (Manipulator)
  - C = Open Center (Tandem)

- **Namur Valve Coils**
  - AN = Atex Approved Explosion Proof
  - UN = UL Approved Explosion Proof

- **Voltage**
  - 12D
  - 24D
  - 110A

- **Rotor Type**
  - H = Thick Rotor/ Needle Bearing
  - B = Thin Rotor/ Roller Bearing

- **Rotor Treatment**
  - Omit = Standard/ Heat Treated
  - N = Nitrited (Black)

- **H Type Rotor**
- **B Type Rotor**