Jerguson’s Tri-Magnet Level Switches deliver failure-free performance.

The innovative use of repelling magnetic fields eliminates springs and other mechanical elements that are prone to failure in high temperatures, extreme vibration, or simply fatigue over time.

**FEATURES**

- Tri-Magnet Switching for Unparalleled Reliability
- Vibration Resistant
- Sealed or Flanged Cage
- 316 Stainless Steel Trim
- ASME B31.1 & B31.3 Design

“*The new switches are very rugged and dependable, and most importantly, they are mercury-free and safe for the environment. Dealing with spilled mercury is an extremely difficult task, but it is one we don’t have to worry about with these new switches. The Jerguson Tri-Magnet Level Switches have been in operation in our facility since May 2007.*”

-Maintenance Superintendent, Major Utility Power Generation Plant

The Tri-Magnet Level Switch was endurance tested to over 850,000 cycles without failure.
JERGUSON® LEVEL SWITCHES
THE SWITCH MECHANISM

Principle of Operation

The switch mechanism is based on a unique three-dimensional magnet design where the snap action is accomplished by the utilization of magnetic repulsion and attraction. The primary magnet mounted on the float rod causes the secondary magnet to rotate as it passes up and down. The tertiary switch magnet is repelled by the secondary and snaps to the opposite side. This causes the cradle to pivot, moving the push rods, which operate the switch contacts. The result is positive snap action interlock switching…no springs…no spring problems!

THE FLOAT CHAMBER
Applications

The flanged chamber construction of this X series range of vertical controls makes them a very serviceable level control solution for petrochemical, power generation and OEM applications.

The unique three-magnet system provides reliable switching for applications such as level alarm, safety shutdown and pump control in product storage tanks, gas scrubbers, process vessels, and high pressure steam generators.

Single or multi-switch models are available. Chambers are designed to ASME B31.1, Power Piping Code, and ASME B31.3, Chemical Plant and Petroleum Refinery Piping Code.

Options:

- Stainless Steel Chamber
- Low temperature chamber below -20°F
- High temperature chrome-moly chamber
- Certified to B31.1 or B31.3
- Non-destructive testing: radiographic, ultrasonic, magnetic particle, dye penetrant
- Epoxy paint finish (FP-18)
- Extended NEMA 4 switch enclosure housing up to 3 SPDT switch mechanisms or 3 DPDT switch mechanisms
- Vent connection
- Specific gravity below .35
- NACE specification MR-0175
DIMENSIONAL AND OPERATING LEVEL DATA

NOTE: All flange nipples are 1" NPS as standard

<table>
<thead>
<tr>
<th>Model</th>
<th>Single Switch NPT/SW</th>
<th>Multi-Switch NPT/SW</th>
<th>Single Switch Flanged</th>
<th>Multi-Switch Flanged</th>
<th>A</th>
<th>B</th>
<th>C1</th>
<th>C2</th>
<th>D</th>
<th>E</th>
<th>F Chamber Type B</th>
<th>Chamber Type X</th>
</tr>
</thead>
<tbody>
<tr>
<td>JBC1F &amp; JXC1F</td>
<td>8 1/2&quot;</td>
<td>11 1/2&quot;</td>
<td>14&quot;</td>
<td>17&quot;</td>
<td>3 1/4&quot;</td>
<td>6&quot;</td>
<td>2&quot;</td>
<td>5&quot;</td>
<td>0.56&quot;</td>
<td>14&quot;</td>
<td>5 1/2&quot;</td>
<td>5 3/4&quot;</td>
</tr>
<tr>
<td>JBC2F &amp; JXC2F</td>
<td>10&quot;</td>
<td>13&quot;</td>
<td>14&quot;</td>
<td>17&quot;</td>
<td>3 3/4&quot;</td>
<td>6 1/2&quot;</td>
<td>2&quot;</td>
<td>5&quot;</td>
<td>0.56&quot;</td>
<td>14&quot;</td>
<td>6&quot;</td>
<td>6&quot;</td>
</tr>
<tr>
<td>JBC3F &amp; JXC3F</td>
<td>10&quot;</td>
<td>13&quot;</td>
<td>14&quot;</td>
<td>17&quot;</td>
<td>3 3/4&quot;</td>
<td>6 1/2&quot;</td>
<td>2&quot;</td>
<td>5&quot;</td>
<td>0.56&quot;</td>
<td>14&quot;</td>
<td>6&quot;</td>
<td>6 11/16&quot;</td>
</tr>
<tr>
<td>JBC4F &amp; JXC4F</td>
<td>10&quot;</td>
<td>13&quot;</td>
<td>14&quot;</td>
<td>17&quot;</td>
<td>3 3/4&quot;</td>
<td>6 1/2&quot;</td>
<td>2&quot;</td>
<td>5&quot;</td>
<td>0.56&quot;</td>
<td>14&quot;</td>
<td>6&quot;</td>
<td>8 1/16&quot;</td>
</tr>
<tr>
<td>JXC5F</td>
<td>10&quot;</td>
<td>13&quot;</td>
<td>14&quot;</td>
<td>17&quot;</td>
<td>3 3/4&quot;</td>
<td>6 1/2&quot;</td>
<td>2&quot;</td>
<td>5&quot;</td>
<td>0.56&quot;</td>
<td>14&quot;</td>
<td>6&quot;</td>
<td>8 1/16&quot;</td>
</tr>
<tr>
<td>JBC5F</td>
<td>9 1/2&quot;</td>
<td>12 1/2&quot;</td>
<td>14&quot;</td>
<td>17&quot;</td>
<td>4 1/4&quot;</td>
<td>7 1/2&quot;</td>
<td>2&quot;</td>
<td>5&quot;</td>
<td>0.56&quot;</td>
<td>14&quot;</td>
<td>6 1/2&quot;</td>
<td>8 1/16&quot;</td>
</tr>
<tr>
<td>JBC6F &amp; JXC6F</td>
<td>10&quot;</td>
<td>13&quot;</td>
<td>14&quot;</td>
<td>17&quot;</td>
<td>4 3/4&quot;</td>
<td>7 1/2&quot;</td>
<td>2&quot;</td>
<td>5&quot;</td>
<td>0.56&quot;</td>
<td>14&quot;</td>
<td>7&quot;</td>
<td>6 9/16&quot;</td>
</tr>
<tr>
<td>JBC7F &amp; JXC7F</td>
<td>10&quot;</td>
<td>13&quot;</td>
<td>14&quot;</td>
<td>17&quot;</td>
<td>4 3/4&quot;</td>
<td>7 1/2&quot;</td>
<td>2&quot;</td>
<td>5&quot;</td>
<td>0.56&quot;</td>
<td>14&quot;</td>
<td>7&quot;</td>
<td>7 3/8&quot;</td>
</tr>
<tr>
<td>JBC8F &amp; JXC8F</td>
<td>10&quot;</td>
<td>13&quot;</td>
<td>14&quot;</td>
<td>17&quot;</td>
<td>4 3/4&quot;</td>
<td>7 1/2&quot;</td>
<td>2&quot;</td>
<td>5&quot;</td>
<td>0.56&quot;</td>
<td>14&quot;</td>
<td>7&quot;</td>
<td>8 1/4&quot;</td>
</tr>
<tr>
<td>JBC9F &amp; JXC9F</td>
<td>12 1/2&quot;</td>
<td>15 1/2&quot;</td>
<td>16&quot;</td>
<td>19&quot;</td>
<td>5 3/4&quot;</td>
<td>8 1/2&quot;</td>
<td>2&quot;</td>
<td>5&quot;</td>
<td>0.56&quot;</td>
<td>14&quot;</td>
<td>7 1/2&quot;</td>
<td>7 3/16&quot;</td>
</tr>
</tbody>
</table>

Notes: 1) Flanged dimensions apply for R.F. process connections up to 2" - 600#
2) Switch actuation levels are at minimum S.G.
3) C1 = Single Switch : Process C/L to rising trip point of switch.
4) C2 = Multi-Switch : Process C/L to rising trip point of upper/high level switch.
5) D = Switch Deadband, Distance between Rising Trip & Falling Reset.
All dimensions in inches.Dimensions are for reference only, and must be certified upon order. All dimensions based on reinforced fittings.

ENCLOSURE DIMENSIONAL DATA

<table>
<thead>
<tr>
<th>Type</th>
<th>Duty</th>
<th>Height G</th>
<th>Conduit Thread</th>
<th>Switch Adjustment</th>
<th>Weatherproof Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA7</td>
<td>Explosion-proof</td>
<td>13 1/4&quot;</td>
<td>1&quot; NPT</td>
<td>3 3/8&quot;</td>
<td>NEMA 4 &amp; 7</td>
</tr>
<tr>
<td>SA4</td>
<td>Weather-proof</td>
<td>12&quot;</td>
<td>1&quot; NPT</td>
<td>3 3/8&quot;</td>
<td>NEMA 4</td>
</tr>
</tbody>
</table>

MATERIALS OF CONSTRUCTION

<table>
<thead>
<tr>
<th>Technical Specifications</th>
<th>Designed in accordance with the requirements of B31.1 &amp; B31.3. Pressure tested to 1.5 x maximum working pressures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials of Construction</td>
<td>Carbon Steel Chamber</td>
</tr>
<tr>
<td>Chamber Pipe</td>
<td>ASTM A106 GrB</td>
</tr>
<tr>
<td>Top/Bottom Caps</td>
<td>ASTM A234</td>
</tr>
<tr>
<td>Flanges/Fittings</td>
<td>ASTM A105</td>
</tr>
<tr>
<td>Studs</td>
<td>ASTM A193-B7</td>
</tr>
<tr>
<td>Nuts</td>
<td>ASTM A194-2H</td>
</tr>
<tr>
<td>Float &amp; Trim</td>
<td>316 SS</td>
</tr>
</tbody>
</table>

OUR WARRANTY

All mechanical level devices are warranted free of defects in materials and workmanship for five years from the date of original factory shipment.

If returned within the stated warranty period, and upon factory inspection the cause of the claim is determined to be covered under the warranty, at option, the device will be repaired or replaced without cost to the purchaser (or owner), other than transportation.

Jergunson® shall not be liable for mis-application, labor claims, direct or consequential damage or expense arising from the installation or use of the equipment. There are no other warranties expressed or implied.
ORDERING INFORMATION

CHAMBER TYPE & MATERIAL OF CONSTRUCTION
EXTERNAL CAGE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Cage</th>
<th>ENCLOSURE TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>JBC</td>
<td>Float is sealed inside chamber during manufacturing. Not removable.</td>
</tr>
<tr>
<td>JXC</td>
<td>Float may be removed from chamber for routine maintenance, cleaning or inspection.</td>
</tr>
</tbody>
</table>

TYPICAL MODEL

- **Design Options**
  - (Omitted): Standard Design
  - WN: Weld Neck Flanges
  - SW: Socket Weld Flanges
  - RTJ: Ring Type Joint Flange
  - 3E: 3" Temperature Extension
  - 6F: 6" Temp. Extension w/ Cooling Fins
  - X: Special Design

- **Process Conn. Style**
  - F: FNPT
  - M: MNPT
  - S: FSW
  - P: Plain-End/MSW (Sch.80)

- **Process Conn. Size**
  - 0: .50" (DN15)
  - 1: .75" (DN20)
  - 2: 1.00" (DN25)
  - 3: 1.25" (DN32)
  - 4: 1.50" (DN40)
  - 5: 2.00" (DN50)
  - 6: 2.50" (DN65)
  - 7: 3.00" (DN80)
  - (Omitted)

- **Replacement Head Ass'y, Less Chamber**
  - "X" Chamber Design Style

- **Process Connection Configuration**
  - 1: Side & Bottom
  - 2: Side & Side With Drain

NUMBER OF SWITCH MECHANISMS

<table>
<thead>
<tr>
<th>Code</th>
<th>Duty</th>
<th>Material of cover</th>
<th>Material of base</th>
<th>Material of pressure</th>
<th>Material of screwed</th>
<th>Maximum number of switches</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA4N</td>
<td>Weather-proof</td>
<td>Aluminum Alloy</td>
<td>Drawn Steel</td>
<td>Stainless Steel</td>
<td>To match chamber material</td>
<td>2</td>
</tr>
<tr>
<td>SA7F</td>
<td>Explosion-proof</td>
<td>Factory Mutual Cl.I, Div.1 Grps. B, C &amp; D</td>
<td>Aluminum Alloy</td>
<td>316 Stainless Steel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES:
1. Code design standard on all chambers unless otherwise specified.
2. Code radiography is available upon request.
3. **Main Chamber**: Circumferential welds between center pipe & pipe cap(s), and weld neck chamber flange ("X" style 'Chamber Design' only), are full penetration, single-V, butt welds.
   **Process Connections**: Immediate branch is an o’let. For flanged connections, when selected, a 1” NPS nipple is welded to the o’let, and slip-on flanges are welded to the nipple, as standard.
4. Welders qualified to ASME IX. PWHT available upon request.
JERGUSON® “FIT & FORGET” PRODUCTS PROVIDE THE SOLUTION TO YOUR LIQUID LEVEL CONTROL PROBLEMS

Medium Pressures
ASME Class 150, 300, 600
SG 0.40

High Pressure
ASME Class 900, 1500, 2500
SG 0.40

Direct Mounting
ASME Class 150, 300, 600
SG 0.40

You can rely on us

The Jerguson range of liquid level controls is designed for operation in a wide variety of applications.

Typical Applications

- Separators
- Water Sumps
- Compressors
- Scrubbers
- Knock Out Pots
- Fractioning Columns
- Condensers
- Process Vessels
- De-actuators
- Condensate Tanks
- Storage Tanks
- Drainpots
- Service Tanks
- Accumulators
- Header Tanks
- Flush Vessels
- Effluent Sumps & Tanks
- Fuel Tanks
- Heat Exchanger
- Feedwater Heaters
- Lube Oil Tanks
- Surge Drums

Jerguson level switches are used for the control of liquids by companies all over the world.

- Shell
- Exxon
- Amoco
- Fluor
- Hyundai
- Hitachi
- British Petroleum
- Mobil
- Texaco
- Ingersoll Rand
- Compare
- Honeywell
- Bechtel
- Bellili
- Ontario Hydro
- Nissaci-Sangyo
- Foster Wheeler
- Siemens
- Mannesmann-Demag
- Catalytic
- Techni
- Technipetrol
- Nuovo Pignone
- Dresser
Instrumentation & Control

Jerguson®

Jacoby-Tarbox®

Reliance®

- Level Gages
- Magnetic Level Gages
- Switches & Valves
- Sight Flow Indicators
- Sight Windows
- Eductors
- Boiler Level Gages
- Remote Level Indicators
- Boiler Safety Instruments

Filtration & Purification

Anderson® Separator

Enervac International ULC

- Oil Filtration Systems®
- Gas Coalescing & Filtration
- Steam Separators & Traps
- Liquid Particle Filtration
- Transformer Oil Purification
- SF6 Equipment
- Air Dryers
- Vacuum Dehydrators
- Varnish Removal Systems
- Hi & Low Flow Filter Skids

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