Zipson's 513F, 3600 psi, 3/4 way high performance flanged ball valve was designed for the high pressure industrial pipe line. With T/L/X/I-port for 3/4 way block body type, easy to find a suitable flow pattern for any application which is a smart way to save the cost on pipe line construction and space. With ISO direct mounting pad design, 513F is able to assemble the actuator directly.

513F was designed according to ASME B16.34. 513F is with 4 seats, this will help to keep the ball position stable. The trunnion ball/ stem help to stand high working pressure and protect the seat and keep from leakage to prolong the life time. The valve is totally solid designed for oil & gas application or other high pressure application for both mixing and diverter purpose.

End caps can be ASME 600/ 900/ 1500. The same center section is also suitable for thread/ SW/ BW ends on 513T type.

513F valve can be with cavity fillers to filled all the valve cavity over 90%. This will help to keep the media from leaving in the cavity for easy cleaning & anti-sticky of the ball. Of course, the internal body need to be machining first for the service.

The size range of 513F is now complete from 1/2" to 2" (DN15 to DN50), and will be ready to expand up to 4" with Class 600 & Class 900 pressure rating soon. TFM/ TFM4215 seat material for Class 600 (DN15 to DN50) and PEEK/ Delrin for Class 900/ 1500 is the standard option.

Extraordinary material such as Hastelloy C, Monel, Alloy 20, Duplex are available, too, for special media or environment.
**SPECIFICATION**
- Body & end caps quality investment casting
- Construction design follow ASME B16.34 standard
- Flange connection - ANSI B16.50
- Available in stainless steel or carbon steel
- with ISO 5211 direct mounting pad
- Adjustable stem packing
- Blow-out proof stem design
- Available in L/ T/ X/ Y-port
- Trunnion and Full bore design
- Temperature range -20°F to 450°F
- End type: ANSI600/ ANSI900/ ANSI1500
- Working pressure:
  - TFM/ TFM4215 seat: ANSI600
  - PEEK/DELRIN seat: ANSI900/ ANSI1500
- For ANSI 1500: 1/2”~1-1/4”, 3600 psi
- 1-1/2” & 2”, 3000 psi

**OPTION**
- Automation application
- Cavity filler
- Hastelloy C, Alloy 20, Super Duplex, Monel
- Fire safe design

**DIMENSIONS, 1/2” to 2” (mm)**

<table>
<thead>
<tr>
<th>SIZE (full port)</th>
<th>A</th>
<th>B</th>
<th>B1</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>d1</th>
<th>d2</th>
<th>H</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>1/2”</td>
<td>15</td>
<td>52</td>
<td>11</td>
<td>112</td>
<td>-</td>
<td>50</td>
<td>-</td>
<td>7.2</td>
<td>11</td>
<td>160</td>
</tr>
<tr>
<td>3/4”</td>
<td>20</td>
<td>63</td>
<td>11</td>
<td>123</td>
<td>-</td>
<td>50</td>
<td>-</td>
<td>7.2</td>
<td>11</td>
<td>160</td>
</tr>
<tr>
<td>1”</td>
<td>25</td>
<td>73</td>
<td>14</td>
<td>126</td>
<td>50</td>
<td>70</td>
<td>7.2</td>
<td>9.2</td>
<td>14</td>
<td>310</td>
</tr>
<tr>
<td>1 1/2”</td>
<td>38</td>
<td>92</td>
<td>17</td>
<td>145</td>
<td>70</td>
<td>102</td>
<td>9.2</td>
<td>11.4</td>
<td>17</td>
<td>310</td>
</tr>
<tr>
<td>2”</td>
<td>50</td>
<td>127</td>
<td>26</td>
<td>190</td>
<td>102</td>
<td>125</td>
<td>11.4</td>
<td>13.5</td>
<td>22</td>
<td>310</td>
</tr>
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</table>
513F, 3/4-Way High Pressure Ball Valve P.3

### MATERIALS LIST, 1/2" to 2"

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NAME</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BODY</td>
<td>CF8M/WCB</td>
</tr>
<tr>
<td>2</td>
<td>FLANGE END</td>
<td>CF8M/WCB</td>
</tr>
<tr>
<td>3</td>
<td>SEAT</td>
<td>TFM/DELREN/PEEK</td>
</tr>
<tr>
<td>4</td>
<td>BALL</td>
<td>SS 316</td>
</tr>
<tr>
<td>5</td>
<td>GASKET</td>
<td>TFM/GRAPHITE</td>
</tr>
<tr>
<td>6</td>
<td>END BOLT</td>
<td>SS 304</td>
</tr>
<tr>
<td>7</td>
<td>TRUNNION PIN</td>
<td>SS 316</td>
</tr>
<tr>
<td>8</td>
<td>STEM</td>
<td>SS 316</td>
</tr>
<tr>
<td>9</td>
<td>THRUST WASHER</td>
<td>PEEK</td>
</tr>
<tr>
<td>10</td>
<td>STEM PACKING</td>
<td>TFM/GRAPHITE</td>
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<tr>
<td>11</td>
<td>STEM BUSHING</td>
<td>DELREN/PEEK</td>
</tr>
<tr>
<td>12</td>
<td>GLAND</td>
<td>SS 304</td>
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<tr>
<td>13</td>
<td>DISK WASHER</td>
<td>SS 301</td>
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<tr>
<td>14</td>
<td>STEM NUT</td>
<td>SS 304</td>
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<tr>
<td>15</td>
<td>NUT STOP</td>
<td>SS 304</td>
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<tr>
<td>16</td>
<td>PLATE STOPPER</td>
<td>SS 304</td>
</tr>
<tr>
<td>17</td>
<td>LEVER HEAD</td>
<td>SS 304</td>
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### FLOW PATTERN

#### 3-WAY
- **L3-90° STANDARD**
- **T3-90° STANDARD**
- **T4-90°**
- **T5-90°**
- **T6-90°**

#### 4-WAY
- **L5-180°**
- **T5-180°**
- **X-90°**
- **I-90°**

### 513F Ball valve is available for 180° operation. This design will allow more flow patterns to be used in your pipe works. Customer just have to change a 180° stop plate for this option.
**513F, 3/4-Way High Pressure Ball Valve**

**Diagram: 513F, 3/4-Way High Pressure Ball Valve**

**Pressure/Temperature Graph**

- **TFM1600**
- **TFM4215**
- **DELRIN**
- **PEEK (450G)**

**Graph Ranges:**
- **Pressure (PSI):** 0 to 3600
- **Temperature (°F):** 0 to 600

**Legend:**
- **TFM1600**
- **TFM4215**
- **DELRIN**
- **PEEK (450G)**

**Questions:**
- Pneumatic (DA or SR)/ Electric actuator
- Solenoid valve/ Limit Switch Box/ EP

**Additional Information:**
- ISO direct mount for actuator assembling directly.

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**Manufacturer:** Zipson

**Address:** No.9, Chen Kong2 St., MinhsiungIndustrial Park, Chia-Yi, Taiwan, R.O.C.

**Contact:**
- Tel: 886-5-220-9374 / Fax : 886-5-221-7018
- http://www.zipson.com.tw E-mail: loogoon@ms22.hinet.net

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513F, 3/4-Way High Pressure Ball Valve

**BREAK-TORQUE VALUE (Nm)**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>1/2&quot;</th>
<th>3/4&quot;</th>
<th>1&quot;</th>
<th>1-1/4&quot;</th>
<th>1-1/2&quot;</th>
<th>2&quot;</th>
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<tbody>
<tr>
<td>GREASE</td>
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<td>45.6</td>
<td>55</td>
<td>-</td>
<td>88</td>
<td>132</td>
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<tr>
<td>NON-GREASE</td>
<td>35.2</td>
<td>62.2</td>
<td>77</td>
<td>-</td>
<td>121</td>
<td>187</td>
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<tr>
<td>AT 3000 PSI</td>
<td>44</td>
<td>76.8</td>
<td>93.5</td>
<td>-</td>
<td>198</td>
<td>341</td>
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</tbody>
</table>

Note 1: The greases ZIPSON use including lubricant & anti-seize grease are both SILICONE-FREE.
Note 2: Strongly suggest increasing at least 30%~40% for safety factor for mounting actuator.

513F, multi-way ball valve can be with cavity filler in internal body to fill the inner cavity. This may keep the body cavity clean and easy to cleanse. The cavity filler will keep the ball operation from sticking for glue-like media.

**Suggestion!**
1. As dismantle the ball valve, don’t forget to replace new Repair Kits, especially the gasket to prevent from leaking.
2. Before welding the valves, make sure the ends were dismantled. And welding the dismantled ends. After all the ends be cool, assemble the ends & use new gasket to prevent from leaking.