Features

1. Very compact, lightweight, and economically priced.
2. Applicable for control of machine tool table operations.
3. Flow Control Valve

Applicable for control of Fast Feed => Cutting Feed (2 stage) => Fast Return.

Specifications

<table>
<thead>
<tr>
<th>Model No</th>
<th>Nominal Diameter</th>
<th>Volume control flow rate ℓ/min</th>
<th>Reverse Flow Rate ℓ/min</th>
<th>Maximum Working Pressure MPa(㎏f/cm²)</th>
<th>Cracking pressure MPa(㎏f/cm²)</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>TL-G03-2-11</td>
<td>3/8</td>
<td>0.08 to 2, 0.1 to 8</td>
<td>35</td>
<td>7(71.4)</td>
<td>0.1(1.0)</td>
<td>2.2</td>
</tr>
<tr>
<td>TL-G04-2-11</td>
<td>1/2</td>
<td>0.08 to 2, 0.1 to 8</td>
<td>53</td>
<td>7(71.4)</td>
<td>0.1(1.0)</td>
<td>7.0</td>
</tr>
<tr>
<td>TLT-G04-2-1.5-11</td>
<td>1/2</td>
<td>0.1 to 2, 0.1 to 1.5, 0.1 to 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLT-G04-2-2-11</td>
<td>1/2</td>
<td>0.1 to 2, 0.1 to 1.5, 0.1 to 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Features

1. In the temperature range of 20°C to 60°C, flow rate fluctuation is within ±5% of the standard flow rate at 40°C.
2. In the pressure range of 1.0 to 7.0MPa (10.2 to 71.4kgf/cm²), flow rate fluctuation is within ±5% of the setting flow rate.
3. Note that flow rate fluctuation exceeds the rated fluctuation amount slightly in the vicinity of the minimum control flow rate, due to changes in operating temperature and hydraulic fluid viscosity.
4. When controlling flow rates that are less than 0.2ℓ/min, use with a line filter no greater than 10μm.
5. Make sure that the pressure differential between the inlet port and outlet is at least 0.6MPa (6.1kgf/cm²) at 4ℓ/min or less, and at least 1.0MPa.
6. The control flow rate is increased by clockwise (rightward) rotation of the control handle.
7. For connection to piping, normally connect to the sub plate. Valve mounting is gasket type, using an O-ring. When a screw in connection is required, seal the gasket surface, remove the side plug, and create a screw in connection directly to the valve unit. In this case, remove all seal material affixed to the plug.
8. See the table below for installation of hex socket bolts.

Applicable Model Bolt Size Q’ty Tightening Torque N·m(㎏f·cm)

<table>
<thead>
<tr>
<th>Applicable Model</th>
<th>Bolt Size</th>
<th>Q’ty</th>
<th>Tightening Torque N·m(㎏f·cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TL-G03-*-11</td>
<td>M8 × 60ℓ</td>
<td>4</td>
<td>20 to 25(205 to 255)</td>
</tr>
<tr>
<td>TLT(T)-G04-*-11</td>
<td>M10 × 75ℓ</td>
<td>4</td>
<td>45 to 55(460 to 560)</td>
</tr>
</tbody>
</table>

Note) For mounting bolts, use bolts of 12.9 strength classification or equivalent.

Explanation of model No.

TLT - G 04 - 2 - (1.5) - (F) - 11

- Design number
- Anti-jumping mechanism (option)
- Maximum volume control flow rate (Feed 2)
- Nominal diameter (size)
- Mounting method: G: Gasket type
- 2-position feed control valve
- 1-position feed control valve

Cam Down Force

TL-G03-11
Cam Down Force
120N (12.2kgf) minimum
TLT-G04-*-11
Feed 1: Cam Down Force
140N (14.4kgf) minimum
Feed 2: Cam Down Force
200N (20.4kgf) minimum

Make the cam angle no greater than 30 degrees.
Flow Control Valve

Installation Dimension Drawings

TL-G03-*-11

Roller operation range detail view G03

Sub Plate MTL-03-10

Anti-jumping Mechanism TL-G03-*-F-11

Sub Plate MTL-04-10

TL(T)-G04-*-11

Roller operation range detail view G04

Sub Plate MTL-04-10

TL(T)-G04-*-F-11

Performance Curves

Hydraulic Operating Fluid Kinematic Viscosity 32mm²/s

<table>
<thead>
<tr>
<th>Oil Temperature – Control Flow Rate Characteristics</th>
<th>Pressure – Control Flow Rate Characteristics</th>
<th>Scale – Control Flow Rate Characteristics</th>
<th>Pressure Loss Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Graph" /></td>
<td><img src="image2.png" alt="Graph" /></td>
<td><img src="image3.png" alt="Graph" /></td>
<td><img src="image4.png" alt="Graph" /></td>
</tr>
</tbody>
</table>
Cross-sectional Drawings

TLT-G04-**-11

Anti-jumping mechanism
TL-G03-**-F-11
TL(T)-G04-**-F-11

Note) The drawings on the left are TLT cross sections. In the case of TL, there is no knob on the right side.

Seal Part List (Kit Model Number FLS-***(2))

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part Name</th>
<th>Part Number</th>
<th>Q'ty</th>
<th>TL-G03-**-11</th>
<th>TL-G04-**-11</th>
<th>TL-G04-**-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>O-ring</td>
<td>NBR-70-1 P9</td>
<td>4</td>
<td>NBR-70-1 P9</td>
<td>NBR-70-1 P9</td>
<td>NBR-70-1 P9</td>
</tr>
<tr>
<td>46</td>
<td>O-ring</td>
<td></td>
<td>—</td>
<td>NBR-70-1 P10</td>
<td>NBR-70-1 P10</td>
<td>NBR-70-1 P10</td>
</tr>
<tr>
<td>47</td>
<td>O-ring</td>
<td>NBR-70-1 P16</td>
<td>2</td>
<td>NBR-70-1 P16</td>
<td>NBR-70-1 P16</td>
<td>NBR-70-1 P16</td>
</tr>
<tr>
<td>48</td>
<td>O-ring</td>
<td>NBR-70-1 P14</td>
<td>1</td>
<td>NBR-70-1 P18</td>
<td>NBR-70-1 P18</td>
<td>NBR-70-1 P18</td>
</tr>
<tr>
<td>49</td>
<td>O-ring</td>
<td>NBR-70-1 P14</td>
<td>2</td>
<td>NBR-70-1 P20</td>
<td>NBR-70-1 P20</td>
<td>NBR-70-1 P20</td>
</tr>
<tr>
<td>50</td>
<td>O-ring</td>
<td>NBR-70-1 P18</td>
<td>2</td>
<td>NBR-70-1 P24</td>
<td>NBR-70-1 P24</td>
<td>NBR-70-1 P24</td>
</tr>
<tr>
<td>51</td>
<td>O-ring</td>
<td></td>
<td>—</td>
<td>NBR-70-1 P20</td>
<td>NBR-70-1 P20</td>
<td>NBR-70-1 P20</td>
</tr>
</tbody>
</table>

Note) 1. *** in the kit number is used for specification of the valve size. To specify TLT, add 2 to the end.
2. The materials and hardness of the O-ring conforms with JIS B2401.

Seal Part List

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part Name</th>
<th>Part Number</th>
<th>Q'ty</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>O-ring</td>
<td>NBR-70-1 P9</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>O-ring</td>
<td>NBR-70-1 P3</td>
<td>1</td>
</tr>
</tbody>
</table>

Note) 1. Part number 7 O-ring and part number 45 O-ring are interchangeable.
2. The materials and hardness of the O-ring conforms with JIS B2401.