

### Balancing Valve (Pressure Reducing and Relief Valve)

7.9 to 13.2 gpm  
2030 psi

#### Features

2-in-1 operation allows a simpler circuit configuration. Combination valve that provides both pressure reducing and counter balance functions.

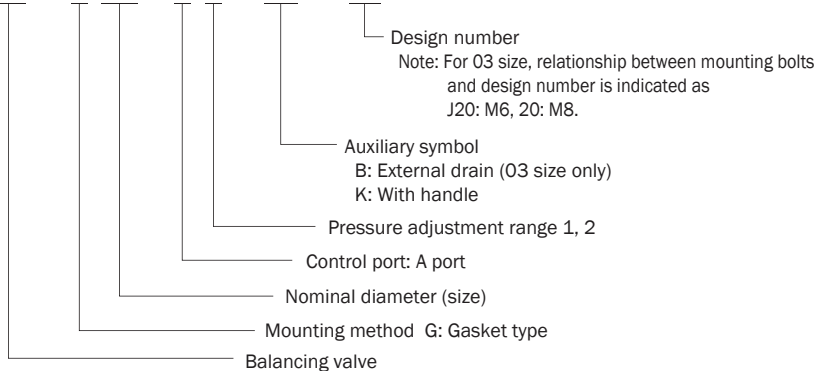
Pressure adjustment using a single screw (bolt). Compact and lightweight valve that can be mounted using the same methods as a 01, 03 size solenoid valve.

#### Specifications

| Model No.               | Nominal Diameter (Size) | Maximum Working Pressure psi | Maximum Flow Rate gpm | Pressure adjustment range psi | Weight lbs | Gasket Surface Dimensions |
|-------------------------|-------------------------|------------------------------|-----------------------|-------------------------------|------------|---------------------------|
| GR-G01- A1-20<br>A2     | 1/8                     | 3045<br>P port               | 30                    | 116 to 1015<br>507 to 2030    | 3.3        | ISO 4401-03-02-0-94       |
| GR-G03- A1-(B)-20<br>A2 | 3/8                     |                              | 50                    | 145 to 1015<br>507 to 2030    | 7.7        | ISO 4401-05-04-0-94       |

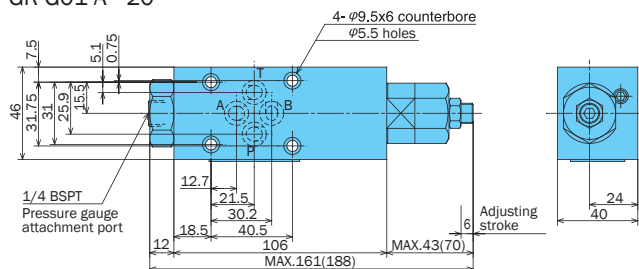
#### Understanding Model Numbers

**GR - G 03 - A 1 - BK - 20**

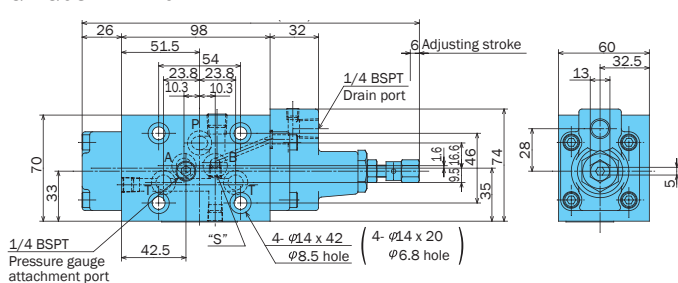


#### Installation Dimension Drawings

GR-G01-A\*-20



GR-G03-A\*-B-20



- Handling
- To adjust pressure, loosen the lock nut and then rotate the adjusting screw (bolt) clockwise (rightward) to increase pressure or counterclockwise (leftward) to decrease it.
  - For the 01 size, draining is from the gasket side B port.
  - For the drain of a 03 size valve when auxiliary symbol B is specified, run a pipe from the drain discharge port directly to the tank. The drain discharge port can also be plugged for direct draining from the gasket side B port. In the case of modification, be sure to change the valve type marking on the nameplate. When using drain piping, use a tightening torque of 16-18.4 ft lbs for pipe joints.
  - The drain of 03 size valve that does not have a B auxiliary symbol can be directly from the T port.
  - Make sure that drain back pressure is no greater than 29 psi.
  - When an adjustment handle is required for pressure adjustment block, insert K for the type specification.
  - Set the difference between the pressure at the primary circuit (port P) and the secondary circuit (port A) at least 72 psi.
  - Use the following table for specification when a sub plate is required.

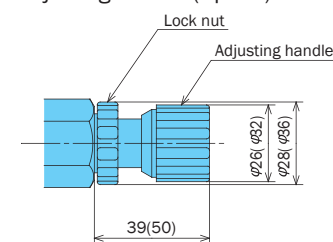
| Model No.   | Pipe Outlet Size | Weight lbs |
|-------------|------------------|------------|
| MSA-01Y-E10 | 3/8              | 2.6        |
| MSA-03-E10  | 3/8              | 8.3        |
| MSA-03X-E10 | 1/2              |            |

The following are the bundled mounting bolts.

| Model No.    | Bolt Dimensions | Q'ty | Tightening Torque ft lbs |
|--------------|-----------------|------|--------------------------|
| GR-G01-A*-20 | 10-24 x 13/4"   | 4    | 3.6 to 5                 |
| GR-G03-A*-20 | 1/4-20 x 1 1/8" | 4    | 14.7 to 18.4             |

Note: For mounting bolts, use grade 8 or equivalent.

#### Adjusting Handle (Option)



Note: 1. For size 03, an escape valve with piping from the drain discharge port is standard for the drain (GR-G03-A\*-B-20). To change from internal drain to external drain, install a plug (NPTF 1/16) in part S, and remove the drain discharge port plug (1/4 BSPT). To change from external drain to internal drain, install a plug (1/4 BSPT) into the drain discharge port, and remove the S part plug (NPTF 1/16). In this case, however, the B port cannot be used as the tank port.  
2. Dimensions in parentheses show dimensions with handle (K type).

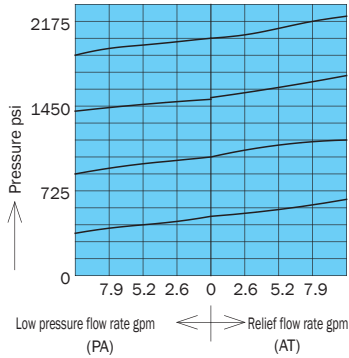
# Performance Curves

Hydraulic Operating Fluid Viscosity 32 centistokes

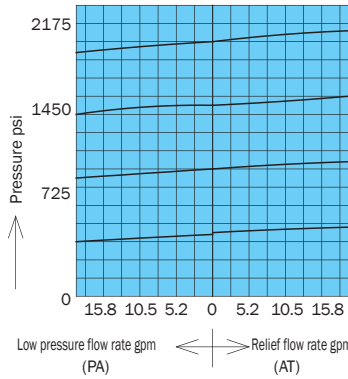
Pressure - Flow Rate Characteristics

Setting Pressure - Drain Flow Rate Characteristics

GR-G01-A\*-20

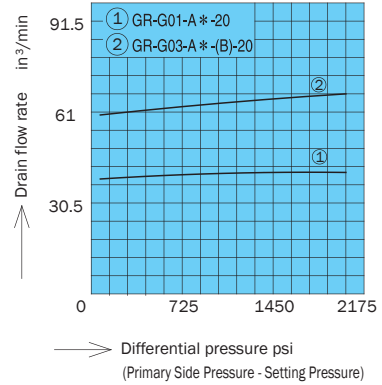


GR-G03-A\*-(B)-20



GR-G01-A\*-20 ①

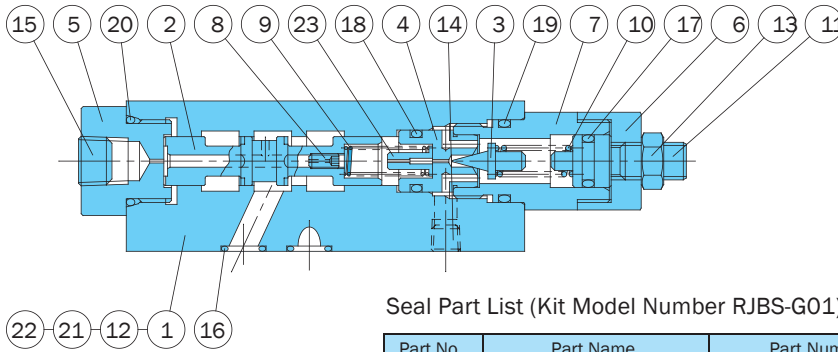
GR-G03-A\*-(B)-20 ②



# Cross-sectional Drawing

Note: O-ring 1A/B-\*\* refers to JIS B2401- 1A/B-\*\*.

GR-G01-A\*-20

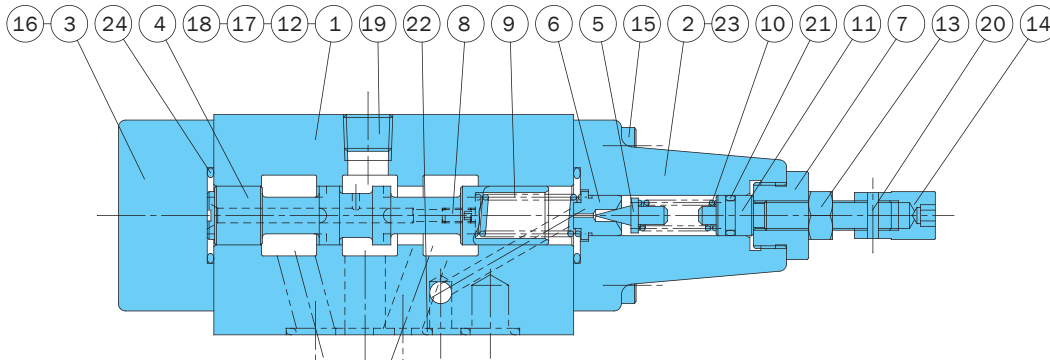


Seal Part List (Kit Model Number RJBS-G01)

| Part No. | Part Name | Part Number | Q'ty |
|----------|-----------|-------------|------|
| 16       | O-ring    | 1B-P9       | 4    |
| 17       | O-ring    | 1A-P10A     | 1    |
| 18       | O-ring    | 1B-P12.5    | 1    |
| 19       | O-ring    | 1B-P18      | 1    |
| 20       | O-ring    | 1B-P20      | 1    |

| Part No. | Part Name | Part No. | Part Name |
|----------|-----------|----------|-----------|
| 1        | Body      | 7        | Retainer  |
| 2        | Spool     | 8        | Choke     |
| 3        | Poppet    | 9        | Spring    |
| 4        | Seat      | 10       | Spring    |
| 5        | Bushing   | 11       | Screw     |
| 6        | Bushing   | 12       | Plate     |
|          |           | 13       | Nut       |
|          |           | 14       | Plug      |
|          |           | 15       | Plug      |
|          |           | 16       | O-ring    |
|          |           | 17       | O-ring    |
|          |           | 18       | O-ring    |
|          |           | 19       | O-ring    |
|          |           | 20       | O-ring    |
|          |           | 21       | Plug      |
|          |           | 22       | Spacer    |
|          |           | 23       | Choke     |

GR-G03-A\*-B-20



Seal Part List (Kit Model Number RJBS-G03)

| Part No. | Part Name | Part Number | Q'ty |
|----------|-----------|-------------|------|
| 21       | O-ring    | 1A-P8       | 1    |
| 22       | O-ring    | 1B-P12      | 5    |
| 23       | O-ring    | 1B-P9       | 1    |
| 24       | O-ring    | 1B-P22      | 2    |

| Part No. | Part Name |
|----------|-----------|
| 1        | Body      |
| 2        | Cover (A) |
| 3        | Cover (B) |
| 4        | Spool     |
| 5        | Poppet    |
| 6        | Seat      |
| 7        | Retainer  |
| 8        | Choke     |
| 9        | Spring    |
| 10       | Spring    |
| 11       | Screw     |
| 12       | Plate     |
| 13       | Nut       |
| 14       | Nut       |
| 15       | Screw     |
| 16       | Screw     |
| 17       | Plug      |
| 18       | Plug      |
| 19       | Plug      |
| 20       | Pin       |
| 21       | O-ring    |
| 22       | O-ring    |
| 23       | O-ring    |
| 24       | O-ring    |