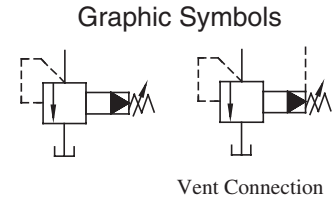
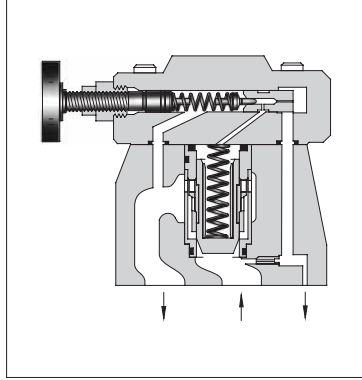


Low Noise Type Pilot Operated Relief Valves

Pilot operated relief valves here have been particularly developed as low-noise types. Able to protect pumps and control valves against excessive pressures, they are used to control the pressure in the hydraulic system to a constant level. Remote control and unloading are permitted by using vent circuits.



Specifications

| Model Numbers | Max. Operating Pressure MPa (PSI) | Pres. Adj. Range MPa (PSI) | Max. Flow L/min (U.S.GPM) | Approx. Mass kg (lbs.) |
|---------------|--------------------------------------|-------------------------------|------------------------------|---------------------------|
| S-BG-03-*-40* | 25 (3630) | Note | 100 (26.4) | 4.1 (9.0) |
| S-BG-06-*-40* | | ★-25 | 200 (52.8) | 5.0 (11.0) |
| S-BG-10-*-40* | | (★-3630) | 400 (106) | 10.5 (23.2) |

Note: See minimum adjustment pressure characteristics on [page 218](#).

Model Number Designation

| F- | S- | B | G | -03 | -V | -L | -40 | * |
|---|-----------------------------|---|---------------------------------|------------|---|--|---------------|-------------------------|
| Special Seals | Low Noise Type | Series Number | Type of Mounting | Valve Size | High Venting* ¹ | Direction of Handle | Design Number | Design Std. |
| F: Special Seals for Phosphate Ester Type Fluids (Omit if not required) | S: Low Noise Type | B: Pilot Operated Relief Valves | G: Sub-plate Mounting | 03 | V: For High Venting Pressure Feature (Omit if not required) | (Viewed from pressure gauge connection) L: Left (Normal) R: Right | 40 | Refer to ★ ² |
| | | | | 06 | | | 40 | |
| | | | | 10 | | | 40 | |

★¹. Use the high venting pressure type where it is necessary to reduce the response time from unloading to onloading.

★². Design Standards: None Japanese Standard "JIS" and European Design Standard 90 N. American Design Standard

Sub-plate

| Valve Model Numbers | Japanese Standard "JIS" | | European Design Standard | | N. American Design Standard | | Approx. Mass kg (lbs.) |
|---------------------|-------------------------|-------------|--------------------------|-------------|-----------------------------|-------------|---------------------------|
| | Sub-plate Model Numbers | Thread Size | Sub-plate Model Numbers | Thread Size | Sub-plate Model Numbers | Thread Size | |
| S-BG-03 | BGM-03-20 | Rc 3/8 | BGM-03-3080 | 3/8 BSP.F | BGM-03-2090 | 3/8 NPT | 2.4 (5.3) |
| | BGM-03X-20 | Rc 1/2 | BGM-03X-3080 | 1/2 BSP.F | BGM-03X-2090 | 1/2 NPT | 3.1 (6.8) |
| S-BG-06 | BGM-06-20 | Rc 3/4 | BGM-06-3080 | 3/4 BSP.F | BGM-06-2090 | 3/4 NPT | 4.7 (10.4) |
| | BGM-06X-20 | Rc 1 | BGM-06X-3080 | 1 BSP.F | BGM-06X-2090 | 1 NPT | 5.7 (12.6) |
| S-BG-10 | BGM-10-20 | Rc 1-1/4 | BGM-10-3080 | 1-1/4 BSP.F | BGM-10-2090 | 1-1/4 NPT | 8.4 (18.5) |
| | BGM-10X-20 | Rc 1-1/2 | BGM-10X-3080 | 1-1/2 BSP.F | BGM-10X-2090 | 1-1/2 NPT | 10.3 (22.7) |

• Sub-plates are available. Specify the sub-plate model number from the table above. When sub-plates are not used, the mounting surface should have a good machined finish.

• The sub-plates are those for pilot operated relief valves. For dimensions, see [page 213](#).

- Attachment
- Mounting Bolts

| Valve Model Numbers | Socket Head Cap Screw | | Qty. |
|---------------------|--|-------------------------|------|
| | Japanese Std. "JIS" and European Design Std. | N. American Design Std. | |
| S-BG-03 | M12 × 40 Lg. | 1/2-13 UNC × 1-1/2 Lg. | 4 |
| S-BG-06 | M16 × 50 Lg. | 5/8-11 UNC × 2 Lg. | 4 |
| S-BG-10 | M20 × 60 Lg. | 3/4-10 UNC × 2-1/4 Lg. | 4 |

Instructions

- If a remote control relief valve is used in the vent circuit, see [page 203](#). In addition, if the internal volume of the vent line is too large, chattering is likely to occur. Thus, as far as possible reduce the inside Dia. and the length of the pipe.
- To adjust the pressure, loosen the lock nut and turn the handle slowly clockwise for higher pressures or anti-clockwise for lower pressures. After adjustments, do not forget to tighten the lock nut.
- Piping of the tank line should not be connected to any tank line of the other valves, but connected directly to the reservoir.
- Pressure is limited by collars. If a working pressure cannot be attained, remove some collars. One collar is equivalent to 10 MPa (1450 PSI).
- With a small flow, the setting pressure may be unstable. Use models numbered 03 and 06 with a flow rate above 5 L/min (1.3 U.S. GPM) and model 10 with 8 L/min (2.1 U.S. GPM).

S-BG-03-*-L-40/4090
S-BG-06-*-L-40/4090
S-BG-10-*-40/4090

**DIMENSIONS IN
MILLIMETRES (INCHES)**

Mounting surface
S-BG-03: ISO 6264-AR-06-2-A
S-BG-06: ISO 6264-AS-08-2-A
S-BG-10: ISO 6264-AT-10-2-A

Opposite Handle Position

S-BG-⁰³/₀₆-*-R

Note: For other dimensions, see the figures shown left.

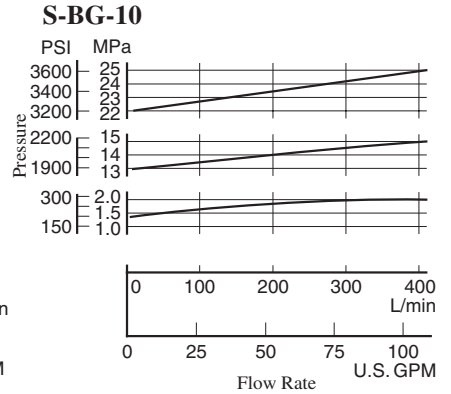
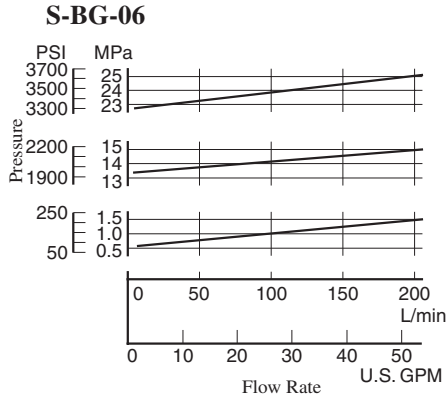
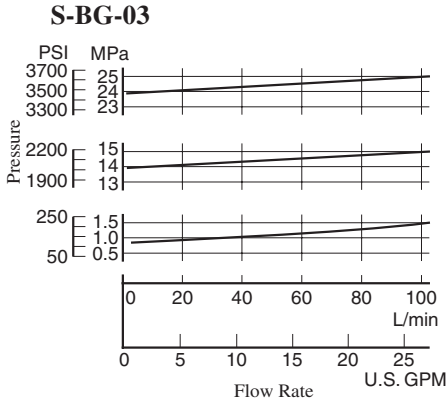
Note: For dimensions of the valve mounting surface, see the dimensional drawing (P. 213) of the sub-plate used together.

| Model Numbers | "Y" Thd. |
|------------------------------------|---------------------|
| S-BG-03- <u>*</u> - <u>*</u> -40 | Rc 1/4 = 1/4 BSP.Tr |
| S-BG-03- <u>*</u> - <u>*</u> -4090 | 1/4 NPT |
| S-BG-06- <u>*</u> - <u>*</u> -40 | Rc 1/4 = 1/4 BSP.Tr |
| S-BG-06- <u>*</u> - <u>*</u> -4090 | 1/4 NPT |
| S-BG-10- <u>*</u> -40 | Rc 1/4 = 1/4 BSP.Tr |
| S-BG-10- <u>*</u> -4090 | 1/4 NPT |

| Model Numbers | Dimensions mm (Inches) | | | | | | | | | | | | | | | | | |
|---------------|------------------------|----------------|---------------|----------------|----------------|----------------|----------------|-----------------|---------------|--------------|--------------|---------------|---------------|----------------|---------------|----------------|-------------|----------------|
| | A | B | C | D | E | F | H | J | K | N | P | Q | S | T | U | V | X | Z |
| S-BG-03 | 76 (2.99) | 53.8 (2.12) | 11.1 (.44) | 26.9 (1.06) | 53.8 (2.12) | 73.6 (2.90) | 26.9 (1.06) | 163.5 (6.44) | 13.5 (.53) | 21 (.83) | 50 (1.97) | 130 (5.12) | 103 (4.06) | 21.5 (.85) | 106 (4.17) | 26.1 (1.03) | 13 (.51) | 36.1 (1.42) |
| S-BG-06 | 98 (3.86) | 70 (2.76) | 14 (.55) | 35 (1.38) | 66.7 (2.63) | 58.8 (2.31) | 33.7 (1.33) | 163.5 (6.44) | 17.5 (.69) | 26 (1.02) | 50 (1.97) | 130 (5.12) | 103 (4.06) | 26 (1.02) | 122 (4.80) | 19.3 (.76) | 13 (.51) | 21.3 (.84) |
| S-BG-10 | 120 (4.72) | 82.6 (3.25) | 18.7 (.74) | 41.3 (1.63) | 88.9 (3.50) | 46.1 (1.81) | 44.9 (1.77) | 180 (7.09) | 21.5 (.85) | 32 (1.26) | 65 (2.56) | 167 (6.57) | 135 (5.31) | 33.5 (1.32) | 155 (6.10) | 21.1 (.83) | 18 (.71) | — |

Nominal Override Characteristics

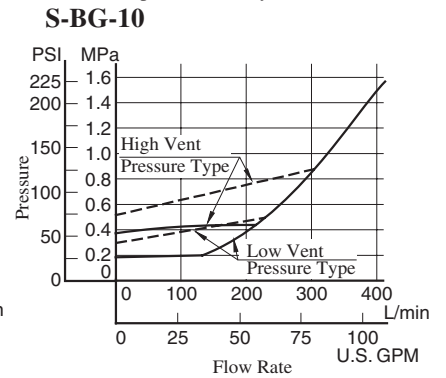
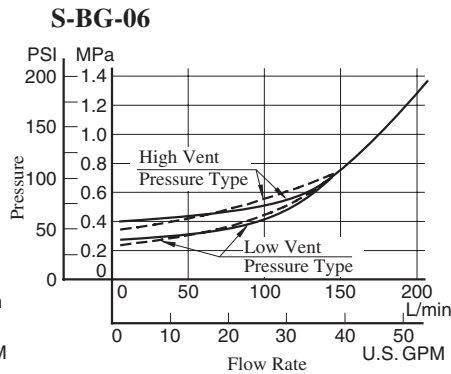
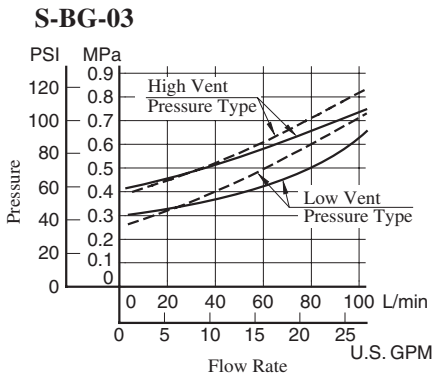
Hydraulic fluid:
 Viscosity : 35 mm²/s (164 SSU)
 Specific Gravity : 0.850



Min. Adj. Pressure and Vent Pressure vs. Flow

Hydraulic fluid:
 Viscosity : 35 mm²/s (164 SSU)
 Specific Gravity : 0.850

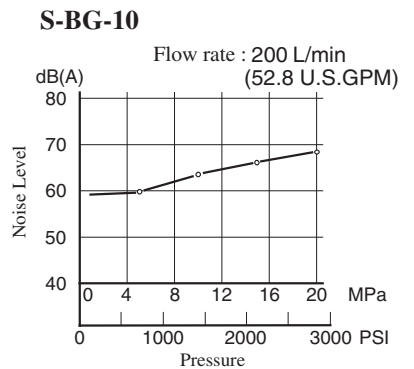
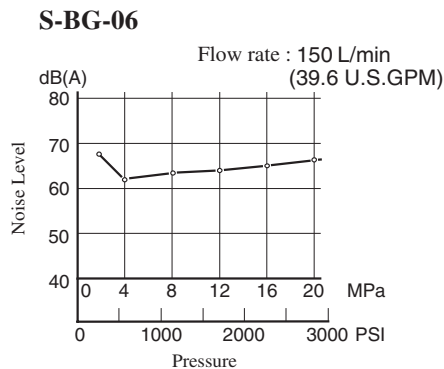
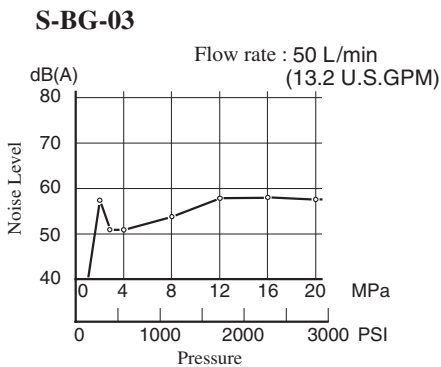
— Vent Pressure
 - - - Min. Adjustment Pressure



Noise Level

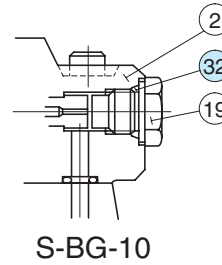
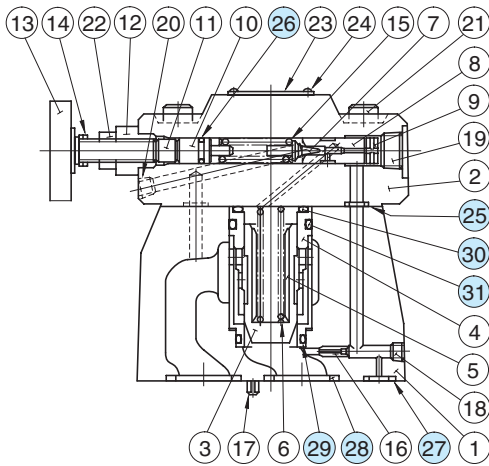
Measuring condition

Measuring position: At 1m (3.3 ft.) back from the valve front.
 Viscosity : 35 mm²/s (164 SSU)
 Back pressure : 0.1 MPa (14.5 PSI)



■ Spare Parts List

S-BG-03,06,10-*-40/4090



● List of Seals

| Item | Name of Parts | Part Numbers | | | Qty. |
|------|---------------|--------------|------------|------------|------|
| | | S-BG-03 | S-BG-06 | S-BG-10 | |
| 25 | O-Ring | SO-NB-P9 | SO-NB-P9 | SO-NB-P9 | 2 |
| 26 | O-Ring | SO-NA-P9 | SO-NA-P9 | SO-NA-P9 | 1 |
| 27 | O-Ring | SO-NB-P9 | SO-NB-P11 | SO-NB-P9 | 1 |
| 28 | O-Ring | SO-NB-P18 | SO-NB-P28 | SO-NB-P32 | 2 |
| 29 | O-Ring | SO-NB-A024 | SO-NB-A024 | SO-NB-A128 | 1 |
| 30 | O-Ring | SO-NB-P28 | SO-NB-P28 | SO-NB-P36 | 1 |
| 31 | O-Ring | SO-NB-P32 | SO-NB-P32 | SO-NB-P42 | 1 |
| 32 | O-Ring | — | — | SO-NB-P14 | 1 |

Note: When ordering the seals, please specify the seal kit number from the table below.

● List of Seal Kits

| Valve Model Numbers | Seal Kit Numbers |
|---------------------|------------------|
| S-BG-03 | KS-S-BG-03-40 |
| S-BG-06 | KS-S-BG-06-40 |
| S-BG-10 | KS-S-BG-10-40 |