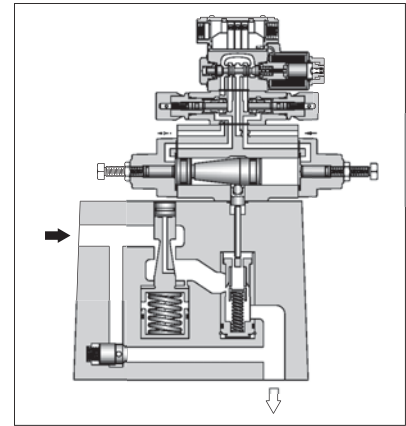
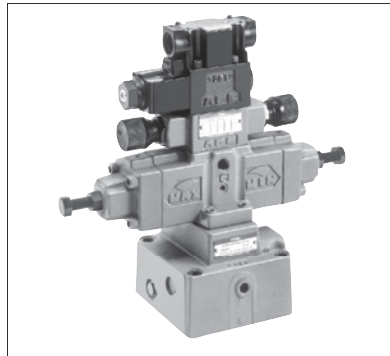
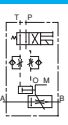


Pilot Operated Flow Control Valves / Pilot Operated Flow Control and Check Valves

Flow control of these valves is continuously made by a hydraulically operated pilot piston mechanism which controls opening area of the orifice of the valve. With the use of these valves, shockless operation either in acceleration or deceleration can be obtained. With the compensator for the pressure and temperature, stable flow control can be obtained regardless of the changes in the pressure (load) and temperature (oil viscosity).



D

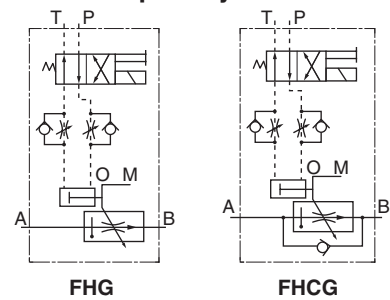


Pilot Operated Flow Control Valves
Pilot Operated Flow Control and Check Valves

Specifications

| Model Numbers | Max. Metred Flow Capacity L/min (U.S.GPM) | Min. Metred Flow Capacity L/min (U.S.GPM) | Max. Operating Pressure MPa (PSI) | Min. Pilot Pressure MPa (PSI) | Approx. Mass kg (lbs.) |
|-----------------------|--|--|--------------------------------------|----------------------------------|---------------------------|
| FHG/FHCG-02-30-*-13* | 30 (7.9) | 0.05 (.013) | 21 (3050) | 1.5 (220) | 13 (28.7) |
| FHG/FHCG-03-125-*-13* | 125 (33) | 0.2 (.053) | | | 17 (37.5) |
| FHG/FHCG-06-250-*-13* | 250 (66) | 2 (.53) | | | 32 (70.6) |
| FHG/FHCG-10-500-*-13* | 500 (132) | 4 (1.06) | | | 61 (135) |

Graphic Symbols



Model Number Designation

| F- | FHC | G | -02 | -30 | -N | -O | -A100 | -N | -13 | * |
|--|--|------------------------------------|------------|-------------------------------------|---|--|--|--|------------------|--|
| Special Seals | Series Number | Type of Mounting | Valve Size | Max. Metred Flow L/min (U.S.GPM) | Pressure ^{★3} Compensator Stroke Adj. | With No Pilot Valve ^{★1} | Coil Type ^{★2} | Type of Electrical Connections | Design Number | Design Standards |
| F: Special Seals for Phos- phate Ester Type Fluids (Omit if not re- quired) | FH: Pilot Operated Flow Control Valves FHC: Pilot Operated Flow Cont. & Check Valves | G: Sub-plate Mounting | 02 | 30 : 30 (7.9) | N: Applicable only for Pres. Compensator Stroke Adjustment (Option - Omit if not required) | O: Applicable only for Without Pilot Valve | AC: A100 A120 A200 A240 | None: Terminal Box Type N: With Plug-in Connector (Din) | 13 | None: Japanese Std. "JIS" 90: N.American Design Std. 80: European Design Std. |
| | | | 03 | 125 : 125 (33) | | | DC: D12 D24 D48 | | 13 | |
| | | | 06 | 250 : 250 (66) | | | AC →DC: R100 R200 | | 13 | |
| | | | 10 | 500 : 500 (132) | | | N: With Plug-in Connector (Din) | | 13 | |

- ★1. Both solenoid operated directional valve (DSG-01) and modular valve (MSW-01) can be used as a pilot valve. If no pilot valve is required, there is no need to specify the coil type and the electrical connection type of solenoid operated directional valve.
- ★2. The coil types are same as those for DSG-01 Series solenoid operated directional valves. See solenoid ratings on page 345.
- ★3. **Pres. compensator stroke adjustment:** Can reduce jumping at the start of the actuator.

In the table above, the symbols or numbers highlighted with shade represent the optional extras. The valves with model number having such optional extras are handles as options, therefore, please confirm the time of delivery with us before ordering.

Attachment
Mounting Bolts

| Valve Model Numbers | Socket Head Cap Screw | | Qty. |
|---------------------|--|-------------------------|------|
| | Japanese Std. "JIS" & European Design Std. | N. American Design Std. | |
| FHG/FHCG-02 | M8×50 Lg. | 5/16-18 UNC × 2 Lg. | 4 |
| FHG/FHCG-03 | M10×75 Lg. | 3/8-16 UNC × 3 Lg. | 4 |
| FHG/FHCG-06 | M16×130 Lg. | 5/8-11 UNC × 5 Lg. | 4 |
| FHG/FHCG-10 | M20×160 Lg. | 3/4-10 UNC × 6-1/2 Lg. | 4 |

Sub-plate

| Valve Model Numbers | Japanese Standard "JIS" | | European Design Std. | | N. American Design Std. | | Approx. Mass kg (lbs.) |
|---------------------|-------------------------|-------------|----------------------|-------------|-------------------------|-------------|------------------------|
| | Sub-plate Model No. | Thread Size | Sub-plate Model No. | Thread Size | Sub-plate Model No. | Thread Size | |
| FHG FHC -02 | FGM-02-20 | Rc 1/4 | FGM-02-2080 | 1/4 BSP.F | FGM-02-2090 | 1/4 NPT | 2.3 (5.1) |
| | FGM-02X-20 | Rc 3/8 | FGM-02X-2080 | 3/8 BSP.F | FGM-02X-2090 | 3/8 NPT | 2.3 (5.1) |
| | FGM-02Y-20 | Rc 1/2 | FGM-02Y-2080 | 1/2 BSP.F | FGM-02Y-2090 | 1/2 NPT | 3.1 (6.8) |
| FHG FHC -03 | FGM-03-20 | Rc 3/8 | FGM-03-2080 | 3/8 BSP.F | FGM-03-2090 | 3/8 NPT | 3.9 (8.6) |
| | FGM-03X-20 | Rc 1/2 | FGM-03X-2080 | 1/2 BSP.F | FGM-03X-2090 | 1/2 NPT | 3.9 (8.6) |
| | FGM-03Y-20 | Rc 3/4 | FGM-03Y-2080 | 3/4 BSP.F | FGM-03Y-2090 | 3/4 NPT | 5.7 (12.6) |
| | FGM-03Z-20 | Rc 1 | FGM-03Z-2080 | 1 BSP.F | FGM-03Z-2090 | 1 NPT | 5.7 (12.6) |
| FHG FHC -06 | FGM-06X-20 | Rc 1 | FGM-06X-2080 | 1 BSP.F | FGM-06X-2090 | 1 NPT | 12.5 (27.6) |
| | FGM-06Y-20 | Rc 1-1/4 | FGM-06Y-2080 | 1-1/4 BSP.F | FGM-06Y-2090 | 1-1/4 NPT | 16 (35.3) |
| | FGM-06Z-20 | Rc 1-1/2 | FGM-06Z-2080 | 1-1/2 BSP.F | FGM-06Z-2090 | 1-1/2 NPT | 16 (35.3) |
| FHG FHC -10 | FGM-10Y-20★ | 1-1/2, 2 | FGM-10Y-20★ | 1-1/2, 2 | FGM-10Y-2090★ | 1-1/2, 2 | 37 (81.6) |

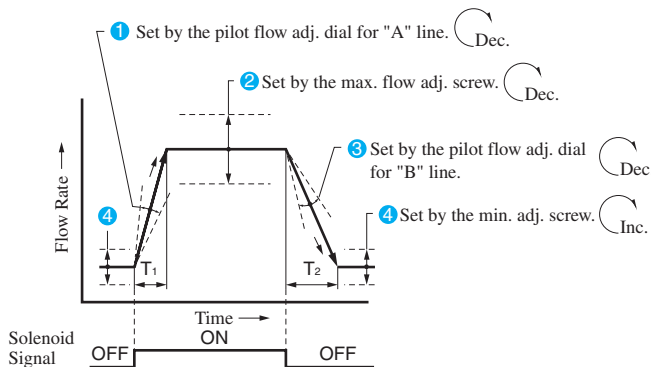
● Sub-plates are available. Specify the sub-plate model number from the table above. When sub-plates are not used, the mounting surface should have a good machined finish.

★ FGM-10Y is special type sub-plates to be used with pipe flange. When ordering FGM-10Y, specify the pipe flange kit in addition to FGM-10Y referring to F3 pipe flanges shown on page 821.

● Sub-plates are common with flow control valves. For dimensions, see pages 281 to 283.

Instructions

Control patterns and flow rate adjustment



- While the solenoid operated directional valve off (4 shown left)
The flow rate is set by the minimum flow adjustment screw and the actuator operates at the minimum speed setting.
- When the solenoid operated directional valve is turned on (1 shown left)
The flow rate is shifted from minimum to maximum and the actuator speed is also shifted likewise. The switching time can be set by the pilot flow adjustment dial 1.
- When the solenoid operated directional valve is turned off (3 shown left)
The flow rate is shifted from maximum to minimum and the actuator speed is also shifted likewise. The switching time can be set by the pilot flow adjustment dial 3.

Tightening of flow adjustment screws and dials

To adjust flow rates, slacken the lock nut or the dial setting screw. After adjustments, tighten the lock nut or the dial.

Min. required pressure difference

The minimum differential pressure between inlet and outlet port is required to obtain the optimum pressure compensation. It varies according to the flow rate to be set. For details, please refer to the performance curves.

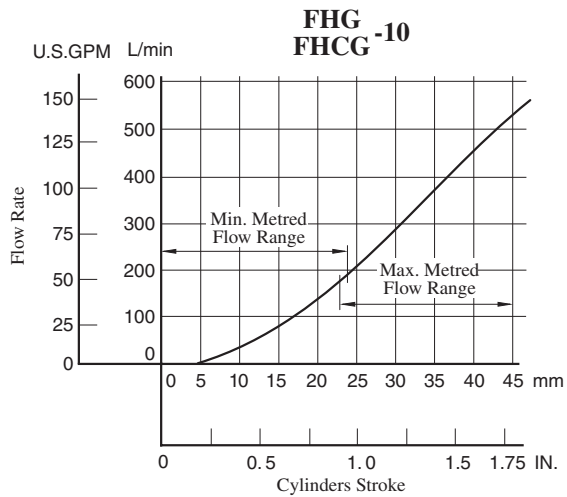
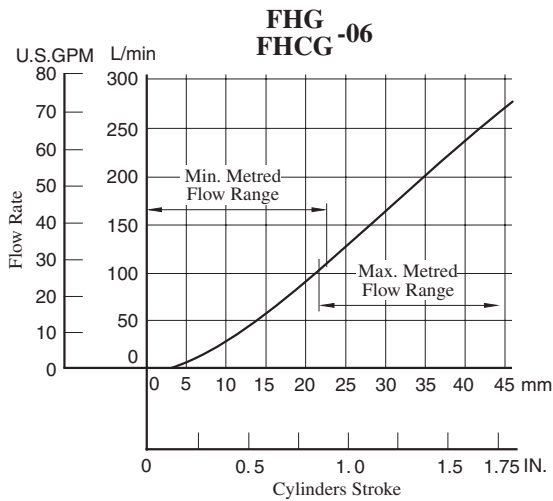
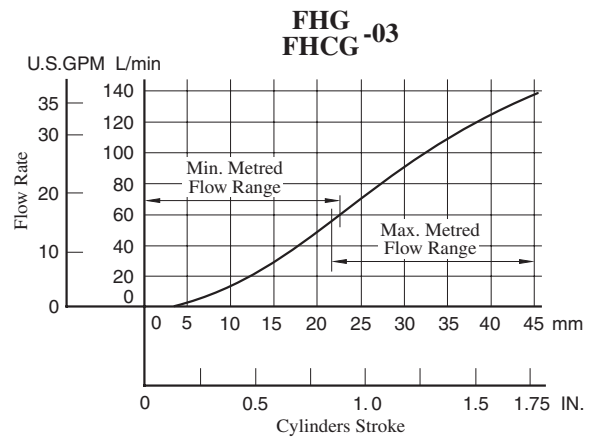
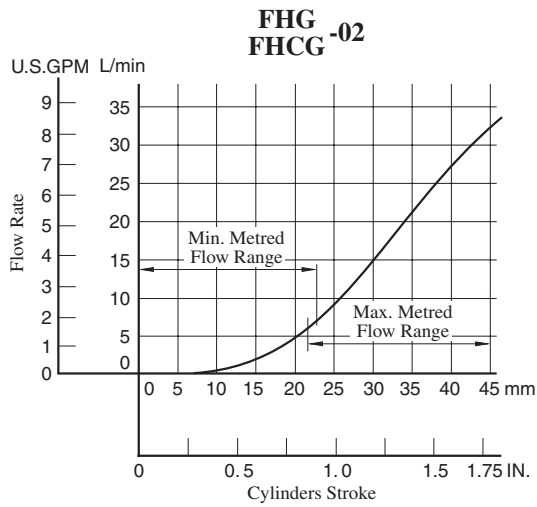
Free flow

Check valve pressure drops vary with flow rates. If models with check valves are used, see free flow pressure drop characteristics.

Line filter

To carry out flow adjustments by as small degree as 2 L/min (.53 U.S.GPM) or less, be sure to use a line filter of 10 μm or finer and install it near the valve inlet.

Metred Flow vs. Cylinders Stroke



Other Characteristics

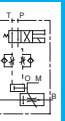
The following characteristics are the same as for flow control valves;

- Metred Flow vs. Differential Pressure
- Metred Flow vs. Viscosity
- Min. Required Pressure Difference
- Pressure Drop for Reversed Free Flow (only for models with check valves)

See pages 284 to 286. For reference, the corresponding model No. of the flow control valves are shown below.

| Valve Model No. | Model No. |
|-----------------|---------------|
| FHG -02 FHCG | FG -02 FCG |
| FHG -03 FHCG | FG -03 FCG |
| FHG -06 FHCG | FG -06 FCG |
| FHG -10 FHCG | FG -10 FCG |

D



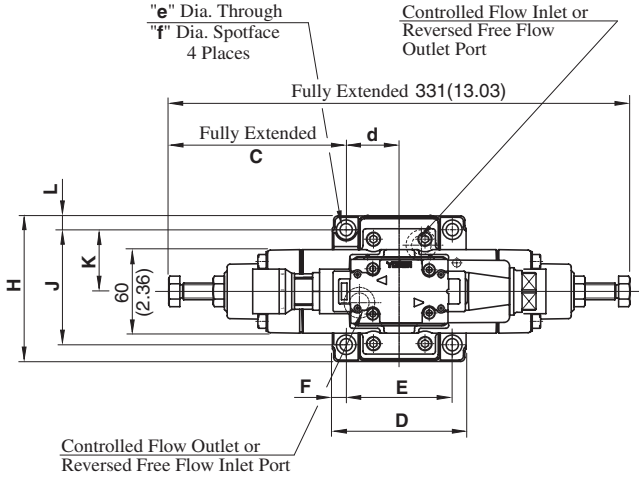
Pilot Operated Flow Control Valves
Pilot Operated Flow Control and Check Valves

● **Terminal Box Type**

FHG/FHCG-02-30-**-**-13/1390
 FHG/FHCG-03-125-**-**-13/1390

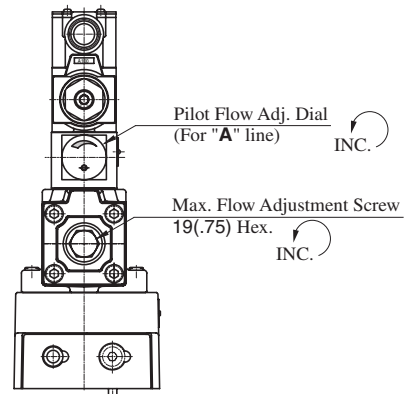
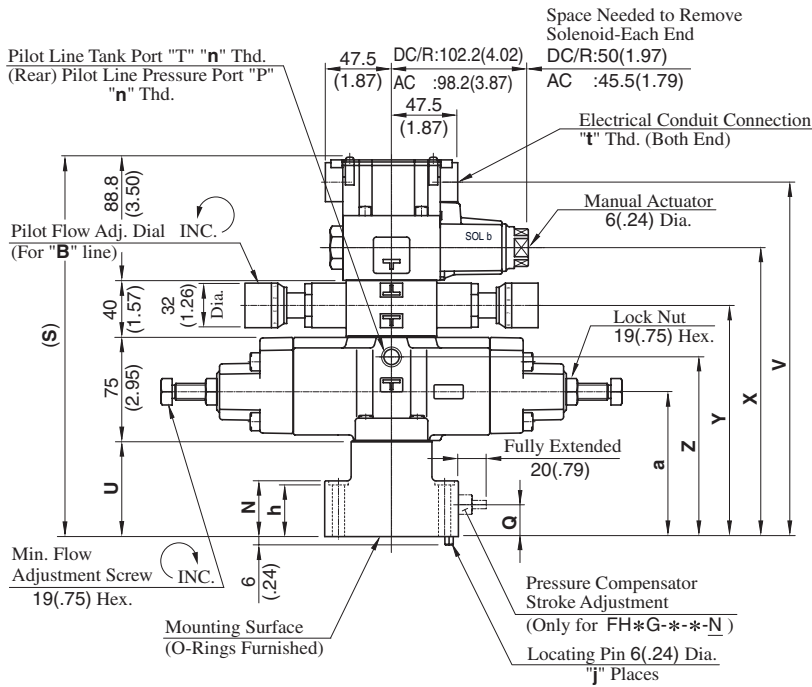
Mounting surface:
 FH*G-02: ISO 6263-AK-06-2-A
 FH*G-03: ISO 6263-AM-07-2-A

DIMENSIONS IN MILLIMETRES (INCHES)



| Model Numbers | n | t |
|----------------------------|---------|---------|
| FHG/FHCG-02-30-**-**-13 | Rc 1/4 | G 1/2 |
| FHG/FHCG-02-30-**-**-1390 | 1/4 NPT | 1/2 NPT |
| FHG/FHCG-03-125-**-**-13 | Rc 1/4 | G 1/2 |
| FHG/FHCG-03-125-**-**-1390 | 1/4 NPT | 1/2 NPT |

Note: For dimensions of the valve mounting surface, see the installation drawing (P.281 and 282) of the sub-plate used together.



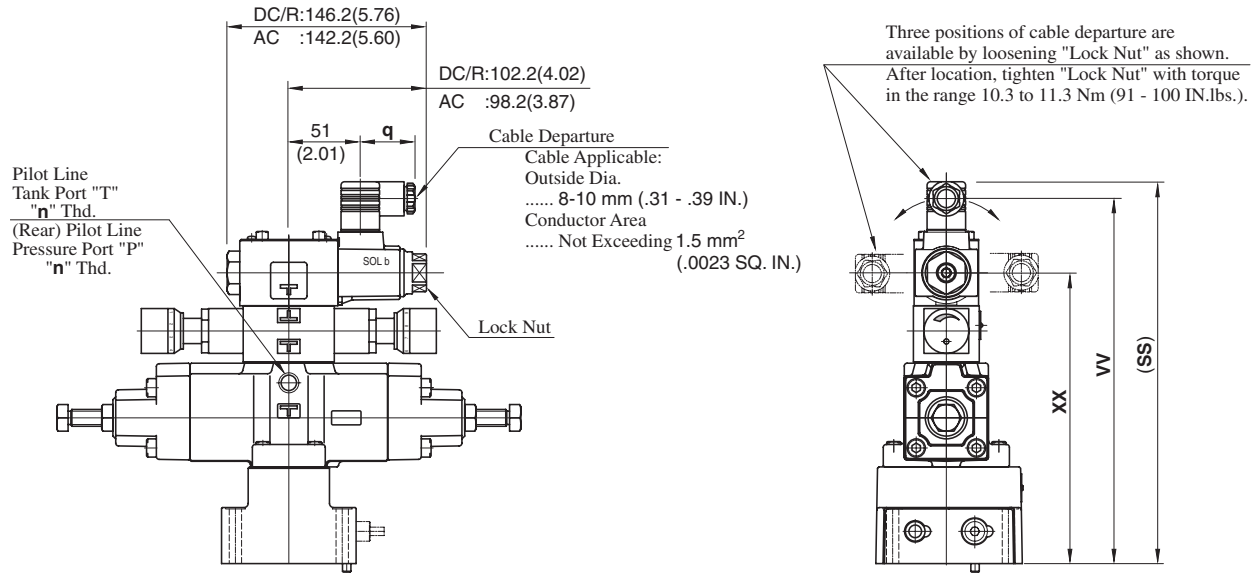
| Model Numbers | Dimensions mm (Inches) | | | | | | | | | | | | | | | |
|-------------------|------------------------|---------------|-----------------|---------------|-----------------|-----------------|----------------|---------------|--------------|--------------|------------------|--------------|------------------|-----------------|---------------|---------------|
| | C | D | E | F | H | J | K | L | N | Q | S | U | V | X | Y | Z |
| FHG-02 FHCG-02 | 127.4 (5.02) | 96 (3.78) | 76.2 (3.00) | 9.9 (.39) | 100.6 (3.96) | 82.6 (3.25) | 44.3 (1.74) | 9 (.35) | 40 (1.57) | 23 (.91) | 272.8 (10.74) | 69 (2.72) | 254.5 (10.02) | 207.5 (8.17) | 166 (6.54) | 129 (5.08) |
| FHG-03 FHCG-03 | 114.7 (4.52) | 125 (4.92) | 101.6 (4.00) | 11.7 (.46) | 125 (4.92) | 101.6 (4.00) | 61.8 (2.43) | 11.7 (.46) | 64 (2.52) | 41 (1.61) | 301.8 (11.88) | 98 (3.86) | 283.5 (11.16) | 236.5 (9.31) | 195 (7.68) | 158 (6.22) |

| Model Numbers | Dimensions mm (Inches) | | | | | j |
|-------------------|------------------------|----------------|--------------|---------------|--------------|---|
| | a | d | e | f | h | |
| FHG-02 FHCG-02 | 104 (4.09) | 38.1 (1.50) | 8.8 (.35) | 14 (.55) | 39 (1.54) | 1 |
| FHG-03 FHCG-03 | 133 (5.24) | 50.8 (2.00) | 11 (.43) | 17.5 (.69) | 63 (2.48) | 2 |

● Models with Plug-in Connector

FHG/FHCG-02-30-*-N-13/1380/1390
 FHG/FHCG-03-125-*-N-13/1380/1390

DIMENSIONS IN
 MILLIMETRES (INCHES)



| Model Numbers | Dimensions mm (Inches) | | | | Remarks |
|------------------------|------------------------|------------------|-----------------|--------------|----------------------|
| | SS | VV | XX | q | |
| FHG/FHCG-02-30-*-A*-N | 272.5 (10.73) | 260.5 (10.26) | 207.5 (8.17) | 39 (1.54) | with AC Solenoid |
| FHG/FHCG-03-125-*-A*-N | 301.5 (11.87) | 289.5 (11.40) | 236.5 (9.31) | | |
| FHG/FHCG-02-30-*-D*-N | 283.5 (11.16) | 271.5 (10.69) | 207.5 (8.17) | 39 (1.54) | with DC Solenoid |
| FHG/FHCG-03-125-*-D*-N | 312.5 (12.30) | 300.5 (11.83) | 236.5 (9.31) | | |
| FHG/FHCG-02-30-*-R*-N | 286.5 (11.28) | 264.7 (10.42) | 207.5 (8.17) | 53 (2.09) | with AC →DC Solenoid |
| FHG/FHCG-03-125-*-R*-N | 315.5 (12.42) | 293.7 (11.56) | 236.5 (9.31) | | |

| Model Numbers | Thread Size | | |
|---------------------|-------------------------------|----------------------------------|------------------------------------|
| | Japanese Std. "JIS" Design 13 | European Design Std. Design 1380 | N.American Design Std. Design 1390 |
| | "n" Thd. | "n" Thd. | "n" Thd. |
| FHG/FHCG-02-30-*-N | Rc 1/4 | 1/4 BSP.F | 1/4 NPT |
| FHG/FHCG-03-125-*-N | | | |

● For other dimensions, refer to "Terminal Box Type".

D



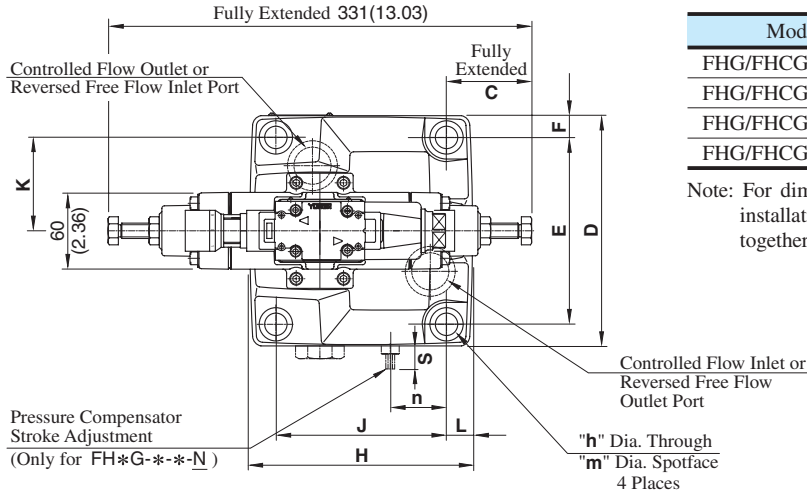
Pilot Operated Flow Control Valves
 Pilot Operated Flow Control and Check Valves

● **Terminal Box Type**

FHG/FHCG-06-250-*-13/1390
 FHG/FHCG-10-500-*-13/1390

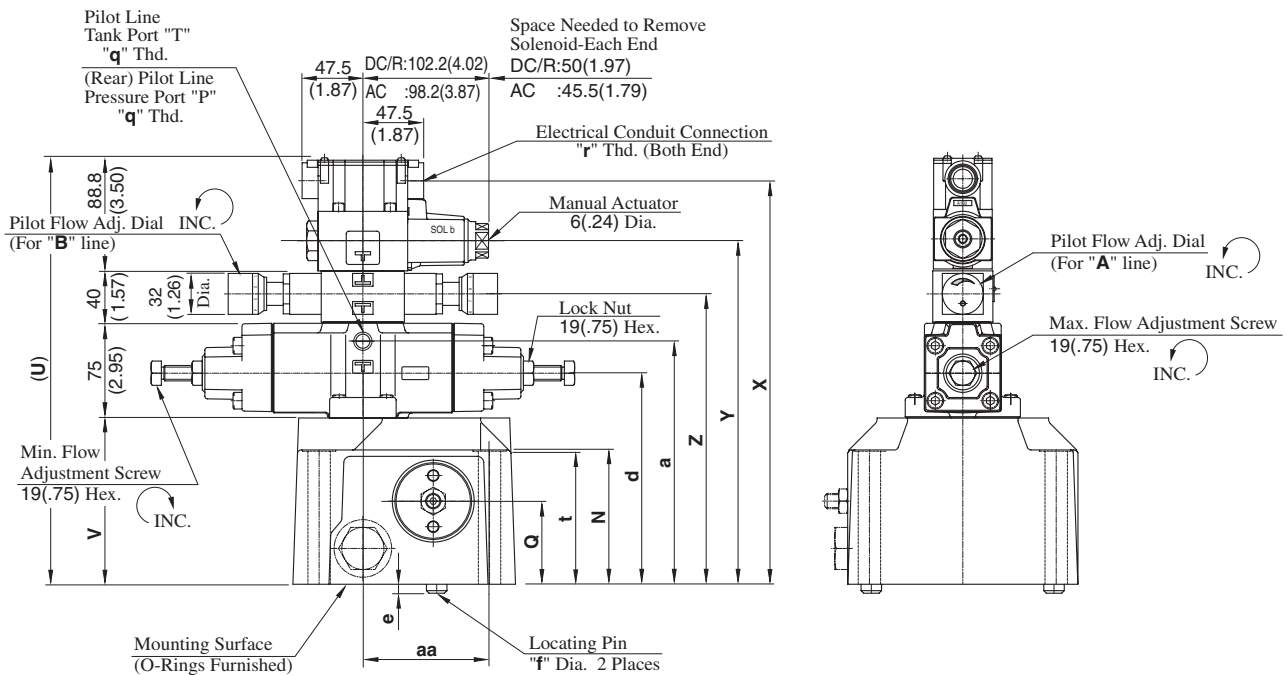
Mounting surface:
 FH*G-06: ISO 6263-AP-08-2-A

**DIMENSIONS IN
 MILLIMETRES (INCHES)**



| Model Numbers | q | r |
|------------------------|---------|---------|
| FHG/FHCG-06-250-*-13 | Rc 1/4 | G 1/2 |
| FHG/FHCG-06-250-*-1390 | 1/4 NPT | 1/2 NPT |
| FHG/FHCG-10-500-*-13 | Rc 1/4 | G 1/2 |
| FHG/FHCG-10-500-*-1390 | 1/4 NPT | 1/2 NPT |

Note: For dimensions of the valve mounting surface, see the installation drawing (P.282 and 283) of the sub-plate used together.



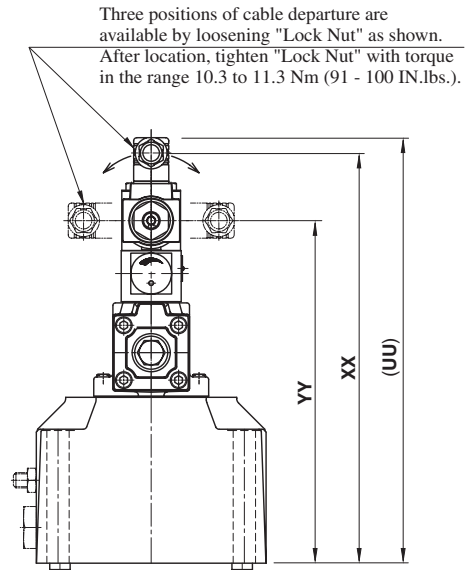
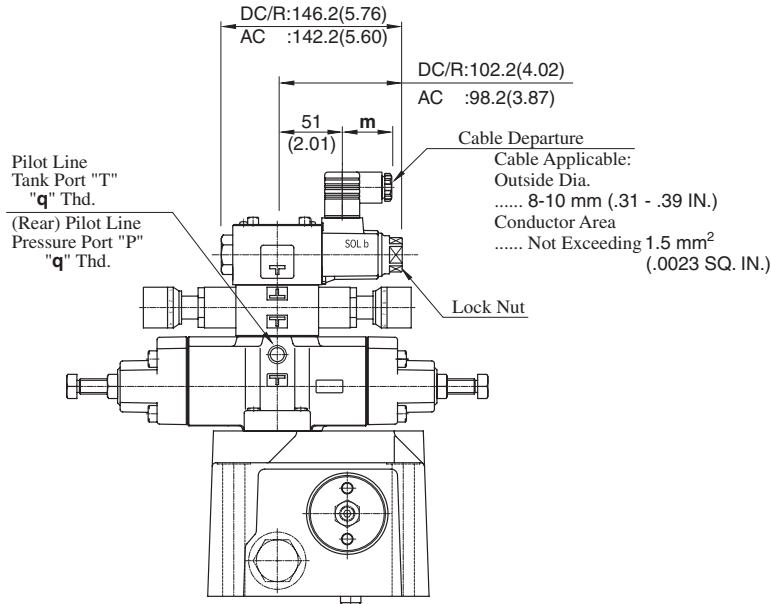
| Model Numbers | Dimensions mm (Inches) | | | | | | | | | | | | | | | |
|-------------------|------------------------|---------------|-----------------|---------------|---------------|-----------------|----------------|---------------|---------------|--------------|-------------|------------------|---------------|------------------|------------------|----------------|
| | C | D | E | F | H | J | K | L | N | Q | S | U | V | X | Y | Z |
| FHG-06 FHCG-06 | 66.5 (2.62) | 180 (7.09) | 146.1 (5.75) | 17 (.67) | 174 (6.85) | 133.4 (5.25) | 73.1 (2.88) | 20.3 (.80) | 105 (4.13) | 65 (2.56) | 18 (.71) | 333.8 (13.14) | 130 (5.12) | 315.5 (12.42) | 268.5 (10.57) | 227 (8.94) |
| FHG-10 FHCG-10 | 21 (.83) | 244 (9.61) | 196.9 (7.75) | 23.5 (.93) | 228 (8.98) | 177.8 (7.00) | 98.5 (3.88) | 25.1 (.99) | 137 (5.39) | 85 (3.35) | 23 (.91) | 363.8 (14.32) | 160 (6.30) | 345.5 (13.60) | 298.5 (11.75) | 257 (10.12) |

| Model Numbers | Dimensions mm (Inches) | | | | | | | | |
|-------------------|------------------------|---------------|-------------|-------------|---------------|--------------|--------------|---------------|-----------------|
| | a | d | e | f | h | m | n | t | aa |
| FHG-06 FHCG-06 | 190 (7.48) | 165 (6.50) | 7 (.28) | 16 (.63) | 17.5 (.69) | 26 (1.02) | 44 (1.73) | 103 (4.06) | 99 (3.90) |
| FHG-10 FHCG-10 | 220 (8.66) | 195 (7.68) | 10 (.39) | 18 (.71) | 21.5 (.85) | 32 (1.26) | 61 (2.40) | 135 (5.31) | 144.5 (5.69) |

● Models with Plug-in Connector

FHG/FHCG-06-250-*-N-13/1380/1390
 FHG/FHCG-10-500-*-N-13/1380/1390

DIMENSIONS IN
 MILLIMETRES (INCHES)



| Model Numbers | Dimensions mm (Inches) | | | | Remarks |
|------------------------|------------------------|------------------|------------------|--------------|----------------------|
| | UU | XX | YY | m | |
| FHG/FHCG-06-250-*-A*-N | 333.5 (13.13) | 321.5 (12.66) | 268.5 (10.57) | 39 (1.54) | with AC Solenoid |
| FHG/FHCG-10-500-*-A*-N | 363.5 (14.31) | 351.5 (13.84) | 298.5 (11.75) | | |
| FHG/FHCG-06-250-*-D*-N | 344.5 (13.56) | 332.5 (13.09) | 268.5 (10.57) | 39 (1.54) | with DC Solenoid |
| FHG/FHCG-10-500-*-D*-N | 374.5 (14.74) | 362.5 (14.27) | 298.5 (11.75) | | |
| FHG/FHCG-06-250-*-R*-N | 347.5 (13.68) | 325.7 (12.82) | 268.5 (10.57) | 53 (2.09) | with AC →DC Solenoid |
| FHG/FHCG-10-500-*-R*-N | 377.5 (14.86) | 355.7 (14.00) | 298.5 (11.75) | | |

| Model Numbers | Thread Size | | |
|---------------------|-------------------------------|----------------------------------|------------------------------------|
| | Japanese Std. "JIS" Design 13 | European Design Std. Design 1380 | N.American Design Std. Design 1390 |
| | "q" Thd. | "q" Thd. | "q" Thd. |
| FHG/FHCG-06-250-*-N | Rc 1/4 | 1/4 BSPF | 1/4 NPT |
| FHG/FHCG-10-500-*-N | | | |

● For other dimensions, refer to "Terminal Box Type".

D



Pilot Operated Flow Control Valves
 Pilot Operated Flow Control and Check Valves

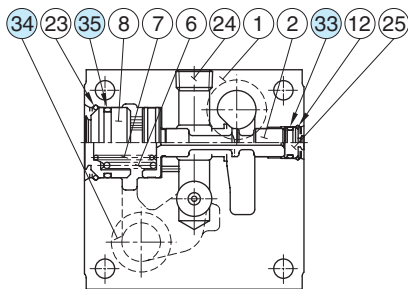
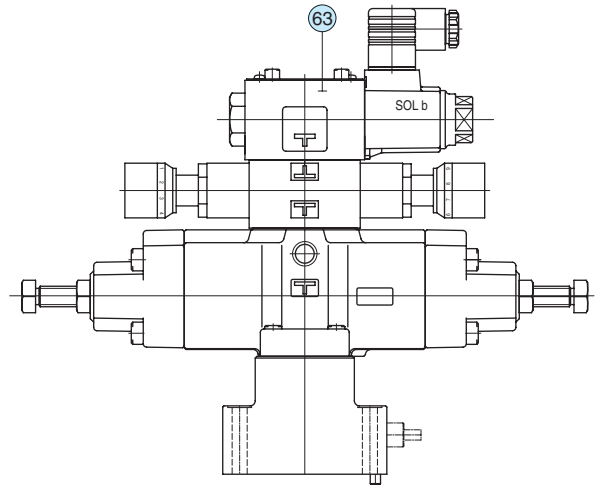
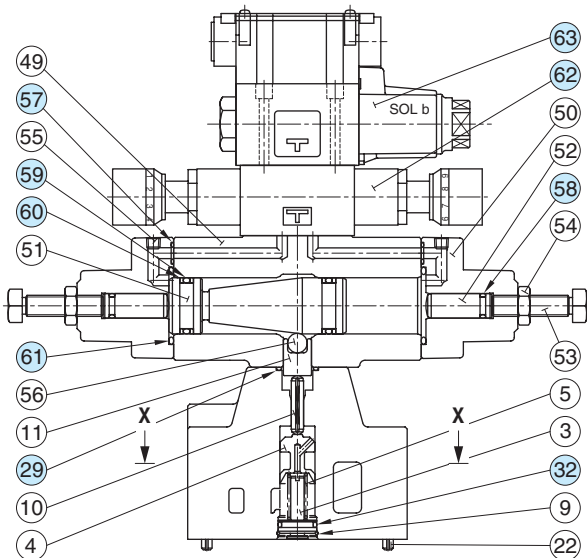
■ List of seals

● Terminal Box Type

FHG/FHCG-02-30-**-13/1390
 FHG/FHCG-03-125-**-13/1390

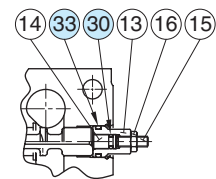
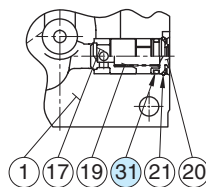
● Models with Plug-in Connector

FHG/FHCG-02-30-**-N-13/1380/1390
 FHG/FHCG-03-125-**-N-13/1380/1390



(FHG-※ Type)

(FHCG-※ Type)



(FHG
 FHCG -**-N Type)

Section X-X

● List of Seals

| Item | Name of Parts | Part Numbers | | Qty. |
|------|---------------|-----------------|-----------------|------|
| | | FHG -02 FHCG | FHG -03 FHCG | |
| 29 | O-Ring | SO-NB-P20 | SO-NB-P20 | 1 |
| 30 | O-Ring | SO-NB-P5 | SO-NB-P5 | 1 |
| 31 | O-Ring | SO-NB-P10A | SO-NB-P16 | 1 |
| 32 | O-Ring | SO-NB-P12 | SO-NB-P18 | 1 |
| 33 | O-Ring | SO-NB-P14 | SO-NB-P14 | 1 |
| 34 | O-Ring | SO-NB-P18 | SO-NB-P28 | 2 |
| 35 | O-Ring | SO-NB-G25 | SO-NB-G35 | 1 |
| 57 | O-Ring | SO-NB-P9 | SO-NB-P9 | 2 |
| 58 | O-Ring | SO-NB-P10A | SO-NB-P10A | 2 |
| 59 | O-Ring | SO-NA-P26 | SO-NA-P26 | 2 |
| 60 | Back Up Ring | SO-BB-P26 | SO-BB-P26 | 4 |
| 61 | O-Ring | SO-NB-P38 | SO-NB-P38 | 2 |

Note: When ordering the seals, please specify the seal kit number from the table right. In addition to the above seals, seals for pilot valves are included in the seal kit.

● Pilot Valves

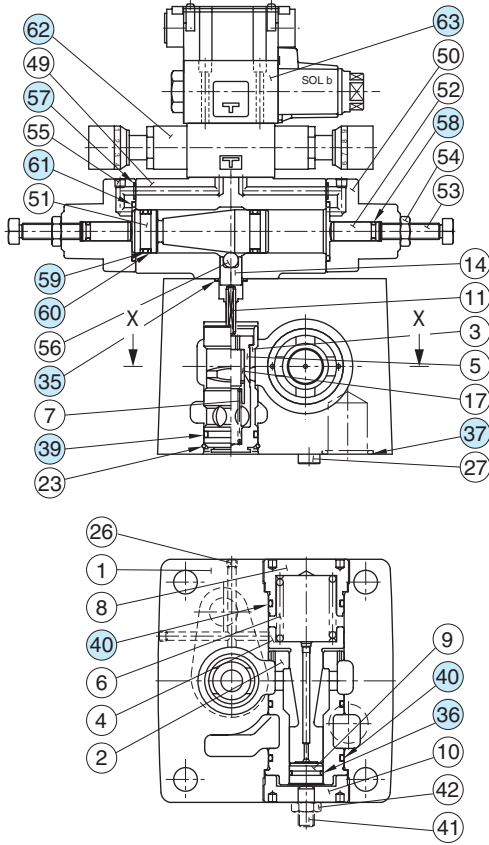
See page 298 for the pilot valve model numbers to be used.

● List of Seal Kits

| Valve Model Numbers | Seal Kit Numbers |
|---------------------|------------------|
| FHG-02 | KS-FHG-02-13 |
| FHCG-02 | KS-FHCG-02-13 |
| FHG-03 | KS-FHG-03-13 |
| FHCG-03 | KS-FHCG-03-13 |

● Terminal Box Type

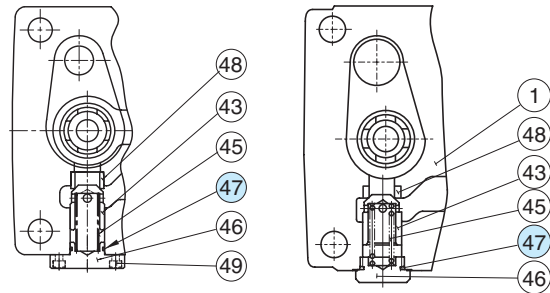
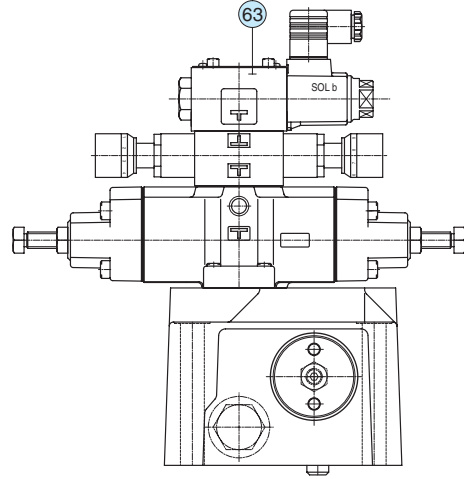
FHG/FHCG-06-250-**-13/1390
 FHG/FHCG-10-500-**-13/1390



(FHG-* Type)
 Section X-X

● Models with Plug-in Connector

FHG/FHCG-06-250-**-N-13/1380/1390
 FHG/FHCG-10-500-**-N-13/1380/1390



(FHCG-06 Type)

(FHCG-10 Type)

Section X-X

● List of Seals

| Item | Name of Parts | Part Numbers | | Qty. |
|------|---------------|----------------|----------------|------|
| | | FHG FHCG-06 | FHG FHCG-10 | |
| 35 | O-Ring | SO-NB-P20 | SO-NB-P20 | 1 |
| 36 | O-Ring | SO-NB-P21 | SO-NB-P34 | 1 |
| 37 | O-Ring | SO-NB-P32 | SO-NB-P48 | 2 |
| 39 | O-Ring | SO-NB-P34 | SO-NB-P50 | 1 |
| 40 | O-Ring | SO-NB-P50 | SO-NB-G75 | 3 |
| 47 | O-Ring | SO-NB-A020 | SO-NB-P32 | 1 |
| 57 | O-Ring | SO-NB-P9 | SO-NB-P9 | 2 |
| 58 | O-Ring | SO-NB-P10A | SO-NB-P10A | 2 |
| 59 | O-Ring | SO-NA-P26 | SO-NA-P26 | 2 |
| 60 | Back Up Ring | SO-BB-P26 | SO-BB-P26 | 4 |
| 61 | O-Ring | SO-NB-P38 | SO-NB-P38 | 2 |

Note: When ordering the seals, please specify the seal kit number from the table right. In addition to the above seals, seals for pilot valves are included in the seal kit.

● Pilot Valves

See page 298 for the pilot valve model numbers to be used.

● List of Seal Kits

| Valve Model Numbers | Seal Kit Numbers |
|---------------------|------------------|
| FHG-06 | KS-FHG-06-13 |
| FHCG-06 | KS-FHCG-06-13 |
| FHG-10 | KS-FHG-10-13 |
| FHCG-10 | KS-FHCG-10-13 |

D
 Pilot Operated Flow Control Valves
 Pilot Operated Flow Control and Check Valves

■ List of Pilot Valves

● List of Pilot Valves

| Type of Electrical Conduit Connections | Valve Model Numbers | Pilot Valve Model Numbers | | Remarks |
|--|--|--|---|-------------------------|
| | | Item No.62 Throttle and Check Modular Valves | Item No.63 Solenoid Operated Directional Valves | |
| Terminal Box Type | FHG/FHCG-02- 30-*-* -13 FHG/FHCG-03-125-*-* -13 FHG/FHCG-06-250-*-* -13 FHG/FHCG-10-500-*-* -13 | MSW-01-X-50 | DSG-01-2B2-★ -70 | Japanese Std. "JIS" |
| | FHG/FHCG-02- 30-*-* -1390 FHG/FHCG-03-125-*-* -1390 FHG/FHCG-06-250-*-* -1390 FHG/FHCG-10-500-*-* -1390 | MSW-01-X-50 | DSG-01-2B2-★ -7090 | N. American Design Std. |
| Plug-in Connector Type | FHG/FHCG-02- 30-*-* -N-13 FHG/FHCG-03-125-*-* -N-13 FHG/FHCG-06-250-*-* -N-13 FHG/FHCG-10-500-*-* -N-13 | MSW-01-X-50 | DSG-01-2B2-★ -N-70 | Japanese Std. "JIS" |
| | FHG/FHCG-02- 30-*-* -N-1380 FHG/FHCG-03-125-*-* -N-1380 FHG/FHCG-06-250-*-* -N-1380 FHG/FHCG-10-500-*-* -N-1380 | MSW-01-X-50 | DSG-01-2B2-★ -N-70 | European Design Std. |
| | FHG/FHCG-02- 30-*-* -N-1390 FHG/FHCG-03-125-*-* -N-1390 FHG/FHCG-06-250-*-* -N-1390 FHG/FHCG-10-500-*-* -N-1390 | MSW-01-X-50 | DSG-01-2B2-★ -N-7090 | N. American Design Std. |

Note: 1. Fill a coil type (a symbol representing current/voltage) in section marked ★ .
 2. For the detail of the MSW-01 valve O-rings, see [Page 566](#).
 3. For the detail of the DSG-01 valve O-rings, see [Page 359](#).