

H/HC Type Pressure Control Valves

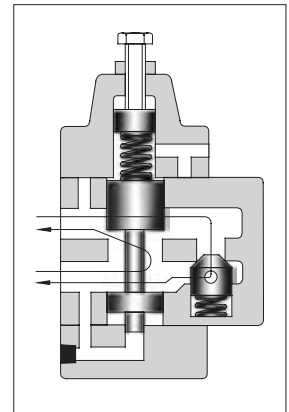
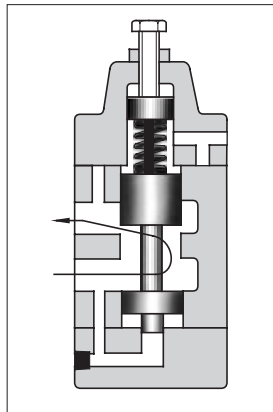
These valves are hydraulically damped, direct operated, pressure control valves which can be actuated by internal or external pilot pressure.

H Type Pressure Control Valves

There are various types of valve including sequence, unloading and low pressure relief valves, all of which are operated by a pressure rise in the circuit, sensed either internally or remotely.

HC Type Pressure Control Valves

They are available with integral check valves for use when free reverse flow from secondary port to the primary port is desired. There are various types of valve including sequence and counterbalance valves, all of which are operated by a pressure rise in the circuit, sensed either internally or remotely.



Specifications

| Series | Model Numbers | | Max. Operating Pres. MPa (PSI) | Max. Flow L/min (U.S.GPM) | Approx. Mass kg (lbs.) | |
|---------------------------------|-------------------------|--------------------|-----------------------------------|---------------------------------|------------------------|--------------------|
| | Threaded Connection | Sub-plate Mounting | | | Threaded Connection | Sub-plate Mounting |
| H Type Pressure Control Valves | HT-03-***-22/2280/2290 | HG-03-***-22/2290 | 21(3050) | 50 (13.2) | 3.7 (8.2) | 4.0 (8.8) |
| | HT-06-***-22/2280/2290 | HG-06-***-22/2290 | | 125 (33) | 6.2 (13.7) | 6.1 (13.5) |
| | HT-10-***-22/2280/2290 | HG-10-***-22/2290 | | 250 (66) | 12.0 (26.5) | 11.0 (24.3) |
| HC Type Pressure Control Valves | HCT-03-***-22/2280/2290 | HCG-03-***-22/2290 | 21(3050) | 50 (13.2) | 4.1 (9.0) | 4.8 (10.6) |
| | HCT-06-***-22/2280/2290 | HCG-06-***-22/2290 | | 125 (33) | 7.1 (15.7) | 7.4 (16.3) |
| | HCT-10-***-22/2280/2290 | HCG-10-***-22/2290 | | 250 (66) | 13.8 (30.4) | 13.8 (30.4) |

● For check valve pressure drops of HC type, see free flow pressure drop characteristics described on [page 247](#).

Yuken can offer flanged connection valves described below.
For details, contact us.

| Model Numbers | Max. Operating Pressure MPa (PSI) | Max. flow L/min (U.S.GPM) |
|-----------------------|--------------------------------------|---------------------------------|
| HF/HCF-10-***-22/2290 | 21 (3050) | 250(66) |
| HF/HCF-16-***-20/2090 | | 500(132) |

Model Number Designation

| F- | H | T | -03 | -C | 3 | -P | -22 | * | |
|---|---|----------------------------------|------------|--|--|--|---------------|---|---|
| Special Seals | Series Number | Type of Mounting | Valve Size | Pres. Adj. Range MPa (PSI) | Valve Type ^{★1} | With Auxiliary Pilot Pressure | Design Number | Design Standards | |
| F: Special Seals for Phosphate Ester Type Fluids (Omit if not required) | H: H Type Pressure Control Valves | T: Threaded Connection | 03 | L: 0.25 - 0.45 (36 - 65) M: 0.45 - 0.9 (65 - 130) N: 0.9 - 1.8 (130 - 260) A: 1.8 - 3.5 (260 - 510) B: 3.5 - 7.0 (510 - 1020) C: 7.0 - 14 (1020 - 2030) | 1 ^{★2} 2 3 4 | P: With Auxiliary Pilot Pressure ^{★3} | 22 | None: Japanese Std. "JIS" 80: European Design Std. 90: N. American Design Std. | |
| | | | 06 | | | | 22 | | |
| | | | 10 | | | | 22 | | |
| | | G: Sub-plate Mounting | 03 | | | | 22 | | None: Japanese Std. "JIS" & European Design Std. 90: N. American Design Std. |
| | | | 06 | | | | 22 | | |
| | | | 10 | | | | 22 | | |
| | HC: HC Type Pressure Control Valves | T: Threaded Connection | 03 | | 1 2 3 4 | | 22 | None: Japanese Std. "JIS" 80: European Design Std. 90: N. American Design Std. | |
| | | | 06 | | | | 22 | | |
| | | | 10 | | | | 22 | | |
| | | G: Sub-plate Mounting | 03 | | | | 22 | | None: Japanese Std. "JIS" & European Design Std. 90: N. American Design Std. |
| | | | 06 | | | | 22 | | |
| | | | 10 | | | | 22 | | |

★1. For the details of valve types, see the following page.

★2. Type 1 is only possible for pressure adjustment ranges L and M.

★3. Models with auxiliary pilots are used where valves must be operated under a lower external pilot pressure than the adjusted pressure (types N, A, and B: about 1/8 of adjusted pressure; type C: about 1/16). This does not apply to pressure adjustment ranges L and M and valve type 1.

Instructions

- To adjust the pressure, loosen the lock nut and turn the pressure adjustment screw slowly clockwise to increase pressures or anti-clockwise to decrease pressures. After adjustments, do not forget to tighten the lock nut.
- Connect the secondary side pressure ports of types 1 and 4 (internal drain) and the drain ports of types 2 and 3 (external drain) directly to the reservoir with a back pressure close to the atmospheric pressure.
- There are two threaded connection primary pressure ports. They can be connected each other in-line; one as inlet and the other as an outlet or the valve can be used by plugging one of the pressure ports.

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 | |
| HG HCG ^{-03-*} | HGM-03-20 | Rc 3/8 | HGM-03-2080 | 3/8 BSP.F | HGM-03-2090 | 3/8 NPT | 1.6 (3.5) |
| | HGM-03X-20 | Rc 1/2 | HGM-03X-2080 | 1/2 BSP.F | HGM-03X-2090 | 1/2 NPT | 1.6 (3.5) |
| HG HCG ^{-03-**-P} | HGM-03-P-20 | Rc 3/8 | HGM-03-P-2080 | 3/8 BSP.F | HGM-03-P-2090 | 3/8 NPT | 2.0 (4.4) |
| | HGM-03X-P-20 | Rc 1/2 | HGM-03X-P-2080 | 1/2 BSP.F | HGM-03X-P-2090 | 1/2 NPT | 2.0 (4.4) |
| HG HCG ^{-06-*} | HGM-06-20 | Rc 3/4 | HGM-06-2080 | 3/4 BSP.F | HGM-06-2090 | 3/4 NPT | 2.4 (5.3) |
| | HGM-06X-20 | Rc 1 | HGM-06X-2080 | 1 BSP.F | HGM-06X-2090 | 1 NPT | 3.0 (6.6) |
| HG HCG ^{-06-**-P} | HGM-06-P-20 | Rc 3/4 | HGM-06-P-2080 | 3/4 BSP.F | HGM-06-P-2090 | 3/4 NPT | 2.4 (5.3) |
| | HGM-06X-P-20 | Rc 1 | HGM-06X-P-2080 | 1 BSP.F | HGM-06X-P-2090 | 1 NPT | 3.0 (6.6) |
| HG HCG ^{-10-*} | HGM-10-20 | Rc 1-1/4 | HGM-10-2080 | 1-1/4 BSP.F | HGM-10-2090 | 1-1/4 NPT | 4.8 (10.6) |
| | HGM-10X-20 | Rc 1-1/2 | HGM-10X-2080 | 1-1/2 BSP.F | HGM-10X-2090 | 1-1/2 NPT | 5.7 (12.6) |
| HG HCG ^{-10-**-P} | HGM-10-P-20 | Rc 1-1/4 | HGM-10-P-2080 | 1-1/4 BSP.F | HGM-10-P-2090 | 1-1/4 NPT | 4.8 (10.6) |
| | HGM-10X-P-20 | Rc 1-1/2 | HGM-10X-P-2080 | 1-1/2 BSP.F | HGM-10X-P-2090 | 1-1/2 NPT | 5.7 (12.6) |

● 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.

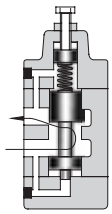
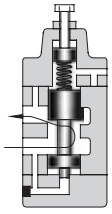
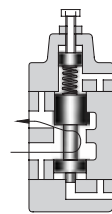
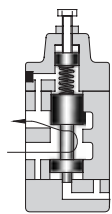
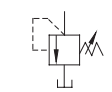
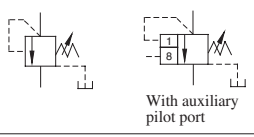
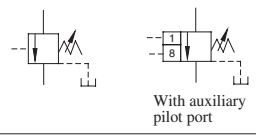
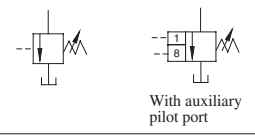
Attachment

Mounting Bolts

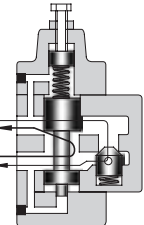
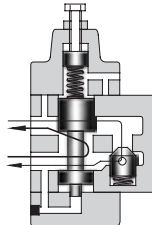
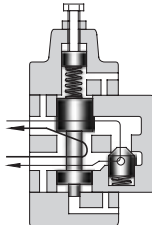
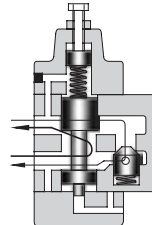
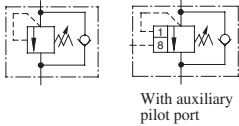
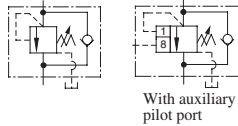
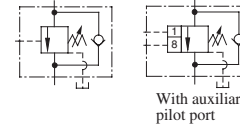
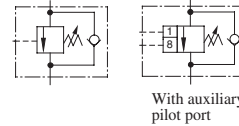
| Valve Model Numbers | Socket Head Cap Screw | | Qty. |
|---------------------|--|-------------------------|------|
| | Japanese Std. "JIS" and European Design Std. | N. American Design Std. | |
| HG-03 | M10 × 50 Lg. | 3/8 -16 UNC × 2 Lg. | 4 |
| HG-06 | M10 × 50 Lg. | 3/8 -16 UNC × 2 Lg. | 4 |
| HG-10 | M10 × 50 Lg. | 3/8 -16 UNC × 2 Lg. | 6 |
| HCG-03 | M10 × 70 Lg. | 3/8 -16 UNC × 2-3/4 Lg. | 4 |
| HCG-06 | M10 × 80 Lg. | 3/8 -16 UNC × 3-1/4 Lg. | 4 |
| HCG-10 | M10 × 90 Lg. | 3/8 -16 UNC × 3-1/2 Lg. | 6 |

Valve Types

H Type

| Valve Type | Type 1: Low Pres. Relief Valve | Type 2: Sequence Valve | Type 3: Sequence Valve | Type 4: Unloading Valve |
|------------------|---|--|--|--|
| Pilot-Drain Type | Internal Pilot-Internal Drain | Internal Pilot-External Drain | External Pilot-External Drain | External Pilot-Internal Drain |
| Operations |  |  |  |  |
| Graphic Symbols |  |  |  |  |
| Description | Can be used as low-pressure relief valve, but be careful to occurrence of surge pressure. | Used to control the operational sequence of two or more actuators. If primary pressure exceeds the pressure setting, effective fluid is delivered to the secondary side. | Used for the same purpose as for the type 2. Operated by external pilot pressure irrespective of primary pressure. | Used as unloading valve. If external pilot pressure exceeds the pressure setting, the pump is turned no-load by releasing all fluid to the tank. |

HC Type

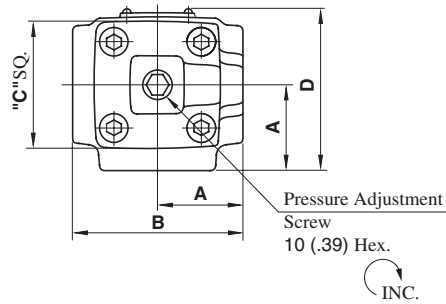
| Valve Type | Type 1: Counterbalance Valve | Type 2: Sequence and Check Valve | Type 3: Sequence and Check Valve | Type 4: Counterbalance Valve |
|------------------|--|--|--|--|
| Pilot-Drain Type | Internal Pilot-Internal Drain | Internal Pilot-External Drain | External Pilot-External Drain | External Pilot-Internal Drain |
| Operations |  |  |  |  |
| Graphic Symbols |  |  |  |  |
| Descriptions | Used to prevent gravitational falls by generating a pressure on the actuator return side. If primary pressure exceeds the pressure setting, fluid is released to keep the pressure constant. | Used to control the operating sequence of two or more actuators. If primary pressure exceeds the pressure setting, effective fluid is delivered to the secondary side. Reversed flow is free by a check valve. | Used for the same purpose as for type 2. Operated by external pilot pressure irrespective of primary pressure. Reversed flow is free by a check valve. | Used for the same purpose as for type 1. Operated by external pilot pressure irrespective of primary pressure. Reversed flow is free by a check valve. |



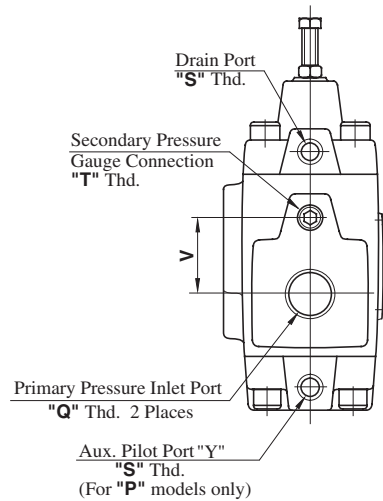
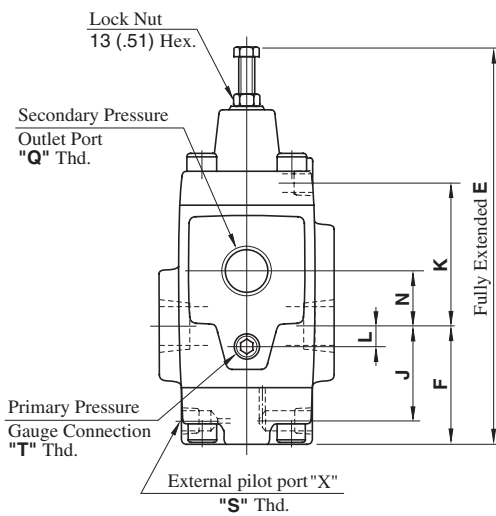
HT-03, 06, 10-**-*-22/2280/2290

Type 3: Sequence Valve
(External Pilot, External Drain)

DIMENSIONS IN MILLIMETRES (INCHES)

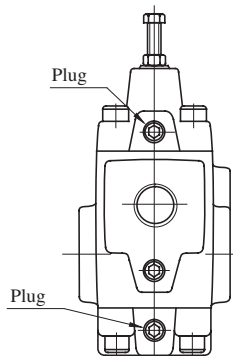


| Model Numbers | Thread Size | | |
|---------------|-------------|-----------|------------|
| | "Q" Thd. | "S" Thd. | "T" Thd. |
| HT-03, 22 | Rc 3/8 | Rc 1/4 | Rc 1/4 |
| HT-06, 22 | Rc 3/4 | | |
| HT-10, 22 | Rc 1-1/4 | | |
| HT-03, 2280 | 3/8 BSP.F | 1/4 BSP.F | 1/4 BSP.Tr |
| HT-06, 2280 | 3/4 BSP.F | | |
| HT-10, 2280 | 1-1/4 BSP.F | | |
| HT-03, 2290 | 3/8 NPT | 1/4 NPT | 1/4 NPT |
| HT-06, 2290 | 3/4 NPT | | |
| HT-10, 2290 | 1-1/4 NPT | | |

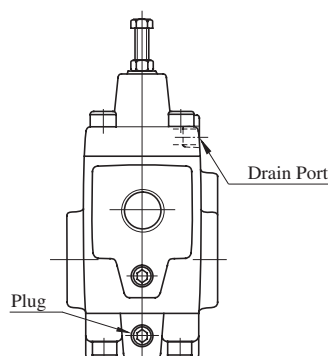


| Model Numbers | Dimensions mm (Inches) | | | | | | | | | | |
|---------------|------------------------|---------------|--------------|---------------|----------------|----------------|----------------|----------------|-------------|--------------|--------------|
| | A | B | C | D | E | F | J | K | L | N | V |
| HT-03 | 41 (1.61) | 82 (3.23) | 60 (2.36) | 74 (2.91) | 191 (7.52) | 57 (2.24) | 43 (1.69) | 70 (2.76) | 0 (0) | 28 (1.10) | 28 (1.10) |
| HT-06 | 48 (1.89) | 96 (3.78) | 73 (2.87) | 87 (3.43) | 221 (8.70) | 64.5 (2.54) | 50.5 (1.99) | 80.5 (3.17) | 9 (.35) | 33 (1.30) | 42 (1.65) |
| HT-10 | 66 (2.60) | 132 (5.20) | 86 (3.39) | 112 (4.41) | 272 (10.71) | 84 (3.31) | 66 (2.60) | 98 (3.86) | 12 (.47) | 40 (1.57) | 52 (2.05) |

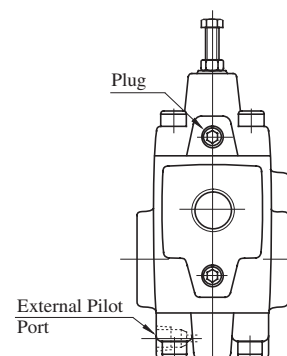
Type 1: Low Pressure Relief Valve
(Internal Pilot, Internal Drain)



Type 2: Sequence Valve
(Internal Pilot, External Drain)



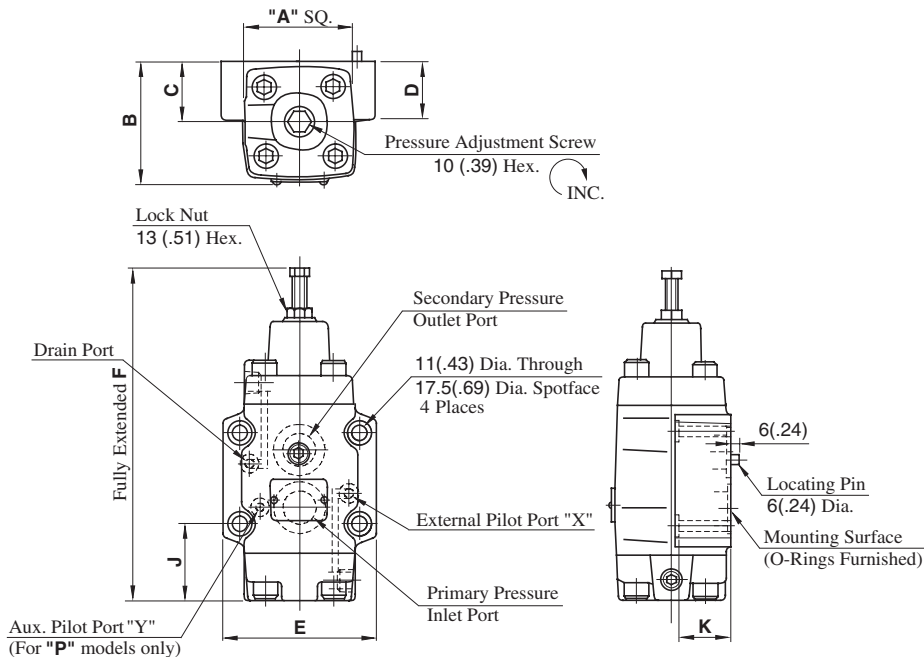
Type 4: Unloading Valve
(External Pilot, Internal Drain)



HG-03, 06-**-**-22/2290

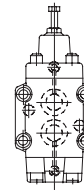
Type 3: Sequence Valve
(External Pilot, External Drain)

Mounting Surface
HG-03: ISO 5781-AG-06-2-A
HG-06: ISO 5781-AH-08-2-A

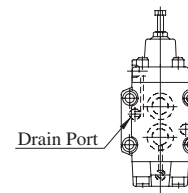


| Model Numbers | Dimensions mm (Inches) | | | | | | | |
|---------------|------------------------|--------------|--------------|--------------|---------------|---------------|----------------|--------------|
| | A | B | C | D | E | F | J | K |
| HG-03 | 60 (2.36) | 67 (2.64) | 35 (1.38) | 39 (1.54) | 89 (3.50) | 191 (7.52) | 49.6 (1.95) | 38 (1.50) |
| HG-06 | 73 (2.87) | 79 (3.11) | 40 (1.57) | 39 (1.54) | 102 (4.02) | 221 (8.70) | 51 (2.01) | 38 (1.50) |

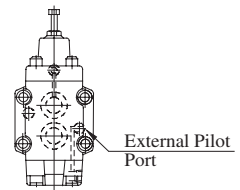
Type 1: Low Pressure Relief Valve
(Internal Pilot, Internal Drain)



Type 2: Sequence Valve
(Internal Pilot, External Drain)



Type 4: Unloading Valve
(External Pilot, Internal Drain)

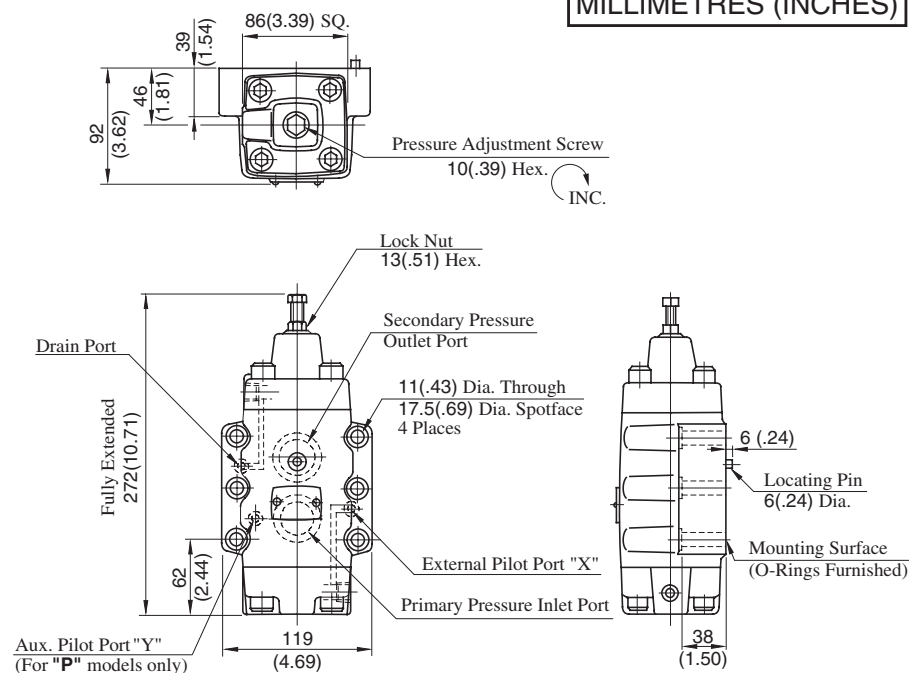


HG-10-**-**-22/2290

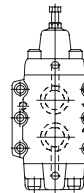
Type 3: Sequence Valve
(External Pilot, External Drain)

Mounting Surface
ISO 5781-AJ-10-2-A

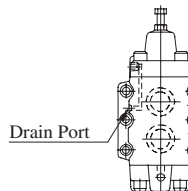
DIMENSIONS IN MILLIMETRES (INCHES)



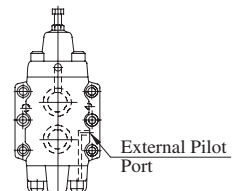
Type 1: Low Pressure Relief Valve
(Internal Pilot, Internal Drain)



Type 2: Sequence Valve
(Internal Pilot, External Drain)



Type 4: Unloading Valve
(External Pilot, Internal Drain)



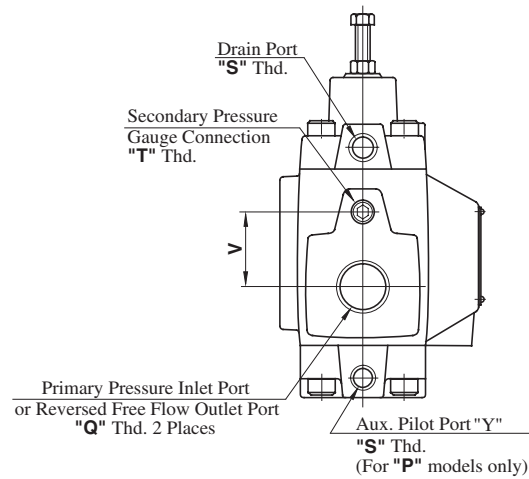
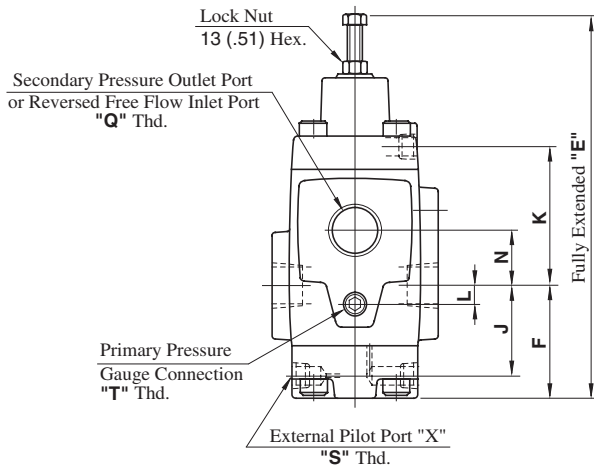
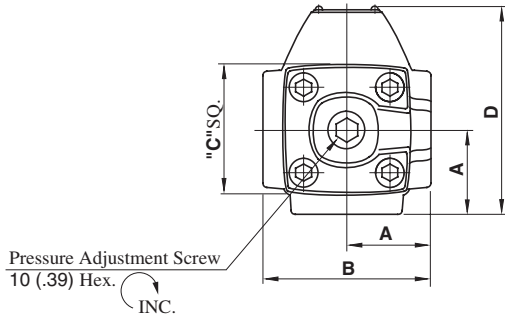
H / HC Type Pressure Control Valves

HCT-03, 06, 10-**-**-22/2280/2209

Type 3: Sequence and Check Valve
(External Pilot, External Drain)

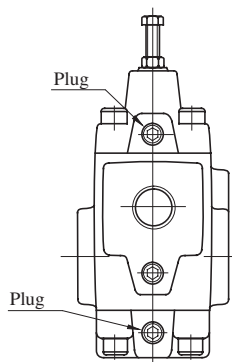
DIMENSIONS IN MILLIMETRES (INCHES)

| Model Numbers | Thread Size | | |
|---------------|-------------|-----------|------------|
| | "Q" Thd. | "S" Thd. | "T" Thd. |
| HCT-03, 22 | Rc 3/8 | Rc 1/4 | Rc 1/4 |
| HCT-06, 22 | Rc 3/4 | | |
| HCT-10, 22 | Rc 1-1/4 | | |
| HCT-03, 2280 | 3/8 BSP.F | 1/4 BSP.F | 1/4 BSP.Tr |
| HCT-06, 2280 | 3/4 BSP.F | | |
| HCT-10, 2280 | 1-1/4 BSP.F | | |
| HCT-03, 2290 | 3/8 NPT | 1/4 NPT | 1/4 NPT |
| HCT-06, 2290 | 3/4 NPT | | |
| HCT-10, 2290 | 1-1/4 NPT | | |

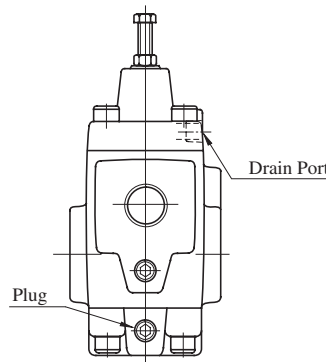


| Model Numbers | Dimensions mm (Inches) | | | | | | | | | | |
|---------------|------------------------|---------------|--------------|---------------|----------------|----------------|----------------|----------------|-------------|--------------|--------------|
| | A | B | C | D | E | F | J | K | L | N | V |
| HCT-03 | 41 (1.61) | 82 (3.23) | 60 (2.36) | 96 (3.78) | 191 (7.52) | 57 (2.24) | 43 (1.69) | 70 (2.76) | 0 (0) | 28 (1.10) | 28 (1.10) |
| HCT-06 | 48 (1.89) | 96 (3.78) | 73 (2.87) | 116 (4.57) | 221 (8.70) | 64.5 (2.54) | 50.5 (1.99) | 80.5 (3.17) | 9 (.35) | 33 (1.30) | 42 (1.65) |
| HCT-10 | 66 (2.60) | 132 (5.20) | 86 (3.39) | 152 (5.98) | 272 (10.71) | 84 (3.31) | 66 (2.60) | 98 (3.86) | 12 (.47) | 40 (1.57) | 52 (2.05) |

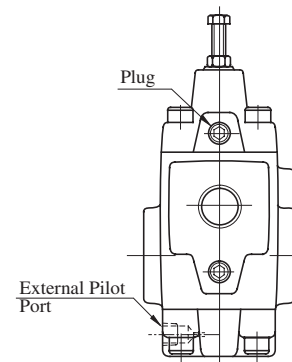
Type 1: Counterbalance Valve
(Internal Pilot, Internal Drain)



Type 2: Sequence and Check Valve
(Internal Pilot, External Drain)



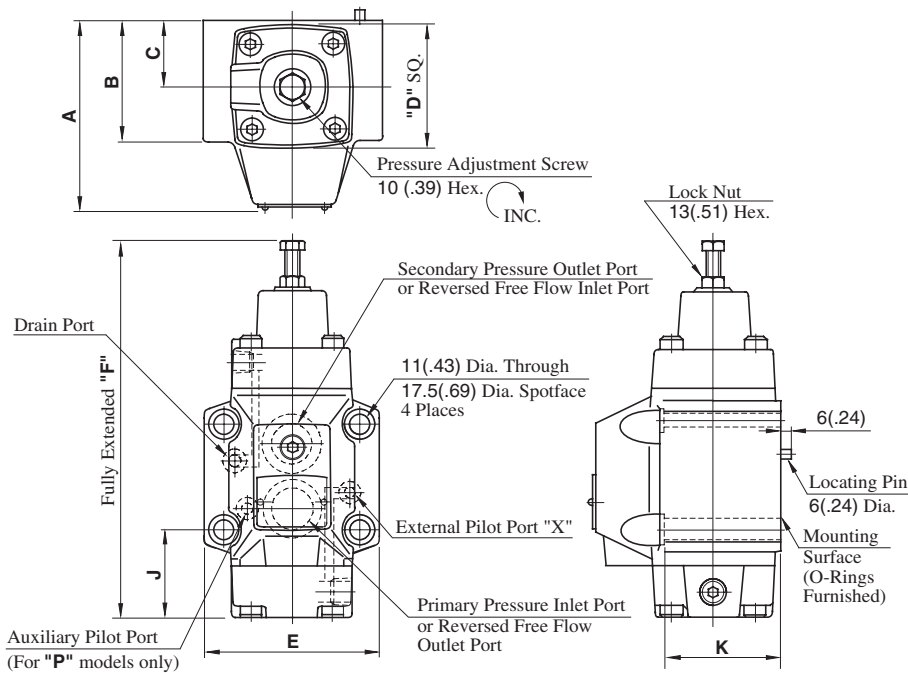
Type 4: Counterbalance Valve
(External Pilot, Internal Drain)



HCG-03, 06-**-**-22/2290

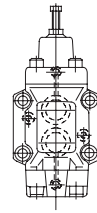
Type 3: Sequence and Check Valve
(External Pilot, External Drain)

Mounting Surface
HCG-03: ISO 5781-AG-06-2-A
HCG-06: ISO 5781-AH-08-2-A

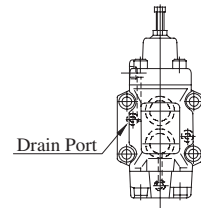


| Model Numbers | Dimensions mm (Inches) | | | | | | | |
|---------------|------------------------|--------------|--------------|--------------|---------------|---------------|----------------|--------------|
| | A | B | C | D | E | F | J | K |
| HCG-03 | 90 (3.54) | 59 (2.32) | 35 (1.38) | 60 (2.36) | 89 (3.50) | 191 (7.52) | 49.6 (1.95) | 58 (2.28) |
| HCG-06 | 108 (4.25) | 69 (2.72) | 40 (1.57) | 73 (2.87) | 102 (4.02) | 221 (8.70) | 51 (2.01) | 68 (2.68) |

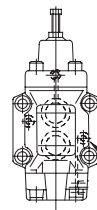
Type 1: Counterbalance Valve
(Internal Pilot, Internal Drain)



Type 2: Sequence and Check Valve
(Internal Pilot, External Drain)



Type 4: Counterbalance Valve
(External Pilot, Internal Drain)

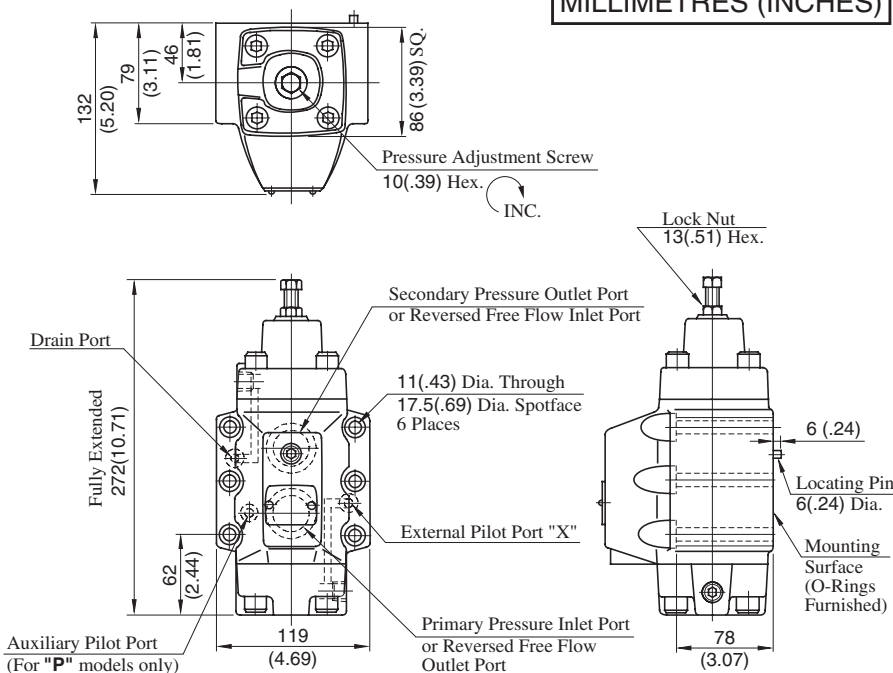


HCG-10-**-**-22/2290

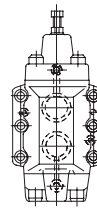
Type 3: Sequence and Check Valve
(External Pilot, External Drain)

Mounting Surface
ISO 5781-AJ-10-2-A

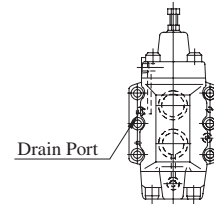
DIMENSIONS IN
MILLIMETRES (INCHES)



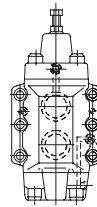
Type 1: Counterbalance Valve
(Internal Pilot, Internal Drain)



Type 2: Sequence and Check Valve
(Internal Pilot, External Drain)

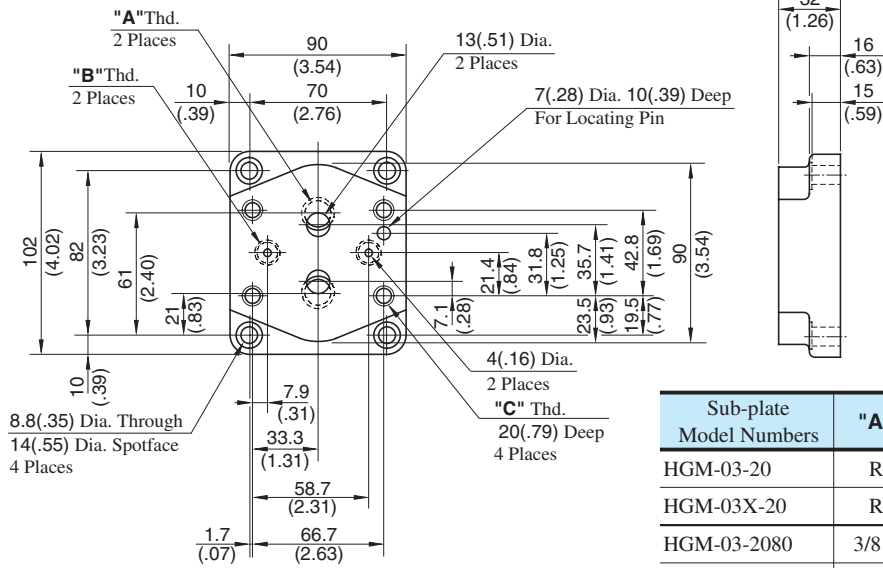


Type 4: Counterbalance Valve
(External Pilot, Internal Drain)



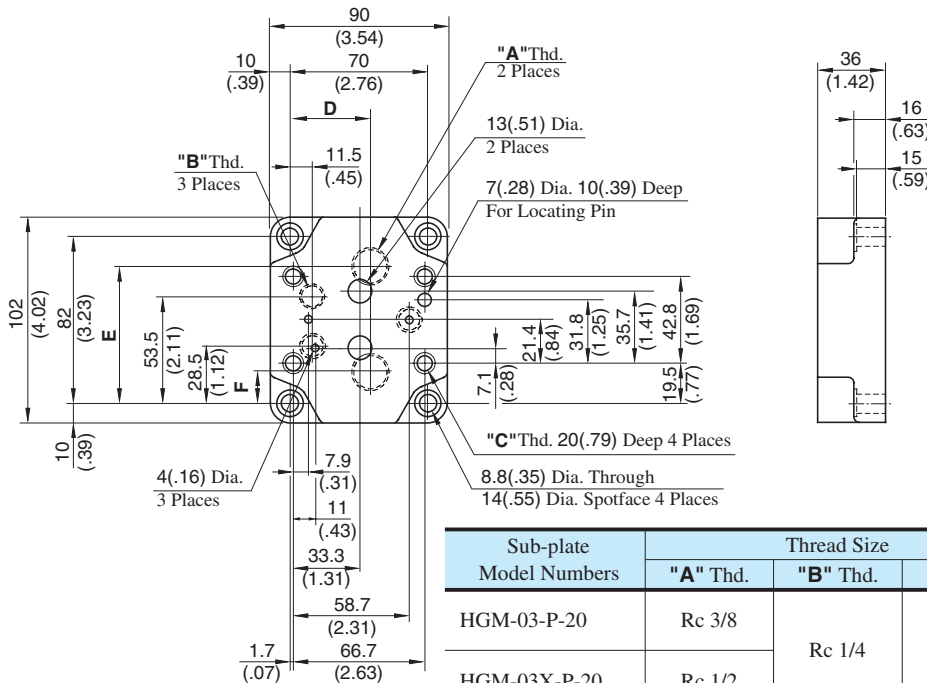
● HGM-03-20/2080/2090
HGM-03X-20/2080/2090

DIMENSIONS IN MILLIMETRES (INCHES)



| Sub-plate Model Numbers | "A" Thd. | "B" Thd. | "C" Thd. |
|-------------------------|-----------|-----------|------------|
| HGM-03-20 | Rc 3/8 | Rc 1/4 | M10 |
| HGM-03X-20 | Rc 1/2 | | |
| HGM-03-2080 | 3/8 BSP.F | 1/4 BSP.F | |
| HGM-03X-2080 | 1/2 BSP.F | | |
| HGM-03-2090 | 3/8 NPT | 1/4 NPT | 3/8-16 UNC |
| HGM-03X-2090 | 1/2 NPT | | |

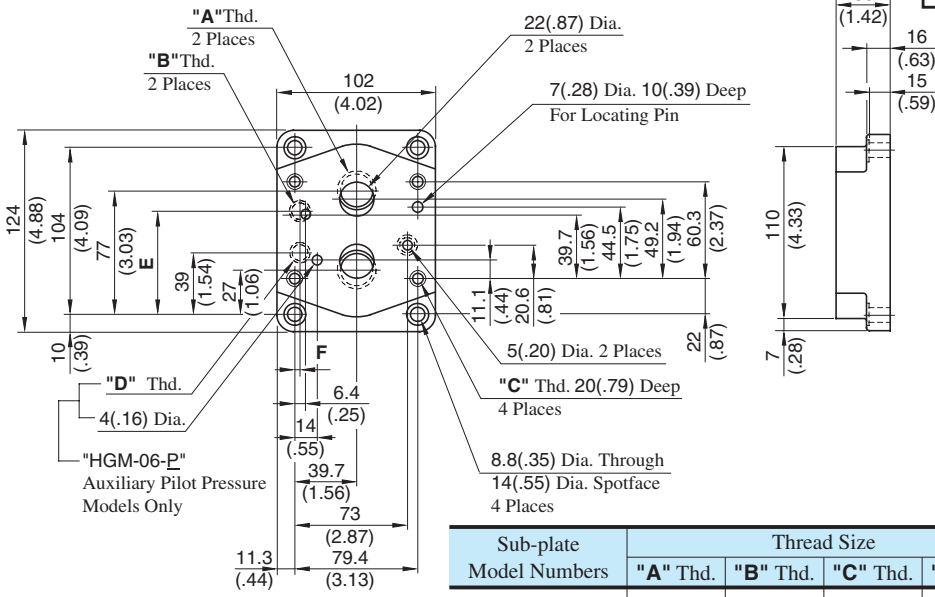
● With Auxiliary Pilot Pressure Port
HGM-03-P-20/2080/2090
HGM-03X-P-20/2080/2090



| Sub-plate Model Numbers | Thread Size | | | Dimensions mm(Inches) | | |
|-------------------------|-------------|-----------|------------|-----------------------|-------------|------------|
| | "A" Thd. | "B" Thd. | "C" Thd. | D | E | F |
| HGM-03-P-20 | Rc 3/8 | Rc 1/4 | M 10 | 35 (1.38) | 69.5 (2.74) | 12.5 (.49) |
| HGM-03X-P-20 | Rc 1/2 | | | 41 (1.61) | 67.5 (2.66) | 14.5 (.57) |
| HGM-03-P-2080 | 3/8 BSP.F | 1/4 BSP.F | | 35 (1.38) | 69.5 (2.74) | 12.5 (.49) |
| HGM-03X-P-2080 | 1/2 BSP.F | | | 41 (1.61) | 67.5 (2.66) | 14.5 (.57) |
| HGM-03-P-2090 | 3/8 NPT | 1/4 NPT | 3/8-16 UNC | 35 (1.38) | 69.5 (2.74) | 12.5 (.49) |
| HGM-03X-P-2090 | 1/2 NPT | | | 41 (1.61) | 67.5 (2.66) | 14.5 (.57) |

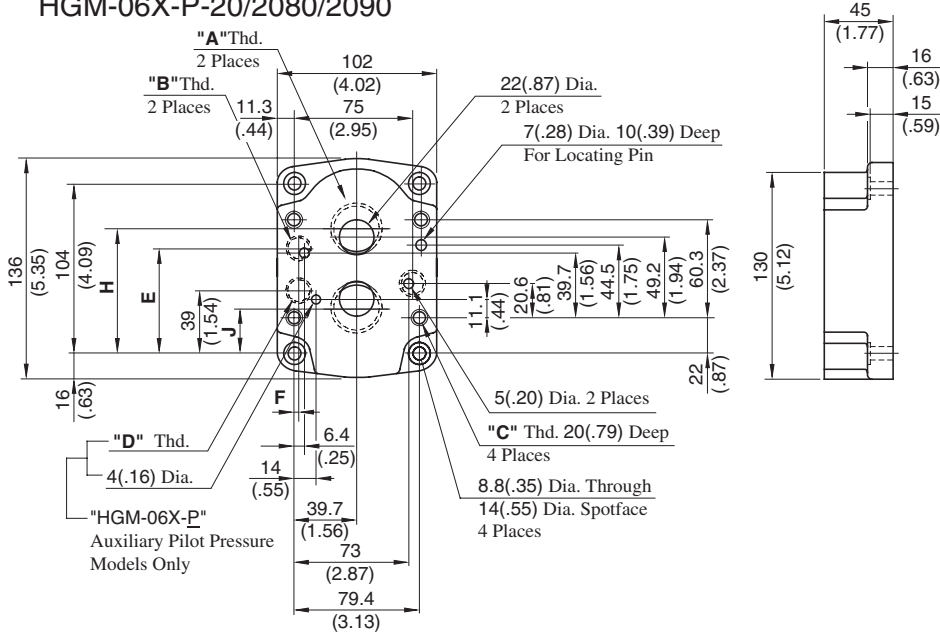
● HGM-06-20/2080/2090
HGM-06-P-20/2080/2090

DIMENSIONS IN MILLIMETRES (INCHES)



| Sub-plate Model Numbers | Thread Size | | | | Dimensions mm(Inches) | |
|-------------------------|-------------|----------|------------|----------|-----------------------|-----------|
| | "A" Thd. | "B" Thd. | "C" Thd. | "D" Thd. | E | F |
| HGM-06-20 | Rc 3/4 | Rc 1/4 | M10 | Rc 1/4 | 61.7 (2.43) | 6.4 (.25) |
| HGM-06-P-20 | | | | | 64 (2.52) | 3 (.12) |
| HGM-06-2080 | 3/4 | 1/4 | M10 | 1/4 | 61.7 (2.43) | 6.4 (.25) |
| HGM-06-P-2080 | BSP.F | BSP.F | | | 64 (2.52) | 3 (.12) |
| HGM-06-2090 | 3/4 NPT | 1/4 NPT | 3/8-16 UNC | 1/4 NPT | 61.7 (2.43) | 6.4 (.25) |
| HGM-06-P-2090 | | | | | 64 (2.52) | 3 (.12) |

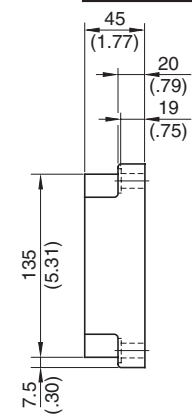
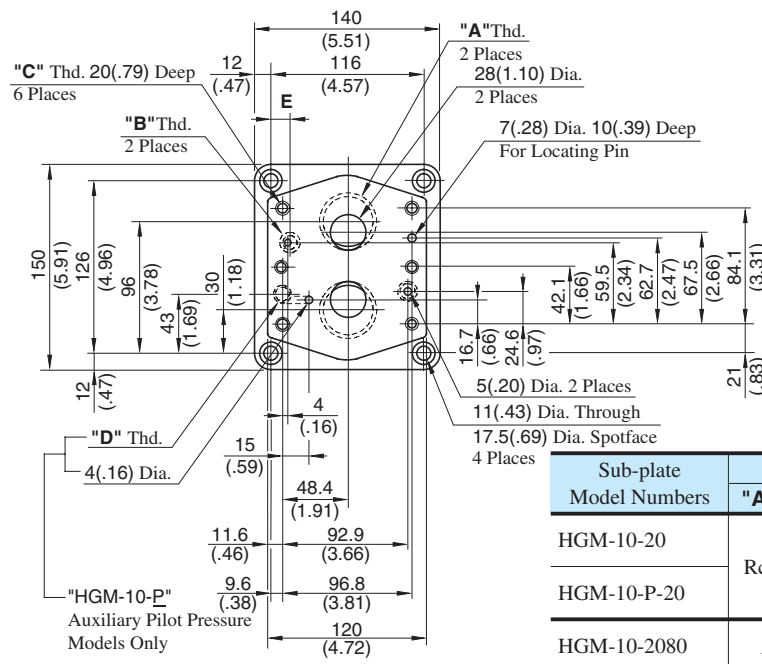
● HGM-06X-20/2080/2090
HGM-06X-P-20/2080/2090



| Sub-plate Model Numbers | Thread Size | | | | Dimensions mm(Inches) | | | |
|-------------------------|-------------|-----------|------------|-----------|-----------------------|-----------|-------------|----------|
| | "A" Thd. | "B" Thd. | "C" Thd. | "D" Thd. | E | F | H | J |
| HGM-06X-20 | Rc 1 | Rc 1/4 | M10 | Rc 1/4 | 61.7 (2.43) | 6.4 (.25) | 82.3 (3.24) | 22 (.87) |
| HGM-06X-P-20 | | | | | 64 (2.52) | 3 (.12) | | |
| HGM-06X-2080 | 1 BSP.F | 1/4 BSP.F | M10 | 1/4 BSP.F | 61.7 (2.43) | 6.4 (.25) | 80 (3.15) | 24 (.94) |
| HGM-06X-P-2080 | | | | | 64 (2.52) | 3 (.12) | 82.3 (3.24) | 22 (.87) |
| HGM-06X-2090 | 1 NPT | 1/4 NPT | 3/8-16 UNC | 1/4 NPT | 61.7 (2.43) | 6.4 (.25) | 80 (3.15) | 24 (.94) |
| HGM-06X-P-2090 | | | | | 64 (2.52) | 3 (.12) | 82.3 (3.24) | 22 (.87) |

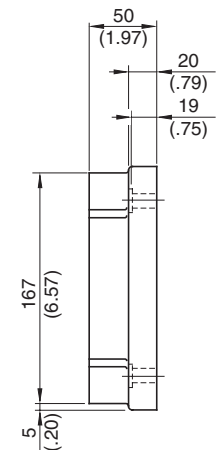
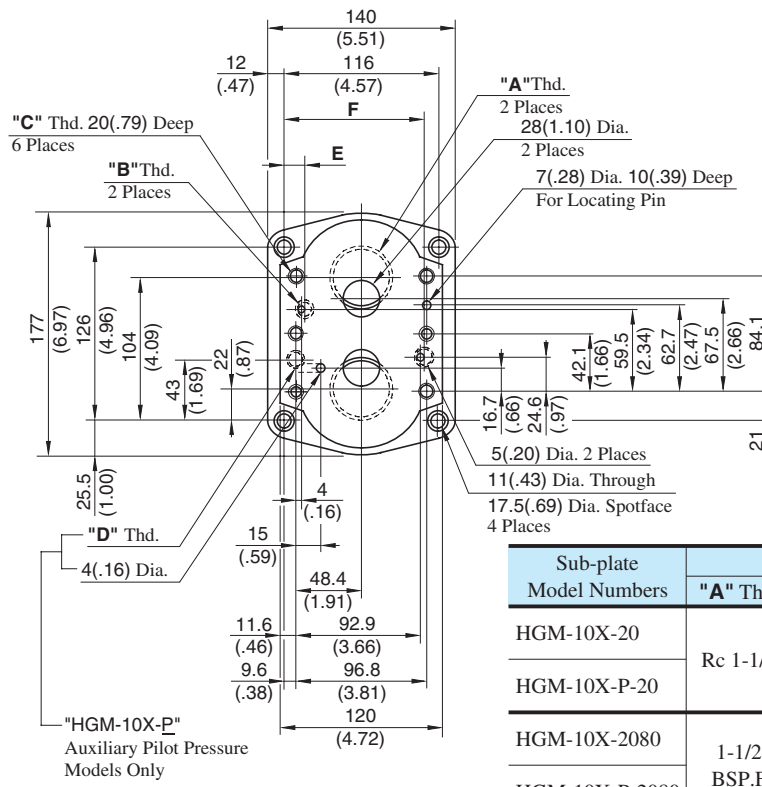
● HGM-10-20/2080/2090
HGM-10-P-20/2080/2090

DIMENSIONS IN MILLIMETRES (INCHES)



| Sub-plate Model Numbers | Thread Size | | | | mm(Inches) | | |
|-------------------------|-------------|-----------|------------|-----------|------------|-------|--|
| | "A" Thd. | "B" Thd. | "C" Thd. | "D" Thd. | E | | |
| HGM-10-20 | Rc 1-1/4 | Rc 1/4 | M10 | Rc 1/4 | 13.6 | | |
| HGM-10-P-20 | | | | | (.54) | 9.6 | |
| HGM-10-2080 | 1-1/4 BSP.F | 1/4 BSP.F | | 1/4 BSP.F | 13.6 | | |
| HGM-10-P-2080 | | | | | (.54) | 9.6 | |
| HGM-10-2090 | 1-1/4 NPT | 1/4 NPT | 3/8-16 UNC | 1/4 NPT | 13.6 | | |
| HGM-10-P-2090 | | | | | (.54) | 9.6 | |
| | | | | | | 13.6 | |
| | | | | | | (.54) | |
| | | | | | 9.6 | | |
| | | | | | (.38) | | |

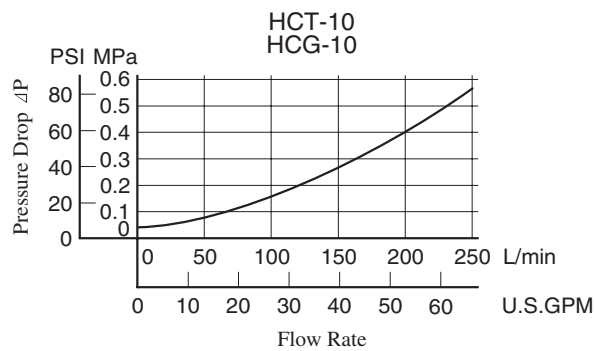
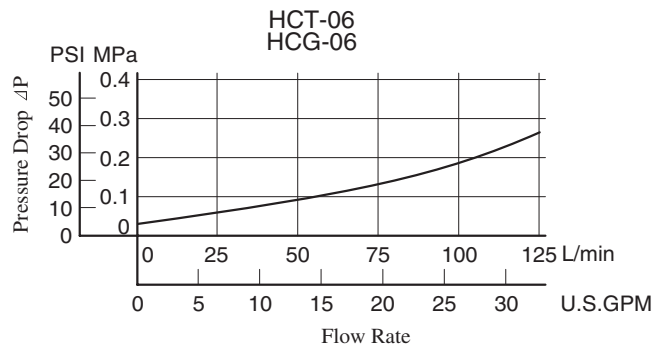
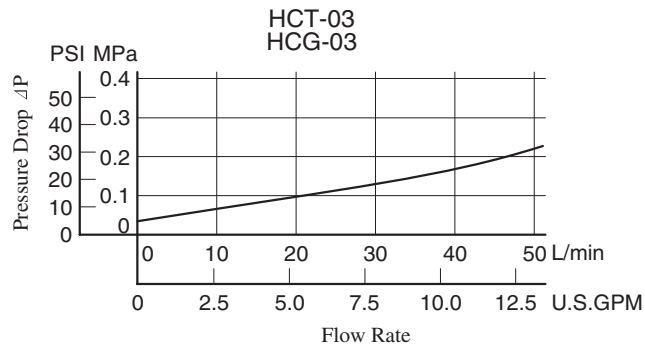
● HGM-10X-20/2080/2090
HGM-10X-P-20/2080/2090



| Sub-plate Model Numbers | Thread Size | | | | mm(Inches) | | |
|-------------------------|-------------|-----------|------------|-----------|------------|--------|-----|
| | "A" Thd. | "B" Thd. | "C" Thd. | "D" Thd. | E | F | |
| HGM-10X-20 | Rc 1-1/2 | Rc 1/4 | M10 | Rc 1/4 | 13.6 | 102.5 | |
| HGM-10X-P-20 | | | | | (.54) | (4.04) | 9.6 |
| HGM-10X-2080 | 1-1/2 BSP.F | 1/4 BSP.F | | 1/4 BSP.F | 13.6 | 102.5 | |
| HGM-10X-P-2080 | | | | | (.54) | (4.04) | 9.6 |
| HGM-10X-2090 | 1-1/2 NPT | 1/4 NPT | 3/8-16 UNC | 1/4 NPT | 13.6 | 102.5 | |
| HGM-10X-P-2090 | | | | | (.54) | (4.04) | 9.6 |
| | | | | | | 13.6 | |
| | | | | | | (.54) | |
| | | | | | 9.6 | | |
| | | | | | (.38) | | |

■ Pressure Drop for Reversed Free Flow

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



- For any other viscosity, multiply the factors in the table below.

| Viscosity | mm ² /s | 15 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|-----------|--------------------|------|------|------|------|------|------|------|------|------|------|
| | SSU | | 77 | 98 | 141 | 186 | 232 | 278 | 324 | 371 | 417 |
| Factor | | 0.81 | 0.87 | 0.96 | 1.03 | 1.09 | 1.14 | 1.19 | 1.23 | 1.27 | 1.30 |

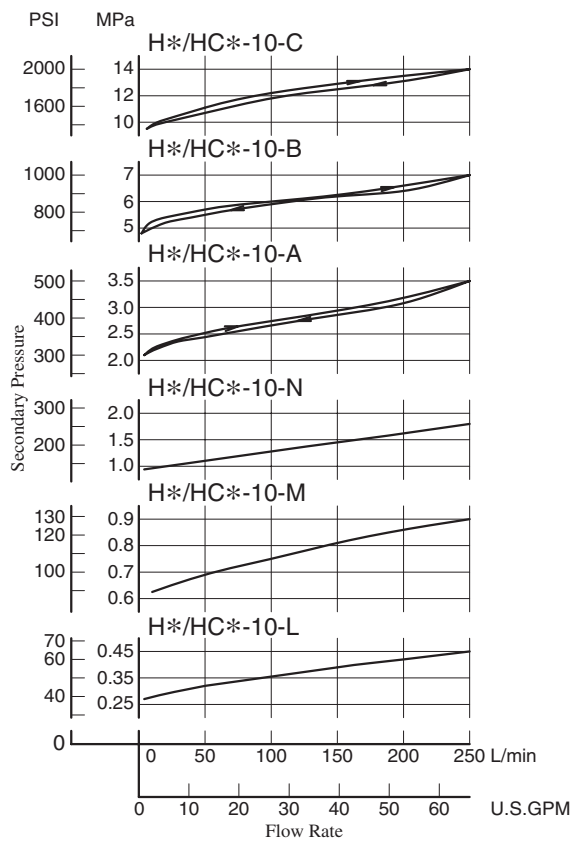
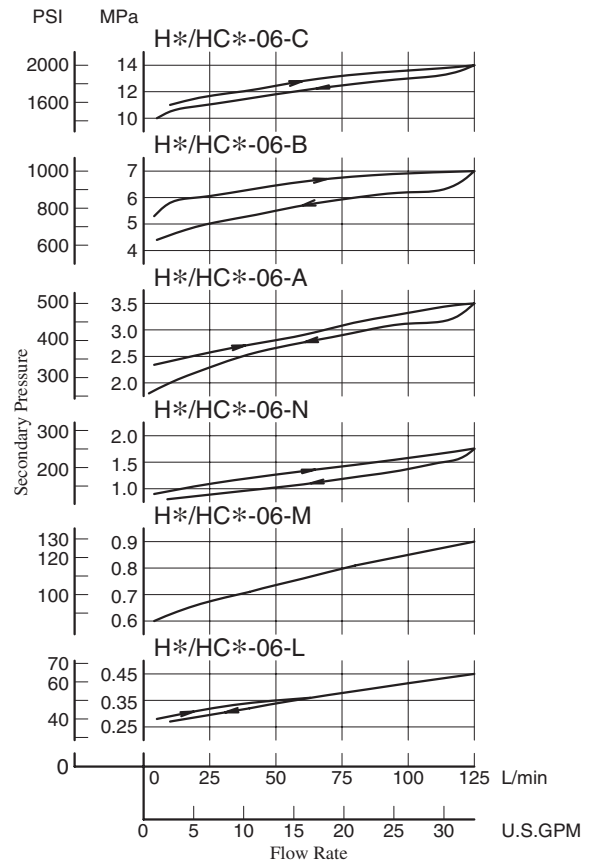
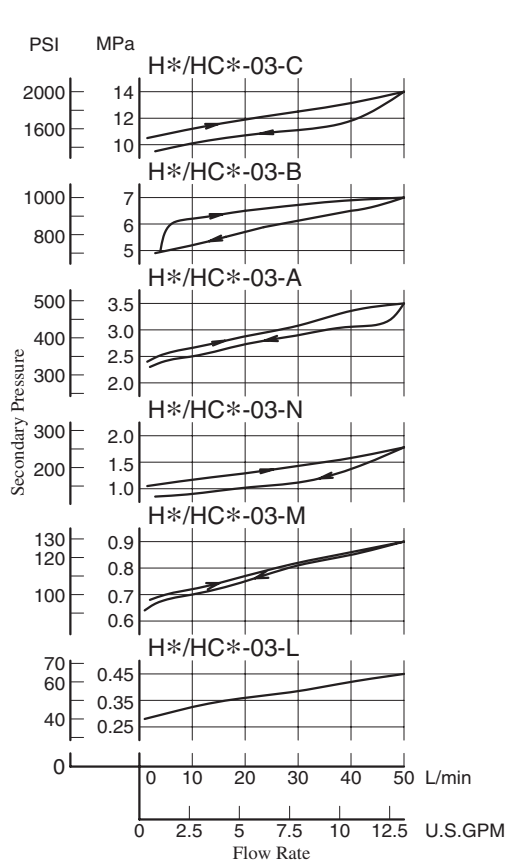
- For any other specific gravity (G'), the pressure drop (ΔP') may be obtained from the formula below.

$$\Delta P' = \Delta P (G'/0.850)$$



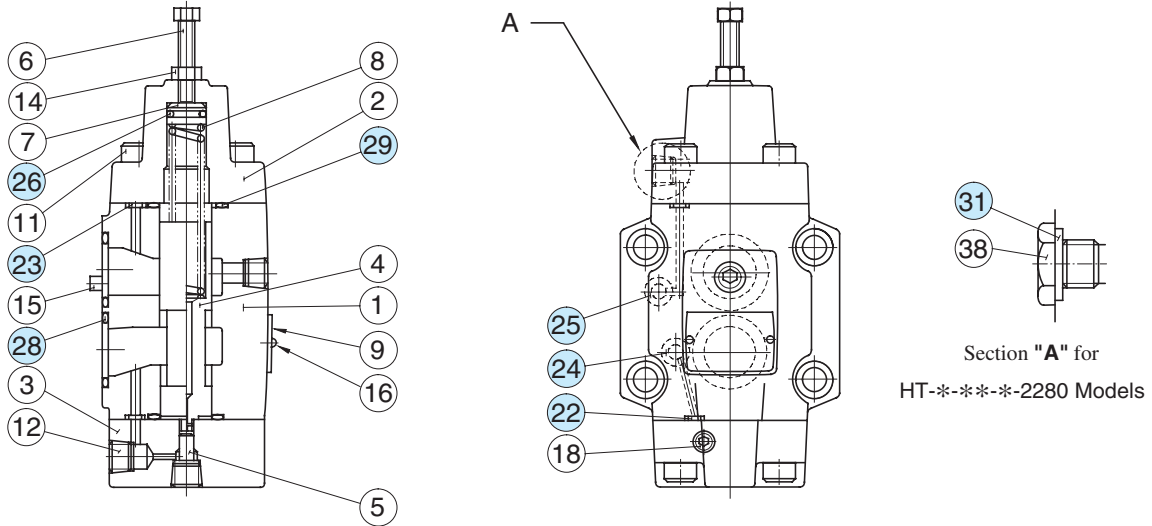
Nominal Override Characteristics

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



Spare Parts List

HT-03, 06, 10-**-**-22/2280/2290
 HG-03, 06, 10-**-**-22/2290



List of Seals

| Item | Name of Parts | Part Numbers | | | Quantity | |
|------|---------------|--------------|--------------|--------------|----------|------|
| | | HT HG -03 | HT HG -06 | HT HG -10 | HT-* | HG-* |
| 22 | O-Ring | SO-NB-P4 | SO-NB-P4 | SO-NB-P4 | — | 3* |
| 23 | O-Ring | SO-NB-P6 | SO-NB-P6 | SO-NB-P6 | 4 | 4 |
| 24 | O-Ring | SO-NB-P9 | SO-NB-P9 | SO-NB-P9 | — | 1* |
| 25 | O-Ring | SO-NB-P9 | SO-NB-P9 | SO-NB-P9 | — | 2 |
| 26 | O-Ring | SO-NA-P11 | SO-NA-P15 | SO-NA-P20 | 1 | 1 |
| 28 | O-Ring | SO-NB-P18 | SO-NB-P28 | SO-NB-P32 | — | 2 |
| 29 | O-Ring | SO-NB-P22 | SO-NB-P28 | SO-NB-P36 | 2 | 2 |
| 31 | Bonded Seal | SG-FB-1/4 | SG-FB-1/4 | SG-FB-1/4 | 2 | — |

* Used only for HG type with auxiliary pilot pressure (P).

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

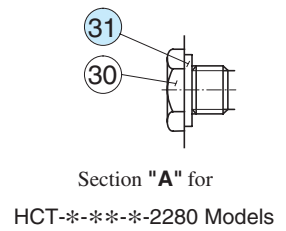
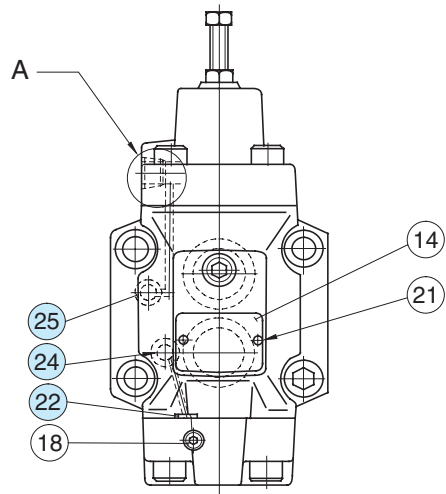
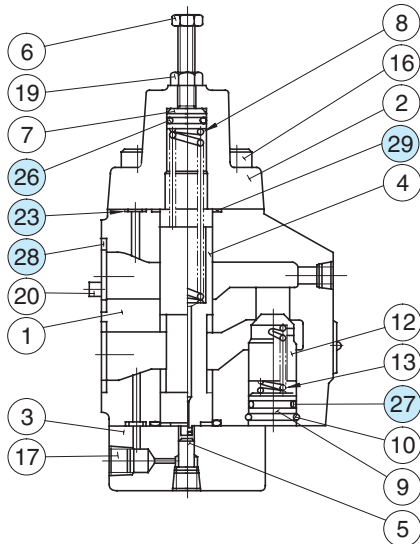
List of Seal Kits

| Valve Model Numbers | Seal Kit Numbers |
|--------------------------|------------------|
| HT-03-**-**-22/2280/2290 | KS-HT-03-22 |
| HT-06-**-**-22/2280/2290 | KS-HT-06-22 |
| HT-10-**-**-22/2280/2290 | KS-HT-10-22 |
| HG-03-**-**-22/2290 | KS-HG-03-22 |
| HG-03-**-P-22/2290 | KS-HG-03-P-22 |
| HG-06-**-**-22/2290 | KS-HG-06-22 |
| HG-06-**-P-22/2290 | KS-HG-06-P-22 |
| HG-10-**-**-22/2290 | KS-HG-10-22 |
| HG-10-**-P-22/2290 | KS-HG-10-P-22 |

Note: No bonded seals are included in the seal kits.

Spare Parts List

HCT-03, 06, 10-***-22/2280/2290
 HCG-03, 06, 10-***-22/2290



● List of Seals

| Item | Name of Parts | Part Numbers | | | Quantity | |
|------|---------------|----------------|----------------|----------------|----------|-------|
| | | HCT HCG -03 | HCT HCG -06 | HCT HCG -10 | HCT-* | HCG-* |
| 22 | O-Ring | SO-NB-P4 | SO-NB-P4 | SO-NB-P4 | — | 3 * |
| 23 | O-Ring | SO-NB-P6 | SO-NB-P6 | SO-NB-P6 | 4 | 4 |
| 24 | O-Ring | SO-NB-P9 | SO-NB-P9 | SO-NB-P9 | — | 1 * |
| 25 | O-Ring | SO-NB-P9 | SO-NB-P9 | SO-NB-P9 | — | 2 |
| 26 | O-Ring | SO-NA-P11 | SO-NA-P15 | SO-NA-P20 | 1 | 1 |
| 27 | O-Ring | SO-NB-P12 | SO-NB-P18 | SO-NB-P22A | 1 | 1 |
| 28 | O-Ring | SO-NB-P18 | SO-NB-P28 | SO-NB-P32 | — | 2 |
| 29 | O-Ring | SO-NB-P22 | SO-NB-P28 | SO-NB-P36 | 2 | 2 |
| 31 | Bonded Seal | SG-FB-1/4 | SG-FB-1/4 | SG-FB-1/4 | 2 | — |

★ Used only for HCG type with auxiliary pilot pressure (P).
 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 |
|-------------------------|------------------|
| HCT-03-***-22/2280/2290 | KS-HCT-03-22 |
| HCT-06-***-22/2280/2290 | KS-HCT-06-22 |
| HCT-10-***-22/2280/2290 | KS-HCT-10-22 |
| HCG-03-***-22/2290 | KS-HCG-03-22 |
| HCG-03-***-P-22/2290 | KS-HCG-03-P-22 |
| HCG-06-***-22/2290 | KS-HCG-06-22 |
| HCG-06-***-P-22/2290 | KS-HCG-06-P-22 |
| HCG-10-***-22/2290 | KS-HCG-10-22 |
| HCG-10-***-P-22/2290 | KS-HCG-10-P-22 |

Note: No bonded seals are included in the seal kits.