

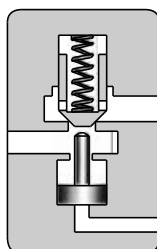


**PILOT CONTROLLED CHECK VALVES**  
**CPT / CPG-03 / 06 / 10 (3/8,3/4,1-1/4)**  
**DECOMPRESSION TYPE**  
**PILOT CONTROLLED CHECK VALVES**  
**CPDT / CPDG-03 / 06 / 10 (3/8,3/4,1-1/4)**  
**Threaded Connections / Sub-plate Mounting**

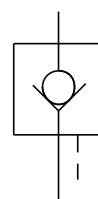
**DIRECTIONAL CONTROLS**

**Up to 25 MPa (3630 PSI), 600 L/min (159 U.S.GPM)**

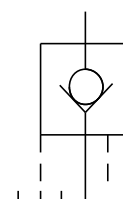
These check valves allow flow in one direction and prevent flow in the reverse direction, until operated by pilot pressure to allow free reverse flow. The specified cracking pressure is required to open the valve to allow free flow direction.



Graphic Symbols



Internal Drain Type



External Drain Type

**Specifications**

| Model Numbers       |                    | Rated Flow *<br>L/min (U.S.GPM) | Max. Operating Pres.<br>MPa (PSI) | Cracking Pres.<br>MPa (PSI) | Approx. Mass<br>kg (lbs.) |
|---------------------|--------------------|---------------------------------|-----------------------------------|-----------------------------|---------------------------|
| Threaded Connection | CPT/CPDT-03-*-*-50 | 40 (10.)                        | 25 (3630)                         | 0.04 (6)                    | 3.0 (6.6)                 |
|                     | *                  | 125 (6)                         |                                   | 0.2 (29)                    | 5.5 (12.)                 |
|                     | CPT/CPDT-06-*-*-50 | 250 (33)                        |                                   | 0.35 (50)                   | 9.6 (1)                   |
| Sub-plate Mounting  | *                  | 40 (66)                         | 25 (3630)                         | 0.04 (6)                    | 3.3 (21.)                 |
|                     | CPT/CPDT-10-*-*-50 | 125 (10.)                       |                                   | 0.2 (29)                    | 5.4 (2)                   |
|                     | *                  | 250 (6)                         |                                   | 0.35 (50)                   | 8.5 (7.3)                 |
|                     |                    |                                 |                                   | 0.5 (70)                    |                           |

★ Rated flow is the approximate flow rate, when there is a free flow pressure drop of maximum 0.3 MPa (44 PSI), the fluid has a specific gravity of 0.85 and a kinematic viscosity of 20 mm<sup>2</sup>/s (98 SSU), and the cracking pressure is 0.04 MPa (6 PSI).

**Model Number Designation**

| F-   | CP  | T                             | 03         | -E                       | -04                      | -50           | *   |
|--|---|-------------------------------|------------|--------------------------|--------------------------|---------------|---|
| Special Seals  | Series Number   | Type of Connection            | Valve Size | Drain Connection         | Cracking Pres. MPa (PSI) | Design Number | Design Standards  |
| <b>F:</b> Special Seals for Phosphate Ester Type Fluids (Omit if not required) | <b>CP:</b> Pilot Controlled Check Valve                     | <b>T:</b> Threaded Connection | <b>03</b>  | <b>N:</b> Internal Drain | <b>04:</b> 0.04 (6)      | <b>50</b>     | <b>N:</b> Japanese Std. "JIS"<br><b>90:</b> European Design Std.<br><b>90:</b> N. American Design Std.    |
|  |   |                               | <b>06</b>  |                          |                          | <b>50</b>     |   |
|  |   |                               | <b>10</b>  |                          |                          | <b>50</b>     |   |
|  | <b>CPD:</b> Decompression Type Pilot Controlled Check Valve | <b>G:</b> Sub-plate Mounting  | <b>03</b>  | <b>E:</b> External Drain | <b>35:</b> 0.35 (50)     | <b>50</b>     | <b>N:</b> Japanese Std. "JIS" &<br><b>one:</b> European Design Std.<br><b>90:</b> N. American Design Std. |
|  |   |                               | <b>06</b>  |                          | <b>50</b>                |               |   |
|  |   |                               | <b>10</b>  |                          | <b>50</b>                |               |   |

**Mounting Bolts**

Socket head cap screws in the table below are included.

| Valve Model Numbers | Socket Head Cap Screw                              |                            | Qty. |
|---------------------|--|----------------------------|------|
|                     | Japanese Standard "JIS" & European Design Standard | N.American Design Standard |      |
| CP* G-03            | M10 × 45 Lg.                                       | 3/8-16 UNC × 1-3/4 Lg.     | 4    |
| CP* G-06            | M10 × 50 Lg.                                       | 3/8-16 UNC × 2 Lg.         | 4    |
| CP* G-10            | M10 × 55 Lg.                                       | 3/8-16 UNC × 2-1/4 Lg.     | 6    |

**Yuken can offer flanged connection valves described below.**

For details, contact us.

| Model Numbers   | Rated Flow<br>L/min (U.S.GPM) | Max. Operating Pressure<br>MPa (PSI) |
|-----------------|-------------------------------|--------------------------------------|
| CP* F-10-*-*-50 | 250 (66)                      | 25 (3630)                            |
| *               | 600 (159)                     | 25 (3630)                            |

#### Hydraulic Fluids

##### Fluid Types

Any type of hydraulic fluids listed in the table below can be used.

|                         |  |
|-------------------------|--|
| Petroleum base oils     | Use fluids equivalent to ISO VG 32 or VG 46.   |
| Synthetic fluids        | Use phosphate ester or polyol ester fluid. When phosphate ester fluid is used, prefix "F-" to the model number because the special seals (fluororubber) are required to be used. |
| Water containing fluids | Use water-glycol fluid.  |

Note: For use with hydraulic fluids other than those listed above, please consult your Yuken representatives in advance.

##### Recommended Viscosity and Oil Temperatures

Viscosity ranging between 15 - 400 mm<sup>2</sup>/s (77 - 1800 SSU).

Oil temperatures between -15/+70℃ (5 - 158℉).

Use hydraulic fluids which satisfy the recommended viscosity and oil temperatures given above.

##### Control of Contamination

Due caution must be paid to maintaining control over contamination of the hydraulic fluids which may otherwise lead to breakdowns and shorten the life of the valves. Please maintain the degree of contamination within NAS 1638-Grade 12. Use 25 μm or finer line filter.

#### 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 |                        |
| CP* G-03            | HGM-03-20               | Rc 3/8      | HGM-03-2080              | 3/8BSP.F    | HGM-03-2090                 | 3/8NPT      | 1.6(3.5)               |
|                     | HGM-03X-                | Rc1/2       | HGM-03X-2080             | 1/2BSP.F    | HGM-03X-2090                | 1/2NPT      | 1.6(3.5)               |
| CP* G-06            | 20                      | Rc 3/4      | HGM-06-2080              | 3/4BSP.F    | HGM-06-2090                 | 3/4NPT      | 2.4(5.3)               |
|                     | HGM-06-20               | Rc 1        | HGM-06X-2080             | 1BSP.F      | HGM-06X-2090                | 1NPT        | 3.0(6.6)               |
| CP* G-10            | HGM-06X-                | Rc 1-1/4    | HGM-10-2080              | 1-1/4BSP.F  | HGM-10-2090                 | 1-1/4NPT    | 4.8(10.6)              |
|                     | 20                      | Rc 1-1/2    | HGM-10X-2080             | 1-1/2 BSP.F | HGM-10X-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.

#### Instructions

##### Operation of internal and external drain types

When the outlet side P1 is directly connected to the tank in reversed free flow (Fig. a), the internal drain type is normally used. When the back pressure is applied to the outlet side P1 (Fig. b), be sure to use the external drain type.

##### Minimum pilot pressure characteristics

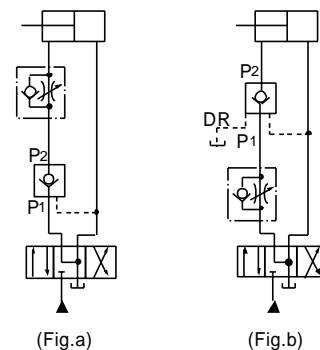
That depends on the pressure of the inlet side P2 in the reversed free flow.

This value can be determined from the characteristics chart.

##### Cautions on replacement of 20 design low cracking pressure type valves with 50 design valves.

In 20 design valve with cracking pressure of 0.035 MPa (5 PSI) (Code "5"), for closing the valve completely and certainly, it was necessary to introduce the pressurized oil into the drain port to push down the piston compulsory.

While in 50 design valve with cracking pressure of 0.04 MPa (6 PSI) (Code "6"), it has such structure that the valve can be closed completely and certainly without introducing the pressurized oil into the drain port. On the contrary, what is worse is that if the pressurized oil is introduced into the drain port, the oil acts towards the direction of opening the valve, which is very dangerous and has to be absolutely avoided. Therefore, please do not supply any pressurized oil into the drain port in case of using 50 design valve.



(Fig.a)

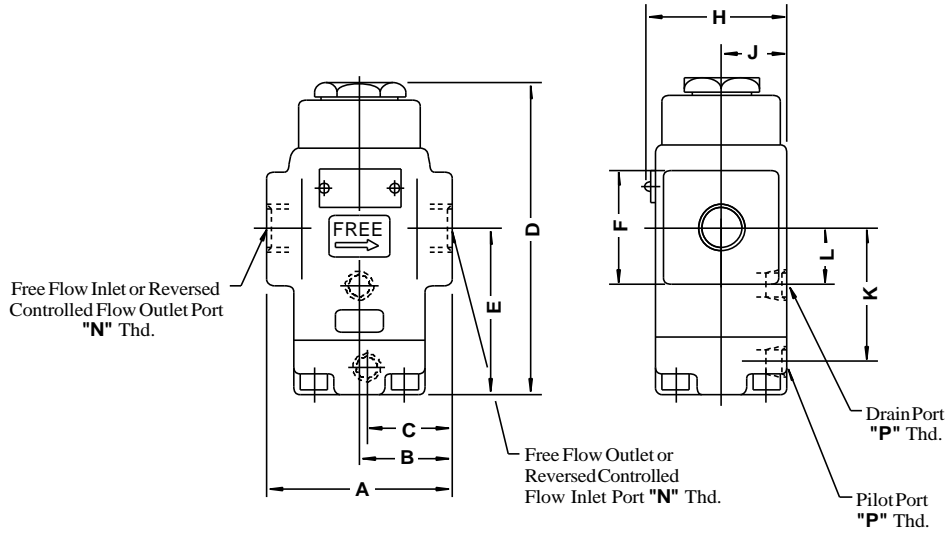
(Fig.b)

#### WARNING

The machinery, if misused due to failure to observe the "Cautions" on the left, may perform unforeseeable movements, resulting in a disastrous accident.

### Installation Drawings

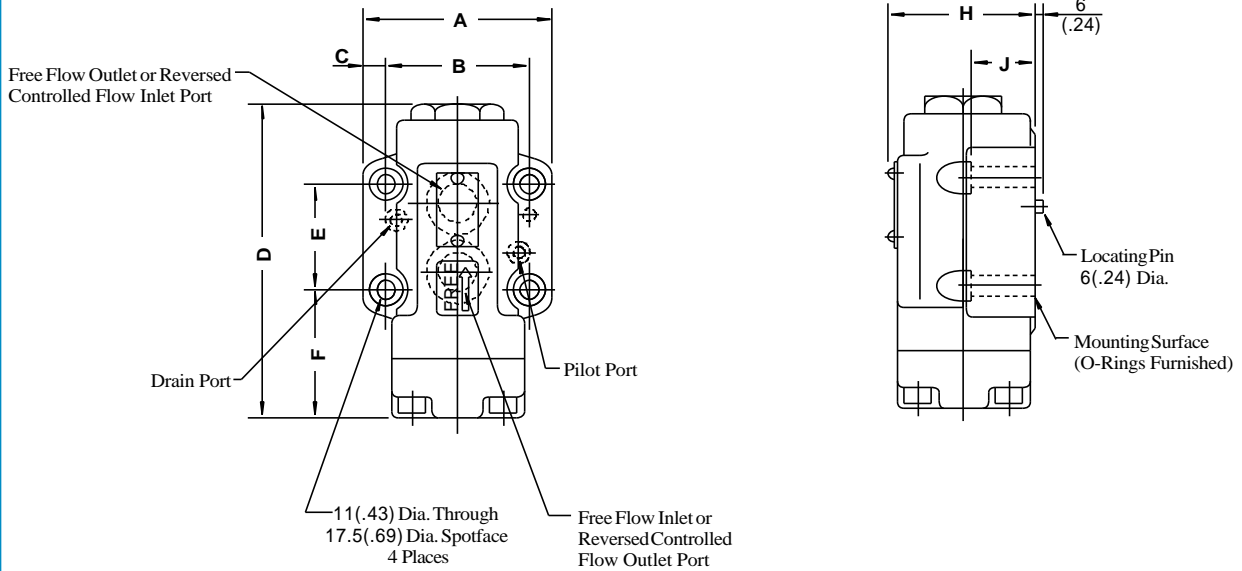
CPT/CPDT-03-\*\*-50/5080/5090  
CPT/CPDT-06-\*\*-50/5080/5090  
CPT/CPDT-10-\*\*-50/5080/5090



| Model Numbers       | Dimensions mm (Inches) |              |              |                 |                |                      |              |              |                |                | Thread Size |          |
|---------------------|------------------------|--------------|--------------|-----------------|----------------|----------------------|--------------|--------------|----------------|----------------|-------------|----------|
|                     | A                      | B            | C            | D               | E              | F                    | H            | J            | K              | L              | "N" Thd.    | "P" Thd. |
| CPT/CPDT-03-**-50   | 80<br>(3.15)           | 40<br>(1.57) | 39<br>(1.54) | 150.5<br>(5.93) | 84.5<br>(3.33) | 38<br>(1.50)<br>Dia. | 60<br>(2.36) | 29<br>(1.14) | 67.5<br>(2.66) | 26.5<br>(1.04) | Rc 3/8      | Rc 1/4   |
| CPT/CPDT-03-**-5080 |                        |              |              |                 |                |                      |              |              |                |                | 3/8BSP.F    | 1/4BSP.F |
|                     |                        |              |              |                 |                |                      |              |              |                |                | 3/8NPT      | 1/4NPT   |
| CPT/CPDT-06-**-50   | 96<br>(3.78)           | 48<br>(1.89) | 47<br>(1.85) | 171.5<br>(6.75) | 92.5<br>(3.64) | 62<br>(2.44)<br>SQ.  | 72<br>(2.83) | 35<br>(1.38) | 75.5<br>(2.97) | 31<br>(1.22)   | Rc 3/4      | Rc 1/4   |
| CPT/CPDT-06-**-5080 |                        |              |              |                 |                |                      |              |              |                |                | 3/4BSP.F    | 1/4BSP.F |
|                     |                        |              |              |                 |                |                      |              |              |                |                | 3/4NPT      | 1/4NPT   |
| CPT/CPDT-10-**-50   | 140<br>(5.51)          | 70<br>(2.76) | 64<br>(2.52) | 203.5<br>(8.01) | 113<br>(4.45)  | 80<br>(3.15)<br>SQ.  | 82<br>(3.23) | 40<br>(1.57) | 96<br>(3.78)   | 43<br>(1.69)   | Rc 1-1/4    | Rc 1/4   |
| CPT/CPDT-10-**-5080 |                        |              |              |                 |                |                      |              |              |                |                | 1-1/4BSP.F  | 1/4BSP.F |
|                     |                        |              |              |                 |                |                      |              |              |                |                | 1-1/4 NPT   | 1/4NPT   |



CPG/CPDG-03-\*\*-50/5090  
CPG/CPDG-06-\*\*-50/5090

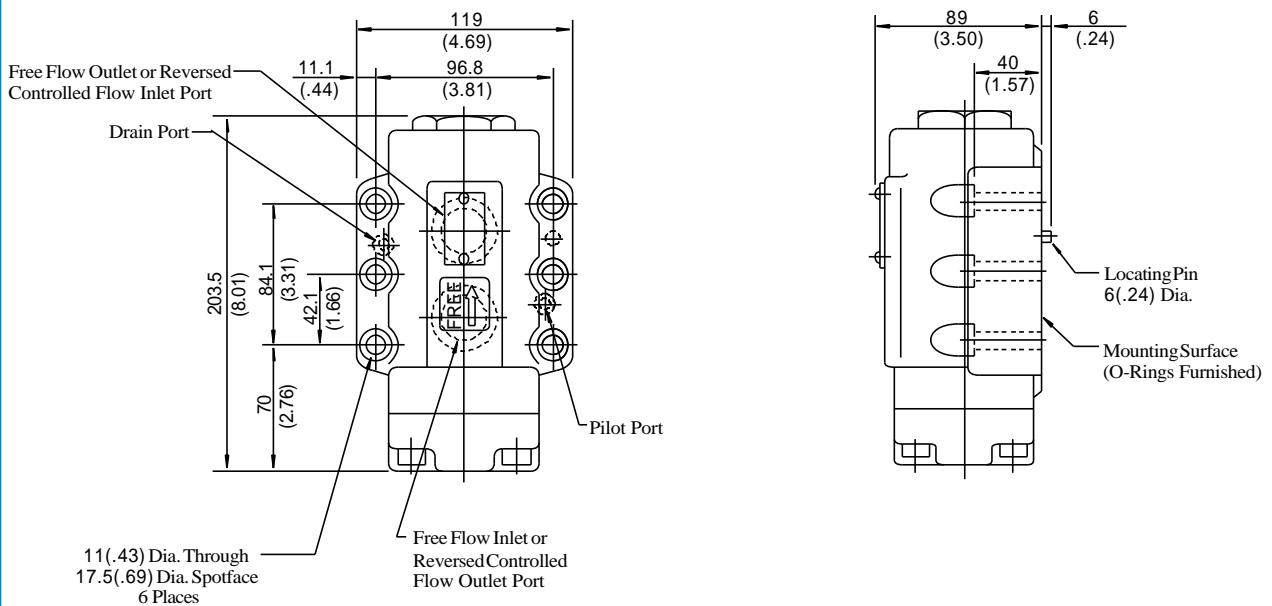


| Model Numbers          | Dimensions mm (Inches) |                |               |                 |                |                |              |              | Mounting Surface   |
|------------------------|------------------------|----------------|---------------|-----------------|----------------|----------------|--------------|--------------|--------------------|
|                        | A                      | B              | C             | D               | E              | F              | H            | J            |                    |
| CPG/CPDG-03-**-50/5090 | 90<br>(3.54)           | 66.7<br>(2.63) | 11.7<br>(.46) | 150.5<br>(5.93) | 42.9<br>(1.69) | 66<br>(2.60)   | 62<br>(2.44) | 30<br>(1.18) | ISO 5781-AG-06-2-A |
| CPG/CPDG-06-**-50/5090 | 102<br>(4.02)          | 79.4<br>(3.13) | 11.3<br>(.44) | 171.5<br>(6.75) | 60.3<br>(2.37) | 67.5<br>(2.66) | 74<br>(2.91) | 35<br>(1.38) | ISO 5781-AH-08-2-A |

CPG/CPDG-10-\*\*-50/5090

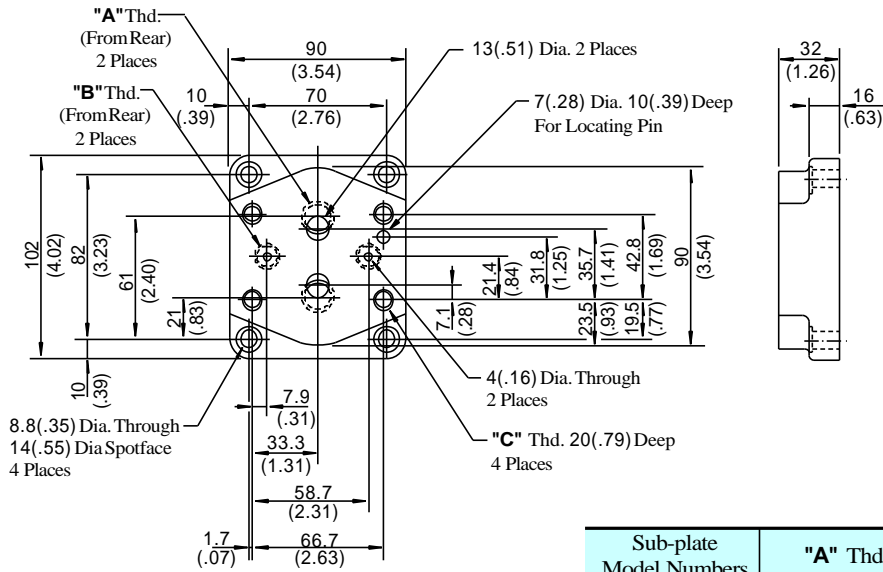
Mounting surface: ISO 5781-AJ-10-2-A

**DIMENSIONS IN  
MILLIMETRES (INCHES)**



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

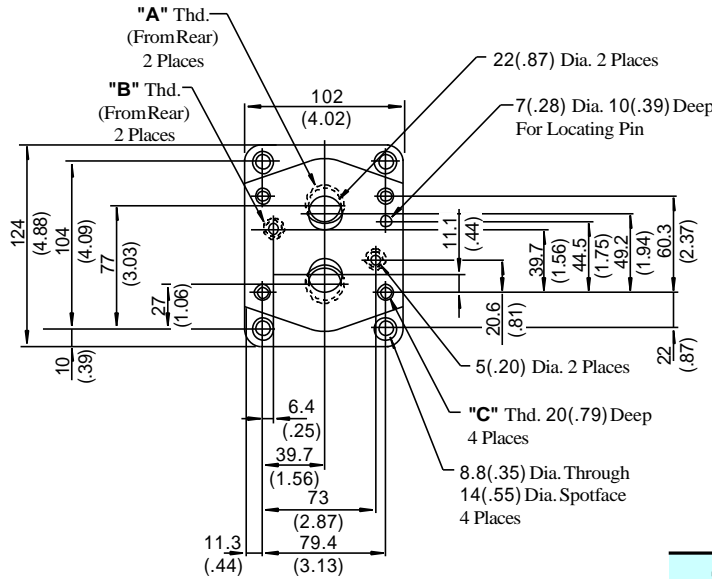
DIMENSIONS IN  
MILLIMETRES (INCHES)



| 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   |           |            |



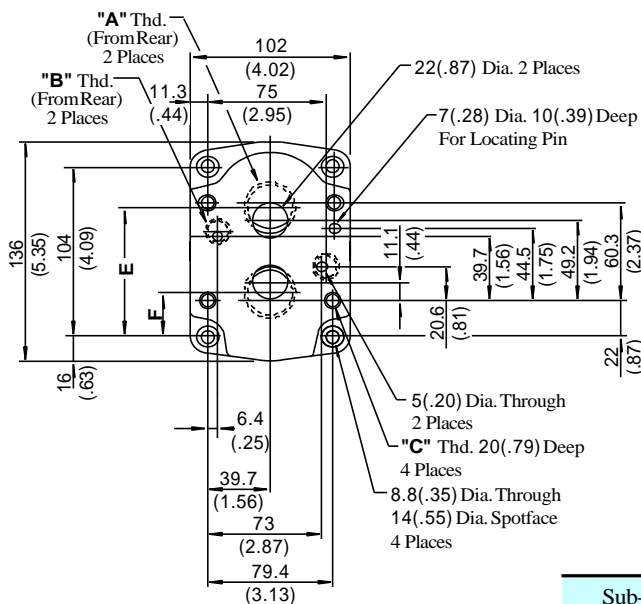
### HGM-06-20/2080/2090



DIMENSIONS IN MILLIMETRES (INCHES)

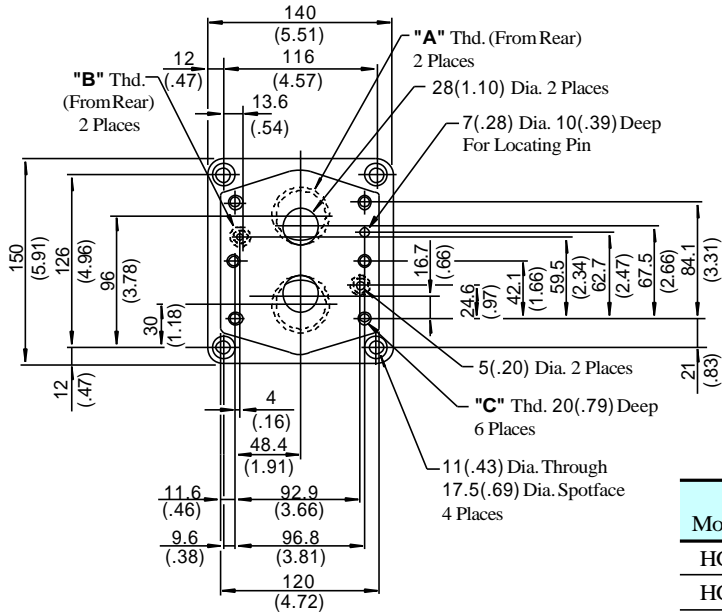
| Sub-plate Model Numbers | "A" Thd. | "B" Thd. | "C" Thd.   |
|-------------------------|----------|----------|------------|
| HGM-06-20               | Rc 3/4   | Rc 1/4   | M10        |
| HGM-06-2080             | 3/4BSP.F | 1/4BSP.F |            |
| HGM-06-2090             | 3/4NPT   | 1/4NPT   | 3/8-16 UNC |

### HGM-06X-20/2080/2090

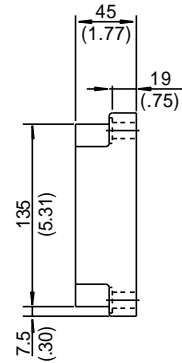


| Sub-plate Model Numbers | Thread Size |          |            | mm (Inches) |          |
|-------------------------|-------------|----------|------------|-------------|----------|
|                         | "A" Thd.    | "B" Thd. | "C" Thd.   | E           | F        |
| HGM-06X-20              | Rc 1        | Rc 1/4   | M10        | 82.3 (3.24) | 22 (.87) |
| HGM-06X-                | 1BSP.F      | 1/4BSP.F |            | 80 (3.15)   | 24 (.94) |
| 2080                    | 1NPT        | 1/4 NPT  | 3/8-16 UNC |             |          |

#### HGM-10-20/2080/2090

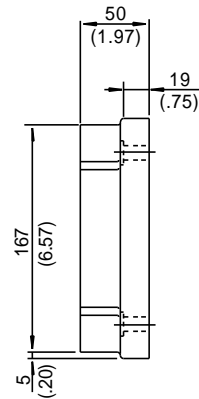
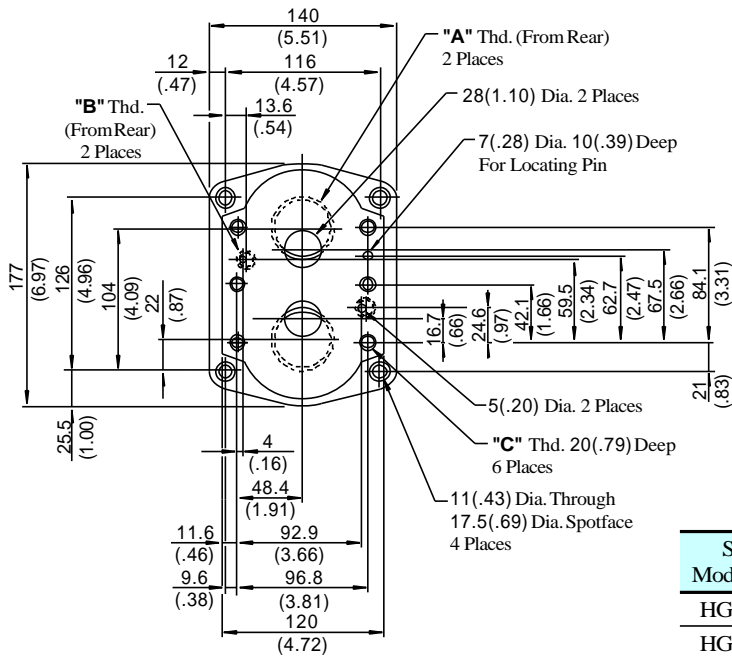


DIMENSIONS IN MILLIMETRES (INCHES)



| Sub-plate Model Numbers | "A" Thd.   | "B" Thd. | "C" Thd.   |
|-------------------------|------------|----------|------------|
| HGM-10-20               | Rc 1-1/4   | Rc 1/4   | M10        |
| HGM-10-2080             | 1-1/4BSP.F | 1/4BSP.F |            |
| HGM-10-2090             | 1-1/4NPT   | 1/4NPT   | 3/8-16 UNC |

#### HGM-10X-20/2080/2090



| Sub-plate Model Numbers | "A" Thd.   | "B" Thd. | "C" Thd.   |
|-------------------------|------------|----------|------------|
| HGM-10X-20              | Rc 1-1/2   | Rc 1/4   | M10        |
| HGM-10X-2080            | 1-1/2BSP.F | 1/4BSP.F |            |
| HGM-10X-2090            | 1-1/2NPT   | 1/4NPT   | 3/8-16 UNC |

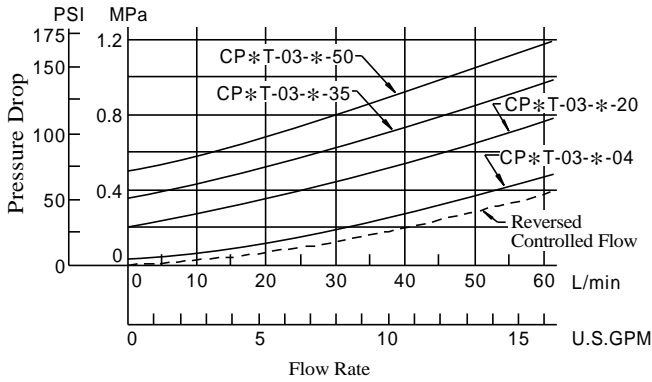


### Performance Characteristics

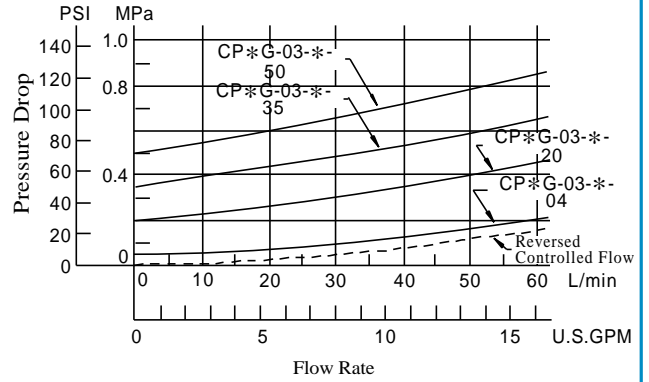
Hydraulic Fluid: Viscosity 30 mm<sup>2</sup>/s (141 SSU) , Specific Gravity 0.850

#### ■ Pressure Drop

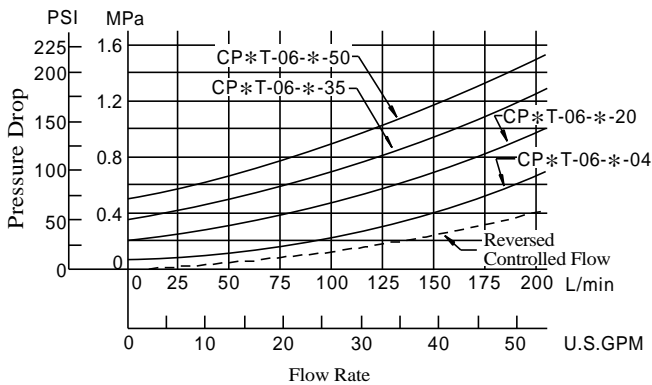
##### ● CPT-03, CPDT-03



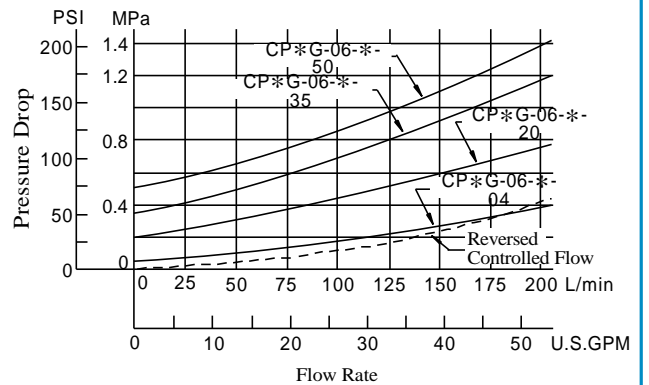
##### ● CPG-03, CPDG-03



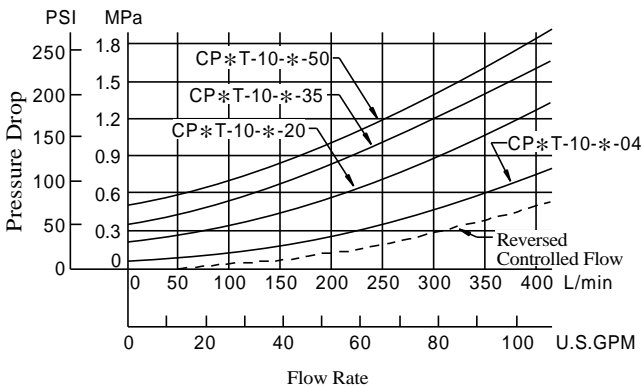
##### ● CPT-06, CPDT-06



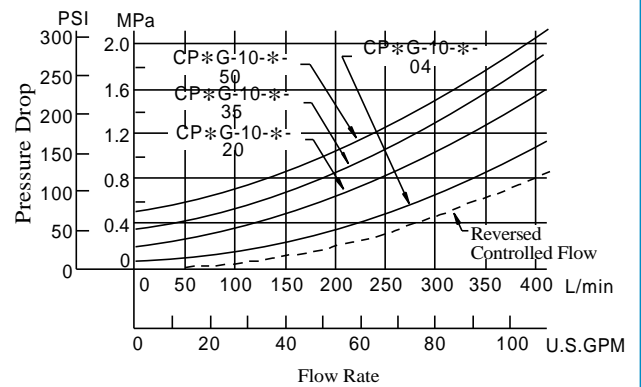
##### ● CPG-06, CPDG-06



##### ● CPT-10, CPDT-10

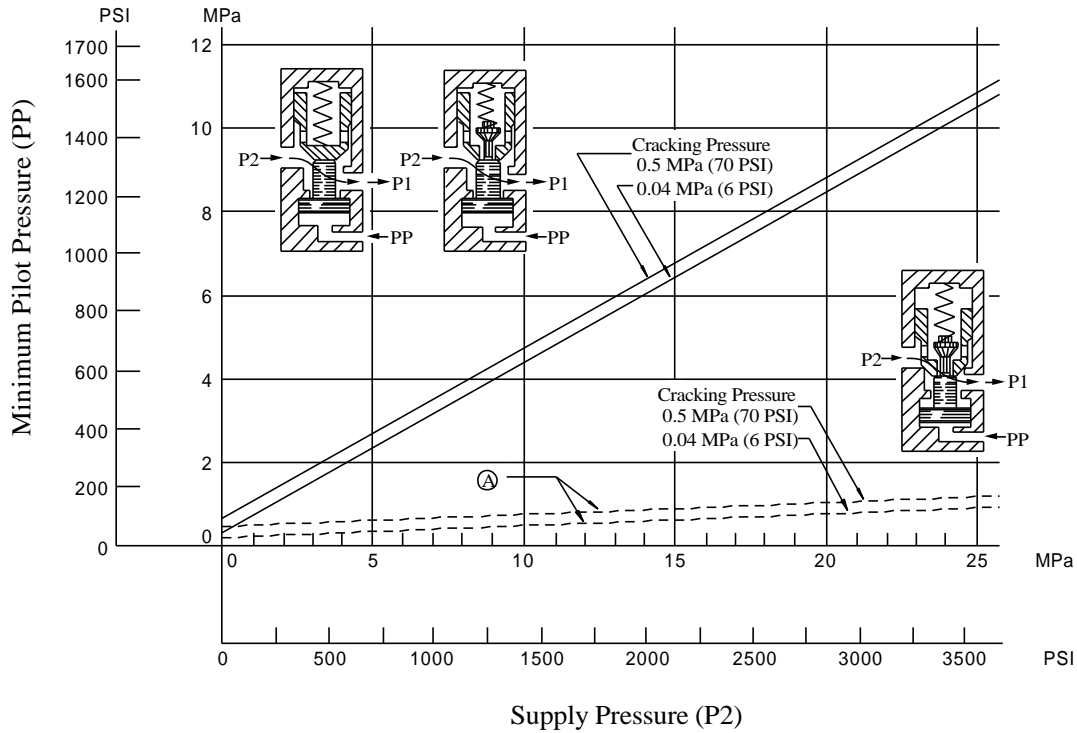


##### ● CPG-10, CPDG-10



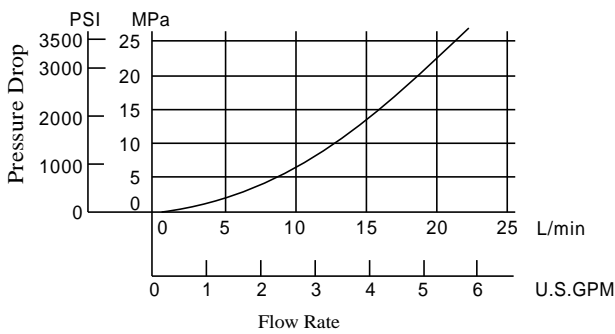
Hydraulic Fluid: Viscosity 30 mm<sup>2</sup>/s (141 SSU) , Specific Gravity 0.850

#### ■ Min. Pilot Pressure Chart

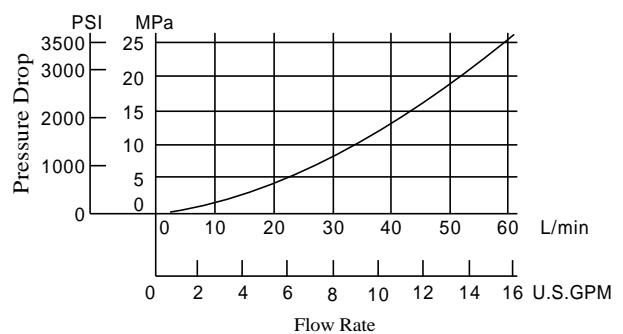


#### ■ Pressure Drop for Reversed Controlled Flow Only when Decompression Valve is Opened

##### ● CPDT-03, CPDG-03



##### ● CPDT-06, CPDG-06



##### ● CPDT-10, CPDG-10

