# Cetop Products

## Directional Valves


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# Directional Valves

## Specification

| Valve Size | | Cetop 3 | | Cetop 5 | |
|---|---|---|---|---|---|
| Working Pressure (bar) | Ports P, A, B | 350 | | 315 | |
| | Port T | 100 | | 100 | |
| Max Flow *(depends on spool)* | L/min | 80 | | 120 | |
| Fluid Temp (°C) | - 20 ~ +70 | | | | |
| Working Voltage | DC | 12 | 24 | 36 | 48 |
| | AC | 110V/50Hz | | 220 V/50Hz | |
| Max. Switch Frequency (T/h) | | 15000 (DC) | | 7200 (AC) | |
| Protection | | IP65 | | | |

## Order Code

**F* - * - *** - *** - ***- *** - **** - * - 50**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① **Control Type**
FW = Solenoid
FS = Lever
FWS = Solenoid / Lever

② **Valve Size:**
3 = Cetop 3 (NG6)
5 = Cetop 5 (NG10)

③ **Spool Type & Spring Arrangement**

④ **Coil Voltage:**
D12 = 12V DC
D24 = 24V DC
D36 = 36V DC
D48 = 48V DC
R110 = 110V AC (Rectifier in coil)
R220 = 220V AC (Rectifier in coil)

⑤ **Electrical Connector:**
Z5L = DIN Plug with Light (standard)
Z6 = Wire Box Type (indent)
K40 = Deutsch Connector (Indent)

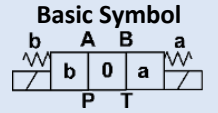
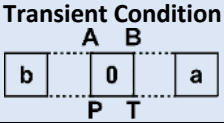
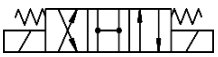
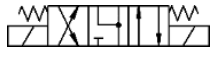
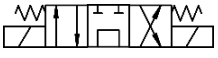
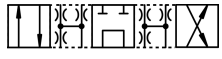
⑥ **Manual Override Option:**
Omit = Plain override(s) on solenoid end(s) only
*(No override on non-solenoid end of single solenoid valves)*
LMO = Locking Manual Override
N9 = Extended Push Pin with M5 male thread

⑦ **N9 Options:**
Omit = M5 male thread only
RB = Red Ball
RC = Rubber Cap (Cetop 3 only)

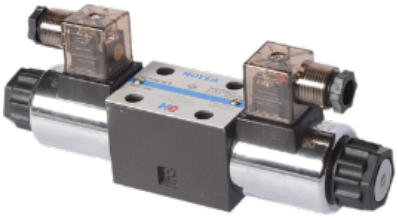
⑧ **Seal Material:**
Omit = NBR (Standard)
V = FPM (Indent)

⑨ **Design Number**

## Spool Description

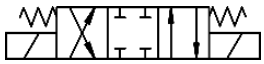
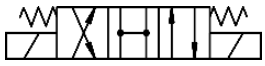
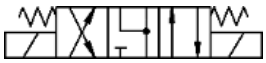
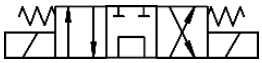
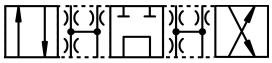
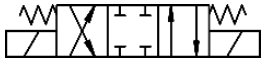
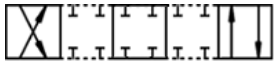
| Basic Symbol | Transient Condition | Spool Code | Description of Spool Function |
|---|---|---|---|
|  |  | 3C2 | Closed centre spool. Commonly Called a Cylinder spool.<br>All ports blocked in the centre position and during crossover. |
|  | | 3C3 | Open centre spool.<br>All ports connected in the centre position and during crossover.<br>Minimises shock during crossover. |
|  | | 3C4 | Commonly called a Motor spool.<br>Pressure port blocked. Both A & B ports connected to tank. |
|  |  | 3C6 | Tandem centre spool with open crossover.<br>During transition from centre to offset position, all ports are interconnected to minimise shock in the system. |

# FW Solenoid Stock Valves



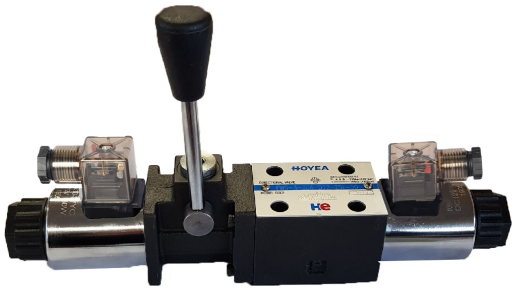
**FW-3-***- *** -Z5L-50**

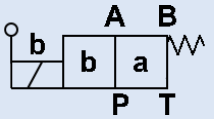
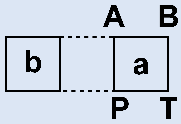
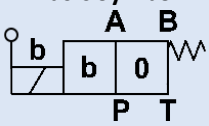
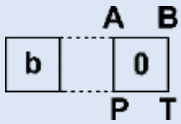
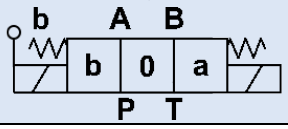
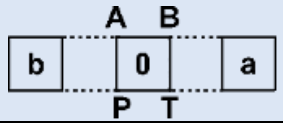
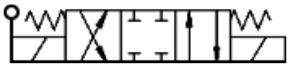
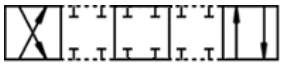
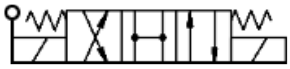
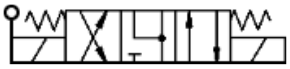
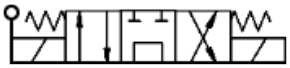
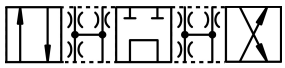
**FW-3-***- *** -Z5L-LMO-50**

| Order Code | Basic Symbol | Transient Condition |
|---|---|---|
| FW-3-2B2- *** -Z5L-50 | | |
| FW-5-2B2- *** -Z5L-50 | | |
| FW-3-2B3- *** -Z5L-50 | | |
| FW-5-2B3- *** -Z5L-50 | | |
| **Order Code** | **Basic Symbol** | **Transient Condition** |
| FW-3-2B3B- *** -Z5L-50 | | |
| FW-5-2B3B- *** -Z5L-50 | | |
| FW-3-2B4B- *** -Z5L-50 | | |
| FW-5-2B4B- *** -Z5L-50 | | |
| FW-3-2B6B- *** -Z5L-50 | | |
| FW-5-2B6B- *** -Z5L-50 | | |
| **Order Code** | **Basic Symbol** | **Transient Condition** |
| FW-3-2D2- *** -Z5L-50 | | |
| FW-5-2D2- *** -Z5L-50 | | |
| FW-3-2D3- *** -Z5L-50 | | |
| FW-5-2D3- *** -Z5L-50 | | |
| **Order Code** | **Basic Symbol** | **Transient Condition** |
| FW-3-3C2- *** -Z5L-50 |  | |
| FW-5-3C2- *** -Z5L-50 | | |
| FW-3-3C3- *** -Z5L-50 |  | |
| FW-5-3C3- *** -Z5L-50 | | |
| FW-3-3C4- *** -Z5L-50 |  | |
| FW-5-3C4- *** -Z5L-50 | | |
| FW-3-3C6- *** -Z5L-50 |  |  |
| FW-5-3C6- *** -Z5L-50 | | |
| FW-3-3C2- *** -Z5L-N9-RBRC-50 |  |  |

***Note:*** *Valves supplied with DIN Light Plug(s) and Bolt Kit (for valve only, not for valve with modules).*

# FWS Solenoid/Lever Stock Valves

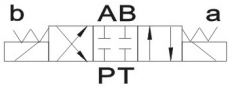
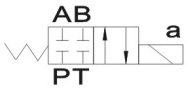
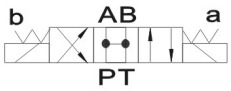
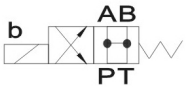
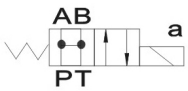
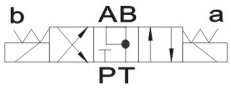
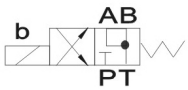
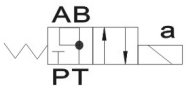
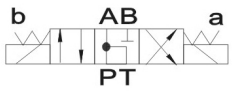
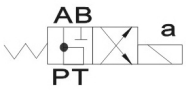
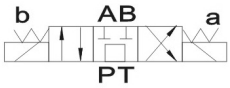
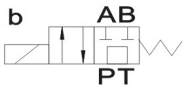
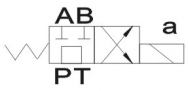
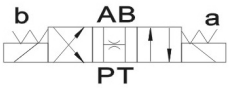
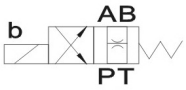
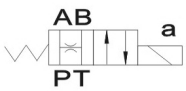
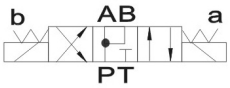
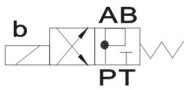
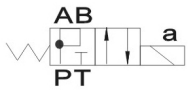
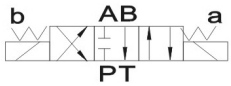
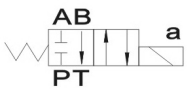
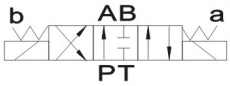
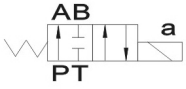
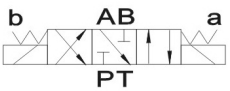
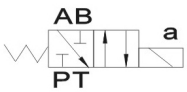
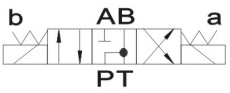
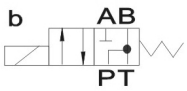
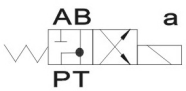
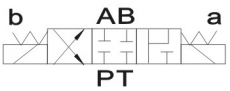
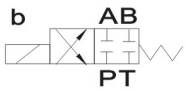
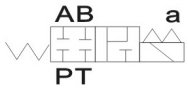


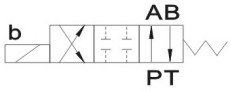
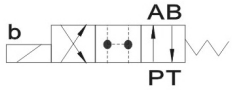
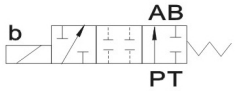
| Order Code | Basic Symbol | Transient Condition |
|---|---|---|
| |   |   |
| FWS-3-2B2- *** -Z5L-50 | | |
| FWS-3-2B3- *** -Z5L-50 | | |
| **Order Code** | **Basic Symbol**   | **Transient Condition**   |
| FWS-3-2B3B- *** -Z5L-50 | | |
| **Order Code** | **Basic Symbol**   | **Transient Condition**   |
| FWS-3-3C2- *** -Z5L-50 |  |  |
| FWS-3-3C3- *** -Z5L-50 |  | |
| FWS-3-3C4- *** -Z5L-50 |  | |
| FWS-3-3C6- *** -Z5L-50 |  |  |

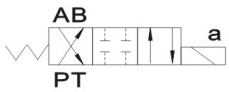
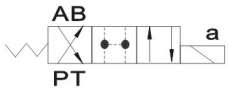
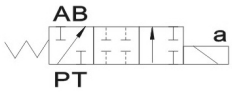
***Note:***

- *Valves supplied with DIN Light Plug(s) and Bolt Kit (for valve only, not for valve with modules).*
- *FWS-5-***-***-Z5L-50 available as indent to customer order.*

# FW & FWS Spool Types & Spring Arrangements

| | | | | | |
|---|---|---|---|---|---|
| 3C2 |  | 2B2B | | 2B2BL |  |
| 3C3 |  | 2B3B |  | 2B3BL |  |
| 3C4 |  | 2B4B |  | 2B4BL |  |
| 3C5 |  | 2B5B | | 2B5BL |  |
| 3C6 |  | 2B6B |  | 2B6BL |  |
| 3C7 |  | 2B7B |  | 2B7BL |  |
| 3C9 |  | 2B9B |  | 2B9BL |  |
| 3C10 |  | 2B10B | | 2B10BL |  |
| 3C11 |  | 2B11B | | 2B11BL |  |
| 3C12 |  | 2B12B | | 2B12BL |  |
| 3C25 |  | 2B25B |  | 2B25BL |  |
| 3C29 |  | 2B29B |  | 2B29BL |  |

| | |
|---|---|
| 2B2 |  |
| 2B3 |  |
| 2B8 |  |

| | |
|---|---|
| 2B2L |  |
| 2B3L |  |
| 2B8L |  |

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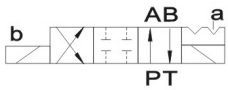
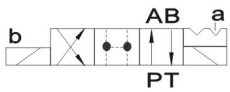
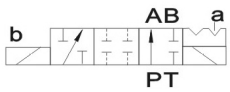
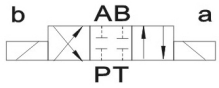
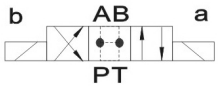
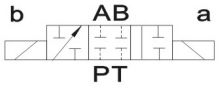
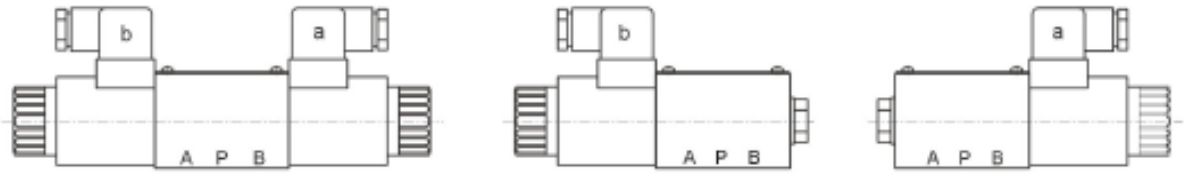
| | |
|---|---|
|  | 2D2 |
|  | 2D3 |
|  | 2D8 |

No spring return and no mechanical positioning

| | |
|---|---|
|  | 2N2 |
|  | 2N3 |
|  | 2N8 |

Note: *D*( No spring return mechanical positioning)
solenoid directional control valve should be installed horizontally.

## Solenoids Identified to U.S. Standards

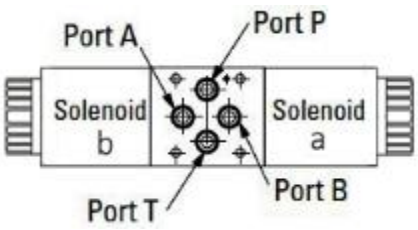



Functional symbols related to solenoid identity “a” and/or “b” according to NFPA/ANSI standards.
i.e. energising solenoid “a” gives flow P to A, energising solenoid “b” gives flow P to B.

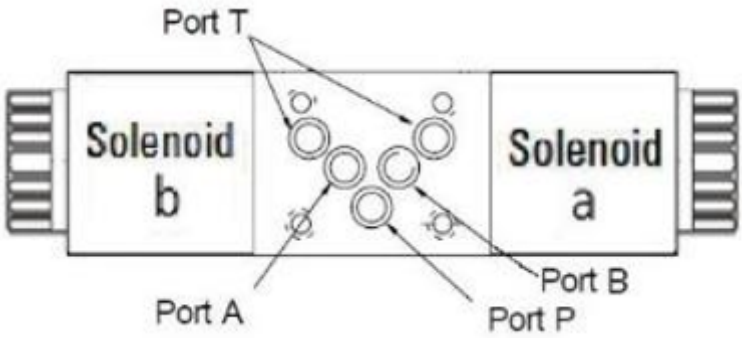
**Note:** Oil flow is in the opposite direction to that above for spools:

- 3C5
- 3C6
- 3C25
- 2B5B
- 2B5BL
- 2B6B
- 2B6BL
- 2B25B
- 2B25BL

i.e. energising solenoid “a” gives flow P to B, energising solenoid “b” gives flow P to A.

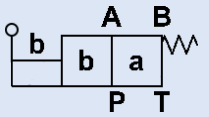
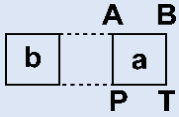
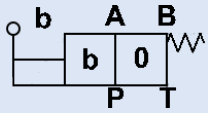
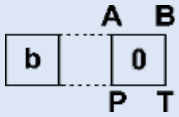
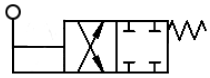
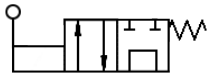
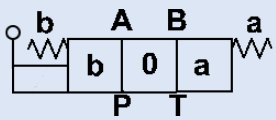
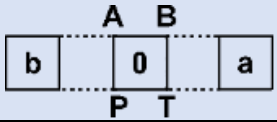
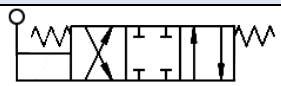
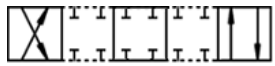
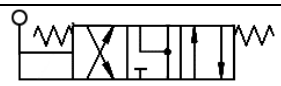
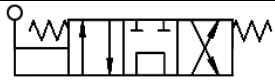
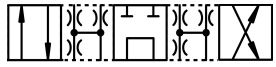



**Cetop 3** **(NG6)**




**Cetop 5** **(NG10)**

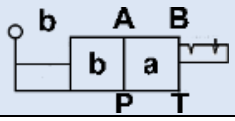
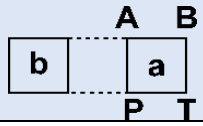
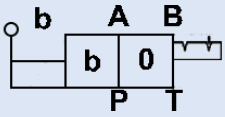
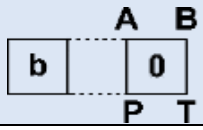
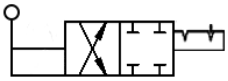
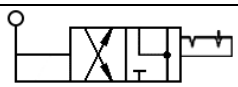
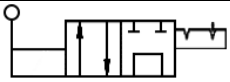
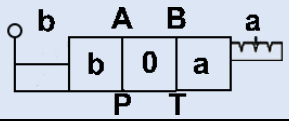
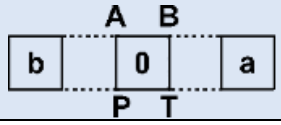
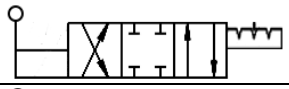
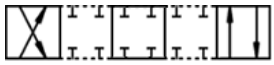
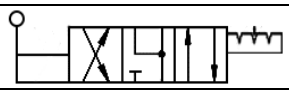
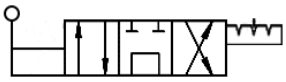
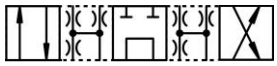
# FS Lever Stock Valves

| Order Code | Basic Symbol | Transient Condition |
|---|---|---|
| |  |  |
| FS-3-2B2-50 | | |
| FS-3-2B3-50 | | |
| **Order Code** | **Basic Symbol** | **Transient Condition** |
| |  |  |
| FS-3-2B2B-50 |  | |
| FS-3-2B3B-50 | | |
| FS-3-2B4B-50 | | |
| FS-3-2B6B-50 |  | |
| **Order Code** | **Basic Symbol** | **Transient Condition** |
| |  |  |
| FS-3-3C2-50 |  |  |
| FS-3-3C3-50 | | |
| FS-3-3C4-50 |  | |
| FS-3-3C6-50 |  |  |

***Note:***

- *Valves supplied with Bolt Kit (for valve only, not for valve with modules).*
- *FS-5-***--50 available as indent to customer order.*

***Continued Next Page***

| Order Code | Basic Symbol | Transient Condition |
|---|---|---|
| |  |  |
| FS-3-2B2-OF-50 | | |
| FS-3-2B3-OF-50 | | |
| **Order Code** | **Basic Symbol** | **Transient Condition** |
| |  |  |
| FS-3-2B2B-OF-50 |  | |
| FS-3-2B3B-OF-50 | | |
| FS-3-2B4B-OF-50 |  | |
| FS-3-2B6B-OF-50 |  | |
| **Order Code** | **Basic Symbol** | **Transient Condition** |
| |  |  |
| FS-3-3C2-OF-50 |  |  |
| FS-3-3C3-OF-50 | | |
| FS-3-3C4-OF-50 |  | |
| FS-3-3C6-OF-50 |  |  |

***Note:***

- *Valves supplied with Bolt Kit (for valve only, not for valve with modules).*
- *FS-5-***-OF-50 available as indent to customer order.*

# Coils, Accessories & Spare Parts

Coil

Locking Manual Override

FS & FWS Handle

Rubber Cap

Red Ball

Core Tube with N9

| Cetop 3 (NG6) | | |
|---|---|---|
| **Order Code** | **Description** | **Coil Dimensions** |
| FW-3-D12-Z5L-50 | 12V DC DIN Coil (DIN Light Plug included) | 23 ID x 45 OD x 51 L |
| FW-3-D24-Z5L-50 | 24V DC DIN Coil (DIN Light Plug included) | |
| FW-3-D36-Z5L-50 | 36V DC DIN Coil (DIN Light Plug included) | |
| FW-3-D48-Z5L-50 | 48V DC DIN Coil (DIN Light Plug included) | |
| FW-3-R110-Z5L-50 | 110V AC Rectified DIN Coil (DIN Light Plug included) | |
| FW-3-R220-Z5L-50 | 220V AC Rectified DIN Coil (DIN Light Plug included) | |
| FW-3-DC-CT-50 | DC Core Tube | |
| FW-3-DC-CT-N9-50 | DC Core Tube with N9 Manual Override – M5 Male Thread | |
| FW-3-DC-LMO-50 | DC Locking Manual Override | |
| FW-3-DC-NUT-50 | DC Coil / Core Tube Nut (M22 x 1.5) | |
| FW-3-EP-50 | End Plug | |
| FW-RB | Red Ball | |
| FW-3-RC-50 | Rubber Cap (no manual override) - use with FW-3-DC-CT-N9-50 | |
| FS-3-HM | Handle & Screw | |
| FWS-3-HM | Handle | |

| Cetop 5 (NG 10) | | |
|---|---|---|
| **Order Code** | **Description** | **Coil Dimensions** |
| FW-5-D12-Z5L-50 | 12V DC DIN Coil (DIN Light Plug included) | 31.0 ID x 63 OD x 75 L |
| FW-5-D24-Z5L-50 | 24V DC DIN Coil (DIN Light Plug included) | |
| FW-5-D36-Z5L-50 | 36V DC DIN Coil (DIN Light Plug included) | |
| FW-5-D48-Z5L-50 | 48V DC DIN Coil (DIN Light Plug included) | |
| FW-5-R110-Z5L-50 | 110V AC Rectified DIN Coil (DIN Light Plug included) | |
| FW-5-R220-Z5L-50 | 220V AC Rectified DIN Coil (DIN Light Plug included) | |
| FW-5-D12-Z5L-51 | 12V DC DIN Coil (DIN Light Plug included) | 31.5 ID x 63 OD x 75 L |
| FW-5-D24-Z5L-51 | 24V DC DIN Coil (DIN Light Plug included) | |
| FW-5-DC-CT-50 | DC Core Tube | |
| FW-5-DC-CT-N9-50 | DC Core Tube with N9 Manual Override - M5 Male Thread | |
| FW-5-DC-LMO-50 | DC Locking Manual Override | |
| FW-5-DC-NUT-50 | DC Coil / Core Tube Nut (M30 x 1.5) | |
| FW-5-EP-50 | End Plug | |
| FW-RB | Red Ball - use with FW-5-DC-CT-N9-50 | |

# DIN Plugs

| Order Code | Voltage | Description |
|---|---|---|
| DLP-A110 | 110V AC | DIN Light Plug |
| DLP-A220 | 220V AC | |
| DLP-D12 | 12V DC | |
| DLP-D24 | 24V DC | |
| DLP-D36 | 36V DC | |
| DLP-D48 | 48V DC | |

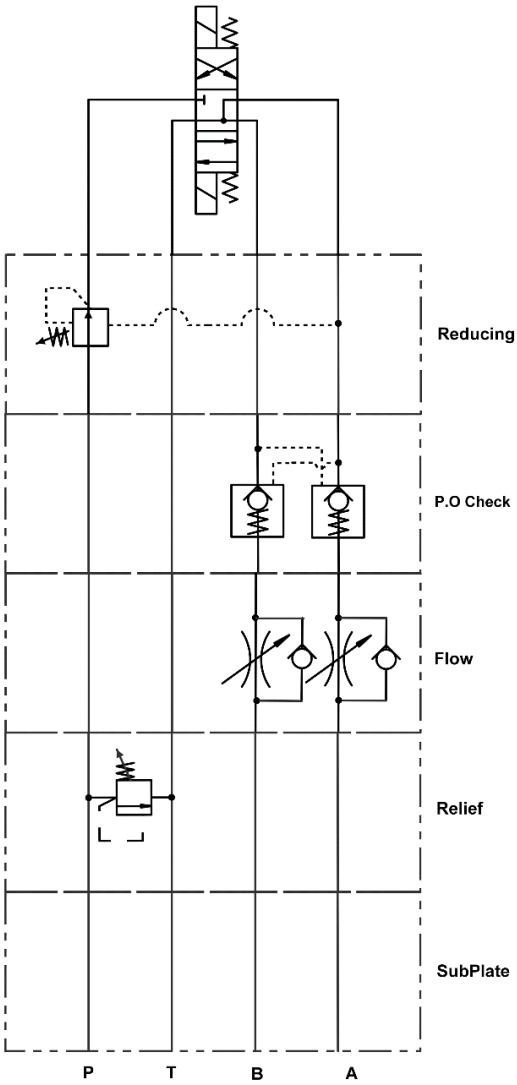
# Mounting Information

With modular valves circuits are easily built by stacking them between the directional control valve and the subplate or manifold. No piping is required which saves and reduces the time and work required to build the circuit. This saves money and there are no hose or pipework connections to leak. The circuit can be easily changed by adding or removing modules as required.
The selection of modular valves, to suit a particular function or hydraulic circuit are made in exactly the same way as conventional valves, taking into account the flow and pressure of each valve to be used.

***Note:***

- Maximum flow and pressure of stack is limited to lowest flow or pressure of a module or the directional valve.
- The minimum pressure setting for DY Pressure Relief Valve & DYJ Pressure Reducing Valve is dependent on the flow, the lower the flow the lower the possible pressure setting. It also depends on the tank line back pressure and this should include the value of the T-line pressure drop characteristics of the valves stacked to the base plate side of the modular valve.

When installing a number of modular valves together the order in which they are stacked can affect their performance. The following information is intended as a guide only. As every hydraulic system is unique it's the user's responsibility to determine what is appropriate for the application.




## General Rules

**Function in P or T Line:**

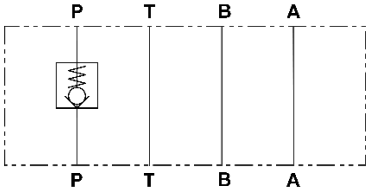
- Relief valves generally should be stacked closest to the subplate or manifold.
- Reducing valves should be stacked between the relief and directional control valve.
- Direct check valves should be stacked closest to the directional control valve.

**Function in A & B Lines:**

- When using a pilot operated check valve module use a meter-out flow control module stacked closest to the subplate or manifold. This prevents back pressure on the pilot operated check valve outlet which increases the pilot pressure required to open the valve and this can cause check valve chatter.
- When using a line mounted pilot operated check valve use a meter-in flow control module.
- When using a counterbalance valve module use a meter-out flow control module stacked closest to the subplate or manifold. This improves system stability by reducing the metering required by the counterbalance valve.
- When using a line mounted counterbalance valve use a meter-in flow control module.

# Check Valves

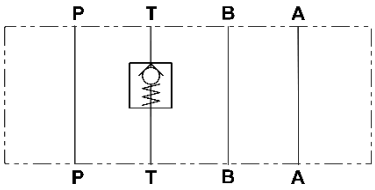
(Port P)




| Cetop 3 (NG06) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Pressure (bar)** | **Free Flow Cracking Pressure (bar)** | **Thickness (mm)** |
| DA-3-P-0.5-70 | 40 | 315 | 0.5 | 40 |
| DA-3-P-4.0-70 | | | 4.0 | |

| Cetop 5 (NG10) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Pressure (bar)** | **Free Flow Cracking Pressure (bar)** | **Thickness (mm)** |
| DA-5-P-0.5-70 | 100 | 315 | 0.5 | 55 |
| DA-5-P-4.0-70 | | | 4.0 | |

(Port T)

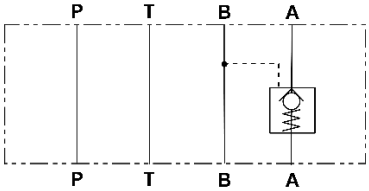



| Cetop 3 (NG06) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Pressure (bar)** | **Free Flow Cracking Pressure (bar)** | **Thickness (mm)** |
| DA-3-T-0.5-70 | 40 | 315 | 0.5 | 40 |
| DA-3-T-4.0-70 | | | 4.0 | |

| Cetop 5 (NG10) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Pressure (bar)** | **Free Flow Cracking Pressure (bar)** | **Thickness (mm)** |
| DA-5-T-0.5-70 | 100 | 315 | 0.5 | 55 |
| DA-5-T-4.0-70 | | | 4.0 | |

# Pilot Operated Check Valves

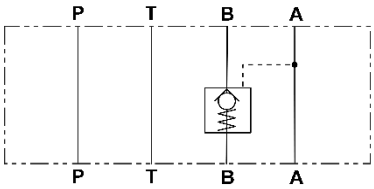
(Port A)




| Cetop 3 (NG6) | | | | | |
|---|---|---|---|---|---|
| Order Code | Max. Flow (L/min) | Max. Pressure (bar) | Pilot Ratio | Free Flow Cracking Pressure (bar) | Thickness (mm) |
| DAY-3-A-4.0-50 | 60 | 315 | 2.9 : 1 | 4.0 | 40 |

| Cetop 5 (NG10) | | | | | |
|---|---|---|---|---|---|
| Order Code | Max. Flow (L/min) | Max. Pressure (bar) | Pilot Ratio | Free Flow Cracking Pressure (bar) | Thickness (mm) |
| DAY-5-A-4.0-50 | 100 | 315 | 10.7 : 1 | 4.0 | 50 |

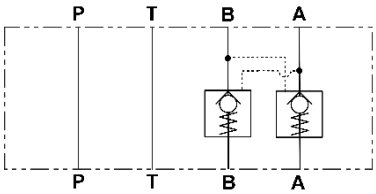
(Port B)




| Cetop 3 (NG6) | | | | | |
|---|---|---|---|---|---|
| Order Code | Max. Flow (L/min) | Max. Pressure (bar) | Pilot Ratio | Free Flow Cracking Pressure (bar) | Thickness (mm) |
| DAY-3-B-4.0-50 | 60 | 315 | 2.9 : 1 | 4.0 | 40 |

| Cetop 5 (NG10) | | | | | |
|---|---|---|---|---|---|
| Order Code | Max. Flow (L/min) | Max. Pressure (bar) | Pilot Ratio | Free Flow Cracking Pressure (bar) | Thickness (mm) |
| DAY-5-B-4.0-50 | 100 | 315 | 10.7 : 1 | 4.0 | 50 |

(Port A & B)

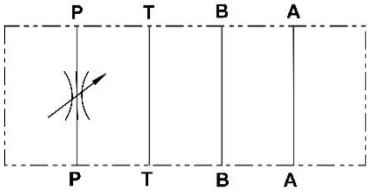



| Cetop 3 (NG6) | | | | | |
|---|---|---|---|---|---|
| Order Code | Max. Flow (L/min) | Max. Pressure (bar) | Pilot Ratio | Free Flow Cracking Pressure (bar) | Thickness (mm) |
| DAY-3-W-4.0-50 | 60 | 315 | 2.9 : 1 | 4.0 | 40 |

| Cetop 5 (NG10) | | | | | |
|---|---|---|---|---|---|
| Order Code | Max. Flow (L/min) | Max. Pressure (bar) | Pilot Ratio | Free Flow Cracking Pressure (bar) | Thickness (mm) |
| DAY-5-W-4.0-50 | 100 | 315 | 10.7 : 1 | 4.0 | 50 |

## Needle Valves

(Port P)

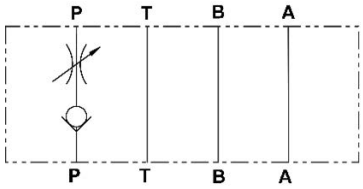



| Cetop 3 (NG6) | | | |
|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DL-3-P-70 | 30 | 315 | 40 |

| Cetop 5 (NG10) | | | |
|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DL-5-P-70 | 50 | 315 | 55 |

## Needle & Check Valve

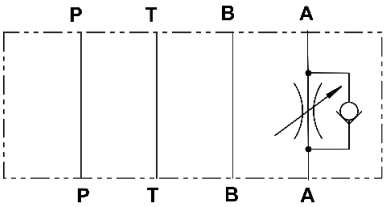
(Port P)



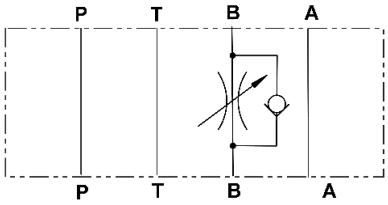

| Cetop 3 (NG6) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Pressure (bar)** | **Free Flow Cracking Pressure (bar)** | **Thickness (mm)** |
| DAL-3-P-70 | 30 | 315 | 0.5 | 40 |

# Flow Control Valves

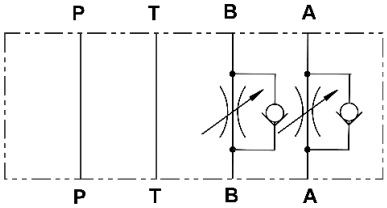
**(Meter IN)**




A Pipeline




B Pipeline

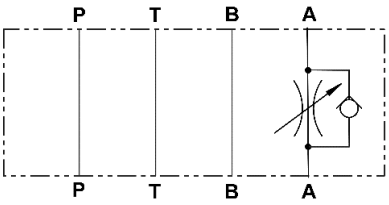



W Pipeline

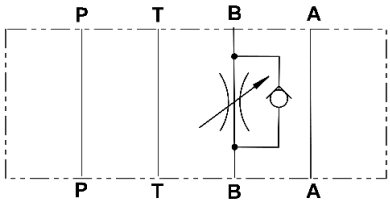
| Cetop 3 (NG06) | | | | |
|---|---|---|---|---|
| Order Code | Max. Flow (L/min) | Max. Pressure (bar) | Free Flow Cracking Pressure (bar) | Thickness (mm) |
| DLA-3-A-MI-70 | 30 | 315 | 0.5 | 40 |
| DLA-3-B-MI-70 | | | | |
| DLA-3-W-MI-70 | | | | |

| Cetop 5 (NG10) | | | | |
|---|---|---|---|---|
| Order Code | Max. Flow (L/min) | Max. Pressure (bar) | Free Flow Cracking Pressure (bar) | Thickness (mm) |
| DLA-5-A-MI-70 | 50 | 315 | 0.5 | 55 |
| DLA-5-B-MI-70 | | | | |
| DLA-5-W-MI-70 | | | | |

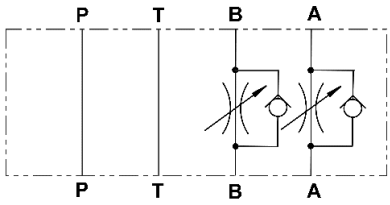
**(Meter OUT)**




A Pipeline




B Pipeline



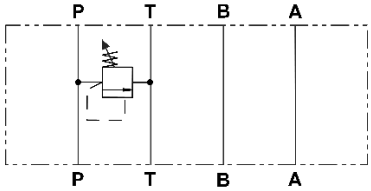

W Pipeline

| Cetop 3 (NG06) | | | | |
|---|---|---|---|---|
| Order Code | Max. Flow (L/min) | Max. Pressure (bar) | Free Flow Cracking Pressure (bar) | Thickness (mm) |
| DLA-3-A-MO-70 | 30 | 315 | 0.5 | 40 |
| DLA-3-B-MO-70 | | | | |
| DLA-3-W-MO-70 | | | | |

| Cetop 5 (NG10) | | | | |
|---|---|---|---|---|
| Order Code | Max. Flow (L/min) | Max. Pressure (bar) | Free Flow Cracking Pressure (bar) | Thickness (mm) |
| DLA-5-A-MO-70 | 50 | 315 | 0.5 | 55 |
| DLA-5-B-MO-70 | | | | |
| DLA-5-W-MO-70 | | | | |

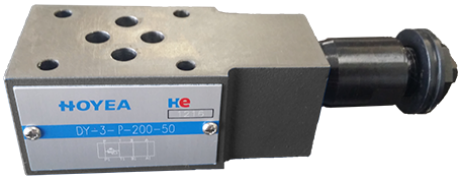
# Pressure Relief Valves (Pilot Operated)

(Port P → T)

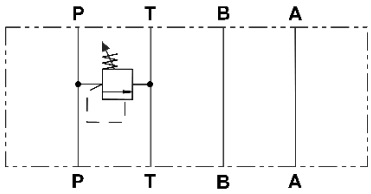



| Cetop 3 (NG6) (Being Superseded by 50 Design) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-3-P-315-70 | 35 | 315 | 315 | 40 |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*



(Port P → T)

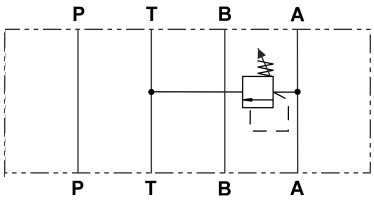



| Cetop 3 (NG6) (50 Design) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-3-P-50-50 | 35 | 50 | 315 | 40 |
| DY-3-P-100-50 | | 100 | | |
| DY-3-P-200-50 | | 200 | | |
| DY-3-P-315-50 | | 315 | | |

| Cetop 5 (NG10) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-5-P-210-70 | 70 | 210 | 315 | 55 |
| DY-5-P-315-70 | | 315 | | |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*

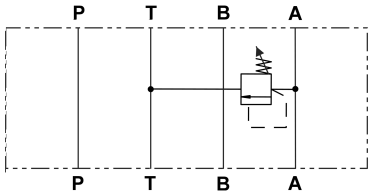
(Port A → T)




| Cetop 3 (NG6) (Being Superseded by 50 Design) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-3-A-315-70 | 35 | 315 | 315 | 40 |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*

(Port A → T)

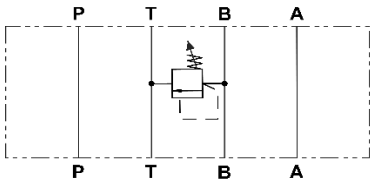



| Cetop 3 (NG6) (50 Design) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-3-A-100-50 | 35 | 100 | 315 | 40 |
| DY-3-A-200-50 | | 200 | | |
| DY-3-A-315-50 | | 315 | | |

| Cetop 5 (NG10) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-5-A-210-70 | 70 | 210 | 315 | 55 |
| DY-5-A-315-70 | | 315 | | |

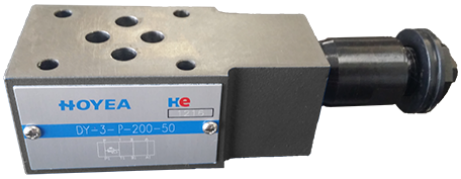
***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*

(Port B → T)

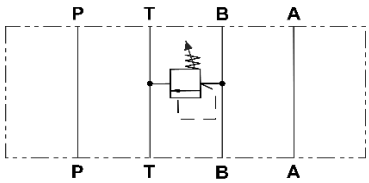



| Cetop 3 (NG6) (Being Superseded by 50 Design) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-3-B-210-70 | 35 | 210 | 315 | 40 |
| DY-3-B-315-70 | | 315 | | |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*



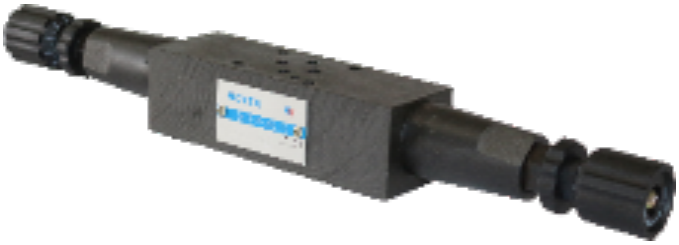
(Port B → T)



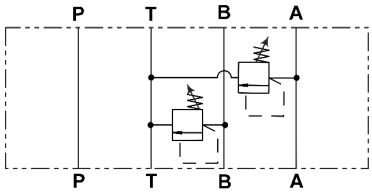

| Cetop 3 (NG6) (50 Design) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-3-B-100-50 | 35 | 100 | 315 | 40 |
| DY-3-B-200-50 | | 200 | | |
| DY-3-B-315-50 | | 315 | | |

| Cetop 5 (NG10) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-5-B-210-70 | 70 | 210 | 315 | 55 |
| DY-5-B-315-70 | | 315 | | |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*



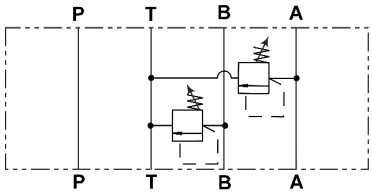
(Port A → T & B → T)




| Cetop 3 (NG6) (Being Superseded by 50 Design) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-3-W-140-70 | 35 | 140 | 315 | 40 |
| DY-3-W-315-70 | | 315 | | |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*

(Port A → T & B → T)

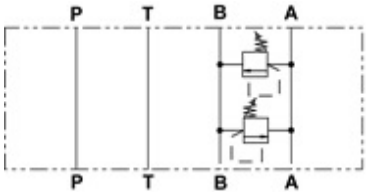



| Cetop 3 (NG6) (50 Design) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-3-C-100-50 | 35 | 100 | 315 | 40 |
| DY-3-C-200-50 | | 200 | | |
| DY-3-C-315-50 | | 315 | | |

| Cetop 5 (NG10) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-5-W-140-70 | 70 | 140 | 315 | 55 |
| DY-5-W-210-70 | | 210 | | |
| DY-5-W-315-70 | | 315 | | |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*

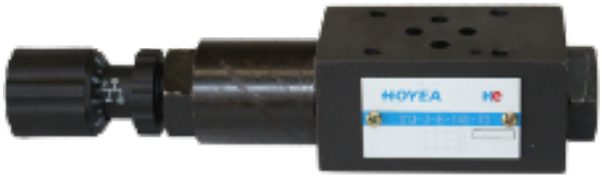
**(Port A → B & B → A)**



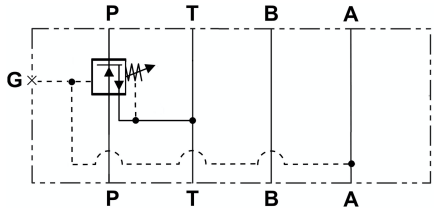

| Cetop 3 (NG6) | | | | |
|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** |
| DY-3-D-100-50 | 35 | 100 | 315 | 40 |
| DY-3-D-200-50 | | 200 | | |
| DY-3-D-315-50 | | 315 | | |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*

# Pressure Reducing Valves



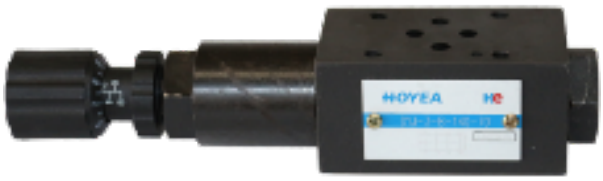
(Port A)



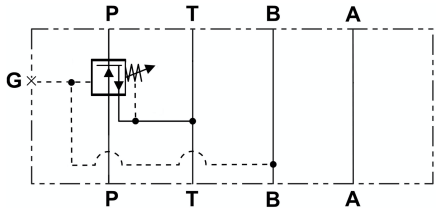

| Cetop 3 (NG6) | | | | | |
|---|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** | **G** |
| DYJ-3-A-140-70 | 35 | 140 | 315 | 40 | 1/4" BSPT |
| DYJ-3-A-210-70 | | 210 | | | |

| Cetop 5 (NG10) | | | | | |
|---|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** | **G** |
| DYJ-5-A-140-70 | 70 | 140 | 315 | 55 | 1/4" BSPT |
| DYJ-5-A-210-70 | | 210 | | | |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*



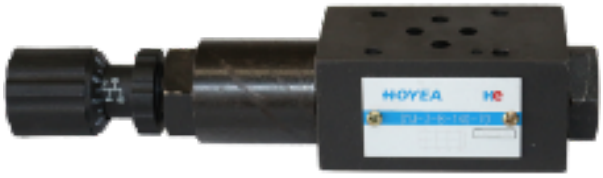
(Port B)



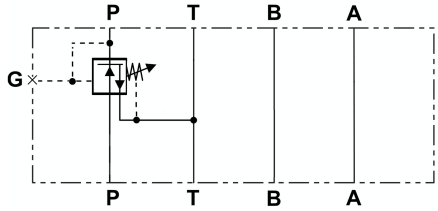

| Cetop 3 (NG6) | | | | | |
|---|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** | **G** |
| DYJ-3-B-140-70 | 35 | 140 | 315 | 40 | 1/4" BSPT |
| DYJ-3-B-210-70 | | 210 | | | |

| Cetop 5 (NG10) | | | | | |
|---|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** | **G** |
| DYJ-5-B-140-70 | 70 | 140 | 315 | 55 | 1/4" BSPT |
| DYJ-5-B-210-70 | | 210 | | | |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*



(Port P)

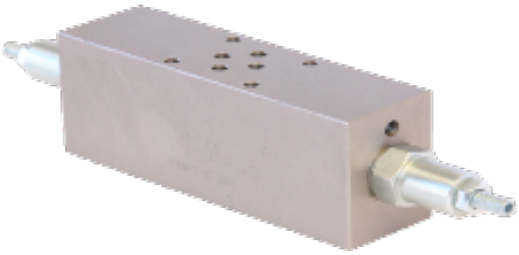


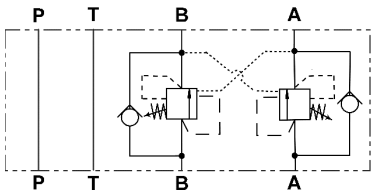

| Cetop 3 (NG6) | | | | | |
|---|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** | **G** |
| DYJ-3-P-70-70 | 35 | 70 | 315 | 40 | 1/4" BSPT |
| DYJ-3-P-140-70 | | 140 | | | |
| DYJ-3-P-210-70 | | 210 | | | |

| Cetop 5 (NG10) | | | | | |
|---|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Max. Set Pressure (bar)** | **Max. Pressure (bar)** | **Thickness (mm)** | **G** |
| DYJ-5-P-70-70 | 70 | 70 | 315 | 55 | 1/4" BSPT |
| DYJ-5-P-140-70 | | 140 | | | |
| DYJ-5-P-210-70 | | 210 | | | |

***Note:*** *After factory testing Adjustable Pressure is set at minimum which is approximately 8 bar, it is dependent on the tank line back pressure.*

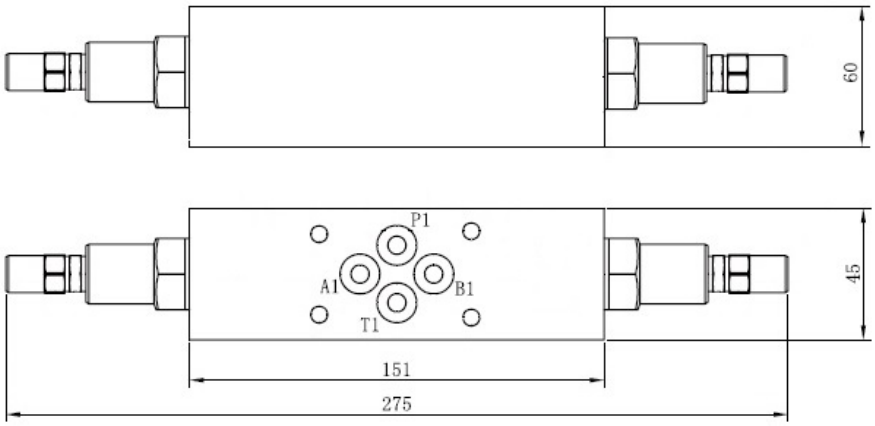
## Dual Counterbalance Valve





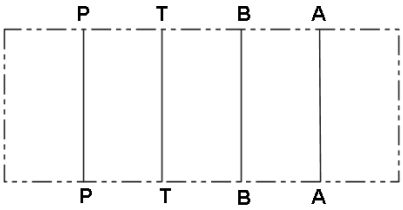

| Cetop 3 (NG6) | | | | | | |
|---|---|---|---|---|---|---|
| **Order Code** | **Max. Flow (L/min)** | **Adjustable Pressure (bar)** | **Max. Pressure (bar)** | **Pilot Ratio** | **Free Flow Cracking Pressure (bar)** | **Thickness (mm)** |
| OCBW-3-43-210 | 45 | 60 - 210 | 350 | 4.3 : 1 | 3.8 | 60 |
| OCBW-3-43-350 | | 100 - 350 | | | | |

***Note:*** *Factory Set 200 bar*

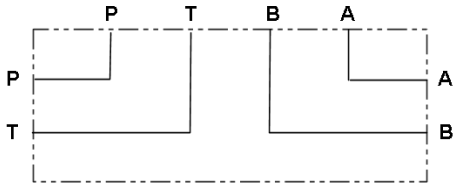


# Subplates, Manifolds & Bolt Kits

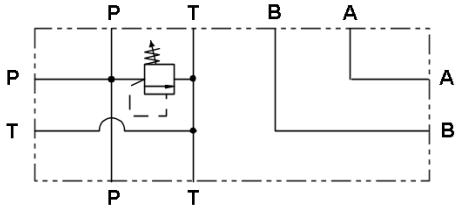
## Cetop 3 (NG6) Subplates




**Bottom Port**




**Side Port**




**Dual P & T with Relief Cavity**

| Cetop 3 (NG6) | | | | |
|---|---|---|---|---|
| **Order Code** | **Port Position** | **Material** | **Max. Pressure (bar)** | **Port Size** |
| SP-3-BP-A | Bottom Port | Alloy (Clear Anodised) | 210 | G 3/8 |
| SP-3-SP-A | Side Port | | | |
| SP-3-RV-A | Dual P & T Port with Relief Cavity | | | |
| SP-3-BP-S | Bottom Port | Steel (Nickel Plated) | 350 | |
| SP-3-SP-S | Side Port | | | |
| SP-3-RV-S | Dual P & T Port with Relief Cavity | | | |

***Note:***

- *SP-3-RV-* not supplied with Pressure Relief Valve Cartridge or Cavity Plug. They are sold separately.*
- *Relief valve cavity is C10-2 (P in nose & T out the side)*
- *Unused P port can be fitted with a Test Fitting.*

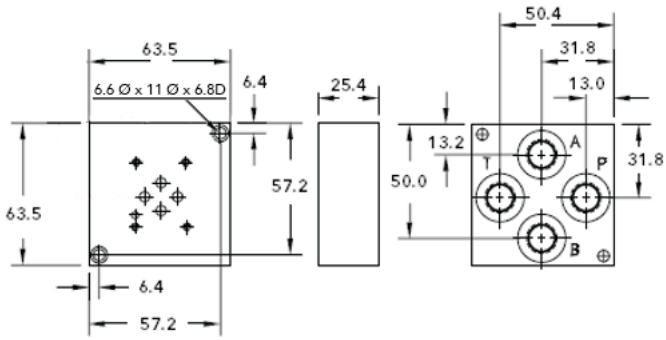
## Pressure Relief Valve Cartridge & Cavity Plug

| Order Code | Max. Flow (L/min) | Adjustable Pressure (bar) | Preset Pressure (bar) | Max. Pressure (bar) |
|---|---|---|---|---|
| LPSRV2-10-8 | 120 | 7 - 55 | 47 | 420 |
| LPSRV2-10-20 | | 35 - 140 | 48 | |
| LPSRV2-10-40 | | 70 - 280 | 88 | |
| LPSRV2-10-60 | | 140 - 420 | 140 | |
| PLUG-C10-2-S | Cavity Plug - Steel | | | |

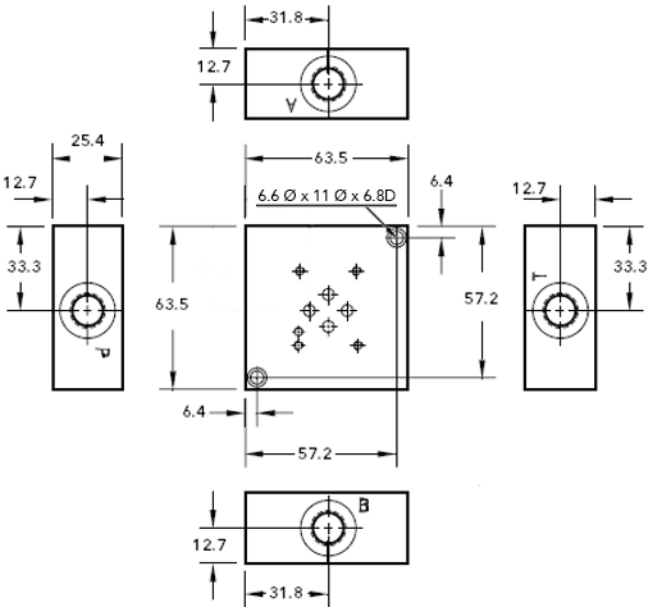
## Test Fitting & Port Plug

| Order Code | Thread | Valve Sealing Type |
|---|---|---|
| PT-08-B | G 3/8 - Dowty Seal | Ball |
| PT-08-C | G 3/8 - Encapsulated Seal | Poppet |
| PLUG-G3/8-S | G 3/8 - Steel Port Plug | |

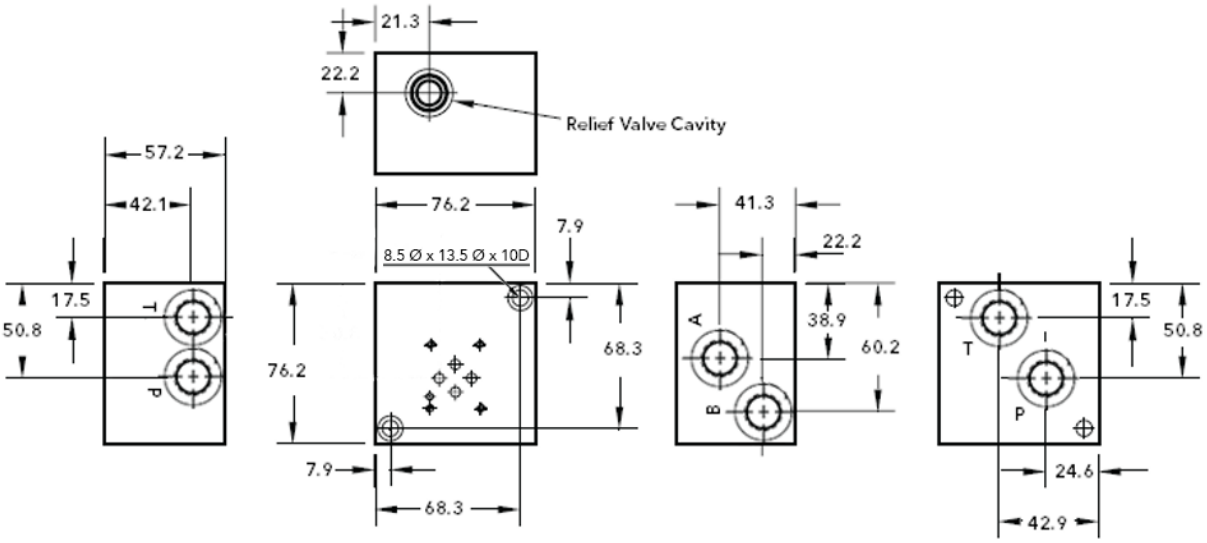
**Bottom Port**




**Side Port**




**Dual P & T Port with Relief Cavity**



# Cetop 3 (NG6) Manifolds

| Cetop 3 (NG6) Parallel - Alloy | | | | |
|---|---|---|---|---|
| **Order Code** | **Stations** | **Material** | **Max. Pressure (bar)** | **Ports** |
| MB-3-P2-A | 2 | Alloy (Clear Anodised) | 210 | P & T = G 1/2<br>A & B = G 3/8<br>Gauge = G 1/4 |
| MB-3-P3-A | 3 | | | |
| MB-3-P4-A | 4 | | | |
| MB-3-P5-A | 5 | | | |
| MB-3-P6-A | 6 | | | |
| MB-3-P7-A | 7 | | | |
| 203-SAE6 | P & T Tapping – Alloy (40 mm Thick) | | | 9/16” UNO (SAE 6) |
| SP-3-CP-S | Cover (Blanking) Plate - Steel (19 mm Thick - Bolts not included) | | | |
| MB-3-MBK | Mounting Bracket Kit (includes Hex Bolts & Spring Washers for Manifold only) | | | |

| Cetop 3 (NG6) Parallel - Steel | | | | |
|---|---|---|---|---|
| **Order Code** | **Stations** | **Material** | **Max. Pressure (bar)** | **Ports** |
| MB-3-P2-S | 2 | Steel (Nickel Plated) | 350 | P & T = G 1/2<br>A & B = G 3/8<br>Gauge = G 1/4 |
| MB-3-P3-S | 3 | | | |
| MB-3-P4-S | 4 | | | |
| MB-3-P5-S | 5 | | | |
| MB-3-P6-S | 6 | | | |
| MB-3-P7-S | 7 | | | |
| 203-SAE6 | P & T Tapping – Alloy (40 mm Thick) | | 210 | 9/16” UNO (SAE 6) |
| SP-3-CP-S | Cover (Blanking) Plate - Steel (19 mm Thick - Bolts not included) | | | |
| MB-3-MBK | Mounting Bracket Kit (includes Hex Bolts & Spring Washers for Manifold only) | | | |

| Cetop 3 (NG6) Series - Alloy | | | | |
|---|---|---|---|---|
| **Order Code** | **Stations** | **Material** | **Max. Pressure (bar)** | **Ports** |
| MB-3-S2-A | 2 | Alloy (Clear Anodised) | 210 | P & T = G 1/2<br>A & B = G 3/8<br>Gauge = G 1/4 |
| MB-3-S3-A | 3 | | | |
| MB-3-S4-A | 4 | | | |
| 203-SAE6 | P & T Tapping – Alloy (40 mm Thick) | | | 9/16” UNO (SAE 6) |
| MB-3-MBK | Mounting Bracket Kit (includes Hex Bolts & Spring Washers for Manifold only) | | | |

***Note:***

- *MB-3 not supplied with Pressure Relief Valve Cartridge or Cavity Plug, Test Fitting or Gauge Port Plug. They are sold separately.*
- *Relief Valve Cavity = C10-2 (P in nose & T out the side)*

## Pressure Relief Valve Cartridge & Cavity Plug

| Order Code | Max. Flow (L/min) | Adjustable Pressure (bar) | Factory Set (bar) | Max. Pressure (bar) |
|---|---|---|---|---|
| LPSRV2-10-8 | 120 | 7 - 55 | 47 | 420 |
| LPSRV2-10-20 | | 35 - 140 | 48 | |
| LPSRV2-10-40 | | 70 - 280 | 88 | |
| LPSRV2-10-60 | | 140 - 420 | 140 | |
| PLUG-C10-2-S | Cavity Plug - Steel | | | |

***Note:*** *Pressure Relief Valve Cartridge or Cavity Plug cannot be used with Solenoid Unloading Valve.*

## Solenoid Unloading Valve

| Order Code | Description | Max. Flow (L/min) | Max. Pressure (bar) |
|---|---|---|---|
| LSV2-10-2NOS | 2/2 N.O. Cartridge | 22.7 | 207 |
| LC2-10-C-1H | Coil DIN 12V DC without Plug | N/A | N/A |
| LC2-10-C-2H | Coil DIN 24V DC without Plug | | |
| LC2-10-C-3H | Coil DIN 110V AC without Plug | | |
| LC2-10-C-4H | Coil DIN 220V AC without Plug | | |
| C01010001-N | DIN Light Plug DC | | |
| C01010004-N | DIN Light Plug AC | | |
| LSV6-10-2NOSP | 2/2 N.O. Cartridge | 70 | 350 |
| LSV6-10-2NOSP-M | 2/2 N.O. Cartridge with O'ride | | |
| LC3-10-C-1H | Coil DIN 12V DC without Plug | N/A | N/A |
| LC3-10-C-2H | Coil DIN 24V DC without Plug | | |
| LC3-10-C-3H | Coil DIN 110V AC without Plug | | |
| LC3-10-C-4H | Coil DIN 220V AC without Plug | | |
| C01010001-N | DIN Light Plug DC | | |
| C01010004-N | DIN Light Plug AC | | |

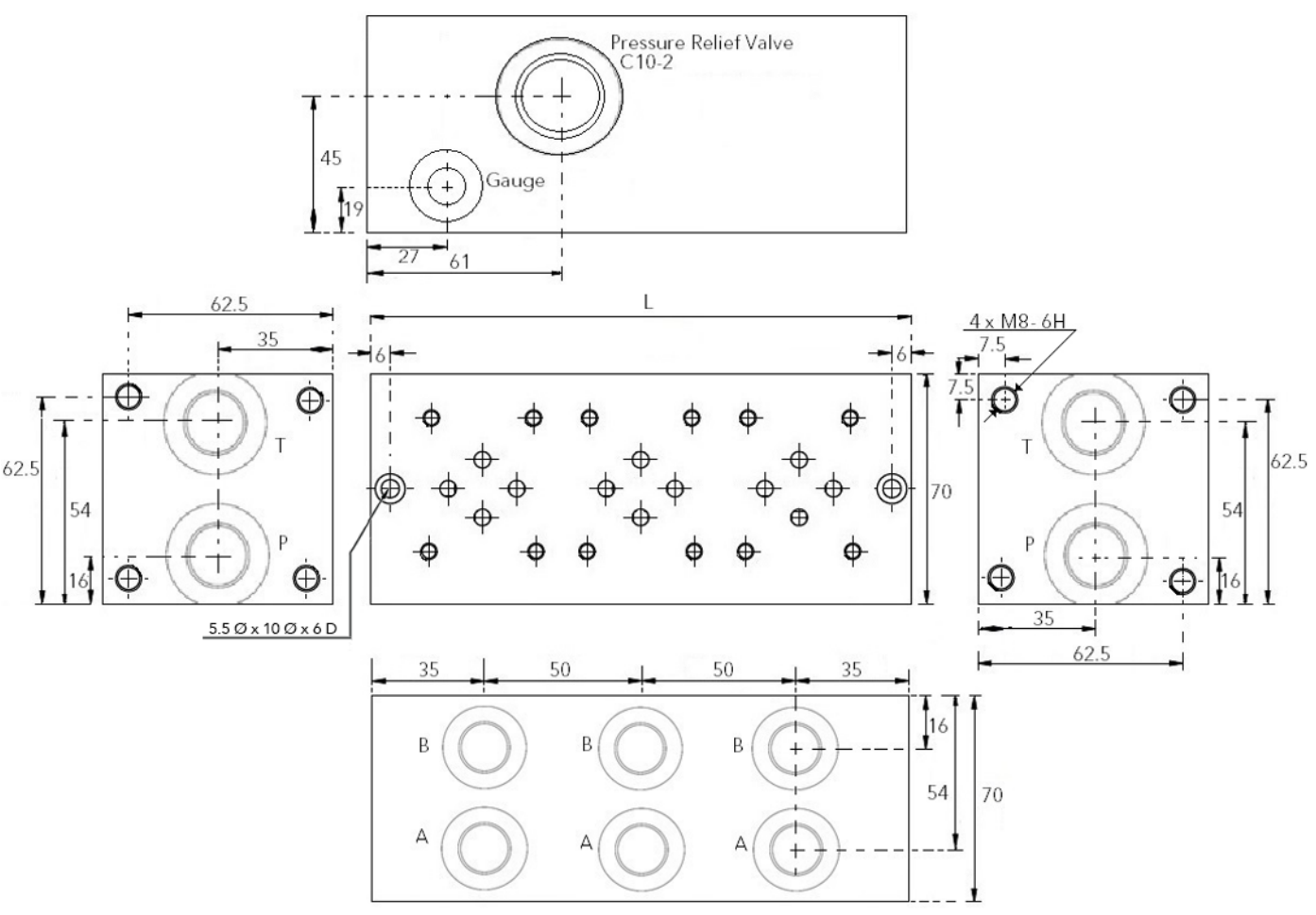
***Note:***

- *Solenoid Unloading Valve cannot be used with Pressure Relief Valve Cartridge or Cavity Plug.*
- *Installation information available on* *Page 9.06 & 9.11.*

## Test Fitting & Port Plugs

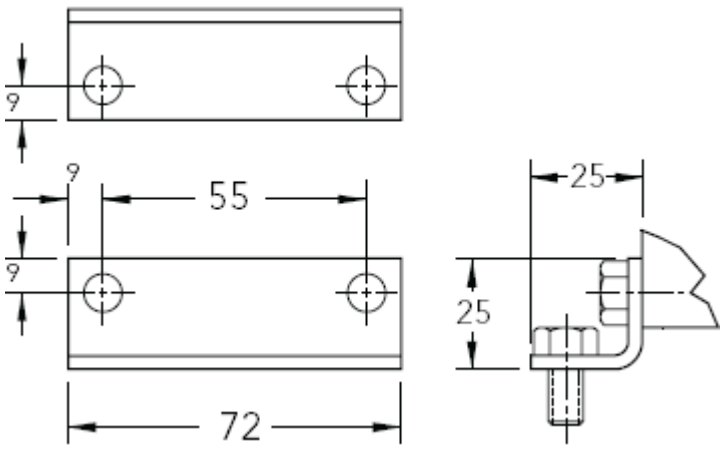
| Order Code | Thread | Valve Sealing Type |
|---|---|---|
| PT-07-B | G 1/4 - Dowty Seal | Ball |
| PT-07-C | G 1/4 - Encapsulated Seal | Poppet |
| PLUG-G1/4-S | G 1/4 - Steel Port Plug | |
| PLUG-G3/8-S | G 3/8 - Steel Port Plug | |
| PLUG-G1/2-S | G 1/2 - Steel Port Plug | |

**MB-3 Parallel & Series**

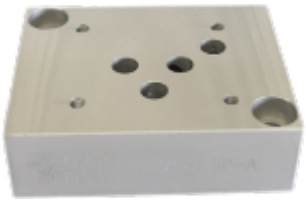


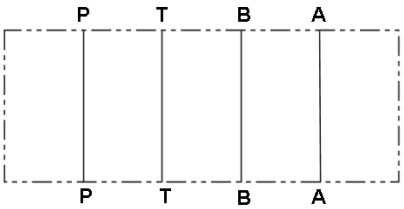

| Station | DIM "L" | Ports |
|---|---|---|
| 2 | 120 | P & T = G 1/2 |
| 3 | 170 | |
| 4 | 220 | A & B = G 3/8 |
| 5 | 270 | |
| 6 | 320 | Gauge = G 1/4 |
| 7 | 370 | |

**MB-3-MBK**

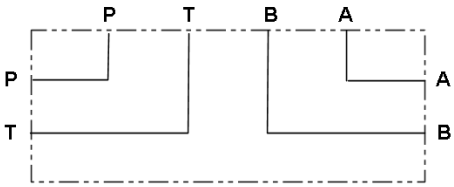


# Cetop 5 (NG10) Subplates

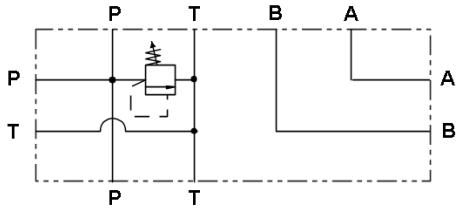





**Bottom Port**




**Side Port**




**Dual P & T with Relief Cavity**

| Cetop 5 (NG10) | | | | |
|---|---|---|---|---|
| **Order Code** | **Port Position** | **Material** | **Max. Pressure (bar)** | **Port Size** |
| SP-5-BP-A | Bottom Port | Alloy (Clear Anodised) | 210 | G 1/2 |
| SP-5-SP-A | Side Port | | | |
| SP-5-RV-A | Dual P & T Port with Relief Cavity | | | |
| SP-5-BP-S | Bottom Port | Steel (Nickel Plated) | 350 | |
| SP-5-SP-S | Side Port | | | |
| SP-5-RV-S | Dual P & T Port with Relief Cavity | | | |

***Note:***

- *SP-5-RV-* not supplied with Pressure Relief Valve Cartridge or Cavity Plug. They are sold separately.*
- *Relief valve cavity is C10-2 (P in nose & T out the side)*
- *Unused P port can be fitted with a Test Fitting.*

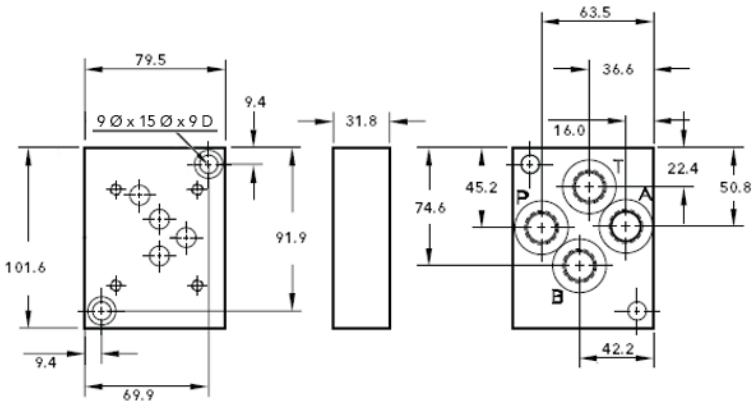
# Pressure Relief Valve Cartridge & Cavity Plug

| Order Code | Max. Flow (L/min) | Adjustable Pressure (bar) | Preset Pressure (bar) | Max. Pressure (bar) |
|---|---|---|---|---|
| LPSRV2-10-8 | 120 | 7 - 55 | 47 | 420 |
| LPSRV2-10-20 | | 35 - 140 | 48 | |
| LPSRV2-10-40 | | 70 - 280 | 88 | |
| LPSRV2-10-60 | | 140 - 420 | 140 | |
| PLUG-C10-2-S | Cavity Plug - Steel | | | |

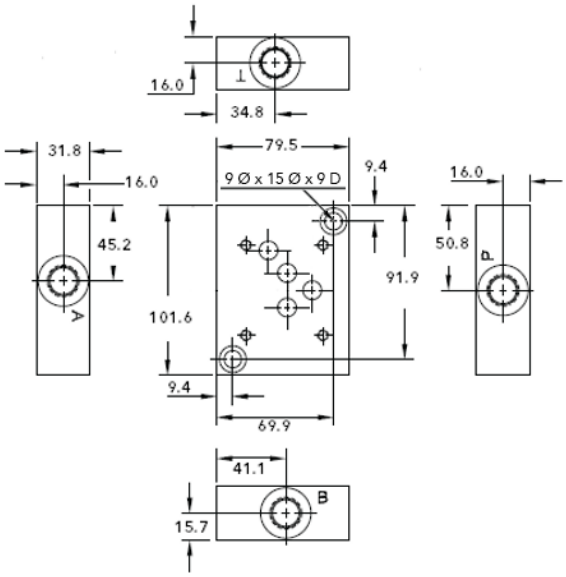
# Test Fitting & Port Plug

| Order Code | Thread | Valve Sealing Type |
|---|---|---|
| PT-09-B | G 1/2 - Dowty Seal | Ball |
| PT-09-C | G 1/2 - Encapsulated Seal | Poppet |
| PLUG-G1/2-S | G 1/2 - Steel Port Plug | |

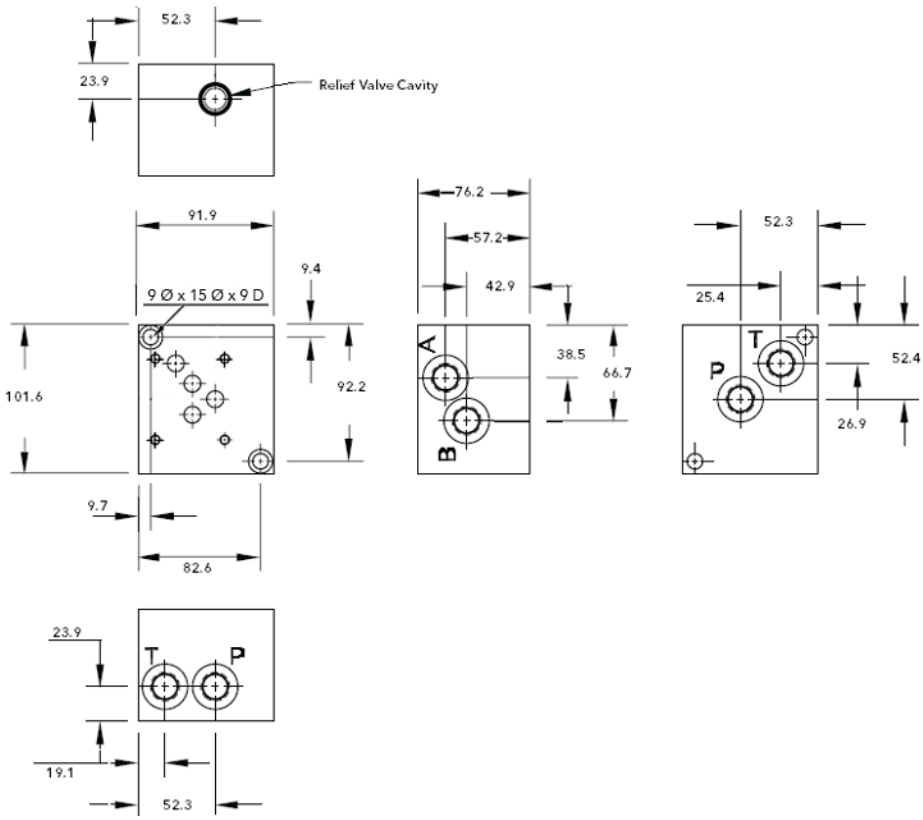
**Bottom Port**



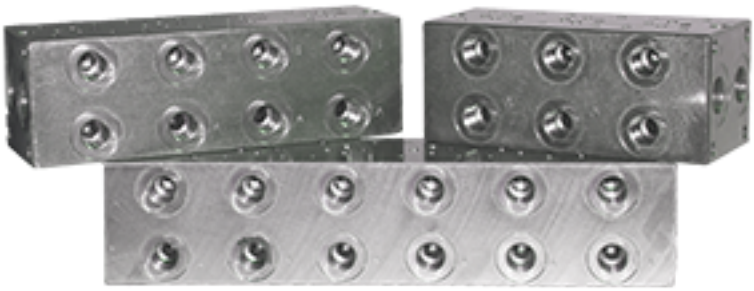

**Side Port**




**Dual P & T Port with Relief Cavity**



# Cetop 5 (NG10) Manifolds



| Cetop 5 (NG10) Parallel - Alloy | | | | |
|---|---|---|---|---|
| **Order Code** | **Stations** | **Material** | **Max. Pressure (bar)** | **Ports** |
| MB-5-P2-A | 2 | Alloy (Clear Anodised) | 210 | P & T = G 3/4<br>A & B = G 1/2<br>Gauge = G 1/4 |
| MB-5-P3-A | 3 | | | |
| MB-5-P4-A | 4 | | | |
| MB-5-P5-A | 5 | | | |
| MB-5-P6-A | 6 | | | |
| SP-5-CP-S | Cover (Blanking) Plate - Steel (19 mm Thick - Bolts not included) | | | |
| MB-5-MBK | Mounting Bracket Kit (includes Hex Bolts & Spring Washers for Manifold only) | | | |

| Cetop 5 (NG10) Parallel - Steel | | | | |
|---|---|---|---|---|
| **Order Code** | **Stations** | **Material** | **Max. Pressure (bar)** | **Ports** |
| MB-5-P2-S | 2 | Steel (Nickel Plated) | 350 | P & T = G 3/4<br>A & B = G 1/2<br>Gauge = G 1/4 |
| MB-5-P3-S | 3 | | | |
| MB-5-P4-S | 4 | | | |
| MB-5-P5-S | 5 | | | |
| MB-5-P6-S | 6 | | | |
| SP-5-CP-S | Cover (Blanking) Plate - Steel (19 mm Thick - Bolts not included) | | | |
| MB-5-MBK | Mounting Bracket Kit (includes Hex Bolts & Spring Washers for Manifold only) | | | |

| Cetop 5 (NG10) Series - Alloy | | | | |
|---|---|---|---|---|
| **Order Code** | **Stations** | **Material** | **Max. Pressure (bar)** | **Ports** |
| MB-5-S2-A | 2 | Alloy (Clear Anodised) | 210 | P & T = G 3/4<br>A & B = G 1/2<br>Gauge = G 1/4 |
| MB-5-S3-A | 3 | | | |
| MB-5-S4-A | 4 | | | |
| MB-5-MBK | Mounting Bracket Kit (includes Hex Bolts & Spring Washers for Manifold only) | | | |

***Note:***

- *MB-5 not supplied with Pressure Relief Valve Cartridge or Cavity Plug, Test Fitting or Gauge Port Plug. They are sold separately.*
- *Relief Valve Cavity = C10-2 (P in nose & T out the side)*
- *MB-5-S*-A have only 1 x P & T Ports. Refer to drawing on Page 5.32.*

## Pressure Relief Valve Cartridge & Cavity Plug

| Order Code | Max. Flow (L/min) | Adjustable Pressure (bar) | Preset Pressure (bar) | Max. Pressure (bar) |
|---|---|---|---|---|
| LPSRV2-10-8 | 120 | 7 - 55 | 47 | 420 |
| LPSRV2-10-20 | | 35 - 140 | 48 | |
| LPSRV2-10-40 | | 70 - 280 | 88 | |
| LPSRV2-10-60 | | 140 - 420 | 140 | |
| PLUG-C10-2-S | Cavity Plug - Steel | | | |

***Note:*** *Pressure Relief Valve Cartridge or Cavity Plug cannot be used with Solenoid Unloading Valve.*

## Solenoid Unloading Valve

| Order Code | Description | Max. Flow (L/min) | Max. Pressure (bar) |
|---|---|---|---|
| LSV6-10-2NOSP | 2/2 N.O. Cartridge | 70 | 350 |
| LSV6-10-2NOSP-M | 2/2 N.O. Cartridge with O'ride | | |
| LC3-10-C-1H | Coil DIN 12V DC without Plug | N/A | N/A |
| LC3-10-C-2H | Coil DIN 24V DC without Plug | | |
| LC3-10-C-3H | Coil DIN 110V AC without Plug | | |
| LC3-10-C-4H | Coil DIN 220V AC without Plug | | |
| C01010001-N | DIN Light Plug DC | | |
| C01010004-N | DIN Light Plug AC | | |

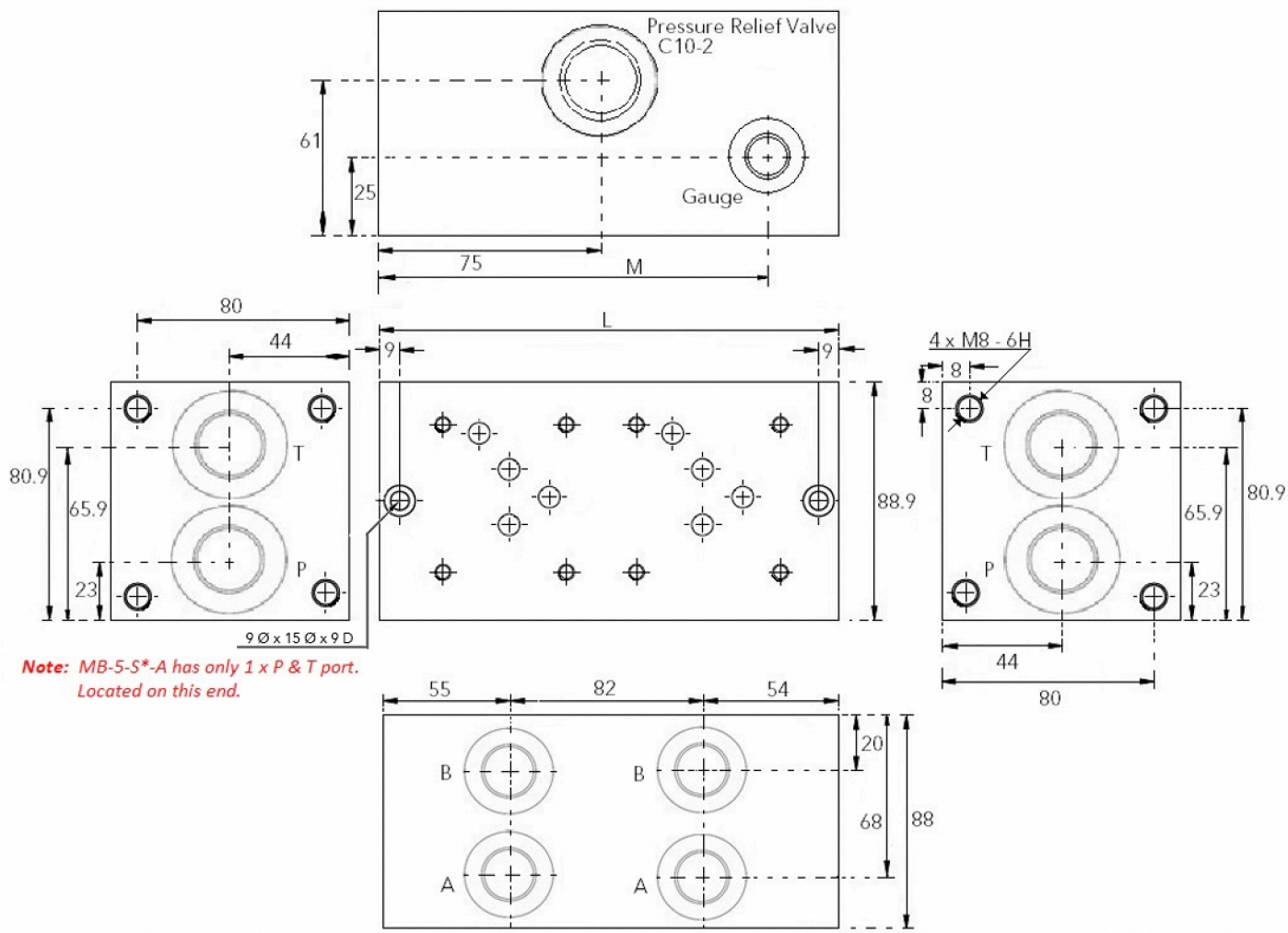
***Note:***

- *Solenoid Unloading Valve cannot be used with Pressure Relief Valve Cartridge or Cavity Plug.*
- *Installation information available on* *Page 9.06 & 9.11.*

## Test Fitting & Port Plugs

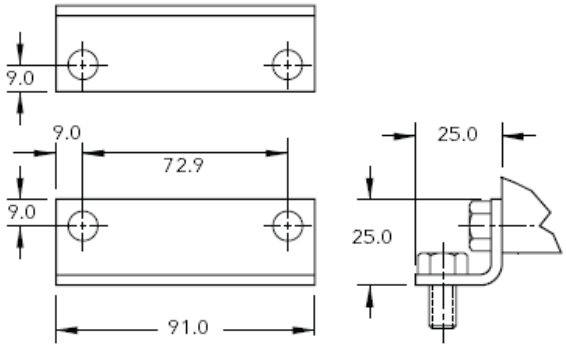
| Order Code | Thread | Valve Sealing Type |
|---|---|---|
| PT-07-B | G 1/4 - Dowty Seal | Ball |
| PT-07-C | G 1/4 - Encapsulated Seal | Poppet |
| PLUG-G1/4-S | G 1/4 - Steel Port Plug | |
| PLUG-G1/2-S | G 1/2 - Steel Port Plug | |
| PLUG-G3/4-S | G 3/4 - Steel Port Plug | |

**MB-5 Parallel & Series**




| Station | DIM "L" | Ports |
|---|---|---|
| 2 | 191 | P & T = G 3/4 |
| 3 | 273 | |
| 4 | 355 | A & B = G 1/2 |
| 5 | 437 | |
| 6 | 519 | Gauge = G 1/4 |

**MB-5-MBK**



# Bolt Kits

| Cetop 3 (NG6) | |
|---|---|
| FW & FWS valve only bolt length = 45 mm (including Thread Engagement)<br>FS valve only bolt length = 50 mm (including Thread Engagement)<br>All modules & 203-SAE 6 Tapping Plate = 40 mm except OCBW-3 = 60 mm | |
| **Order Code** | **Length (mm)** |
| BKM5x25 | 25 |
| BKM5x30 | 30 |
| BKM5x45 | 45 |
| BKM5x85 | 85 |
| BKM5x90 | 90 |
| BKM5x105 | 105 |
| BKM5x110 | 110 |
| BKM5x125 | 125 |
| BKM5x130 | 130 |
| BKM5x145 | 145 |
| BKM5x150 | 150 |
| BKM5x165 | 165 |
| BKM5x185 | 185 |
| BKM5x205 | 205 |
| BKM5x225 | 225 |

***Note:*** *All bolt kits consist of 4 x SHCS.*

| Cetop 5 (NG10) | |
|---|---|
| Valve only bolt length = 40 mm (including Thread Engagement)<br>All modules = 55 mm except DAY-5 = 50 mm | |
| **Order Code** | **Length (mm)** |
| BKM6x30 | 30 |
| BKM6x40 | 40 |
| BKM6x50 | 50 |
| BKM6x60 | 60 |
| BKM6x90 | 90 |
| BKM6x95 | 95 |
| BKM6x100 | 100 |
| BKM6x110 | 110 |
| BKM6x145 | 145 |
| BKM6x150 | 150 |
| BKM6x160 | 160 |
| BKM6x200 | 200 |
| BKM6x205 | 205 |
| BKM6x255 | 255 |
| BKM6x260 | 260 |

***Note:*** *All bolt kits consist of 4 x SHCS.*