

# 2017 CARTRIDGE CATALOGUE

New Zealand



# Hydraulic Specialties Ltd - 2017 Cartridge Catalogue

**Effective 1<sup>st</sup> April 2017**

**All prices listed are quoted in \$NZ and are G.S.T. exclusive.**

- This edition is an update from the 2012 version.
- Whilst every effort is made to hold prices steady, list prices are subject to change without prior notice.
- Where two manifold port sizes are listed the assembly price is for the smaller and may cost more for the larger port size.
- All performance and specification figures are taken from the latest possible literature and may vary from older literature versions.
- It is the responsibility of the system designer to determine suitability of the component.
- A commissioning, assembly or product conversion fee may apply.
- Product pictures shown are indicative only. Actual products may differ from that shown.
- Product contained in the cartridge catalogue is offered subject to Hyspecs' normal terms and conditions of sale.
- A restocking fee may apply on goods returned for credit.
- All manifolds priced are for aluminium unless otherwise stated. For steel manifolds an extra charge may apply.
- For high pressure (240+ bar) Hyspecs recommends steel manifolds.
- Pressure or flow setting charges may apply.
- Solenoid valves are priced with flying leads (DC only) unless otherwise stated. AC coils are DIN plug only. Hirschman / DIN plugs are not included in the price.
- Where needed banjo bolts are included in the price.

## Introduction

### About Hydraulic Cartridge Manifolds

For over 40 years Hyspecs have offered comprehensive high quality hydraulic cartridge valves for the mobile and industrial equipment markets. We are designing and manufacturing cartridge manifolds using an extensive range of cartridges from HydraForce, Command Controls, Eaton and Sun to meet virtually any need encountered in machine design for flow rates of 0.4 to 1700 l/min.

Cartridge valving offers hydraulic system design engineers and customers an unlimited range of integral circuit design possibilities. With the extensive range of cartridges available, entire system valving can be housed in one manifold, saving on hoses & fittings, installation time and space. Having all of the valves in one block also eliminates possible leakage points and the chance of failure.

This catalogue aims to introduce just some of the cartridge valves we now have available and help design engineers and customers to use these common valves in different applications effectively. We also custom design and manufacture cartridge manifolds to suit particular customer requirements usually incorporating several valve functions in one manifold.

### How To Use The Catalogue

This catalogue is edited on the base of valve functions – Pressure Controls, Flow Controls, Directional Controls, Solenoid Valves, Motion Controls, Proportional Valves, Excavator Valving, and Cetop Subplates/Modules. From the CONTENTS index, you can locate the valves with the functions you are looking for. In the valves, you can choose one suitable for your particular application – flow rate, pressure, ratio, ports.

*For example, you can find Single Pilot Operated Check Valves on page C4. However, for 25 l/min, 220 bar and 2:1 pilot ratio, HS1030P6 manifold with two PC10-32 cartridges is the best choice. 75 x 65 x 37mm shows the dimension of the manifold only. The cartridge numbers listed in this catalogue have been abbreviated for simplicity of description. Please consult Hyspecs for the full cartridge code and cartridge options.*

#### HS1030P6 or P8



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                 | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|-----------------------|---------------|-------------------|
| PC10-30                                | 22             | 240          | Ratio 4:1, 3-ports    | 3/8"-1/2"     | \$ 232.00         |
| PC10-32                                | 30             | 240          | Ratio 2:1, 3-ports    | 3/8"-1/2"     | \$ 267.00         |
| PC10-38                                | 45             | 240          | Ratio 3:1, thermal RV | 3/8"-1/2"     | \$ 305.00         |
| HS1030P6 or P8 manifold only \$ 132.00 |                |              |                       |               |                   |

#### All the ports are clearly shown in the catalogue as;

Accum = Accumulator

C1, C2= Cylinder

D = Drain

M1, M2 = Motor

Pi, Po = Pressure in, out

RP1, RP2 = Reduced pressure

V, V1, V2 = Valve

Br = Brake

Cf = Controlled flow

Elel, EleR = Elevator in, return

Mh, Mp = Motor hold, pilot

Pil, pp = Pilot

T = Tank

Vh, Vp = Valve hold, pilot

By = Bypass

Ch, Cp = Cylinder hold, pilot

FlrI, FlrR = Floor in, return

P, P1, P2, P3 = Pressure

R = Return

x = plugged

## How To Order

HS 1020 P8 \* \* \*\*S - RV10-22

|                                                                                                                                   |                                           |              |                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------|--------------------------------------------------------|
| <div> <div>HS</div> <div>1020</div> <div>P8</div> <div>*</div> <div>*</div> <div>**S</div> <div>-</div> <div>RV10-22</div> </div> | <b>Cartridge</b>                          |              |                                                        |
|                                                                                                                                   | <b>Block material</b>                     | Omit         | Aluminium<br>(240 bar max pressure)                    |
|                                                                                                                                   |                                           | S            | Steel<br>(350 bar max pressure)                        |
|                                                                                                                                   |                                           | **           | Additional functions,<br><i>Consult Hyspecs</i>        |
|                                                                                                                                   | <b>Cavity quantity</b>                    | B - Z        | For anything with 2 cavities or more (omit for 1)      |
|                                                                                                                                   |                                           | "X"          | <i>Consult Hyspecs</i>                                 |
|                                                                                                                                   | <b>Manifold layout</b>                    | Omit         | Standard manifolds                                     |
|                                                                                                                                   |                                           | "X"          | <i>Consult Hyspecs</i>                                 |
|                                                                                                                                   | <b>Block porting</b>                      | P4           | 1/4" BSPP                                              |
|                                                                                                                                   |                                           | P6           | 3/8" BSPP                                              |
|                                                                                                                                   |                                           | P8           | 1/2" BSPP                                              |
|                                                                                                                                   |                                           | P12          | 3/4" BSPP                                              |
|                                                                                                                                   |                                           | P16          | 1" BSPP                                                |
|                                                                                                                                   |                                           | U9           | 9/16" UN 'O'-Ring                                      |
|                                                                                                                                   |                                           | U14          | 7/8" UN 'O'-Ring                                       |
|                                                                                                                                   |                                           | U17          | 1 1/16" UN 'O'-Ring                                    |
|                                                                                                                                   |                                           | U21          | 1 5/16" UN 'O'-Ring                                    |
|                                                                                                                                   | <b>Block cavity &amp; series number</b>   | 0000 to 2999 | General purpose configuration                          |
|                                                                                                                                   |                                           | 3000 to 9999 | Special purpose configuration - <i>Consult Hyspecs</i> |
|                                                                                                                                   | <b>Hyspecs series cartridge manifolds</b> |              |                                                        |

- **Maximum operating pressure of block and cartridge combinations is limited to the component with lowest operating pressure rating.**
- Cartridge blocks and valves can be custom designed for a specific application or ordered as an 'off the shelf' item for more common functions. Price and delivery for custom designed blocks are available on application.
- Modification on manifolds will be identified by reversion code at the end of the manifold part number, e. g. \_B or \_C.
- **NOTE:** The cartridge numbers listed in this catalogue have been abbreviated for simplicity of description. Please consult Hyspecs for the full cartridge code and cartridge options.

## Contents

### Common Formulae and Conversions

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### Technical

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### A – Pressure Controls

|     |                                    |
|-----|------------------------------------|
| A1  | Relief Valves                      |
| A21 | Pressure Reducing/Relieving Valves |
| A23 | Sequence Valves                    |

### B – Flow Controls

|     |                                |
|-----|--------------------------------|
| B1  | Two/Three Port                 |
| B10 | Auto-Pilot Steering Valves     |
| B11 | Sequence Flow Controls         |
| B12 | Flow Dividers/Combiners        |
| B13 | Solenoid Defeatable Valves     |
| B14 | Hoist & Roller Spreader Valves |

### C – Directional Valves

|     |                               |
|-----|-------------------------------|
| C1  | Check Valves                  |
| C4  | Pilot-operated Check Valves   |
| C8  | Shuttle Valves                |
| C10 | External Pilot Operated       |
| C15 | Manually Operated – Rotary    |
| C16 | Manually Operated – Push/Pull |

### D - Solenoid Valves

### E – Motion Controls

|     |                       |
|-----|-----------------------|
| E1  | Counterbalance Valves |
| E17 | Regenerative Valves   |

## **F – Proportional Valves**

|     |                                                        |
|-----|--------------------------------------------------------|
| F1  | Relief Valves                                          |
| F3  | Pressure Reducing/Relieving Valves – Solenoid Operated |
| F4  | Flow Controls – Solenoid Operated                      |
| F10 | Directional Valves – Pilot Operated                    |
| F11 | Directional Valves – Solenoid Operated                 |
| F15 | Proportional Valve Controllers                         |

## **G – Excavator Valving**

|     |                               |
|-----|-------------------------------|
| G1  | Hyspecs Excavator Valving     |
| G24 | Excavator Valving Accessories |

## **H – Cetop Subplates & Modules**

|     |                                |
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| H1  | Cetop Subplates – How to Order |
| H2  | Cetop 3 Subplates              |
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## **I – HydraForce Coils & Cartridge/Coil Installation**

|    |                                       |
|----|---------------------------------------|
| I1 | Standard and Proportional Valve Coils |
|----|---------------------------------------|

## Cylinders And Actuators Formulae - Metric Units

| Symbol | Description  | Units           |
|--------|--------------|-----------------|
| Q      | Flow Rate    | l/min           |
| A      | Net Area     | cm <sup>2</sup> |
| v      | Piston Speed | m/sec           |
| F      | Force        | N               |
| p      | Pressure     | Bar             |

| Symbol | Description     | Units  |
|--------|-----------------|--------|
| D      | Cylinder Bore Ø | cm     |
| d      | Rod Diameter    | cm     |
| V      | Volume          | litres |
| L      | Stroke Length   | cm     |
| t      | Stroke Time     | sec    |

**Net Area Piston Side:** 
$$A = \frac{\pi \times D^2}{4}$$

**Net Area Rod Side:** 
$$A = \frac{\pi}{4} \times (D^2 - d^2)$$

**Cylinder Force:** 
$$F = A \times p \times 10$$

**Cylinder Volume:** 
$$V = \frac{A \times L}{1000}$$

**Required Flow:** 
$$Q = A \times v \times 6$$

**Stroke Time:** 
$$t = \frac{0.06 \times A \times L}{Q}$$

**Or Stroke Time:** 
$$t = \frac{60 \times V}{Q}$$

**Power:** 
$$P = \frac{F \times V}{1000}$$

## Pumps & Motors Formulae – Metric Units

| Symbol | Description  | Units |
|--------|--------------|-------|
| Q      | Flow Rate    | l/min |
| V      | Displacement | cc    |
| n      | Shaft Speed  | rpm   |
| P      | Power        | kW    |
| T      | Torque       | Nm    |

| Symbol | Description    | Units |
|--------|----------------|-------|
| p      | Pressure       | Bar   |
| v      | Vehicle Speed  | km/hr |
| r      | Rolling radius | m     |
| G      | Gear Reduction |       |

**Power - Pump:**

$$P = \frac{Q \times P}{600}$$

**Power - Motor:**

$$P = \frac{T \times n}{9549}$$

**Flow:**

$$Q = \frac{V \times n}{1000}$$

**Torque:**

$$T = \frac{p \times V}{20 \times \pi}$$

## Flow / Volume Conversion Table

### Exact Conversions

- 1 LPM = 0.264 GPM (U.S)
- 1 LPM = 0.221 GPM (Imp)
- 1 GPM (U.S.) = 3.785 LPM
- 1 GPM (Imp) = 4.524 LPM
- 1 m<sup>3</sup> = 1000 Litres
- 1 Litre = 1000 cm<sup>3</sup>
- 1 cm<sup>3</sup> = 0.061 in<sup>3</sup>
- 1 in<sup>3</sup> = 16.39 cm<sup>3</sup>

### Approximate Conversion Table

| LPM | GPM (U.S) | GPM (Imperial) |
|-----|-----------|----------------|
| 1   | 0.3       | 0.2            |
| 5   | 1.3       | 1.1            |
| 10  | 2.6       | 2.2            |
| 15  | 4.0       | 3.3            |
| 20  | 5.3       | 4.4            |
| 25  | 6.6       | 5.5            |
| 30  | 7.9       | 6.6            |
| 35  | 9.2       | 7.7            |
| 40  | 10.6      | 8.8            |
| 45  | 11.9      | 9.9            |
| 50  | 13.2      | 11.1           |
| 55  | 14.5      | 12.2           |
| 60  | 15.9      | 13.3           |
| 65  | 17.2      | 14.4           |
| 70  | 18.5      | 15.5           |
| 75  | 19.8      | 16.6           |
| 80  | 21.1      | 17.7           |
| 85  | 22.5      | 18.8           |
| 90  | 23.8      | 19.9           |
| 95  | 25.1      | 21.0           |
| 100 | 26.4      | 22.1           |
| 110 | 29.1      | 24.3           |
| 120 | 31.7      | 26.5           |
| 130 | 34.3      | 28.7           |
| 140 | 37.0      | 30.9           |

## Power Conversion Table

### Exact Conversions

- 1 kW = 1.341 HP
- 1 HP = 0.7457 kW
- 1 cal/s = 4.1868 watts
- 1 kW = 56.92 Btu/min

### Approximate Conversion Table

| kW   | HP    | cal/s | Btu/min |
|------|-------|-------|---------|
| 0.33 | 0.4   | 79    | 19      |
| 0.50 | 0.7   | 119   | 28      |
| 0.75 | 1.0   | 179   | 43      |
| 1    | 1.3   | 239   | 57      |
| 2    | 2.7   | 478   | 114     |
| 3    | 4.0   | 717   | 171     |
| 4    | 5.4   | 955   | 228     |
| 5    | 6.7   | 1194  | 285     |
| 8    | 10.7  | 1911  | 455     |
| 10   | 13.4  | 2388  | 569     |
| 15   | 20.1  | 3583  | 854     |
| 20   | 26.8  | 4777  | 1138    |
| 25   | 33.5  | 5971  | 1423    |
| 30   | 40.2  | 7165  | 1708    |
| 35   | 46.9  | 8359  | 1992    |
| 40   | 53.6  | 9554  | 2277    |
| 45   | 60.3  | 10748 | 2561    |
| 50   | 67.1  | 11942 | 2846    |
| 55   | 73.8  | 13136 | 3131    |
| 60   | 80.5  | 14330 | 3415    |
| 65   | 87.2  | 15525 | 3700    |
| 70   | 93.9  | 16719 | 3984    |
| 75   | 100.6 | 17913 | 4269    |
| 80   | 107.3 | 19107 | 4554    |
| 85   | 114.0 | 20301 | 4838    |

## Pressure Conversion Table

### Exact Conversions

- 1 Bar = 14.50 PSI
- 1 Bar = 100.00 kPa
- 1 Bar = 0.1 MPa
- 1 Bar = 1.02 kg/cm<sup>2</sup>
- 1 PSI = 0.0690 Bar
- 1 PSI = 6.895 kPa
- 1 PSI = 0.0069 MPa
- 1 PSI = 0.07 kg/cm<sup>2</sup>

### Approximate Conversion Table

| PSI   | Bar   | kPa   | MPa  |
|-------|-------|-------|------|
| 100   | 6.9   | 690   | 0.7  |
| 200   | 13.8  | 1379  | 1.4  |
| 300   | 20.7  | 2069  | 2.1  |
| 400   | 27.6  | 2759  | 2.8  |
| 500   | 34.5  | 3448  | 3.4  |
| 1000  | 69.0  | 6897  | 6.9  |
| 1250  | 86.2  | 8621  | 8.6  |
| 1500  | 103.4 | 10345 | 10.3 |
| 1750  | 120.7 | 12069 | 12.1 |
| 2000  | 137.9 | 13793 | 13.8 |
| 2250  | 155.2 | 15517 | 15.5 |
| 2500  | 172.4 | 17241 | 17.2 |
| 2750  | 189.7 | 18966 | 19.0 |
| 3000  | 206.9 | 20690 | 20.7 |
| 3250  | 224.1 | 22414 | 22.4 |
| 3500  | 241.4 | 24138 | 24.1 |
| 3750  | 258.6 | 25862 | 25.9 |
| 4000  | 275.9 | 27586 | 27.6 |
| 4250  | 293.1 | 29310 | 29.3 |
| 4500  | 310.3 | 31034 | 31.0 |
| 4750  | 327.6 | 32759 | 32.8 |
| 5000  | 344.8 | 34483 | 34.5 |
| 5500  | 379.3 | 37931 | 37.9 |
| 6000  | 413.8 | 41379 | 41.4 |
| 10000 | 689.7 | 68966 | 69.0 |

## Torque Conversion Table

### Exact Conversions

- 1 Nm = 0.7376 ft-lbs
- 1 Nm = 8.851 in-lbs
- 1 Nm = 0.102 kgm
- 1 ft-lbs = 1.356 Nm
- 1 in-lbs = 0.113 Nm
- 1 kgm = 9.807 Nm

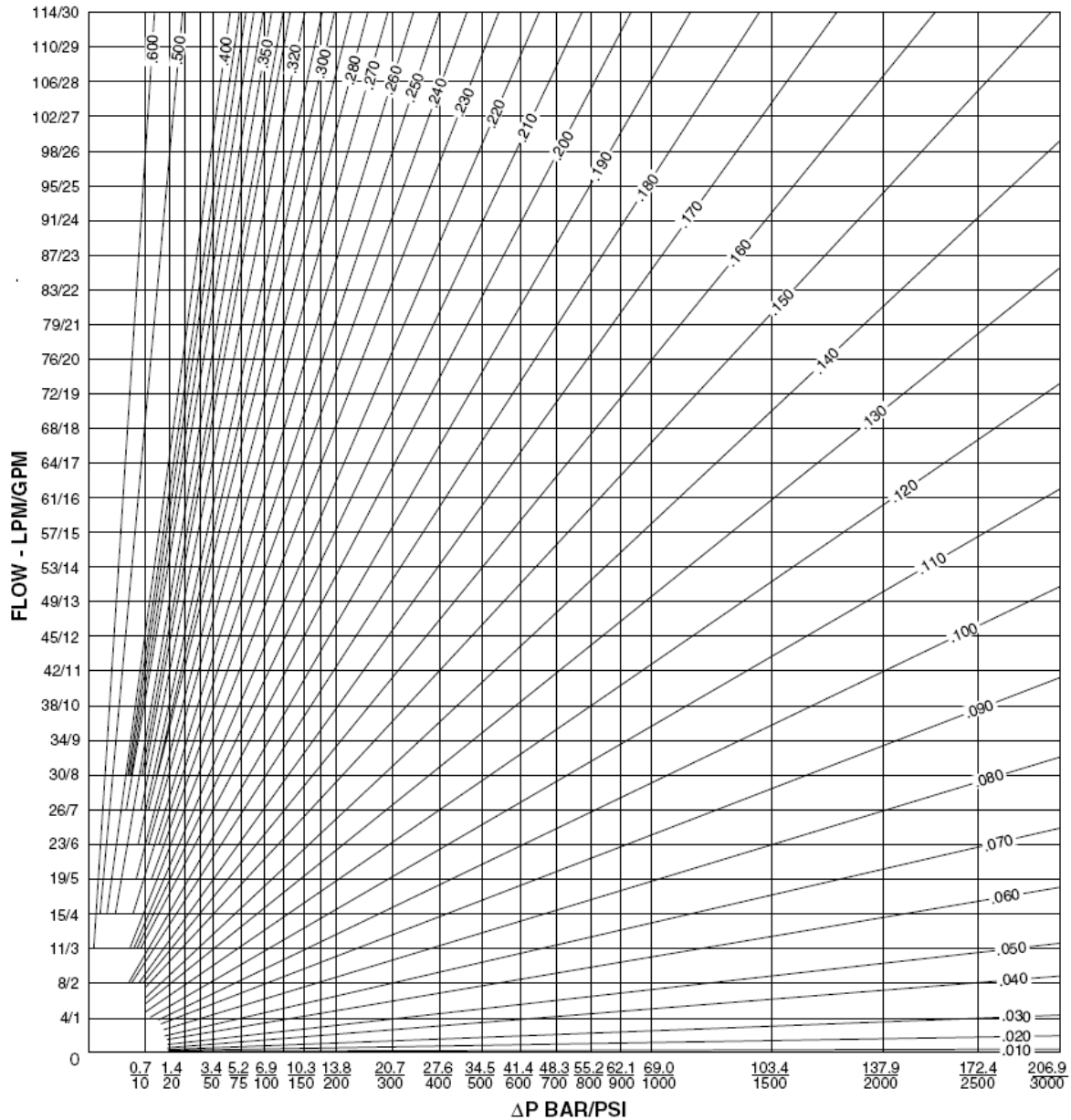
### Approximate Conversion Table

| Nm  | ft-lbs | in-lbs | kgm  |
|-----|--------|--------|------|
| 1   | 0.7    | 8.9    | 0.1  |
| 2   | 1.5    | 17.7   | 0.2  |
| 3   | 2.2    | 26.6   | 0.3  |
| 4   | 3.0    | 35.4   | 0.4  |
| 5   | 3.7    | 44.3   | 0.5  |
| 10  | 7.4    | 88.5   | 1.0  |
| 12  | 8.9    | 106.2  | 1.2  |
| 14  | 10.3   | 123.9  | 1.4  |
| 16  | 11.8   | 141.6  | 1.6  |
| 18  | 13.3   | 159.3  | 1.8  |
| 20  | 14.8   | 177.0  | 2.0  |
| 25  | 18.4   | 221.3  | 2.6  |
| 30  | 22.1   | 265.5  | 3.1  |
| 35  | 25.8   | 309.8  | 3.6  |
| 40  | 29.5   | 354.0  | 4.1  |
| 45  | 33.2   | 398.3  | 4.6  |
| 50  | 36.9   | 442.6  | 5.1  |
| 75  | 55.3   | 663.8  | 7.7  |
| 100 | 73.8   | 885.1  | 10.2 |
| 150 | 110.6  | 1327.7 | 15.3 |
| 200 | 147.5  | 1770.2 | 20.4 |
| 300 | 221.3  | 2655.3 | 30.6 |
| 400 | 295.0  | 3540.4 | 40.8 |
| 500 | 368.8  | 4425.5 | 51.0 |
| 600 | 442.6  | 5310.6 | 61.2 |

## Orifice Disc Sizing Guides

### ORIFICE DISC SIZING GUIDE (Inches)

Curves represent orifice disc drill-thru diameters.

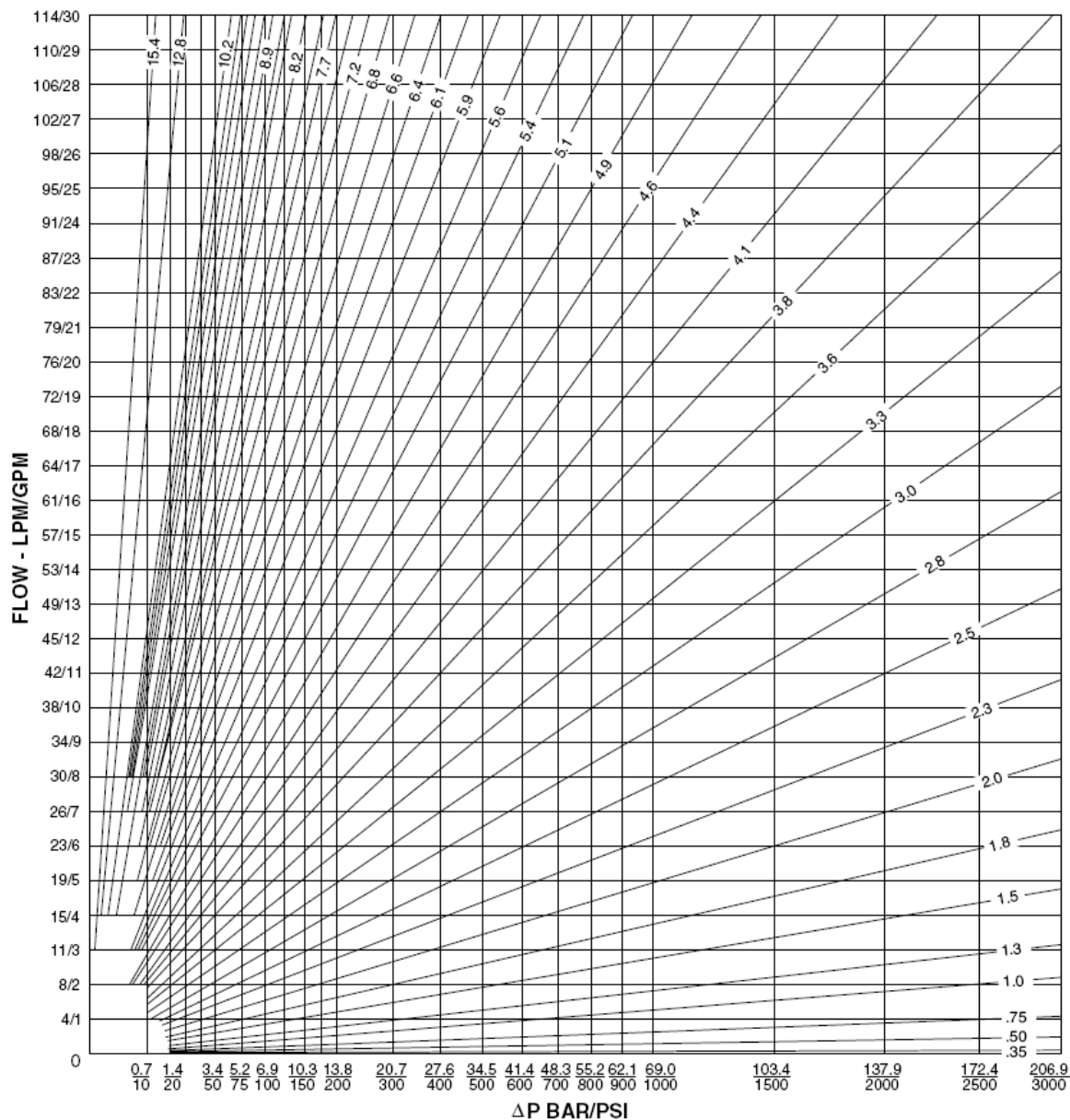


Note: Table is calculated at 32 cSt (150 SSU) oil at 40°C. Values will change with viscosity changes.

## Orifice Disc Sizing Guides (Continued)

### ORIFICE DISC SIZING GUIDE (mm)

Curves represent orifice disc drill-thru diameters.



Note: Table is calculated at 32 cSt (150 SSU) oil at 40°C. Values will change with viscosity changes.

Guide extracted from Hydraforce Technical Catalogue 2004/2005

## Contents Section A – Pressure Controls

### **A1 Relief Valves**

|     |                                                     |
|-----|-----------------------------------------------------|
| A1  | 2-Port                                              |
| A3  | 3-Port                                              |
| A6  | 4-Port Cross Line                                   |
| A7  | 5-Port Cross Line                                   |
| A10 | Solenoid Ventable                                   |
| A11 | S.A.E. Pad Mounted                                  |
| A12 | S.A.E. Pad Mounted with Dump                        |
| A13 | European Pad Mounted                                |
| A14 | Banjo Bolt Mounted - Single Relief                  |
| A15 | Banjo Bolt Mounted – Dual Relief (Cross Line)       |
| A18 | Cross Line With Flushing - Hydrostatic Transmission |
| A20 | Hot Oil Flushing Valves                             |

### **A21 Pressure Reducing & Relieving Valves**

### **A23 Sequence Valves**

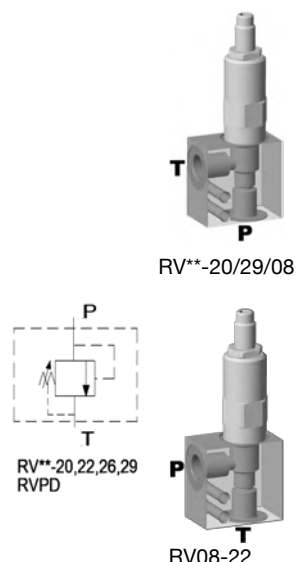
|     |                                    |
|-----|------------------------------------|
| A23 | Single                             |
| A25 | Dual                               |
| A25 | Hi-Low Double Pump Sequence Valves |
| A26 | Accumulator Unloading Valves       |

## Relief Valves



### 2-Port Relief Valves

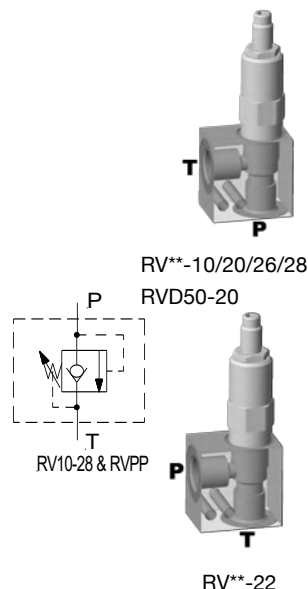
#### HS0820P4\_B or HS0820P6\_B



| Cartridge Options                                        | Q max<br>l/min | P max<br>bar | Notes                        | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------------------------|----------------|--------------|------------------------------|---------------|-------------------|
| RV08-20                                                  | 22             | 276*         | Direct act. Poppet           | 1/4"-3/8"     | \$ 178.00         |
| RV58-20                                                  | 22             | 350*         | Direct act. Poppet           | 1/4"-3/8"     | \$ 183.00         |
| RV08-22                                                  | 30             | 248*         | Differential Poppet          | 1/4"-3/8"     | \$ 178.00         |
| RVPD-08                                                  | 7.6            | 350*         | Direct Acting, Pilot Control | 1/4"-3/8"     | \$ 178.00         |
| RV08-29                                                  | 1.9            | 240          | Direct Acting, Pilot Control | 1/4"-3/8"     | \$ 178.00         |
| HS0820P4_B or HS0820P6_B manifold only \$ 78.00          |                |              |                              |               |                   |
| HS0820P4S_B or HS0820P6S_B steel manifold only \$ 132.00 |                |              |                              |               |                   |

- Manifold dimensions, 50 x 50 x 32mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS1020P6\_B or P8\_B



| Cartridge Options                                  | Q max<br>l/min | P max<br>bar | Notes                          | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------------------|----------------|--------------|--------------------------------|---------------|-------------------|
| RV10-20                                            | 38             | 228          | Direct act. Poppet             | 3/8"-1/2"     | \$ 209.00         |
| RVD50-20                                           | 115            | 350*         | Direct act. Poppet             | 3/8"-1/2"     | \$ 286.00         |
| RV10-26                                            | 115            | 240          | Pilot-Operated                 | 3/8"-1/2"     | \$ 228.00         |
| RV50-26                                            | 115            | 350*         | Pilot-Operated                 | 3/8"-1/2"     | \$ 243.00         |
| RV10-22                                            | 115            | 240          | Differential Poppet            | 3/8"-1/2"     | \$ 209.00         |
| RV50-22                                            | 76             | 350*         | Differential Poppet            | 3/8"-1/2"     | \$ 243.00         |
| RVPD-10                                            | 8.5            | 350*         | Direct Acting, Pilot Control   | 3/8"-1/2"     | \$ 206.00         |
| RV10-28                                            | 115            | 240          | Pilot-Op./Free Rev.            | 3/8"-1/2"     | \$ 243.00         |
| RVPP-10                                            | 100            | 350*         | Pilot-Op./Free Rev. Anti-Cav** | 3/8"-1/2"     | \$ 259.00         |
| HS1020P6_B or P8_B manifold only \$ 86.00          |                |              |                                |               |                   |
| HS1020P6S_B or P8S_B steel manifold only \$ 132.00 |                |              |                                |               |                   |

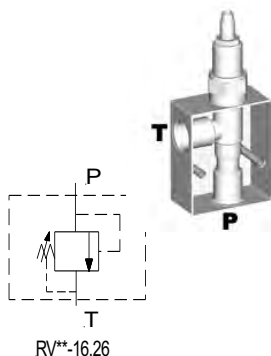
- Manifold dimensions, 50 x 50 x 35mm (excluding cartridge)
- \* Requires steel block over 240 bar
- \*\* Consult Hyspecs for anti-cav performance

## Relief Valves



### 2-Port Relief Valves

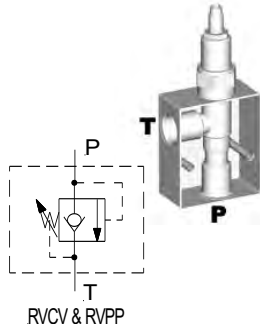
#### HS1220P12



| Cartridge Options                        | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------|----------------|--------------|----------------|---------------|-------------------|
| RV12-26                                  | 185            | 207          | Pilot-Operated | 3/4"          | \$ 335.00         |
| RV52-26                                  | 185            | 350*         | Pilot-Operated | 3/4"          | \$ 365.00         |
| HS1220P12 manifold only \$ 155.00        |                |              |                |               |                   |
| HS1220P12S steel manifold only \$ 210.00 |                |              |                |               |                   |

- Manifold dimensions, 90 x 75 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS1221P12



| Cartridge Options                        | Q max<br>l/min | P max<br>bar | Notes                     | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------|----------------|--------------|---------------------------|---------------|-------------------|
| RVPP-12                                  | 227            | 350*         | Pilot-Operated & anti cav | 3/4"          | \$ 385.00         |
| HS1221P12 manifold only \$ 155.00        |                |              |                           |               |                   |
| HS1221P12S steel manifold only \$ 230.00 |                |              |                           |               |                   |

- Manifold dimensions, 75 x 75 x 41mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS1620P12 or P16



| Cartridge                                                      | Q max<br>l/min | P max<br>bar | Notes                         | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------------------------------|----------------|--------------|-------------------------------|---------------|-------------------|
| RV16-26                                                        | 300            | 240          | Pilot-Operated                | 3/4" - 1"     | \$ 450.00         |
| RV56-26                                                        | 380            | 350*         | Pilot Operated                | 3/4" - 1"     | \$ 494.00         |
| RV5-16                                                         | 300            | 350*         | Pilot-Operated                | 3/4" - 1"     | \$ 480.00         |
| RV3-16                                                         | 300            | 350*         | Differential Poppet           | 3/4" - 1"     | \$ 459.00         |
| RVCV56-20                                                      | 115            | 420*         | Direct act. Poppet & anti cav | 3/4" - 1"     | \$ 454.00         |
| HS1620P12 or P16, manifold only \$ 189.00 or \$ 207.00         |                |              |                               |               |                   |
| HS1620P12S or P16S, steel manifold only \$ 255.00 or \$ 290.00 |                |              |                               |               |                   |

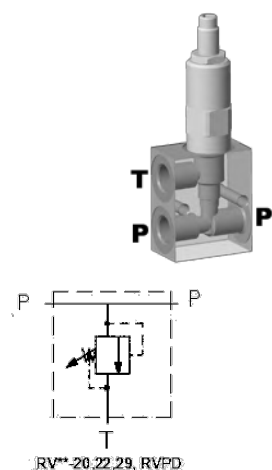
- Manifold dimensions, 100 x 70 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar

## Relief Valves



### 3-Port Relief Valves

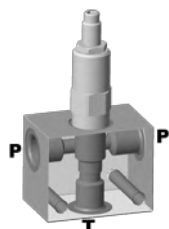
#### HS0820P6N\_B



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes                        | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|------------------------------|---------------|-------------------|
| RV08-20                             | 22             | 275*         | Direct act. Poppet           | 3/8"          | \$ 213.00         |
| RV58-20                             | 22             | 350*         | Differential Poppet          | 3/8"          | \$ 218.00         |
| RVPD-08                             | 7.6            | 350*         | Direct Acting, Pilot Control | 3/8"          | \$ 213.00         |
| RV08-29                             | 1.9            | 240          | Direct Acting, Pilot Control | 3/8"          | \$ 213.00         |
| HS0820P6N_B manifold only \$ 113.00 |                |              |                              |               |                   |

- Manifold dimensions, 62 x 50 x 32mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

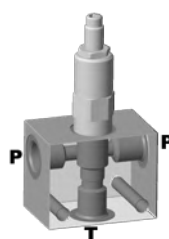
#### HS0820P4T\_B or P6T\_B



| Cartridge                                  | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly<br>Price |
|--------------------------------------------|----------------|--------------|---------------------|---------------|-------------------|
| RV08-22                                    | 30             | 240          | Differential Poppet | 1/4"-3/8"     | \$ 213.00         |
| HS0820P4T_B, P6T_B manifold only \$ 113.00 |                |              |                     |               |                   |

- Manifold dimensions, 75 x 55 x 40mm (excluding cartridge)

#### HS1020P6T\_B or P8T\_B



| Cartridge Options                         | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------|----------------|--------------|---------------------|---------------|-------------------|
| RV10-22                                   | 115            | 240          | Differential Poppet | 3/8"-1/2"     | \$ 225.00         |
| RV50-22                                   | 76             | 350*         | Differential Poppet | 3/8"-1/2"     | \$ 259.00         |
| HS1020P6T_B, P8T_B manifold only \$102.00 |                |              |                     |               |                   |

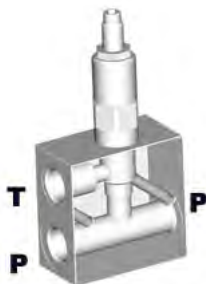
- Manifold dimensions, 75 x 60 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

## Relief Valves

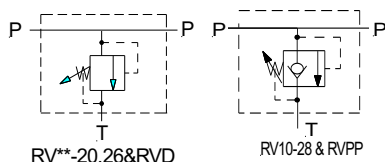


### 3-Port Relief Valves

#### HS1020P8N or P12N

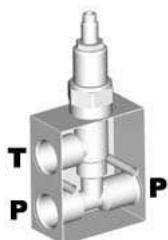


| Cartridge Options                                       | Q max<br>l/min | P max<br>bar | Notes                             | Ports<br>BSPP | Assembly Price |
|---------------------------------------------------------|----------------|--------------|-----------------------------------|---------------|----------------|
| RV10-20                                                 | 38             | 228          | Direct act, Poppet                | 1/2"-3/4"     | \$ 225.00      |
| RV10-26                                                 | 115            | 240          | Pilot-Operated                    | 1/2"-3/4"     | \$ 244.00      |
| RV10-28                                                 | 115            | 240          | Pilot-Op./Free Rev.               | 1/2"-3/4"     | \$ 259.00      |
| RV50-26                                                 | 115            | 350*         | Pilot-Operated                    | 1/2"-3/4"     | \$ 259.00      |
| RVPP-10                                                 | 100            | 350*         | Pilot-Op./Free Rev.<br>Anti-Cav** | 1/2"-3/4"     | \$ 275.00      |
| RVD50-20                                                | 115            | 350*         | Poppet, low pressure rise         | 1/2"-3/4"     | \$ 302.00      |
| HS1020P8N or P12N, manifold only \$ 102.00 or \$ 127.00 |                |              |                                   |               |                |
| HS1020P8NS, steel manifold only \$ 183.00               |                |              |                                   |               |                |



- Manifold dimensions, 80 x 75 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar
- \*\* Consult Hyspecs for anti-cav performance

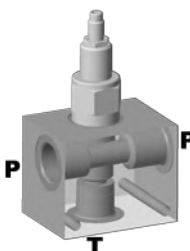
#### HS1220P12N



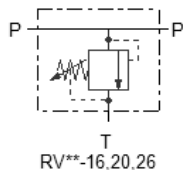
| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSPP | Assembly Price |
|------------------------------------|----------------|--------------|----------------|---------------|----------------|
| RV12-26                            | 185            | 207          | Pilot-Operated | 3/4"          | \$ 346.00      |
| RV52-26                            | 185            | 350*         | Pilot-Operated | 3/4"          | \$ 376.00      |
| HS1220P12N manifold only \$ 166.00 |                |              |                |               |                |

- Manifold dimensions, 90 x 75 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs for pricing*

#### HS1620P12T\_B or P16T\_B



| Cartridge                                                   | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly Price |
|-------------------------------------------------------------|----------------|--------------|---------------------|---------------|----------------|
| RV3-16                                                      | 300            | 350*         | Differential Poppet | 3/4" - 1"     | \$ 482.00      |
| HS1620P12T_B or P16T_B manifold only \$ 212.00 or \$ 223.00 |                |              |                     |               |                |
| HS1620P12TS_B steel manifold only \$ 315.00                 |                |              |                     |               |                |



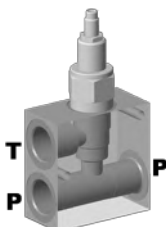
- Manifold dimensions, 100 x 80 x 75mm (excluding cartridge)
- \* Requires steel block over 240 bar

## Relief Valves

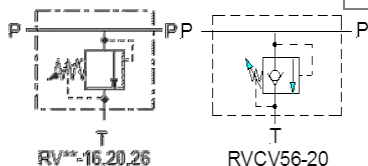


### 3-Port Relief Valves

#### HS1620P16N



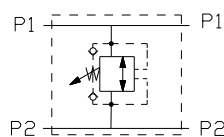
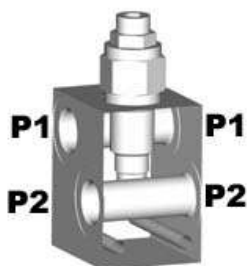
| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                         | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------|---------------|-------------------|
| RV16-26                            | 300            | 240          | Pilot-Operated                | 1"            | \$ 473.00         |
| RV5-16                             | 300            | 350*         | Pilot-Operated                | 1"            | \$ 503.00         |
| RV56-26                            | 380            | 350*         | Pilot Operated                | 1"            | \$ 517.00         |
| RVCV56-20                          | 115            | 420*         | Direct act. Poppet & anti cav | 1"            | \$ 477.00         |
| HS1620P16N manifold only \$ 212.00 |                |              |                               |               |                   |



- Manifold dimensions, 100 x 100 x 50 mm (excluding cartridge)
- \* Requires steel block over 240 bar – contact Hyspecs for pricing

### 4-Port Cross Line Relief Valves

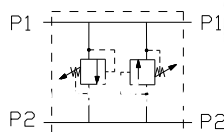
#### HS1020P8F or 12F



| Cartridge Options                                             | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly<br>Price P8 |
|---------------------------------------------------------------|----------------|--------------|---------------------|---------------|----------------------|
| RVBD-10                                                       | 76             | 350*         | Differential poppet | 1/2"-3/4"     | \$ 312.00            |
| CR10-28                                                       | 60             | 240          | Differential poppet | 1/2"-3/4"     | \$ 391.00            |
| HS1020P8F or 12F manifold only \$ 127.00 or \$ 200.00         |                |              |                     |               |                      |
| HS1020P8FS or 12FS steel manifold only \$ 189.00 or \$ 264.00 |                |              |                     |               |                      |

- Manifold dimensions, 76 x 60 x 50mm for 1/2" and 75 x 75 x 50mm for 3/4" (excluding cartridge)
- \* Requires steel block over 240 bar

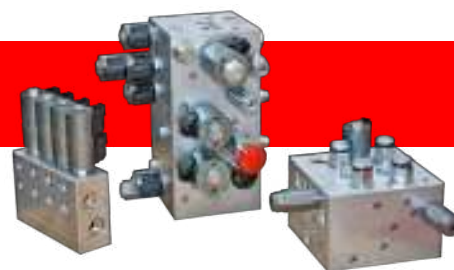
#### HS1020P6X



| Cartridges                        | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|----------------------|---------------|-------------------|
| RV10-20 x 2                       | 38             | 228          | Direct acting poppet | 3/8"          | \$ 406.00         |
| HS1020P6X manifold only \$ 160.00 |                |              |                      |               |                   |

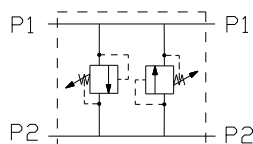
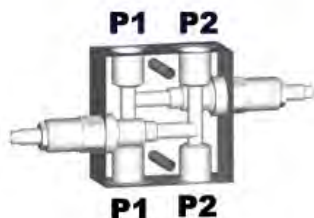
- Manifold dimensions, 75 x 50 x 37mm (excluding cartridge)

## Relief Valves



### 4-Port Cross Line Relief Valves

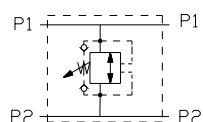
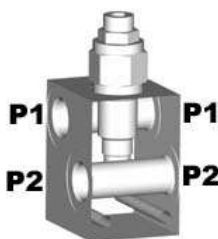
#### HS1020P8Y or P12Y



| Cartridge Options                                                                     | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSP | Assembly<br>Price |
|---------------------------------------------------------------------------------------|----------------|--------------|----------------------|--------------|-------------------|
| RV10-20 x 2                                                                           | 38             | 228          | Direct acting poppet | 1/2"-3/4"    | \$ 446.00         |
| RV10-22 x 2                                                                           | 115            | 240          | Differential poppet  | 1/2"-3/4"    | \$ 446.00         |
| RV5A-10 x 2                                                                           | 114            | 350*         | Pilot operated       | 1/2" - 3/4"  | \$ 488.00         |
| HS1020P8Y or P12Y manifold only \$ 200.00<br>HS1020P8YS steel manifold only \$ 330.00 |                |              |                      |              |                   |

- Manifold dimensions, 100 x 100 x 50mm (excluding cartridge)
- \* Require steel block over 240 bar

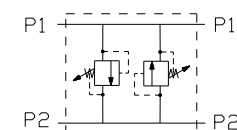
#### HS1220P12F



| Cartridge Options                                                               | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSP | Assembly<br>Price |
|---------------------------------------------------------------------------------|----------------|--------------|---------------------|--------------|-------------------|
| RVBD-12                                                                         | 152            | 350*         | Differential poppet | 3/4"         | \$ 490.00         |
| HS1220P12F manifold only \$ 200.00<br>HS1220P12FS steel manifold only \$ 281.00 |                |              |                     |              |                   |

- Manifold dimensions, 110 x 75 x 60mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS1620U21X



| Cartridge Options                                                               | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>UNO | Assembly<br>Price |
|---------------------------------------------------------------------------------|----------------|--------------|---------------------|--------------|-------------------|
| RV3-16 x 2                                                                      | 300            | 350*         | Differential poppet | 1 5/16"      | \$ 882.00         |
| RV5-16 x 2                                                                      | 300            | 350*         | Pilot-operated      | 1 5/16"      | \$ 924.00         |
| HS1620U21X manifold only \$ 342.00<br>HS1620U21XS steel manifold only \$ 567.00 |                |              |                     |              |                   |

- Manifold dimensions, 110 x 100 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar

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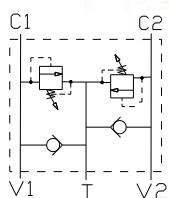
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## Relief Valves



### 5-Port Cross Line Relief Valves

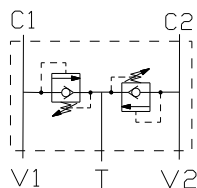
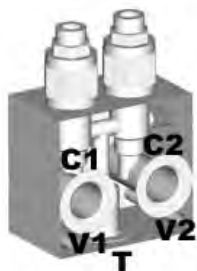
#### HS1020P8W



| Cartridges                        | Q max<br>l/min | P max<br>bar | Notes                        | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|------------------------------|---------------|-------------------|
| RV10-20 x 2<br>+CV10-20 x 2       | 38             | 228          | Direct acting<br>poppet      | 1/2"          | \$ 582.00         |
| RVD50-20 x 2<br>+CV50-20 x 2      | 56             | 350*         | Poppet, low<br>pressure rise | 1/2"          | \$ 778.00         |
| HS1020P8W manifold only \$ 266.00 |                |              |                              |               |                   |

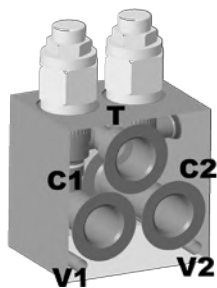
- Manifold dimensions, 100 x 100 x 40mm (excluding cartridge)
- Consult Hyspecs for anti-cav performance
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

#### HS1020P8ZB or P12ZB or HS1020P8ZB\_B\*\*



| Cartridges                                                                                           | Q max<br>l/min | P max<br>bar | Notes                                 | Ports<br>BSPP | Assembly<br>Price P8 |
|------------------------------------------------------------------------------------------------------|----------------|--------------|---------------------------------------|---------------|----------------------|
| RVPP-10 x 2                                                                                          | 100            | 350*         | Pilot operated with<br>in-built check | 1/2"-<br>3/4" | \$ 524.00            |
| Alloy manifold only HS1020P8ZB or P12ZB ( \$ 178.00 or \$ 207.00 )<br>or HS1020P8ZB_B ( \$178.00 )   |                |              |                                       |               |                      |
| Steel manifold only HS1020P8ZBS or P12ZBS ( \$264.00 or \$ 315.00 )<br>or HS1020P8ZBS_B ( \$264.00 ) |                |              |                                       |               |                      |

- Manifold dimensions, 80 x 75 x 50mm for P8 and 100 x 75 x 50mm for P12 and 75 x 75 x 60mm for Version B (excluding cartridges)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing
- \*\* Version B – main ports centre distance 37mm
- Consult Hyspecs for anti-cav performance



Version B

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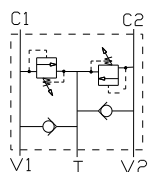
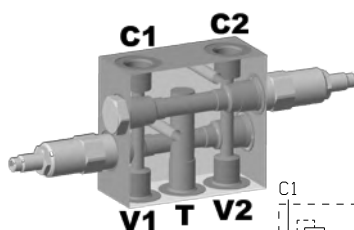
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## Relief Valves



### 5-Port Cross Line Relief Valves

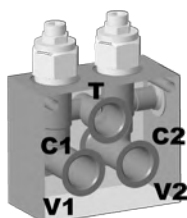
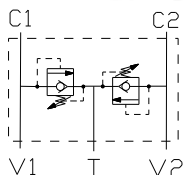
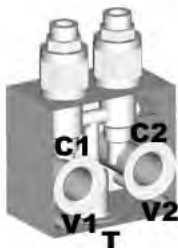
#### HS1020P8ZDS



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSP | Assembly<br>Price |
|------------------------------------|----------------|--------------|---------------------|--------------|-------------------|
| RV50-22 x 2<br>+ CV50-20           | 76             | 350          | Differential relief | 1/2"         | \$696.00          |
| HS1020P8ZDS manifold only \$270.00 |                |              |                     |              |                   |

- Manifold dimensions 110 x 100 x 50mm
- Steel manifold
- Contact Hyspecs for anti-cav performance

#### HS1220P12ZB or HS1220P12ZB\_B\*\*

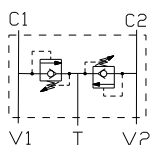
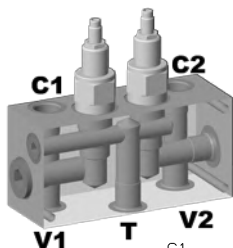


Version B

| Cartridges                                                   | Q max<br>l/min | P max<br>bar | Notes                                 | Ports<br>BSP | Assembly<br>Price P8 |
|--------------------------------------------------------------|----------------|--------------|---------------------------------------|--------------|----------------------|
| RVPP-12 x 2                                                  | 227            | 350*         | Pilot operated<br>with in-built check | 3/4"         | \$ 772.00            |
| HS1220P12ZB or HS1220P12ZB_B manifold only \$ 312.00         |                |              |                                       |              |                      |
| HS1220P12ZBS or HS1220P12ZBS_B steel manifold only \$ 490.00 |                |              |                                       |              |                      |

- Manifold dimensions 115 x 100 x 48mm for P12ZB and 115 x 100 x 60mm for P12ZB\_B (Version B) (excluding cartridges)
- \* Requires steel block over 240 bar
- \*\* Version B – main ports centre distance 46mm
- Consult Hyspecs for anti-cav performance

#### HS1620P12ZB2S\*



| Cartridges                           | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSP | Assembly<br>Price P8 |
|--------------------------------------|----------------|--------------|--------------------------------------|--------------|----------------------|
| RVCV56-20<br>x 2                     | 115            | 420          | Direct acting with<br>in-built check | 3/4"         | \$920.00             |
| HS1620P12ZB2S manifold only \$450.00 |                |              |                                      |              |                      |

- Consult Hyspecs for anti-cav performance
- Steel manifold
- \*Non-common stock item – Contact Hyspecs for lead time

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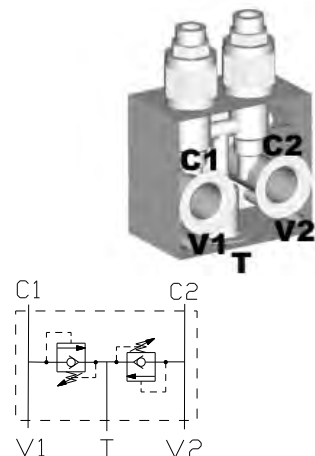
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## Relief Valves



### 5-Port Cross Line Relief Valves

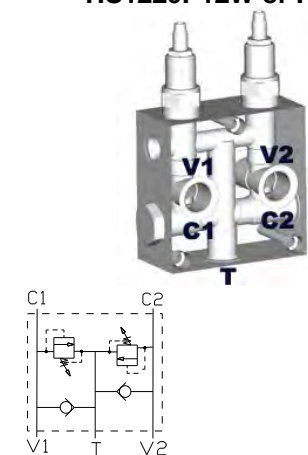
#### HS1620P12ZBS or P16ZBS\*



| Cartridges                                     | Q max<br>l/min | P max<br>bar | Notes                             | Ports<br>BSPP | Assembly<br>Price P8 |
|------------------------------------------------|----------------|--------------|-----------------------------------|---------------|----------------------|
| RVCV56-20 x 2                                  | 115            | 420          | Direct acting with in-built check | 3/4" -1"      | \$ 990.00            |
| HS1620P12ZBS or P16ZBS manifold only \$ 520.00 |                |              |                                   |               |                      |

- Manifold dimensions 135 x 100 x 50mm (excluding cartridges)
- Consult Hyspecs for anti-cav performance
- Steel manifold
- \*Non-common stock item – *Contact Hyspecs* for lead time

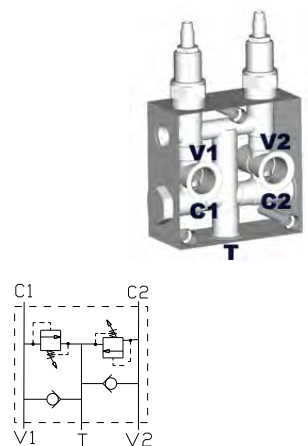
#### HS1220P12W or P16W



| Cartridges                                 | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSPP | Assembly<br>Price |
|--------------------------------------------|----------------|--------------|----------------|---------------|-------------------|
| RV12-26 x 2<br>+CV12-20 x 2                | 150            | 207          | Pilot-operated | 3/4"-1"       | \$ 998.00         |
| HS1220P12W or P16W manifold only \$ 504.00 |                |              |                |               |                   |

- Manifold dimensions, 130 x 115 x 50mm (excluding cartridge)
- Consult Hyspecs for anti-cav performance

#### HS1620P16WS



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------|---------------|-------------------|
| RV56-26 x 2<br>+CV11-16 x 2         | 300*           | 350          | Pilot-operated | 1"            | \$ 1991.00        |
| HS1620P16WS manifold only \$ 845.00 |                |              |                |               |                   |

- Manifold dimensions, 150 x 150 x 70mm (excluding cartridge)
- Steel manifold
- Consult Hyspecs for anti-cav performance
- \* Relieving flow rating only. CV11-12 is rated 114LPM

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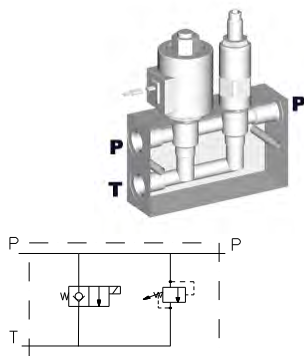
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## Relief Valves



### Solenoid Ventable

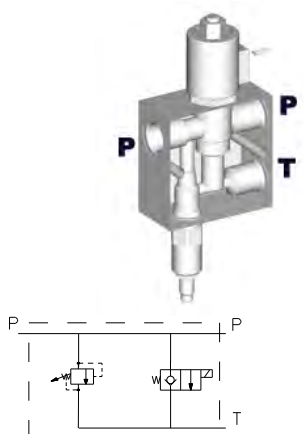
#### HS6186P8BE



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                         | Ports<br>BSPP | Assembly Price |
|------------------------------------|----------------|--------------|-----------------------------------------------|---------------|----------------|
| RV10-22<br>+ SV10-20               | 115            | 240          | Vents max 57 l/min,<br><u>normally closed</u> | 1/2"          | \$ 505.00      |
| RV10-22<br>+ SV10-21               | 115            | 207          | Vents max 68 l/min,<br><u>normally open</u>   | 1/2"          | \$ 535.00      |
| HS6186P8BE manifold only \$ 205.00 |                |              |                                               |               |                |

- Manifold dimensions, 125 x 75 x 37mm (excluding cartridge)
- Requires AC coil and DIN plug – Add \$ 71.00

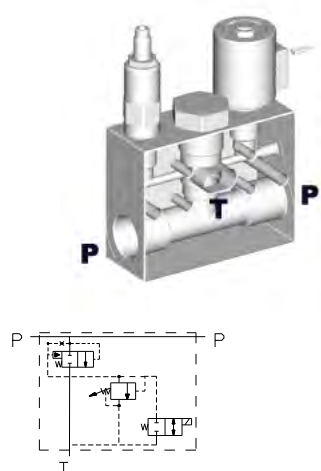
#### HS6194P12BE\_B



| Cartridge Options                     | Q max<br>l/min | P max<br>bar | Notes                                    | Ports<br>BSPP | Assembly Price |
|---------------------------------------|----------------|--------------|------------------------------------------|---------------|----------------|
| RV10-26<br>+ SV16-20                  | 115            | 240          | Full ventable,<br><u>normally closed</u> | 3/4"          | \$ 713.00      |
| RV10-26<br>+ SV16-21                  | 115            | 207          | Full ventable,<br><u>normally open</u>   | 3/4"          | \$ 733.00      |
| HS6194P12BE_B manifold only \$ 264.00 |                |              |                                          |               |                |

- Manifold dimensions, 100 x 100 x 50mm (excluding cartridge)
- AC coil and DIN plug – Add \$ 71.00

#### HS6188P16CE\_B



| Cartridge Options                                | Q max<br>l/min | P max<br>bar | Notes                                                          | Ports                            | Assembly Price |
|--------------------------------------------------|----------------|--------------|----------------------------------------------------------------|----------------------------------|----------------|
| EV16-S34<br>+ RVPD-08<br>+ SV08-20               | 190            | 207          | Vented logic, Pil.<br>Op. by Dif. P,<br><u>normally closed</u> | P-<br>1"BSPP<br>T - C61<br>SAE1" | \$ 746.00      |
| EV16-S34<br>+ RVPD-08<br>+ SV08-21               | 190            | 207          | Vented logic, Pil.<br>Op. by Dif. P,<br><u>normally open</u>   | P-<br>1"BSPP<br>T - C61<br>SAE1" | \$ 781.00      |
| HS6188P12CE_B or P16CE_B manifold only \$ 327.00 |                |              |                                                                |                                  |                |

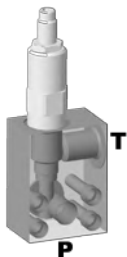
- Manifold dimensions, 125 x 100 x 50mm (excluding cartridge)
- Requires AC coil and DIN plug – Add \$ 71.00

## Relief Valves



### S.A.E. Pad Mounted

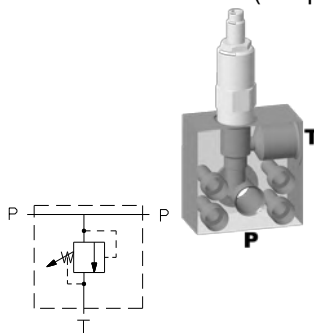
**HS7302P8AS** (For pump or cylinder with Code 61 SAE 1/2" pad mounting)



| Cartridge                                | Q max<br>l/min | P max<br>bar | Notes         | Ports<br>BSPP       | Assembly<br>Price |
|------------------------------------------|----------------|--------------|---------------|---------------------|-------------------|
| RVD50-20                                 | 115            | 350          | Direct Acting | P - 3/8"<br>T- 1/2" | \$ 385.00         |
| HS7302P6AS steel manifold only \$ 220.00 |                |              |               |                     |                   |

- Manifold dimensions, 75 x 55 x 37mm (excluding cartridge)
- Can be used as sandwich valve

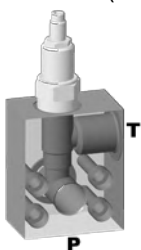
**HS7303P8BS** (For pump or cylinder with Code 61 SAE 3/4" pad mounting)



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|----------------|---------------|-------------------|
| RV10-26                            | 115            | 240          | Pilot-Operated | 1/2"          | \$ 339.00         |
| RVD50-20                           | 115            | 350          | Poppet type    | 1/2"          | \$ 395.00         |
| HS7303P8BS manifold only \$ 230.00 |                |              |                |               |                   |

- Manifold dimensions, 80 x 75 x 37mm (excluding cartridge)
- Can be used as sandwich valve
- Steel manifold

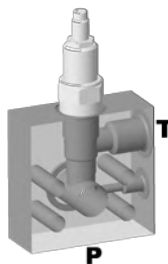
**HS7304P12CS\*** (For pump or cylinder with Code 61 SAE 1" pad mounting)



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------|---------------|-------------------|
| RV12-26                             | 185            | 240          | Pilot-Operated | 3/4"          | \$ 460.00         |
| RV52-26                             | 185            | 320          | Pilot-Operated | 3/4"          | \$ 490.00         |
| HS7304P12CS manifold only \$ 310.00 |                |              |                |               |                   |

- Manifold dimensions, 100 x 80 x 50mm (excluding cartridge)
- Can be used as sandwich valve
- \*Steel manifold. Non-common stock item – *Contact Hyspecs*

**HS7312CS\*** (For pump or cylinder with Code 62 SAE 1" pad mounting)



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------|---------------|-------------------|
| RV12-26                             | 185            | 240          | Pilot-Operated | 3/4"          | \$580.00          |
| RV52-26                             | 185            | 350          | Pilot-Operated | 3/4"          | \$610.00          |
| HS7312P12CS manifold only \$ 460.00 |                |              |                |               |                   |

- Manifold dimensions, 100 x 100 x 40mm (excluding cartridge)
- Can be used as sandwich valve
- \*Steel Manifold. Non-common stock item – *Contact Hyspecs*

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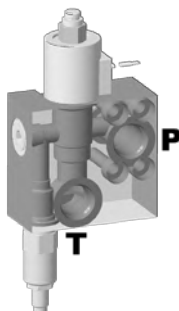
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## Relief Valves

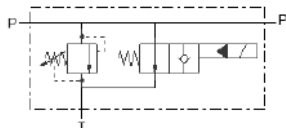


### S.A.E. Pad Mounted with Dump

**HS7311U17BBES\*** (For pump or cylinder with Code 61 SAE 3/4" pad mounting)

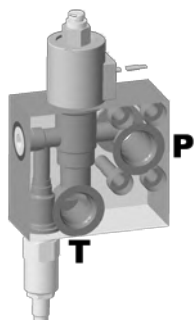


| Cartridge Options                     | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>UNO | Assembly<br>Price |
|---------------------------------------|----------------|--------------|----------------|--------------|-------------------|
| RV10-26<br>+ SV16-21                  | 115            | 207          | Pilot-Operated | 1 1/16"      | \$947.00          |
| RVD50-20<br>+ SV13-16-O*              | 115            | 350          | Pilot-Operated | 1 1/16"      | \$POA             |
| HS7311U17BBES manifold only \$ 442.00 |                |              |                |              |                   |

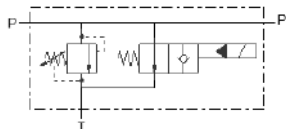


- Manifold dimensions, 105 x 100 x 50mm (excluding cartridge)
- Steel Manifold
- \*Non-common stock item – *Contact Hyspecs* for lead time

**HS7310U17CBES\*** (For pump or cylinder with Code 61 SAE 1" pad mounting)



| Cartridge Options                     | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>UNO | Assembly<br>Price |
|---------------------------------------|----------------|--------------|----------------|--------------|-------------------|
| RV10-26<br>+ SV16-21                  | 115            | 207          | Pilot-Operated | 1 1/16"      | \$991.00          |
| RVD50-20<br>+ SV13-16-O*              | 115            | 320          | Pilot-Operated | 1 1/16"      | \$POA             |
| HS7310U17CBES manifold only \$ 486.00 |                |              |                |              |                   |



- Manifold dimensions, 110 x 100 x 50mm (excluding cartridge)
- Steel Manifold
- \*Non-common stock item – *Contact Hyspecs* for lead time

## Relief Valves



### European Pad Mounted

**HS6710U7A** (For group 1 gear pumps with 26mm PCD pad mounted pressure ports)



| Cartridge                         | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>UNO | Assembly<br>Price |
|-----------------------------------|----------------|--------------|--------------------|--------------|-------------------|
| RV08-20                           | 22             | 240          | Direct act. Poppet | 7/16"        | \$ 232.00         |
| HS6710U7A manifold only \$ 132.00 |                |              |                    |              |                   |

- Manifold dimensions, 75 x 46 x 37mm (excluding cartridge)

**HS6713P6B\_B** (For group 1 & 2 gear pumps with 30mm PCD pad mounted pressure ports)



| Cartridge                           | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP        | Assembly<br>Price |
|-------------------------------------|----------------|--------------|---------------------|----------------------|-------------------|
| RV10-22                             | 115            | 240          | Differential Poppet | P – 1/4"<br>T – 3/8" | \$ 323.00         |
| HS6713P6B_B manifold only \$ 200.00 |                |              |                     |                      |                   |

- Manifold dimensions, 80 x 50 x 50mm (excluding cartridge)

**HS6716P8C\_B** (For group 3 gear pumps with 40mm PCD pad mounted pressure ports)



| Cartridge                           | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------|---------------|-------------------|
| RV10-26                             | 115            | 240          | Pilot-Operated | 1/2"          | \$ 354.00         |
| HS6716P8C_B manifold only \$ 212.00 |                |              |                |               |                   |

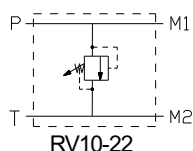
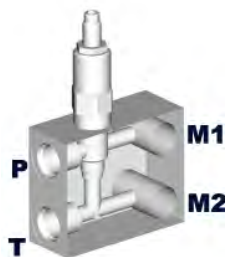
- Manifold dimensions, 80 x 75 x 37mm (excluding cartridge)

## Relief Valves



### Banjo Bolt Mounted - Single Relief

**HS7001U14A** (for Char-Lynn H, S & T Series)

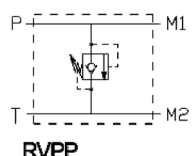
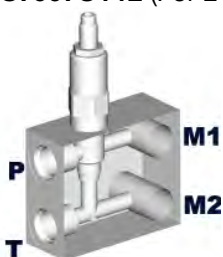


RV10-22

| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                                                                    | Ports<br>UNO | Assembly Price |
|------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------|--------------|----------------|
| RV10-22                            | 76             | 190          | <b>1.8" centre</b> , 7/8" banjo bolts (BB-14L x 2)                                       | 7/8"         | \$ 399.00      |
| RVPP-10                            | 76             | 190          | <b>1.8" centre</b> , 7/8" banjo bolts (BB-14L x 2) Free-reverse flow for anti-cavitation | 7/8"         | \$ 449.00      |
| HS7001U14A manifold only \$ 184.00 |                |              |                                                                                          |              |                |

- Example is for RV10-22, Swap P & T for RVPP-10
- Manifold dimensions, 99 x 80 x 39mm (excluding cartridge)

**HS7007U14L** (For 2" Centre Motors)

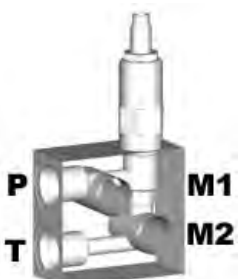


RVPP

| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                                                                   | Ports<br>UNO | Assembly Price |
|------------------------------------|----------------|--------------|-----------------------------------------------------------------------------------------|--------------|----------------|
| RV10-22                            | 76             | 240          | <b>2" centre</b> , 7/8" banjo bolts (BB-14L x 2)                                        | 7/8"         | \$ 399.00      |
| RVPP-10                            | 76             | 240          | <b>2" centre</b> , 7/8" banjo bolts (BB-14L x 2), Free-reverse flow for anti-cavitation | 7/8"         | \$ 449.00      |
| HS7007U14L manifold only \$ 184.00 |                |              |                                                                                         |              |                |

- Example is for RV10-22, Swap P & T for RVPP-10
- Manifold dimensions, 99 x 80 x 39mm (excluding cartridge)

**HS7013U14C** (For Char-Lynn 2000 Series)



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                         | Ports<br>UNO | Assembly Price |
|------------------------------------|----------------|--------------|-------------------------------|--------------|----------------|
| RV10-22                            | 115            | 240          | 7/8" banjo bolts (BB-14L x 2) | 7/8"         | \$ 415.00      |
| RVPP-10                            | 100            | 310*         | 7/8" banjo bolts (BB-14L x 2) | 7/8"         | \$ 465.00      |
| HS7013U14C manifold only \$ 200.00 |                |              |                               |              |                |

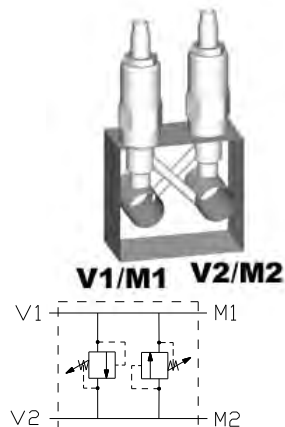
- Manifold dimensions 80 x 75 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar – Contact Hyspecs for pricing

## Relief Valves



### Banjo Bolt Mounted – Dual Relief (Cross Line)

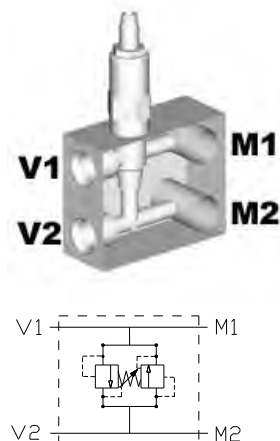
**HS7003U14AX** (for Char-Lynn H, S & T Series)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                                                              | Ports<br>UNO              | Assembly<br>Price |
|-------------------------------------|----------------|--------------|--------------------------------------------------------------------|---------------------------|-------------------|
| RV08-22 x 2                         | 30             | 190          | <b>1.8" centre,</b><br>7/8" ported<br>banjo bolts (BB-<br>14T x 2) | 7/8" on<br>banjo<br>bolts | \$ 454.00         |
| HS7003U14AX manifold only \$ 140.00 |                |              |                                                                    |                           |                   |

- Manifold dimensions, 80 x 75 x 39mm (excluding cartridge)

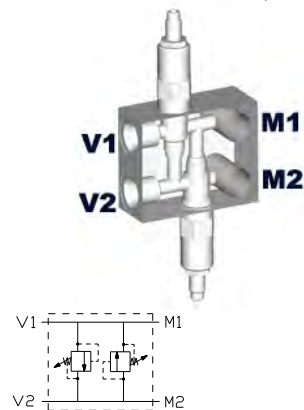
**HS7001U14A** (for Char-Lynn H, S & T Series)



| Cartridge<br>Options               | Q max<br>l/min | P max<br>bar | Notes                                                                   | Ports<br>UNO | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------------------------------------------------|--------------|-------------------|
| RVBD-10                            | 76             | 190          | <b>1.8" centre,</b> 7/8" banjo<br>bolts (BB-14L x 2)                    | 7/8"         | \$ 460.00         |
| CR10-28                            | 60             | 190          | <b>1.8" centre,</b> 7/8" banjo<br>bolts (BB-14L x 2),<br>factory preset | 7/8"         | \$ 474.00         |
| HS7001U14A manifold only \$ 184.00 |                |              |                                                                         |              |                   |

- Manifold dimensions, 99 X 80 X 39mm (excluding cartridge)

**HS7002U14AX** (for Char-Lynn H, S & T Series)



| Cartridges                          | Q max<br>l/min | P<br>max<br>bar | Notes                                                | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|-----------------|------------------------------------------------------|--------------|-------------------|
| RV10-22 x 2                         | 76             | 190             | <b>1.8" centre,</b> 7/8" banjo<br>bolts (BB-14L x 2) | 7/8"         | \$ 550.00         |
| HS7002U14AX manifold only \$ 212.00 |                |                 |                                                      |              |                   |

- Manifold dimensions, 99 x 80 x 39mm (excluding cartridge)

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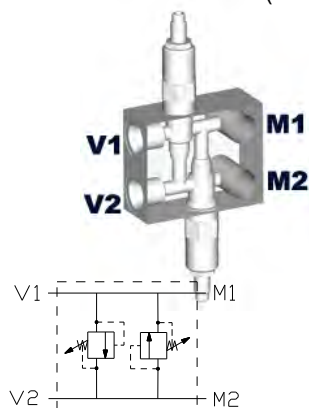
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## Relief Valves



### Banjo Bolt Mounted – Dual Relief (Cross Line)

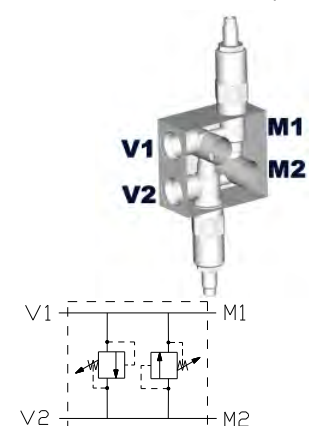
**HS7008U14LX** (For 2" Centre Motors)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                                            | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|--------------------------------------------------|--------------|-------------------|
| RV10-22 x 2                         | 110            | 240          | <b>2" centre</b> , 7/8" banjo bolts (BB-14L x 2) | 7/8"         | \$ 550.00         |
| HS7008U14LX manifold only \$ 212.00 |                |              |                                                  |              |                   |

- Manifold dimensions, 99 x 90 x 39mm (excluding cartridge)

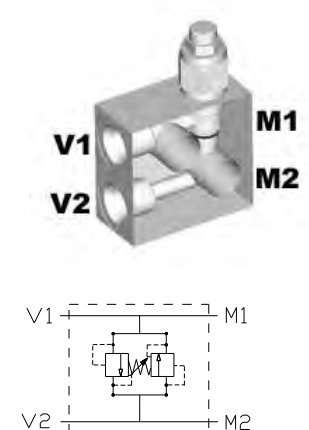
**HS7012U14CX** (for Char-Lynn 2000 Series)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                         | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|-------------------------------|--------------|-------------------|
| RV10-22 x 2                         | 110            | 240          | 7/8" banjo bolts (BB-14L x 2) | 7/8"         | \$ 561.00         |
| HS7012U14CX manifold only \$ 223.00 |                |              |                               |              |                   |

- Manifold dimensions, 80 x 75 x 39mm (excluding cartridge)

**HS7013U14C** (for Char-Lynn 2000 Series)



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                         | Ports<br>UNO | Assembly Price |
|------------------------------------|----------------|--------------|-----------------------------------------------|--------------|----------------|
| RVBD-10                            | 76             | 310*         | 7/8" banjo bolts (BB-14L x 2)                 | 7/8"         | \$ 477.00      |
| CR10-28                            | 60             | 240          | 7/8" banjo bolts (BB-14L x 2), factory preset | 7/8"         | \$ 486.00      |
| HS7013U14C manifold only \$ 200.00 |                |              |                                               |              |                |

- Manifold dimensions, 80 x 75 x 39mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

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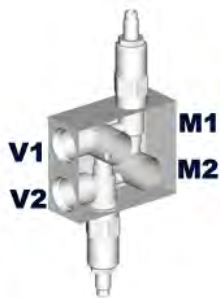
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## Relief Valves



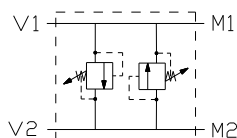
### Banjo Bolt Mounted – Dual Relief (Cross Line)

**HS7022U17EX** (for Char-Lynn 4000 Series)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                            | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------------------------|--------------|-------------------|
| RV10-22 x 2                         | 110            | 240          | 1 1/16" banjo bolts (BB-17H x 2) | 1 1/16"      | \$ 694.00         |
| HS7022U17EX manifold only \$ 252.00 |                |              |                                  |              |                   |

- Manifold dimensions, 99 x 80 x 39mm (excluding cartridge)

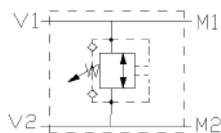


**HS7033U21GX** (for Char-Lynn 6000 Series)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                            | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------------------------|--------------|-------------------|
| RVBD-12                             | 152            | 280*         | 1 5/16" banjo bolts (BB-21L x 2) | 1 5/16"      | \$ 785.00         |
| HS7033U21GX manifold only \$ 285.00 |                |              |                                  |              |                   |

- Manifold dimensions, 110 x 100 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

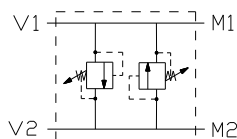


**HS7035U21GX** (for Char-Lynn 6000 Series)

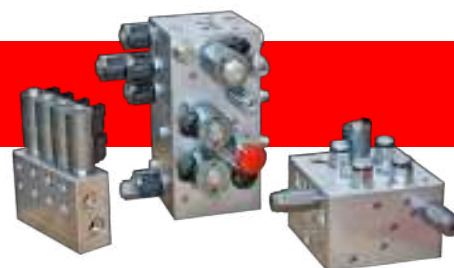


| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                            | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------------------------|--------------|-------------------|
| RV11-12 x 2                         | 190            | 310*         | 1 5/16" banjo bolts (BB-21L x 2) | 1 5/16"      | \$ 891.00         |
| HS7035U21GX manifold only \$ 293.00 |                |              |                                  |              |                   |

- Manifold dimensions, 110 x 100 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

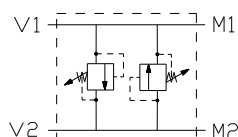


## Relief Valves



### Banjo Bolt Mounted – Dual Relief (Cross Line)

HS7045U21IX (for Char-Lynn 10000 Series)

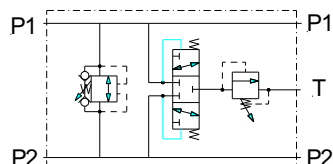
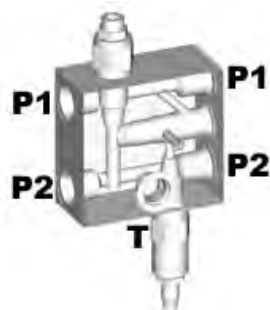


| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                            | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------------------------|--------------|-------------------|
| RV11-12 x 2                         | 190            | 275*         | 1 5/16" banjo bolts (BB-21L x 2) | 1 5/16"      | \$ 993.00         |
| HS7044U21IX manifold only \$ 395.00 |                |              |                                  |              |                   |

- Manifold dimensions, 125 x 125 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

### Cross Line With Flushing – Hydrostatic Transmission

HS6451U14C



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>UNO          | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------|-----------------------|-------------------|
| RVBD-10<br>+ RV08-20<br>+ HS50-43  | 76             | 350*         | 22 l/min flushing | P* - 7/8"<br>T - 3/4" | \$ 913.00         |
| HS6451U14C manifold only \$ 418.00 |                |              |                   |                       |                   |

- Manifold dimensions, 105 x 100 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

## Relief Valves



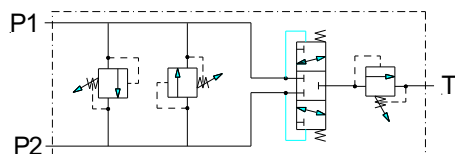
### Cross Line With Flushing – Hydrostatic Transmission

#### HS6454P16D\*

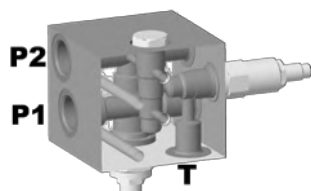


| Cartridges                            | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>BSPP | Assembly<br>Price |
|---------------------------------------|----------------|--------------|--------------------|---------------|-------------------|
| RV11-12 x 2<br>+ RV10-26<br>+ HS52-43 | 185            | 350**        | 115 l/min flushing | 1"            | \$ 1531.00        |
| HS6454P16D manifold only \$ 521.00    |                |              |                    |               |                   |

- Manifold dimensions, 170 x 130 x 60mm (excluding cartridge)
- \* Non-common stock item – *Contact Hyspecs* for lead time
- \*\* Requires steel block over 240 bar – *contact Hyspecs* for pricing

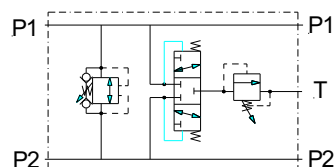


#### HS6456P12CS

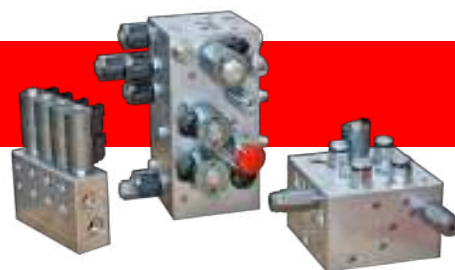


| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------|---------------|-------------------|
| RVBD-12<br>+ RV10-20<br>+ HS50-43  | 152            | 350          | 38 l/min flushing | 3/4"          | \$956.00          |
| HS6456P12CS manifold only \$438.00 |                |              |                   |               |                   |

- Manifold dimensions, 100 x 100 x 88mm (excluding cartridge)
- Steel manifold

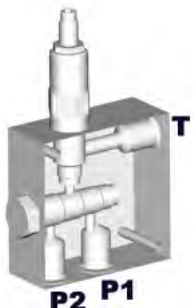


## Relief Valves



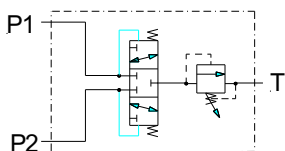
### Hot Oil Flushing Valves

#### HS9168P8BR

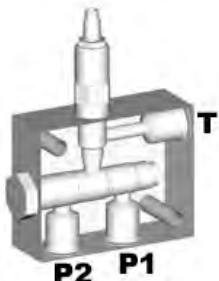


| Cartridges                                | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------|----------------|--------------|--------------------|---------------|-------------------|
| HS50-43<br>+ RV10-20                      | 38             | 350*         | Steel block option | 1/2"          | \$ 545.00         |
| HS9168P8BR manifold only \$ 212.00        |                |              |                    |               |                   |
| HS9168P8BRS steel manifold only \$ 321.00 |                |              |                    |               |                   |

- Manifold dimensions, 100 x 100 x 40mm (excluding cartridge)
- \* Requires steel block over 240 bar

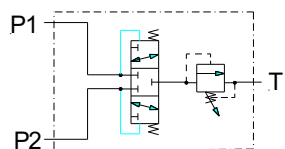


#### HS9169P12BR



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|--------------------|---------------|-------------------|
| HS52-43<br>+ RV10-26                | 115            | 350*         | Steel block option | 3/4"          | \$ 871.00         |
| HS9169P12BR manifold only \$ 304.00 |                |              |                    |               |                   |

- Manifold dimensions, 125 x 100 x 45mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs for pricing*

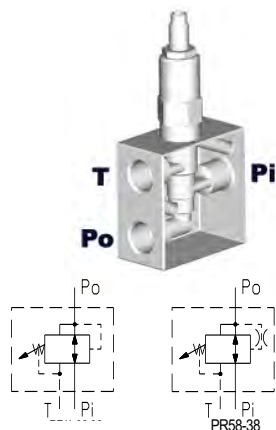


## Pressure Reducing Valves



### Pressure Reducing And Relieving Valves

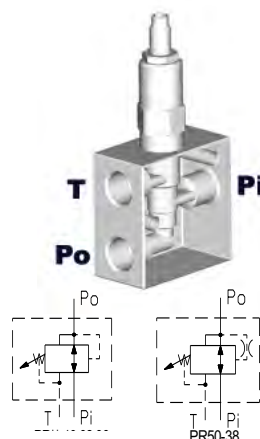
#### HS0830P4 or P6



| Cartridge Options                                                                        | Q max<br>l/min | P max<br>bar | Notes                                                          | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------------------------------------------------|----------------|--------------|----------------------------------------------------------------|---------------|-------------------|
| PR08-32                                                                                  | 11             | 240          | Direct acting<br>Reducing to 151 bar                           | 1/4"-3/8"     | \$ 279.00         |
| PR58-38                                                                                  | 19             | 350*         | Direct acting<br>Internal damping<br>for enhanced<br>stability | 1/4"-3/8"     | \$ 334.00         |
| HS0830P4 or P6 manifold only \$ 127.00<br>HS0830P4S or P6S steel manifold only \$ 183.00 |                |              |                                                                |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar

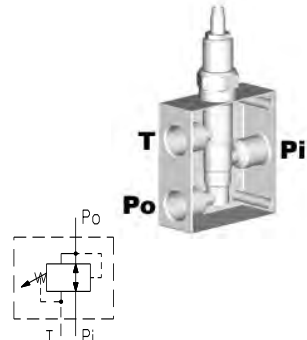
#### HS1030P6 or P8



| Cartridge Options                                                                        | Q max<br>l/min | P max<br>bar | Notes                                                       | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------------------------------------------------|----------------|--------------|-------------------------------------------------------------|---------------|-------------------|
| PR10-32                                                                                  | 30             | 207          | Direct acting<br>Reducing to 145 bar                        | 3/8"-1/2"     | \$ 284.00         |
| PR10-36                                                                                  | 56             | 240          | Direct acting<br>Reducing to 207 bar                        | 3/8"-1/2"     | \$ 347.00         |
| PR50-36                                                                                  | 56             | 350*         | Direct acting<br>Reducing to 345 bar                        | 3/8"-1/2"     | \$ 353.00         |
| PR50-38                                                                                  | 72             | 350*         | Direct acting<br>Internal damping for<br>enhanced stability | 3/8"-1/2"     | \$ 402.00         |
| HS1030P6 or P8 manifold only \$ 132.00<br>HS1030P6S or P8S steel manifold only \$ 175.00 |                |              |                                                             |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS1230P12



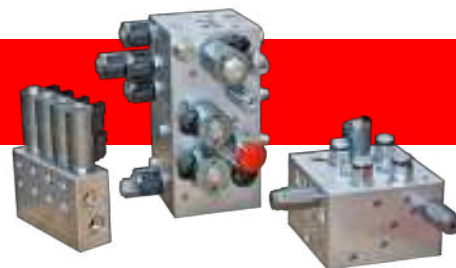
| Cartridge Options                                                             | Q max<br>l/min | P max<br>bar | Notes                                 | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------------------------------------|----------------|--------------|---------------------------------------|---------------|-------------------|
| PR12-36                                                                       | 189            | 276          | Pilot operated<br>Reducing to 207 bar | 3/4"          | \$ 462.00         |
| PRV12-12                                                                      | 114            | 350*         | Pilot operated, 10-350 bar            | 3/4"          | P.O.A             |
| HS1230P12 manifold only \$ 241.00<br>HS1230P12S steel manifold only \$ 355.00 |                |              |                                       |               |                   |

- Manifold dimensions, 99 x 75 x 39mm (excluding cartridge)
- \* Requires steel block over 240 bar

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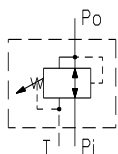
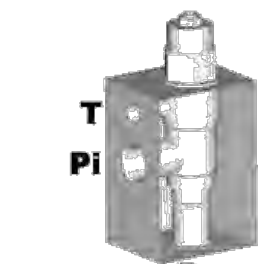
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## Pressure Reducing Valves



### Pressure Reducing And Relieving Valves

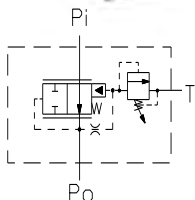
#### HS4505P12S



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                               | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------------|---------------|-------------------|
| PPHB-LWN                           | 160            | 350          | Pilot operated, reducing to 315 bar | 3/4"          | \$ 1191.00        |
| HS4505P12S manifold only \$ 593.00 |                |              |                                     |               |                   |

- Manifold dimensions, 110 x 75 x 62mm (excluding cartridge)
- Steel block

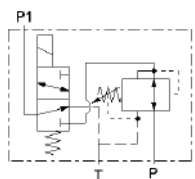
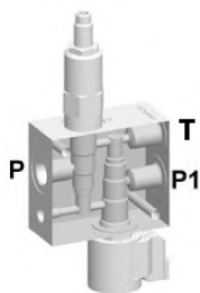
#### HS7503U17BS



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------|--------------|-------------------|
| ER12-S30 + RV58-20                  | 114            | 350          | Pilot operated | 1 1/16"      | \$ 588.00         |
| HS7503U17BS manifold only \$ 280.00 |                |              |                |              |                   |

- Manifold dimensions, 100 x 100 x 45mm (excluding cartridge)
- Steel block

#### HS7504P6BE (For brake release or pilot control)



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes                  | Ports<br>UNO | Assembly<br>Price |
|------------------------------------|----------------|--------------|------------------------|--------------|-------------------|
| PR58-38 + SV08-30                  | 19             | 350*         | With solenoid selector | 3/8"         | \$ 851.00         |
| HS7504P6BE manifold only \$ 521.00 |                |              |                        |              |                   |

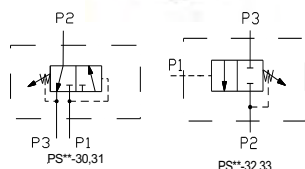
- Manifold dimensions, 85 x 75 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar - contact Hyspecs for pricing

## Sequence Valves



### Single Sequence Valves

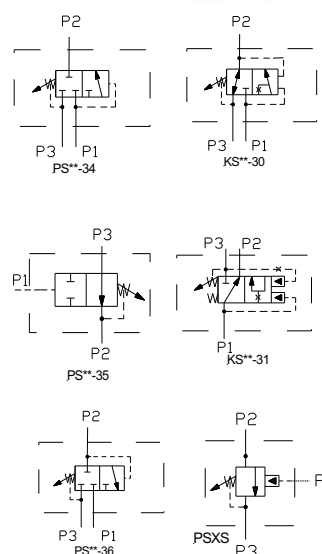
#### HS0830P4 or P6



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                   | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|-------------------------|---------------|-------------------|
| PS08-30                                | 22             | 240          | Int.pilot & drain, NC   | 1/4"-1/2"     | \$ 272.00         |
| PS08-32                                | 19             | 240          | Ext.pilot/Int.drain, NC | 1/4"-1/2"     | \$ 272.00         |
| PS08-35                                | 19             | 240          | Ext.pilot/Int.drain, NO | 1/4"-1/2"     | \$ 272.00         |
| HS0830P4 or P6 manifold only \$ 127.00 |                |              |                         |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

#### HS1030P6 or P8



| Cartridge Options                              | Q max<br>l/min | P max<br>bar | Notes                   | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------|----------------|--------------|-------------------------|---------------|-------------------|
| PS10-30                                        | 38             | 207          | Int.pilot & drain, NC   | 3/8"-1/2"     | \$ 282.00         |
| PS10-31                                        | 38             | 240          | Int.pilot & drain, NC   | 3/8"-1/2"     | \$ 282.00         |
| PS10-32                                        | 38             | 207          | Ext.pilot/Int.drain, NC | 3/8"-1/2"     | \$ 282.00         |
| PS10-33                                        | 22             | 240          | Ext.pilot/Int.drain, NC | 3/8"-1/2"     | \$ 282.00         |
| PS10-34                                        | 56             | 207          | Int.pilot & drain, NC   | 3/8"-1/2"     | \$ 282.00         |
| PS10-35                                        | 38             | 207          | Ext.pilot/Int.drain, NO | 3/8"-1/2"     | \$ 292.00         |
| PS10-36                                        | 56             | 240          | Int.pilot/Ext.drain, NC | 3/8"-1/2"     | \$ 292.00         |
| PS50-36                                        | 56             | 350*         | Int.pilot/Ext.drain, NC | 3/8"-1/2"     | \$ 315.00         |
| KS10-30                                        | 11             | 207          | Kick-down, Int. pilot   | 3/8"-1/2"     | \$ 355.00         |
| KS10-31                                        | 19             | 207          | Kick-down, Int. pilot   | 3/8"-1/2"     | \$ 355.00         |
| PSXS-10                                        | 46             | 350*         | Ext.pilot/Int.drain, NC | 3/8"-1/2"     | \$ 322.00         |
| HS1030P6 or P8 manifold only \$ 132.00         |                |              |                         |               |                   |
| HS1030P6S or P8S steel manifold only \$ 175.00 |                |              |                         |               |                   |

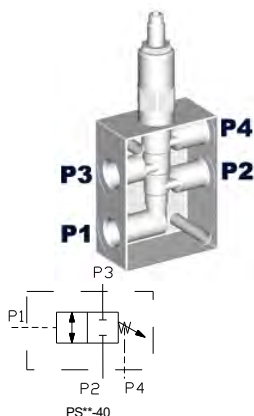
- Manifold dimensions, 75 x 75 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar

## Sequence Valves

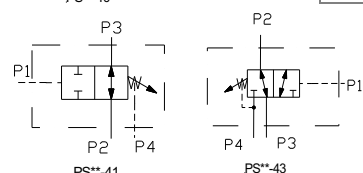


### Single Sequence Valves

#### HS1040P6 or P8



| Cartridge Options                              | Q max<br>l/min | P max<br>bar | Notes                             | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------|----------------|--------------|-----------------------------------|---------------|-------------------|
| PS10-40                                        | 38             | 240          | Ext.pilot & drain, NC             | 3/8"-1/2"     | \$ 357.00         |
| PS10-41                                        | 38             | 240          | Ext.pilot & drain, NO             | 3/8"-1/2"     | \$ 357.00         |
| PS10-43                                        | 38             | 240          | Ext.pilot/Int.drain, NO           | 3/8"-1/2"     | \$ 357.00         |
| PS50-40                                        | 38             | 350*         | Ext.pilot & drain, NC Steel block | 3/8"-1/2"     | \$ 373.00         |
| HS1040P6 or P8 manifold only \$ 150.00         |                |              |                                   |               |                   |
| HS1040P6S or P8S steel manifold only \$ 185.00 |                |              |                                   |               |                   |

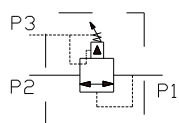


- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS4505P12

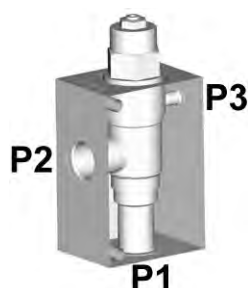


| Cartridge Options                        | Q max<br>l/min | P max<br>bar | Notes                              | Ports<br>BSPP   | Assembly<br>Price |
|------------------------------------------|----------------|--------------|------------------------------------|-----------------|-------------------|
| RSHC-LWN*                                | 240            | 350**        | Internal pilot, external drain, NC | 3/4"<br>1/4" P3 | \$ 795.00         |
| HS4505P12 manifold only \$ 395.00        |                |              |                                    |                 |                   |
| HS4505P12S steel manifold only \$ 593.00 |                |              |                                    |                 |                   |



- Manifold dimensions, 110 x 75 x 62.5mm (excluding cartridge)
- \* Non-common stock item – Contact Hyspecs for lead time
- \*\* Requires steel block over 240 bar

#### HS4506P16S



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                     | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------------------|---------------|-------------------|
| RSJC-LWN*                          | 480            | 350          | Internal pilot, external drain, NC, steel | 1" 1/4"<br>P3 | \$ 1490.00        |
| HS4506P16S manifold only \$ 675.00 |                |              |                                           |               |                   |

- Manifold dimensions, 150 x 100 x 75mm (excluding cartridge)
- Steel block
- \* Non-common stock item – Contact Hyspecs for lead time

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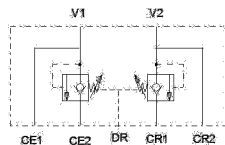
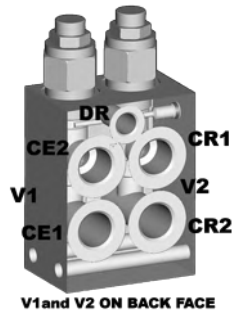
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## Sequence Valves



### Dual Sequence Valves

HS7703P8B

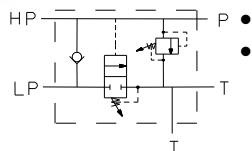
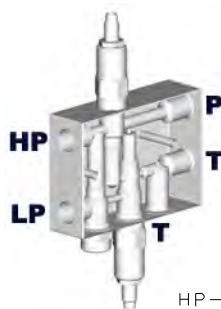


| Cartridges                        | Q max<br>l/min | P max<br>bar | Notes                 | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|-----------------------|---------------|-------------------|
| PSVP-10 x 2                       | 76             | 350*         | Poppet with free rev. | 1/2"          | \$ 707.00         |
| HS7703P8B manifold only \$ 257.00 |                |              |                       |               |                   |

- Manifold dimensions, 100 x 90 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – contact Hyspecs for pricing

### Hi-Low Double Pump Sequence Valves

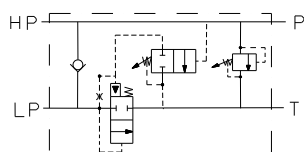
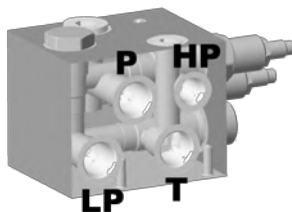
HS7890P8C\_B



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                                                                     | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|---------------------------------------------------------------------------|---------------|-------------------|
| PS10-32<br>+ RV10-22<br>+ CV10-24   | 110            | 207          | The valve unloads second pump flow, LP (35 l/min max) at preset pressure. | 3/8"          | \$ 594.00         |
| HS7890P8C_B manifold only \$ 257.00 |                |              |                                                                           |               |                   |

- Manifold dimensions, 125 x 100 x 50mm (excluding cartridge)
- HP and LP flow are combined until pressure setting of PS10-32 is reached and then LP is unloaded. Includes main relief. Block one T port not needed.

HS7856P12DR



| Cartridges                                      | Q max<br>l/min | P max<br>bar | Notes                                                                      | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------|----------------|--------------|----------------------------------------------------------------------------|---------------|-------------------|
| EV12-S34<br>+ PS08-32<br>+ RV12-26<br>+ CV12-20 | 170            | 240          | The valve unloads second pump flow, LP (150 l/min max) at preset pressure. | 3/4"-1"       | \$ 1099.00        |
| HS7856P12DR \$ 493.00                           |                |              |                                                                            |               |                   |

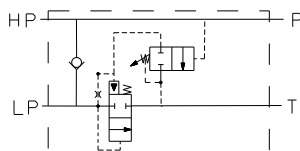
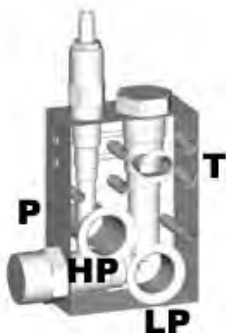
- Manifold dimensions, 135 x 100 x 50mm (excluding cartridge)
- HP and LP flow are combined until pressure setting of PS08-32 is reached and then LP is unloaded. Includes main relief.

## Sequence Valves



### Hi-Low Double Pump Sequence Valves

HS7898P16C

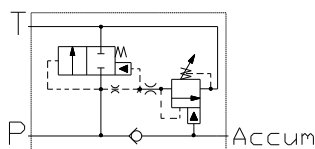
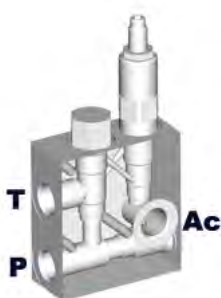


| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes                                                                               | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------------------------------------------------------------|---------------|-------------------|
| EV16-S34<br>+ PS10-32<br>+ CV16-20 | 300            | 207          | The valve unloads<br>second pump flow,<br>LP (180 l/min max)<br>at preset pressure. | 1"            | \$ 1157.00        |
| HS7898P16C manifold only \$ 664.00 |                |              |                                                                                     |               |                   |

- Manifold dimensions, 145 x 100 x 50mm (excluding cartridge)
- HP and LP flow are combined until pressure setting of PS10-32 is reached and then LP is unloaded.

### Accumulator Unloading Valves

HS7916P8CC



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes                                                       | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------------------------------------|---------------|-------------------|
| EV10-S34<br>+ UP10-31<br>+ CV10-20 | 75             | 207          | Ratio between<br>loading and<br>reloading P is 75<br>to 85% | 1/2"          | \$ 724.00         |
| HS7916P8CC manifold only \$ 223.00 |                |              |                                                             |               |                   |

- Manifold dimensions, 99 x 90 x 39mm (excluding cartridges)

## **Contents Section B – Flow Controls**

### **B1 Two Port Flow Controls**

- B1 Non Compensated
- B2 Pressure Compensated

### **B4 Three Port Flow Controls (Pressure Compensated)**

### **B6 Three Port Flow Controls with Relief Valve (Pressure Compensated)**

### **B8 Three Port Flow Controls - Priority-on-Demand**

### **B10 Auto-Pilot Steering Valves**

### **B11 Sequence Flow Controls**

### **B12 Flow Dividers/Combiners**

### **B13 Solenoid Defeatable Valves**

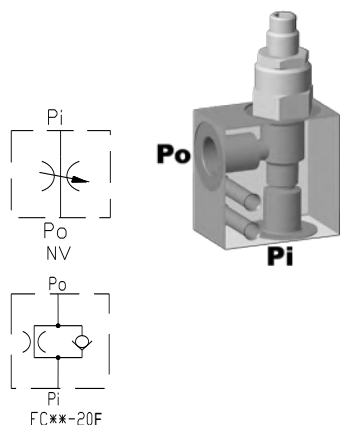
### **B14 Hoist & Roller Spreader Control Valves**

## Two Port Flow Controls



### Non Compensated

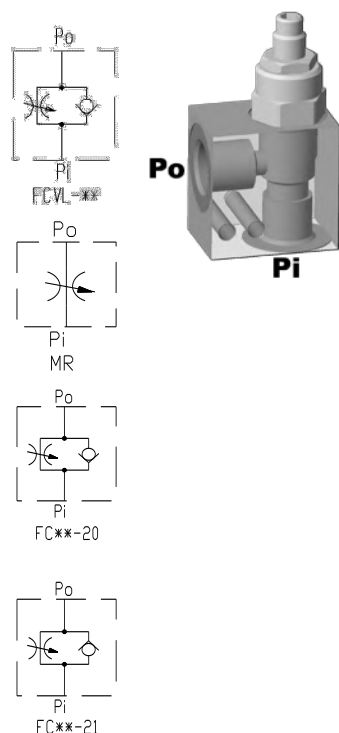
#### HS0820P4\_B or P6\_B



| Cartridge Options                                  | Q max<br>l/min | P max<br>bar | Notes                        | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------------------|----------------|--------------|------------------------------|---------------|-------------------|
| NV08-20                                            | 42             | 240          | 3.5 turns                    | 1/4"-3/8"     | \$ 143.00         |
| NV08-21E                                           | 55             | 240          | 8 turns and positive shutoff | 1/4"-3/8"     | \$ 158.00         |
| FC08-20F                                           | 45             | 240          | Fixed orifice check          | 1/4"-3/8"     | \$ 168.00         |
| NV08-23                                            | 38             | 240          | Fine adjustment              | 1/4"-3/8"     | \$ 153.00         |
| FCVL-08-F                                          | 38             | 350*         | Free reverse check           | 1/4"-3/8"     | \$ 198.00         |
| HS0820P4_B or P6_B manifold only \$ 78.00          |                |              |                              |               |                   |
| HS0820P4S_B or P6S_B steel manifold only \$ 132.00 |                |              |                              |               |                   |

- Manifold dimensions, 50 x 32mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS1020P6\_B or P8\_B



| Cartridge Options                                  | Q max<br>l/min | P max<br>bar | Notes                                                | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------------------|----------------|--------------|------------------------------------------------------|---------------|-------------------|
| NV10-20                                            | 57             | 240          | 3.5 turns                                            | 3/8"-1/2"     | \$ 156.00         |
| NV10-21E                                           | 57             | 240          | 9 turns and positive shutoff                         | 3/8"-1/2"     | \$ 176.00         |
| NV10-22                                            | 60             | 240          | 5.5 turns lockable                                   | 3/8"-1/2"     | \$ 176.00         |
| MR10-20                                            | 49             | 240          | Manual rotary and ten position detent                | 3/8"-1/2"     | \$ 214.00         |
| FC10-20                                            | 45             | 240          | 3 turns and free reverse check. CCW to increase flow | 3/8"-1/2"     | \$ 186.00         |
| FC10-21                                            | 60             | 240          | 2 turns and free reverse check. CW to increase flow  | 3/8"-1/2"     | \$ 186.00         |
| FCVL-10-F                                          | 68             | 350*         | Free reverse check                                   | 3/8"-1/2"     | \$ 186.00         |
| HS1020P6_B or P8_B manifold only \$ 86.00          |                |              |                                                      |               |                   |
| HS1020P6S_B or P8S_B steel manifold only \$ 132.00 |                |              |                                                      |               |                   |

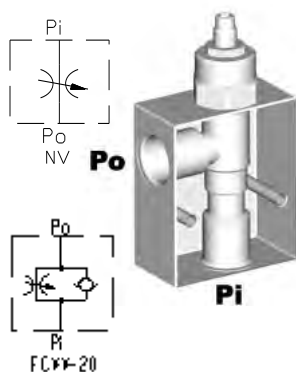
- Manifold dimensions, 50 x 50 x 35mm (excluding cartridge)
- \* Requires steel block over 240 bar

## Two Port Flow Controls



### Non Compensated

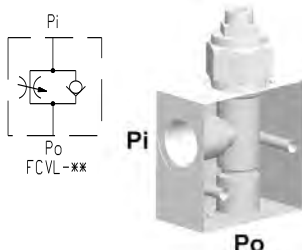
#### HS1220P12



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                          | Ports<br>BSPP | Assembly Price |
|-----------------------------------|----------------|--------------|--------------------------------|---------------|----------------|
| NV12-20                           | 130            | 240          | 4.5 turns                      | 3/4"          | \$ 285.00      |
| FC12-20                           | 130            | 240          | 5 turns and free reverse check | 3/4"          | \$ 287.00      |
| HS1220P12 manifold only \$ 155.00 |                |              |                                |               |                |

- Manifold dimensions, 90 x 75 x 40mm (excluding cartridge)

#### HS1221P12

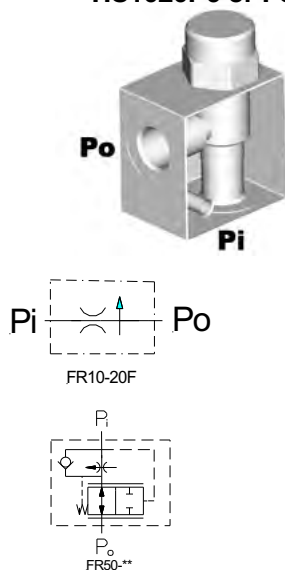


| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>BSPP | Assembly Price |
|------------------------------------|----------------|--------------|--------------------|---------------|----------------|
| FCVL-12-F                          | 136            | 350*         | Free reverse check | 3/4"          | \$ 295.00      |
| HS1221P12 manifold only \$ 155.00  |                |              |                    |               |                |
| HS1221P12S manifold only \$ 230.00 |                |              |                    |               |                |

- Manifold dimensions, 75 x 75 x 40mm (excluding cartridge)
- \* Requires steel block over 240 bar

### Pressure Compensated

#### HS1020P6 or P8



| Cartridge                                      | Q max<br>l/min | P max<br>bar | Notes                     | Ports<br>BSPP | Assembly Price |
|------------------------------------------------|----------------|--------------|---------------------------|---------------|----------------|
| FR10-20F                                       | 22             | 240          | Preset orifice            | 3/8"-1/2"     | \$ 178.00      |
| FR50-23                                        | 11.5           | 350*         | Adjustable from 0.4 l/min | 3/8"-1/2"     | \$ 289.00      |
| FR50-28                                        | 34             | 350*         | Adjustable from 0.8 l/min | 3/8"-1/2"     | \$ 298.00      |
| HS1020P6 or P8 manifold only \$ 86.00          |                |              |                           |               |                |
| HS1020P6S or P8S steel manifold only \$ 132.00 |                |              |                           |               |                |

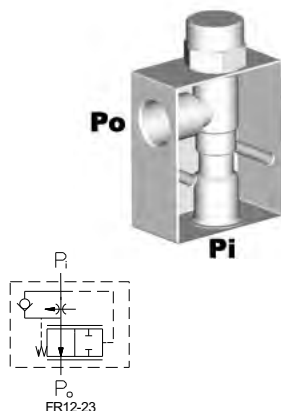
- Manifold dimensions, 50 x 50 x 35mm (excluding cartridge)
- \* Requires steel block over 240 bar

## Two Port Flow Controls



### Pressure Compensated

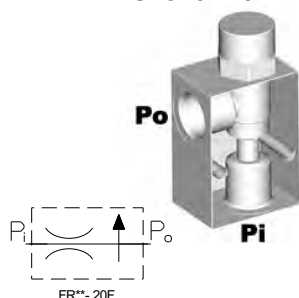
#### HS1220P12



| Cartridge                         | Q max<br>l/min | P max<br>bar | Notes                                    | Ports<br>BSPP | Assembly Price |
|-----------------------------------|----------------|--------------|------------------------------------------|---------------|----------------|
| FR12-20F                          | 55             | 240          | Preset orifice                           | 3/4"          | \$ 333.00      |
| FR12-23                           | 77             | 240          | Full range adjustable, block mod. needed | 3/4"          | \$ 405.00      |
| HS1220P12 manifold only \$ 155.00 |                |              |                                          |               |                |

- Manifold dimensions, 90 x 75 x 40mm (excluding cartridge)

#### HS1620P16

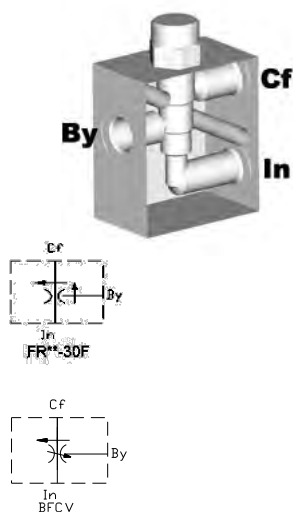


| Cartridge                                             | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSPP | Assembly Price |
|-------------------------------------------------------|----------------|--------------|----------------|---------------|----------------|
| FR16-20F                                              | 113            | 240          | Preset orifice | 3/4" -1"      | \$ 392.00      |
| HS1620P12 or P16 manifold only \$ 189.00 or \$ 207.00 |                |              |                |               |                |

- Manifold dimensions, 100 x 70 x 50mm (excluding cartridge)

### Three Port Flow Controls

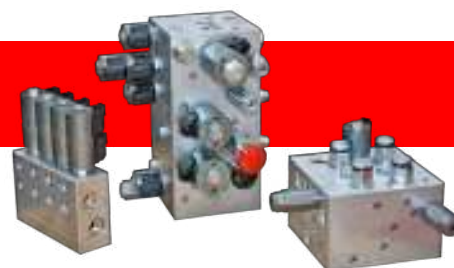
#### HS1030P6 or P8



| Cartridge                                                   | Q max<br>l/min | P max<br>bar | Notes                                       | Ports<br>BSPP | Assembly Price |
|-------------------------------------------------------------|----------------|--------------|---------------------------------------------|---------------|----------------|
| FR10-30F                                                    | 38             | 240          | Preset orifice and 22.7 l/min max regulated | 3/8"-1/2"     | \$ 233.00      |
| BFCV-10                                                     | 45             | 350*         | Preset orifice with 30% adjustment          | 3/8"-1/2"     | \$ 337.00      |
| HS1030P6 or P8 manifold only \$ 132.00                      |                |              |                                             |               |                |
| HS1030P6S or P8S steel manifold only \$ 175.00 or \$ 212.00 |                |              |                                             |               |                |

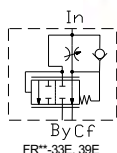
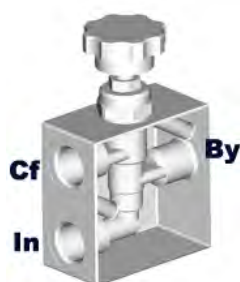
- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar

## Three Port Flow Controls



### Pressure Compensated

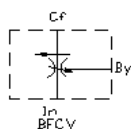
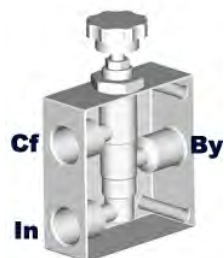
#### HS1030P6 or P8



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                                                                     | Ports<br>BSP | Assembly Price |
|----------------------------------------|----------------|--------------|---------------------------------------------------------------------------|--------------|----------------|
| FR10-33E                               | 20             | 240          | 3 port R.F: 0-11 l/min<br>2 port R.F: 0-9 l/min<br>Full range adjustable  | 3/8"-1/2"    | \$ 344.00      |
| FR10-39E                               | 57             | 240          | 3 port R.F: 0-38 l/min<br>2 port R.F: 0-34 l/min<br>Full range adjustable | 3/8"-1/2"    | \$ 344.00      |
| HS1030P6 or P8 manifold only \$ 132.00 |                |              |                                                                           |              |                |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

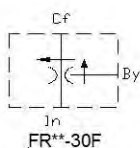
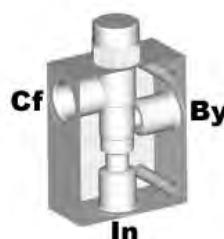
#### HS1230P12



| Cartridge Options                       | Q max<br>l/min | P max<br>bar | Notes                                                                     | Ports<br>BSP | Assembly Price |
|-----------------------------------------|----------------|--------------|---------------------------------------------------------------------------|--------------|----------------|
| FR12-33E                                | 114            | 240          | 3 port R.F: 0-68 l/min<br>2 port R.F: 0-45 l/min<br>Full range adjustable | 3/4"         | \$ 562.00      |
| FR12-30F                                | 95             | 240          | Preset orifice and 49 l/min regulated                                     | 3/4"         | \$ 391.00      |
| BFCV-12                                 | 76             | 350*         | Preset orifice with 30% adjustment                                        | 3/4"         | \$ 456.00      |
| HS1230P12 manifold only \$ 241.00       |                |              |                                                                           |              |                |
| HS1230P12 steel manifold only \$ 355.00 |                |              |                                                                           |              |                |

- Manifold dimensions, 100 x 75 x 39mm (excluding cartridge)
- \* Requires steel block over 240 bar

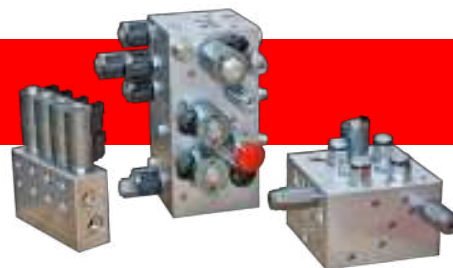
#### HS1630P16



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                                  | Ports<br>BSP | Assembly Price |
|-----------------------------------|----------------|--------------|----------------------------------------|--------------|----------------|
| FR16-30F                          | 190            | 240          | Preset orifice and 130 l/min regulated | 1"           | \$ 484.00      |
| HS1630P16 manifold only \$ 264.00 |                |              |                                        |              |                |

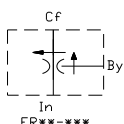
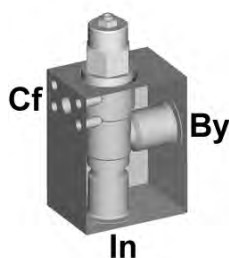
- Manifold dimensions, 125 x 100 x 50mm (excluding cartridge)

## Three Port Flow Controls



### Pressure Compensated

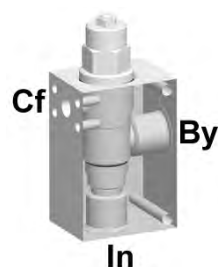
#### HS17AP16\*



| Cartridge                        | Q max<br>l/min | P max<br>bar | Notes                                                      | Ports<br>BSP                    | Assembly<br>Price |
|----------------------------------|----------------|--------------|------------------------------------------------------------|---------------------------------|-------------------|
| FREA-LAN*                        | 240            | 350**        | Priority 100 l/min<br>preset with $\pm 25\%$<br>adjustment | 1" &<br>1/2" code<br>61 Cf port | \$ 740.00         |
| HS17AP16 manifold only \$ 380.00 |                |              |                                                            |                                 |                   |

- Manifold dimensions, 110 x 85 x 62mm (excluding cartridge)
- \* Non-common stock item – *Contact Hyspecs* for lead time
- \*\* Requires steel block over 240 bar

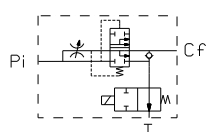
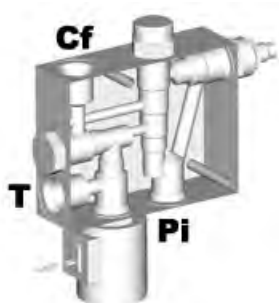
#### HS19AP20\*



| Cartridge                        | Q max<br>l/min | P max<br>bar | Notes                                                      | Ports<br>BSP                           | Assembly<br>Price |
|----------------------------------|----------------|--------------|------------------------------------------------------------|----------------------------------------|-------------------|
| FRFA-LAN                         | 480            | 350**        | Priority 200 l/min<br>preset with $\pm 25\%$<br>adjustment | 1 1/4" &<br>3/4" code<br>62 Cf<br>port | \$ 1060.00        |
| HS19AP20 manifold only \$ 415.00 |                |              |                                                            |                                        |                   |

- Manifold dimensions, 150 x 100 x 75mm (excluding cartridge)
- \* Non-common stock item – *Contact Hyspecs* for lead time
- \*\* Requires steel block over 240 bar

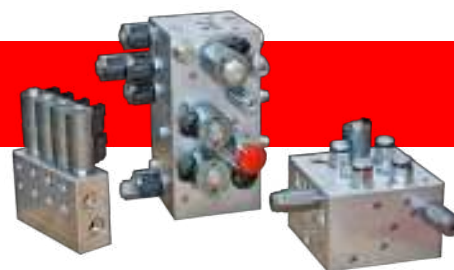
#### HS8216U14DE (2 speed control)



| Cartridge<br>Options                                                        | Q max<br>l/min | P max<br>bar | Notes                                                                              | Ports<br>UNO | Assembly<br>Price                      |
|-----------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------|--------------|----------------------------------------|
| NV10-20<br>+ EC10-40<br>+ CV10-20<br>+ SV10-24(NC)*<br>or<br>+ SV10-25(NO)* | 57             | 207          | 2-speed control,<br>solenoid operated,<br>38 l/min max<br>when bypass<br>open to T | 7/8"         | \$ 782.00<br>(NC)<br>\$ 795.00<br>(NO) |
| HS8216U14DE manifold only \$ 380.00                                         |                |              |                                                                                    |              |                                        |

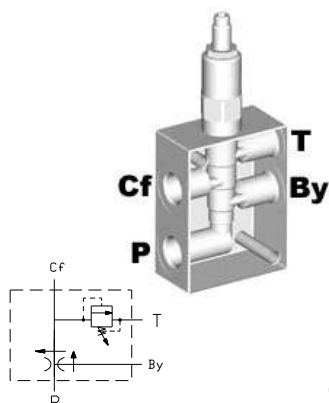
- Manifold dimensions, 125 x 100 x 40mm (excluding cartridge)
- \* Priced with flying leads DC coil

## Three Port Flow Controls with Relief Valve



### Pressure Compensated

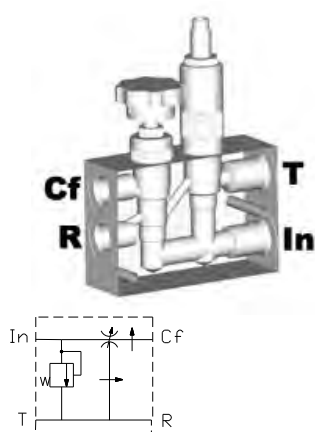
#### HS1040P6 or P8



| Cartridge                              | Q max<br>l/min | P max<br>bar | Notes                                                               | Ports<br>BSP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|---------------------------------------------------------------------|--------------|-------------------|
| FRRV10-41F                             | 38             | 207          | 19 l/min max regulated flow, fixed orifice, adjustable relief valve | 3/8"-1/2"    | \$ 391.00         |
| HS1040P6 or P8 manifold only \$ 150.00 |                |              |                                                                     |              |                   |

- Manifold dimensions, 99 x 75 x 39mm (excluding cartridge)

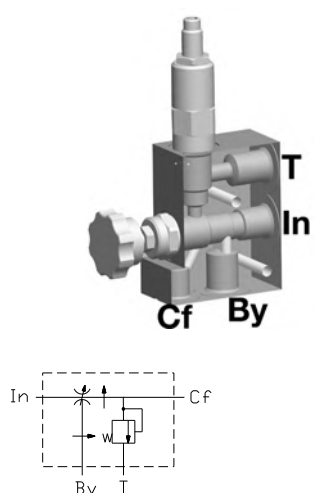
#### HS8270P8BR



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                                       | Ports<br>BSP           | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------------------------------------|------------------------|-------------------|
| FR10-33E +RV10-20                  | 20             | 240          | Full range adjustable. 12 l/min regulated. Relieve to tank. | In&T-1/2"<br>Cf&R-3/8" | \$ 581.00         |
| FR10-39E +RV10-26                  | 57             | 240          | Full range adjustable. 34 l/min regulated. Relieve to tank. | In&T-1/2"<br>Cf&R-3/8" | \$ 600.00         |
| HS8270P8BR manifold only \$ 246.00 |                |              |                                                             |                        |                   |

- Manifold dimensions, 110 x 75 x 37mm (excluding cartridge)

#### HS8214P8BR



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                                       | Ports<br>BSP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------------------------------------|--------------|-------------------|
| FR10-33E +RV10-20                  | 29             | 240          | Full range adjustable. 12 l/min regulated. Relieve to tank. | 1/2"         | \$ 519.00         |
| FR10-39E +RV10-20                  | 57             | 240          | Full range adjustable. 34 l/min regulated. Relieve to tank. | 1/2"         | \$ 519.00         |
| HS8214P8BR manifold only \$ 184.00 |                |              |                                                             |              |                   |

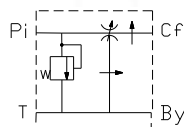
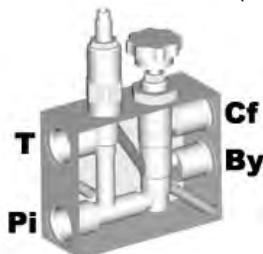
- Manifold dimensions, 99 x 80 x 39mm (excluding cartridge)

## Three Port Flow Controls with Relief Valve



### Pressure Compensated

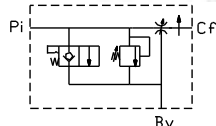
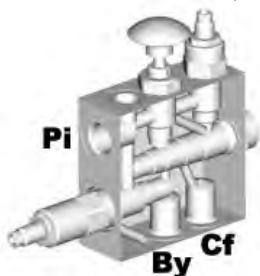
HS8212P12BR (with relief)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                   | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|-------------------------|---------------|-------------------|
| FR12-33E<br>+ RV10-26               | 76             | 240          | 68 l/min regulated flow | 3/4"          | \$ 847.00         |
| HS8212P12BR manifold only \$ 384.00 |                |              |                         |               |                   |

- Manifold dimensions, 125 x 100 x 50mm (excluding cartridge)

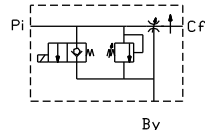
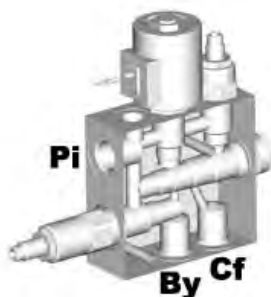
HS8209P8DR (with manual dump & relief)



| Cartridges                                     | Q max<br>l/min | P max<br>bar | Notes                                                                           | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------|---------------|-------------------|
| NV10-20<br>+ EC10-40<br>+ RV10-22<br>+ MP10-20 | 57             | 207          | 38 l/min regulated<br><b>3.5 turns</b> , relief<br>and manual dump<br>to bypass | 1/2"          | \$ 835.00         |
| HS8209P8DR manifold only \$ 384.00             |                |              |                                                                                 |               |                   |

- Manifold dimensions, 105 x 99 x 49mm (excluding cartridge)

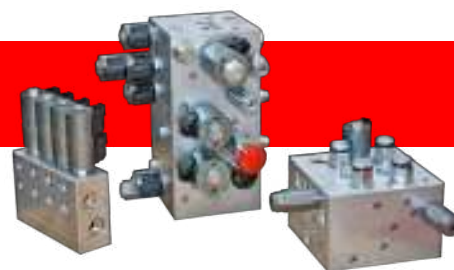
HS8209P8DR (with solenoid dump & relief)



| Cartridge<br>Options                            | Q<br>max<br>l/min | P max<br>bar | Notes                                                                                 | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------|-------------------|--------------|---------------------------------------------------------------------------------------|---------------|-------------------|
| NV10-20<br>+ EC10-40<br>+ RV10-22<br>+ SV10-20* | 57                | 207          | 38 l/min regulated<br><b>3.5 turns</b> , relief<br>and solenoid dump<br>to bypass     | 1/2"          | \$ 881.00         |
| MR10-20<br>+ EC10-40<br>+ RV10-22<br>+ SV10-20* | 57                | 207          | 38 l/min regulated<br><b>1/2 turn only</b> , relief<br>and solenoid dump<br>to bypass | 1/2"          | \$ 939.00         |
| HS8209P8DR manifold only \$ 384.00              |                   |              |                                                                                       |               |                   |

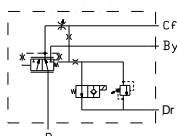
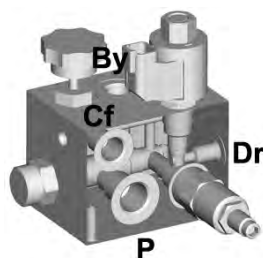
- Manifold dimensions, 105 x 99 x 39mm (excluding cartridge)
- \* DC flying leads coil included, contact Hyspecs for other coils

## Three Port Flow Controls – Priority-On-Demand



### Pressure Compensated

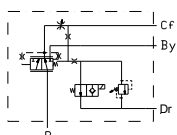
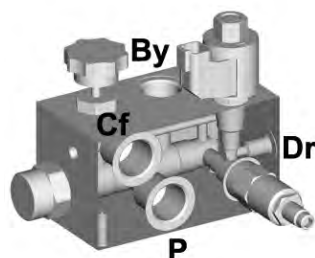
#### HS8206P8DRE



| Cartridge Options                                       | Q max<br>l/min | P max<br>bar | Notes                                                                  | Ports<br>BSPP                              | Assembly Price |
|---------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------|--------------------------------------------|----------------|
| NV08-21E<br>+ EC10-43<br>+ RV08-29<br>+ <b>SV08-21*</b> | 45             | 240          | Priority 34<br>l/min, relief and<br>solenoid control<br>on Cf port, NO | P - 1/2"<br>Cf & By -<br>3/8"<br>Dr - 1/4" | \$ 881.00      |
| HS8206P8DRE manifold only \$ 345.00                     |                |              |                                                                        |                                            |                |

- Manifold dimensions, 100 x 75 x 75mm (excluding cartridge)
- \* DC flying leads coil included, contact Hyspecs for other coils

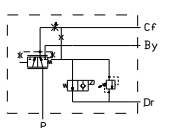
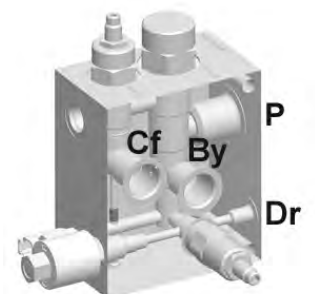
#### HS8211P12DRE



| Cartridge Options                                       | Q max<br>l/min | P max<br>bar | Notes                                                                  | Ports<br>BSPP     | Assembly Price |
|---------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------|-------------------|----------------|
| NV10-21E<br>+ EC12-43<br>+ RV08-29<br>+ <b>SV08-21*</b> | 114            | 240          | Priority 57<br>l/min, relief and<br>solenoid control<br>on Cf port, NO | 3/4"<br>Dr - 1/4" | \$ 1029.00     |
| HS8211P12DRE manifold only \$ 405.00                    |                |              |                                                                        |                   |                |

- Manifold dimensions, 135 x 75 x 75mm (excluding cartridge)
- \* DC flying leads coil included, contact Hyspecs for other coils

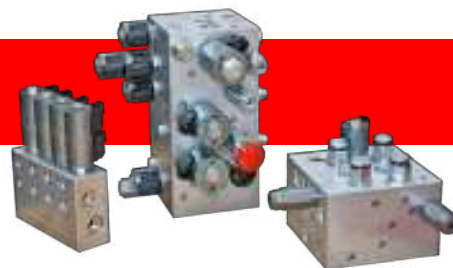
#### HS8217P16DRE



| Cartridge Options                                      | Q max<br>l/min | P max<br>bar | Notes                                                                  | Ports<br>BSPP                            | Assembly Price |
|--------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------|------------------------------------------|----------------|
| NV12-20<br>+ EC16-43<br>+ RV08-29<br>+ <b>SV08-21*</b> | 190            | 240          | Priority 95 l/min,<br>relief and<br>solenoid control<br>on Cf port, NO | P - 1"<br>Cf & By -<br>3/4"<br>Dr - 1/4" | \$ 1199.00     |
| HS8217P16DRE manifold only \$ 495.00                   |                |              |                                                                        |                                          |                |

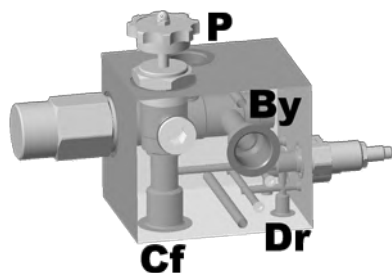
- Manifold dimensions, 150 x 126 x 75mm (excluding cartridge)
- \* DC flying leads coil included, contact Hyspecs for other coils

## Three Port Flow Controls – Priority-On-Demand

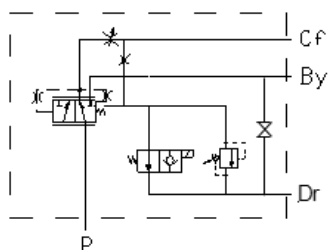


### Pressure Compensated

HS8221P16DRE\*

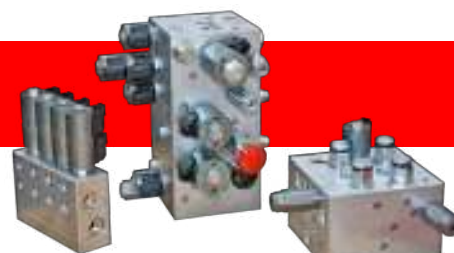


| Cartridge Options                                       | Q max<br>l/min | P max<br>bar | Notes                                                           | Ports<br>BSPP   | Assembly<br>Price |
|---------------------------------------------------------|----------------|--------------|-----------------------------------------------------------------|-----------------|-------------------|
| NV1-20<br>+ EC42-M43<br>+ RV08-29<br>+ <b>SV08-20**</b> | 303            | 210          | Priority 260 l/min,<br>relief and solenoid<br>control on Cf, NC | 1"<br>Dr – 1/4" | \$ 1906.00        |
| NV1-20<br>+ EC42-M43<br>+ RV08-29<br>+ <b>SV08-21**</b> | 303            | 210          | Priority 260 l/min,<br>relief and solenoid<br>control on Cf, NO | 1"<br>Dr – 1/4" | \$ 1922.00        |
| HS8221P16DRE manifold only \$ 738.00                    |                |              |                                                                 |                 |                   |

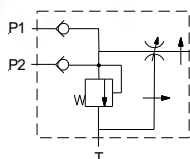


- Manifold dimensions, 150 x 126 x 125mm (excluding cartridge)
- Option to connect Dr to By port via M6 plug removal.
- \* Non-common stock item – *Contact Hyspecs* for lead time
- \*\* DC flying leads coil included, contact Hyspecs for other coils

## Auto-Pilot Steering Valves



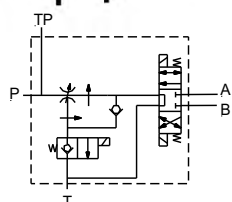
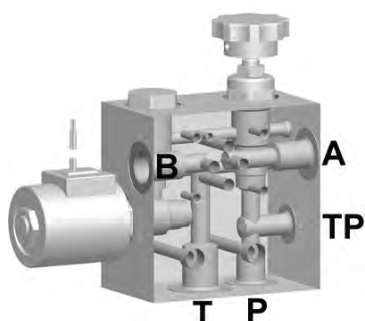
**HS8210P8DR**



| Cartridges                             | Q max<br>l/min | P max<br>bar | Notes                                          | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|------------------------------------------------|---------------|-------------------|
| FR10-39E<br>+ RV10-22<br>+ CV10-20 x 2 | 57             | 240          | Two pump inlets,<br>38 l/min<br>regulated flow | 1/2"          | \$ 916.00         |
| HS8210P8DR manifold only \$ 481.00     |                |              |                                                |               |                   |

- Manifold dimensions, 160 x 75 x 37mm (excluding cartridge)

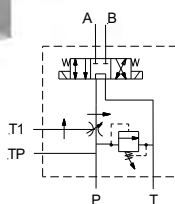
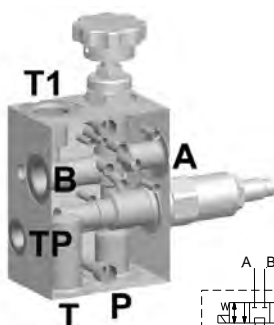
**HS31SFE**



| Cartridge<br>Options                                                                 | Q max<br>l/min | P max<br>bar | Notes                                                                 | Ports<br>BSPP   | Assembly<br>Price NH |
|--------------------------------------------------------------------------------------|----------------|--------------|-----------------------------------------------------------------------|-----------------|----------------------|
| FR10-39E<br>+ SWH-G02-C6<br>+ CV10-20<br>+ SV10-20*<br>(N.H)<br>or SV10-21*<br>(N.L) | 57             | 240          | Two speed by<br>solenoid<br>changeover,<br>38 l/min<br>regulated flow | 1/2"<br>TP-1/4" | \$ 1158.00           |
| HS31SFE manifold only \$ 452.00                                                      |                |              |                                                                       |                 |                      |

- Manifold dimensions, 100 x 100 x 60mm (excluding cartridge)
- SWH-G02-C6 cetop 3 valve included but not shown
- \* DC flying leads coil included, contact Hyspecs for other coils

**HS31SFR**



| Cartridges                         | Q<br>max<br>l/min | P max<br>bar | Notes                                                                    | Ports<br>BSPP   | Assembly<br>Price |
|------------------------------------|-------------------|--------------|--------------------------------------------------------------------------|-----------------|-------------------|
| FR10-39<br>+SWH-G02-C6<br>+RV10-22 | 57                | 240          | Built in relief,<br>bypass can be<br>used,<br>38 l/min<br>regulated flow | 1/2"<br>TP-1/4" | \$ 1047.00        |
| HS31SFR manifold only \$ 452.00    |                   |              |                                                                          |                 |                   |

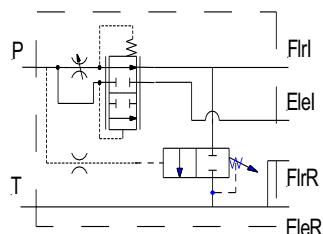
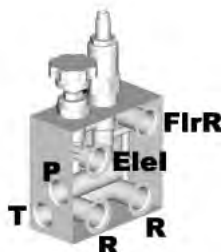
- Manifold dimensions, 100 x 75 x 50mm (excluding cartridge)
- SWH-G02-C6 cetop 3 valve included but not shown
- T1 is bypass flow and can be used for auxiliary functions

## Sequence Flow Controls



### Feed Out Wagon Valves

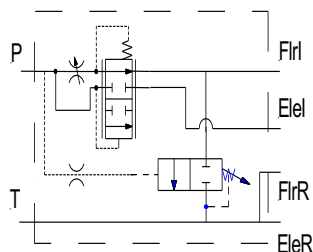
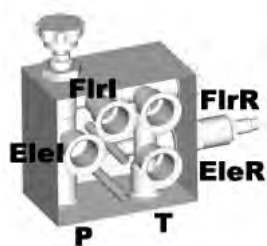
#### HS8768P8B



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes                                           | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------------------------|---------------|-------------------|
| FR10-39E<br>+ PS10-32<br>+ Orifice | 57             | 240          | 38 l/min regulated<br>flow, parallel<br>version | 1/2"          | \$ 588.00         |
| HS8768P8B manifold only \$ 212.00  |                |              |                                                 |               |                   |

- Manifold dimensions, 105 x 100 x 50mm (excluding cartridge)

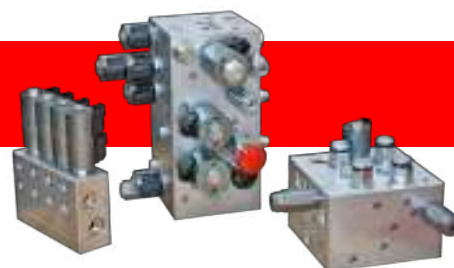
#### HS8769P12B



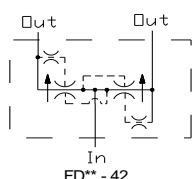
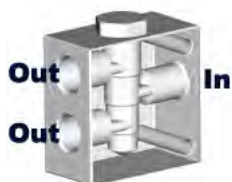
| Cartridges                                      | Q max<br>l/min | P max<br>bar | Notes                                           | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------|----------------|--------------|-------------------------------------------------|---------------|-------------------|
| EV10-S34<br>+ PS08-32<br>+ FR12-33<br>+ Orifice | 100            | 240          | 68 l/min regulated<br>flow, parallel<br>version | 3/4"          | \$ 1290.00        |
| HS8769P12B manifold only \$ 660.00              |                |              |                                                 |               |                   |

- Manifold dimensions, 125 x 115 x 75mm (excluding cartridge)

## Flow Dividers/Combiners



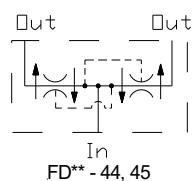
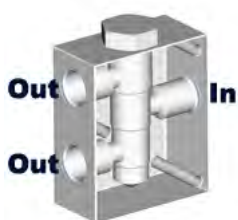
### HS1040P6D or P8D



| Cartridge Options                        | Q max<br>l/min | P max<br>bar | Notes                                                 | Ports<br>BSP | Assembly Price |
|------------------------------------------|----------------|--------------|-------------------------------------------------------|--------------|----------------|
| FD50-44                                  | 38*            | 350**        | Multi-function, high performance                      | 3/8"-1/2"    | \$ 315.00      |
| FD50-45                                  | 45*            | 350**        | Cylinder and motor synchronization in both directions | 3/8"-1/2"    | \$ 332.00      |
| HS1040P6D or P8D manifold only \$ 143.00 |                |              |                                                       |              |                |
| HS1040P8DS steel manifold only \$ 155.00 |                |              |                                                       |              |                |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \* Specify input flow rate for higher accuracy
- \*\* Requires steel block over 240 bar

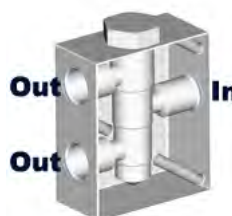
### HS1240P12D



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                                 | Ports<br>BSP | Assembly Price |
|------------------------------------|----------------|--------------|-------------------------------------------------------|--------------|----------------|
| FD52-45                            | 90*            | 350**        | Cylinder and motor synchronization in both directions | 3/4"         | \$ 541.00      |
| HS1240P12D manifold only \$ 241.00 |                |              |                                                       |              |                |

- Manifold dimensions, 130 x 99 x 39mm (excluding cartridge)
- \* Specify input flow rate for higher accuracy
- \*\* Requires steel block over 240 bar - Contact Hyspecs for pricing

### HS1640P12D or 16D



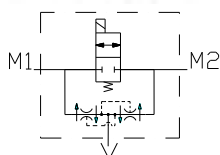
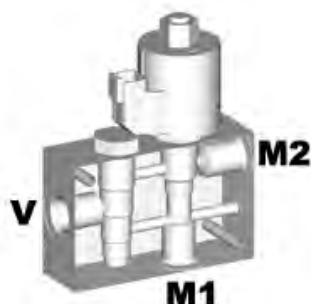
| Cartridge Options                                      | Q max<br>l/min | P max<br>bar | Notes                                                 | Ports<br>BSP | Assembly Price |
|--------------------------------------------------------|----------------|--------------|-------------------------------------------------------|--------------|----------------|
| FD56-45                                                | 150*           | 350**        | Cylinder and motor synchronization in both directions | 3/4"-1"      | \$ 630.00      |
| HS1640P12D or 16D manifold only \$ 264.00 or \$ 277.00 |                |              |                                                       |              |                |

- Manifold dimensions, 120 x 100 x 50mm (excluding cartridge)
- \* Specify input flow rate for higher accuracy
- \*\* Requires steel block over 240 bar - Contact Hyspecs for pricing

## Solenoid Defeatable Valves



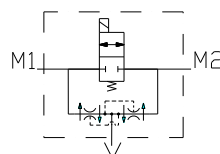
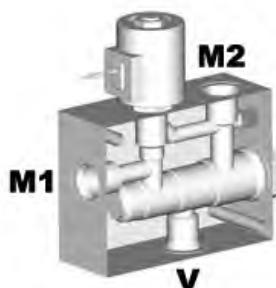
**HS8921P8BE**



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                    | Ports<br>BSPP | Assembly Price |
|------------------------------------|----------------|--------------|--------------------------|---------------|----------------|
| FD50-45<br>+SV10-24**              | 45*            | 207          | Solenoid normally closed | 1/2"          | \$ 641.00      |
| FD50-45<br>+SV10-25**              | 45*            | 207          | Solenoid normally open   | 1/2"          | \$ 654.00      |
| HS8921P8BE manifold only \$ 281.00 |                |              |                          |               |                |

- Manifold dimensions, 115 x 75 x 37mm (excluding cartridge)
- \* Specify input flow rate for higher accuracy
- \*\* DC flying leads coil included, contact Hyspecs for other coils

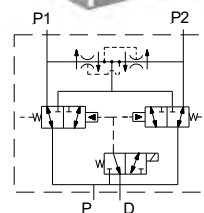
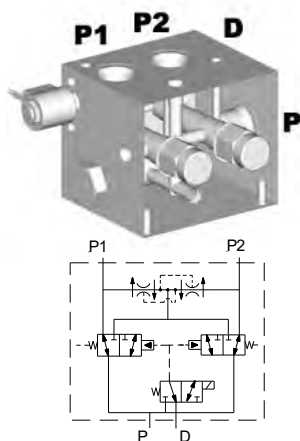
**HS8923P12BE**



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes                    | Ports<br>UNO | Assembly Price |
|-------------------------------------|----------------|--------------|--------------------------|--------------|----------------|
| FD16-45<br>+SV10-24**               | 150*           | 207          | Solenoid normally closed | 3/4"         | \$ 892.00      |
| FD16-45<br>+SV10-25**               | 150*           | 207          | Solenoid normally open   | 3/4"         | \$ 905.00      |
| HS8923P12BE manifold only \$ 355.00 |                |              |                          |              |                |

- Manifold dimensions, 135 x 100 x 50mm (excluding cartridge)
- \* Specify input flow rate for higher accuracy
- \*\* DC flying leads coil included, contact Hyspecs for other coils

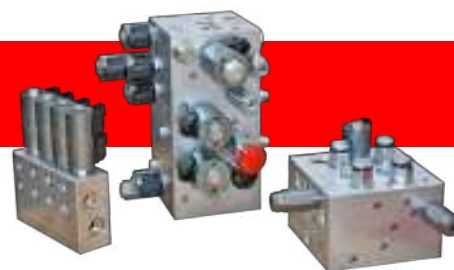
**HS8699U21DE\***



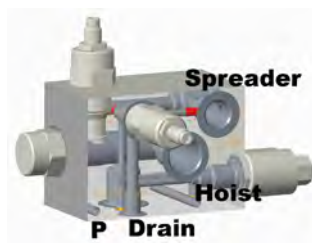
| Cartridges                               | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>UNO | Assembly Price |
|------------------------------------------|----------------|--------------|----------------------|--------------|----------------|
| 2 x PD12-40<br>+ FD16-45<br>+ SV08-30*** | 230**          | 207          | Defeatable both ways | 1 5/16"      | \$ 1733.00     |
| HS8699U21DE manifold only \$ 675.00      |                |              |                      |              |                |

- Manifold dimensions, 145 x 125 x 125mm (excluding cartridge)
- \* Non-common stock item – Contact Hyspecs for lead time
- \*\* Specify input flow rate for higher accuracy
- \*\*\* DC flying leads coil included, contact Hyspecs for other coils

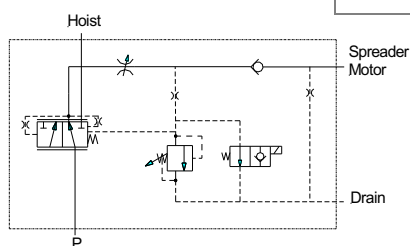
## Hoist & Roller Spreader Control Valves



### HS8303P12ERE

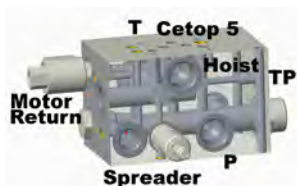


| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                                                                    | Ports<br>BSP                          | Assembly Price |
|-------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------|---------------------------------------|----------------|
| NV10-20A*<br>+ EC12-43<br>+ RV08-20<br>+ SV08-21<br>+ CV10-20-0-N-100** | 110 in         | 207          | Load sense, solenoid start/stop and relief on roller spreader, 50 l/min max for spreader | P - 3/4"<br>S & H - 1/2"<br>Dr - 1/4" | \$ 1317.00     |
| HS8303P12ERE manifold only \$ 658.00                                    |                |              |                                                                                          |                                       |                |

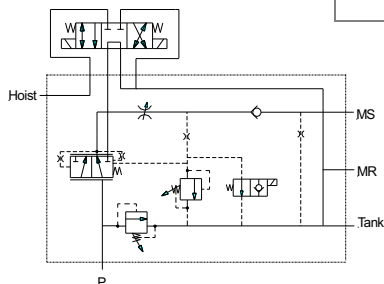


- Manifold dimensions, 125 x 90 x 75mm (excluding cartridge)
- DC flying leads coil included, contact Hyspecs for other coil options
- \* SP10-24 can be used for remote spreader speed control
- \*\* SV10-28 will be used if EC12-43-0-N-160 is used for high flow

### HS8307P16FRE\*



| Cartridge Options                                                                      | Q max<br>l/min | P max<br>bar | Notes                                                                                                                                | Ports<br>BSP                                          | Assembly Price |
|----------------------------------------------------------------------------------------|----------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------|
| NV10-20A**<br>+ EC12-43<br>+ RV10-26<br>+ RV08-20<br>+ SV08-21<br>+ CV10-20-0-N-100*** | 110 in         | 207          | Load sense, solenoid start/stop and relief on roller spreader, 50 l/min max for spreader, Cetop 5 (not included) interface for hoist | P&Hoist - 3/4"<br>MS&MR - 1/2"<br>T - 1"<br>TP - 1/4" | \$ 1658.00     |
| HS8307P16FRE manifold only \$ 870.00                                                   |                |              |                                                                                                                                      |                                                       |                |



- Manifold dimensions, 155 x 100 x 100mm (excluding cartridge)
- DC flying leads coil included, contact Hyspecs for other coil options
- \* Non-common stock item – Contact Hyspecs for lead time
- \*\* SP10-24 can be used for remote spreader speed control
- \*\*\* SV10-28 will be used if EC12-43-0-N-160 is used for high flow

## Contents Section C – Directional Valves

### **C1 Check Valves**

- C1 Single Direct Acting
- C3 Anti-Cavitation

### **C4 Pilot-operated Check Valves**

- C4 Single Pilot Operated
- C6 Double Pilot Operated

### **C8 Shuttle Valves**

- C8 Ball Shuttle Valves
- C9 Brake Release Valves

### **C10 External Pilot Operated**

- C10 2 Way, 2 Position
- C11 2 Way or 3 Way, 2 Position
- C13 3 Way or 4 Way, 2 or 3 Position
- C14 Parallel-Series Valves

### **C15 Manually Operated - Rotary**

- C15 3 Way, 2 or 3 Position

### **C16 Manually Operated – Push / Pull**

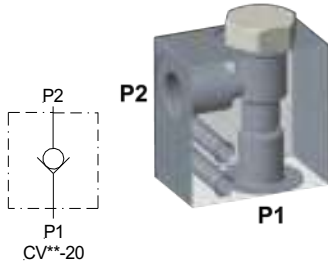
- C16 2 Way, 2 Position
- C16 3 Way, 2 Position
- C17 4 Way, 2 Position
- C17 4 Way, 3 Position

## Check Valves



### Single Direct Acting

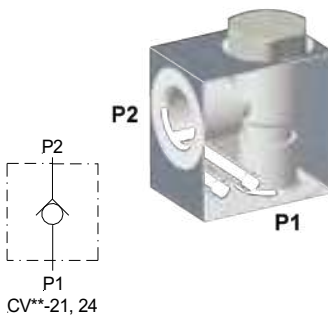
#### HS0820P4\_B or P6\_B



| Cartridge Options                         | Q max<br>l/min | P max<br>bar | Notes            | Ports<br>BSPP | Assembly Price |
|-------------------------------------------|----------------|--------------|------------------|---------------|----------------|
| CV08-20                                   | 30             | 240          | Guided           | 1/4"-3/8"     | \$ 123.00      |
| CV08-21                                   | 30             | 240          | Guided, Reversed | 1/4"-3/8"     | \$ 138.00      |
| HS0820P4_B or P6_B manifold only \$ 78.00 |                |              |                  |               |                |

- Manifold dimensions, 50 x 50 x 32mm (excluding cartridge)

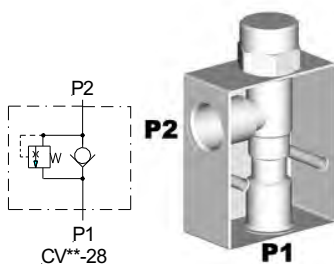
#### HS1020P6\_B or P8\_B



| Cartridge Options                                  | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly Price |
|----------------------------------------------------|----------------|--------------|---------------------|---------------|----------------|
| CV10-20                                            | 75             | 240          | Guided              | 3/8"-1/2"     | \$ 136.00      |
| CV50-20                                            | 75             | 350*         | Guided, HP          | 3/8"-1/2"     | \$ 166.00      |
| CV10-24                                            | 56             | 240          | Guided, Reversed    | 3/8"-1/2"     | \$ 146.00      |
| CV10-28                                            | 45             | 240          | With thermal relief | 3/8"-1/2"     | \$ 186.00      |
| HS1020P6_B or P8_B manifold only \$ 86.00          |                |              |                     |               |                |
| HS1020P6S_B or P8S_B steel manifold only \$ 132.00 |                |              |                     |               |                |

- Manifold dimensions, 50 x 50 x 35mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS1220P12



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes            | Ports<br>BSPP | Assembly Price |
|-----------------------------------|----------------|--------------|------------------|---------------|----------------|
| CV12-20                           | 95             | 240          | Guided           | 3/4"          | \$ 255.00      |
| CV12-21                           | 113            | 240          | Guided, Reversed | 3/4"          | \$ 265.00      |
| HS1220P12 manifold only \$ 155.00 |                |              |                  |               |                |

- Manifold dimensions, 100 x 75 x 50mm (excluding cartridge)

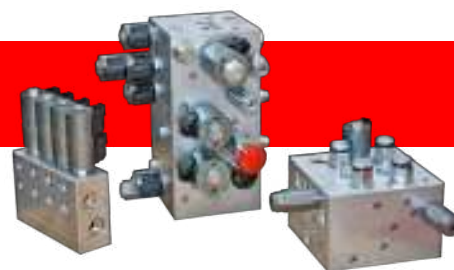
#### HHS1220P12S



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes         | Ports<br>BSPP | Assembly Price |
|-------------------------------------|----------------|--------------|---------------|---------------|----------------|
| HCV12-20                            | 95             | 350          | HyPerformance | 3/4"          | \$ 295.00      |
| HHS1220P12S manifold only \$ 175.00 |                |              |               |               |                |

- Manifold dimensions, 100 x 75 x 50mm (excluding cartridge)
- Steel manifold

## Check Valves



### Single Direct Acting

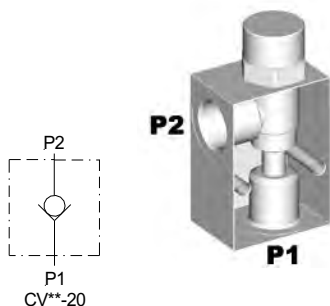
#### HS1620P12 or P16



| Cartridge                                             | Q max<br>l/min | P max<br>bar | Notes  | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------------|----------------|--------------|--------|---------------|-------------------|
| CV16-20                                               | 150            | 240          | Guided | 3/4"-1"       | \$ 332.00         |
| HS1620P12 or P16 manifold only \$ 189.00 or \$ 207.00 |                |              |        |               |                   |

- Manifold dimensions, 100 x 75 x 50mm (excluding cartridge)

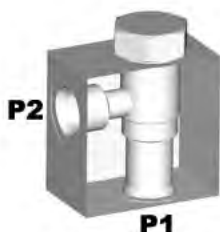
#### HHS1620P16S



| Cartridge                 | Q max<br>l/min | P max<br>bar | Notes         | Ports<br>BSPP | Assembly<br>Price |
|---------------------------|----------------|--------------|---------------|---------------|-------------------|
| HCV16-20                  | 150            | 350          | HyPerformance | 1"            | \$420.00          |
| HHS1620P16S Manifold only |                |              |               | \$250.00      |                   |

- Manifold dimensions, 100 x 75 x 50mm (excluding cartridge)
- Steel manifold

#### HS4220U21

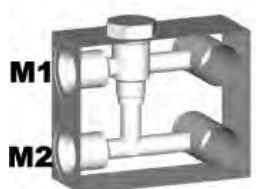


| Cartridge                         | Q max<br>l/min | P max<br>bar | Notes  | Ports<br>UNO | Assembly<br>Price |
|-----------------------------------|----------------|--------------|--------|--------------|-------------------|
| CV42-M20                          | 378            | 240          | Guided | 1 5/16"      | \$ 450.00         |
| HS4220U21 manifold only \$ 235.00 |                |              |        |              |                   |

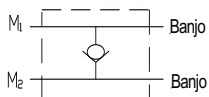
- Manifold dimensions, 100 x 100 x 60mm (excluding cartridge)

### Anti-Cavitation – Banjo Bolt Motor Mounted

#### HS7001U14A (H, S & T Series)



| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes                              | Ports<br>UNO | Assembly<br>Price |
|------------------------------------|----------------|--------------|------------------------------------|--------------|-------------------|
| CV10-20                            | 75             | 190          | 1.8" Centre, 7/8" bolts BB-14L x 2 | 7/8"         | \$ 326.00         |
| HS7001U14A manifold only \$ 184.00 |                |              |                                    |              |                   |



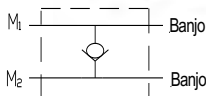
- Manifold dimensions, 90 x 80 x 39mm (excluding cartridge)

## Check Valves



### Anti-Cavitation – Banjo Bolt Motor Mounted

#### HS7013U14C (2000 Series)



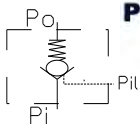
| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes                                        | Ports<br>UNO | Assembly<br>Price |
|------------------------------------|----------------|--------------|----------------------------------------------|--------------|-------------------|
| CV10-20                            | 75             | 240          | Charlynn 2000 series 7/8" banjo bolts BB-14L | 7/8"         | \$ 342.00         |
| HS7013U14C manifold only \$ 200.00 |                |              |                                              |              |                   |

- Manifold dimensions, 80 x 75 x 39mm (excluding cartridge)

### Pilot-operated Check Valves

#### Single Pilot Operated

##### HHS0830P6S



| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|--------------------|---------------|-------------------|
| HPC08-30                           | 38             | 350          | Ratio 3:1, 3-ports | 3/8"          | \$ 265.00         |
| HHS0830P6S manifold only \$ 175.00 |                |              |                    |               |                   |

- Manifold dimensions 75 x 65 x 37mm (excluding cartridge)
- \* Steel block

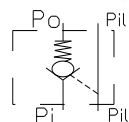
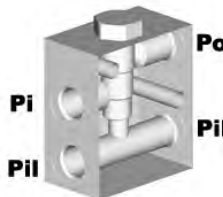
##### HS0830P4 or P6



| Cartridge                              | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|--------------------|---------------|-------------------|
| PC08-30                                | 18             | 240          | Ratio 3:1, 3-ports | 1/4"-3/8"     | \$ 217.00         |
| HS0830P4 or P6 manifold only \$ 127.00 |                |              |                    |               |                   |

- Manifold dimensions 75 x 60 x 37mm for P4, 75 x 65 x 37mm for P6 (excluding cartridge)

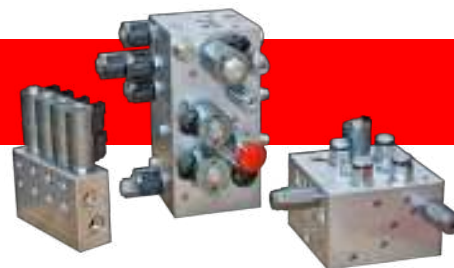
##### HS0830P6N



| Cartridge                         | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|--------------------|---------------|-------------------|
| PC08-30                           | 18             | 240          | Ratio 3:1, 4-ports | 3/8"          | \$ 270.00         |
| HS0830P6N manifold only \$ 180.00 |                |              |                    |               |                   |

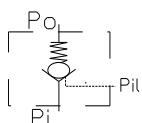
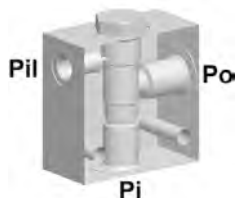
- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

## Pilot Operated Check Valves



### Single Pilot Operated

#### HS1025P8 or P12



| Cartridge                                                                                 | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------------------------------------------------|----------------|--------------|--------------------|---------------|-------------------|
| POCI-10                                                                                   | 76             | 350*         | Ratio 3:1, 3-ports | 1/2"-3/4"     | \$ 318.00         |
| HS1025P8 manifold only \$ 178.00, P12 \$184.00<br>HS1025P8S steel manifold only \$ 218.00 |                |              |                    |               |                   |

- Manifold dimensions 75 (80 for P12) x 75 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar

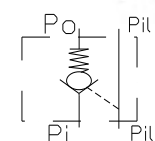
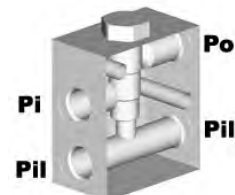
#### HS1030P6 or P8



| Cartridge<br>Options                   | Q max<br>l/min | P max<br>bar | Notes                 | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|-----------------------|---------------|-------------------|
| PC10-30                                | 22             | 240          | Ratio 4:1, 3-ports    | 3/8"-1/2"     | \$ 232.00         |
| PC10-32                                | 30             | 240          | Ratio 2:1, 3-ports    | 3/8"-1/2"     | \$ 267.00         |
| PC10-38                                | 45             | 240          | Ratio 3:1, thermal RV | 3/8"-1/2"     | \$ 305.00         |
| HS1030P6 or P8 manifold only \$ 132.00 |                |              |                       |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

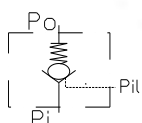
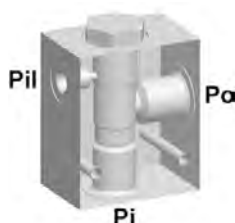
#### HS1030P6N or P8N



| Cartridge<br>Options                     | Q max<br>l/min | P max<br>bar | Notes                 | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------|----------------|--------------|-----------------------|---------------|-------------------|
| PC10-30                                  | 22             | 240          | Ratio 4:1, 4-ports    | 3/8"-1/2"     | \$ 280.00         |
| PC10-32                                  | 30             | 240          | Ratio 2:1, 4-ports    | 3/8"-1/2"     | \$ 285.00         |
| PC10-38                                  | 45             | 240          | Ratio 3:1, thermal RV | 3/8"-1/2"     | \$ 353.00         |
| HS1030P6N or P8N manifold only \$ 180.00 |                |              |                       |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

#### HS1225P12



| Cartridge                                                                     | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------------------------------------|----------------|--------------|--------------------|---------------|-------------------|
| POCI-12                                                                       | 132            | 350*         | Ratio 3:1, 3-ports | 3/4"          | \$ 423.00         |
| HS1225P12 manifold only \$ 223.00<br>HS1225P12S steel manifold only \$ 338.00 |                |              |                    |               |                   |

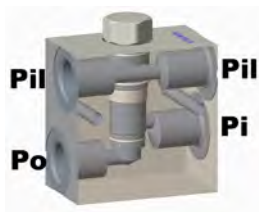
- Manifold dimensions 90 x 75 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar

## Pilot Operated Check Valves



### Single Pilot Operated

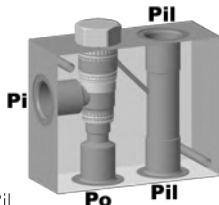
#### HS4504P8A\_B or P8A\_B



| Cartridge                                    | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------------|----------------|--------------|----------------|---------------|-------------------|
| CKCD-XAN                                     | 60             | 350*         | Ratio 3:1 3/8" | 1/2"          | \$ 297.00         |
| HS4504P6A_B or P8A_B manifold only \$ 147.00 |                |              |                |               |                   |
| HS4504P8AS_B steel manifold only \$ 220.00   |                |              |                |               |                   |

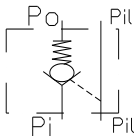
- Manifold dimensions, 75.5 x 75 x 45mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS4502P12A

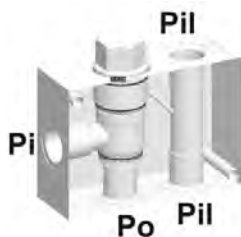


| Cartridge                                 | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------|----------------|--------------|-----------|---------------|-------------------|
| CKED-XAN                                  | 120            | 350*         | Ratio 3:1 | 3/4"          | \$ 470.00         |
| HS4502P12A manifold only \$ 290.00        |                |              |           |               |                   |
| HS4502P12AS steel manifold only \$ 330.00 |                |              |           |               |                   |

- Manifold dimensions, 125 x 100 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar



#### HS4503P12A



| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-----------|---------------|-------------------|
| CKGD-XAN                           | 240            | 350*         | Ratio 3:1 | 3/4"          | \$ 560.00         |
| HS4503P12A manifold only \$ 330.00 |                |              |           |               |                   |

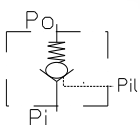
- Manifold dimensions, 140 x 100 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs for pricing*

#### HS4506P16A



| Cartridge                                 | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------|----------------|--------------|-----------|---------------|-------------------|
| CKID-XAN                                  | 480            | 350*         | Ratio 3:1 | 1", 1/4" Pil  | \$ 935.00         |
| HS4506P16A manifold only \$ 395.00        |                |              |           |               |                   |
| HS4506P16AS steel manifold only \$ 575.00 |                |              |           |               |                   |

- Manifold dimensions, 150 x 100 x 75mm (excluding cartridge)
- \* Requires steel block over 240 bar

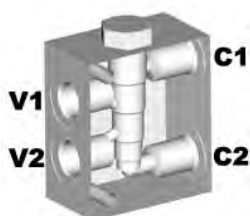


## Pilot Operated Check Valves



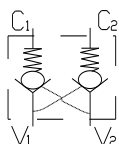
### Double Pilot Operated

#### HS0840P6-2

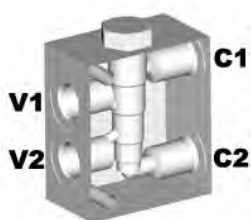


| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-----------|---------------|-------------------|
| DC08-40                            | 19             | 240          | Ratio 3:1 | 3/8"          | \$ 335.00         |
| HS0840P6-2 manifold only \$ 160.00 |                |              |           |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)



#### HS1040P6-2



| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-----------|---------------|-------------------|
| DC10-40                            | 30             | 240          | Ratio 3:1 | 3/8"          | \$ 341.00         |
| HS1040P6-2 manifold only \$ 161.00 |                |              |           |               |                   |

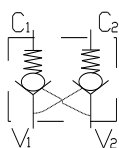
- Manifold dimensions, 90 x 75 x 37mm (excluding cartridge)

#### HS9110P8B

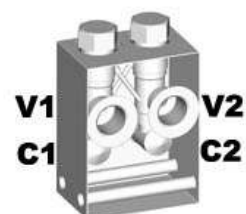


| Cartridge<br>Options              | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|-----------|---------------|-------------------|
| POCI-10 x 2                       | 76             | 350*         | Ratio 3:1 | 1/2"          | \$ 568.00         |
| HS9110P8B manifold only \$ 288.00 |                |              |           |               |                   |

- Manifold dimensions, 100 x 75 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – contact Hyspecs for pricing



#### HS4605P8B



| Cartridges                               | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------|----------------|--------------|-----------|---------------|-------------------|
| CKCD x 2                                 | 60             | 350*         | Ratio 3:1 | 1/2"          | \$ 489.00         |
| HS4605P8B manifold only \$ 189.00        |                |              |           |               |                   |
| HS4605P8BS steel manifold only \$ 285.00 |                |              |           |               |                   |

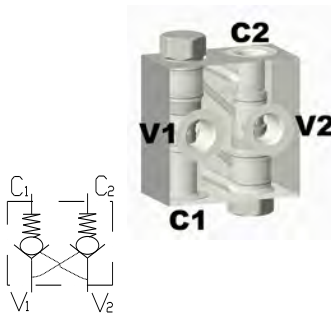
- Manifold dimensions, 100 x 75 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar

## Pilot Operated Check Valves



### Double Pilot Operated

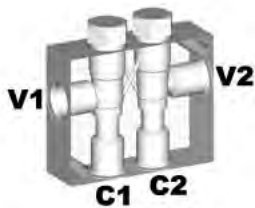
#### HS4611P6B or P8B



| Cartridges                              | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------------|----------------|--------------|-----------|---------------|-------------------|
| CKCD x 2                                | 60             | 350*         | Ratio 3:1 | 1/2"          | \$ 480.00         |
| HS4611P6B or P8B manifold only \$180.00 |                |              |           |               |                   |

- Manifold dimensions, 75 x 75 x 40mm for HS4611P6B and 80 x 75 x 50mm for HS4611P8B (excluding cartridges)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

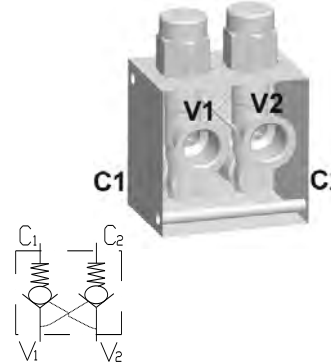
#### HS4602P12B



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-----------|---------------|-------------------|
| CKED x 2                           | 120            | 350*         | Ratio 3:1 | 3/4"          | \$ 660.00         |
| HS4602P12B manifold only \$ 300.00 |                |              |           |               |                   |

- Manifold dimensions, 120 x 99 x 39mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

#### HS4607P12B



| Cartridges                                | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------|----------------|--------------|-----------|---------------|-------------------|
| POCI-12 x 2                               | 132            | 350*         | Ratio 3:1 | 3/4"          | \$ 670.00         |
| HS4607P12B manifold only \$ 270.00        |                |              |           |               |                   |
| HS4607P12BS steel manifold only \$ 452.00 |                |              |           |               |                   |

- Manifold dimensions, 100 x 100 x 75mm (excluding cartridge)
- \* Requires steel block over 240 bar

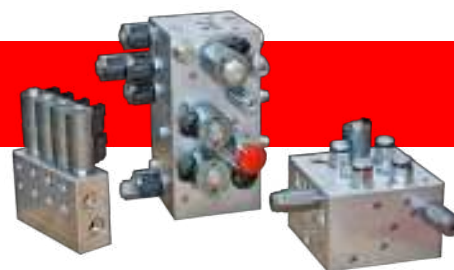
#### HS4603P16B



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes     | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-----------|---------------|-------------------|
| CKGD x 2                           | 240            | 350*         | Ratio 3:1 | 1"            | \$ 956.00         |
| HS4603P16B manifold only \$ 483.00 |                |              |           |               |                   |

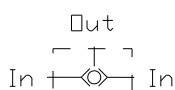
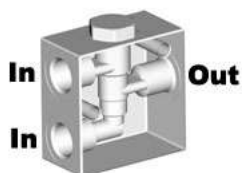
- Manifold dimensions, 165 x 125 x 60mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

## Shuttle Valves



### Load Shuttle Valves

#### HS0830P4 or P6



| Cartridge                                      | Q max<br>l/min | P max<br>bar | Notes         | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------|----------------|--------------|---------------|---------------|-------------------|
| LS08-30                                        | 19             | 240          | Ball Type     | 1/4"-3/8"     | \$ 196.00         |
| BDSV-08                                        | 11             | 350*         | Ball Type, HP | 1/4"-3/8"     | \$ 187.00         |
| HS0830P4 or P6 manifold only \$ 127.00         |                |              |               |               |                   |
| HS0830P4S or P6S steel manifold only \$ 183.00 |                |              |               |               |                   |

- Manifold dimensions, 75 x 60 x 37mm for P4, 75 x 65 x 37 for P6 (excluding cartridge)
- \* Requires steel block over 240 bar

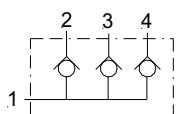
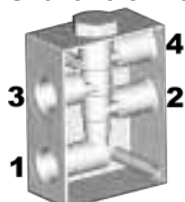
#### HS1030P6 or P8



| Cartridge Options                                           | Q max<br>l/min | P max<br>bar | Notes         | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------------------|----------------|--------------|---------------|---------------|-------------------|
| LS10-30                                                     | 30             | 240          | Ball Type     | 3/8"-1/2"     | \$ 201.00         |
| LS50-30                                                     | 30             | 350*         | Ball Type, HP | 3/8"-1/2"     | \$ 222.00         |
| HS1030P6 or P8 manifold only \$ 132.00                      |                |              |               |               |                   |
| HS1030P6S or P8S steel manifold only \$ 175.00 or \$ 212.00 |                |              |               |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar

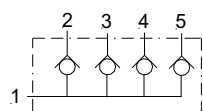
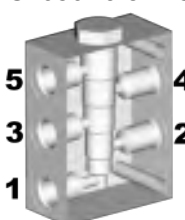
#### HS1040P6 or P8



| Cartridge                              | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|----------------------|---------------|-------------------|
| LS10-40                                | 1.89           | 240          | Load shuttle network | 3/8"-1/2"     | \$ 259.00         |
| HS1040P6 or P8 manifold only \$ 150.00 |                |              |                      |               |                   |

- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)

#### HS1050P6 or P8



| Cartridge                              | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|----------------------|---------------|-------------------|
| LS10-50                                | 1.89           | 240          | Load shuttle network | 3/8"-1/2"     | \$ 395.00         |
| HS1050P6 or P8 manifold only \$ 252.00 |                |              |                      |               |                   |

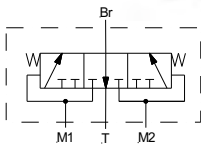
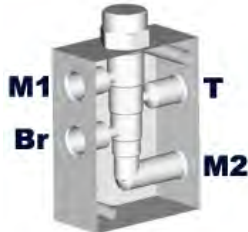
- Manifold dimensions, 99 x 75 x 39mm (excluding cartridge)

## Shuttle Valves



### Brake Release Valves

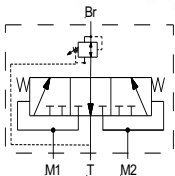
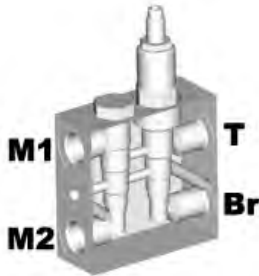
#### HS1040P6 or P8



| Cartridge                              | Q max<br>l/min | P max<br>bar | Notes      | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|------------|---------------|-------------------|
| BV10-40                                | 8              | 240          | Spool type | 3/8"-1/2"     | \$ 357.00         |
| HS1040P6 or P8 manifold only \$ 150.00 |                |              |            |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

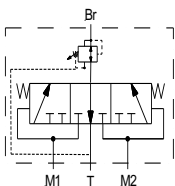
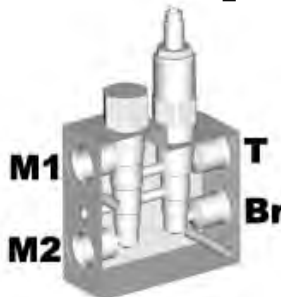
#### HS9201P8P



| Cartridges                        | Q max<br>l/min | P max<br>bar | Notes                                                           | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|-----------------------------------------------------------------|---------------|-------------------|
| BV10-40<br>+ PR10-32              | 8              | 207          | Designed for brake<br>system operated<br>on reduced<br>pressure | 1/2"          | \$ 754.00         |
| HS9201P8P manifold only \$ 395.00 |                |              |                                                                 |               |                   |

- Manifold dimensions, 100 x 100 x 39mm (excluding cartridge)

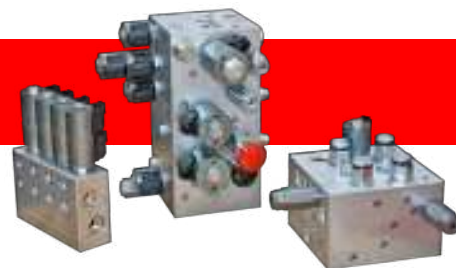
#### HS9210P8PS\_B



| Cartridges                           | Q max<br>l/min | P max<br>bar | Notes       | Ports<br>BSPP | Assembly<br>Price |
|--------------------------------------|----------------|--------------|-------------|---------------|-------------------|
| HVB10-40<br>+ PR50-36                | 8              | 350          | Steel block | 1/2"          | \$ 913.00         |
| HS9210P8PS_B manifold only \$ 452.00 |                |              |             |               |                   |

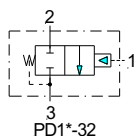
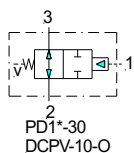
- Manifold dimensions, 100 x 100 x 39mm (excluding cartridge)

## External Pilot Operated



### 2 Way, 2 Position

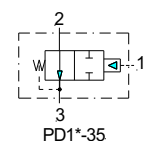
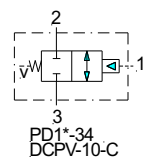
#### HS1030P6 or P8



| Cartridge Options                                           | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------------------|----------------|--------------|----------------------|---------------|-------------------|
| PD10-30                                                     | 38             | 240          | N.O. & external vent | 3/8"-1/2"     | \$ 284.00         |
| PD10-32                                                     | 38             | 240          | N.C. & internal vent | 3/8"-1/2"     | \$ 284.00         |
| PD10-34                                                     | 38             | 240          | N.C. & external vent | 3/8"-1/2"     | \$ 284.00         |
| PD10-35                                                     | 38             | 240          | N.O. & internal vent | 3/8"-1/2"     | \$ 270.00         |
| DCPV-10-O                                                   | 38             | 350*         | N.O. & external vent | 3/8"-1/2"     | \$ 312.00         |
| DCPV-10-C                                                   | 38             | 350*         | N.C. & internal vent | 3/8"-1/2"     | \$ 312.00         |
| HS1030P6 or P8 manifold only \$ 132.00                      |                |              |                      |               |                   |
| HS1030P6S or P8S steel manifold only \$ 175.00 or \$ 212.00 |                |              |                      |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS1230P12



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|----------------------|---------------|-------------------|
| PD12-30                           | 115            | 240          | N.O. & external vent | 3/4"          | \$ 468.00         |
| PD12-32                           | 115            | 240          | N.C. & internal vent | 3/4"          | \$ 468.00         |
| PD12-34                           | 115            | 240          | N.C. & external vent | 3/4"          | \$ 468.00         |
| PD12-35                           | 115            | 240          | N.O. & internal vent | 3/4"          | \$ 456.00         |
| HS1230P12 manifold only \$ 241.00 |                |              |                      |               |                   |

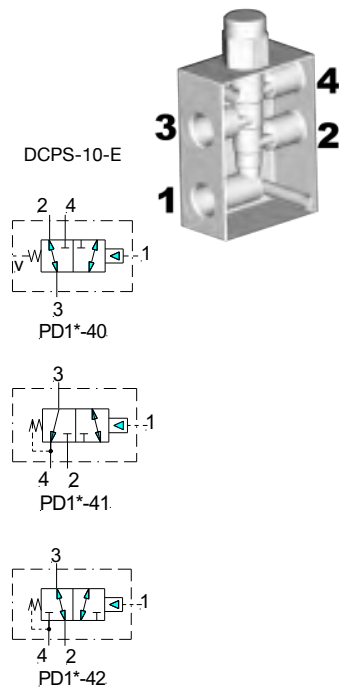
- Manifold dimensions, 99 x 75 x 39mm (excluding cartridge)

## External Pilot Operated



### 2 Way Or 3 Way, 2 Position

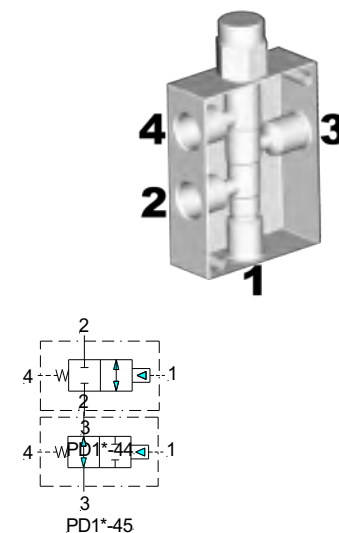
#### HS1040P6 or P8



| Cartridge Options                                                                        | Q max<br>l/min | P max<br>bar | Notes                 | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------------------------------------------------|----------------|--------------|-----------------------|---------------|-------------------|
| PD10-40                                                                                  | 38             | 240          | 3-way & external vent | 3/8"-1/2"     | \$ 321.00         |
| PD10-41                                                                                  | 45             | 240          | 3-way & internal vent | 3/8"-1/2"     | \$ 302.00         |
| PD10-42                                                                                  | 38             | 240          | 3-way & internal vent | 3/8"-1/2"     | \$ 302.00         |
| PD10-44                                                                                  | 34             | 240          | 2-way, N.C. ext. vent | 3/8"-1/2"     | \$ 302.00         |
| PD10-45                                                                                  | 45             | 240          | 2-way, N.O. ext. vent | 3/8"-1/2"     | \$ 302.00         |
| DCPS-10-E                                                                                | 46             | 350*         | 3-way & external vent | 3/8"-1/2"     | \$ 330.00         |
| HS1040P6 or P8 manifold only \$ 150.00<br>HS1040P6S or P8S steel manifold only \$ 185.00 |                |              |                       |               |                   |

- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)
- \* Requires steel block over 240 bar

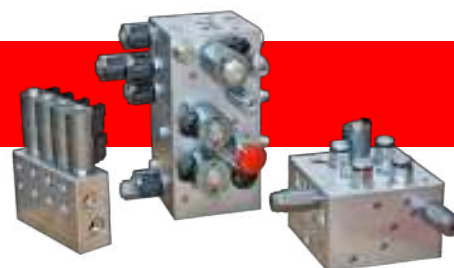
#### HS1240P12



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                 | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|-----------------------|---------------|-------------------|
| PD12-40                           | 115            | 240          | 3-way & external vent | 3/4"          | \$ 509.00         |
| PD12-41                           | 115            | 240          | 3-way & internal vent | 3/4"          | \$ 509.00         |
| PD12-42                           | 115            | 240          | 3-way & internal vent | 3/4"          | \$ 509.00         |
| PD12-44                           | 115            | 240          | 2-way, N.C. ext. vent | 3/4"          | \$ 509.00         |
| PD12-45                           | 115            | 240          | 2-way, N.O. ext. vent | 3/4"          | \$ 509.00         |
| HS1240P12 manifold only \$ 252.00 |                |              |                       |               |                   |

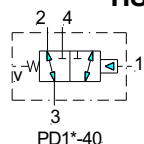
- Manifold dimensions, 130 x 99 x 39mm (excluding cartridge)

## External Pilot Operated

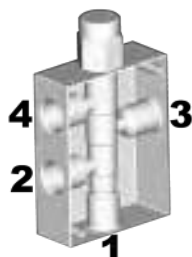
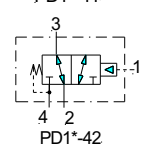
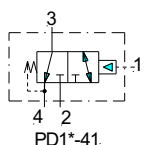


### 2 Way or 3 Way, 2 Position

#### HS1640P12 or P16



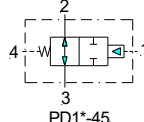
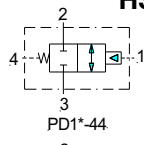
DCPS-16-E



| Cartridge Options                        | Q max<br>l/min | P max<br>bar | Notes                 | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------|----------------|--------------|-----------------------|---------------|-------------------|
| PD16-40                                  | 170            | 240          | 3-way & external vent | 3/4"-1"       | \$ 590.00         |
| PD16-41                                  | 170            | 240          | 3-way & internal vent | 3/4"-1"       | \$ 590.00         |
| PD16-42                                  | 170            | 240          | 3-way & internal vent | 3/4"-1"       | \$ 590.00         |
| PD16-44                                  | 170            | 240          | 2-way, N.C. ext. vent | 3/4"-1"       | \$ 590.00         |
| PD16-45                                  | 170            | 240          | 2-way, N.O. ext. vent | 3/4"-1"       | \$ 590.00         |
| DCPS-16-E                                | 136            | 350*         | 3-way & external vent | 3/4"-1"       | \$ 646.00         |
| HS1640P12 or P16 manifold only \$ 286.00 |                |              |                       |               |                   |

- Manifold dimensions, 135 x 100 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

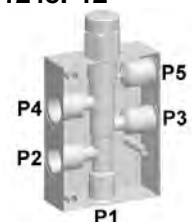
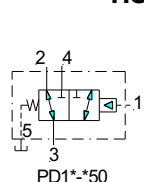
#### HS1050P6



| Cartridge Options                | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------|----------------|--------------|---------------------|---------------|-------------------|
| PD10-50                          | 30             | 240          | 3-way & ported vent | 1/2"          | \$ 467.00         |
| HS1050P6 manifold only \$ 252.00 |                |              |                     |               |                   |

- Manifold dimensions, 100 x 75 x 39mm (excluding cartridge)

#### HS1245P12

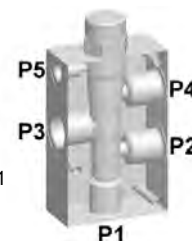
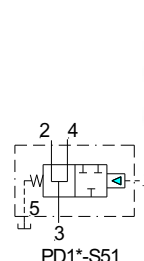


| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|---------------------|---------------|-------------------|
| PD12-S50                          | 95             | 240          | 3-way & ported vent | 3/4"          | \$ 610.00         |
| HS1245P12 manifold only \$ 310.00 |                |              |                     |               |                   |

- Manifold dimensions, 139 x 99 x 39mm (excluding cartridge)

### 3 Way, 2 Position

#### HS1645P16\*



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|---------------------|---------------|-------------------|
| PD16-S50*                         | 170            | 240          | 3-way & ported vent | 1", 1/4" P5   | \$ 725.00         |
| PD16-S51*                         | 151            | 240          | 3-way & all N.O.    | 1", 1/4" P5   | \$ 800.00         |
| HS1645P16 manifold only \$ 405.00 |                |              |                     |               |                   |

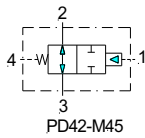
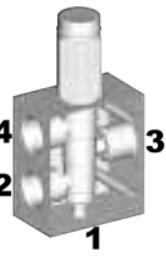
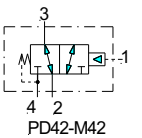
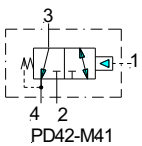
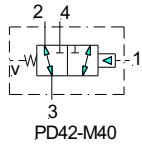
- Manifold dimensions, 160 x 100 x 50mm (excluding cartridge)
- \* Non-common stock item – *Contact Hyspecs* for lead time

## External Pilot Operated



### 3 Way Or 4 Way, 2 Position

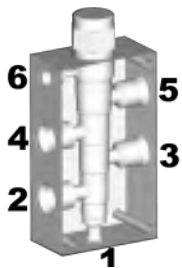
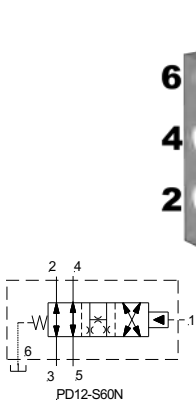
#### HS4240P20S



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                               | Ports<br>BSPP      | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------------|--------------------|-------------------|
| PD42-M40                           | 265            | 350          | 3 way, 2 position,<br>external vent | 1 1/4"<br>1/4" Pil | \$ 1357.00        |
| PD42-M41*                          | 265            | 350          | 3 way, 2 position,<br>internal vent | 1 1/4"<br>1/4" Pil | \$ 1333.00        |
| PD42-M42*                          | 265            | 350          | 3 way, 2 position,<br>internal vent | 1 1/4"<br>1/4" Pil | \$ 1333.00        |
| PD42-M45*                          | 265            | 350          | 3 way, 2 position,<br>external vent | 1 1/4"<br>1/4" Pil | \$ 1333.00        |
| HS4240P20S manifold only \$ 733.00 |                |              |                                     |                    |                   |

- Manifold dimensions, 145 x 125 x 75mm (excluding cartridge)
- Steel manifold
- \* Non-common stock item – *Contact Hyspecs* for lead time

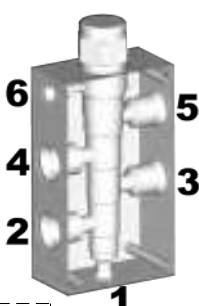
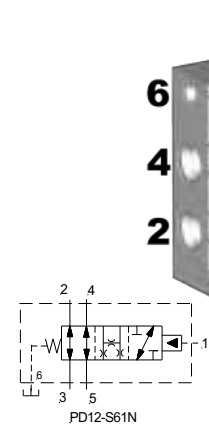
#### HS1255U17\*



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>UNO               | Assembly<br>Price |
|-----------------------------------|----------------|--------------|--------------------------------------|----------------------------|-------------------|
| PD12-S60N                         | 56             | 240          | 4 way, 2 position,<br>external drain | 1 1/16"<br>1/4" T &<br>Pil | \$ 635.00         |
| PD12-S61N*                        | 56             | 240          | 4 way, 2 position,<br>external drain | 1 1/16"<br>1/4" T &<br>Pil | \$ 635.00         |
| HS1255U17 manifold only \$ 360.00 |                |              |                                      |                            |                   |

- Manifold dimensions, 160 x 100 x 50mm (excluding cartridge)
- \* Non-common stock item – *Contact Hyspecs* for lead time

#### HS1655U17



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>UNO | Assembly<br>Price |
|-----------------------------------|----------------|--------------|--------------------------------------|--------------|-------------------|
| PD16-S60N                         | 151            | 240          | 4 way, 2 position,<br>external drain | 1 1/16"      | \$ 745.00         |
| PD16-S61N                         | 151            | 240          | 4 way, 2 position,<br>external drain | 1 1/16"      | \$ 745.00         |
| HS1655U17 manifold only \$ 436.00 |                |              |                                      |              |                   |

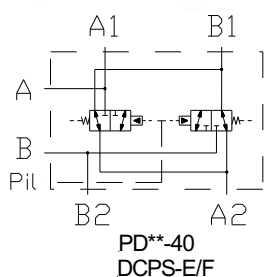
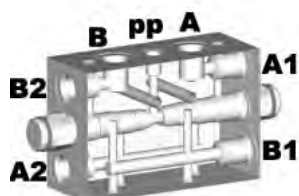
- Manifold dimensions, 177 x 100 x 55mm (excluding cartridge)

## External Pilot Operated



### Parallel-Series Valves

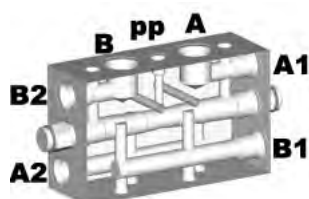
#### HS9380P8B



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                                       | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|---------------------------------------------|---------------|-------------------|
| PD10-40 x 2                       | 38             | 240          | Series-parallel, 1/4" pilot port            | 1/2" PP 1/4"  | \$ 925.00         |
| DCPS-10-E x 2                     | 46             | 350*         | Series-parallel, 1/4" pp open on changeover | 1/2" PP 1/4"  | \$ 943.00         |
| HS9380P8B manifold only \$ 583.00 |                |              |                                             |               |                   |

- Manifold dimensions, 150 x 100 x 60mm (excluding cartridge)
- \*Requires steel block over 240 bar – contact Hyspecs for pricing

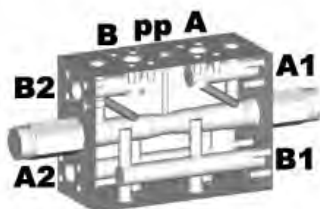
#### HS9381U17B



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                            | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|----------------------------------|---------------|-------------------|
| PD12-40 x 2                        | 115            | 240          | Series-parallel, 1/4" pilot port | 3/4" PP 1/4"  | \$ 1150.00        |
| HS9381U17B manifold only \$ 636.00 |                |              |                                  |               |                   |

- Manifold dimensions, 210 x 126 x 75mm (excluding cartridge)

#### HS9382T20BS



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                             | Ports<br>SAE                | Assembly<br>Price |
|-----------------------------------|----------------|--------------|-----------------------------------|-----------------------------|-------------------|
| PD42-M40 x2                       | 265            | 350          | Series-parallel, 3/8" pilot port, | 1 1/4" code 62 PP 1/4" BSPP | \$ 2963.00        |
| HS9382BS manifold only \$ 1715.00 |                |              |                                   |                             |                   |

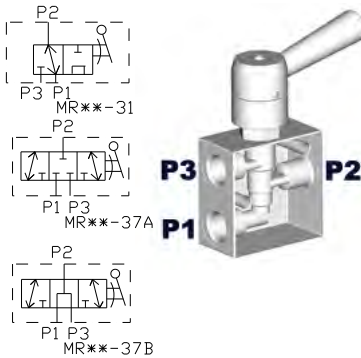
- Manifold dimensions, 280 x 200 x 126mm (excluding cartridge)
- Steel manifold

## Manually Operated - Rotary



### 3 Way, 2 Or 3 Position

#### HS1030P6 or P8

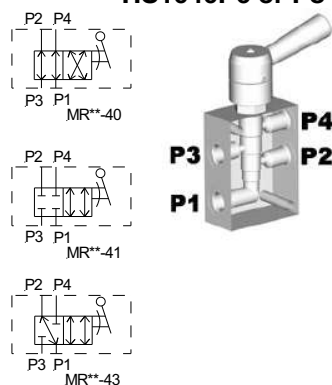


| Cartridge Options                      | Q<br>max<br>l/min | P max<br>bar | Notes                               | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|-------------------|--------------|-------------------------------------|---------------|-------------------|
| MR10-31                                | 38                | 240          | 3-way, 2-position                   | 3/8"-1/2"     | \$ 442.00         |
| MR10-37A                               | 38                | 240          | 3-way, 3-position,<br>closed centre | 3/8"-1/2"     | \$ 486.00         |
| MR10-37B                               | 38                | 240          | 3-way, 3-position,<br>open centre   | 3/8"-1/2"     | \$ 486.00         |
| HS1030P6 or P8 manifold only \$ 132.00 |                   |              |                                     |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

### 4 Way, 2 Position

#### HS1040P6 or P8

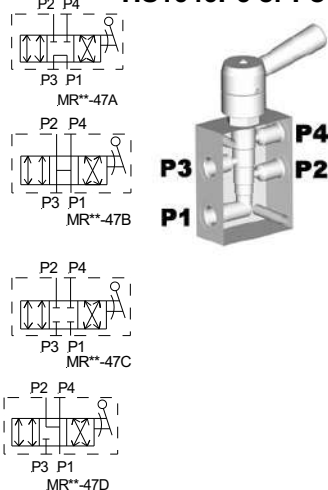


| Cartridge Options                      | Q<br>max<br>l/min | P max<br>bar | Notes                                 | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|-------------------|--------------|---------------------------------------|---------------|-------------------|
| MR10-40                                | 11                | 240          | 4-way, 2-position,<br>normally open   | 3/8"-1/2"     | \$ 529.00         |
| MR10-41                                | 11                | 240          | 4-way, 2-position,<br>normally closed | 3/8"-1/2"     | \$ 540.00         |
| MR10-43                                | 11                | 240          | 4-way, 2 position                     | 3/8"-1/2"     | \$ 540.00         |
| HS1040P6 or P8 manifold only \$ 150.00 |                   |              |                                       |               |                   |

- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)

### 4 Way, 3 Position

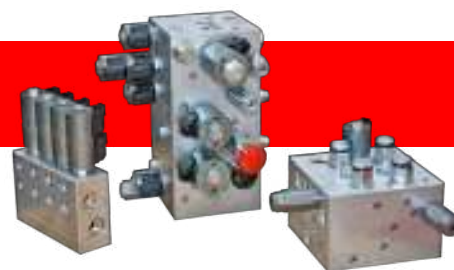
#### HS1040P6 or P8



| Cartridge Options                      | Q<br>max<br>l/min | P max<br>bar | Notes                               | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|-------------------|--------------|-------------------------------------|---------------|-------------------|
| MR10-47A                               | 11                | 240          | 4-way, 3-position,<br>tandem centre | 3/8"-1/2"     | \$ 578.00         |
| MR10-47B                               | 11                | 240          | 4-way, 3-position,<br>open centre   | 3/8"-1/2"     | \$ 578.00         |
| MR10-47C                               | 11                | 240          | 4-way, 3-position,<br>closed centre | 3/8"-1/2"     | \$ 578.00         |
| MR10-47D                               | 11                | 240          | 4-way, 3-position,<br>motor spool   | 3/8"-1/2"     | \$ 578.00         |
| HS1040P6 or P8 manifold only \$ 150.00 |                   |              |                                     |               |                   |

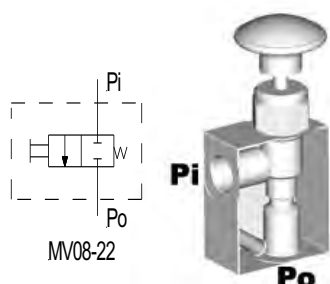
- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)

## Manually Operated - Push / Pull



### 2 Way, 2 Position

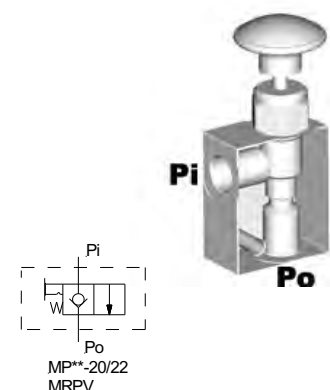
#### HS0820P4 or P6



| Cartridge Options                     | Q max<br>l/min | P max<br>bar | Notes                       | Ports<br>BSPP | Assembly<br>Price |
|---------------------------------------|----------------|--------------|-----------------------------|---------------|-------------------|
| MV08-22                               | 38             | 207          | Push to open, spring return | 1/4"-3/8"     | \$ 179.00         |
| MP08-20                               | 53             | 207          | Pull to open, spring return | 1/4"-3/8"     | \$ 216.00         |
| HS0820P4 or P6 manifold only \$ 78.00 |                |              |                             |               |                   |

- Manifold dimensions, 50 x 32mm (excluding cartridge)

#### HS1020P6 or P8

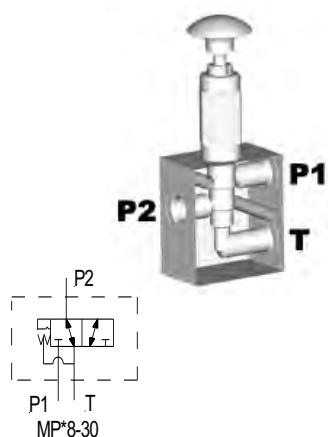


| Cartridge Options                              | Q max<br>l/min | P max<br>bar | Notes                                                           | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------|----------------|--------------|-----------------------------------------------------------------|---------------|-------------------|
| MP10-20                                        | 57             | 207          | Pull to open, detent spring return                              | 3/8"-1/2"     | \$ 224.00         |
| MP10-22                                        | 57             | 207          | Pull to open, spring return, detent, higher tank press. (28bar) | 3/8"-1/2"     | \$ 266.00         |
| MRPV-10                                        | 70             | 350*         | Pull to open, spring return                                     | 3/8"-1/2"     | \$ 226.00         |
| HS1020P6 or P8 manifold only \$ 86.00          |                |              |                                                                 |               |                   |
| HS1020P6S or P8S steel manifold only \$ 132.00 |                |              |                                                                 |               |                   |

- Manifold dimensions, 50 x 50 x 35mm (excluding cartridge)
- \*Requires steel block over 240 bar

### 3 Way, 2 Position

#### HS0830P4 or P6



| Cartridge Options                              | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| MP08-30                                        | 25             | 240          | Pull to shift, spring return, detent | 1/4"-3/8"     | \$ 311.00         |
| MP58-30*                                       | 25             | 350**        | Pull to shift, spring return, detent | 1/4"-3/8"     | \$ 342.00         |
| HS0830P4 or P6 manifold only \$ 127.00         |                |              |                                      |               |                   |
| HS0830P4S or P6S steel manifold only \$ 183.00 |                |              |                                      |               |                   |

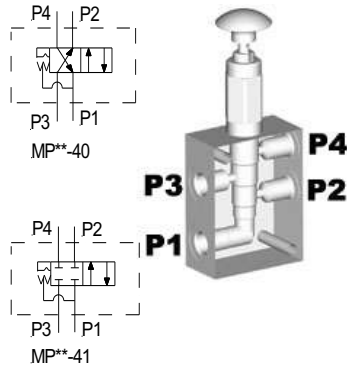
- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \* Non-common stock item – *Contact Hyspecs* for lead time
- \*\* Requires steel block over 240 bar

## Manually Operated - Push / Pull



### 4 Way, 2 Position

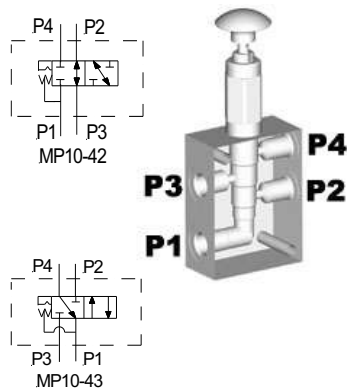
#### HS0840P4 or P6



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                                     | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|-------------------------------------------|---------------|-------------------|
| MP08-40                                | 12             | 240          | Pull to shift, spring return, N.O, detent | 1/4"-3/8"     | \$ 309.00         |
| MP08-41*                               | 12             | 240          | Pull to shift, spring return, N.C, detent | 1/4"-3/8"     | \$ 309.00         |
| HS0840P4 or P6 manifold only \$ 138.00 |                |              |                                           |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

#### HS1040P6 or P8

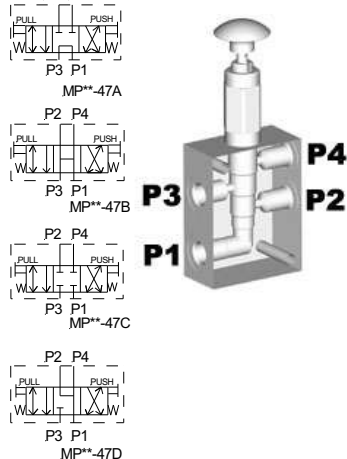


| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                                     | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|-------------------------------------------|---------------|-------------------|
| MP10-40                                | 23             | 207          | Pull to shift, spring return, N.O, detent | 3/8"-1/2"     | \$ 368.00         |
| MP10-41*                               | 23             | 207          | Pull to shift, spring return, N.C, detent | 3/8"-1/2"     | \$ 368.00         |
| MP10-42*                               | 34             | 240          | Pull to shift, spring return, detent      | 3/8"-1/2"     | \$ 368.00         |
| MP10-43*                               | 34             | 207          | Pull to shift, spring return, detent      | 3/8"-1/2"     | \$ 368.00         |
| MD10-40                                | 38             | 207          | Push to shift, spring return, N.O         | 3/8"-1/2"     | \$ 368.00         |
| HS1040P6 or P8 manifold only \$ 150.00 |                |              |                                           |               |                   |

- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)

### 4 Way, 3 Position

#### HS1040P6 or P8



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                                 | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|---------------------------------------|---------------|-------------------|
| MP10-47A                               | 15             | 207          | Pull/push to shift, spring return, TC | 3/8"-1/2"     | \$ 345.00         |
| MP10-47B*                              | 11             | 207          | Pull/push to shift, spring return, OC | 3/8"-1/2"     | \$ 345.00         |
| MP10-47C*                              | 23             | 207          | Pull/push to shift, spring return, CC | 3/8"-1/2"     | \$ 345.00         |
| MP10-47D*                              | 23             | 207          | Pull/push to shift, spring return, MS | 3/8"-1/2"     | \$ 345.00         |
| HS1040P6 or P8 manifold only \$ 150.00 |                |              |                                       |               |                   |

- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)
- \* Non-common stock item – Contact Hyspecs for lead time

## **Contents Section D – Solenoid Valves**

**D1 2 Way, 2 Position**

**D9 3 Way, 2 Position**

**D11 4 Way, 2 Position**

**D13 4 Way, 3 Position**

**D14 5 Way, 3 Position**

**D15 6 Way, 2 Position**

**D16 Single Acting Cylinder Lift / Lower Valves**

**D17 Start / Stop Valves – Motor Banjo Bolt Mounted**

## Solenoid Valves

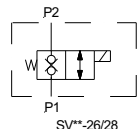
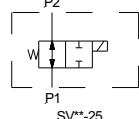
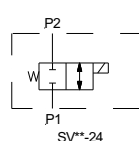
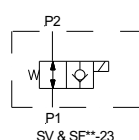
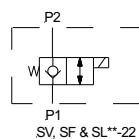
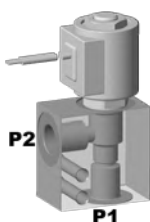
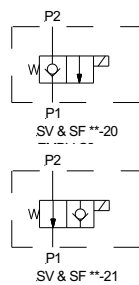


Solenoid valves are priced with flying leads (DC only) unless otherwise stated. AC coils are DIN plug only. Reliable, long-life, environmentally- hardened E coils are available with different connection options and prices.

Hirschman / DIN or Deutsch plugs are not included in the price.

### 2 Way, 2 Position

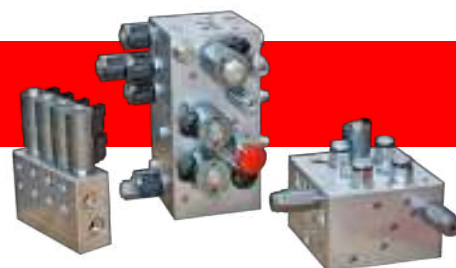
#### HS0820P4\_B or HS0820P6\_B



| Cartridge Options                                        | Q<br>max<br>l/min | P<br>max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------------------------|-------------------|-----------------|--------------------------------------|---------------|-------------------|
| SV08-20                                                  | 30                | 207             | N.C. poppet, one way                 | 1/4"-3/8"     | \$ 214.00         |
| SF08-20                                                  | 27                | 350*            | High Pressure                        | 1/4"-3/8"     | \$ 239.00         |
| SV08-21                                                  | 38                | 207             | N.O. poppet, one way                 | 1/4"-3/8"     | \$ 244.00         |
| SF08-21                                                  | 38                | 350*            | High pressure                        | 1/4"-3/8"     | \$ 296.00         |
| SV08-22                                                  | 30                | 207             | N.C. poppet, both ways               | 1/4"-3/8"     | \$ 229.00         |
| SF08-22                                                  | 23                | 350*            | High pressure                        | 1/4"-3/8"     | \$ 299.00         |
| SV08-23                                                  | 30                | 207             | N.O. poppet, both ways               | 1/4"-3/8"     | \$ 279.00         |
| SF08-23                                                  | 38                | 350*            | High pressure                        | 1/4"-3/8"     | \$ 313.00         |
| SV08-24                                                  | 17                | 207             | N.C. spool, both ways                | 1/4"-3/8"     | \$ 214.00         |
| SV08-25                                                  | 9                 | 207             | N.O. spool, both ways                | 1/4"-3/8"     | \$ 224.00         |
| SV08-26                                                  | 2                 | 207             | N.C. blocking both ways              | 1/4"-3/8"     | \$ 224.00         |
| SV38-26                                                  | 3.4               | 207             | N.C. blocking both ways              | 1/4"-3/8"     | \$ 284.00         |
| SV08-28                                                  | 11                | 207             | N.C. blocking both ways              | 1/4"-3/8"     | \$ 242.00         |
| SV38-28                                                  | 19                | 207             | N.C. blocking both ways<br>Size coil | 1/4"-3/8"     | \$ 395.00         |
| HS0820P4_B or HS0820P6_B manifold only \$ 78.00          |                   |                 |                                      |               |                   |
| HS0820P4S_B or HS0820P6S_B steel manifold only \$ 132.00 |                   |                 |                                      |               |                   |

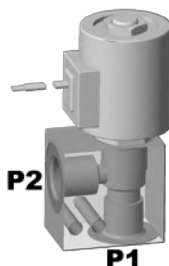
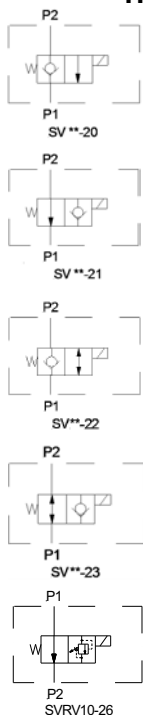
- Manifold dimensions, 50 x 50 x 32mm (excluding cartridge)
- \*Requires steel block over 240 bar
- Manual override available for most cartridges

## Solenoid Valves



### 2 Way, 2 Position

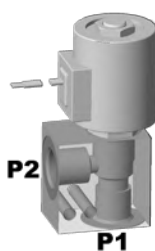
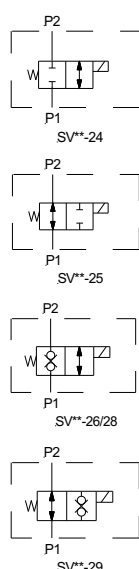
#### HS1020P6\_B or HS1020P8\_B



| Cartridge Options                                        | Q max<br>l/min | P max<br>bar | Notes                                    | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------------------------|----------------|--------------|------------------------------------------|---------------|-------------------|
| SV10-20                                                  | 57             | 240          | N.C. poppet, one way                     | 3/8"-1/2"     | \$ 270.00         |
| SV10-21                                                  | 68             | 207          | N.O. poppet, one way                     | 3/8"-1/2"     | \$ 309.00         |
| SV10-22                                                  | 57             | 240          | N.C. poppet, both ways                   | 3/8"-1/2"     | \$ 275.00         |
| SV10-23                                                  | 68             | 207          | N.O. poppet, both ways                   | 3/8"-1/2"     | \$ 321.00         |
| SV10-24                                                  | 57             | 207          | N.C. spool, both ways                    | 3/8"-1/2"     | \$ 257.00         |
| SV10-25                                                  | 23             | 207          | N.O. spool, both ways                    | 3/8"-1/2"     | \$ 270.00         |
| SV10-28                                                  | 76             | 240          | N.C. blocking both ways                  | 3/8"-1/2"     | \$ 314.00         |
| SV10-29                                                  | 76             | 207          | N.O. blocking both ways                  | 3/8"-1/2"     | \$ 332.00         |
| SVRV10-26                                                | 83             | 297*         | N.O. spool with fixed relief when closed | 3/8"-1/2"     | \$ 383.00         |
| HS1020P6_B or HS1020P8_B manifold only \$ 86.00          |                |              |                                          |               |                   |
| HS1020P6S_B or HS1020P8S_B steel manifold only \$ 132.00 |                |              |                                          |               |                   |

- Manifold dimensions, 50 x 50 x 35mm (excluding cartridge)
- Manual override available for most cartridges
- \*Requires steel block over 240 bar

#### HHS1020P8S



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| HSV10-20                           | 76             | 350          | N.C. poppet, one way                 | 1/2"          | \$ 380.00         |
| HSV10-21                           | 76             | 350          | N.O. poppet, one way                 | 1/2"          | \$ 449.00         |
| HSV10-22*                          | 76             | 350          | N.C. poppet, both ways               | 1/2"          | \$ 392.00         |
| HSV10-23*                          | 76             | 350          | N.O. poppet, both ways               | 1/2"          | \$ 445.00         |
| HSV10-24*                          | 30             | 350          | N.C. spool, both ways                | 1/2"          | \$ 400.00         |
| HSV10-25*                          | 30             | 350          | N.O. spool, both ways                | 1/2"          | \$ 410.00         |
| HSV10-28*                          | 76             | 350          | N.C. poppet, bi-directional blocking | 1/2"          | \$ 600.00         |
| HSV10-29*                          | 76             | 350          | N.O. poppet, bi-directional blocking | 1/2"          | \$ 640.00         |
| HHS1020P8S manifold only \$ 115.00 |                |              |                                      |               |                   |

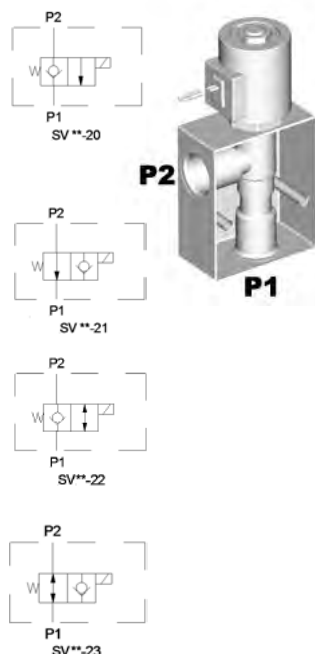
- E coil required
- Manifold dimensions, 50 x 50 x 35mm (excluding cartridge)
- Manual override available for most cartridges
- High performance cavity steel manifold
- HSV circuit diagram same as corresponding SV diagram
- \* Non-common stock item - Contact Hyspecs for lead time

## Solenoid Valves



### 2 Way, 2 Position

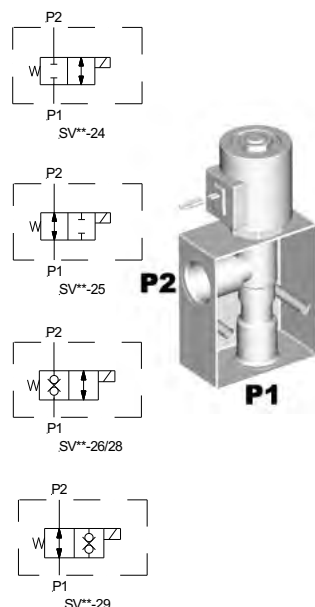
#### HS1220P12



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| SV12-20                           | 114            | 240          | N.C. poppet, one way                 | 3/4"          | \$ 427.00         |
| SV12-21                           | 114            | 240          | N.O. poppet, one way                 | 3/4"          | \$ 464.00         |
| SV12-22                           | 114            | 240          | N.C. poppet, both ways               | 3/4"          | \$ 439.00         |
| SV12-23                           | 114            | 240          | N.O. poppet, both ways               | 3/4"          | \$ 628.00         |
| SV12-24*                          | 76             | 240          | N.C. spool, both ways                | 3/4"          | \$ 602.00         |
| SV12-25*                          | 76             | 240          | N.O. spool, both ways                | 3/4"          | \$ 625.00         |
| SV12-28                           | 114            | 240          | N.C. poppet, bi-directional blocking | 3/4"          | \$ 452.00         |
| SV12-29                           | 114            | 240          | N.O. poppet, bi-directional blocking | 3/4"          | \$ 469.00         |
| HS1220P12 manifold only \$ 155.00 |                |              |                                      |               |                   |

- Manifold dimensions, 85 x 75 x 50mm (excluding cartridge)
- Manual override available for most cartridges
- \* **Special 12-size E-coil**

#### HHS1220P12S



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| HSV12-20                            | 114            | 350          | N.C. poppet, one way                 | 3/4"          | \$ 500.00         |
| HSV12-21                            | 114            | 350          | N.O. poppet, one way                 | 3/4"          | \$ 565.00         |
| HSV12-22*                           | 114            | 350          | N.C. poppet, both ways               | 3/4"          | \$ 515.00         |
| HSV12-23*                           | 114            | 350          | N.O. poppet, both ways               | 3/4"          | \$ 650.00         |
| HSV12-28*                           | 114            | 350          | N.C. poppet, bi-directional blocking | 3/4"          | \$ 665.00         |
| HSV12-29*                           | 114            | 350          | N.O. poppet, bi-directional blocking | 3/4"          | \$ 700.00         |
| HHS1220P12S manifold only \$ 200.00 |                |              |                                      |               |                   |

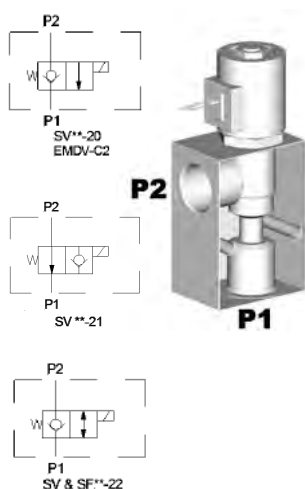
- E coil required
- Manifold dimensions, 75 x 75 x 40mm (excluding cartridge)
- Manual override available for most cartridges
- High performance cavity steel manifold
- HSV circuit diagram same as corresponding SV diagram
- \* Non-common stock item - Contact Hyspecs for lead time

## Solenoid Valves



### 2 Way, 2 Position

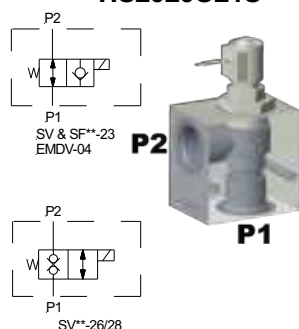
#### HS1620P12 or P16



| Cartridge Options                                     | Q max<br>l/min | P max<br>bar | Notes                      | Ports<br>BSPP | Assembly Price |
|-------------------------------------------------------|----------------|--------------|----------------------------|---------------|----------------|
| SV16-20                                               | 151            | 240          | N.C. poppet, one way       | 3/4"-1"       | \$ 518.00      |
| SV16-21                                               | 132            | 207          | N.O. poppet, one way       | 3/4"-1"       | \$ 550.00      |
| SV16-22                                               | 151            | 240          | N.C. poppet, both ways     | 3/4"-1"       | \$ 521.00      |
| SV16-23                                               | 132            | 207          | N.O. poppet, both ways     | 3/4"-1"       | \$ 561.00      |
| EMDV-16-C2                                            | 190            | 350*         | N.C. pilot operated poppet | 3/4"-1"       | \$ 639.00      |
| EMDV-16-O4                                            | 190            | 350*         | N.O. pilot operated poppet | 3/4"-1"       | \$ 699.00      |
| HS1620P12 or P16 manifold only \$ 189.00 or \$ 207.00 |                |              |                            |               |                |
| HS1620P16S steel manifold only \$ 290.00              |                |              |                            |               |                |

- Manifold dimensions, 100 x 70 x 50mm (excluding cartridge)
- Manual override available for most cartridges
- \*Requires steel block over 240 bar

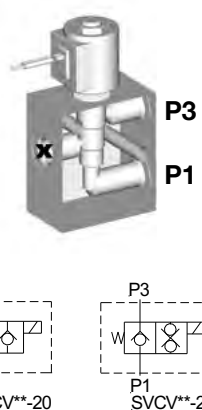
#### HS2020U21S



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                  | Ports<br>UNO | Assembly Price |
|------------------------------------|----------------|--------------|------------------------|--------------|----------------|
| SF20-22                            | 303            | 350          | N.C. poppet, 08 coil   | 1 5/16"      | \$ 855.00      |
| SF20-23                            | 303            | 350          | N.O. poppet, 08 coil   | 1 5/16"      | \$ 912.00      |
| SV20-28*                           | 303            | 207          | N.C. poppet, 12 E coil | 1 5/16"      | \$ 1237.00     |
| HS2020U21S manifold only \$ 464.00 |                |              |                        |              |                |

- Manifold dimensions, 100 x 100 x 75mm (excluding cartridge)
- Steel manifold
- \* Non-common stock item - Contact Hyspecs for lead time

#### HS0830P4 or P6



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                              | Ports<br>BSPP | Assembly Price |
|----------------------------------------|----------------|--------------|------------------------------------|---------------|----------------|
| SVCV08-20                              | 23             | 207          | N.C. poppet with outlet flow check | 1/4"-3/8"     | \$ 323.00      |
| SVCV08-21*                             | 23             | 207          | N.O. poppet with outlet flow check |               | \$348.00       |
| HS0830P4 or P6 manifold only \$ 127.00 |                |              |                                    |               |                |

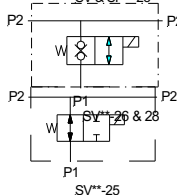
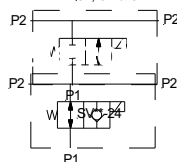
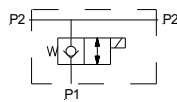
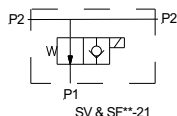
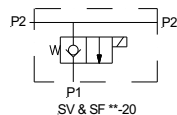
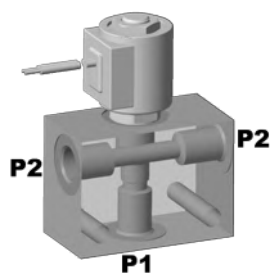
- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- Manual override available for most cartridges
- \* Non-common stock item - Contact Hyspecs for lead time

## Solenoid Valves



### 2 Way, 2 Position

HS0820P4T\_B or HS0820P6T\_B



| Cartridge Options                            | Q max<br>l/min | P max<br>bar | Notes                   | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------------|----------------|--------------|-------------------------|---------------|-------------------|
| SV08-20                                      | 30             | 207          | N.C. poppet, one way    | 1/4"-3/8"     | \$ 249.00         |
| SF08-20                                      | 27             | 350*         | High Pressure           | 1/4"-3/8"     | \$ 274.00         |
| SV08-21                                      | 38             | 207          | N.O. poppet, one way    | 1/4"-3/8"     | \$ 279.00         |
| SF08-21                                      | 38             | 350*         | High pressure           | 1/4"-3/8"     | \$ 331.00         |
| SV08-22                                      | 30             | 207          | N.C. poppet, both ways  | 1/4"-3/8"     | \$ 264.00         |
| SF08-22                                      | 23             | 350*         | High pressure           | 1/4"-3/8"     | \$ 334.00         |
| SV08-23                                      | 30             | 207          | N.O. poppet, both ways  | 1/4"-3/8"     | \$ 314.00         |
| SF08-23                                      | 38             | 350*         | High pressure           | 1/4"-3/8"     | \$ 348.00         |
| SV08-24                                      | 17             | 207          | N.C. spool, both ways   | 1/4"-3/8"     | \$ 249.00         |
| SV08-25                                      | 9              | 207          | N.O. spool, both ways   | 1/4"-3/8"     | \$ 259.00         |
| SV08-26                                      | 2              | 207          | N.C. blocking both ways | 1/4"-3/8"     | \$ 259.00         |
| SV38-26                                      | 3.4            | 207          | N.C. blocking both ways | 1/4"-3/8"     | \$ 319.00         |
| SV08-28                                      | 11             | 207          | N.C. blocking both ways | 1/4"-3/8"     | \$ 277.00         |
| SV38-28                                      | 19             | 207          | N.C. blocking both ways | 1/4"-3/8"     | \$ 430.00         |
| HS0820P4T_B or P6T_B manifold only \$ 113.00 |                |              |                         |               |                   |

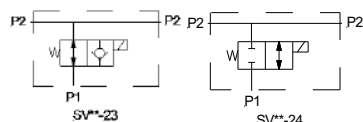
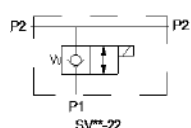
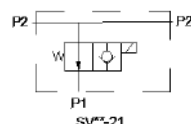
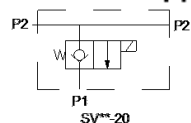
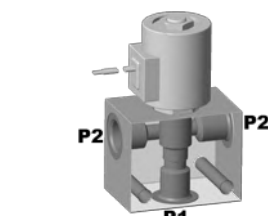
- Manifold dimensions, 75 x 50 x 40mm (excluding cartridge)
- Manual override available for most cartridges
- \*Requires steel block over 240 bar – *contact Hyspecs* for pricing

## Solenoid Valves



### 2 Way, 2 Position

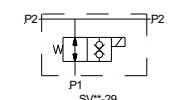
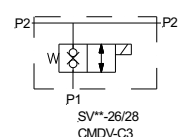
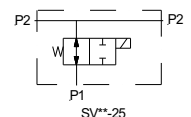
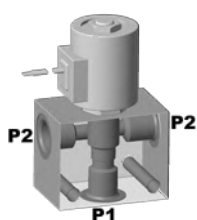
#### HS1020P6T\_B or HS1020P8T\_B



| Cartridge Options                            | Q max<br>l/min | P max<br>bar | Notes                               | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------------|----------------|--------------|-------------------------------------|---------------|-------------------|
| SV10-20                                      | 57             | 240          | N.C. poppet, one way                | 3/8"-1/2"     | \$ 286.00         |
| SV10-21                                      | 68             | 207          | N.O. poppet, one way                | 3/8"-1/2"     | \$ 325.00         |
| SV10-22                                      | 57             | 240          | N.C. poppet, both ways              | 3/8"-1/2"     | \$ 291.00         |
| SV10-23                                      | 68             | 207          | N.O. poppet, both ways              | 3/8"-1/2"     | \$ 337.00         |
| SV10-24                                      | 57             | 207          | N.C. spool, both ways               | 3/8"-1/2"     | \$ 273.00         |
| SV10-25                                      | 23             | 207          | N.O. spool, both ways               | 3/8"-1/2"     | \$ 286.00         |
| SV10-28                                      | 76             | 240          | N.C. poppet blocking bi-directional | 3/8"-1/2"     | \$ 330.00         |
| SV10-29                                      | 76             | 207          | N.O. poppet blocking bi-directional | 3/8"-1/2"     | \$ 348.00         |
| HS1020P6T_B or P8T_B manifold only \$ 102.00 |                |              |                                     |               |                   |

- Manifold dimensions, 75 x 60 x 37mm (excluding cartridge)
- \*Requires steel block over 240 bar – *contact Hyspecs* for pricing
- Manual override available for most cartridges

#### HHS1020P8TS



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| HSV10-20                            | 76             | 350          | N.C. poppet, one way                 | 1/2"          | \$ 395.00         |
| HSV10-21                            | 76             | 350          | N.O. poppet, one way                 | 1/2"          | \$ 464.00         |
| HSV10-22*                           | 76             | 350          | N.C. poppet, both ways               | 1/2"          | \$ 407.00         |
| HSV10-23*                           | 76             | 350          | N.O. poppet, both ways               | 1/2"          | \$ 460.00         |
| HSV10-24*                           | 30             | 350          | N.C. spool, both ways                | 1/2"          | \$ 415.00         |
| HSV10-25*                           | 30             | 350          | N.O. spool, both ways                | 1/2"          | \$ 425.00         |
| HSV10-28*                           | 76             | 350          | N.C. poppet, bi-directional blocking | 1/2"          | \$ 615.00         |
| HSV10-29*                           | 76             | 350          | N.O. poppet, bi-directional blocking | 1/2"          | \$ 655.00         |
| HHS1020P8TS manifold only \$ 130.00 |                |              |                                      |               |                   |

- E coil required
- Manifold dimensions, 75 x 60 x 37mm (excluding cartridge)
- Manual override available for most cartridges
- High performance cavity steel manifold
- HSV circuit diagram same as corresponding SV diagram
- \* Non-common stock item - *Contact Hyspecs* for lead time

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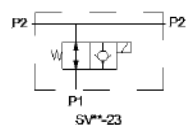
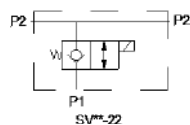
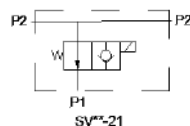
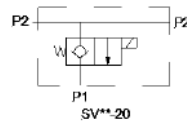
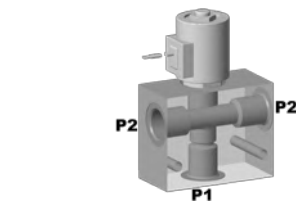
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## Solenoid Valves



### 2 Way, 2 Position

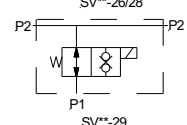
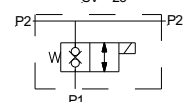
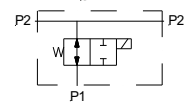
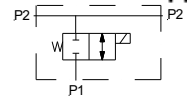
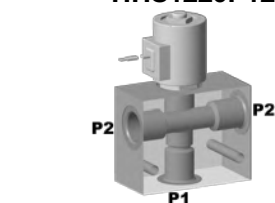
#### HS1220P12T\_B



| Cartridge Options                    | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|--------------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| SV12-20                              | 114            | 240          | N.C. poppet, one way                 | 3/4"          | \$ 444.00         |
| SV12-21                              | 114            | 240          | N.O. poppet, one way                 | 3/4"          | \$ 481.00         |
| SV12-22                              | 114            | 240          | N.C. poppet, both ways               | 3/4"          | \$ 456.00         |
| SV12-23                              | 114            | 240          | N.O. poppet, both ways               | 3/4"          | \$ 645.00         |
| SV12-24*                             | 76             | 240          | N.C. spool, both ways                | 3/4"          | \$ 619.00         |
| SV12-25*                             | 76             | 240          | N.O. spool, both ways                | 3/4"          | \$ 642.00         |
| SV12-28                              | 114            | 240          | N.C. poppet, bi-directional blocking | 3/4"          | \$ 469.00         |
| SV12-29                              | 114            | 240          | N.O. poppet, bi-directional blocking | 3/4"          | \$ 486.00         |
| HS1220P12T_B manifold only \$ 172.00 |                |              |                                      |               |                   |

- Manifold dimensions, 100 x 80 x 50mm (excluding cartridge)
- Manual override available for most cartridges
- \* Special size 12 E-coil

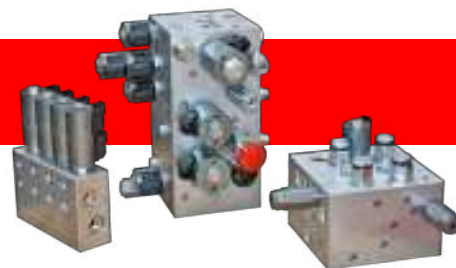
#### HHS1220P12TS



| Cartridge Options                    | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|--------------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| HSV12-20                             | 114            | 350          | N.C. poppet, one way                 | 3/4"          | \$ 575.00         |
| HSV12-21                             | 114            | 350          | N.O. poppet, one way                 | 3/4"          | \$ 640.00         |
| HSV12-22*                            | 114            | 350          | N.C. poppet, both ways               | 3/4"          | \$ 590.00         |
| HSV12-23*                            | 114            | 350          | N.O. poppet, both ways               | 3/4"          | \$ 725.00         |
| HSV12-28*                            | 114            | 350          | N.C. poppet, bi-directional blocking | 3/4"          | \$ 740.00         |
| HSV12-29*                            | 114            | 350          | N.O. poppet, bi-directional blocking | 3/4"          | \$ 775.00         |
| HHS1220P12TS manifold only \$ 210.00 |                |              |                                      |               |                   |

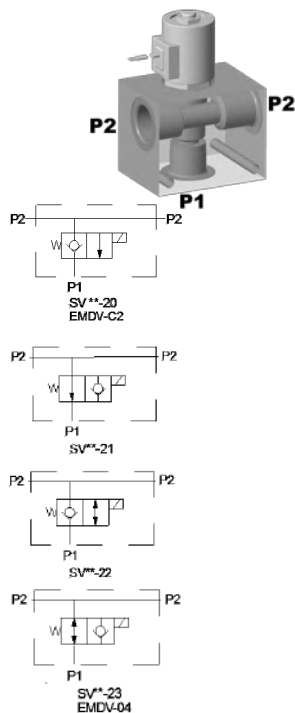
- E coil required
- Manifold dimensions, 100 x 80 x 50mm (excluding cartridge)
- Manual override available for most cartridges
- Steel manifold
- HSV circuit diagram same as corresponding SV diagram
- \* Non-common stock item - Contact Hyspecs for lead time

## Solenoid Valves



### 2 Way, 2 Position

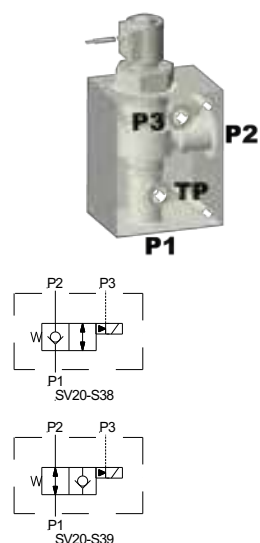
#### HS1620P12T\_B or HS1620P16T\_B



| Cartridge Options                                                                                          | Q max<br>l/min | P max<br>bar | Notes                      | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------------------------------------------------------------------|----------------|--------------|----------------------------|---------------|-------------------|
| SV16-20                                                                                                    | 151            | 240          | N.C. poppet, one way       | 3/4"-1"       | \$ 541.00         |
| SV16-21                                                                                                    | 132            | 207          | N.O. poppet, one way       | 3/4"-1"       | \$ 573.00         |
| SV16-22                                                                                                    | 151            | 240          | N.C. poppet, both ways     | 3/4"-1"       | \$ 544.00         |
| SV16-23                                                                                                    | 132            | 207          | N.O. poppet, both ways     | 3/4"-1"       | \$ 584.00         |
| EMDV-16-C2                                                                                                 | 190            | 350*         | N.C. pilot operated poppet | 3/4"-1"       | \$ 662.00         |
| EMDV-16-O4                                                                                                 | 190            | 350*         | N.O. pilot operated poppet | 3/4"-1"       | \$ 722.00         |
| HS1620P12T_B or P16T_B manifold only \$ 212.00 or \$ 223.00<br>HS1620P12TS_B steel manifold only \$ 315.00 |                |              |                            |               |                   |

- Manifold dimensions, 100 x 80 x 50mm (excluding cartridge)
- \*Requires steel block over 240 bar
- Manual override available for most cartridges

#### HS2025P16



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                                  | Ports<br>BSPP    | Assembly<br>Price |
|-----------------------------------|----------------|--------------|----------------------------------------|------------------|-------------------|
| SV20-S38                          | 378            | 293*         | N.C. pilot operated poppet, 1/4" pilot | 1",<br>1/4" P3 & | \$ 793.00         |
| SV20-S39                          | 378            | 293*         | N.O. pilot operated poppet, 1/4" pilot | TP               | \$ 842.00         |
| HS2025P16 manifold only \$ 378.00 |                |              |                                        |                  |                   |

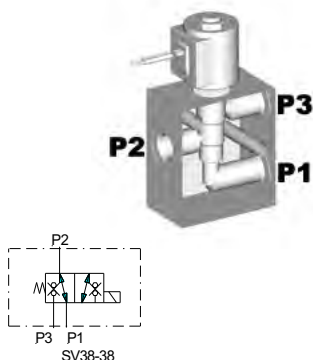
- Manifold dimensions, 126 x 100 x 75mm (excluding cartridge)
- \*Requires steel block over 240 bar – *contact Hyspecs for pricing*
- Size 8 coil
- TP port on P1

## Solenoid Valves

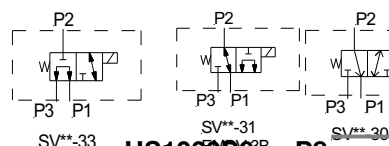


### 3 Way, 2 Position

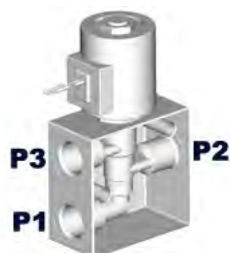
#### HS0830P4 or P6



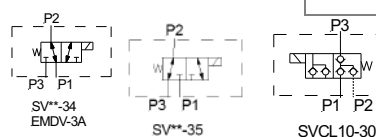
| Cartridge Options                              | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------|----------------|--------------|---------------------------------|---------------|-------------------|
| SV08-30                                        | 15             | 207          | Common at 2                     | 1/4"-3/8"     | \$ 305.00         |
| SV58-30                                        | 15             | 350*         | High pressure                   | 1/4"-3/8"     | \$ 375.00         |
| SV08-31                                        | 11             | 207          | Common at 1                     | 1/4"-3/8"     | \$ 305.00         |
| SV08-33                                        | 11             | 207          | Common at 1                     | 1/4"-3/8"     | \$ 305.00         |
| SV08-35                                        | 11             | 207          | Common at 2                     | 1/4"-3/8"     | \$ 305.00         |
| SV38-38                                        | 11             | 207          | Common at 2,<br>double blocking | 1/4"-3/8"     | \$ 415.00         |
| HS0830P4 or P6 manifold only \$ 127.00         |                |              |                                 |               |                   |
| HS0830P4S or P6S steel manifold only \$ 183.00 |                |              |                                 |               |                   |



#### HS1030P6 or P8



| Cartridge Options                                           | Q max<br>l/min | P max<br>bar | Notes                   | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------------------|----------------|--------------|-------------------------|---------------|-------------------|
| SV10-31                                                     | 23             | 207          | Common at 1             | 3/8"-1/2"     | \$ 327.00         |
| SV10-33                                                     | 19             | 207          | Common at 1             | 3/8"-1/2"     | \$ 339.00         |
| SV10-34                                                     | 23             | 207          | Common at 2             | 3/8"-1/2"     | \$ 342.00         |
| EMDV-10-3B                                                  | 30             | 350*         | Common at 1             | 3/8"-1/2"     | \$ 452.00         |
| SVCL10-30                                                   | 57             | 240          | N.C. with L.S.<br>check | 3/8"-1/2"     | \$ 342.00         |
| HS1030P6 or P8 manifold only \$ 132.00                      |                |              |                         |               |                   |
| HS1030P6S or P8S steel manifold only \$ 175.00 or \$ 212.00 |                |              |                         |               |                   |



#### HS1230P12



| Cartridge Options                        | Q max<br>l/min | P max<br>bar | Notes       | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------|----------------|--------------|-------------|---------------|-------------------|
| SV12-31                                  | 65             | 240          | Common at 1 | 3/4"          | \$ 732.00         |
| SV12-33                                  | 65             | 240          | Common at 1 | 3/4"          | \$ 684.00         |
| SV12-34                                  | 65             | 240          | Common at 2 | 3/4"          | \$ 732.00         |
| EMDV-12-3A                               | 60             | 350*         | Common at 2 | 3/4"          | \$ 686.00         |
| EMDV-12-3B                               | 60             | 350*         | Common at 1 | 3/4"          | \$ 691.00         |
| HS1230P12 manifold only \$ 241.00        |                |              |             |               |                   |
| HS1230P12S steel manifold only \$ 355.00 |                |              |             |               |                   |

- Manifold dimensions, 100 x 75 x 37mm (excluding cartridge)
- \*Requires steel block over 240 bar
- Manual override available for most cartridges
- Size 12 E Coil for SV12

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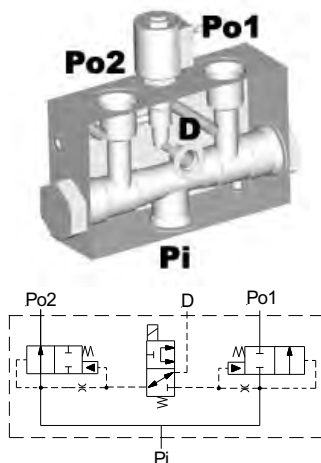
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## Solenoid Valves



### 3 Way, 2 Position

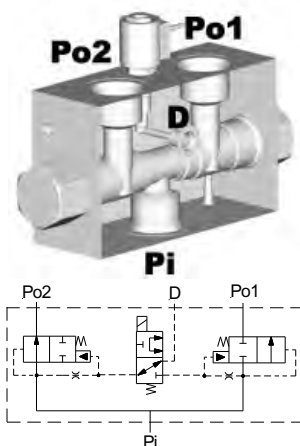
#### HS9396U17C



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes                                                                                                   | Ports<br>UNO       | Assembly<br>Price |
|------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------|--------------------|-------------------|
| EV16-S34 x 2<br>+ SV08-31          | 190            | 207          | Flow from P to<br>A or B only.<br>Drain port<br>(9/16"UNO)<br>must be<br>connected<br>directly to tank. | 1 1/16"<br>D 9/16" | \$ 1093.00        |
| HS9396U17C manifold only \$ 515.00 |                |              |                                                                                                         |                    |                   |

- Manifold dimensions, 160 x 100 x 50mm (excluding cartridges)

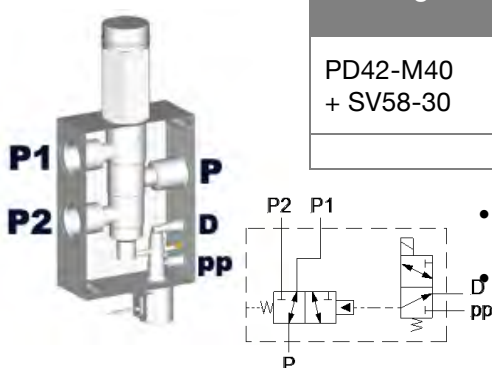
#### HS9397U26C



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes                                                                                                   | Ports<br>UNO      | Assembly<br>Price |
|------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------|-------------------|-------------------|
| EV20-S34 x 2<br>+ SV08-31          | 380            | 207          | Flow from P to<br>A or B only.<br>Drain port<br>(9/16"UNO)<br>must be<br>connected<br>directly to tank. | 1 5/8"<br>D 9/16" | \$ 1408.00        |
| HS9397U26C manifold only \$ 530.00 |                |              |                                                                                                         |                   |                   |

- Manifold dimensions, 200 x 125 x 75mm (excluding cartridges)

#### HS9603P16BS



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes          | Ports<br>BSP         | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------|----------------------|-------------------|
| PD42-M40<br>+ SV58-30               | 265            | 350          | Flow both ways | 1"<br>D & PP<br>1/4" | \$ 1587.00        |
| HS9603P16BS manifold only \$ 715.00 |                |              |                |                      |                   |

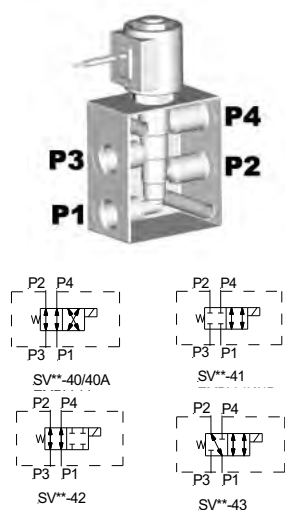
- Manifold dimensions, 170 x 100 x 75mm (excluding cartridges)  
Steel manifold

## Solenoid Valves



### 4 Way, 2 Position

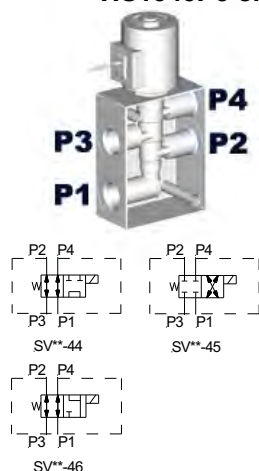
#### HS0840P4 or P6



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|---------------------|---------------|-------------------|
| SV08-40                                | 11             | 207          | Cross over          | 1/4"-3/8"     | \$ 337.00         |
| SV58-40                                | 11             | 350*         | High pressure       | 1/4"-3/8"     | \$ 337.00         |
| SV08-41                                | 13             | 207          | N.C.                | 1/4"-3/8"     | \$ 337.00         |
| SV58-41                                | 13             | 350*         | High pressure, N.C. | 1/4"-3/8"     | \$ 424.00         |
| SV08-42                                | 11             | 207          | N.O.                | 1/4"-3/8"     | \$ 337.00         |
| SV08-43                                | 11             | 207          | P4 to P1 N.O.       | 1/4"-3/8"     | \$ 337.00         |
| SV08-44                                | 11             | 207          | N.O. to tandem      | 1/4"-3/8"     | \$ 337.00         |
| SV08-45                                | 11             | 207          | N.C. to cross open  | 1/4"-3/8"     | \$ 337.00         |
| SV08-46                                | 11             | 207          | N.O. to motor spool | 1/4"-3/8"     | \$ 337.00         |
| HS0840P4 or P6 manifold only \$ 138.00 |                |              |                     |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \*Requires steel block over 240 bar – *contact Hyspecs* for pricing

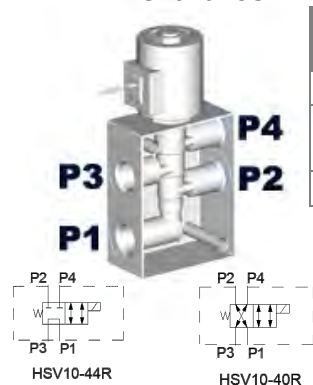
#### HS1040P6 or P8



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                            | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|----------------------------------|---------------|-------------------|
| SV10-40                                | 23             | 207          | Cross over, open on changeover   | 3/8"-1/2"     | \$ 365.00         |
| SV10-40A                               | 38             | 207          | Cross over, closed on changeover | 3/8"-1/2"     | \$ 365.00         |
| SV10-41                                | 23             | 207          | N.C.                             | 3/8"-1/2"     | \$ 365.00         |
| SV10-42                                | 23             | 207          | N.O.                             | 3/8"-1/2"     | \$ 373.00         |
| SV10-43                                | 23             | 207          | 4 to 1 N.O.                      | 3/8"-1/2"     | \$ 373.00         |
| SV10-44                                | 23             | 207          | N.O. to tandem                   | 3/8"-1/2"     | \$ 362.00         |
| HS1040P6 or P8 manifold only \$ 150.00 |                |              |                                  |               |                   |

- Manifold dimensions, 100 x 65 x 37mm (excluding cartridge)

#### HHS1040P8S



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                    | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|--------------------------|---------------|-------------------|
| HSV10-40R*                        | 23             | 350          | Reverse cross over       | 1/2"          | \$ 480.00         |
| HSV10-44R*                        | 37             | 350          | Tandem when de-energised | 1/2"          | \$ 480.00         |
| HHS1040P8S manifold only \$160.00 |                |              |                          |               |                   |

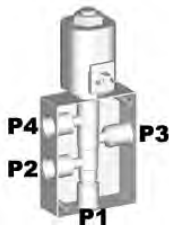
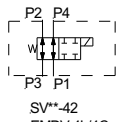
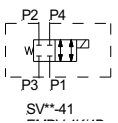
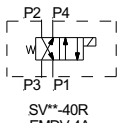
- E coil required
- Manifold dimensions, 100 x 65 x 37mm (excluding cartridge)
- High performance cavity steel manifold
- *HSV circuit diagram same as corresponding SV diagram*
- \* Non-common stock item - *Contact Hyspecs* for lead time

## Solenoid Valves



### 4 Way, 2 Position

#### HS1240P12



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes              | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|--------------------|---------------|-------------------|
| SV12-40R                          | 65             | 240          | Reverse cross over | 3/4"          | \$ 751.00         |
| SV12-41                           | 65             | 240          | N.C.               | 3/4"          | \$ 755.00         |
| SV12-42*                          | 65             | 240          | N.O.               | 3/4"          | \$ 692.00         |
| HS1240P12 manifold only \$ 252.00 |                |              |                    |               |                   |

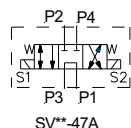
- Manifold dimensions, 130 x 100 x 37mm (excluding cartridge)
- Size 12 E Coil
- \* Non-common stock item - *Contact Hyspecs* for lead time

## Solenoid Valves

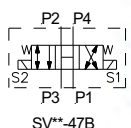


### 4 Way, 3 Position

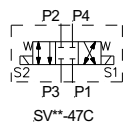
#### HS0840P4 or P6



SV\*\*47A



SV\*\*47B



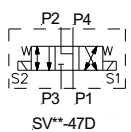
SV\*\*47C



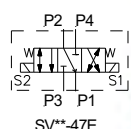
| Cartridge Options                      | Q<br>max<br>l/min | P<br>max<br>bar | Notes                            | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|-------------------|-----------------|----------------------------------|---------------|-------------------|
| SV08-47A                               | 4                 | 207             | Tandem centre                    | 1/4"-3/8"     | \$ 451.00         |
| SV08-47B                               | 11                | 207             | Open centre                      | 1/4"-3/8"     | \$ 451.00         |
| SV08-47C                               | 11                | 207             | Closed centre (CC)               | 1/4"-3/8"     | \$ 451.00         |
| SV08-47D                               | 11                | 207             | Motor spool (MS)                 | 1/4"-3/8"     | \$ 451.00         |
| SV08-47E                               | 11                | 207             | P & B blocked, A to T in neutral | 1/4"-3/8"     | \$ 451.00         |
| HS0840P4 or P6 manifold only \$ 138.00 |                   |                 |                                  |               |                   |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

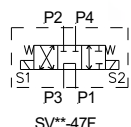
#### HS1040P6 or P8



SV\*\*47D



SV\*\*47E



SV\*\*47F



| Cartridge Options                      | Q<br>max<br>l/min | P<br>max<br>bar | Notes                            | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|-------------------|-----------------|----------------------------------|---------------|-------------------|
| SV10-47A                               | 19                | 240             | Tandem centre                    | 3/8"-1/2"     | \$ 557.00         |
| SV10-47B                               | 23                | 207             | Open centre                      | 3/8"-1/2"     | \$ 557.00         |
| SV10-47C                               | 23                | 240             | Closed centre (CC)               | 3/8"-1/2"     | \$ 541.00         |
| SV10-47D                               | 23                | 207             | Motor spool (MS)                 | 3/8"-1/2"     | \$ 541.00         |
| SV10-47E                               | 30                | 250             | P & B blocked, A to T in neutral | 3/8"-1/2"     | \$ 605.00         |
| SV10-47F                               | 15                | 240             | Tandem centre                    | 3/8"-1/2"     | \$ 605.00         |
| HS1040P6 or P8 manifold only \$ 150.00 |                   |                 |                                  |               |                   |

- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)

#### HHS1040P8S



| Cartridge Options                  | Q<br>max<br>l/min | P<br>max<br>bar | Notes              | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|-------------------|-----------------|--------------------|---------------|-------------------|
| HSV10-47C                          | 38                | 350             | Closed centre (CC) | 1/2"          | \$ 785.00         |
| HSV10-47D                          | 34                | 350             | Motor spool (MS)   | 1/2"          | \$ 785.00         |
| HHS1040P8S manifold only \$ 160.00 |                   |                 |                    |               |                   |

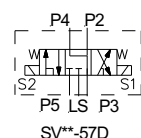
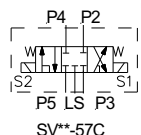
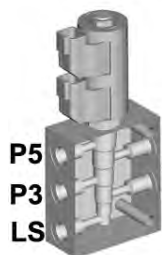
- E coil required
- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)
- HyPerformance Steel manifold
- HSV circuit diagram same as corresponding SV diagram

## Solenoid Valves



### 5 Way, 3 Position, with Load Sense Port or Power Beyond

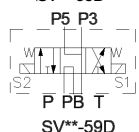
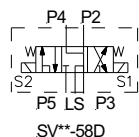
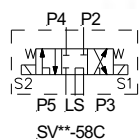
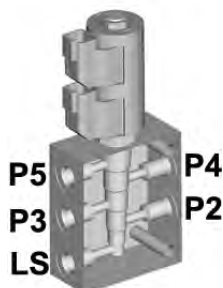
#### HS0850P4 or P6\*



| Cartridge                              | Q max<br>l/min | P max<br>bar | Notes                                     | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|-------------------------------------------|---------------|-------------------|
| SV08-58C*                              | 13             | 240          | Closed centre load sense vents at neutral | 1/4"-3/8"     | \$ 622.00         |
| SV08-58D                               | 13             | 240          | Motor spool load sense vents at neutral   | 1/4"-3/8"     | \$ 622.00         |
| HS0850P4 or P6 manifold only \$ 245.00 |                |              |                                           |               |                   |

- Manifold dimensions 100 x 75 x 37mm (excluding cartridge)
- The assembly price includes leadwires coils
- \* Non-common stock item - *Contact Hyspecs* for lead time
- Optional load sense check valve disc CVD08 (\$34) can be fit into the bottom of SV08

#### HS1050P6\_B or P8\_B



| Cartridge                                  | Q max<br>l/min | P max<br>bar | Notes                                     | Ports<br>BSPP | Assembly<br>Price |
|--------------------------------------------|----------------|--------------|-------------------------------------------|---------------|-------------------|
| SV10-57C                                   | 20             | 250*         | Closed centre with closed load sense port | 3/8"-1/2"     | \$ 623.00         |
| SV10-57D                                   | 20             | 250*         | Motor spool with closed load sense port   | 3/8"-1/2"     | \$ 623.00         |
| SV10-58C                                   | 30             | 250*         | Closed centre load sense vents At neutral | 3/8"-1/2"     | \$ 727.00         |
| SV10-58D                                   | 30             | 250*         | Open centre load sense vents at neutral   | 3/8"-1/2"     | \$ 727.00         |
| SV10-59D**                                 | 15             | 207          | Motor spool with power beyond             | 3/8"-1/2"     | \$ POA            |
| HS1050P6_B or P8_B manifold only \$ 252.00 |                |              |                                           |               |                   |

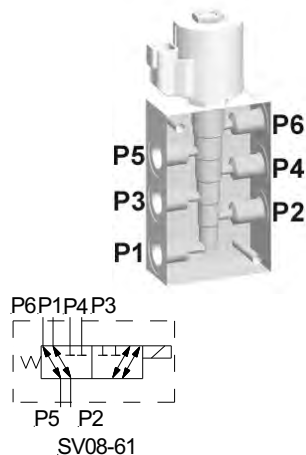
- Manifold dimensions, 110 x 75 x 39mm (excluding cartridge)
- The assembly price includes leadwires coils
- \*Requires steel block over 240 bar – *contact Hyspecs* for pricing
- \*\*Non common stock item – *contact Hyspecs* for lead time
- Optional load sense check valve disc CVD10 (\$38) can be fit into the bottom of SV10

## Solenoid Valves



### 6 Way, 2 Position

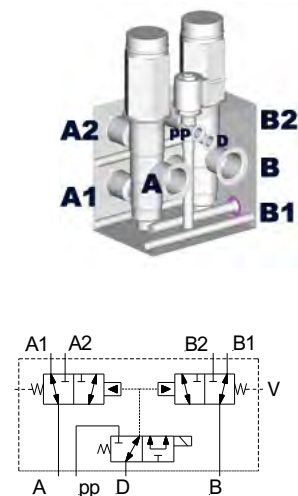
HS1060P6 or P8\*



| Cartridge                              | Q max<br>l/min | P max<br>bar | Notes           | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|-----------------|---------------|-------------------|
| SV80-61*                               | 7.6            | 207          | 6 port selector | 3/8"-1/2"     | \$ 597.00         |
| HS1060P6 or P8 manifold only \$ 280.00 |                |              |                 |               |                   |

- Manifold dimensions, 120 x 75 x 37mm (excluding cartridges)
- \* Non-common stock item – *Contact Hyspecs* for lead time
- The assembly price includes leadwires coils

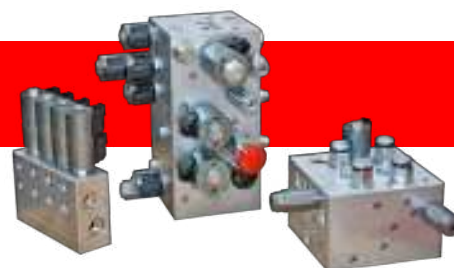
HS9606P16CS



| Cartridges                           | Q max<br>l/min | P max<br>bar | Notes           | Ports<br>BSPP   | Assembly<br>Price |
|--------------------------------------|----------------|--------------|-----------------|-----------------|-------------------|
| PD42-M40 x 2<br>+ SV08-31            | 260            | 350          | 6 port selector | 1"<br>¼" D & pp | \$ 2569.00        |
| HS9606P16CS manifold only \$ 1143.00 |                |              |                 |                 |                   |

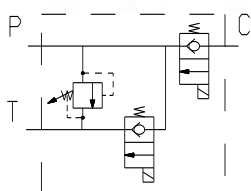
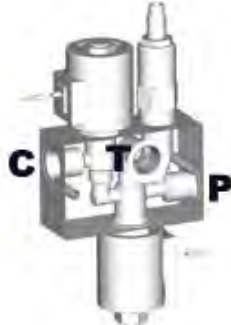
- Manifold dimensions, 150 x 150 x 100mm (excluding cartridges)
- Steel manifold
- Spring chamber vents to atmosphere

## Solenoid Valves



### Single Acting Cylinder Lift / Lower Valves

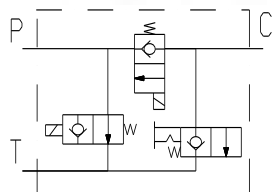
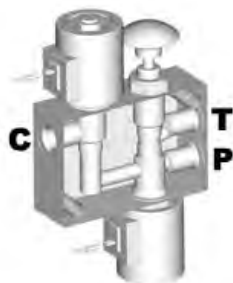
**HS9604P8C**



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes         | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|---------------|---------------|-------------------|
| SV10-20 x 2<br>+ RV10-26          | 56             | 240          | Normally up   | 1/2"          | \$ 800.00         |
| SV10-20<br>+ SV10-21<br>+ RV10-26 | 56             | 207          | Normally hold | 1/2"          | \$ 839.00         |
| HS9604P8C manifold only \$ 257.00 |                |              |               |               |                   |

- Manifold dimensions, 99 x 65 x 39mm (excluding cartridges)

**HS9607P6C**



| Cartridges                        | Q max<br>l/min | P max<br>bar | Notes           | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|-----------------|---------------|-------------------|
| SV10-20<br>+ SV10-21<br>+ MP10-20 | 56             | 207          | Manual override | 3/8"          | \$ 802.00         |
| HS9607P6C manifold only \$ 257.00 |                |              |                 |               |                   |

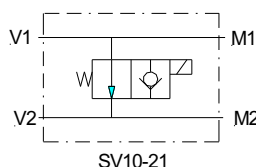
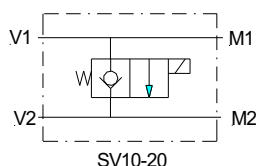
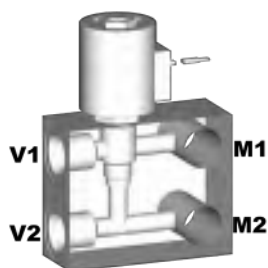
- Manifold dimensions, 110 x 75 x 37mm (excluding cartridges)

## Solenoid Valves



### Start / Stop Valves - Motor Banjo Bolt Mounted

#### HS7001U14A



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                                                         | Ports<br>UNO | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------------------------------------------------------------------|--------------|-------------------|
| SV10-20                            | 56             | 190          | 1.8" port centre, suits H S & T series, N.C.<br>7/8" banjo bolts (BB-14L x 2) | 7/8"         | \$ 460.00         |
| SV10-21                            | 56             | 190          | 1.8" port centre, suits H S & T series, N.O.<br>7/8" banjo bolts (BB-14L x 2) | 7/8"         | \$ 499.00         |
| HS7001U14A manifold only \$ 184.00 |                |              |                                                                               |              |                   |

- Manifold dimensions, 99 x 80 x 39mm (excluding cartridge)

#### HS7013U14A



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                                                    | Ports<br>UNO | Assembly<br>Price |
|------------------------------------|----------------|--------------|----------------------------------------------------------|--------------|-------------------|
| SV10-20                            | 56             | 240          | Suits 2000 series, N.C.<br>7/8" banjo bolts (BB-14L x 2) | 7/8"         | \$ 460.00         |
| SV10-21                            | 68             | 207          | Suits 2000 series, N.O.<br>7/8" banjo bolts (BB-14L x 2) | 7/8"         | \$ 499.00         |
| HS7013U14A manifold only \$ 184.00 |                |              |                                                          |              |                   |

- Manifold dimensions, 80 x 75 x 39mm (excluding cartridge)

## Contents Section E – Motion Controls

### **E1 Counterbalance Valves**

- E1 Single In-Line
- E2 Single In-Line With Brake Release
- E3 Double In-Line
- E6 Double In-Line With Brake Release
- E7 Single Pad Mounted
- E9 Double Pad Mounted
- E11 Banjo Bolt Mounted – Char-Lynn H, S & T Series
- E13 Banjo Bolt Mounted – Char-Lynn 2000 Series
- E14 Banjo Bolt Mounted – Char-Lynn 4000 Series
- E15 Banjo Bolt Mounted – Char-Lynn 6000 Series
- E16 Banjo Bolt Mounted – Char-Lynn 10000 Series
- E16 Banjo Bolt Mounted – Motor Torque Limiting Valves

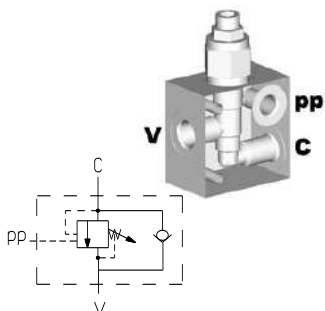
### **E17 Regenerative Valves**

## Counterbalance Valves



### Single In-Line

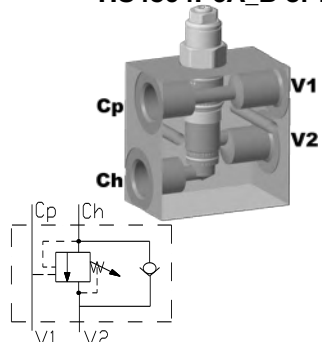
#### HS4508P6A



| Cartridge                         | Q max<br>l/min | P max<br>bar | Notes           | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|-----------------|---------------|-------------------|
| CBPA-08                           | 38             | 350*         | 4:1 pilot ratio | 3/8"          | \$ 287.00         |
| HS4508P6A manifold only \$ 132.00 |                |              |                 |               |                   |

- Manifold dimensions, 62.5 x 62.5 x 38mm (excluding cartridge)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

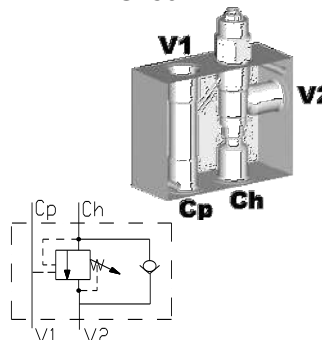
#### HS4504P6A\_B or P8A\_B



| Cartridge                                            | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------------|----------------|--------------|-------------------|---------------|-------------------|
| CBCG-LJN                                             | 60             | 350*         | 4.5:1 pilot ratio | 3/8"-1/2"     | \$ 317.00         |
| CBCH-LJN                                             | 60             | 350*         | 10:1 pilot ratio  | 3/8"-1/2"     | \$ 337.00         |
| HS4504P6A_B or P8A_B manifold only \$ 147.00         |                |              |                   |               |                   |
| HS4504P6AS_B or P8AS_B steel manifold only \$ 220.00 |                |              |                   |               |                   |

- Manifold dimensions, 75.5 x 75 x 45mm (excluding cartridge)
- \* Requires steel block over 240 bar

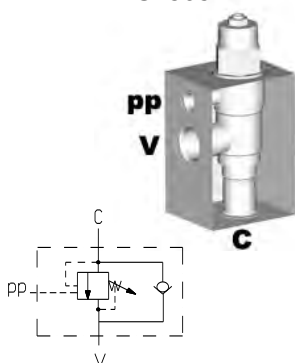
#### HS4502P12A



| Cartridge                                 | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------|----------------|--------------|-------------------|---------------|-------------------|
| CBEG-LJN                                  | 120            | 350*         | 4.5:1 pilot ratio | 3/4"          | \$ 440.00         |
| CBEH-LJN                                  | 120            | 350*         | 10:1 pilot ratio  | 3/4"          | \$ 460.00         |
| HS4502P12A manifold only \$ 180.00        |                |              |                   |               |                   |
| HS4502P12AS steel manifold only \$ 330.00 |                |              |                   |               |                   |

- Manifold dimensions, 125 x 100 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar

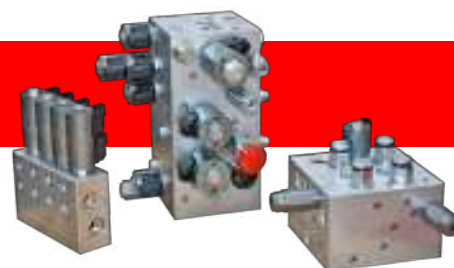
#### HS4505P12A



| Cartridge                                 | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------|----------------|--------------|-------------------|---------------|-------------------|
| CBGG-LJN                                  | 240            | 350*         | 4.5:1 pilot ratio | 3/4" & 1/4"   | \$ 750.00         |
| HS4505P12A manifold only \$ 300.00        |                |              |                   |               |                   |
| HS4505P12AS steel manifold only \$ 593.00 |                |              |                   |               |                   |

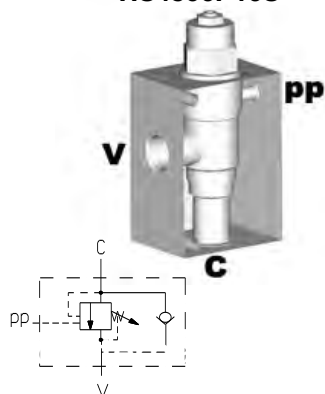
- Manifold dimensions, 110 x 75 x 62.5mm (excluding cartridge)
- \* Requires steel block over 240 bar

## Counterbalance Valves



### Single In-Line

HS4506P16S

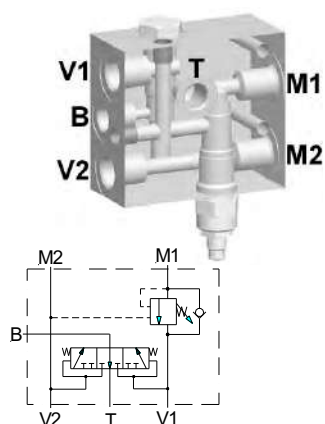


| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------|--------------|-------------------|
| CBIG-LJN                           | 480            | 350          | 4.5:1 pilot ratio | 1" & 1/4" pp | \$ 1675.00        |
| HS4506P16S manifold only \$ 675.00 |                |              |                   |              |                   |

- Manifold dimensions, 150 x 100 x 75mm (excluding cartridge)
- Steel block

### Single In-Line With Brake Release

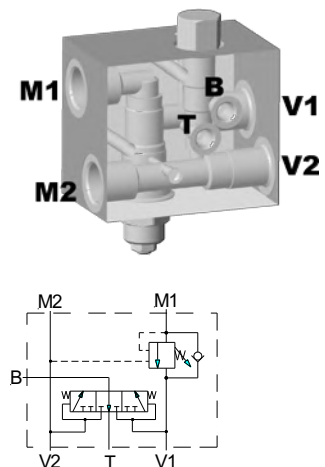
HS4513P8BB\_B



| Cartridge                            | Q max<br>l/min | P max<br>bar | Notes                         | Ports<br>BSP      | Assembly<br>Price |
|--------------------------------------|----------------|--------------|-------------------------------|-------------------|-------------------|
| CBCG-LJN<br>+ HBV10-40               | 60             | 350*         | 4.5:1 ratio, brake<br>release | 1/2"<br>1/4" B, T | \$ 631.00         |
| HS4513P8BB_B manifold only \$ 241.00 |                |              |                               |                   |                   |

- Manifold dimensions, 110 x 100 x 50mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

HS4527P12BB



| Cartridge                           | Q max<br>l/min | P max<br>bar | Notes                         | Ports<br>BSP      | Assembly<br>Price |
|-------------------------------------|----------------|--------------|-------------------------------|-------------------|-------------------|
| CBEG-LJN<br>+HBV10-40               | 120            | 350*         | 4.5:1 ratio, brake<br>release | 3/4"<br>1/4" B, T | \$ 744.00         |
| HS4527P12BB manifold only \$ 264.00 |                |              |                               |                   |                   |

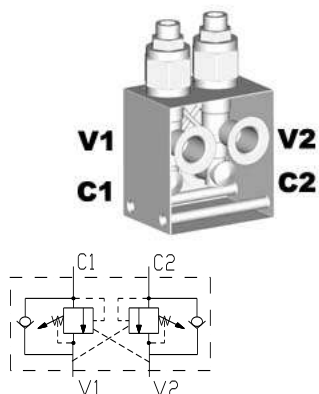
- Manifold dimensions, 115 x 100 x 75mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

## Counterbalance Valves



### Double In-Line

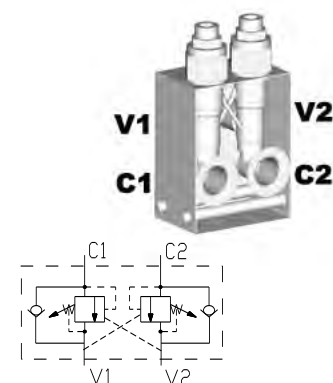
#### HS4608P6B



| Cartridges                               | Q max<br>l/min | P max<br>bar | Notes           | Ports<br>BSP | Assembly<br>Price |
|------------------------------------------|----------------|--------------|-----------------|--------------|-------------------|
| CBPA-08 x 2                              | 38             | 350*         | 4:1 pilot ratio | 3/8"         | \$ 499.00         |
| HS4608P6B manifold only \$ 189.00        |                |              |                 |              |                   |
| HS4608P6BS steel manifold only \$ 264.00 |                |              |                 |              |                   |

- Manifold dimensions, 75 x 70 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar

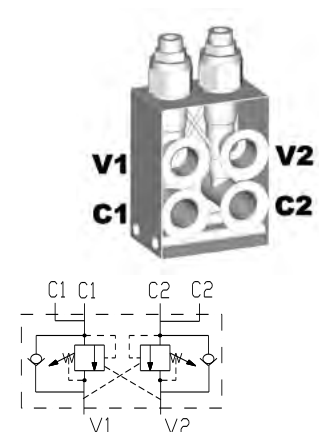
#### HS4605P8B



| Cartridges                               | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSP | Assembly<br>Price |
|------------------------------------------|----------------|--------------|--------------------------------------|--------------|-------------------|
| CBCG-LJN x 2                             | 60             | 350*         | 4.5:1 pilot ratio,<br>compact design | 1/2"         | \$ 529.00         |
| CBCH-LJN x 2                             | 60             | 350*         | 10:1 pilot ratio,<br>compact design  | 1/2"         | \$ 569.00         |
| HS4605P8B manifold only \$ 189.00        |                |              |                                      |              |                   |
| HS4605P8BS steel manifold only \$ 285.00 |                |              |                                      |              |                   |

- Manifold dimensions, 100 x 75 x 50mm (excluding cartridges)
- \* Requires steel block over 240 bar

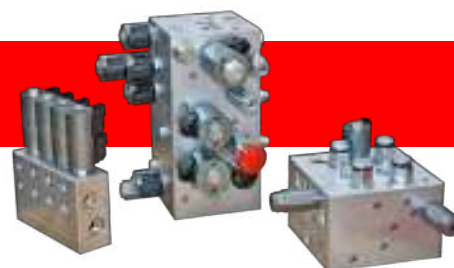
#### HS4606P8B



| Cartridges                        | Q max<br>l/min | P max<br>bar | Notes                                    | Ports<br>BSP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|------------------------------------------|--------------|-------------------|
| CBCG-LJN x 2                      | 60             | 350*         | 4.5:1 pilot ratio,<br>through ports on C | 1/2"         | \$ 579.00         |
| CBCH-LJN x 2                      | 60             | 350*         | 10:1 pilot ratio,<br>through ports on C  | 1/2"         | \$ 619.00         |
| HS4606P8B manifold only \$ 239.00 |                |              |                                          |              |                   |

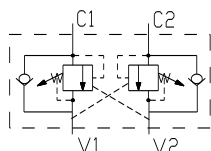
- Manifold dimensions, 100 x 75 x 50mm (excluding cartridges)
- \* Requires steel block over 240 bar

## Counterbalance Valves



### Double In-Line

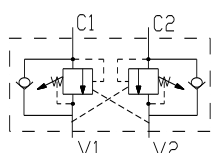
#### HS4611P6B or P8B



| Cartridges                              | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP  | Assembly<br>Price |
|-----------------------------------------|----------------|--------------|--------------------------------------|----------------|-------------------|
| CBCG-LJN x 2                            | 60             | 350*         | 4.5:1 pilot ratio,<br>compact design | 3/8"<br>- 1/2" | \$ 520.00         |
| CBCH-LJN x 2                            | 60             | 350*         | 10:1 pilot ratio,<br>compact design  | 3/8"<br>- 1/2" | \$ 560.00         |
| HS4611P6B or P8B manifold only \$180.00 |                |              |                                      |                |                   |

- Manifold dimensions, 75 x 75 x 40mm for HS4611P6B and 80 x 75 x 50mm for HS4611P8B (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

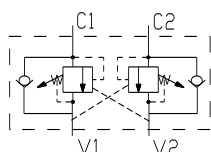
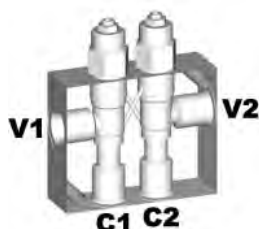
#### HS4613P6B\*



| Cartridges                       | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| CBCG-LJN x 2                     | 60             | 350**        | 4.5:1 pilot ratio,<br>compact design | 3/8"          | \$ 520.00         |
| CBCH-LJN x 2                     | 60             | 350**        | 10:1 pilot ratio,<br>compact design  | 3/8"          | \$ 560.00         |
| HS4613P6B manifold only \$180.00 |                |              |                                      |               |                   |

- Manifold dimensions, 125 x 75 x 40mm (excluding cartridges)
- \* Non-common stock item - Contact Hyspecs for lead time
- \*\* Requires steel block over 240 bar – call Hyspecs for pricing

#### HS4602P12B



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------|---------------|-------------------|
| CBEG-LJN x 2                       | 120            | 350*         | 4.5:1 pilot ratio | 3/4"          | \$ 785.00         |
| CBEH-LJN x 2                       | 120            | 350*         | 10:1 pilot ratio  | 3/4"          | \$ 825.00         |
| HS4602P12B manifold only \$ 265.00 |                |              |                   |               |                   |

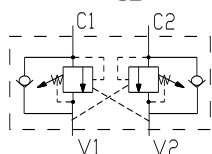
- Manifold dimensions, 120 x 99 x 39mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

## Counterbalance Valves



### Double In-Line

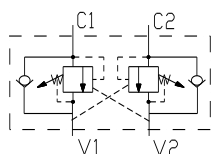
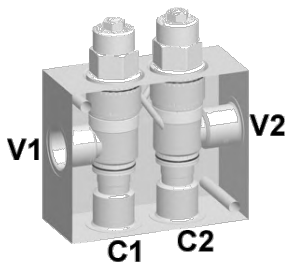
#### HS4615P12B\*



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------|---------------|-------------------|
| CBEG-LJN x 2                       | 120            | 350**        | 4.5:1 pilot ratio | 3/4"          | \$ 785.00         |
| CBEH-LJN x 2                       | 120            | 350**        | 10:1 pilot ratio  | 3/4"          | \$ 825.00         |
| HS4615P12B manifold only \$ 265.00 |                |              |                   |               |                   |

- Manifold dimensions, 100 x 80 x 75mm (excluding cartridges)
- \* Non-common stock item - *Contact Hyspecs for lead time*
- \*\* Requires steel block over 240 bar – *call Hyspecs for pricing*

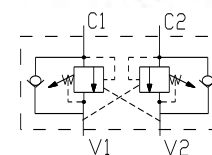
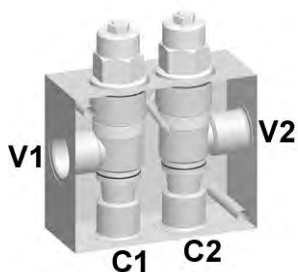
#### HS4603P16B



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------|---------------|-------------------|
| CBGG-LJN x 2                       | 240            | 350*         | 4.5:1 pilot ratio | 1"            | \$ 1300.00        |
| HS4603P16B manifold only \$ 400.00 |                |              |                   |               |                   |

- Manifold dimensions, 165 x 125 x 60mm (excluding cartridges)
- \* Requires steel block over 240 bar – *call Hyspecs for pricing*

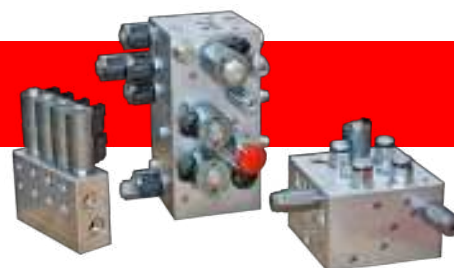
#### HS4609P20B



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------|---------------|-------------------|
| CBIG-LJN x 2                       | 480            | 350*         | 4.5:1 pilot ratio | 1.25"         | \$ 2670.00        |
| HS4609P20B manifold only \$ 670.00 |                |              |                   |               |                   |

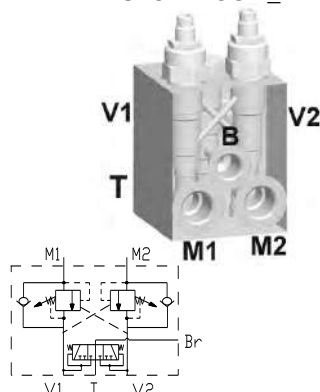
- Manifold dimensions, 180 x 150 x 75mm (excluding cartridges)
- \* Requires steel block over 240 bar – *call Hyspecs for pricing*

## Counterbalance Valves



### Double In-Line With Brake Release

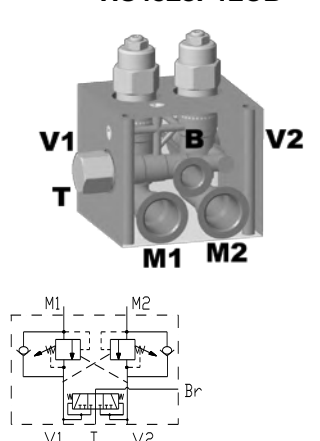
#### HS4514P8CB\_B



| Cartridge                            | Q max<br>l/min | P max<br>bar | Notes                         | Ports<br>BSP      | Assembly<br>Price |
|--------------------------------------|----------------|--------------|-------------------------------|-------------------|-------------------|
| CBCG-LJN x 2<br>+ HBV10-40           | 60             | 350*         | 4.5:1 ratio, brake<br>release | 1/2"<br>1/4" B, T | \$ 892.00         |
| HS4514P8CB_B manifold only \$ 332.00 |                |              |                               |                   |                   |

- Manifold dimensions, 95 x 75 x 75mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

#### HS4528P12CB\*

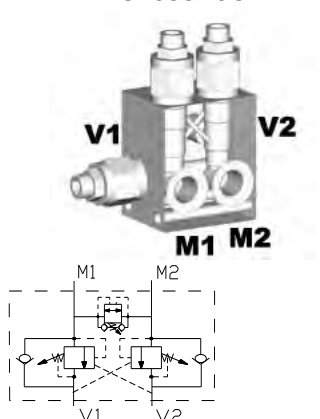


| Cartridge                           | Q max<br>l/min | P max<br>bar | Notes                         | Ports<br>BSP      | Assembly<br>Price |
|-------------------------------------|----------------|--------------|-------------------------------|-------------------|-------------------|
| CBEG-LJN x 2<br>+ HBV10-40          | 120            | 350**        | 4.5:1 ratio, brake<br>release | 3/4"<br>1/4" B, T | \$ 1140.00        |
| HS4528P12CB manifold only \$ 400.00 |                |              |                               |                   |                   |

- Manifold dimensions, 100 x 100 x 95mm (excluding cartridges)
- \* Non-common stock item - Contact Hyspecs for lead time
- \*\* Requires steel block over 240 bar – call Hyspecs for pricing

### Double In-Line With Cross-Line Relief

#### HS4638P6CR



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes           | Ports<br>BSP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-----------------|--------------|-------------------|
| CBPA-08 X 2<br>+ RVBD-08           | 38             | 350*         | 4:1 pilot ratio | 3/8"         | \$ 778.00         |
| HS4638P6CR manifold only \$ 293.00 |                |              |                 |              |                   |

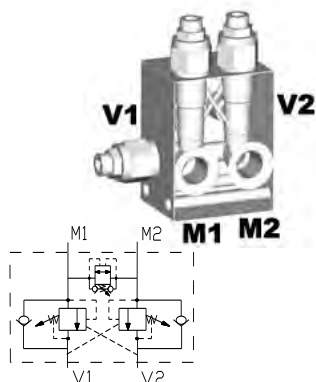
- Manifold dimensions, 75 x 62 x 50mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

## Counterbalance Valves



### Double In-Line With Cross-Line Relief

HS4639P8CR

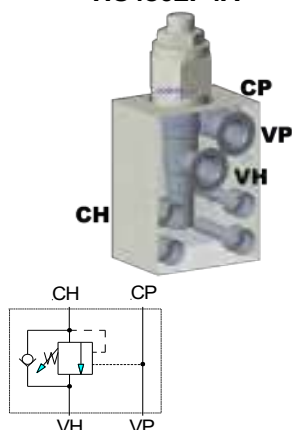


| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|-------------------|---------------|-------------------|
| CBCG-LJN X 2<br>+ RVBD-10          | 60             | 350*         | 4.5:1 pilot ratio | 1/2"          | \$ 825.00         |
| HS4639P8CR manifold only \$ 300.00 |                |              |                   |               |                   |

- Manifold dimensions, 100 x 75 x 60mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

### Single Pad Mounted

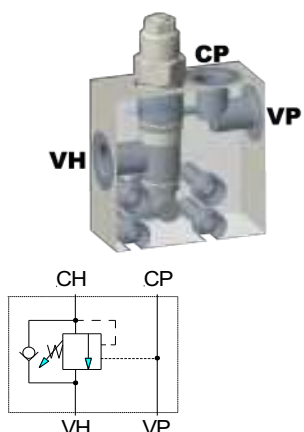
HS4802P4A



| Cartridge                         | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| CBPA-08                           | 38             | 350*         | 4:1 pilot ratio,<br>code 61 SAE 1/2" | 1/4"          | \$ 305.00         |
| HS4802P4A manifold only \$ 150.00 |                |              |                                      |               |                   |

- Manifold dimensions, 75 x 55 x 40mm (excluding cartridge)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

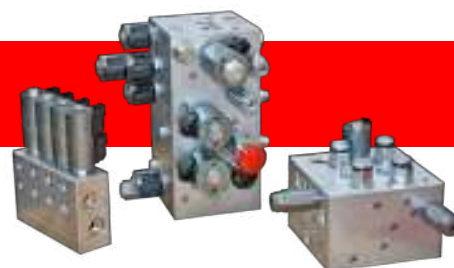
HS4803P6A\*\*



| Cartridge                         | Q max<br>l/min | P max<br>bar | Notes                                  | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|----------------------------------------|---------------|-------------------|
| CBCG-LJN                          | 60             | 350*         | 4.5:1 pilot ratio,<br>code 61 SAE 1/2" | 3/8"          | \$ 335.00         |
| CBCA-LHN                          | 60             | 280*         | 3:1 pilot ratio,<br>code 61 SAE 1/2"   | 3/8"          | \$355.00          |
| HS4803P6A manifold only \$ 165.00 |                |              |                                        |               |                   |

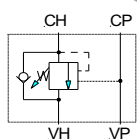
- Manifold dimensions, 75 x 75 x 35mm (excluding cartridge)
- \* Requires steel block over 240 bar – call Hyspecs for pricing
- \*\* Non-common stock item - Contact Hyspecs for lead time

## Counterbalance Valves



### Single Pad Mounted

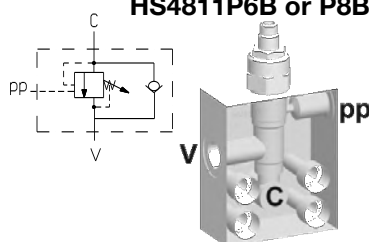
#### HS4804P6B



| Cartridge                                | Q max<br>l/min | P max<br>bar | Notes                                  | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------|----------------|--------------|----------------------------------------|---------------|-------------------|
| CBCG-LJN                                 | 60             | 350*         | 4.5:1 pilot ratio,<br>code 61 SAE 3/4" | 3/8"-<br>1/2" | \$ 382.00         |
| CBCA-LHN                                 | 60             | 280*         | 3:1 pilot ratio,<br>code 61 SAE 3/4"   | 3/8"-<br>1/2" | \$402.00          |
| HS4804P6B \$ 212.                        |                |              |                                        |               |                   |
| HS4811P6B or P8B manifold only \$ 212.00 |                |              |                                        |               |                   |

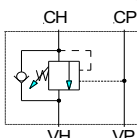
- Manifold dimensions, 90 x 75 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

#### HS4811P6B or P8B



- Manifold dimensions, 90 x 75 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

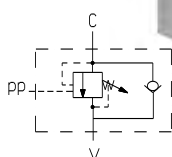
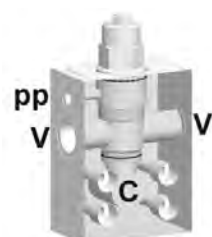
#### HS4813P12C\*



| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| CBEG-LJN                           | 120            | 320**        | 4.5:1 pilot ratio,<br>code 61 SAE 1" | 3/4"          | \$ 610.00         |
| CBEA-LHN                           | 120            | 280**        | 3:1 pilot ratio<br>Code 61 SAE 1"    | 3/4"          | \$ 630.00         |
| HS4813P12C manifold only \$ 350.00 |                |              |                                      |               |                   |

- Manifold dimensions, 100 x 100 x 60mm (excluding cartridge)
- \*Non-common stock item - Contact Hyspecs for lead time
- \*\*Requires steel block over 240 bar – call Hyspecs for pricing

#### HS4815P16E



| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes                                  | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|----------------------------------------|---------------|-------------------|
| CBIG-LJN                           | 480            | 210          | 4.5:1 pilot ratio,<br>code 61 SAE 1.5" | 1", 1/4" pp   | \$ 1470.00        |
| HS4815P16E manifold only \$ 470.00 |                |              |                                        |               |                   |

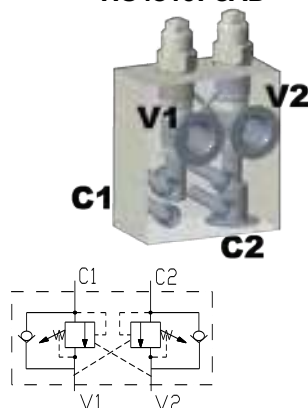
- Manifold dimensions, 170 x 124 x 75mm (excluding cartridge)

## Counterbalance Valves



### Double Pad Mounted

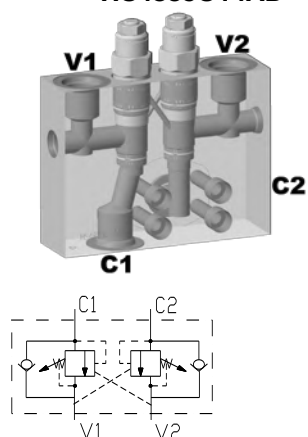
#### HS4819P8AD



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes                                  | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|----------------------------------------|---------------|-------------------|
| CBCG-LJN x 2                       | 60             | 350*         | 4.5:1 pilot ratio,<br>code 61 SAE 1/2" | 1/2"          | \$ 650.00         |
| CBCA-LHN x 2                       | 60             | 280*         | 3:1 pilot ratio,<br>code 61 SAE 1/2"   | 1/2"          | \$ 690.00         |
| HS4819P8AD manifold only \$ 310.00 |                |              |                                        |               |                   |

- Manifold dimensions, 100 x 90 x 50mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

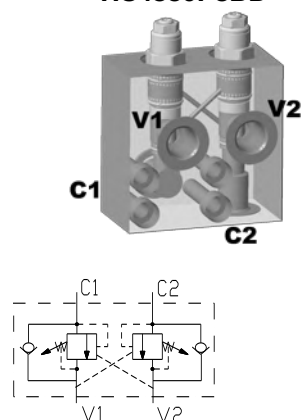
#### HS4835U14AD\*



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                                  | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|----------------------------------------|--------------|-------------------|
| CBCG-LJN x 2                        | 60             | 350**        | 4.5:1 pilot ratio,<br>code 61 SAE 1/2" | 7/8"         | \$ 670.00         |
| CBCA-LHN x 2                        | 60             | 280**        | 3:1 pilot ratio,<br>code 61 SAE 1/2"   | 7/8"         | \$ 710.00         |
| HS4835U14AD manifold only \$ 330.00 |                |              |                                        |              |                   |

- Manifold dimensions, 130 x 100 x 37mm (excluding cartridges)
- \* Non-common stock item - Contact Hyspecs for lead time
- \*\* Requires steel block over 240 bar – call Hyspecs for pricing

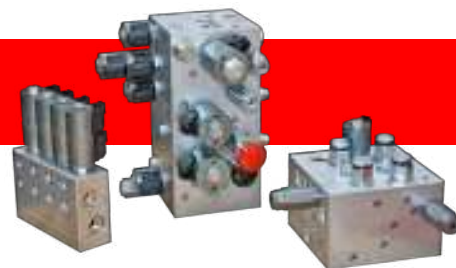
#### HS4830P8BD\*



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes                                  | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|----------------------------------------|---------------|-------------------|
| CBCG-LJN x 2                       | 60             | 350**        | 4.5:1 pilot ratio,<br>code 61 SAE 3/4" | 1/2"          | \$ 670.00         |
| CBCA-LHN x 2                       | 60             | 280**        | 3:1 pilot ratio,<br>code 61 SAE 3/4"   | 1/2"          | \$ 710.00         |
| HS4830P8BD manifold only \$ 330.00 |                |              |                                        |               |                   |

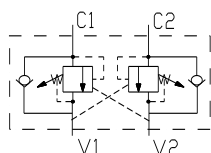
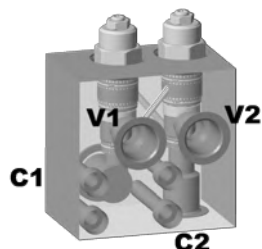
- Manifold dimensions, 100 x 100 x 55mm (excluding cartridges)
- \* Non-common stock item - Contact Hyspecs for lead time
- \*\* Requires steel block over 240 bar – call Hyspecs for pricing

## Counterbalance Valves



### Double Pad Mounted

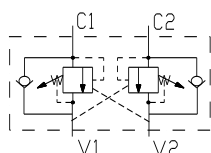
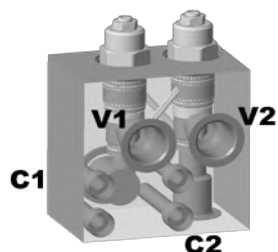
#### HS4832P12CD\*



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| CBEG-LJN x 2                        | 120            | 320**        | 4.5:1 pilot ratio,<br>code 61 SAE 1" | 3/4"          | \$ 925.00         |
| CBEA-LHN x 2                        | 120            | 280**        | 3:1 pilot ratio,<br>code 61 SAE 1"   | 3/4"          | \$ 965.00         |
| HS4832P12CD manifold only \$ 405.00 |                |              |                                      |               |                   |

- Manifold dimensions, 110 x 100 x 75mm (excluding cartridges)
- \* Non-common stock item - *Contact Hyspecs* for lead time
- \*\* Requires steel block over 240 bar – *call Hyspecs for pricing*

#### HS4828P12CDS



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|--------------------------------------|---------------|-------------------|
| CBEG-LJN x 2                        | 120            | 350          | 4.5:1 pilot ratio,<br>code 62 SAE 1" | 3/4"          | \$ 945.00         |
| CBEA-LHN x 2                        | 120            | 280          | 3:1 pilot ratio,<br>code 62 SAE 1"   | 3/4"          | \$ 995.00         |
| HS4828P12CD manifold only \$ 425.00 |                |              |                                      |               |                   |

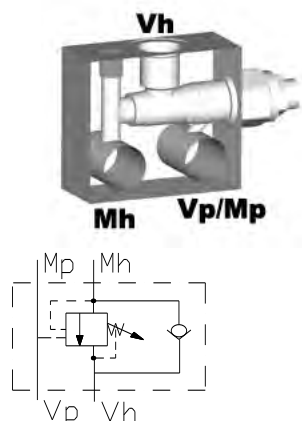
- Manifold dimensions, 126 x 105 x 75mm (excluding cartridges)
- Steel block

## Counterbalance Valves



### Banjo Bolt Mounted – Char-Lynn H, S & T Series – 1.8" Centre

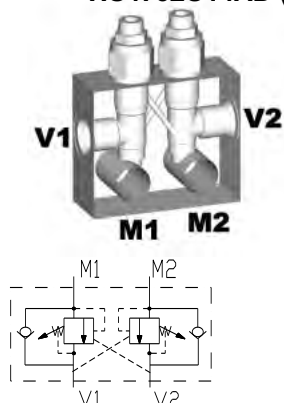
#### HS4701U14A (Single C/B)



| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes                                                | Ports<br>UNO | Assembly<br>Price |
|------------------------------------|----------------|--------------|------------------------------------------------------|--------------|-------------------|
| CBCG-LJN                           | 60             | 190          | 4.5:1 pilot ratio, Vp port on banjo bolt, BB-14T+14L | 7/8"         | \$ 457.00         |
| CBCH-LJN                           | 60             | 190          | 10:1 pilot ratio, Vp port on banjo bolt, BB-14T+14L  | 7/8"         | \$ 477.00         |
| HS4701U14A manifold only \$ 195.00 |                |              |                                                      |              |                   |

- Manifold dimensions, 85 x 75 x 37mm (excluding cartridge)

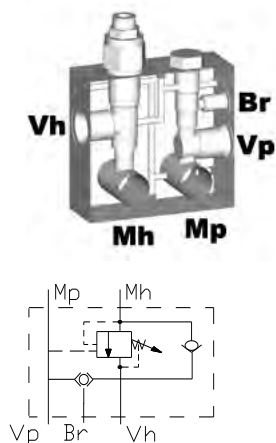
#### HS4702U14AD (Double C/B)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                         | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|-------------------------------|--------------|-------------------|
| CBCG-LJN x 2                        | 60             | 190          | 4.5:1 pilot ratio, BB-14L x 2 | 7/8"         | \$ 649.00         |
| CBCH-LJN x 2                        | 60             | 190          | 10:1 pilot ratio, BB-14L x 2  | 7/8"         | \$ 689.00         |
| HS4702U14AD manifold only \$ 217.00 |                |              |                               |              |                   |

- Manifold dimensions, 99 x 90 x 39mm (excluding cartridges)

#### HS4703U14AL\_B (Single C/B with shuttle for brake release)



| Cartridges                            | Q max<br>l/min | P max<br>bar | Notes                         | Ports<br>UNO    | Assembly<br>Price |
|---------------------------------------|----------------|--------------|-------------------------------|-----------------|-------------------|
| CBCG-LJN + LS08-30                    | 60             | 190          | 4.5:1 pilot ratio, BB-14L x 2 | 7/8" & 7/16" Br | \$ 595.00         |
| HS4703U14AL_B manifold only \$ 264.00 |                |              |                               |                 |                   |

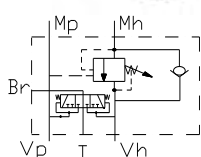
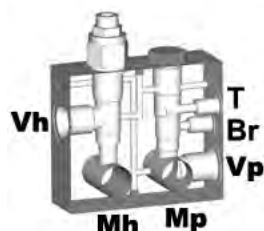
- Manifold dimensions, 105 x 99 x 39mm (excluding cartridges)

## Counterbalance Valves

### Banjo Bolt Mounted – Char-Lynn H, S & T Series – 1.8" Centre



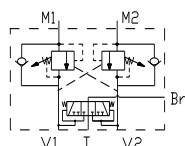
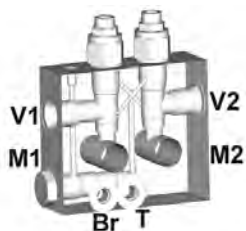
#### HS4705U14AB\_B (Single C/B with brake release valve)



| Cartridges                            | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO              | Assembly<br>Price |
|---------------------------------------|----------------|--------------|---------------------------------|---------------------------|-------------------|
| CBCG-LJN<br>+ BV10-40                 | 60             | 190          | 4.5:1 pilot ratio<br>BB-14L x 2 | 7/8" &<br>7/16"<br>Br & T | \$ 789.00         |
| HS4705U14AB_B manifold only \$ 320.00 |                |              |                                 |                           |                   |

- Manifold dimensions, 115 x 99 x 39mm (excluding cartridges)

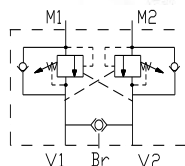
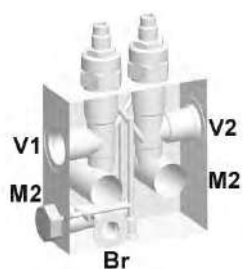
#### HS4706U14AB (Double C/B with brake release valve)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO              | Assembly<br>Price |
|-------------------------------------|----------------|--------------|---------------------------------|---------------------------|-------------------|
| CBCG-LJN x 2<br>+ BV10-40           | 60             | 190          | 4.5:1 pilot ratio<br>BB-14L x 2 | 7/8" &<br>7/16"<br>Br & T | \$ 999.00         |
| HS4706U14AB manifold only \$ 360.00 |                |              |                                 |                           |                   |

- Manifold dimensions, 125 x 110 x 42mm (excluding cartridges)

#### HS4708U14AE (Double C/B with shuttle for brake release)



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO          | Assembly<br>Price |
|------------------------------------|----------------|--------------|---------------------------------|-----------------------|-------------------|
| CBCG-LJN x 2<br>+ LS08-30          | 60             | 190          | 4.5:1 pilot ratio<br>BB-14L x 2 | 7/8" &<br>7/16"<br>Br | \$ 833.00         |
| HS470U14AE manifold only \$ 332.00 |                |              |                                 |                       |                   |

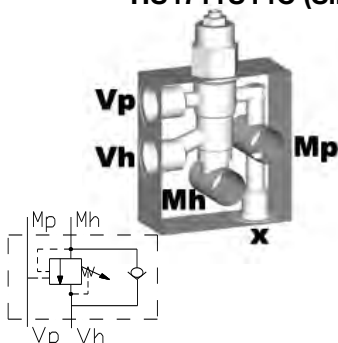
- Manifold dimensions, 110 x 99 x 39mm (excluding cartridges)

## Counterbalance Valves



### Banjo Bolt Mounted – Char-Lynn 2000 Series

#### HS4711U14C (Single C/B)

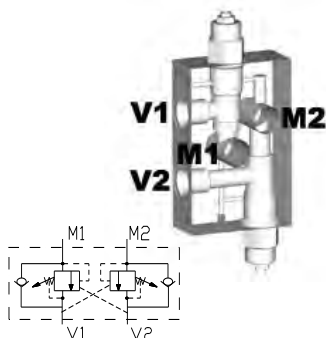


| Cartridge | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO | Assembly<br>Price |
|-----------|----------------|--------------|---------------------------------|--------------|-------------------|
| CBEG-LJN  | 115            | 310*         | 4.5:1 pilot ratio<br>BB-14L x 2 | 7/8"         | \$ 559.00         |
| CBEH-LJN  | 115            | 310*         | 10:1 ratio<br>BB-14L x 2        | 7/8"         | \$ 579.00         |

HS4711U14C manifold only \$ 207.00

- Manifold dimensions, 90 x 90 x 39mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

#### HS4712U14CD (Double C/B)

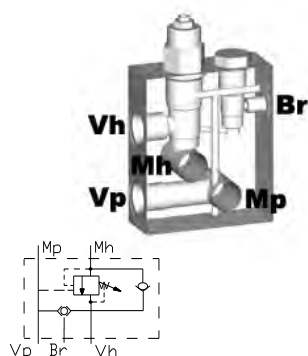


| Cartridges   | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO | Assembly<br>Price |
|--------------|----------------|--------------|---------------------------------|--------------|-------------------|
| CBEG-LJN x 2 | 115            | 310*         | 4.5:1 pilot ratio<br>BB-14L x 2 | 7/8"         | \$ 927.00         |
| CBEH-LJN x 2 | 115            | 310*         | 10:1 ratio<br>BB-14L x 2        | 7/8"         | \$ 967.00         |

HS4712U14CD manifold only \$ 315.00

- Manifold dimensions, 140 x 90 x 39mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

#### HS4713U14CL\_B (Single C/B with shuttle for brake release)

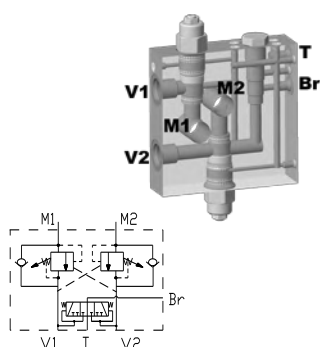


| Cartridges            | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO       | Assembly<br>Price |
|-----------------------|----------------|--------------|---------------------------------|--------------------|-------------------|
| CBEG-LJN<br>+ LS08-30 | 115            | 240          | 4.5:1 pilot ratio<br>BB-14L x 2 | 7/8" &<br>7/16" Br | \$ 736.00         |

HS4713U14CL\_B manifold only \$ 315.00

- Manifold dimensions, 120 x 100 x 39mm (excluding cartridges)

#### HS4715U14CB (Double C/B with brake release valve)

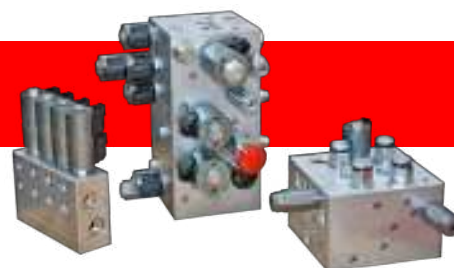


| Cartridges                | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO              | Assembly<br>Price |
|---------------------------|----------------|--------------|---------------------------------|---------------------------|-------------------|
| CBEG-LJN x 2<br>+ BV10-40 | 115            | 240          | 4.5:1 pilot ratio<br>BB-14L x 2 | 7/8" &<br>7/16"<br>Br & T | \$ 1397.00        |

HS4715U14CB manifold only \$ 578.00

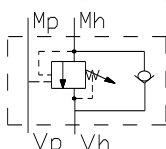
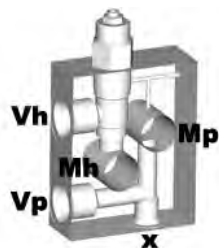
- Manifold dimensions, 150 x 150 x 39mm (excluding cartridges)

## Counterbalance Valves



### Banjo Bolt Mounted – Char-Lynn 4000 Series

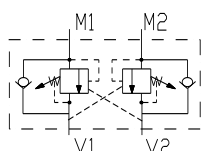
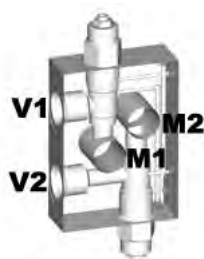
#### HS4721U17E (Single C/B)



| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO | Assembly<br>Price |
|------------------------------------|----------------|--------------|---------------------------------|--------------|-------------------|
| CBEG-LJN                           | 115            | 310*         | 4.5:1 pilot ratio<br>BB-17H x 2 | 1 1/16"      | \$ 735.00         |
| CBEH-LJN                           | 115            | 310*         | 10:1 ratio<br>BB-17H x 2        | 1 1/16"      | \$ 755.00         |
| HS4721U17E manifold only \$ 343.00 |                |              |                                 |              |                   |

- Manifold dimensions, 125 x 99 x 39mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

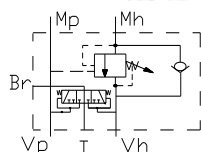
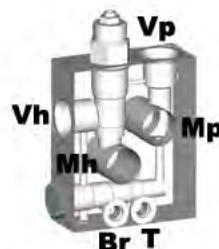
#### HS4722U17ED (Double C/B)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|---------------------------------|--------------|-------------------|
| CBEG-LJN x 2                        | 115            | 310*         | 4.5:1 pilot ratio<br>BB-17H x 2 | 1 1/16"      | \$ 1150.00        |
| CBEH-LJN x 2                        | 115            | 310*         | 10:1 ratio<br>BB-17H x 2        | 1 1/16"      | \$ 1190.00        |
| HS4722U17ED manifold only \$ 498.00 |                |              |                                 |              |                   |

- Manifold dimensions, 140 x 99 x 39mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

#### HS4723U17EB (Single C/B with brake release valve)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO              | Assembly<br>Price |
|-------------------------------------|----------------|--------------|---------------------------------|---------------------------|-------------------|
| CBEG-LJN<br>+ BV10-40               | 115            | 240          | 4.5:1 pilot ratio<br>BB-17H x 2 | 1 1/16" &<br>7/16" Br & T | \$ 934.00         |
| HS4723U17EB manifold only \$ 335.00 |                |              |                                 |                           |                   |

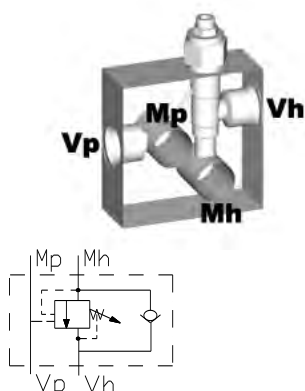
- Manifold dimensions, 125 x 100 x 42mm (excluding cartridges)

## Counterbalance Valves



### Banjo Bolt Mounted – Char-Lynn 6000 Series

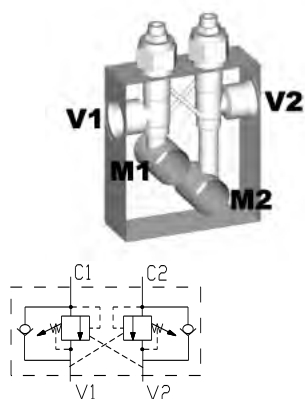
#### HS4734U21G (Single C/B)



| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO | Assembly<br>Price |
|------------------------------------|----------------|--------------|---------------------------------|--------------|-------------------|
| CBEG-LJN                           | 120            | 310*         | 4.5:1 pilot ratio<br>BB-21L x 2 | 1 5/16"      | \$ 860.00         |
| CBEH-LJN                           | 120            | 310*         | 10:1 pilot ratio<br>BB-21L x 2  | 1 5/16"      | \$ 880.00         |
| HS4734U21G manifold only \$ 390.00 |                |              |                                 |              |                   |

- Manifold dimensions, 125 x 100 x 50mm (excluding cartridge)
- \* Requires steel block – call Hyspecs for pricing

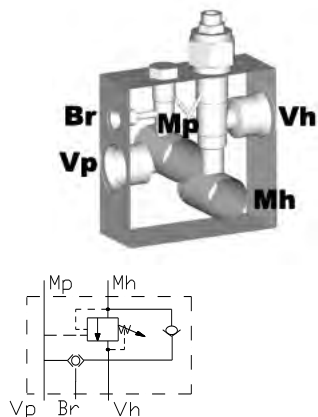
#### HS4735U21GD\* (Double C/B)



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|---------------------------------|--------------|-------------------|
| CBEG-LJN x 2                        | 120            | 310**        | 4.5:1 pilot ratio<br>BB-21L x 2 | 1 5/16"      | \$ 1245.00        |
| CBEH-LJN x 2                        | 120            | 310**        | 10:1 pilot ratio<br>BB-21L x 2  | 1 5/16"      | \$ 1285.00        |
| HS4735U21GD manifold only \$ 515.00 |                |              |                                 |              |                   |

- Manifold dimensions, 150 x 130 x 50mm (excluding cartridges)
- \* Non-common stock item - Contact Hyspecs for lead time
- \*\* Requires steel block over 240 bar – call Hyspecs for pricing

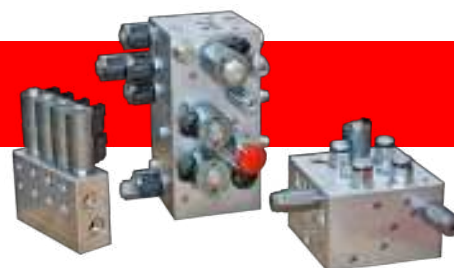
#### HS4736U21GL\* (Single C/B with shuttle for brake release)



| Cartridges                          | Q<br>max<br>l/min | P<br>max<br>bar | Notes                           | Ports<br>UNO             | Assembly<br>Price |
|-------------------------------------|-------------------|-----------------|---------------------------------|--------------------------|-------------------|
| CBEG-LJN<br>+ LS08-30               | 120               | 240             | 4.5:1 pilot ratio<br>BB-21L x 2 | 1 5/16"<br>&<br>9/16" Br | \$ 939.00         |
| HS4736U21GL manifold only \$ 400.00 |                   |                 |                                 |                          |                   |

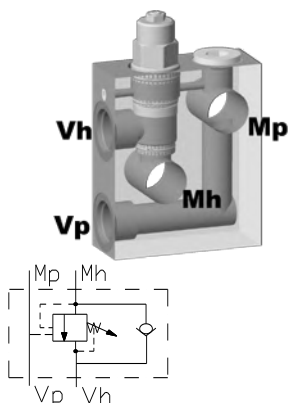
- Manifold dimensions, 125 x 125 x 50mm (excluding cartridges)
- \* Non-common stock item - Contact Hyspecs for lead time

## Counterbalance Valves



### Banjo Bolt Mounted – Char-Lynn 10000 Series

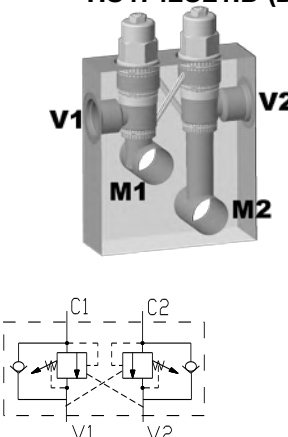
#### HS4741U21I (Single C/B)



| Cartridge                          | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO | Assembly<br>Price |
|------------------------------------|----------------|--------------|---------------------------------|--------------|-------------------|
| CBGG-LJN                           | 240            | 275*         | 4.5:1 pilot ratio<br>BB-21L x 2 | 1 5/16"      | \$ 1060.00        |
| HS4741U21I manifold only \$ 400.00 |                |              |                                 |              |                   |

- Manifold dimensions, 151 x 126 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

#### HS4742U21ID (Double C/B)

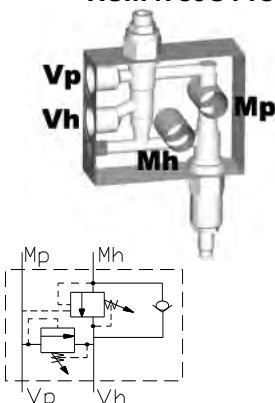


| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO | Assembly<br>Price |
|-------------------------------------|----------------|--------------|---------------------------------|--------------|-------------------|
| CBGG-LJN x 2                        | 240            | 275*         | 4.5:1 pilot ratio<br>BB-21L x 2 | 1 5/16"      | \$ 1570.00        |
| HS4742U21ID manifold only \$ 460.00 |                |              |                                 |              |                   |

- Manifold dimensions, 175 x 151 x 50mm (excluding cartridges)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

### Banjo Bolt Mounted – Motor Torque Limiting Valves

#### HSM4789U14CR (For Char-Lynn 2000 series motors)



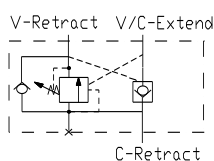
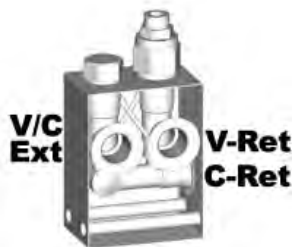
| Cartridges                           | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>UNO | Assembly<br>Price |
|--------------------------------------|----------------|--------------|---------------------------------|--------------|-------------------|
| CBCG-LJN<br>+ RV10-26                | 60             | 240          | 4.5:1 pilot ratio<br>BB-14L x 2 | 7/8"         | \$ 746.00         |
| HSM4789U14CR manifold only \$ 342.00 |                |              |                                 |              |                   |

- Manifold dimensions, 120 x 99 x 39mm (excluding cartridges)

## Regenerative Valves



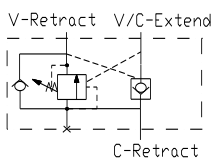
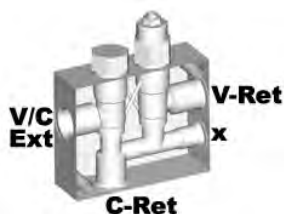
**HS4681P8B**



| Cartridges                        | Q max<br>l/min | P max<br>bar | Notes                                   | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------|----------------|--------------|-----------------------------------------|---------------|-------------------|
| CBCA-LHN<br>+ CODA-XBN            | 60             | 240          | Pressure sensing –<br>350-1200 psi adj. | 1/2"          | \$ 655.00         |
| HS4681P8B manifold only \$ 281.00 |                |              |                                         |               |                   |

- Manifold dimensions, 100 x 75 x 50mm (excluding cartridges)

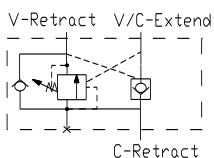
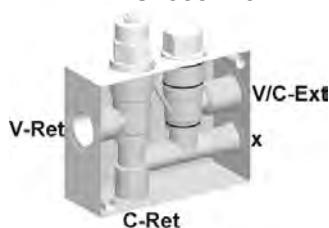
**HS4682P12B\***



| Cartridges                          | Q max<br>l/min | P max<br>bar | Notes                                   | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------|----------------|--------------|-----------------------------------------|---------------|-------------------|
| CBEA-LHN*<br>+ COFA-XAN*            | 120            | 240          | Pressure sensing –<br>350-1200 psi adj. | 3/4"          | \$ POA            |
| HS4682P12B* manifold only \$ 380.00 |                |              |                                         |               |                   |

- Manifold dimensions, 120 x 99 x 39mm (excluding cartridges)
- \* Non-common stock item - Contact Hyspecs for lead time

**HS4683P16B\***



| Cartridges                         | Q max<br>l/min | P max<br>bar | Notes                                       | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------|----------------|--------------|---------------------------------------------|---------------|-------------------|
| CBGA-LHN*<br>+ COHA-XAN*           | 240            | 240          | Pressure<br>sensing – 350-<br>1200 psi adj. | 1"            | \$ POA            |
| HS4683P16B manifold only \$ 460.00 |                |              |                                             |               |                   |

- M
- Manifold dimensions, 160 x 126 x 60mm (excluding cartridges)
- \* Non-common stock item - Contact Hyspecs for lead time

## Contents Section F – Proportional Valves

### **F1 Relief Valves – Solenoid Operated**

- F1 2-Port
- F2 3-Port

### **F3 Pressure Reducing/Relieving Valves – Solenoid Operated**

- F3 Single
- F3 Double

### **F4 Flow Controls – Solenoid Operated**

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### **F10 Directional Valves – Pilot Operated**

- F10 2 Way, 3 Way or 4 Way, 2 Position

### **F11 Directional Valves – Solenoid Operated**

- F11 3 Way, 2 Position
- F11 4 Way, 2 Position
- F12 4 Way, 3 Position
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### **F14 Proportional Valve Controllers**

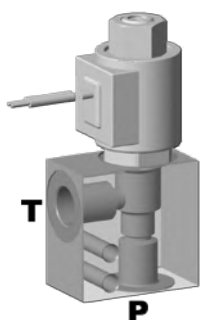
- F14 Programmable Valve Drivers – Coil & Remote Mounted
- F15 Amplifier Plugs
- F16 Electronic Control Units

## Relief Valves – Solenoid Operated



### 2-Port

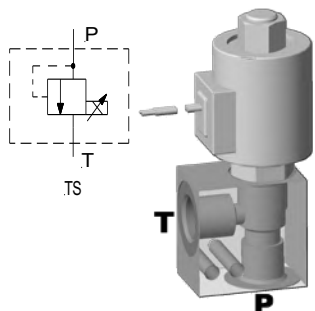
#### HS0820P4\_B or P6\_B



| Cartridge Options                                  | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly Price |
|----------------------------------------------------|----------------|--------------|----------------------|---------------|----------------|
| TS08-20                                            | 12             | 34.5         | Direct acting, Inc.  | 1/4"-3/8"     | \$ 388.00      |
| TS38-20                                            | 12             | 240          | Direct acting, Inc.  | 1/4"-3/8"     | \$ 399.00      |
| TS58-20                                            | 7.6            | 350*         | High Pressure, Inc.  | 1/4"-3/8"     | \$ 574.00      |
| TS38-21                                            | 1.1            | 240          | Direct acting, Dec.  | 1/4"-3/8"     | \$ 528.00      |
| TS08-27                                            | 19             | 240          | Pilot operated, Dec. | 1/4"-3/8"     | \$ 417.00      |
| HS0820P4_B or P6_B manifold only \$ 78.00          |                |              |                      |               |                |
| HS0820P4S_B or P6S_B steel manifold only \$ 132.00 |                |              |                      |               |                |

- Manifold dimensions, 50 x 50 x 32mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS1020P6\_B or P8\_B



| Cartridge Options                                  | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly Price |
|----------------------------------------------------|----------------|--------------|----------------------|---------------|----------------|
| TS10-26                                            | 100            | 240          | Pilot operated, Inc. | 3/8"-1/2"     | \$ 535.00      |
| TS10-27                                            | 100            | 240          | Pilot operated, Dec. | 3/8"-1/2"     | \$ 535.00      |
| ERVD-10                                            | 3.8            | 350*         | Direct acting, Inc.  | 3/8"-1/2"     | \$ 631.00      |
| ERVP-10                                            | 95             | 350*         | Pilot operated, Inc. | 3/8"-1/2"     | \$ 661.00      |
| HS1020P6_B or P8_B manifold only \$ 86.00          |                |              |                      |               |                |
| HS1020P6S_B or P8S_B steel manifold only \$ 132.00 |                |              |                      |               |                |

- Manifold dimensions, 50 x 50 x 35mm (excluding cartridge)
- \* Requires steel block over 240 bar

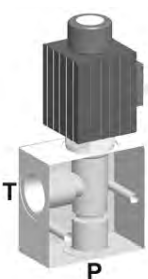
#### HS1220P12



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly Price |
|-----------------------------------|----------------|--------------|----------------------|---------------|----------------|
| TS12-26                           | 200            | 240          | Pilot operated, Inc. | 3/4"          | \$ 741.00      |
| TS12-27*                          | 200            | 240          | Pilot operated, Dec. | 3/4"          | \$ 752.00      |
| HS1220P12 manifold only \$ 155.00 |                |              |                      |               |                |

- Manifold dimensions, 90 x 75 x 50mm (excluding cartridge)
- \*Non-common stock item – Contact Hyspecs for lead time

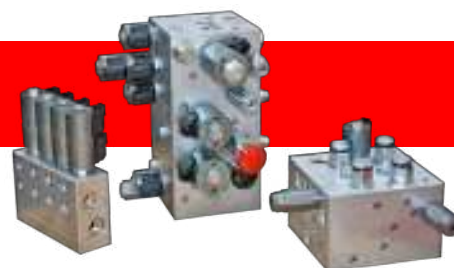
#### HS1221P12



| Cartridge Options                        | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly Price |
|------------------------------------------|----------------|--------------|----------------------|---------------|----------------|
| ERVP-12                                  | 227            | 350*         | Pilot operated, Inc. | 3/4"          | \$ 805.00      |
| HS1221P12 manifold only \$ 155.00        |                |              |                      |               |                |
| HS1221P12S steel manifold only \$ 230.00 |                |              |                      |               |                |

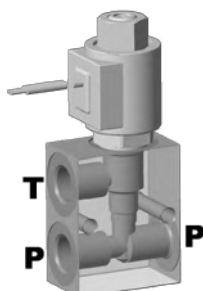
- Manifold dimensions, 75 x 75 x 40mm (excluding cartridge)
- \* Requires steel block over 240 bar

## Relief Valves – Solenoid Operated

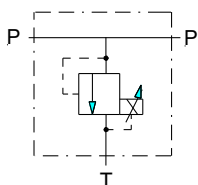


### 3-Port

#### HS0820P6N\_B

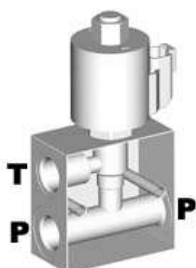


| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly Price |
|-------------------------------------|----------------|--------------|----------------------|---------------|----------------|
| TS08-20                             | 12             | 34.5         | Direct acting, Inc.  | 3/8"          | \$ 423.00      |
| TS38-20                             | 12             | 240          | Direct acting, Inc.  | 3/8"          | \$ 434.00      |
| TS58-20                             | 7.6            | 350*         | Direct acting, Inc.  | 3/8"          | \$ 609.00      |
| TS38-21                             | 1.1            | 240          | Direct acting, Dec.  | 3/8"          | \$ 563.00      |
| TS08-27                             | 19             | 240          | Pilot operated, Dec. | 3/8"          | \$ 452.00      |
| HS0820P6N_B manifold only \$ 113.00 |                |              |                      |               |                |



- Manifold dimensions, 62 x 50 x 30mm (excluding cartridge)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

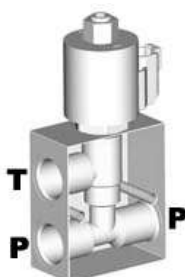
#### HS1020P8N or P12N



| Cartridge Options                                      | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly Price |
|--------------------------------------------------------|----------------|--------------|----------------------|---------------|----------------|
| TS10-26                                                | 100            | 240          | Pilot operated, Inc. | 1/2"-3/4"     | \$ 551.00      |
| TS10-27                                                | 100            | 240          | Pilot operated, Dec. | 1/2"-3/4"     | \$ 551.00      |
| ERVD-10                                                | 3.8            | 350*         | Direct acting, Inc.  | 1/2"-3/4"     | \$ 627.00      |
| ERVP-10                                                | 95             | 350*         | Pilot operated, Inc. | 1/2"-3/4"     | \$ 657.00      |
| HS1020P8N or P12N manifold only \$ 102.00 or \$ 127.00 |                |              |                      |               |                |
| HS1020P8NS steel manifold only \$ 183.00               |                |              |                      |               |                |

- Manifold dimensions, 80 x 75 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HS1220P12N



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSPP | Assembly Price |
|------------------------------------|----------------|--------------|----------------------|---------------|----------------|
| TS12-26                            | 200            | 240          | Pilot operated, Inc. | 3/4"          | \$ 752.00      |
| TS12-27*                           | 200            | 240          | Pilot operated, Dec. | 3/4"          | \$ 752.00      |
| HS1220P12N manifold only \$ 166.00 |                |              |                      |               |                |

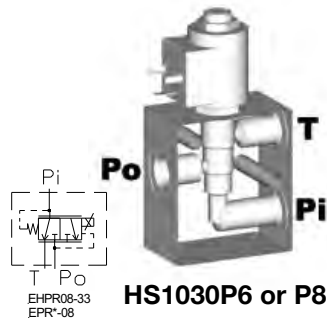
- Manifold dimensions, 90 x 75 x 37mm (excluding cartridge)
- \*Non-common stock item – Contact Hyspecs for lead time

## Pressure Reducing Valves – Solenoid Operated



### Single

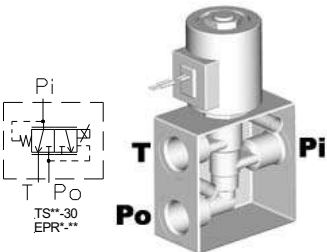
#### HS0830P4 or P6



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                           | Ports<br>BSP | Assembly Price |
|----------------------------------------|----------------|--------------|---------------------------------|--------------|----------------|
| EHPR08-33                              | 15             | 207          | Direct acting, Inc.<br>0-26 bar | 1/4"-3/8"    | \$ 488.00      |
| HS0830P4 or P6 manifold only \$ 127.00 |                |              |                                 |              |                |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

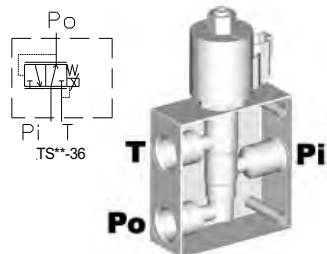
#### HS1030P6 or P8



| Cartridge Options                                           | Q max<br>l/min | P max<br>bar | Notes                                | Ports<br>BSP | Assembly Price |
|-------------------------------------------------------------|----------------|--------------|--------------------------------------|--------------|----------------|
| TS10-36                                                     | 60             | 240          | Pilot operated, Inc.<br>6.9-207 bar  | 3/8"-1/2"    | \$ 781.00      |
| EPRS-10                                                     | 46             | 350*         | Pilot operated, Inc.,<br>3.5-350 bar | 3/8"-1/2"    | \$ 722.00      |
| HS1030P6 or P8 manifold only \$ 132.00                      |                |              |                                      |              |                |
| HS1030P6S or P6S steel manifold only \$ 175.00 or \$ 212.00 |                |              |                                      |              |                |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \* Requires steel block over 240 bar

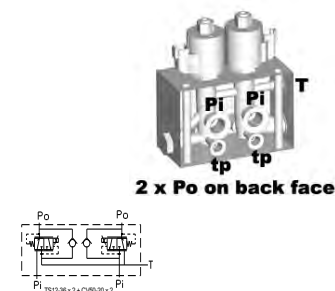
#### HS1230P12



| Cartridge Options                        | Q max<br>l/min | P max<br>bar | Notes                               | Ports<br>BSP | Assembly Price |
|------------------------------------------|----------------|--------------|-------------------------------------|--------------|----------------|
| TS12-36                                  | 189            | 276*         | Pilot operated, Inc.<br>6.9-207 bar | 3/4"         | \$ 773.00      |
| TS12-37F**                               | 190            | 276*         | Pilot operated, Dec.<br>276-6.9 bar | 3/4"         | \$ 798.00      |
| EPRS-12                                  | 91             | 350*         | Pilot operated, Inc.<br>3.5-350 bar | 3/4"         | \$ 911.00      |
| HS1230P12 manifold only \$ 241.00        |                |              |                                     |              |                |
| HS1230P12S steel manifold only \$ 355.00 |                |              |                                     |              |                |

- Manifold dimensions, 99 x 75 x 39mm (excluding cartridge)
- \* Requires steel block over 240 bar
- \*\*Non-common stock item – Contact Hyspecs for lead time

#### HS7512P8DC (Double)



| Cartridge Options                         | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSP | Assembly Price |
|-------------------------------------------|----------------|--------------|-------------------|--------------|----------------|
| TS12-36 x 2<br>+ CV50-20 x 2              | 189**          | 276*         | Free reverse flow | 1/2"         | \$ 2045.00     |
| HS7512P8DC manifold only \$ 761.00        |                |              |                   |              |                |
| HS7512P8DCS steel manifold only \$ 961.00 |                |              |                   |              |                |

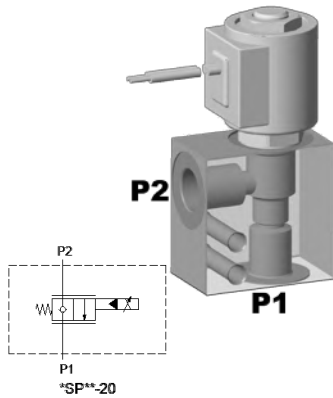
- Manifold dimensions, 150 x 100 x 75mm (excluding cartridge)
- \*\*Special conditions apply to the flow
- \* Requires steel block over 240 bar

## Flow Controls – Solenoid Operated



### 2-Way, Two Port Non-Compensated

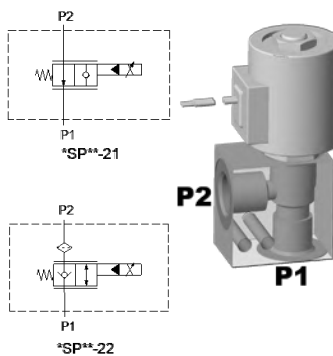
#### HS0820P4\_B or P6\_B



| Cartridge Options                                  | Q max<br>l/min | P max<br>bar | Notes                 | Ports<br>BSPP | Assembly Price |
|----------------------------------------------------|----------------|--------------|-----------------------|---------------|----------------|
| SP08-22                                            | 30             | 207          | Poppet, N.C., Bi-Dir. | 1/4"-3/8"     | \$ 369.00      |
| SP08-24                                            | 11.4           | 207          | Spool-Type, N.C.      | 1/4"-3/8"     | \$ 414.00      |
| SP08-25                                            | 15             | 207          | Spool-Type, N.O.      | 1/4"-3/8"     | \$ 349.00      |
| HS0820P4_B or P6_B manifold only \$ 78.00          |                |              |                       |               |                |
| HS0820P4S_B or P6S_B steel manifold only \$ 132.00 |                |              |                       |               |                |

- Manifold dimensions, 50 x 50 x 32mm (excluding cartridge)
- \* Requires steel block over 240 bar

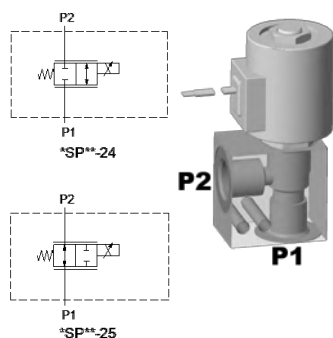
#### HS1020P6\_B or P8\_B



| Cartridge Options                                  | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly Price |
|----------------------------------------------------|----------------|--------------|-------------------|---------------|----------------|
| SP10-20                                            | 68             | 250*         | Poppet-Type, N.C. | 3/8"-1/2"     | \$ 368.00      |
| SP10-21                                            | 60             | 250*         | Poppet-Type, N.O. | 3/8"-1/2"     | \$ 393.00      |
| SP10-24                                            | 26.5           | 207          | Spool-Type, N.C.  | 3/8"-1/2"     | \$ 483.00      |
| SP10-25                                            | 18.9           | 207          | Spool-Type, N.O.  | 3/8"-1/2"     | \$ 428.00      |
| HS1020P6_B or P8_B manifold only \$ 86.00          |                |              |                   |               |                |
| HS1020P6S_B or P8S_B steel manifold only \$ 132.00 |                |              |                   |               |                |

- Manifold dimensions, 50 x 50 x 35mm (excluding cartridge)
- \* Requires steel block over 240 bar

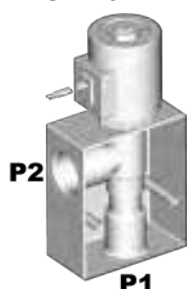
#### HHS1020P8S



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly Price |
|------------------------------------|----------------|--------------|-------------------|---------------|----------------|
| HSP10-20                           | 53             | 350          | Poppet-Type, N.C. | 1/2"          | \$ 470.00      |
| HSP10-21                           | 53             | 350          | Poppet-Type, N.O. | 1/2"          | \$ 540.00      |
| HHS1020P8S manifold only \$ 115.00 |                |              |                   |               |                |

- Manifold dimensions, 50 x 50 x 35mm (excluding cartridge)
- High performance cavity steel manifold
- EL coil IP69K

#### HS1220P12



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly Price |
|-----------------------------------|----------------|--------------|-------------------|---------------|----------------|
| SP12-20                           | 100            | 250*         | Poppet-Type, N.C. | 3/4"          | \$ 467.00      |
| SP12-21                           | 200            | 250*         | Poppet-Type, N.O. | 3/4"          | \$ 577.00      |
| HS1220P12 manifold only \$ 155.00 |                |              |                   |               |                |

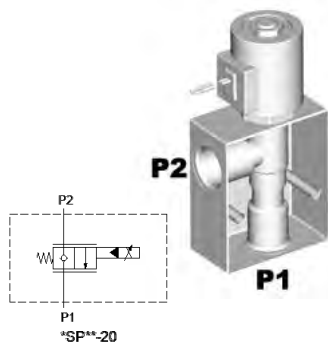
- Manifold dimensions, 90 x 75 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

## Flow Controls – Solenoid Operated



### 2-Way, Two Port Non-Compensated

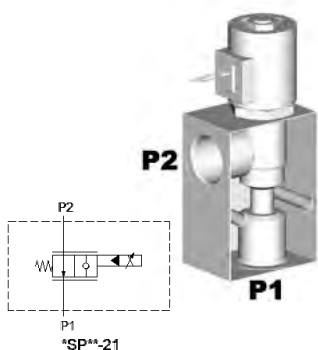
#### HHS1220P12S



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly Price |
|-------------------------------------|----------------|--------------|-------------------|---------------|----------------|
| HSP12-20 M                          | 84             | 350          | Poppet-Type, N.C. | 3/4"          | \$ 655.00      |
| HHS1220P12S manifold only \$ 200.00 |                |              |                   |               |                |

- 
- Manifold dimensions, 90 x 75 x 50mm (excluding cartridge)
- High performance cavity steel manifold
- EL coil IP69K

#### HS1620P12 or P16



| Cartridge Options                                 | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly Price |
|---------------------------------------------------|----------------|--------------|-------------------|---------------|----------------|
| SP16-20                                           | 150            | 250*         | Poppet-Type, N.C. | 3/4" - 1"     | \$ 532.00      |
| SP16-21                                           | 150            | 250*         | Poppet-Type, N.O. | 3/4" - 1"     | \$ 601.00      |
| HS1620P12 or P16 manifold only \$189 or \$ 207.00 |                |              |                   |               |                |
| HS1620P16S steel manifold only \$ 290.00          |                |              |                   |               |                |

- Manifold dimensions, 100 x 70 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar

#### HHS1620P16S\*



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes             | Ports<br>BSPP | Assembly Price |
|-------------------------------------|----------------|--------------|-------------------|---------------|----------------|
| HSP16-20*                           | 150            | 350          | Poppet-Type, N.C. | 1"            | \$ 785.00      |
| HSP16-21*                           | 150            | 350          | Poppet-Type, N.O. | 1"            | \$ 760.00      |
| HHS1620P16S manifold only \$ 260.00 |                |              |                   |               |                |

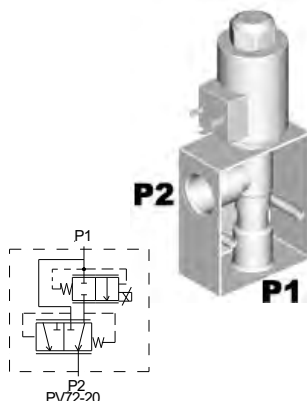
- Manifold dimensions, 100 x 70 x 50mm (excluding cartridge)
- High performance cavity steel manifold
- EL coil IP69K
- \*Non-common stock item – Contact Hyspecs for lead time

## Flow Controls – Solenoid Operated



### 2-Way, Two Port Pressure Compensated

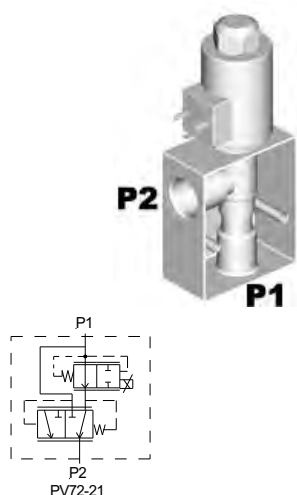
#### HS1220P12



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes           | Ports<br>BSPP | Assembly Price |
|-----------------------------------|----------------|--------------|-----------------|---------------|----------------|
| PV72-20                           | 64             | 240          | Normally closed | 3/4"          | \$ 694.00      |
| PV72-21                           | 56             | 240          | Normally open   | 3/4"          | \$ 694.00      |
| HS1220P12 manifold only \$ 155.00 |                |              |                 |               |                |

- Manifold dimensions, 90 x 75 x 50mm (excluding cartridge)
- 70 Size coil

#### HHS1220P12S



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes           | Ports<br>BSPP | Assembly Price |
|-------------------------------------|----------------|--------------|-----------------|---------------|----------------|
| HPV12-20*                           | 68             | 350          | Normally closed | 3/4"          | \$ 755.00      |
| HPV12-21*                           | 61             | 350          | Normally open   | 3/4"          | \$ 755.00      |
| HHS1220P12S manifold only \$ 200.00 |                |              |                 |               |                |

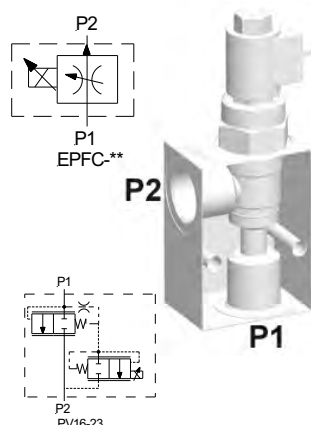
- Manifold dimensions, 90 x 75 x 50mm (excluding cartridge)
- High performance cavity steel manifold
- HPV12 circuit same as PV72 as above
- 10 Size EG coil IP69K
- \*Non-common stock item – *Contact Hyspecs* for lead time

## Flow Controls – Solenoid Operated



### Two Port Pressure Compensated

HS1620P12 or P16

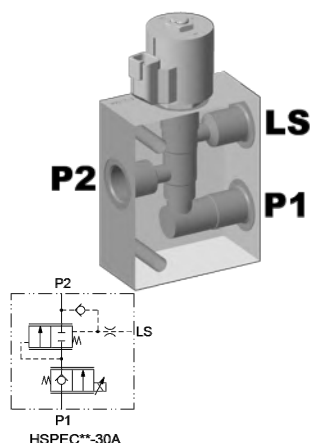


| Cartridge Options                                                                                | Q max<br>l/min | P max<br>bar | Notes                      | Ports<br>BSPP | Assembly Price |
|--------------------------------------------------------------------------------------------------|----------------|--------------|----------------------------|---------------|----------------|
| PV16-23                                                                                          | 170            | 240          | Non-compensated, N.C.      | 3/4"-1"       | \$ 1140.00     |
| EPFC-16                                                                                          | 76             | 350*         | Pressure compensated, N.C. | 3/4"-1"       | \$ 1104.00     |
| HS1620P12 or P16 manifold only \$ 189.00 & \$ 207.00<br>HS1620P16S steel manifold only \$ 290.00 |                |              |                            |               |                |

- Manifold dimensions, 100 x 70 x 50mm (excluding cartridge)
- \* Requires steel block over 240 bar – call Hyspecs for pricing

### Two Port with Integral Post-Pressure Compensation

HHS1230P12S



| Cartridge Options                   | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly Price |
|-------------------------------------|----------------|--------------|---------------------|---------------|----------------|
| HSPEC12-30AT                        | 70             | 350          | Integral load-sense | 3/4"          | \$ 935.00      |
| HHS1230P12S Manifold only \$ 290.00 |                |              |                     |               |                |

- Manifold dimensions, 125 x 100 x 50mm (excluding cartridge)
- High performance cavity steel manifold
- Size 10 ER coil
- Mount the manifold to allow coil at or under horizontal line

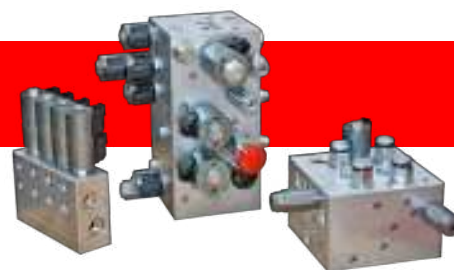
HSPEC1630P16S\*



| Cartridge Options                     | Q max<br>l/min | P max<br>bar | Notes               | Ports<br>BSPP | Assembly Price |
|---------------------------------------|----------------|--------------|---------------------|---------------|----------------|
| HSPEC16-30AT                          | 132            | 350          | Integral load-sense | 1"<br>LS 1/4" | \$ 1105.00     |
| HSPEC1630P16S Manifold only \$ 360.00 |                |              |                     |               |                |

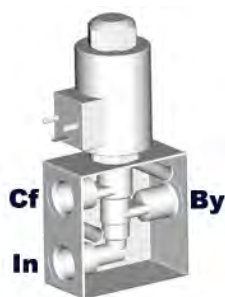
- Manifold dimensions, 125 x 100 x 50mm (excluding cartridge)
- High performance cavity steel manifold
- Size 10 ER coil
- Mount the manifold to allow coil at or under horizontal line
- \*Non-common stock item – Contact Hyspecs for lead time

## Flow Controls – Solenoid Operated



### Three Port Pressure Compensated

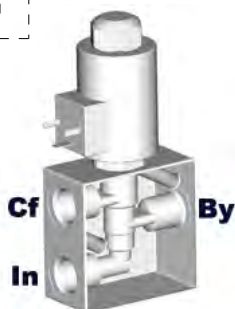
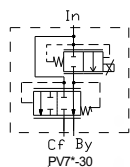
#### HS0830P6



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                                      | Ports<br>BSPP | Assembly Price |
|----------------------------------------|----------------|--------------|--------------------------------------------|---------------|----------------|
| PV08-30                                | 23             | 240          | 0-11 l/min R.F. 2-port block by-pass, N.C. | 1/4"-3/8"     | \$ 605.00      |
| PV08-31                                | 23             | 240          | 0-11 l/min R.F. 2-port block by-pass, N.O. | 1/4"-3/8"     | \$ 605.00      |
| HS0830P4 or P6 manifold only \$ 127.00 |                |              |                                            |               |                |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- Size 08 EHPR DG coil

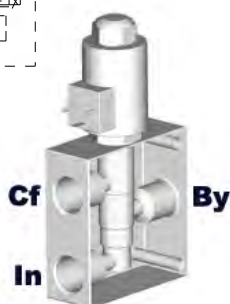
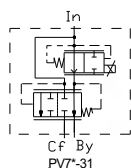
#### HS1030P6 or P8



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                                                              | Ports<br>BSPP | Assembly Price |
|----------------------------------------|----------------|--------------|--------------------------------------------------------------------|---------------|----------------|
| PV70-30                                | 50             | 240          | 3-port R.F: 0-30 l/min, 2-port R.F: 0-26 l/min block by-pass, N.C. | 3/8"-1/2"     | \$ 728.00      |
| PV70-31                                | 50             | 240          | 3-port R.F: 0-30 l/min, 2-port R.F: 0-26 l/min block by-pass, N.O. | 3/8"-1/2"     | \$ 728.00      |
| HS1030P6 or P8 manifold only \$ 132.00 |                |              |                                                                    |               |                |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- 70 size coil

#### HS1230P12



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                                                              | Ports<br>BSPP | Assembly Price |
|-----------------------------------|----------------|--------------|--------------------------------------------------------------------|---------------|----------------|
| PV72-30                           | 114            | 240          | 3-port R.F: 0-64 l/min, 2-port R.F: 0-46 l/min block by-pass, N.C. | 3/4"          | \$ 945.00      |
| PV72-31                           | 114            | 240          | 3-port R.F: 0-53 l/min, 2-port R.F: 0-42 l/min block by-pass, N.O. | 3/4"          | \$ 945.00      |
| HS1230P12 manifold only \$ 241.00 |                |              |                                                                    |               |                |

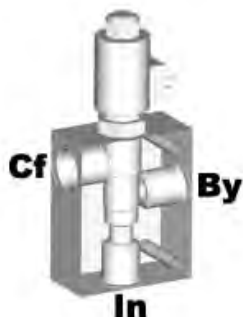
- Manifold dimensions, 100 x 75 x 50mm (excluding cartridge)
- 70 size coil

## Flow Controls – Solenoid Operated

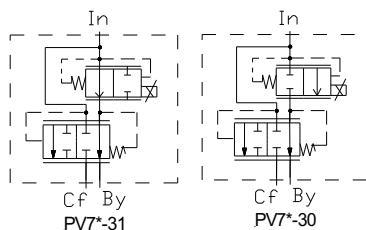


### Three Port Pressure Compensated

#### HS1630P12

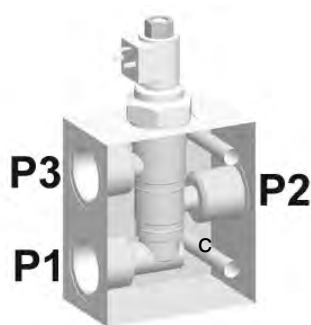


| Cartridge Options                        | Q max<br>l/min | P max<br>bar | Notes                                                                   | Ports<br>BSPP | Assembly Price |
|------------------------------------------|----------------|--------------|-------------------------------------------------------------------------|---------------|----------------|
| PV76-30AM                                | 150            | 240          | 3-port R.F: 0-95 l/min<br>2-port R.F: 0-85 l/min<br>block by-pass, N.C. | 3/4"-1"       | \$ 1120.00     |
| PV76-31AM*                               | 150            | 240          | 3-port R.F: 0-76 l/min<br>2-port R.F: 0-80 l/min<br>block by-pass, N.O. | 3/4"-1"       | \$ 1120.00     |
| HS1630P12 or P16 manifold only \$ 264.00 |                |              |                                                                         |               |                |



- Manifold dimensions, 125 x 100 x 50mm (excluding cartridge)
- 70 size coil
- \*Non-common stock item – *Contact Hyspecs* for lead time

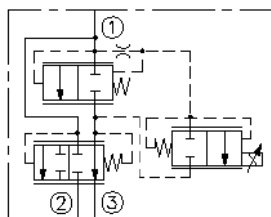
#### HS4230P20\*



| Cartridge                         | Q max<br>l/min | P max<br>bar | Notes                                                                     | Ports<br>BSPP | Assembly Price |
|-----------------------------------|----------------|--------------|---------------------------------------------------------------------------|---------------|----------------|
| PV42-M30*                         | 225            | 240          | 3-port R.F: 0-190 l/min<br>2-port R.F: 0-130 l/min<br>block by-pass, N.C. | 1 1/4"        | \$ 1150.00     |
| HS4230P20 manifold only \$ 345.00 |                |              |                                                                           |               |                |

- Manifold dimensions, 145 x 125 x 75mm (excluding cartridge)
- Size 08 EHPR DG coil
- \*Non-common stock item – *Contact Hyspecs* for lead time

USASI/ISO:

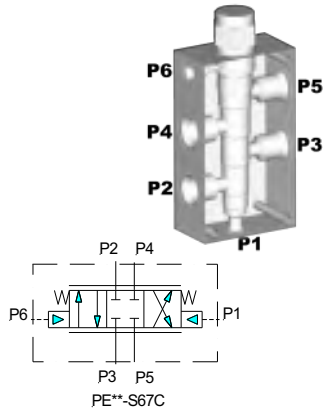


## Directional Valves – Pilot Operated



### 4 Way, 3 Position

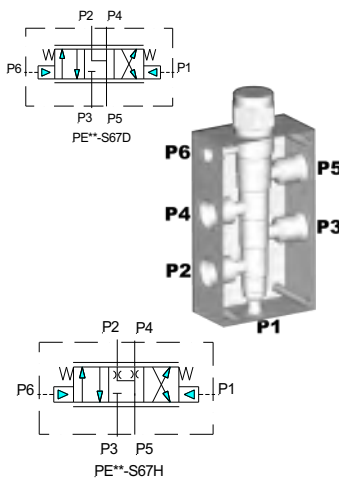
#### HS1255U17\*\*



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>UNO   | Assembly<br>Price |
|-----------------------------------|----------------|--------------|----------------------|----------------|-------------------|
| PE12-S67C                         | 45             | 350*         | Closed centre        | 1 1/16"        | \$ 680.00         |
| PE12-S67D**                       | 45             | 350*         | Meter in and out     |                | \$ 680.00         |
| PE12-S67H**                       | 45             | 350*         | Restrict motor spool | P1&P6<br>9/16" | \$ 680.00         |
| PE12-S67K**                       | 45             | 350*         | Meter in only        |                | \$ 680.00         |
| HS1255U17 manifold only \$ 360.00 |                |              |                      |                |                   |

- Manifold dimensions, 150 x 100 x 50mm (excluding cartridge)
- \*Requires steel block over 240 bar – *contact Hyspecs* for pricing
- \*\* Non-common stock item – *Contact Hyspecs* for lead time

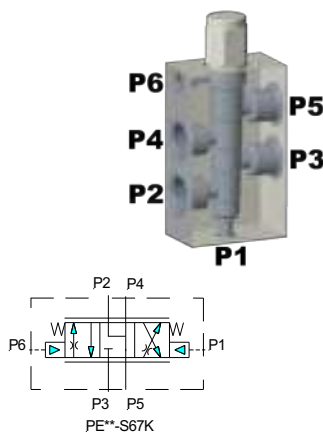
#### HS1655U17



| Cartridge Options                 | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>UNO   | Assembly<br>Price |
|-----------------------------------|----------------|--------------|----------------------|----------------|-------------------|
| PE16-S67C                         | 90             | 350*         | Closed centre        | 1 1/16"        | \$ 740.00         |
| PE16-S67D                         | 90             | 350*         | Meter in and out     |                | \$ 740.00         |
| PE16-S67H**                       | 90             | 350*         | Restrict motor spool | P1&P6<br>9/16" | \$ 740.00         |
| PE16-S67K**                       | 90             | 350*         | Meter in only        |                | \$ 740.00         |
| HS1655U17 manifold only \$ 436.00 |                |              |                      |                |                   |

- Manifold dimensions, 177 x 125 x 75mm (excluding cartridge)
- \*Requires steel block over 240 bar – *contact Hyspecs* for pricing
- \*\* Non-common stock item – *Contact Hyspecs* for lead time

#### HS4255P20S\*



| Cartridge Options                  | Q max<br>l/min | P max<br>bar | Notes                | Ports<br>BSP  | Assembly Price |
|------------------------------------|----------------|--------------|----------------------|---------------|----------------|
| PE42-S67C                          | 170            | 350          | Closed centre        | 1 1/4"        | \$ 1079.00     |
| PE42-S67D                          | 170            | 350          | Meter in and out     |               | \$ 1079.00     |
| PE42-S67H*                         | 170            | 350          | Restrict motor spool | P1&P6<br>3/8" | \$ 1079.00     |
| PE42-S67K*                         | 170            | 350          | Meter in only        |               | \$ 1079.00     |
| HS4255P20S manifold only \$ 575.00 |                |              |                      |               |                |

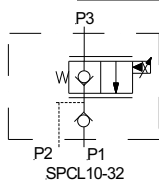
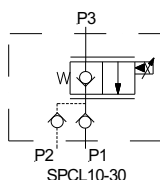
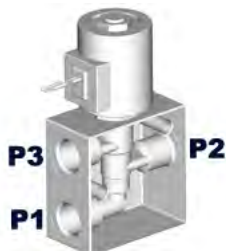
- Manifold dimensions, 210 x 125 x 75mm (excluding cartridge)
- Steel manifold
- \* Non-common stock item – *Contact Hyspecs* for lead time

## Directional Valves – Solenoid Operated



### 3 Way, 2 Position

HS1030P6 or P8

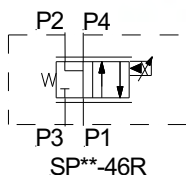


| Cartridge Options                                           | Q max<br>l/min | P max<br>bar | Notes                              | Ports<br>BSPP | Assembly Price |
|-------------------------------------------------------------|----------------|--------------|------------------------------------|---------------|----------------|
| SPCL10-30                                                   | 57             | 250*         | With check isolated load sense     | 3/8"-1/2"     | \$ 434.00      |
| SPCL10-32                                                   | 57             | 250*         | With check non-isolated load sense | 3/8"-1/2"     | \$ 399.00      |
| HS1030P6 or P8 manifold only \$ 132.00                      |                |              |                                    |               |                |
| HS1030P6S or P8S steel manifold only \$ 175.00 or \$ 212.00 |                |              |                                    |               |                |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \*Requires steel block over 240 bar

### 4 Way, 2 Position

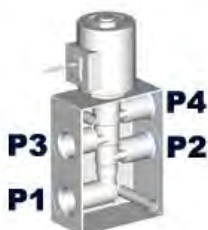
HS0840P4 or P6



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                            | Ports<br>BSPP | Assembly Price |
|----------------------------------------|----------------|--------------|----------------------------------|---------------|----------------|
| SP08-46R*                              | 11             | 240          | 2 position, normally motor spool | 1/4"-3/8"     | \$ 429.00      |
| HS0840P4 or P6 manifold only \$ 138.00 |                |              |                                  |               |                |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)
- \* Non-common stock item – *Contact Hyspecs* for lead time

HS1040P6 or P8



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                            | Ports<br>BSPP | Assembly Price |
|----------------------------------------|----------------|--------------|----------------------------------|---------------|----------------|
| SP10-46R*                              | 23             | 240          | 2 position, normally motor spool | 3/8"-1/2"     | \$ 472.00      |
| HS1040P6 or P8 manifold only \$ 150.00 |                |              |                                  |               |                |

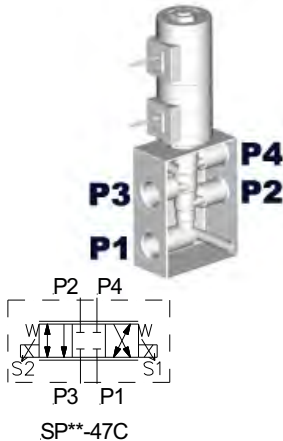
- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)
- \* Non-common stock item – *Contact Hyspecs* for lead time

## Directional Valves – Solenoid Operated



### 4 Way, 3 Position

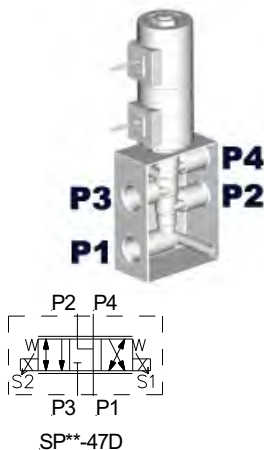
#### HS0840P4 or P6



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                                 | Ports<br>BSPP | Assembly Price |
|----------------------------------------|----------------|--------------|---------------------------------------|---------------|----------------|
| SP08-47C                               | 11             | 240          | 3 position, spool type, closed centre | 1/4"-3/8"     | \$ 476.00      |
| SP08-47D                               | 11             | 240          | 3 position, spool type, motor spool   | 1/4"-3/8"     | \$ 476.00      |
| SP08-47CL                              | 7              | 240          | Low flow version                      | 1/4"-3/8"     | \$ 494.00      |
| SP08-47DL                              | 7              | 240          | Low flow version                      | 1/4"-3/8"     | \$ 494.00      |
| HS0840P4 or P6 manifold only \$ 138.00 |                |              |                                       |               |                |

- Manifold dimensions, 75 x 65 x 37mm (excluding cartridge)

#### HS1040P6 or P8



| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                                 | Ports<br>BSPP | Assembly Price |
|----------------------------------------|----------------|--------------|---------------------------------------|---------------|----------------|
| SP10-47C                               | 23             | 240          | 3 position, spool type, closed centre | 3/8"-1/2"     | \$ 717.00      |
| SP10-47D                               | 23             | 207          | 3 position, spool type, motor spool   | 3/8"-1/2"     | \$ 717.00      |
| HS1040P6 or P8 manifold only \$ 150.00 |                |              |                                       |               |                |

- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)

#### HHS1040P8S



| Cartridge Options | Q max<br>l/min | P max<br>bar | Notes                                 | Ports<br>BSPP | Assembly Price |
|-------------------|----------------|--------------|---------------------------------------|---------------|----------------|
| HSP10-47C*        | 33             | 350          | 3 position, spool type, closed centre | 1/2"          | \$ 717.00      |
| HSP10-47D*        | 35             | 350          | 3 position, spool type, motor spool   | 1/2"          | \$ 717.00      |

- Manifold dimensions, 99 x 65 x 39mm (excluding cartridge)
- Steel manifold
- \*Same circuit as SP cartridges. Non-common stock item – Contact Hyspecs for lead time

## Directional Valves – Solenoid Operated

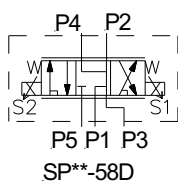
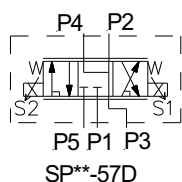


### 5 Way, 3 Position

HS0850P6\*



| Cartridge Options                | Q max<br>l/min | P max<br>bar | Notes                          | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------|----------------|--------------|--------------------------------|---------------|-------------------|
| SP08-57D*                        | 9.5            | 240          | Load sense, motor spool        | 1/4" - 3/8"   | \$ 704.00         |
| SP08-58D*                        | 15             | 240          | Motor spool with brake release | 1/4" - 3/8"   | \$ 704.00         |
| HS0850P6 manifold only \$ 252.00 |                |              |                                |               |                   |

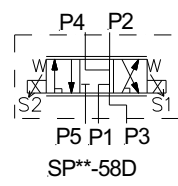
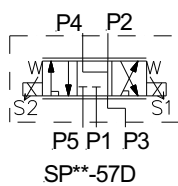
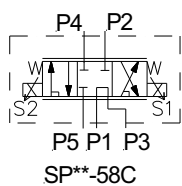
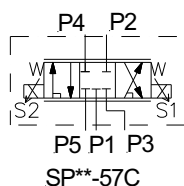


- Manifold dimensions, 100 x 75 x 37mm (excluding cartridge)
- \*Non common stock item – *Contact Hyspecs* for lead time
- Optional load sense check valve disc CVD08 (\$34) can be fit into the bottom of SP08

### HS1050P6\_B or P8\_B



| Cartridge Options                          | Q max<br>l/min | P max<br>bar | Notes                          | Ports<br>BSPP | Assembly<br>Price |
|--------------------------------------------|----------------|--------------|--------------------------------|---------------|-------------------|
| SP10-57C**                                 | 23             | 250*         | Load sense, closed centre      | 3/8" - 1/2"   | \$ 670.00         |
| SP10-58C                                   | 23             | 250*         | Brake release, closed centre   | 3/8" - 1/2"   | \$ 670.00         |
| SP10-57D                                   | 23             | 250*         | Load sense, motor spool        | 3/8" - 1/2"   | \$ 670.00         |
| SP10-58D                                   | 23             | 250*         | Motor spool with brake release | 3/8" - 1/2"   | \$ 670.00         |
| HS1050P6_B or P8_B manifold only \$ 252.00 |                |              |                                |               |                   |



- Manifold dimensions, 110 x 65 x 39mm (excluding cartridge)
- \*Requires steel block over 240 bar – *contact Hyspecs* for pricing
- \*\*Non common stock item – *Contact Hyspecs* for lead time
- Optional load sense check valve disc CVD10 (\$38) can be fit into the bottom of SP10

## Proportional Valve Controllers



### Hydraforce Programmable Valve Drivers - Coil & Remote Mounted

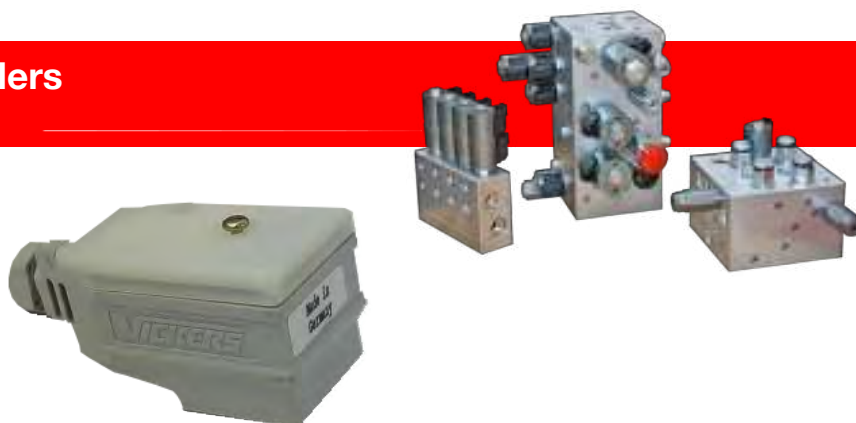
The CE-qualified, compact plug-in style, microprocessor based, valve driver designed for use in hydraulic proportional valve applications.

- Configurable to drive either one or two coils using SAE J1939 CAN input or an independent voltage, current, or resistance signal.
- The EVDR-0201 is designed to proportionally control one or two coils to a user-defined metering profile

| Part    | Description                                                                                                              | List      |
|---------|--------------------------------------------------------------------------------------------------------------------------|-----------|
| 4204800 | EVDR-0101A -single plug-in style valve driver                                                                            | \$ 350.00 |
| 4204700 | EVDR-0201A - up to 2 configurable inputs & 2 outputs (2A max.)                                                           | \$ 760.00 |
| 4204740 | ECDR-0201A – CAN capable dual/single plug-in valve driver                                                                | \$ 615.00 |
| 4208230 | ECDR-0203A – CAN capable 3 inputs configurable to multiple settings<br>2 outputs (1 PWM closed loop and 1 PWM open loop) | \$ 810.00 |
| 4208560 | ECDR-0506A – CAN capable 6 inputs configurable to multiple settings<br>5 outputs (4 PWM closed loop and 1 PWM open loop) | \$ 955.00 |
| 4001953 | Connector kit DT06-4S                                                                                                    | \$ 35.00  |
| 4001955 | Connector kit DT06-8SA (gold)                                                                                            | \$ 60.00  |
| 4001956 | Connector kit (grey)                                                                                                     | \$ 80.00  |
| 4001965 | Connector kit (black)                                                                                                    | \$ 95.00  |

- Contact Hyspecs for connector kit required

## Proportional Valve Controllers



### Eaton Amplifier Plugs

Proportional Power plugs, conforming to ISO 4400/DIN 43650 interface, are designed for compact, electronic control of non-feedback hydraulic proportional and switching valves. This plug/valve combination offers an easy to use, cost-effective alternative to traditional rack mounted machine controls. Din plug mounting, protection to IP67.

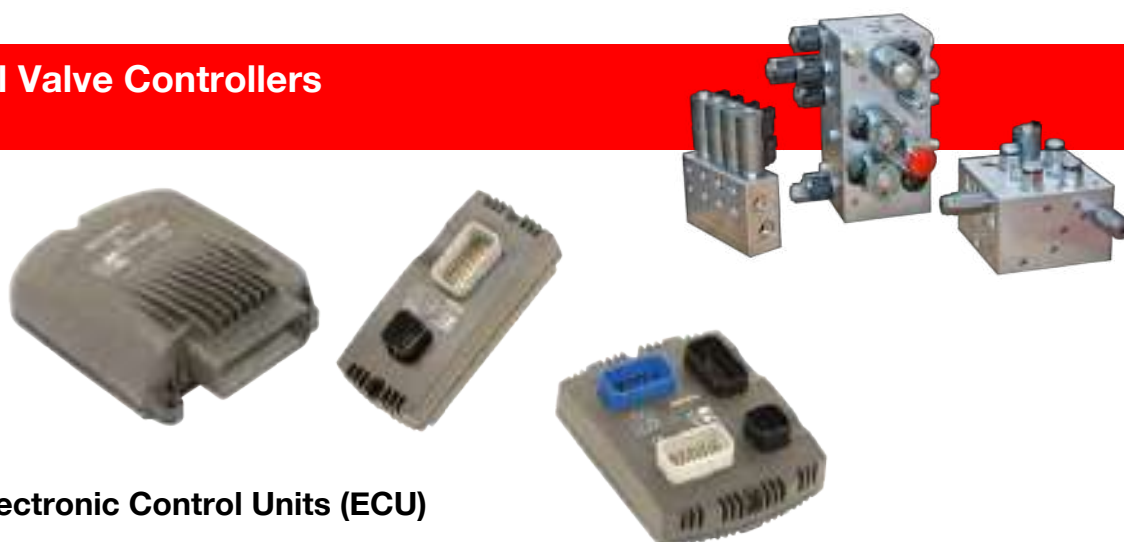
Proportional Power Plugs are available in the following configurations:

Type C plugs offer “soft switch” control. Using built in ramps for discrete “on/off” signals, soft switch power plugs with proportional valves help to reduce hydraulic system shocks, improving machine usability and extending life

Type D and K plugs are controlled with a standard analog command signals, (0-10V and 4-20mA respectively.)

| Part      | Model Code       | Function   | Power Supply | Command Signal | Ramp Time | Max O/P Current | List      |
|-----------|------------------|------------|--------------|----------------|-----------|-----------------|-----------|
| 02-326009 | EHH-AMP-702-C-20 | Soft Shift | 24VDC        | 24VDC          | 50ms - 5s | 1.6 Amps        | \$ 429.00 |
| 02-326010 | EHH-AMP-702-D-20 | Prop       | 24VDC        | 0-10V          | 50ms - 5s | 1.6 Amps        | \$ 502.00 |
| 02-326012 | EHH-AMP-702-K-20 | Prop       | 24VDC        | 4-20mA         | 50ms - 5s | 1.6 Amps        | \$ 502.00 |
| 02-326013 | EHH-AMP-712-D-20 | Prop       | 12VDC        | 0-10V          | 50ms - 5s | 3.0 Amps        | \$ 502.00 |

## Proportional Valve Controllers



### Hydraforce Electronic Control Units (ECU)

CoreTek ECUs are general-purpose programmable controllers that can be used as stand-alone controllers or integrated with other CAN networked devices.

These controllers are designed to withstand the environmental demands of mobile off-highway equipment applications.

They feature flexible input and output configuration and are capable of driving up to 3.0 amps per output pin.

| Part    | Description                                                  | List       |
|---------|--------------------------------------------------------------|------------|
| 4000350 | ECU-0809 - up to 17 total inputs & 8 outputs (configurable)  | \$ 1060.00 |
| 4000351 | ECU-0710 - up to 20 total inputs & 7 outputs (configurable)  | \$ 1345.00 |
| 4000352 | ECU-2415 - up to 49 total inputs & 24 outputs (configurable) | \$ 2055.00 |
| 4000355 | ECU-2032 - up to 52 total inputs & 20 outputs (configurable) | \$ 2055.00 |
| 4000356 | ECU-2820 - up to 52 total inputs & 28 outputs (configurable) | \$ 2055.00 |
| 4000360 | Ampseal connector 23 pin black                               | \$ 65.00   |
| 4000361 | Ampseal connector 23 pin grey                                | \$ 65.00   |
| 4000362 | Ampseal connector 23 pin blue                                | \$ 65.00   |
| 4000363 | Ampseal connector 8 pin black                                | \$ 30.00   |
| 4000381 | Ampseal connector 35 pin                                     | \$ 65.00   |
| 4000364 | Ampseal socket (each)                                        | \$ 3.00    |
| 4000369 | Ampseal socket (100 pack)                                    | \$ 290.00  |
| 4000365 | Ampseal sealing plug (each)                                  | \$ 1.00    |
| 4000370 | Ampseal sealing plug (100 pack)                              | \$ 70.00   |
| 4000371 | USB-CAN adaptor                                              | \$ 2035.00 |

- Contact Hyspecs for connector kit required.

## Contents Section G – Excavator Valving & Accessories



### G1 Excavator Valving

- G1 Introduction
- G3 HS9501 - Pilot Valve
- G4 HS9501 - Quickhitch Valve – Double Acting
- G5 HS9502 - Tilt Control Valve (Low Flow)
- G6 HS9503 - Quickhitch Valve – Single Acting
- G7 HS9504 - Tilt & Thumb Valve (Low Flow)
- G8 HS9505 - Tilt Only With 5-Port Relief (Low Flow)
- G9 HS9506 - Load Sense Tilt Only with 5-Port Relief (Medium Flow)
- G10 HS9507 - Quickhitch, Tilt & Thumb Valve (Low Flow)
- G11 HS9508 - Quickhitch & Tilt with 5-Port Relief (Low Flow)
- G12 HS9509 - Quickhitch & Tilt with Cross-line Relief (Low Flow)
- G13 HS9512 - Thumb Control or Tilt (High Flow)
- G14 HS9515 - Two Stage Pilot Control of Main Spool
- G15 HS9516 - Tilt Control, with Cross-line Relief (Medium Flow)
- G16 HS9518 – Two Inlets, Quickhitch & Thumb Tilt Valve (High Flow)
- G17 HS9521 - Load Sense Tilt Control with Dual Counterbalance
- G18 HS9525 – Proportional Pilot Control
- G19 HS9526/HS9527 – Joystick Pattern Charger
- G20 A/HS8222P12GRCS – Dual Pump Flow Sharing Valve
- G21 A/HS8223P16GRCS – Dual Pump Higher Flow Sharing Valve
- G22 SAFEX™ Valves – Excavator Host Burst Safety Valves

### G24 Excavator Valving Accessories

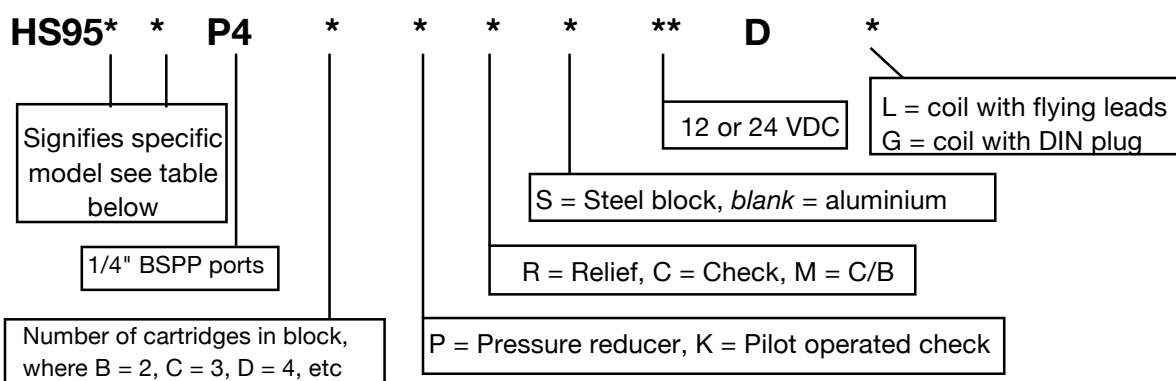
- G24 Multi Function Ergonomic Handles

## Excavator Valving - Hyspecs

### Introduction

- **Custom designed cartridge valve manifolds, designed specifically to control excavator attachments.**
- **Features:**
  - Compact design allows valving to be positioned in confined spaces where others do not fit.
  - Manifold design minimises oil leakage paths
  - Reliable low current draw solenoids provide millions of cycle lifetime
  - Hardened spools and cages for longer life
  - All work ports are located on single block face
  - Can be operated continuously in temperatures up to 100°C without challenging the coils insulation.
  - Integral pressure reducing/relieving valves guard against pressure spikes and thermal shock.
  - Low pressure drops
- **Material:**
  - Aluminium or steel for pressures up to 240 bar and 350 bar respectively.
  - All steel blocks are nickel plated to protect your investment.

### Model Order Code



| Code             | Main Purpose                                  | Valves Included                                                                                                      |
|------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| HS9501P4BP**D*   | Piloting of main spool                        | Pressure reducer, 3 position solenoid valve                                                                          |
| HS9501P4BPS**D*  | Quickhitch                                    | Pressure reducer, 2 position solenoid valve                                                                          |
| HS9502P4CPS**D*  | Tilt bucket (S/A or equal area ram/s)         | Pressure reducer, 3 position solenoid valve, 4-port cross line relief valve                                          |
| HS9503P4BK**D*   | S/A Quickhitch                                | 2 position solenoid valve, pilot operated check valve                                                                |
| HS9504P4EPS**D*  | Tilt bucket (S/A or equal area ram/s) & Thumb | Pressure reducer, 3 position solenoid valve, 4-port cross line relief valve, Cetop 3, 5-port cross line relief valve |
| HS9505P4DPS**D*  | Tilt bucket (D/A ram/s)                       | Pressure reducer, 3 position solenoid valve, 5-port cross line relief valve                                          |
| HS9506P4EPRS**D* | Load sense Tilt bucket (D/A ram/s)            | Pressure reducer, Load sensing 3 position solenoid valve, 5-port cross line relief valve                             |

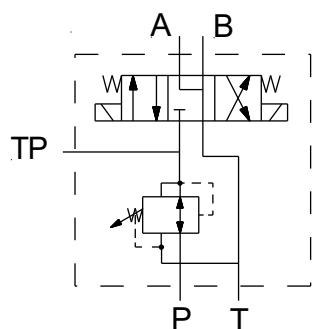
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## Excavator Valving - Hyspecs

| Code                    | Main Purpose                                                        | Valves Included                                                                                                                                                                 |
|-------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HS9507P4FPS**D*</b>  | Tilt (S/A or equal area ram/s), Quickhitch & Thumb                  | Pressure reducer, 2 & 3 position solenoid valves, 4-port cross line relief valve, Cetop 3, 5-port cross line relief valve                                                       |
| <b>HS9508P4EPS**D*</b>  | Quickhitch & Tilt (Low Flow) with 5 port relief                     | Pressure reducer, 2 & 3 position solenoid valves 5-port cross line relief for Tilt.                                                                                             |
| <b>HS9509P4DPS**D*</b>  | Quickhitch & Tilt (Low Flow) with X-line relief                     | Pressure reducer, 2 & 3 position solenoid valves cross line relief for Tilt.                                                                                                    |
| <b>HS9512CPRS**</b>     | Thumb or Tilt Control (High Flow)                                   | Pressure reducer, Cetop 3 solenoid valve, 5-port relief valve.                                                                                                                  |
| <b>HS9515P4CP**D*</b>   | Two stage pilot control of main spool                               | Pressure reducer, 3-position solenoid valve and 2-position 3 way solenoid valve                                                                                                 |
| <b>HS9516P4CPS**D*</b>  | Tilt control, high flow                                             | Pressure reducer, 3-position solenoid valve, cross line relief                                                                                                                  |
| <b>HS9518P6GPRCSD*</b>  | Two Inlets, Quickhitch & Thumb or Tilt Valve                        | Pressure reducer, Cetop 3 solenoid valve, 5-port relief valve, 2-position 4 way solenoid and check valves                                                                       |
| <b>HS9521P6FPMS**D*</b> | Load sense tilt control with dual counterbalance                    | Pressure reducer, Cetop 3, load sense check and double counterbalance valve                                                                                                     |
| <b>HS9525P4BP</b>       | Proportional pilot control                                          | Two proportional pressure reducing/relieving valves                                                                                                                             |
| <b>HS9526U7C</b>        | Joystick pattern changer between Hitachi & ISO                      | Three 2- position 4-way solenoid valves                                                                                                                                         |
| <b>HS9527U7C</b>        | Joystick pattern changer with manual override between Hitachi & ISO | Three size 10 2-position 4-way solenoid valves with manual override                                                                                                             |
| <b>A/HS8222P12GRCS</b>  | Dual Pump Flow Sharing Valve                                        | Designed up to 190 LPM attachment. The valve will deliver priority flow from each main pump to the attachment depending on demand from load sensing line.                       |
| <b>A/HS8223P16GRCS</b>  | Dual Pump Flow Sharing Valve                                        | Designed for higher flow (up to 150 x 2 LPM) attachment. The valve will deliver priority flow from each main pump to the attachment depending on demand from load sensing line. |

## Excavator Valving - Hyspecs

### HS9501 - Pilot Valves



- Pilot valves are used to provide pilot pressure to the auxiliary spool on an excavator. Auxiliary spools are often used to attach rotating grapples. This valve gives the operator fingertip control of that new attachment. A pressure reducer/reliever provides the user with a means of setting up the desired flow with proportional auxiliary spools.

| Model          | Description                               | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List      |
|----------------|-------------------------------------------|----------------|--------------|---------------|-----------|
| HS9501P4BP**DL | Pilot valve, aluminium, flying leads      | 11             | 207          | 12 or 24      | \$ 693.00 |
| HS9501P4BP**DG | Pilot valve, aluminium, DIN plug with LED | 11             | 207          | 12 or 24      | \$ 777.00 |

\*\* Denotes coil voltage

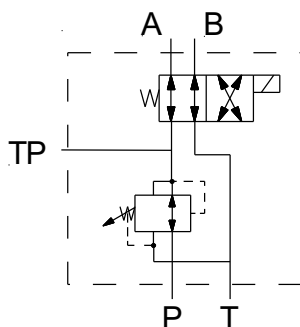
- Valve includes alloy manifold block, 1 x 4-way 3-position solenoid cartridge valve and coils and 1 x pressure reducer/reliever.
- 5 ports, A, B, P, T and TP, all 1/4" BSPP
- Valve overall dimensions, 248mm x 63mm x 51mm (L x W x H)
- Electro-proportional directional cartridge option is available – *Consult Hyspecs*

| Spare Components      | Description                                                         | List      |
|-----------------------|---------------------------------------------------------------------|-----------|
| HS9501P4BP_B          | Pilot manifold, aluminium                                           | \$ 228.00 |
| PR10-32A-0-N-04<br>or | Pressure reducer/reliever (5.5 – 27.6bar)                           | \$ 152.00 |
| PR10-32A-0-N-08       | Pressure reducer/reliever (13.8 – 55.2bar)                          | \$ 152.00 |
| SV08-47D-0-N-0        | 4-way, 3-position solenoid valve (P blocked, A & B to T in neutral) | \$ 221.00 |
| 6306012               | 12 VDC coil, 8 size, DIN plug                                       | \$ 69.00  |
| 6306024               | 24 VDC coil, 8 size, DIN plug                                       | \$ 69.00  |
| 6302012               | 12 VDC coil, 8 size, flying leads                                   | \$ 46.00  |
| 6302024               | 24 VDC coil, 8 size, flying leads                                   | \$ 46.00  |
| ISOL-30R              | DIN plug to suit DC coils                                           | \$ 19.00  |

- E coils and other terminations available – *Consult Hyspecs*

## Excavator Valving - Hyspecs

### HS9501 - Quick Hitch Valves – Double Acting



- Quick hitch valves are used to clamp, hold and release excavator attachments via a quick hitch cylinder at the end of the excavator boom.

| Model           | Description                                 | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List      |
|-----------------|---------------------------------------------|----------------|--------------|---------------|-----------|
| HS9501P4BPS**DL | Quick hitch valve, steel, flying leads      | 11             | 350          | 12 or 24      | \$ 693.00 |
| HS9501P4BPS**DG | Quick hitch valve, steel, DIN plug with LED | 11             | 350          | 12 or 24      | \$ 766.00 |

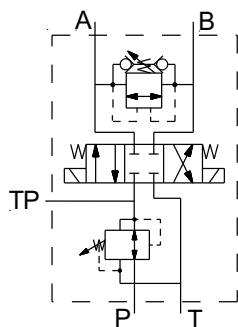
\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x 4-way 2-position solenoid valve and coil and a pressure reducer/reliever.
- 5 ports, A, B, P, T and TP, all 1/4" BSPP
- Valve overall dimensions, 208mm x 63mm x 51mm (L x W x H)

| Spare Components     | Description                              | List      |
|----------------------|------------------------------------------|-----------|
| HS9501P4BPS_B        | Quick hitch manifold, steel              | \$ 304.00 |
| PR50-36A-0-P-50      | Pressure reducer/reliever (207 - 350bar) | \$ 221.00 |
| SV08-40-0-N-0        | 4-way, 2-position solenoid valve         | \$ 153.00 |
| 6306012              | 12 VDC coil, 8 size, DIN plug            | \$ 69.00  |
| 6306024              | 24 VDC coil, 8 size, DIN plug            | \$ 69.00  |
| 6302012              | 12 VDC coil, 8 size, flying leads        | \$ 46.00  |
| 6302024              | 24 VDC coil, 8 size, flying leads        | \$ 46.00  |
| <b>SV58-40-0-P-0</b> | <b>For pressures above 207bar</b>        | \$153.00  |
| 6356012              | 12 VDC coil, 10 size, DIN plug           | \$ 75.00  |
| 6356024              | 24 VDC coil, 10 size, DIN plug           | \$ 75.00  |
| 6352012              | 12 VDC coil, 10 size, flying leads       | \$ 57.00  |
| 6352024              | 24 VDC coil, 10 size, flying leads       | \$ 57.00  |
| ISOL-30R             | DIN plug to suit DC coils                | \$ 19.00  |

## Excavator Valving - Hyspecs

### HS9502 – Tilt Control Valves (Low Flow)



- Designed to control a Tilt Bucket with single acting or equal area ram/s.

| Model           | Description                                                             | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|-----------------|-------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9502P4CPS**DL | Tilt valve, steel, flying leads, in-built 4-port x-line protection      | 11             | 350          | 12 or 24      | \$ 1041.00 |
| HS9502P4CPS**DG | Tilt valve, steel, DIN plug with LED, in-built 4-port x-line protection | 11             | 350          | 12 or 24      | \$ 1125.00 |

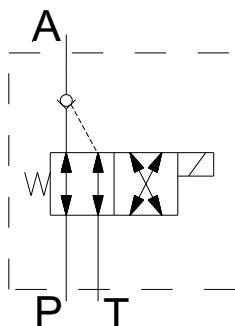
\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x 4-way 3-position solenoid cartridge valve and coils, 1 x bi-directional relief valve and 1 x pressure reducer/reliever.
- 5 ports, A, B, P, T and TP, all 1/4" BSPP
- Valve overall dimensions, 248mm x 63mm x 51mm (L x W x H)
- Electro-proportional directional cartridge option is available – *Consult Hyspecs*

| Spare Components | Description                                                     | List      |
|------------------|-----------------------------------------------------------------|-----------|
| HS9502P4CPS      | Tilt manifold, steel                                            | \$ 332.00 |
| RVBD-08-N-S-0-50 | Bi-directional relief valve                                     | \$ 175.00 |
| PR50-36A-0-P-50  | Pressure reducer/reliever (maximum setting 207bar)              | \$ 221.00 |
| SV08-47C-0-N-0   | 4-way, 3-position solenoid valve (All ports blocked in neutral) | \$ 221.00 |
| 6306012          | 12 VDC coil, 8 size, DIN plug                                   | \$ 69.00  |
| 6306024          | 24 VDC coil, 8 size, DIN plug                                   | \$ 69.00  |
| 6302012          | 12 VDC coil, 8 size, flying leads                               | \$ 46.00  |
| 6302024          | 24 VDC coil, 8 size, flying leads                               | \$ 46.00  |
| ISOL-30R         | DIN plug to suit DC coils                                       | \$ 19.00  |

## Excavator Valving - Hyspecs

### HS9503 - Quick Hitch Valves - Single Acting



- Single acting quick hitch valves are used to clamp, hold and release excavator attachments via a single acting quick hitch cylinder at the end of the excavator boom.

| Model          | Description                                          | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List      |
|----------------|------------------------------------------------------|----------------|--------------|---------------|-----------|
| HS9503P4BK**DL | S/A Quick hitch valve, aluminium, flying leads       | 11             | 207          | 12 or 24      | \$ 593.00 |
| HS9503P4BK**DG | S/A Quick hitch valve, aluminium , DIN plug with LED | 11             | 207          | 12 or 24      | \$ 635.00 |

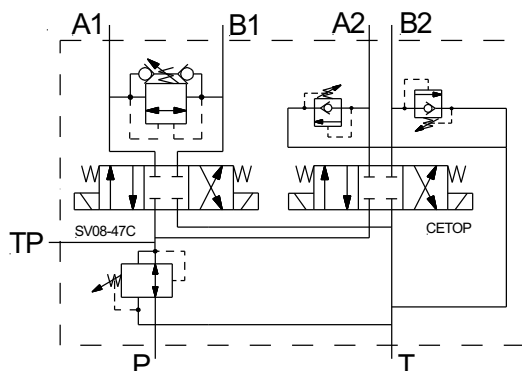
\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x 3-way 2-position solenoid valve and coil and a pilot operated check valve.
- 3 ports, A, P and T, 1/4" BSPP
- Valve overall dimensions, 85mm x 37mm x 124mm (L x W x H)

| Spare Components | Description                       | List      |
|------------------|-----------------------------------|-----------|
| HS9503P4BK       | Quick hitch manifold, aluminium   | \$ 304.00 |
| SV08-40-0-N-0    | 3-way, 2-position solenoid valve  | \$ 153.00 |
| PC08-30-0-N-0    | Pilot operated check valve        | \$ 101.00 |
| 6306012          | 12 VDC coil, 8 size, DIN plug     | \$ 69.00  |
| 6306024          | 24 VDC coil, 8 size, DIN plug     | \$ 69.00  |
| 6302012          | 12 VDC coil, 8 size, flying leads | \$ 46.00  |
| 6302024          | 24 VDC coil, 8 size, flying leads | \$ 46.00  |
| ISOL-30R         | DIN plug to suit DC coils         | \$ 19.00  |

## Excavator Valving - Hyspecs

### HS9504 - Tilt (Low Flow) & Thumb Valves



- Designed to control a Tilt Bucket with single acting or equal area ram/s and Thumb.

| Model         | Description                                                                                | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|---------------|--------------------------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9504EPS**DL | Tilt & thumb valve, steel, flying leads, in-built 4-port and 5-port x-line protection      | 11 & 60        | 350          | 12 or 24      | \$ 2340.00 |
| HS9504EPS**DG | Tilt & thumb valve, steel, DIN plug with LED, in-built 4-port and 5-port x-line protection | 11 & 60        | 350          | 12 or 24      | \$ 2424.00 |

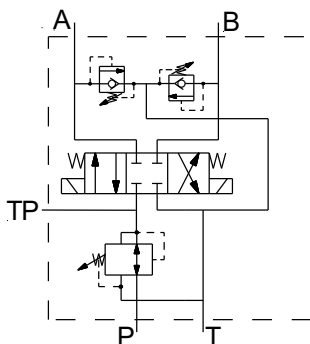
\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x 4-way 3-position solenoid cartridge valve and coils, 1 x Cetop 3 valve, 1 x bi-directional relief valve, 2 x relief valves with anti-cav, and 1 x pressure reducer/reliever.
- P (3/8" BSPP) & T (1/2" BSPP); TP, A1 & B1 (1/4" BSPP) and A2 & B2 (3/8" BSPP)
- Valve overall dimensions, 250mm x 220mm x 180mm (L x W x H)
- Electro-proportional directional cartridge option is available – *Consult Hyspecs*

| Spare Components | Description                                                                                                              | List       |
|------------------|--------------------------------------------------------------------------------------------------------------------------|------------|
| HS9504EPS_B      | Tilt and thumb manifold, steel                                                                                           | \$ 1042.00 |
| RVBD-08-N-S-0-50 | Bi-directional relief valve                                                                                              | \$ 175.00  |
| RVPP-10-N-S-0-50 | Relief valve with anti-cavitation protection (3.5 – 315bar)                                                              | \$ 180.00  |
| PR50-38A-0-P-33  | Pressure reducer/reliever (55 – 207bar)                                                                                  | \$ 270.00  |
| SV08-47C-0-N-0   | 4-way, 3-position solenoid valve (All ports blocked in neutral)                                                          | \$ 221.00  |
| SWH-G02-C2-D**   | Cetop 3 valve, 4-way, 3-position solenoid valve (All ports blocked in neutral) *Use Eaton Cetop for higher pressure POA. | \$ 243.00  |
| 6306012          | 12 VDC coil, 8 size, DIN plug                                                                                            | \$ 69.00   |
| 6306024          | 24 VDC coil, 8 size, DIN plug                                                                                            | \$ 69.00   |
| 6302012          | 12 VDC coil, 8 size, flying leads                                                                                        | \$ 46.00   |
| 6302024          | 24 VDC coil, 8 size, flying leads                                                                                        | \$ 46.00   |
| ISOL-30R         | DIN plug to suit DC coils                                                                                                | \$ 19.00   |

## Excavator Valving - Hyspecs

### HS9505 - Tilt with 5-Port Relief (Low Flow)



- Designed to control a Tilt Bucket with a differential area cylinder.

| Model               | Description                                                             | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|---------------------|-------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9505P4DPS**<br>DL | Tilt valve, steel, flying leads, in-built 5-port x-line protection      | 11             | 350          | 12 or 24      | \$ 1474.00 |
| HS9505P4DPS**<br>DG | Tilt valve, steel, DIN plug with LED, in-built 5-port x-line protection | 11             | 350          | 12 or 24      | \$ 1561.00 |

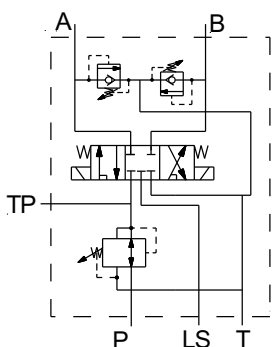
\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x 4-way 3-position solenoid cartridge valve and coils, 2 x relief valves with anti-cav, and 1 x pressure reducer/reliever.
- 5 ports, A, B, P, T and TP, all 1/4" BSPP
- Valve overall dimensions, 248mm x 75mm x 117mm (L x W x H)
- Electro-proportional directional cartridge option is available – *Consult Hyspecs*

| Spare Components | Description                                                     | List      |
|------------------|-----------------------------------------------------------------|-----------|
| HS9505P4DPS_B    | Tilt with 5-port relief manifold, steel                         | \$ 567.00 |
| RVPP-10-N-S-0-50 | Relief valve with anticav protection (3.5 – 207bar)             | \$ 180.00 |
| PR50-36A-0-P-50  | Pressure reducer/reliever (maximum setting 207bar)              | \$ 221.00 |
| SV08-47C-0-N-0   | 4-way, 3-position solenoid valve (All ports blocked in neutral) | \$ 221.00 |
| 6306012          | 12 VDC coil, 8 size, DIN plug                                   | \$ 69.00  |
| 6306024          | 24 VDC coil, 8 size, DIN plug                                   | \$ 69.00  |
| 6302012          | 12 VDC coil, 8 size, flying leads                               | \$ 46.00  |
| 6302024          | 24 VDC coil, 8 size, flying leads                               | \$ 46.00  |
| ISOL-30R         | DIN plug to suit DC coils                                       | \$ 19.00  |

## Excavator Valving - Hyspecs

### HS9506 - Load Sense Tilt or Thumb with 5-Port Relief (Medium Flow)



- Designed to control a tilt bucket with a double acting cylinder with in-built load sensing.

| Model          | Description                                                                         | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|----------------|-------------------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9506DPRS**DL | Tilt valve, steel, flying leads, in-built 5-port x-line protection, load sense      | 23             | 350          | 12 or 24      | \$ 1401.00 |
| HS9506DPRS**DG | Tilt valve, steel, DIN plug with LED, in-built 5-port x-line protection, load sense | 23             | 350          | 12 or 24      | \$ 1485.00 |

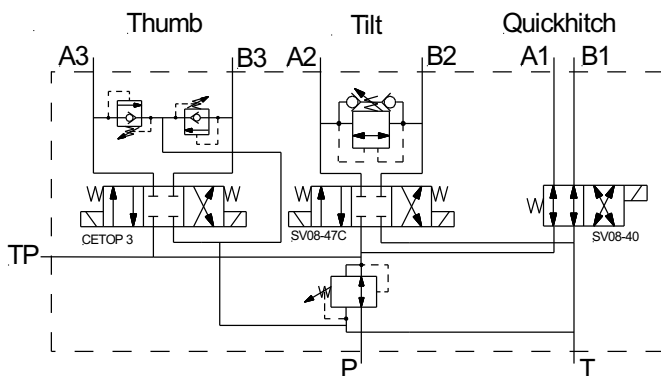
\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x 5-way 3-position solenoid cartridge valve and coils, 2 x relief valves with anti-cav, 1 x pressure reducer/reliever cartridge
- 6 ports, A, B, P, TP, LS -1/4" BSPP and T -3/8" BSPP
- Valve overall dimensions, 213mm x 75mm x 154mm (L x W x H)
- Electro-proportional directional cartridge option is available – Consult Hyspecs

| Spare Components | Description                                                     | List      |
|------------------|-----------------------------------------------------------------|-----------|
| HS9506DPRS_B     | Tilt with 5-port relief manifold, steel                         | \$ 485.00 |
| RVPP-10-N-S-0-50 | Relief valve with anti-cavitation protection (3.5 – 250bar)     | \$ 180.00 |
| PR50-36A-0-P-50  | Pressure reducer/reliever (maximum setting 250bar)              | \$ 221.00 |
| SV10-57C-0-N-0   | 5-way, 3-position solenoid valve (All ports blocked in neutral) | \$ 257.00 |
| 6356012          | 12 VDC coil, 10 size, DIN plug                                  | \$ 75.00  |
| 6356024          | 24 VDC coil, 10 size, DIN plug                                  | \$ 75.00  |
| 6352012          | 12 VDC coil, 10 size, flying leads                              | \$ 57.00  |
| 6352024          | 24 VDC coil, 10 size, flying leads                              | \$ 57.00  |
| ISOL-30R         | DIN plug to suit DC coils                                       | \$ 19.00  |

## Excavator Valving - Hyspecs

### HS9507 - Quickhitch, Tilt (Low Flow) & Thumb Valves



- Designed to control a Quickhitch, Tilt Bucket with single acting or equal area ram/s and a Thumb.

| Model         | Description                                                                                            | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|---------------|--------------------------------------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9507FPS**DL | Quickhitch, tilt & thumb valve, steel, flying leads, in-built 4-port and 5-port x-line protection      | 11 & 60        | 350          | 12 or 24      | \$ 2617.00 |
| HS9507FPS**DG | Quickhitch, tilt & thumb valve, steel, DIN plug with LED, in-built 4-port and 5-port x-line protection | 11 & 60        | 350          | 12 or 24      | \$ 2743.00 |

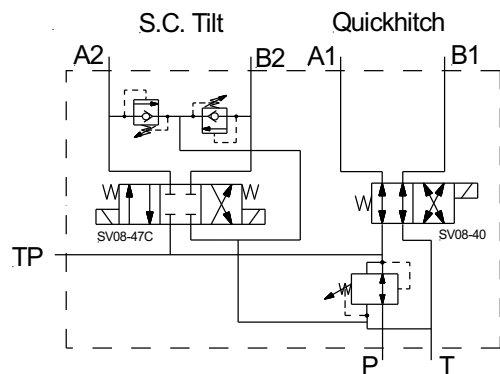
\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x 4-way 3-position solenoid cartridge valve and coils, 1 x Cetop 3 valve, 1 x 4-way 2-position solenoid cartridge valve and coil, 1 x bi-directional relief valve, 2 x relief valves with anti-cav, and 1 x pressure reducer/reliever.
- 9 ports, P, A3, B3 – 3/8" BSPP, A1, B1, A2, B2, TP – 1/4" BSPP, T – 1/2" BSPP
- Valve overall dimensions, 150mm x 170mm x 180mm (L x W x H)
- Electro-proportional directional cartridge option is available – *Consult Hyspecs*

| Spare Components | Description                                                     | List       |
|------------------|-----------------------------------------------------------------|------------|
| HS9507FPS_B      | Quickhitch, tilt and thumb manifold, steel                      | \$ 1120.00 |
| RVBD-08-N-S-0-50 | Bi-directional relief valve (3.5 – 207bar)                      | \$ 175.00  |
| RVPP-10-N-S-0-50 | Relief valve with anti-cavitation protection (3.5 – 315bar)     | \$ 180.00  |
| PR50-38A-0-P-33  | Pressure reducer/reliever (maximum setting 207bar)              | \$ 270.00  |
| SV08-40-0-N-0    | 4-way, 2-position solenoid valve                                | \$ 153.00  |
| SV08-47C-0-N-0   | 4-way, 3-position solenoid valve (All ports blocked in neutral) | \$ 221.00  |
| SWH-G02-C2-D**   | Cetop 3 valve, 3-position (All ports blocked in neutral)        | \$ 243.00  |
| 6306012          | 12 VDC coil, 8 size, DIN plug                                   | \$ 69.00   |
| 6306024          | 24 VDC coil, 8 size, DIN plug                                   | \$ 69.00   |
| 6302012          | 12 VDC coil, 8 size, flying leads                               | \$ 46.00   |
| 6302024          | 24 VDC coil, 8 size, flying leads                               | \$ 46.00   |
| ISOL-30R         | DIN plug to suit DC coils                                       | \$ 19.00   |

## Excavator Valving - Hyspecs

### HS9508 - Quickhitch & Tilt (Low Flow) with 5-Port Relief



- Designed to control a Quickhitch and Tilt Bucket with a double acting ram/s.

| Model           | Description                                                                            | Q<br>max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|-----------------|----------------------------------------------------------------------------------------|-------------------|--------------|---------------|------------|
| HS9508P4EPS**DL | Quickhitch and tilt valve, steel, flying leads, in-built 5-port x-line protection      | 11                | 350          | 12 or 24      | \$ 1876.00 |
| HS9508P4EPS**DG | Quickhitch and tilt valve, steel, DIN plug with LED, in-built 5-port x-line protection | 11                | 350          | 12 or 24      | \$ 2002.00 |

\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x 4-way 3-position solenoid cartridge valve and coils, 1 x 4-way 2-position solenoid cartridge valve and coil, 2 x relief valves with anti-cav, and 1 x pressure reducer/reliever.
- 7 ports, P, TP, T, A1, B1, A2 & B2 all 1/4" BSPP
- Valve overall dimensions, 248mm x 100mm x 137mm (L x W x H)
- Electro-proportional directional cartridge option is available – *Consult Hyspecs*

| Spare Components | Description                                                     | List      |
|------------------|-----------------------------------------------------------------|-----------|
| HS9508P4EPS_B    | Quickhitch and tilt with 5-port relief manifold, steel          | \$ 767.00 |
| RVPP-10-N-S-0-50 | Relief valve with anti-cavitation protection (3.5 – 207bar)     | \$ 180.00 |
| PR50-36A-0-P-50  | Pressure reducer/reliever (maximum setting 207bar)              | \$ 221.00 |
| SV08-40-0-N-0    | 4-way, 2-position solenoid valve                                | \$ 153.00 |
| SV08-47C-0-N-0   | 4-way, 3-position solenoid valve (All ports blocked in neutral) | \$ 221.00 |
| 6306012          | 12 VDC coil, 8 size, DIN plug                                   | \$ 69.00  |
| 6306024          | 24 VDC coil, 8 size, DIN plug                                   | \$ 69.00  |
| 6302012          | 12 VDC coil, 8 size, flying leads                               | \$ 46.00  |
| 6302024          | 24 VDC coil, 8 size, flying leads                               | \$ 46.00  |
| ISOL-30R         | DIN plug to suit DC coils                                       | \$ 19.00  |

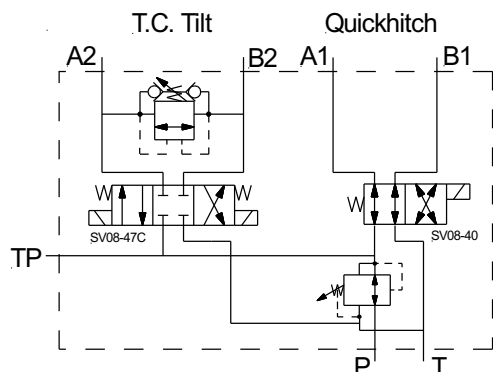
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**G11 Excavator Valving & Accessories**

## Excavator Valving - Hyspecs

### HS9509 - Quickhitch & Tilt (Low Flow)



- Designed to control a Quickhitch and Tilt Bucket with twin single acting or equal area ram/s.

| Model           | Description                                                                            | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|-----------------|----------------------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9509P4DPS**DL | Quickhitch and tilt valve, steel, flying leads, in-built 4-port x-line protection      | 2 x 11         | 350          | 12 or 24      | \$ 1620.00 |
| HS9509P4DPS**DG | Quickhitch and tilt valve, steel, DIN plug with LED, in-built 4-port x-line protection | 2 x 11         | 350          | 12 or 24      | \$ 1746.00 |

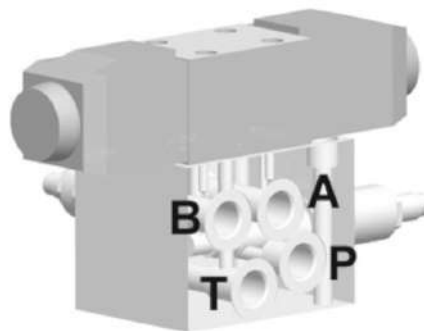
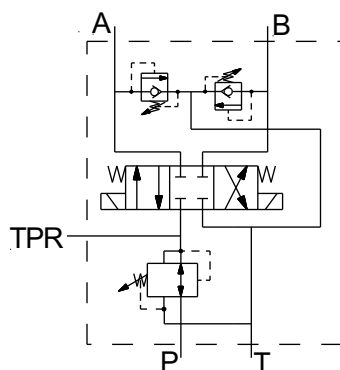
\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x 4-way 3-position solenoid cartridge valve and coils, 1 x 4-way 2-position solenoid cartridge valve and coil, 1 x bi-directional relief valve and 1 x pressure reducer/reliever.
- 7 ports, P, T, TP, 2 x A & B, all 1/4" BSPP
- Valve overall dimensions, 248mm x 100mm x 105mm (L x W x H)
- Electro-proportional directional cartridge option is available – *Consult Hyspecs*

| Spare Components | Description                                                     | List      |
|------------------|-----------------------------------------------------------------|-----------|
| HS9509P4DPS_B    | Quickhitch and tilt with 5-port relief manifold, steel          | \$ 658.00 |
| RVBD-08-N-S-0-50 | Bi-directional relief valve (3.5 – 207bar)                      | \$ 175.00 |
| PR50-36A-0-P-50  | Pressure reducer/reliever (maximum setting 207bar)              | \$ 221.00 |
| SV08-40-0-N-0    | 4-way, 2-position solenoid valve                                | \$ 153.00 |
| SV08-47C-0-N-0   | 4-way, 3-position solenoid valve (All ports blocked in neutral) | \$ 221.00 |
| 6306012          | 12 VDC coil, 8 size, DIN plug                                   | \$ 69.00  |
| 6306024          | 24 VDC coil, 8 size, DIN plug                                   | \$ 69.00  |
| 6302012          | 12 VDC coil, 8 size, flying leads                               | \$ 46.00  |
| 6302024          | 24 VDC coil, 8 size, flying leads                               | \$ 46.00  |
| ISOL-30R         | DIN plug to suit DC coils                                       | \$ 19.00  |

## Excavator Valving - Hyspecs

### HS9512 - Thumb or Tilt Control (High Flow)



- Designed to control a thumb via a D/A cylinder.

| Model        | Description                                                                      | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|--------------|----------------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9512CPRS** | Thumb control of a single D/A cylinder, steel manifold, 5-port x-line protection | 60             | 350          | 12 or 24      | \$ 1577.00 |

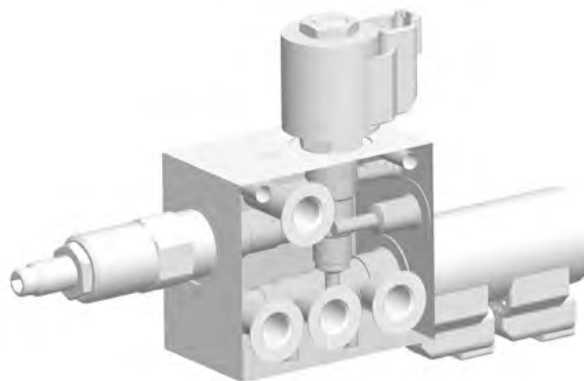
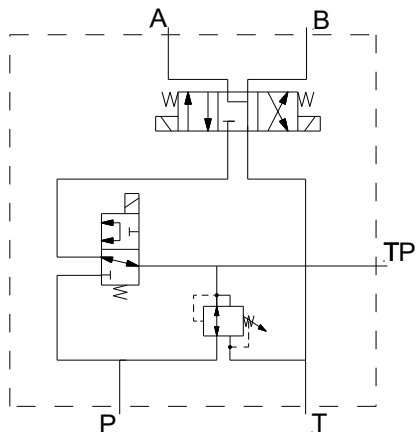
\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x Cetop 3 valve, 2 x relief valves with anti-cav and 1 x pressure reducer/reliever.
- 5 ports, P, T, A & B – 3/8" BSPP, TPR – 1/4" BSPP
- Electro-proportional directional valve option is available – *Consult Hyspecs*

| Spare Components |                                                                                |  |  | List      |
|------------------|--------------------------------------------------------------------------------|--|--|-----------|
| HS9512CPRS       | Thumb manifold, steel                                                          |  |  | \$ 767.00 |
| RVPP-10-N-S-0-50 | Relief valve with anti-cavitation protection (3.5 – 315bar)                    |  |  | \$ 180.00 |
| PR50-38A-0-P-33  | Pressure reducer/reliever (55 – 228bar)                                        |  |  | \$ 270.00 |
| SWH-G02-C2-D**   | Cetop 3 valve, 4-way, 3-position solenoid valve (All ports blocked in neutral) |  |  | \$ 243.00 |

## Excavator Valving - Hyspecs

### HS9515 - Two Stage Pilot Control of Main Spool



- Designed to control the main spool of an excavator, partial flow or full flow.

| Model          | Description                                                                                           | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|----------------|-------------------------------------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9515P4CP**DL | Pressure reducer, 3 position solenoid valve and 2 position 3 way solenoid selector, flying leads      | 11             | 207          | 12 or 24      | \$ 938.00  |
| HS9515P4CP**DG | Pressure reducer, 3 position solenoid valve and 2 position 3 way solenoid selector, DIN plug with LED | 11             | 207          | 12 or 24      | \$ 1064.00 |

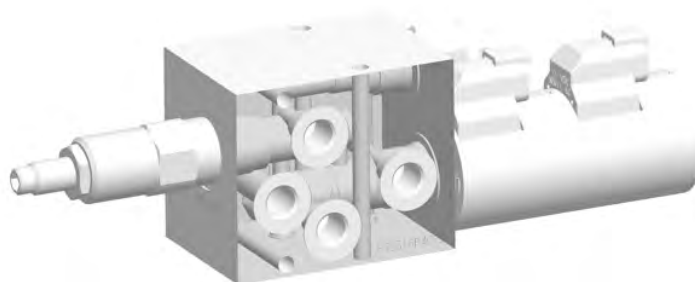
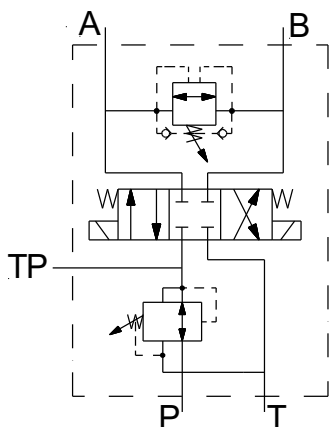
\*\* Denotes coil voltage

- Valve includes aluminium manifold, 1 x 3-way 2-position solenoid cartridge with coils and 1 x pressure reducer/reliever.
- 5 ports, P, T, A, B & TP, all 1/4" BSPP
- Valve overall dimensions, 299mm x 122mm x 50mm (L x W x H)

| Spare Components                      | Description                                                                             | List                   |
|---------------------------------------|-----------------------------------------------------------------------------------------|------------------------|
| HS9515P4CP                            | Two stage pilot control manifold, aluminium                                             | \$ 295.00              |
| PR10-32A-0-N-04 or<br>PR10-32A-0-N-08 | Pressure reducer/reliever (5.5 – 27.6bar)<br>Pressure reducer/reliever (13.8 – 55.2bar) | \$ 152.00<br>\$ 152.00 |
| SV08-47D-0-N-0                        | 4-way, 3-position solenoid valve                                                        | \$ 221.00              |
| SV08-31-0-N-0                         | 3-way, 2-position solenoid valve                                                        | \$132.00               |
| 6306012                               | 12 VDC coil, 8 size, DIN plug                                                           | \$ 69.00               |
| 6306024                               | 24 VDC coil, 8 size, DIN plug                                                           | \$ 69.00               |
| 6302012                               | 12 VDC coil, 8 size, flying leads                                                       | \$ 46.00               |
| 6302024                               | 24 VDC coil, 8 size, flying leads                                                       | \$ 46.00               |
| ISOL-30R                              | DIN plug to suit DC coils                                                               | \$ 19.00               |

## Excavator Valving - Hyspecs

### HS9516 - Tilt Control (Medium Flow)



- Designed to control a Tilt Bucket with larger single acting or equal area ram/s.

| Model           | Description                                                                       | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|-----------------|-----------------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9516P4CPS**DL | Pressure reducer, 3 position solenoid valve, cross line relief, flying leads      | 23             | 350          | 12 or 24      | \$ 1145.00 |
| HS9516P4CPS**DG | Pressure reducer, 3 position solenoid valve, cross line relief, DIN plug with LED | 23             | 350          | 12 or 24      | \$ 1229.00 |

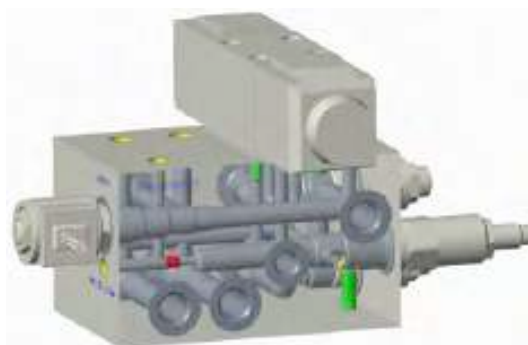
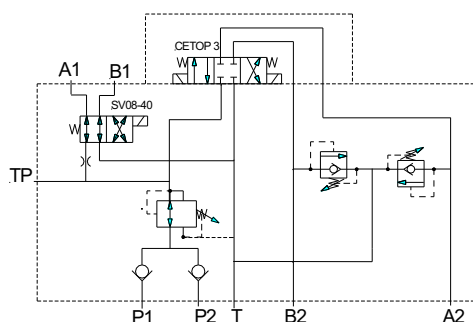
\*\* Denotes coil voltage

- Valve includes steel manifold, 1 x 4-way 3-position solenoid cartridge and coil, 1 x bi-directional relief valve and 1 x pressure reducer/reliever.
- 5 ports, P, T, TP, A & B, all 1/4" BSPP
- Valve overall dimensions, 254mm x 75mm x 62.5mm (L x W x H)

| Spare Components | Description                                        | List      |
|------------------|----------------------------------------------------|-----------|
| HS9516P4CPS_B    | Tilt control, high flow manifold, steel            | \$ 380.00 |
| PR50-36A-0-P-50  | Pressure reducer/reliever (maximum setting 207bar) | \$ 221.00 |
| SV10-47C-0-N-0   | 4-way, 3-position solenoid valve                   | \$ 277.00 |
| RVBD-08-N-S-0-50 | B-directional relief valve                         | \$ 175.00 |
| 6356012          | 12 VDC coil, size 10, DIN plug                     | \$ 75.00  |
| 6356024          | 24 VDC coil, size 10, DIN plug                     | \$ 75.00  |
| 6352012          | 12 VDC coil, size 10, flying leads                 | \$ 57.00  |
| 6352024          | 24 VDC coil, size 10, flying leads                 | \$ 57.00  |
| ISOL-30R         | DIN plug to suit DC coils                          | \$ 19.00  |

## Excavator Valving - Hyspecs

### HS9518 - Two Inlets, Quickhitch & Thumb or Tilt Valve (High Flow)



- Designed to control a Quickhitch and Thumb (single D/A ram) or Tilt (High Flow).

| Model                | Description                                                                                                                                                                              | Q<br>max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------|---------------|------------|
| HS9518P6GPR<br>S**DL | Two inlets, Quickhitch & thumb valve, checks, pressure reducer, 2 & 3 position solenoid valves (cetop3 for thumb), 5-port cross line relief valve on the thumb, steel, flying leads      | 11 &<br>60        | 350          | 12 or 24      | \$ 2269.00 |
| HS9518P6GPR<br>S**DG | Two inlets, Quickhitch & thumb valve, checks, pressure reducer, 2 & 3 position solenoid valves (cetop3 for thumb), 5-port cross line relief valve on the thumb, steel, DIN plug with LED | 11 &<br>60        | 350          | 12 or 24      | \$ 2311.00 |

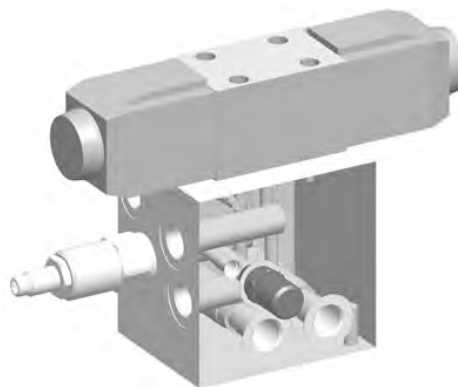
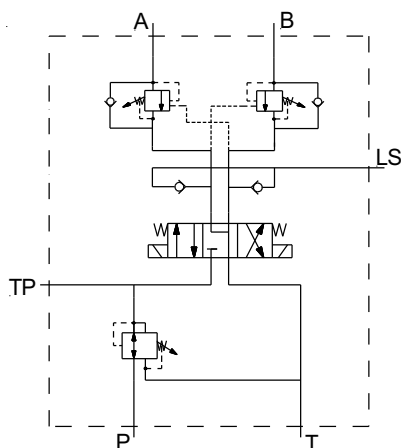
\*\* Denotes coil voltage

- Valve includes steel manifold block, 1 x Cetop 3 valve, 1 x 4-way 2-position solenoid cartridge valve and coil, 2 x relief valves with anti-cavitation, 2 x check valves, and 1 x pressure reducer/reliever.
- 8 ports, P1, P2, T, A2 & B2 - 3/8"BSPP, TP, A1 & B1 - 1/4"BSPP
- Electro-proportional directional cartridge option is available – *Consult Hyspecs*
- Valve overall dimensions, 276mm x 109mm x 170mm (L x W x H)

| Spare Components |                                                                                | List       |
|------------------|--------------------------------------------------------------------------------|------------|
| HS9518P6GPRS     | Quickhitch, tilt and thumb manifold, steel                                     | \$ 1100.00 |
| RVPP-10-N-S-0-50 | Relief valve with anti-cavitation protection                                   | \$ 180.00  |
| PR50-38A-0-P-33  | Pressure reducer/reliever                                                      | \$ 270.00  |
| SV08-40-0-N-0    | 4-way, 2-position solenoid valve                                               | \$ 153.00  |
| CV50-20          | High pressure check valve                                                      | \$ 92.00   |
| SWH-G02-C2-D**   | Cetop 3 valve, 4-way, 3-position solenoid valve (All ports blocked in neutral) | \$ 243.00  |
| 6306012          | 12 VDC coil, 8 size, DIN plug                                                  | \$ 69.00   |
| 6306024          | 24 VDC coil, 8 size, DIN plug                                                  | \$ 69.00   |
| 6302012          | 12 VDC coil, 8 size, flying leads                                              | \$ 46.00   |
| 6302024          | 24 VDC coil, 8 size, flying leads                                              | \$ 46.00   |
| ISOL-30R         | DIN plug to suit DC coils                                                      | \$ 19.00   |

## Excavator Valving - Hyspecs

### HS9521 - Load Sense Tilt or Thumb Control with Dual Counterbalance



- Designed to control a high flow tilt bucket or thumb with built-in load sense & dual counterbalance.

| Model            | Description                                                                                   | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|------------------|-----------------------------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9521P6FPMS**DG | Pressure reducer, Cetop 3, load sense checks, double counterbalance valves, DIN plug with LED | 60             | 350          | 12 or 24      | \$ 1461.00 |

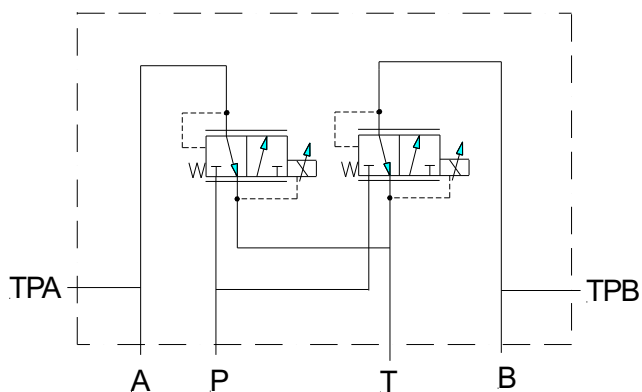
\*\* Denotes coil voltage

- Valve includes steel manifold, 1 x Cetop 3 valve, 2 x counterbalance valves, 2 x check valves and 1 x pressure reducer/reliever.
- 6 ports, P,T A & B – 3/8" BSPP; LS & TP – 1/4" BSPP
- Valve overall dimensions, 179mm x 123mm x 165mm (L x W x H)

| Spare Components | Description                                                                 | List      |
|------------------|-----------------------------------------------------------------------------|-----------|
| HS9521P6FPMS_B   | Load sense tilt control with dual counterbalance manifold, steel            | \$ 575.00 |
| CBCG-LJN         | Counterbalance valve                                                        | \$ 298.00 |
| PR50-38A-0-P-33  | Pressure reducer/reliever (55 – 228bar)                                     | \$ 270.00 |
| CV04-20          | Load sense check valve                                                      | \$ 46.00  |
| SWH-G02-C4-D**   | Cetop 3 valve, 3-position solenoid valve (P blocked, A & B to T in neutral) | \$ 243.00 |
| NWH-02-D**       | 12 or 24 VDC coil, DIN plug                                                 | \$ 80.00  |
| ISOL-30R         | DIN plug to suit DC coils                                                   | \$ 19.00  |

## Excavator Valving - Hyspecs

### HS9525 – Proportional Pilot Control



- Designed to provide proportional pilot pressure to the auxiliary spool on an excavator to supply proportional flow to attachments.

| Model        | Description                                                 | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List      |
|--------------|-------------------------------------------------------------|----------------|--------------|---------------|-----------|
| HS9525P4BP** | Proportional pilot valve<br>Aluminium, Deutsch<br>connector | 18             | 240          | 12 or 24      | \$ 854.00 |

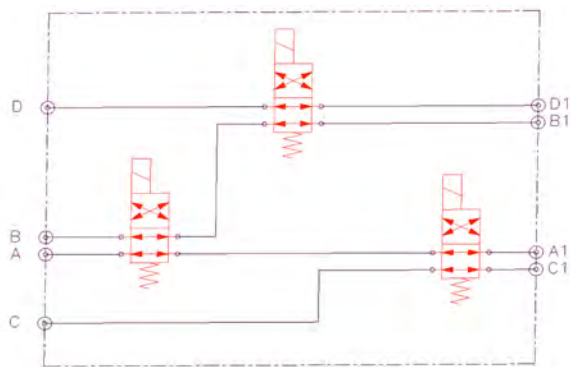
\*\* Denotes coil voltage

- Valve includes alloy manifold block, 2 x proportional reducing/relieving drop-in-style valves with coils and matching Deutsch connectors
- 6 ports, A, B, TPA, TPB, P & T, all 1/4 " BSPP
- Valve overall Dimensions: 120mm x 100mm x 50mm
- Plug-In style dual/single valve driver EVDR-0201 as a controller option
- Refer proportional valve controller page for controller options

| Spare Components | Description                                           | List      |
|------------------|-------------------------------------------------------|-----------|
| HS9525P4BP_B     | Proportional pilot manifold aluminium                 | \$ 240.00 |
| EHPR98-T38B-**ER | Proportional reducing/relieving with coil (0 – 57bar) | \$ 285.00 |
| 4001417          | Deutsch mating connector                              | \$ 22.00  |

## Excavator Valving - Hyspecs

### HS9526/HS9527 – Joystick Pattern Changer



- Designed for joystick pattern changer between Hitachi and ISO.

| Model         | Description                                                                              | Q max<br>l/min | P max<br>bar | Voltage<br>DC | List       |
|---------------|------------------------------------------------------------------------------------------|----------------|--------------|---------------|------------|
| HS9526U7C**DL | Three 08, size 2 position, 4 way solenoid valves, flying leads                           | 11             | 207          | 12 or 24      | \$ 1032.00 |
| HS9526U7C**DG | Three 08, size 2 position, 4 way solenoid valves, DIN plug with LED                      | 11             | 207          | 12 or 24      | \$ 1158.00 |
| HS9527U7C**DL | Three size 10, 2 position, 4 way solenoid valves with manual override, flying leads      | 23             | 207          | 12 or 24      | \$ 1437.00 |
| HS9527U7C**DG | Three size 10, 2 position, 4 way solenoid valves with manual override, DIN plug with LED | 23             | 207          | 12 or 24      | \$ 1548.00 |

\*\* Denotes coil voltage

- Valve includes aluminium manifold block, 3 x 4-way, 2 position solenoid cartridges and coils
- 8 ports, A, B, C, D & A1, B1, C1, D1, all 7/16" UNO
- Valve overall Dimensions: HS9526 122mm x 120mm x 50mm
- HS9527 178mm x 150mm x 75mm

| Spare Components | Description                                           | List      |
|------------------|-------------------------------------------------------|-----------|
| HS9526U7C        | Joystick pattern changer size 8 manifold aluminium    | \$ 435.00 |
| HS9527U7C        | Joystick pattern changer size 10 manifold aluminium   | \$ 510.00 |
| SV08-40-0-N-0    | 4-way, 2 position solenoid valve                      | \$ 153.00 |
| SV10-40M-0-N-0   | 4-way, 2 position solenoid valve with manual override | \$ 252.00 |
| 63060**          | 12 or 24 VDC coil, 8 size, DIN plug                   | \$ 69.00  |
| 63020**          | 12 or 24 VDC coil, 8 size, flying leads               | \$ 46.00  |
| 63560**          | 12 or 24 VDC coil, 10 size, DIN plug                  | \$ 75.00  |
| 63520**          | 12 or 24 VDC coil, 10 size, flying leads              | \$ 57.00  |
| ISOL-30R         | DIN plug to suit DC coils                             | \$ 19.00  |

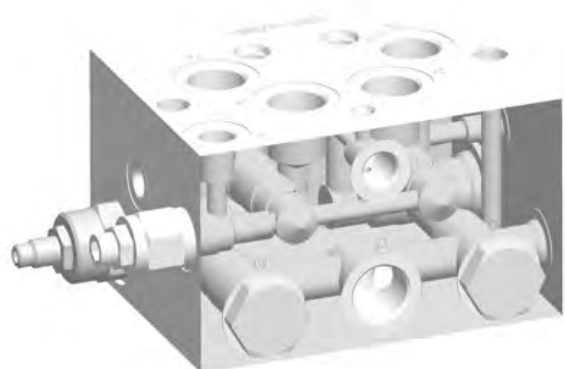
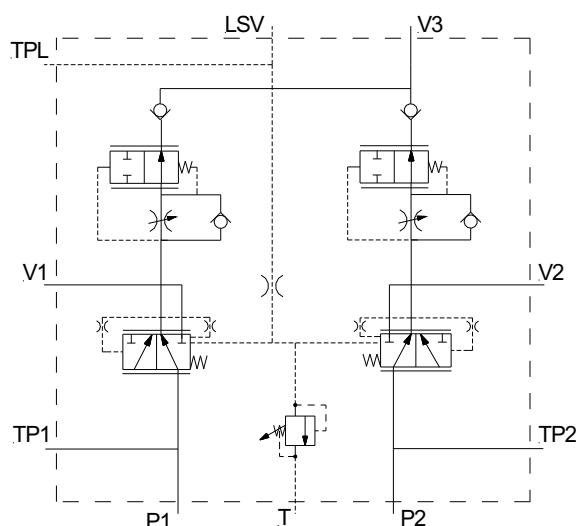
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**G19 Excavator Valving & Accessories**

## Excavator Valving - Hyspecs

### A/HS8222P12GRCS - Dual Pump Flow Sharing Valve



- Designed for high flow (up to 190 LPM) attachment. The valve will deliver priority flow from each main pump to port the attachment (port V3) depending on demand from load sensing line.

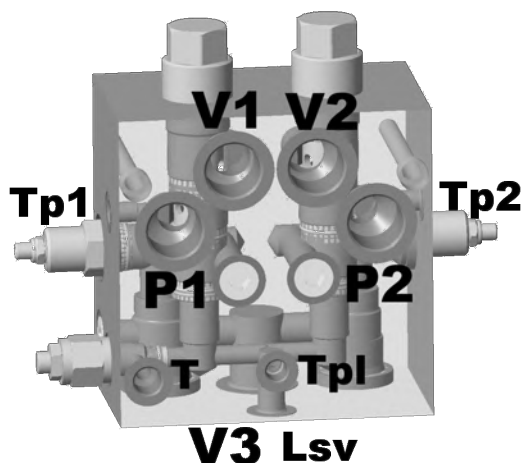
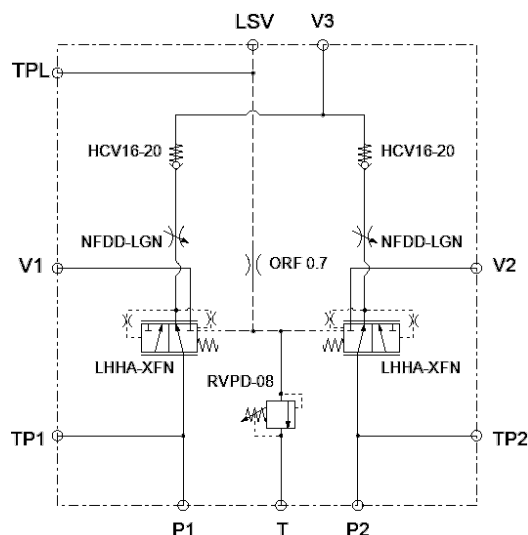
| Model           | Q max<br>l/min   | P max<br>bar | Notes                                                       | Ports<br>BSPP                                                             | Assembly<br>Price |
|-----------------|------------------|--------------|-------------------------------------------------------------|---------------------------------------------------------------------------|-------------------|
| A/HS8222P12GRCS | 130 x 2<br>Input | 350          | Load sense on demand with maximum flow and pressure limiter | 3/4" main ports,<br>3/8" load sense<br>and tank ports,<br>1/4" test ports | \$ 2263.00        |

- Manifold dimensions, 165 x 126 x 100mm (excluding cartridges)

| Spare Components | Description                               | List       |
|------------------|-------------------------------------------|------------|
| HS8222P12GRCS    | Dual pump flow sharing manifold, steel    | \$ 1065.00 |
| FCVL-12          | Flow control to limit maximum flow taking | \$ 145.00  |
| EC12-43-0-N-160  | Priority-on-demand pressure compensator   | \$ 257.00  |
| CV11-12          | Check valve (02-172411)                   | \$ 147.00  |
| RVPD-08          | Relief valve (3.5 – 350bar)               | \$ 105.00  |

## Excavator Valving - Hyspecs

### A/HS8223P16GRCS - Dual Pump Higher Flow Sharing Valve



- Designed for higher flow (up to 150 x 2 LPM) attachment. The valve will deliver priority flow from each main pump to the attachment (port V3) depending on demand from load sensing line.

| Model           | Q max<br>l/min   | P max<br>bar | Notes                                                       | Ports<br>BSPP                                                        | Assembly<br>Price |
|-----------------|------------------|--------------|-------------------------------------------------------------|----------------------------------------------------------------------|-------------------|
| A/HS8223P16GRCS | 240 x 2<br>Input | 350          | Load sense on demand with maximum flow and pressure limiter | 1" main ports,<br>3/8" load sense and tank ports,<br>1/4" test ports | \$ 3160.00        |

- Manifold dimensions, 176 x 176 x 110mm (excluding cartridges)

| Spare Components | Description                               | List      |
|------------------|-------------------------------------------|-----------|
| HS8223P16GRCS*   | Dual pump flow sharing manifold, steel    | \$1450.00 |
| NFDD-LGN*        | Flow control to limit maximum flow taking | \$100.00  |
| LHHA-XFN*        | Pressure compensator                      | \$540.00  |
| HCV16-20         | Check valve                               | \$165.00  |
| RVPD-08          | Relief valve (3.5 – 350bar)               | \$105.00  |

- \* Non-common stock item - Contact Hyspecs for lead time

## Excavator Valving – Hyspecs

### SAFEX™ Valve



SAFEX™ valves are designed to be mounted directly to the boom and/or the stick (arm) cylinders of hydraulic excavators. With the correct installation and adjustment these valves prevent uncontrolled lowering of the boom/stick cylinders in the event of a hose burst, thereby becoming part of the load holding and lowering system designed to comply with **AS 1418.8 / ISO 8643**.

| Model          | Port Size       |                           |               | Max. Press. In bar (psi) | Rated Flow Per Valve lpm | List       |
|----------------|-----------------|---------------------------|---------------|--------------------------|--------------------------|------------|
|                | C               | V                         | E/EP, PIL, DR |                          |                          |            |
| A/HS4541P6CRS  | BSPP 3/8"       | BSPP 3/8"                 | 1/4" BSPP     | 350 (5000)               | 30                       | \$ 785.00  |
| A/HS4542P8CRS  | BSPP 1/2"       | BSPP 1/2"                 | 1/4" BSPP     | 350 (5000)               | 90                       | \$ 845.00  |
| A/HS4543P12CRS | BSPP 3/4"       | BSPP 3/4"                 | 1/4" BSPP     | 400 (5800)               | 180                      | \$ 875.00  |
| A/HS4543U21CRS | UNO 1 5/16"     | UNO 1 5/16"               | 1/4" BSPP     | 350 (5000)               | 180                      | \$ 875.00  |
| A/HS4882BCRS   | SAE 3/4" C61&62 | SAE 3/4" C61&62           | 1/4" BSPP     | 350 (5000)               | 90                       | \$ 1148.00 |
| A/HS4883BCRS   | SAE 3/4" C61&62 | SAE 3/4" C61&62           | 1/4" BSPP     | 350 (5000)               | 180                      | \$ 1180.00 |
| A/HS4884BCRS   | SAE 3/4" C61&62 | SAE 3/4" C61&62           | 1/4" BSPP     | 350 (5000)               | 300                      | \$ 1459.00 |
| A/HS4885BCRS   | SAE 3/4" C61&62 | SAE 3/4" C61&62 Long tail | 1/4" BSPP     | 350 (5000)               | 180                      | \$ 1295.00 |
| A/HS4886CCRS   | SAE 1" C61      | SAE 1" C61&62             | 1/4" BSPP     | 350 (5000)               | 180                      | \$ 1220.00 |
| A/HS4887CCRS   | SAE 1" C62      | SAE 1" C61&62             | 1/4" BSPP     | 400 (5800)               | 180                      | \$ 1220.00 |
| A/HS4888CCRS   | SAE 1" C62      | SAE 1" C61&62             | 1/4" BSPP     | 400 (5800)               | 300                      | \$ 1584.00 |
| A/HS4889CCRS   | SAE 1" C62      | SAE 1" C61&62 Long Tail   | 1/4" BSPP     | 400 (5800)               | 180                      | \$ 1290.00 |
| A/HS4890DCRS   | SAE 1.25" C62   | SAE 1.25" C62             | 1/4" BSPP     | 400 (5800)               | 300                      | \$ 1685.00 |
| A/HS4891ECRS   | SAE 1.5" C62    | SAE 1.5" C62              | 1/4" BSPP     | 400 (5800)               | 300                      | \$ 1775.00 |
| A/HS4847BCRS   | SAE 3/4" C61&62 | SAE 3/4" C62              | 1/4" BSPP     | 350 (5000)               | 180                      | \$ 1245.00 |
| A/HS4848CDRS   | SAE 1" C62      | SAE 1" C62                | 1/4" BSPP     | 400 (5800)               | 360                      | \$ 1848.00 |

(continued over page)

## Excavator Valving – Hyspecs

### SAFEX™ Valve (*continued*)

#### Features and Benefits

- Designed to meet the Australian Safety Regulations for Excavators and complies with ISO 8643.
- Compact design with dual code SAE 61 and 62 ports.
- Relief valve with screen is included for cylinder protection (full flow).
- Duplicated valve (V), pilot (PIL) ports allow the valves to be fitted to either side. End pilot (PIL) and drain (DR) ports make it easy to connect.
- E/TP port on the valves can be used for initial bleed off, a test point to set the relief, manual lowering, and equalizing two boom cylinders.
- Assembled from top quality standard cartridges, which can be purchased in any major city around the world.
- Manufactured by HYSPECS and HYTECH.
- Steel manifolds and Nickel plated
- Tamper proof capable.

**IMPORTANT:** It is the owner's responsibility to ensure that these valves are installed and set correctly in order to comply with the safety standards. Incorrect installation and/or adjustment could result in severe injury, disability or death!

**NB. Contact Hyspecs for Safex Valve technical data sheets and setup procedure.**

## Excavator Valving Accessories - Walvoil



### Multi-Function Ergonomic Handles

- Quickhitch, tilt and thumb valves require switching gear to allow the operator control.
- Walvoil remote handles provide this control, with their various switching and handle options.
- M12 mounting adaptor
- Quenching diodes must be used on rocker switches for DC operation.

### Handles

| Code       | Model     | Description                                              | Suggested Use              | Rating                                 | Price     |
|------------|-----------|----------------------------------------------------------|----------------------------|----------------------------------------|-----------|
| 5IMP200000 | Series 10 | Type X (ON)/OFF push button,                             | Quick hitch                | 6A Resistive<br>4A Inductive<br>@30VDC | \$ 75.00  |
| 5IMP600000 | Series 10 | Type T 3-position rocker switch ON/OFF/ON, spring centre | Tilt                       | 6A Resistive<br>4A Inductive<br>@30VDC | \$ 75.00  |
| 2IM4000235 | H series  | Ergonomic type 2 ON/OFF push buttons                     | Tilt                       | 2A Resistive<br>@12VDC                 | \$ 225.00 |
| 2IM4000003 | H series  | Ergonomic type 3 ON/OFF push buttons                     | Quick hitch, tilt or thumb | 2A Resistive<br>@12VDC                 | \$ 260.00 |
| 2IM4000221 | H series  | Ergonomic type 3 ON/OFF push buttons                     | Tilt and thumb             | 2A Resistive<br>@12VDC                 | \$ 320.00 |
| 5IMP032012 | V series  | Ergonomic type 1 ON/OFF push buttons                     | Quick hitch                | 4A Resistive<br>@24VDC                 | \$ 115.00 |

## Contents Section H – Cetop Subplates & Modules

### H1 Cetop Subplates & Modules – How to Order

#### H2 Cetop 3 Subplates

|     |                          |
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| H2  | Single Station           |
| H4  | Two Station Parallel     |
| H5  | Two Station Series       |
| H5  | Two Station Load Sense   |
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| H7  | Three Station Series     |
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| H8  | Four Station Parallel    |
| H9  | Four Station Series      |
| H9  | Four Station Load Sense  |
| H10 | Five Station Parallel    |
| H11 | Five Station Series      |
| H11 | Five Station Load Sense  |
| H12 | Six Station Parallel     |
| H13 | Six Station Load Sense   |
| H13 | Seven Station Parallel   |

#### H14 Cetop 3 Modules

|     |                               |
|-----|-------------------------------|
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#### H23 Cetop 5 Subplates

|     |                          |
|-----|--------------------------|
| H23 | Single Station           |
| H25 | Two Station Parallel     |
| H26 | Two Station Series       |
| H26 | Two Station Load Sense   |
| H27 | Three Station Parallel   |
| H28 | Three Station Series     |
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| H31 | Five Station Parallel    |
| H32 | Five Station Series      |
| H32 | Five Station Load Sense  |

#### H33 Cetop 5 Modules

|     |                 |
|-----|-----------------|
| H33 | Pressure Relief |
| H35 | Flow Control    |
| H37 | Load Control    |

## Cetop Subplates & Modules - How To Order



- Hyspecs has an extensive range of standard CETOP 3 and 5 sub-plates and control modules. These are designed to suit the majority of applications. Hyspecs offers series or parallel configuration for up to 7 stations. Sub-plates are machined for two pressure ranges: - up to 240 and 350 bar. Cetop 7 and 8 subplates are also available but not listed in this catalogue.

| HS | 32 | SR | D | S |                                                                |
|----|----|----|---|---|----------------------------------------------------------------|
|    |    |    |   |   | <b>Material</b>                                                |
|    |    |    |   |   | Omit                                                           |
|    |    |    |   |   | Aluminium ( <b>240</b> bar max. pressure)                      |
|    |    |    |   |   | S                                                              |
|    |    |    |   |   | Steel ( <b>350</b> bar max. pressure)                          |
|    |    |    |   |   | <b>Option</b>                                                  |
|    |    |    |   |   | Omit                                                           |
|    |    |    |   |   | Without cavity                                                 |
|    |    |    |   |   | D                                                              |
|    |    |    |   |   | Dump valve for subplates / Dual functions on A & B for modules |
|    |    |    |   |   | P                                                              |
|    |    |    |   |   | Acting port for modules                                        |
|    |    |    |   |   | A                                                              |
|    |    |    |   |   | B                                                              |
|    |    |    |   |   | <b>Option</b>                                                  |
|    |    |    |   |   | Omit                                                           |
|    |    |    |   |   | Without cavity                                                 |
|    |    |    |   |   | R                                                              |
|    |    |    |   |   | Relief valve                                                   |
|    |    |    |   |   | F                                                              |
|    |    |    |   |   | Flow control                                                   |
|    |    |    |   |   | P                                                              |
|    |    |    |   |   | Pressure reducing valve                                        |
|    |    |    |   |   | T                                                              |
|    |    |    |   |   | P&T through ports                                              |
|    |    |    |   |   | L                                                              |
|    |    |    |   |   | Load sense module                                              |
|    |    |    |   |   | <b>Design</b>                                                  |
|    |    |    |   |   | P                                                              |
|    |    |    |   |   | Parallel                                                       |
|    |    |    |   |   | S                                                              |
|    |    |    |   |   | Series                                                         |
|    |    |    |   |   | L                                                              |
|    |    |    |   |   | Load sense                                                     |
|    |    |    |   |   | M                                                              |
|    |    |    |   |   | Module                                                         |
|    |    |    |   |   | <b>Number of stations</b>                                      |
|    |    |    |   |   | 1 to 7                                                         |
|    |    |    |   |   | <b>Cetop Size</b>                                              |
|    |    |    |   |   | 3                                                              |
|    |    |    |   |   | Cetop 3                                                        |
|    |    |    |   |   | Subplate Ports:                                                |
|    |    |    |   |   | P & T                                                          |
|    |    |    |   |   | 1/2" BSPP                                                      |
|    |    |    |   |   | A & B                                                          |
|    |    |    |   |   | 3/8" BSPP                                                      |
|    |    |    |   |   | 5                                                              |
|    |    |    |   |   | Cetop 5                                                        |
|    |    |    |   |   | Subplate Ports:                                                |
|    |    |    |   |   | P & T                                                          |
|    |    |    |   |   | 3/4" BSPP                                                      |
|    |    |    |   |   | A & B                                                          |
|    |    |    |   |   | 1/2" BSPP                                                      |
|    |    |    |   |   | <b>Hyspecs series cartridge manifolds</b>                      |

## Cetop 3 Subplates

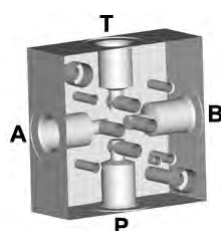


### Single Station



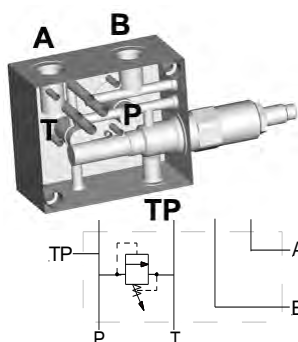
| Cartridge Options                    | P max<br>bar | Notes                                     | Ports<br>BSP | Assembly Price |
|--------------------------------------|--------------|-------------------------------------------|--------------|----------------|
| N/A                                  | 240          | P & T on bottom, A, B & T2 on three sides | 3/8"         | \$ 184.00      |
| Manifold Dimensions: 75 x 64 x 37 mm |              |                                           |              |                |

### HS31SA or HS31SS (steel)



| Cartridge Options                    | P max<br>bar | Notes                | Ports<br>BSP | Assembly Price |
|--------------------------------------|--------------|----------------------|--------------|----------------|
| N/A                                  | 240          | Alloy sub side ports | 3/8"         | \$ 184.00      |
| N/A                                  | 350          | Steel sub side ports |              | \$ 196.00      |
| Manifold Dimensions: 75 x 75 x 30 mm |              |                      |              |                |

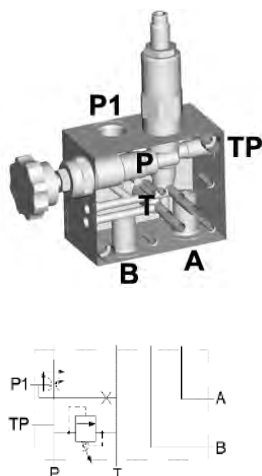
### HS31ER



| Cartridge Options                                                      | P max<br>bar | Notes                                                          | Ports<br>BSP    | Assembly Price |
|------------------------------------------------------------------------|--------------|----------------------------------------------------------------|-----------------|----------------|
| RV10-22                                                                | 240          | P & T on bottom, A & B on one side, TP other side, relief on P | 3/8"<br>TP 1/4" | \$ 364.00      |
| Manifold Dimensions : 100 x 85 x 50 mm. HS31ER manifold only \$ 241.00 |              |                                                                |                 |                |

- Suitable for tank top mount

### HS31EFR



| Cartridge Options                                                     | Q max<br>l/min | P max<br>bar | Notes                                                                                                                                                                     | Ports<br>BSP    | Assembly Price |
|-----------------------------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| RV10-22<br>+FR10-39E                                                  | 57             | 240          | P & T on bottom, A, B on one side. Compensated priority flow control valve (0-38LPM reg.) on P can be used as bypass (P1) or plugged for variable pump. TP & relief on P. | 3/8"<br>TP 1/4" | \$ 628.00      |
| Manifold Dimensions: 90 x 75 x 50 mm. HS31ERF manifold only \$ 293.00 |                |              |                                                                                                                                                                           |                 |                |

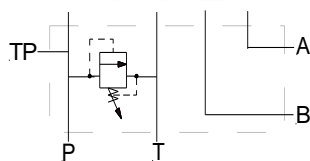
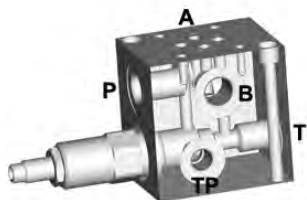
- Suitable for tank top mount

## Cetop 3 Subplates



### Single Station

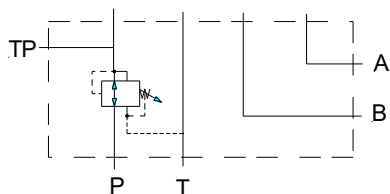
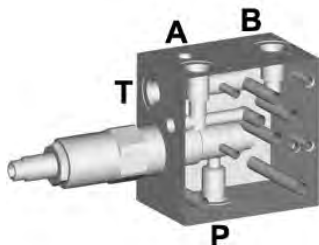
#### HS31PR



| Cartridge Options                                                    | P max<br>bar | Notes                                                     | Ports<br>BSPP   | Assembly Price |
|----------------------------------------------------------------------|--------------|-----------------------------------------------------------|-----------------|----------------|
| RV10-22                                                              | 240          | P, A & T on each side, B and TP on one side. Relief on P. | 3/8"<br>TP 1/4" | \$ 341.00      |
| Manifold Dimensions: 75 x 60 x 75 mm. HS31PR manifold only \$ 218.00 |              |                                                           |                 |                |

HS31SFE and HS31SFR - refer to Auto-Pilot Steering Valves, page B11.

#### HS31SPS\_B



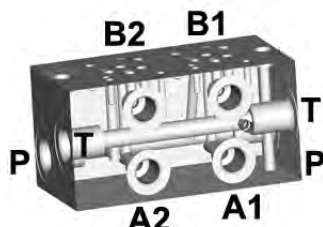
| Cartridge Options                                                              | Q max<br>l/min | P max<br>bar | Notes                                                                                          | Ports<br>BSPP                  | Assembly Price |
|--------------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------------|--------------------------------|----------------|
| PR50-36                                                                        | 56             | 350          | P & T on each side, A & B on one side. Pressure reducing relieving valve on P. Steel subplate. | P & T<br>3/8"<br>A & B<br>1/4" | \$ 478.00      |
| Manifold Dimensions: 75.5 x 75.5 x 50 mm.<br>HS31SPS_B manifold only \$ 257.00 |                |              |                                                                                                |                                |                |

## Cetop 3 Subplates

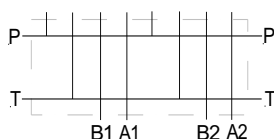


### Two Station - Parallel

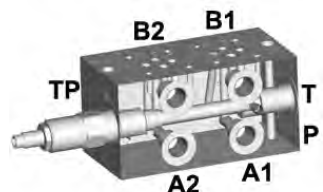
#### HS32PT



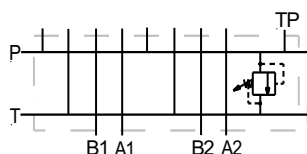
| Cartridge Options                     | P max<br>bar | Notes                                                              | Ports<br>BSP | Assembly Price |
|---------------------------------------|--------------|--------------------------------------------------------------------|--------------|----------------|
| N/A                                   | 240          | P & T (1/2") through two ends. All A & B ports (3/8") on one side. | 3/8"-1/2"    | \$ 389.00      |
| Manifold Dimensions: 145 x 75 x 75 mm |              |                                                                    |              |                |



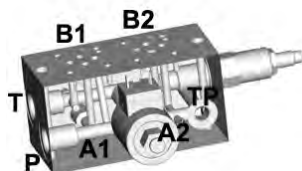
#### HS32PR



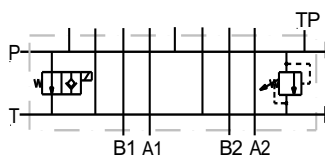
| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                   | Ports<br>BSP | Assembly Price |
|-----------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------|--------------|----------------|
| RV10-22                                                               | 240          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP (1/4") port on other side. Relief on P. | 1/4"-1/2"    | \$ 512.00      |
| Manifold Dimensions: 145 x 75 x 75 mm. HS32PR manifold only \$ 389.00 |              |                                                                                                         |              |                |



#### HS32PRD



| Cartridge Options                                                      | P max<br>bar | Notes                                                                                                                           | Ports<br>BSP | Assembly Price |
|------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
| RV10-22<br>+SV10-21                                                    | 207          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP (1/4") port on other side. Relief and N.O. solenoid valve on P. | 1/4"-1/2"    | \$ 826.00      |
| Manifold Dimensions: 145 x 75 x 75 mm. HS32PRD manifold only \$ 480.00 |              |                                                                                                                                 |              |                |

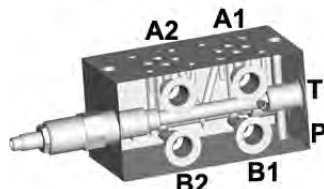


## Cetop 3 Subplates

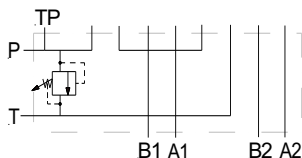


### Two Station – Series

#### HS32SR

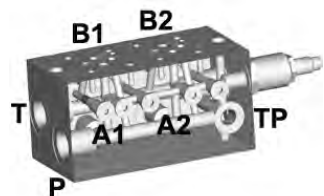


| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                   | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-22                                                               | 240          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP (1/4") port on other side. Relief on P. | 1/4"-<br>1/2" | \$ 512.00         |
| Manifold Dimensions: 145 x 75 x 75 mm. HS32SR manifold only \$ 389.00 |              |                                                                                                         |               |                   |

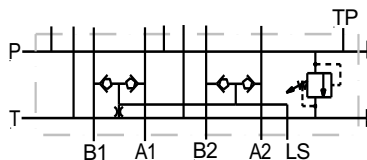


### Two Station – Load Sense

#### HS32LR



| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                                                                 | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-22 +<br>4 x CV04-20                                              | 240          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Four load sense checks. Relief on P. 0.4 mm bleed orifice. | 1/4"-<br>1/2" | \$ 765.00         |
| Manifold Dimensions: 145 x 75 x 75 mm. HS32LR manifold only \$ 458.00 |              |                                                                                                                                                       |               |                   |

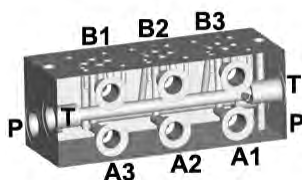


## Cetop 3 Subplates

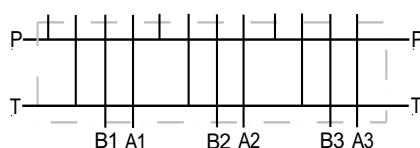


### Three Station – Parallel

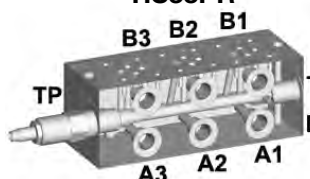
#### HS33PT



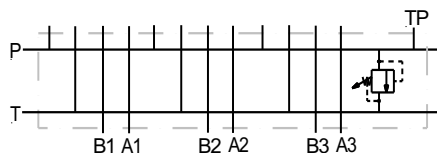
| Cartridge Options                     | P max<br>bar | Notes                                                              | Ports<br>BSP | Assembly Price |
|---------------------------------------|--------------|--------------------------------------------------------------------|--------------|----------------|
| N/A                                   | 240          | P & T (1/2") through two ends. All A & B ports (3/8") on one side. | 3/8"-1/2"    | \$ 481.00      |
| Manifold Dimensions: 200 x 75 x 75 mm |              |                                                                    |              |                |



#### HS33PR



| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                   | Ports<br>BSP | Assembly Price |
|-----------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------|--------------|----------------|
| RV10-22                                                               | 240          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Relief on P. | 1/4"-1/2"    | \$ 604.00      |
| Manifold Dimensions: 200 x 75 x 75 mm. HS33PR manifold only \$ 481.00 |              |                                                                                                         |              |                |

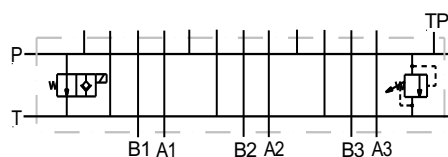


#### HS33PRD

##### A & B ports on back



| Cartridge Options                                                      | P max<br>bar | Notes                                                                                                                           | Ports<br>BSP | Assembly Price |
|------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
| RV10-22 + SV10-21                                                      | 207          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Relief and N.O. solenoid valve on P. | 1/4"-1/2"    | \$ 918.00      |
| Manifold Dimensions: 200 x 75 x 75 mm. HS33PRD manifold only \$ 572.00 |              |                                                                                                                                 |              |                |

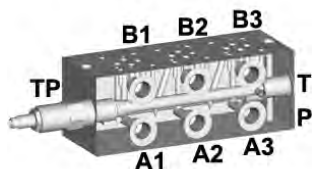


## Cetop 3 Subplates

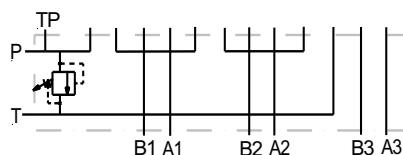


### Three Station – Series

#### HS33SR



| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                   | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-22                                                               | 240          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Relief on P. | 1/4"-<br>1/2" | \$ 604.00         |
| Manifold Dimensions: 200 x 75 x 75 mm. HS33SR manifold only \$ 481.00 |              |                                                                                                         |               |                   |

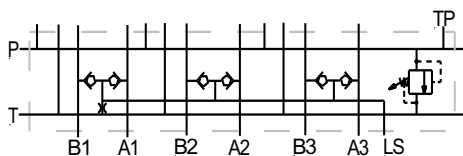


### Three Station – Load Sense

#### HS33LR



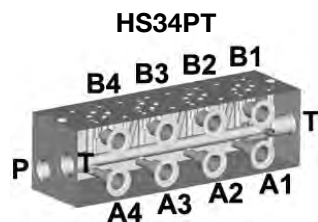
| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                                                                                              | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-22 +<br>6 x CV04-20                                              | 240          | P & T (1/2") on one end. LS port (1/4") on other end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Four load sense checks. Relief on P. 0.4 mm bleed orifice. | 1/4"-<br>1/2" | \$ 1040.00        |
| Manifold Dimensions: 200 x 75 x 75 mm. HS33LR manifold only \$ 641.00 |              |                                                                                                                                                                                    |               |                   |



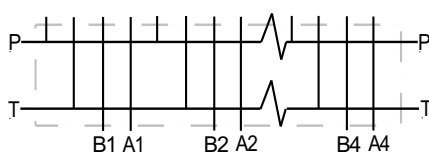
## Cetop 3 Subplates



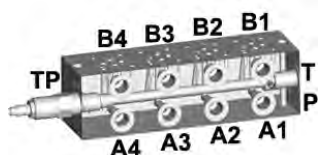
### Four Station – Parallel



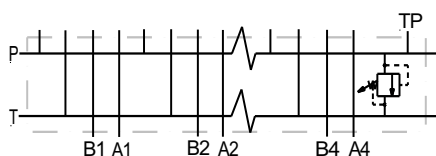
| Cartridge Options                     | P max<br>bar | Notes                                                              | Ports<br>BSP | Assembly<br>Price |
|---------------------------------------|--------------|--------------------------------------------------------------------|--------------|-------------------|
| N/A                                   | 240          | P & T (1/2") through two ends. All A & B ports (3/8") on one side. | 3/8"-1/2"    | \$ 629.00         |
| Manifold Dimensions: 255 x 75 x 75 mm |              |                                                                    |              |                   |



### HS34PR



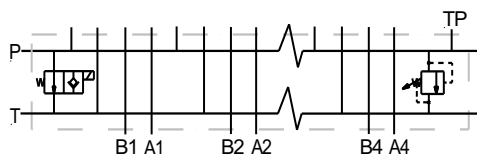
| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                   | Ports<br>BSP | Assembly<br>Price |
|-----------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------|--------------|-------------------|
| RV10-22                                                               | 240          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Relief on P. | 1/4"-1/2"    | \$ 752.00         |
| Manifold Dimensions: 255 x 75 x 75 mm. HS34PR manifold only \$ 629.00 |              |                                                                                                         |              |                   |



### HS34PRD



| Cartridge Options                                                      | P max<br>bar | Notes                                                                                                                           | Ports<br>BSP | Assembly<br>Price |
|------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|
| RV10-22 + SV10-21                                                      | 207          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Relief and N.O. solenoid valve on P. | 1/4"-1/2"    | \$ 1066.00        |
| Manifold Dimensions: 255 x 75 x 75 mm. HS34PRD manifold only \$ 720.00 |              |                                                                                                                                 |              |                   |

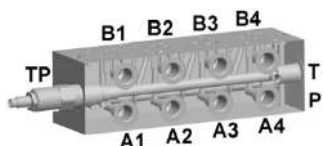


## Cetop 3 Subplates



### Four Station – Series

HS34SR



| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                      | Ports<br>BSP | Assembly<br>Price |
|-----------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------|--------------|-------------------|
| RV10-22                                                               | 240          | P & T (1/2") on one end.<br>All A & B ports (3/8") on one side. TP port (1/4") on other side. Relief on P. | 1/4"-1/2"    | \$ 752.00         |
| Manifold Dimensions: 255 x 75 x 75 mm. HS34SR manifold only \$ 629.00 |              |                                                                                                            |              |                   |

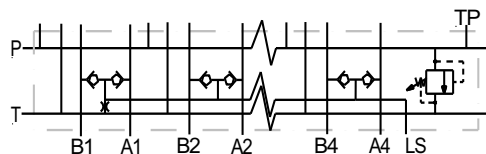


### Four Station – Load Sense

HS34LR



| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                                                                                                 | Ports<br>BSP | Assembly<br>Price |
|-----------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|
| RV10-22 +<br>8 x CV04-20                                              | 240          | P & T (1/2") on one end.<br>LS port (1/4") on other end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Four load sense checks. Relief on P. 0.4 mm bleed orifice. | 1/4"-1/2"    | \$ 1315.00        |
| Manifold Dimensions: 255 x 75 x 75 mm. HS34LR manifold only \$ 824.00 |              |                                                                                                                                                                                       |              |                   |

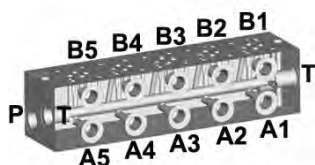


## Cetop 3 Subplates

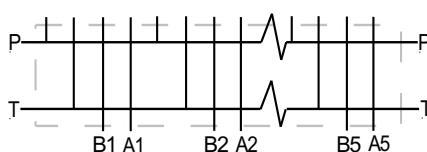


### Five Station – Parallel

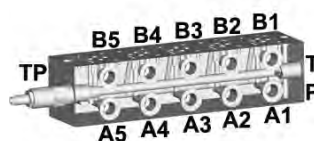
#### HS35PT



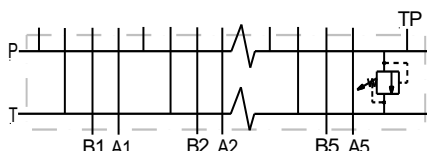
| Cartridge Options                     | P max<br>bar | Notes                                                              | Ports<br>BSP | Assembly Price |
|---------------------------------------|--------------|--------------------------------------------------------------------|--------------|----------------|
| N/A                                   | 240          | P & T (1/2") through two ends. All A & B ports (3/8") on one side. | 3/8"-1/2"    | \$ 756.00      |
| Manifold Dimensions: 310 x 75 x 75 mm |              |                                                                    |              |                |



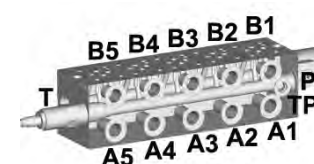
#### HS35PR



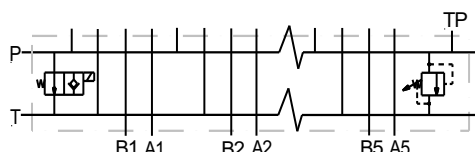
| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                   | Ports<br>BSP | Assembly Price |
|-----------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------|--------------|----------------|
| RV10-22                                                               | 240          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Relief on P. | 1/4"-1/2"    | \$ 879.00      |
| Manifold Dimensions: 310 x 75 x 75 mm. HS35PR manifold only \$ 756.00 |              |                                                                                                         |              |                |



#### HS35PRD



| Cartridge Options                                                      | P max<br>bar | Notes                                                                                                                           | Ports<br>BSP | Assembly Price |
|------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
| RV10-20 + SV10-21                                                      | 207          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Relief and N.O. solenoid valve on P. | 1/4"-1/2"    | \$ 1193.00     |
| Manifold Dimensions: 310 x 75 x 75 mm. HS35PRD manifold only \$ 847.00 |              |                                                                                                                                 |              |                |

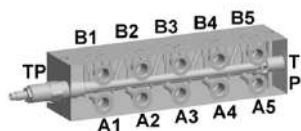


## Cetop 3 Subplates

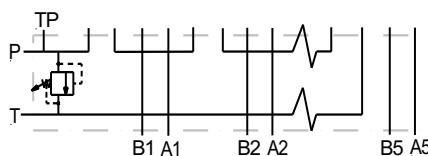


### Five Station – Series

#### HS35SR

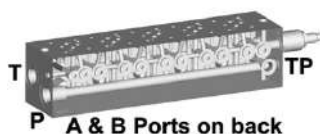


| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                            | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-22                                                               | 240          | P & T (1/2") on one end.<br>All A & B ports (3/8") on<br>one side. TP port (1/4")<br>on other side. Relief on P. | 1/4"-1/2"     | \$ 879.00         |
| Manifold Dimensions: 310 x 75 x 75 mm. HS35SR manifold only \$ 756.00 |              |                                                                                                                  |               |                   |

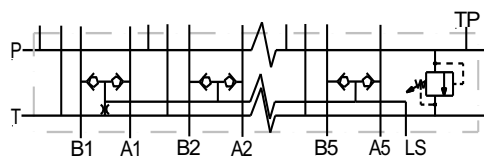


### Five Station – Load Sense

#### HS35LR



| Cartridge Options                                                      | P max<br>bar | Notes                                                                                                                                                                                                | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-22 +<br>10 x CV04-20                                              | 240          | P & T (1/2") on one end.<br>LS port (1/4") on other<br>end. All A & B ports (3/8")<br>on one side. TP port (1/4")<br>on other side. Four load<br>sense checks. Relief on P.<br>0.4 mm bleed orifice. | 1/4"-1/2"     | \$ 1591.00        |
| Manifold Dimensions: 310 x 75 x 75 mm. HS35LR manifold only \$ 1008.00 |              |                                                                                                                                                                                                      |               |                   |

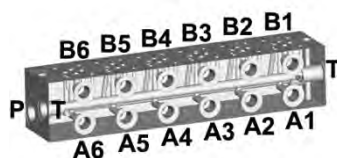


## Cetop 3 Subplates

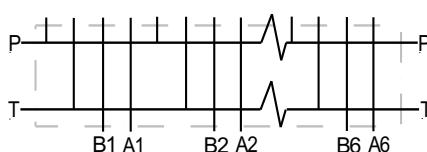


### Six Station – Parallel

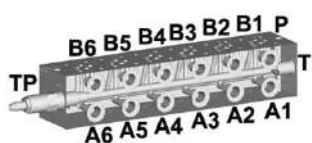
#### HS36PT



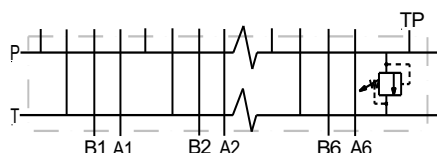
| Cartridge Options                     | P max<br>bar | Notes                                                              | Ports<br>BSPP | Assembly Price |
|---------------------------------------|--------------|--------------------------------------------------------------------|---------------|----------------|
| N/A                                   | 240          | P & T (1/2") through two ends. All A & B ports (3/8") on one side. | 3/8"-1/2"     | \$ 881.00      |
| Manifold Dimensions: 365 x 75 x 75 mm |              |                                                                    |               |                |



#### HS36PR



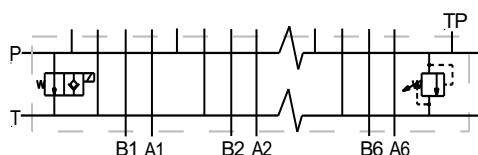
| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                   | Ports<br>BSPP | Assembly Price |
|-----------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------|---------------|----------------|
| RV10-22                                                               | 240          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Relief on P. | 1/4"-1/2"     | \$ 1004.00     |
| Manifold Dimensions: 365 x 75 x 75 mm. HS36PR manifold only \$ 881.00 |              |                                                                                                         |               |                |



#### HS36PRD



| Cartridge Options                                                      | P max<br>bar | Notes                                                                                                                           | Ports<br>BSPP | Assembly Price |
|------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|
| RV10-22<br>+SV10-21                                                    | 207          | P & T (1/2") on one end. All A & B ports (3/8") on one side. TP port (1/4") on other side. Relief and N.O. solenoid valve on P. | 1/4"-1/2"     | \$ 1318.00     |
| Manifold Dimensions: 365 x 75 x 75 mm. HS36PRD manifold only \$ 972.00 |              |                                                                                                                                 |               |                |



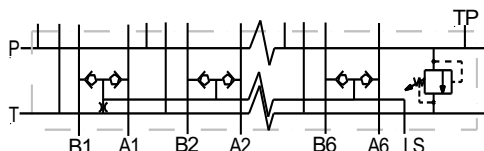
## Cetop 3 Subplates



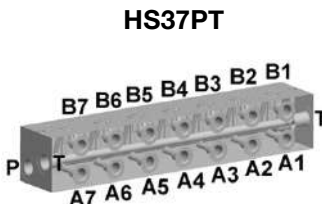
### Six Station – Load Sense



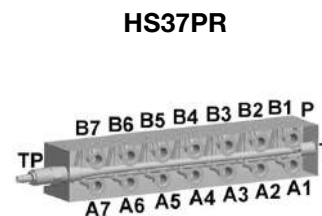
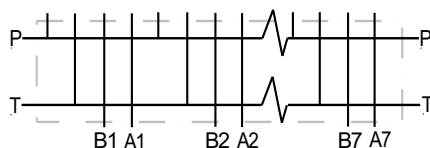
| Cartridge Options                                                      | P max<br>bar | Notes                                                                                                                                                                                                   | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-22 +12<br>x CV04-20                                               | 240          | P & T (1/2") on one end.<br>LS port (1/4") on other<br>end. All A & B ports (3/8")<br>on one side. TP port<br>(1/4") on other side. Four<br>load sense checks. Relief<br>on P. 0.4 mm bleed<br>orifice. | 1/4"-1/2"     | \$ 1842.00        |
| Manifold Dimensions: 365 x 75 x 75 mm. HS35LR manifold only \$ 1167.00 |              |                                                                                                                                                                                                         |               |                   |



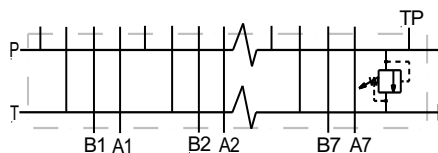
### Seven Station – Parallel



| Cartridge Options                     | P max<br>bar | Notes                                                                    | Ports<br>BSPP | Assembly<br>Price |
|---------------------------------------|--------------|--------------------------------------------------------------------------|---------------|-------------------|
| N/A                                   | 240          | P & T (1/2") through two<br>ends. All A & B ports (3/8")<br>on one side. | 3/8"-1/2"     | \$ 985.00         |
| Manifold Dimensions: 420 x 75 x 75 mm |              |                                                                          |               |                   |



| Cartridge Options                                                     | P max<br>bar | Notes                                                                                                            | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-22                                                               | 240          | P & T (1/2") on one end.<br>All A & B ports (3/8") on<br>one side. TP port (1/4") on<br>other side. Relief on P. | 1/4"-1/2"     | \$ 1108.00        |
| Manifold Dimensions: 420 x 75 x 75 mm. HS37PR manifold only \$ 985.00 |              |                                                                                                                  |               |                   |



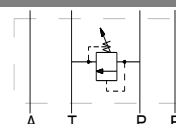
## Cetop 3 Modules



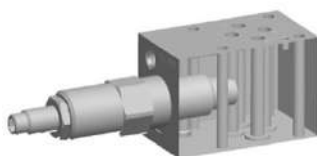
### Pressure Relief

#### HS31MRP\_B



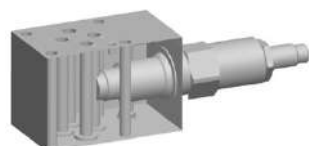
| Cartridge Options                                                        | Q<br>max<br>l/min | P<br>max<br>bar | Notes         | Circuit                                                                             | Assembly Price |
|--------------------------------------------------------------------------|-------------------|-----------------|---------------|-------------------------------------------------------------------------------------|----------------|
| RV10-20                                                                  | 38                | 228             | P to T relief |  | \$ 350.00      |
| RV10-26                                                                  | 60                | 240             |               |                                                                                     | \$ 369.00      |
| Manifold Dimensions : 90 x 46 x 50 mm. HS31MRP B manifold only \$ 227.00 |                   |                 |               |                                                                                     |                |

#### HS31MRA\_B



| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes         | Circuit                                                                             | Assembly Price |
|-------------------------------------------------------------------------|----------------|--------------|---------------|-------------------------------------------------------------------------------------|----------------|
| RV10-20                                                                 | 38             | 228          | A to T relief |  | \$ 350.00      |
| RV10-26                                                                 | 60             | 240          |               |                                                                                     | \$ 369.00      |
| Manifold Dimensions: 75 x 46 x 50 mm. HS31MRA B manifold only \$ 227.00 |                |              |               |                                                                                     |                |

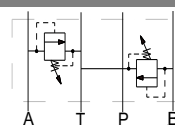
#### HS31MRB\_B



| Cartridge Options                                                       | Q<br>max<br><i>l/min</i> | P<br>max<br><i>bar</i> | Notes         | Circuit                                                                              | Assembly Price |
|-------------------------------------------------------------------------|--------------------------|------------------------|---------------|--------------------------------------------------------------------------------------|----------------|
| RV10-20                                                                 | 38                       | 228                    | B to T relief |  | \$ 350.00      |
| RV10-26                                                                 | 60                       | 240                    |               |                                                                                      | \$ 369.00      |
| Manifold Dimensions: 75 x 46 x 50 mm. HS31MRB B manifold only \$ 227.00 |                          |                        |               |                                                                                      |                |

#### HS31MRD\_B



| Cartridge Options                                                        | Q max<br>l/min | P max<br>bar | Notes             | Circuit                                                                               | Assembly Price |
|--------------------------------------------------------------------------|----------------|--------------|-------------------|---------------------------------------------------------------------------------------|----------------|
| RV10-20 x 2                                                              | 38             | 240          | A & B to T relief |  | \$ 492.00      |
| Manifold Dimensions : 90 x 46 x 50 mm. HS31MRD_B manifold only \$ 246.00 |                |              |                   |                                                                                       |                |

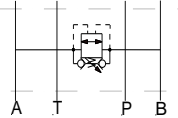
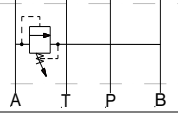
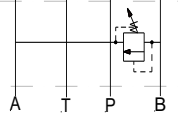
## Cetop 3 Modules



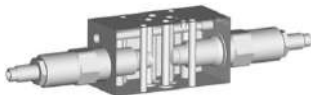
### Pressure Relief

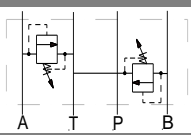
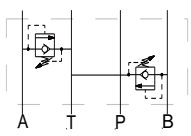
#### HS31MRX\_B



| Cartridge Options                                                        | Q max<br>l/min | P max<br>bar | Notes                   | Circuit                                                                             | Assembly Price |
|--------------------------------------------------------------------------|----------------|--------------|-------------------------|-------------------------------------------------------------------------------------|----------------|
| RVBD-10                                                                  | 75             | 240          | A & B cross line relief |  | \$ 412.00      |
| RV10-20                                                                  | 38             | 228          | A to B relief           |  | \$ 350.00      |
| RV10-22                                                                  | 80             | 240          | B to A relief           |  | \$ 350.00      |
| Manifold Dimensions : 75 x 46 x 50 mm. HS31MRX_B manifold only \$ 227.00 |                |              |                         |                                                                                     |                |

#### HS31MRW\_B



| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                             | Circuit                                                                               | Assembly Price |
|-------------------------------------------------------------------------|----------------|--------------|---------------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| 2 x RV10-20                                                             | 38             | 228          | A & B to T relief                                 |  | \$ 503.00      |
| 2 x RVPP-10                                                             | 80             | 240          | A and B to T relief and over-run check T to A & B |  | \$ 617.00      |
| Manifold Dimensions : 96 x 46 x 50 mm HS31MRW_B manifold only \$ 257.00 |                |              |                                                   |                                                                                       |                |

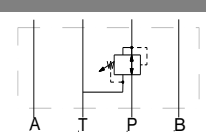
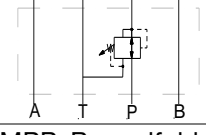
## Cetop 3 Modules



### Pressure Reducing / Relieving

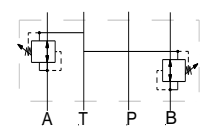
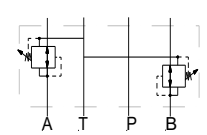
#### HS31MPP\_B



| Cartridge Options                                                      | Q max<br>l/min | P max<br>bar | Notes                                     | Circuit                                                                             | Assembly Price |
|------------------------------------------------------------------------|----------------|--------------|-------------------------------------------|-------------------------------------------------------------------------------------|----------------|
| PR10-32                                                                | 30             | 207          | Pressure reducing on P and relieving to T |  | \$ 484.00      |
| PR10-36                                                                | 56             | 240          | Pressure reducing on P and relieving to T |  | \$ 547.00      |
| Manifold Dimensions: 80 x 46 x 50 mm HS31MPP_B manifold only \$ 332.00 |                |              |                                           |                                                                                     |                |

#### HS31MPAB\_B



| Cartridge Options                                                        | Q max<br>l/min | P max<br>bar | Notes                                         | Circuit                                                                               | Assembly Price |
|--------------------------------------------------------------------------|----------------|--------------|-----------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| 2 x PR10-32                                                              | 30             | 207          | Pressure reducing on A & B and relieving to T |  | \$ 756.00      |
| 2 x PR10-36                                                              | 56             | 240          | Pressure reducing on A & B and relieving to T |  | \$ 882.00      |
| Manifold Dimensions: 125 x 46 x 50 mm. HS31MPAB_B manifold only \$452.00 |                |              |                                               |                                                                                       |                |

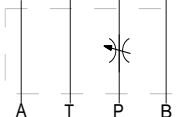
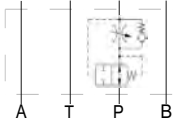
## Cetop 3 Modules



### Flow Control

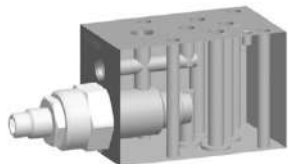
#### HS31MNP\_B

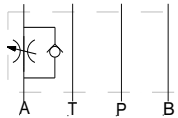
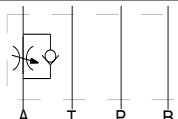
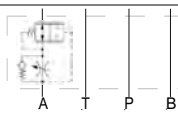


| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                   | Circuit                                                                             | Assembly Price |
|-------------------------------------------------------------------------|----------------|--------------|-----------------------------------------|-------------------------------------------------------------------------------------|----------------|
| NV10-20                                                                 | 45             | 240          | Single needle valve meter-in on P       |  | \$ 282.00      |
| FR50-28                                                                 | 34             | 350*         | Pressure compensated flow control on P. |  | \$ 424.00      |
| Manifold Dimensions: 90 x 46 x 50 mm. HS31MNP_B manifold only \$ 212.00 |                |              |                                         |                                                                                     |                |

- \* Requires steel block over 240 bar – contact Hyspecs for pricing

#### HS31MNA\_B



| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                                       | Circuit                                                                               | Assembly Price |
|-------------------------------------------------------------------------|----------------|--------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| FC10-21                                                                 | 57             | 240          | Single needle valve with free reverse flow on A – meter out |  | \$ 292.00      |
| FC10-20                                                                 | 45             | 240          | Single needle valve with free reverse flow on A – meter in  |  | \$ 292.00      |
| FR50-28                                                                 | 34             | 350*         | Pressure compensated flow control on A – meter out          |  | \$ 404.00      |
| Manifold Dimensions: 75 x 46 x 50 mm. HS31MNA_B manifold only \$ 192.00 |                |              |                                                             |                                                                                       |                |

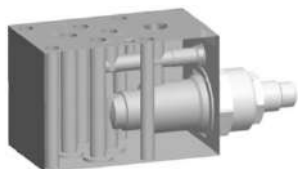
- \* Requires steel block over 240 bar – contact Hyspecs for pricing

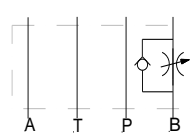
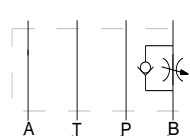
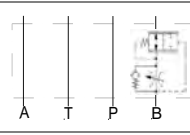
## Cetop 3 Modules



### Flow Control

#### HS31MNB\_B

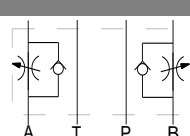
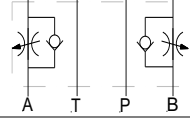


| Cartridge Options                                                       | Q<br>max<br>l/min | P<br>max<br>bar | Notes                                                       | Circuit                                                                              | Assembly Price |
|-------------------------------------------------------------------------|-------------------|-----------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------|
| FC10-21                                                                 | 57                | 240             | Single needle valve with free reverse flow on B – meter out |   | \$ 292.00      |
| FC10-20                                                                 | 45                | 240             | Single needle valve with free reverse flow on B – meter in  |   | \$ 292.00      |
| FR50-28                                                                 | 34                | 350*            | Pressure compensated flow control on B – meter out          |  | \$ 404.00      |
| Manifold Dimensions: 75 x 46 x 50 mm. HS31MNB_B manifold only \$ 192.00 |                   |                 |                                                             |                                                                                      |                |

- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

#### HS31MND\_B



| Cartridge Options                                                       | Q<br>max<br>l/min | P<br>max<br>bar | Notes                                                | Circuit                                                                               | Assembly Price |
|-------------------------------------------------------------------------|-------------------|-----------------|------------------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| 2 x FC10-20                                                             | 45                | 240             | Dual needle valve with free reverse flow – meter out |  | \$ 412.00      |
| 2 x FC10-21                                                             | 57                | 240             | Dual needle valve with free reverse flow – meter in  |  | \$ 412.00      |
| 2 x FR50-28                                                             | 34                | 350*            | Pressure compensated dual flow control – meter in    |  | \$ 636.00      |
| Manifold Dimensions: 96 x 46 x 50 mm. HS31MND_B manifold only \$ 212.00 |                   |                 |                                                      |                                                                                       |                |

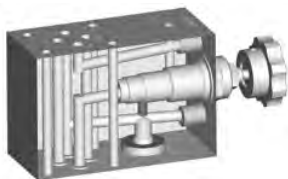
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

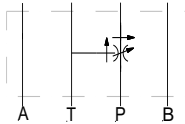
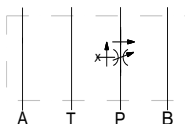
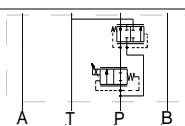
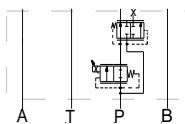
## Cetop 3 Modules



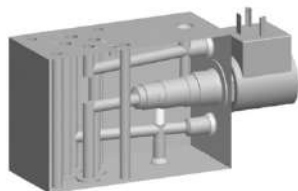
### Flow Control

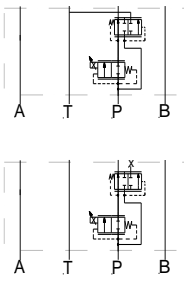
#### HS31MFP\_B



| Cartridge Options                                                        | Q max<br>l/min | P max<br>bar | Notes                                                                                                            | Circuit                                                                               | Assembly Price |
|--------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| FR10-39A                                                                 | 57             | 240          | Pressure compensated priority flow control valve meter-in on P. Full range adjustment, regulated flow 0 – 38LPM. |    | \$ 618.00      |
|                                                                          |                |              | Bypass can be plugged for restricted flow control valve on P. Regulated flow 0 – 34LPM                           |    |                |
| PV70-30                                                                  | 50             | 240          | Proportional pressure compensated flow control on P with Bypass to T.                                            |  | \$ 1014.00     |
|                                                                          |                |              | Bypass can be plugged for restrictive flow on P.                                                                 |  |                |
| Manifold Dimensions: 110 x 46 x 75 mm. HS31MFP_B manifold only \$ 418.00 |                |              |                                                                                                                  |                                                                                       |                |

#### HS3108MFP\_B



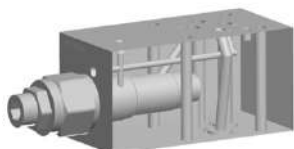
| Cartridge Options                                                          | Q max<br>l/min | P max<br>bar | Notes                                                                                                                     | Circuit                                                                               | Assembly Price |
|----------------------------------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| PV08-30                                                                    | 23             | 240          | Low flow proportional pressure compensated flow control on P. Regulated flow: Bypass open 11.4LPM, bypass blocked 11.4LPM |  | \$ 896.00      |
| Manifold Dimensions: 110 x 46 x 75 mm. HS3108MFP B manifold only \$ 418.00 |                |              |                                                                                                                           |                                                                                       |                |

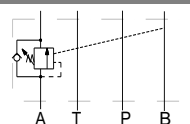
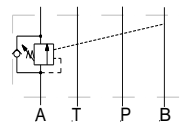
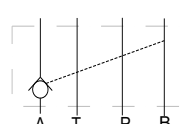
## Modules



### Load Control

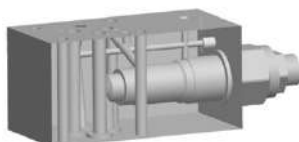
#### HS31MMA\_B

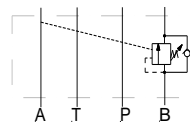
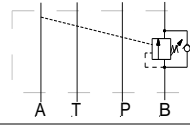
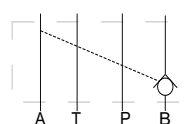


| Cartridge Options                                                      | Q max<br>l/min | P max<br>bar | Notes                                                          | Circuit                                                                             | Assembly Price |
|------------------------------------------------------------------------|----------------|--------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------|
| CBCG                                                                   | 60             | 350*         | Counterbalance on port A, pilot from B. 4.5:1 ratio.           |  | \$ 487.00      |
| CBCH                                                                   | 60             | 350*         | Counterbalance on port A, pilot from B. 10:1 ratio.            |  | \$ 507.00      |
| CKCD                                                                   | 60             | 350*         | Pilot operated check holds on port A, pilot from B. 3:1 ratio. |  | \$ 467.00      |
| Manifold Dimensions: 100 x 46 x 50mm HS31MMA_B manifold only \$ 317.00 |                |              |                                                                |                                                                                     |                |

- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

#### HS31MMB\_B



| Cartridge Options                                                      | Q max<br>l/min | P max<br>bar | Notes                                                          | Circuit                                                                               | Assembly Price |
|------------------------------------------------------------------------|----------------|--------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| CBCG                                                                   | 60             | 350*         | Counterbalance on port B, pilot from A. 4.5:1 ratio.           |  | \$ 487.00      |
| CBCH                                                                   | 60             | 350*         | Counterbalance on port B, pilot from A. 10:1 ratio.            |  | \$ 507.00      |
| CKCD                                                                   | 60             | 350*         | Pilot operated check holds on port B, pilot from A. 3:1 ratio. |  | \$ 467.00      |
| Manifold Dimensions: 100 x 46 x 50 mm HS31MMB_B manifold only \$317.00 |                |              |                                                                |                                                                                       |                |

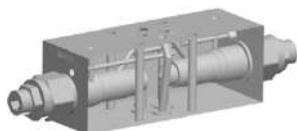
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

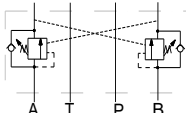
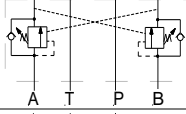
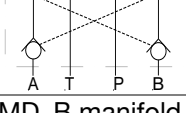
## Cetop 3 Modules



### Load Control

#### HS31MMD\_B



| Cartridge Options                                                      | Q<br>max<br>l/min | P<br>max<br>bar | Notes                                 | Circuit                                                                             | Assembly Price |
|------------------------------------------------------------------------|-------------------|-----------------|---------------------------------------|-------------------------------------------------------------------------------------|----------------|
| CBCG x 2                                                               | 60                | 350*            | Dual counterbalance. 4.5:1 ratio.     |  | \$ 792.00      |
| CBCH x 2                                                               | 60                | 350*            | Dual counterbalance. 10:1 ratio       |  | \$ 832.00      |
| CKCD x 2                                                               | 60                | 350*            | Dual pilot operated check. 3:1 ratio. |  | \$ 752.00      |
| Manifold Dimensions: 136 x 46 x 50 mm HS31MMD_B manifold only \$452.00 |                   |                 |                                       |                                                                                     |                |

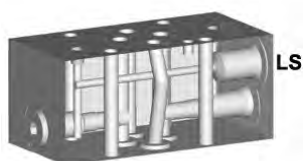
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

## Cetop 3 Modules



### Load Sense

#### HS31ML\_B



| Cartridge Options                                                    | P max bar | Notes                                      | Circuit | Assembly Price |
|----------------------------------------------------------------------|-----------|--------------------------------------------|---------|----------------|
| CV04-20 x 2                                                          | 240       | Dual load sense module. LS port 1/4" BSPP. |         | \$ 316.00      |
| Manifold Dimensions: 90 x 46 x 50 mm. HS31ML manifold only \$ 224.00 |           |                                            |         |                |

#### HS31MTS



| Cartridge Options                     | P max bar | Notes                                      | Circuit | Assembly Price |
|---------------------------------------|-----------|--------------------------------------------|---------|----------------|
| N/A                                   | 350       | Extension module, all ports through module |         | \$ 195.00      |
| Manifold Dimensions: 70 x 46 x 50 mm. |           |                                            |         |                |

#### HS31MTP\_B



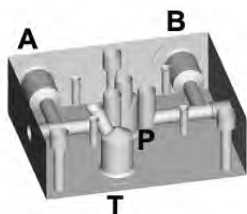
| Cartridge Options                     | P max bar | Notes                                 | Circuit | Assembly Price |
|---------------------------------------|-----------|---------------------------------------|---------|----------------|
| N/A                                   | 240       | Test point on P module TP - 1/4" BSPP |         | \$ 185.00      |
| Manifold Dimensions: 70 x 46 x 50 mm. |           |                                       |         |                |

## Cetop 5 Subplates



### Single Station

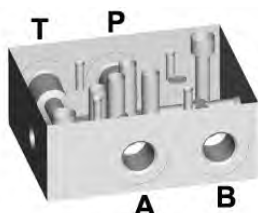
#### HS51E



| Cartridge Options                     | Q max<br>l/min | P max<br>bar | Notes                              | Ports<br>BSPP | Assembly Price |
|---------------------------------------|----------------|--------------|------------------------------------|---------------|----------------|
| N/A                                   | 120            | 240          | P & T on bottom, A & B on one side | 1/2"          | \$ 195.00      |
| Manifold Dimensions: 120 x 99 x 39 mm |                |              |                                    |               |                |

- Suitable for tank top mount

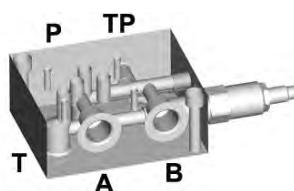
#### HS51SA



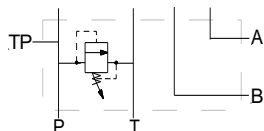
| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                                     | Ports<br>BSPP | Assembly Price |
|----------------------------------------|----------------|--------------|-------------------------------------------|---------------|----------------|
| N/A                                    | 120            | 240          | P & T on one side, A & B on opposite side | 1/2"          | \$ 205.00      |
| Manifold Dimensions: 126 x 100 x 50 mm |                |              |                                           |               |                |

- Suitable for tank top mount

#### HS51ER



| Cartridge Options                                                      | Q max<br>l/min | P max<br>bar | Notes                                                                         | Ports<br>BSPP | Assembly Price |
|------------------------------------------------------------------------|----------------|--------------|-------------------------------------------------------------------------------|---------------|----------------|
| RV10-22                                                                | 114            | 240          | P & T on bottom, A & B on one side (1/2"), TP (1/4") other side. Relief on P. | 1/4"-1/2"     | \$ 427.00      |
| Manifold Dimensions: 125 x 100 x 50 mm. HS51ER manifold only \$ 304.00 |                |              |                                                                               |               |                |



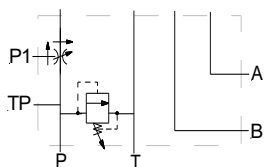
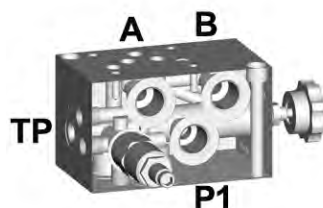
- Suitable for tank top mount

## Cetop 5 Subplates



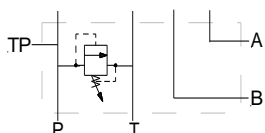
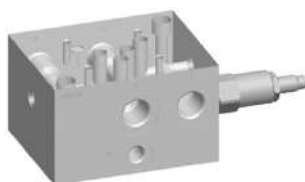
### Single Station

#### HS51ERF



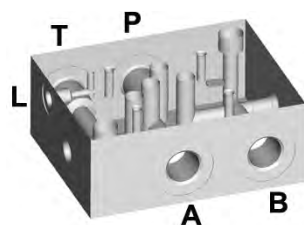
| Cartridge Options                                                      | Q max<br>l/min | P max<br>bar | Notes                                                                                                                                                                                          | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-26<br>+FR12-33E                                                   | 114            | 240          | Compensated priority flow control valve (0-68LPM reg.) on P. Bypass flow can be used and plugged (0-45LPM reg. for variable pump). P & T on bottom, A & B and Bypass on one side. Relief on P. | 1/2"          | \$ 858.00         |
| Manifold Dimensions: 125 x 75 x 75 mm. HS51ERF manifold only \$ 395.00 |                |              |                                                                                                                                                                                                |               |                   |

#### HS51SR



| Cartridge Options                                                      | Q max<br>l/min | P max<br>bar | Notes                                                                              | Ports<br>BSPP | Assembly<br>Price |
|------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-26                                                                | 114            | 240          | P & T on one side, A & B opposite side (1/2"). TP (1/4") on one side. Relief on P. | 1/4"-1/2"     | \$ 447.00         |
| Manifold Dimensions: 125 x 100 x 75 mm. HS51SR manifold only \$ 305.00 |                |              |                                                                                    |               |                   |

#### HS51SS



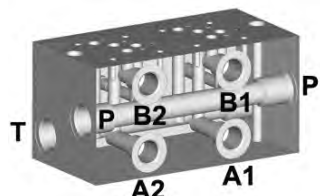
| Cartridge Options                      | Q max<br>l/min | P max<br>bar | Notes                                                                                                           | Ports<br>BSPP | Assembly<br>Price |
|----------------------------------------|----------------|--------------|-----------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| N/A                                    | 120            | 350          | Steel subplate. P & T on one side, A & B opposite side (1/2"). L drain port for proportional valves -7/16" UNO. | 1/4"-1/2"     | \$ 220.00         |
| Manifold Dimensions: 125 x 100 x 50 mm |                |              |                                                                                                                 |               |                   |

## Cetop 5 Subplates



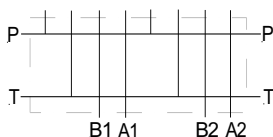
### Two Station - Parallel

#### HS52PT

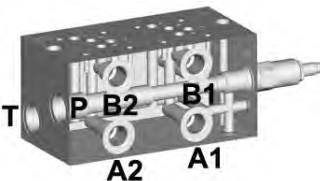


| Cartridge Options | Q max<br>l/min | P max<br>bar | Notes                                                              | Ports<br>BSPP | Assembly Price |
|-------------------|----------------|--------------|--------------------------------------------------------------------|---------------|----------------|
| N/A               | 120            | 240          | P & T (3/4") through two ends. All A & B ports (1/2") on one side. | 1/2"-3/4"     | \$ 615.00      |

Manifold Dimensions: 198 x 100 x 100 mm

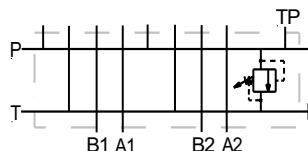


#### HS52PR

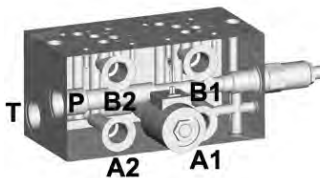


| Cartridge Options | Q max<br>l/min | P max<br>bar | Notes                                                                                                   | Ports<br>BSPP | Assembly Price |
|-------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------|---------------|----------------|
| RV10-26           | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Relief on P. | 1/4"-3/4"     | \$ 806.00      |

Manifold Dimensions: 198 x 100 x 100 mm. HS52PR manifold only \$ 664.00

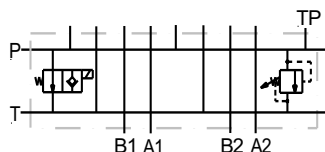


#### HS52PRD



| Cartridge Options | Q max<br>l/min | P max<br>bar | Notes                                                                                                                           | Ports<br>BSPP | Assembly Price |
|-------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|
| RV10-26 +SV12-21  | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Relief and N.O. solenoid valve on P. | 1/4"-3/4"     | \$ 1206.00     |

Manifold Dimensions: 198 x 100 x 100 mm. HS52PRD manifold only \$ 755.00

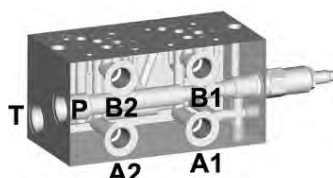


## Cetop 5 Subplates

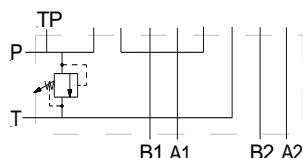


### Two Station – Series

HS52SR

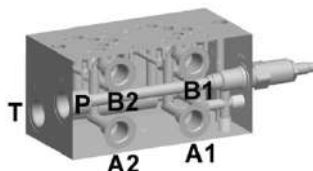


| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                                                                                   | Ports<br>BSP | Assembly<br>Price |
|-------------------------------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------|--------------|-------------------|
| RV10-26                                                                 | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP (1/4") port on other side. Relief on P. | 1/4"-3/4"    | \$ 806.00         |
| Manifold Dimensions: 198 x 100 x 100 mm. HS52SR manifold only \$ 664.00 |                |              |                                                                                                         |              |                   |

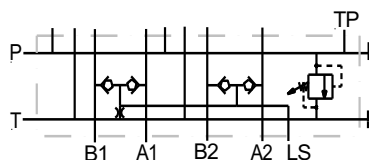


### Two Station – Load Sense

HS52LR



| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                                                                                                                                                              | Ports<br>BSP | Assembly<br>Price |
|-------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|
| RV10-26 +<br>4 x CV04-20                                                | 114            | 240          | P & T (3/4") on one end. LS port (1/4") on other end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Four load sense checks. Relief on P. 0.4 mm bleed orifice. | 1/4"-3/4"    | \$ 1082.00        |
| Manifold Dimensions: 198 x 100 x 100 mm. HS52LR manifold only \$ 756.00 |                |              |                                                                                                                                                                                    |              |                   |

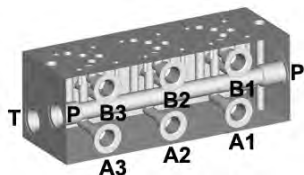


## Cetop 5 Subplates

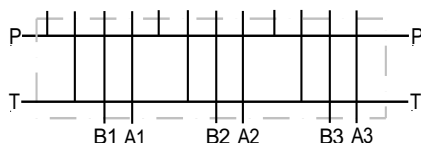


### Three Station – Parallel

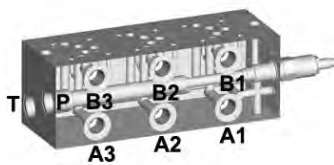
HS53PT



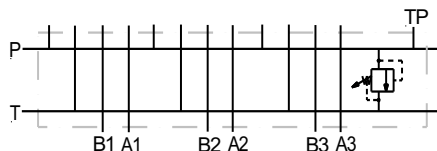
| Cartridge Options                       | Q max<br>l/min | P max<br>bar | Notes                                                              | Ports<br>BSPP | Assembly Price |
|-----------------------------------------|----------------|--------------|--------------------------------------------------------------------|---------------|----------------|
| N/A                                     | 120            | 240          | P & T (3/4") through two ends. All A & B ports (1/2") on one side. | 1/2"-3/4"     | \$ 685.00      |
| Manifold Dimensions: 280 x 100 x 100 mm |                |              |                                                                    |               |                |



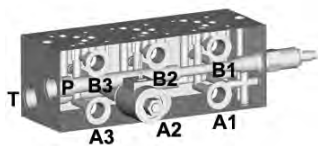
HS53PR



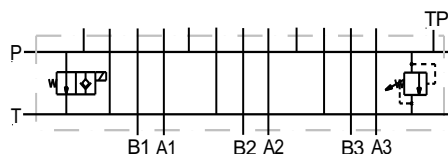
| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                                                                                   | Ports<br>BSPP | Assembly Price |
|-------------------------------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------|---------------|----------------|
| RV10-26                                                                 | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Relief on P. | 1/4"-3/4"     | \$ 875.00      |
| Manifold Dimensions: 280 x 100 x 100 mm. HS53PR manifold only \$ 733.00 |                |              |                                                                                                         |               |                |



HS53PRD



| Cartridge Options                                                        | Q max<br>l/min | P max<br>bar | Notes                                                                                                                           | Ports<br>BSPP | Assembly Price |
|--------------------------------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|
| RV10-26 +SV12-21                                                         | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Relief and N.O. solenoid valve on P. | 1/4"-3/4"     | \$ 1275.00     |
| Manifold Dimensions: 280 x 100 x 100 mm. HS53PRD manifold only \$ 824.00 |                |              |                                                                                                                                 |               |                |

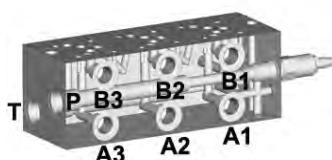


## Cetop 5 Subplates

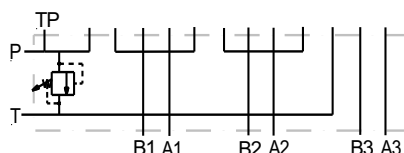


### Three Station – Series

#### HS53SR

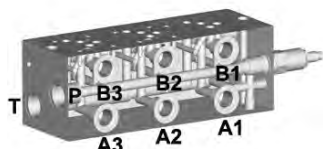


| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                                                                                   | Ports<br>BSP | Assembly<br>Price |
|-------------------------------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------|--------------|-------------------|
| RV10-26                                                                 | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP (1/4") port on other side. Relief on P. | 1/4"-3/4"    | \$ 875.00         |
| Manifold Dimensions: 280 x 100 x 100 mm. HS53SR manifold only \$ 733.00 |                |              |                                                                                                         |              |                   |

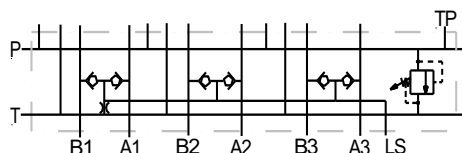


### Three Station – Load Sense

#### HS53LR



| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                                                                                                                                                              | Ports<br>BSP | Assembly<br>Price |
|-------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|
| RV10-26 +<br>6 x CV04-20                                                | 114            | 240          | P & T (3/4") on one end. LS port (1/4") on other end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Four load sense checks. Relief on P. 0.4 mm bleed orifice. | 1/4"-3/4"    | \$ 1311.00        |
| Manifold Dimensions: 280 x 100 x 100 mm. HS53LR manifold only \$ 893.00 |                |              |                                                                                                                                                                                    |              |                   |

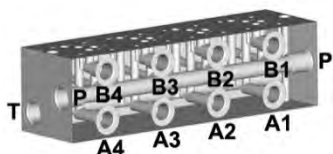


## Cetop 5 Subplates



### Four Station – Parallel

#### HS54PT

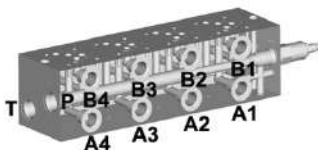


| Cartridge Options | Q max<br>l/min | P max<br>bar | Notes                                                              | Ports<br>BSPP | Assembly<br>Price |
|-------------------|----------------|--------------|--------------------------------------------------------------------|---------------|-------------------|
| N/A               | 120            | 240          | P & T (3/4") through two ends. All A & B ports (1/2") on one side. | 1/2"-3/4"     | \$ 800.00         |

Manifold Dimensions: 362 x 100 x 100 mm

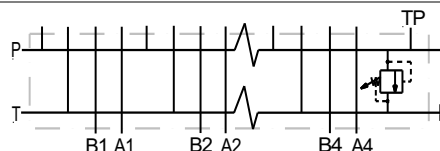


#### HS54PR

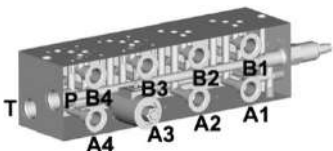


| Cartridge Options | Q max<br>l/min | P max<br>bar | Notes                                                                                                   | Ports<br>BSPP | Assembly<br>Price |
|-------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-26           | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Relief on P. | 1/4"-3/4"     | \$ 1012.00        |

Manifold Dimensions: 362 x 100 x 100 mm. HS54PR manifold only \$ 870.00

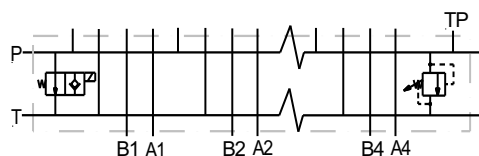


#### HS54PRD



| Cartridge Options | Q max<br>l/min | P max<br>bar | Notes                                                                                                                           | Ports<br>BSPP | Assembly<br>Price |
|-------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-26 + SV12-21 | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Relief and N.O. solenoid valve on P. | 1/4"-3/4"     | \$ 1412.00        |

Manifold Dimensions: 362 x 100 x 100 mm. HS54PRD manifold only \$ 961.00

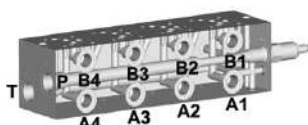


## Cetop 5 Subplates

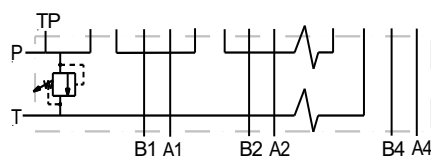


### Four Station – Series

#### HS54SR

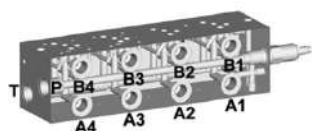


| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                                                                                   | Ports<br>BSP | Assembly<br>Price |
|-------------------------------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------|--------------|-------------------|
| RV10-26                                                                 | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP (1/4") port on other side. Relief on P. | 1/4"-3/4"    | \$ 1012.00        |
| Manifold Dimensions: 362 x 100 x 100 mm. HS54SR manifold only \$ 870.00 |                |              |                                                                                                         |              |                   |

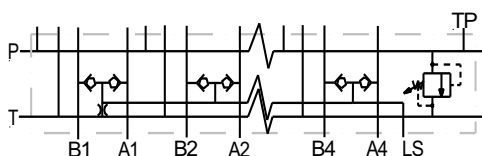


### Four Station – Load Sense

#### HS54LR



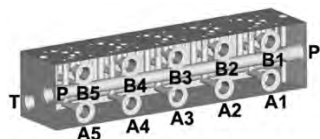
| Cartridge Options                                                        | Q max<br>l/min | P max<br>bar | Notes                                                                                                                                                                              | Ports<br>BSP | Assembly<br>Price |
|--------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|
| RV10-26 +<br>8 x CV04-20                                                 | 114            | 240          | P & T (3/4") on one end. LS port (1/4") on other end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Four load sense checks. Relief on P. 0.4 mm bleed orifice. | 1/4"-3/4"    | \$ 1620.00        |
| Manifold Dimensions: 362 x 100 x 100 mm. HS54LR manifold only \$ 1110.00 |                |              |                                                                                                                                                                                    |              |                   |



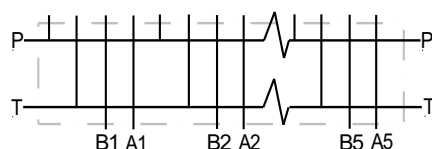
## Cetop 5 Subplates



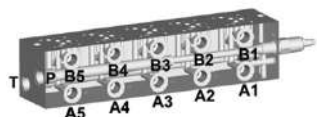
### Five Station – Parallel HS55PT



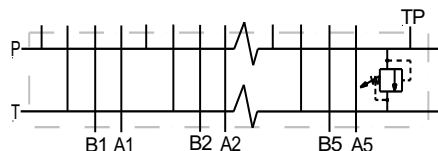
| Cartridge Options                        | Q max<br>l/min | P max<br>bar | Notes                                                              | Ports<br>BSPP | Assembly Price |
|------------------------------------------|----------------|--------------|--------------------------------------------------------------------|---------------|----------------|
| N/A                                      | 120            | 240          | P & T (3/4") through two ends. All A & B ports (1/2") on one side. | 1/2"-3/4"     | \$ 910.00      |
| Manifold Dimensions: 444 x 100 x 100 mm. |                |              |                                                                    |               |                |



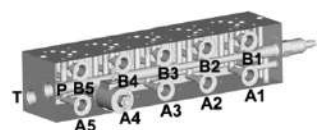
### HS55PR



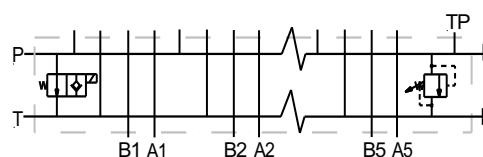
| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                                                                                   | Ports<br>BSPP | Assembly Price |
|-------------------------------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------|---------------|----------------|
| RV10-26                                                                 | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Relief on P. | 1/4"-3/4"     | \$ 1127.00     |
| Manifold Dimensions: 444 x 100 x 100 mm. HS55PR manifold only \$ 985.00 |                |              |                                                                                                         |               |                |



### HS55PRD



| Cartridge Options                                                           | Q max<br>l/min | P max<br>bar | Notes                                                                                                                           | Ports<br>BSPP | Assembly Price |
|-----------------------------------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|
| RV10-26 + SV12-21                                                           | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Relief and N.O. solenoid valve on P. | 1/4"-3/4"     | \$ 1527.00     |
| Manifold Dimensions: 444 x 100 x 100 mm<br>HS55PRD manifold only \$ 1076.00 |                |              |                                                                                                                                 |               |                |

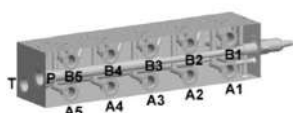


## Cetop 5 Subplates

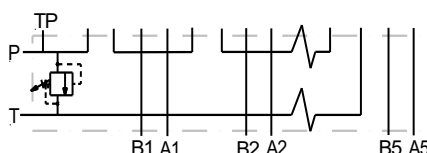


### Five Station – Series

#### HS55SR

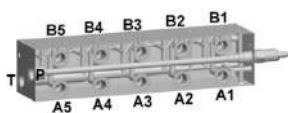


| Cartridge Options                                                       | Q max<br>l/min | P max<br>bar | Notes                                                                                                   | Ports<br>BSPP | Assembly<br>Price |
|-------------------------------------------------------------------------|----------------|--------------|---------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-26                                                                 | 114            | 240          | P & T (3/4") on one end. All A & B ports (1/2") on one side. TP (1/4") port on other side. Relief on P. | 1/4"-3/4"     | \$ 1127.00        |
| Manifold Dimensions: 444 x 100 x 100 mm. HS55SR manifold only \$ 985.00 |                |              |                                                                                                         |               |                   |

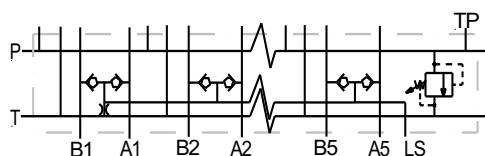


### Five Station – Load Sense

#### HS55LR



| Cartridge Options                                                           | Q max<br>l/min | P max<br>bar | Notes                                                                                                                                                                              | Ports<br>BSPP | Assembly<br>Price |
|-----------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| RV10-26 +<br>10 x CV04-20                                                   | 114            | 240          | P & T (3/4") on one end. LS port (1/4") on other end. All A & B ports (1/2") on one side. TP port (1/4") on other side. Four load sense checks. Relief on P. 0.4 mm bleed orifice. | 1/4"-3/4"     | \$ 1747.00        |
| Manifold Dimensions: 444 x 100 x 100 mm.<br>HS55LR manifold only \$ 1145.00 |                |              |                                                                                                                                                                                    |               |                   |



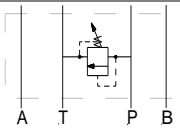
## Cetop 5 Modules



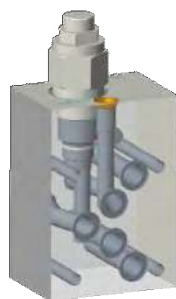
### Pressure Relief

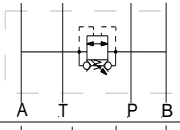
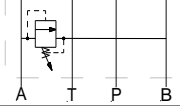
#### HS51MRP\_B



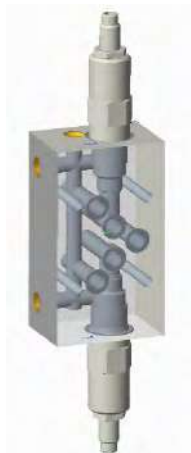
| Cartridge Options                                                            | Q max<br>l/min | P max<br>bar | Notes         | Circuit                                                                             | Assembly Price |
|------------------------------------------------------------------------------|----------------|--------------|---------------|-------------------------------------------------------------------------------------|----------------|
| RV10-26                                                                      | 110            | 240          | P to T relief |  | \$ 442.00      |
| Manifold Dimensions : 100 x 70 x 50 mm.<br>HS51MRP_B manifold only \$ 300.00 |                |              |               |                                                                                     |                |

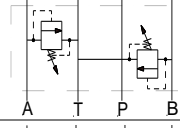
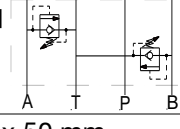
#### HS51MRX\_B



| Cartridge Options                                                            | Q max<br>l/min | P max<br>bar | Notes                   | Circuit                                                                               | Assembly Price |
|------------------------------------------------------------------------------|----------------|--------------|-------------------------|---------------------------------------------------------------------------------------|----------------|
| RVBD-10                                                                      | 75             | 240          | A & B cross line relief |  | \$ 495.00      |
| RV10-22                                                                      | 110            | 240          | A to B relief           |  | \$ 433.00      |
| Manifold Dimensions : 100 x 70 x 50 mm.<br>HS51MRX_B manifold only \$ 310.00 |                |              |                         |                                                                                       |                |

#### HS51MRW\_B



| Cartridge Options                                                            | Q max<br>l/min | P max<br>bar | Notes                                           | Circuit                                                                               | Assembly Price |
|------------------------------------------------------------------------------|----------------|--------------|-------------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| RV10-26 x 2                                                                  | 110            | 240          | A & B to T relief                               |  | \$ 674.00      |
| RVPP-10 x 2                                                                  | 100            | 240          | A & B to T relief and over-run check T to A & B |  | \$ 736.00      |
| Manifold Dimensions : 125 x 70 x 50 mm.<br>HS51MRW_B manifold only \$ 390.00 |                |              |                                                 |                                                                                       |                |

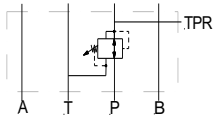
## Cetop 5 Modules



### Pressure Reducing / Relieving

#### HS51MPP\_B

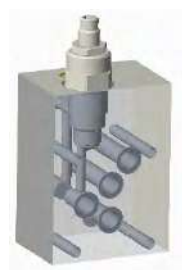


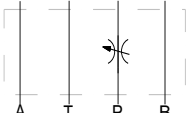
| Cartridge Options                                                            | Q max<br>l/min | P max<br>bar | Notes                                     | Circuit                                                                             | Assembly Price |
|------------------------------------------------------------------------------|----------------|--------------|-------------------------------------------|-------------------------------------------------------------------------------------|----------------|
| PR50-38                                                                      | 70             | 350*         | Pressure reducing on P and relieving to T |  | \$ 571.00      |
| Manifold Dimensions : 125 x 70 x 50 mm.<br>HS51MPP_B manifold only \$ 350.00 |                |              |                                           |                                                                                     |                |

- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing
- TPR port 1/4"BSPP at the opposite end of cartridge

### Flow Control

#### HS51MNP\_B



| Cartridge Options                                                            | Q max<br>l/min | P max<br>bar | Notes                                  | Circuit                                                                               | Assembly Price |
|------------------------------------------------------------------------------|----------------|--------------|----------------------------------------|---------------------------------------------------------------------------------------|----------------|
| NV10-20                                                                      | 45             | 240          | Single needle valve meter- in on P     |  | \$ 370.00      |
| FR50-28                                                                      | 34             | 350*         | Pressure compensated flow control on P |  | \$ 512.00      |
| Manifold Dimensions : 100 x 70 x 50 mm.<br>HS51MNP_B manifold only \$ 300.00 |                |              |                                        |                                                                                       |                |

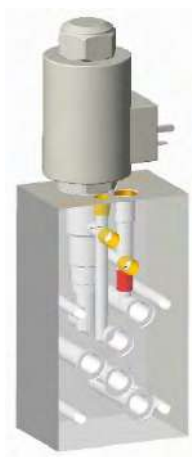
- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

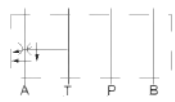
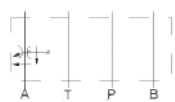
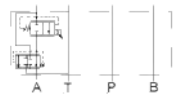
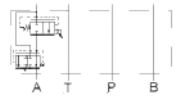
## Cetop 5 Modules



### Flow Control

#### HS51MFA\_B



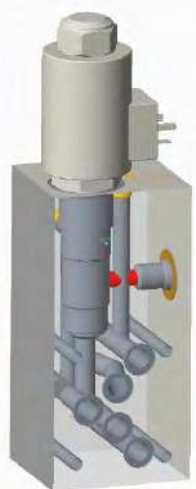
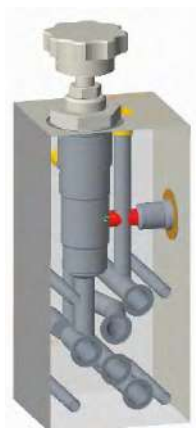
| Cartridge Options                                                            | Q max<br>l/min | P max<br>bar | Notes                                                                                                            | Circuit                                                                               | Assembly Price |
|------------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| FR10-39E                                                                     | 57             | 240          | Pressure compensated priority flow control valve meter-in on A. Full range adjustment, regulated flow 0 – 38LPM. |    | \$ 562.00      |
|                                                                              |                |              | Bypass can be plugged (red) for restricted flow control valve on A.<br>Regulated flow 0 – 34LPM                  |   |                |
| PV70-30                                                                      | 50             | 240          | Proportional pressure compensated flow control on A with Bypass to T.                                            |  | \$ 946.00      |
|                                                                              |                |              | Bypass can be plugged (red) for restrictive flow on A.                                                           |  |                |
| Manifold Dimensions : 125 x 70 x 50 mm.<br>HS51MFA_B manifold only \$ 350.00 |                |              |                                                                                                                  |                                                                                       |                |

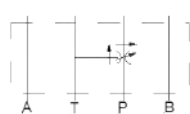
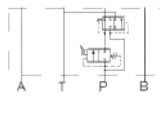
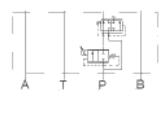
## Cetop 5 Modules



### Flow Control

#### HS51MFP\_B



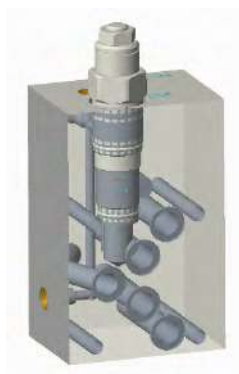
| Cartridge Options                                                            | Q max<br>l/min | P max<br>bar | Notes                                                                                                            | Circuit                                                                               | Assembly Price |
|------------------------------------------------------------------------------|----------------|--------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| FR12-33                                                                      | 100            | 240          | Pressure compensated priority flow control valve meter-in on P. Full range adjustment, regulated flow 0 – 68LPM. |    | \$ 721.00      |
|                                                                              |                |              | Bypass can be plugged for restricted flow control valve on P. Regulated flow 0 – 45LPM                           |   |                |
| PV72-30                                                                      | 100            | 240          | Proportional pressure compensated flow control on P with Bypass to T. Regulated flow 0 – 57LPM                   |  | \$ 1104.00     |
|                                                                              |                |              | Bypass can be plugged for restrictive flow on P. Regulated flow 0 – 53LPM                                        |  |                |
| Manifold Dimensions : 150 x 70 x 65 mm.<br>HS51MFP_B manifold only \$ 400.00 |                |              |                                                                                                                  |                                                                                       |                |

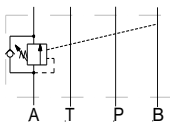
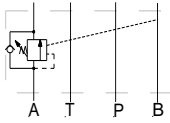
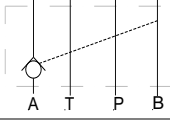
## Cetop 5 Modules



### Load Control

#### HS51MMA

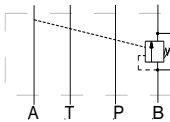
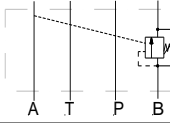
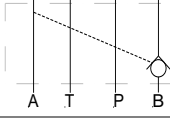


| Cartridge Options                                                         | Q max<br>l/min | P max<br>bar | Notes                                                          | Circuit                                                                             | Assembly Price |
|---------------------------------------------------------------------------|----------------|--------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------|
| CBCG                                                                      | 60             | 350*         | Counterbalance on port A, pilot from B. 4.5:1 ratio.           |  | \$ 495.00      |
| CBCH                                                                      | 60             | 350*         | Counterbalance on port A, pilot from B. 10:1 ratio.            |  | \$ 515.00      |
| CKCD                                                                      | 60             | 350*         | Pilot operated check holds on port A, pilot from B. 3:1 ratio. |  | \$ 475.00      |
| Manifold Dimensions : 110 x 70 x 50mm.<br>HS51MMA manifold only \$ 325.00 |                |              |                                                                |                                                                                     |                |

- \* Requires steel block over 240 bar – contact Hyspecs for pricing

#### HS51MMB



| Cartridge Options                                                         | Q max<br>l/min | P max<br>bar | Notes                                                          | Circuit                                                                               | Assembly Price |
|---------------------------------------------------------------------------|----------------|--------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| CBCG                                                                      | 60             | 350*         | Counterbalance on port B, pilot from A. 4.5:1 ratio.           |  | \$ 495.00      |
| CBCH                                                                      | 60             | 350*         | Counterbalance on port B, pilot from A. 10:1 ratio.            |  | \$ 515.00      |
| CKCD                                                                      | 60             | 350*         | Pilot operated check holds on port B, pilot from A. 3:1 ratio. |  | \$ 475.00      |
| Manifold Dimensions : 110 x 70 x 50mm.<br>HS51MMB manifold only \$ 325.00 |                |              |                                                                |                                                                                       |                |

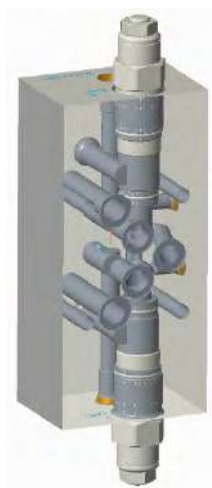
- \* Requires steel block over 240 bar – contact Hyspecs for pricing

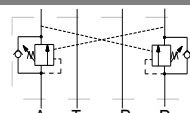
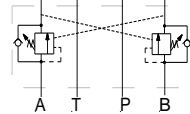
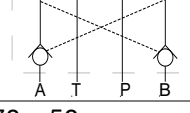
## Cetop 5 Modules



### Load Control

#### HS51MMD\_B

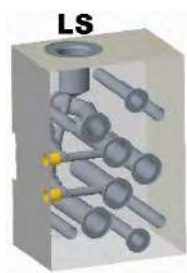


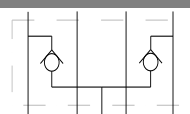
| Cartridge Options                                                           | Q max<br>l/min | P max<br>bar | Notes                                 | Circuit                                                                             | Assembly Price |
|-----------------------------------------------------------------------------|----------------|--------------|---------------------------------------|-------------------------------------------------------------------------------------|----------------|
| CBCG x 2                                                                    | 60             | 350*         | Dual counterbalance. 4.5:1 ratio.     |  | \$ 790.00      |
| CBCH x 2                                                                    | 60             | 350*         | Dual counterbalance. 10:1 ratio       |  | \$ 830.00      |
| CKCD x 2                                                                    | 60             | 350*         | Dual pilot operated check. 3:1 ratio. |  | \$ 750.00      |
| Manifold Dimensions : 150 x 70 x 50mm.<br>HS51MMD_B manifold only \$ 450.00 |                |              |                                       |                                                                                     |                |

- \* Requires steel block over 240 bar – *contact Hyspecs* for pricing

### Load Sense

#### HS51ML\_B



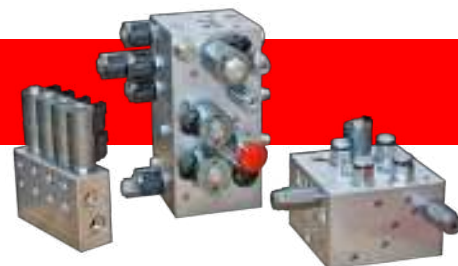
| Cartridge Options                                                          | P max<br>bar | Notes                                       | Circuit                                                                               | Assembly Price |
|----------------------------------------------------------------------------|--------------|---------------------------------------------|---------------------------------------------------------------------------------------|----------------|
| CV04-20 x 2                                                                | 240          | Dual load sense module. LS port 1/4 " BSPP. |  | \$ 344.00      |
| Manifold Dimensions : 100 x 70 x 50mm.<br>HS51ML_B manifold only \$ 252.00 |              |                                             |                                                                                       |                |

## Contents Section I – Standard and Proportional Valve Coils

### **I1 Standard and Proportional Valve Coils**

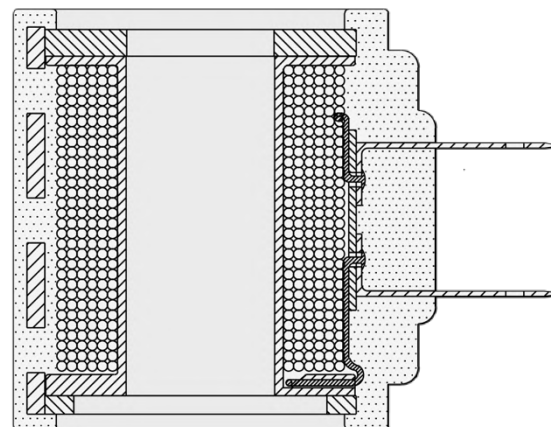
- I1 Benefits of using Hydraforce Standard Coils
- I2 Series 08, 80, 98 Coil Information
- I2 Series 10, 12, 16, 38, 58 Coil Information
- I3 Size 70 Coil Information
- I3 Series EHPR08 Coil Information
- I4 Coil Pricing
- I5 E Waterproof/Weather Resistant Coils
- I6 08-Size Series E Coils
- I7 10-Size Series E Coils
- I8 70-Size Series E Coils
- I8 EHPS-Size Series E Coils
- I9 12-Size Series E Coils
- I10 E Coil Pricing
- I11 Coil Installation
- I12 Hirschman Plug Wiring

## Standard and Proportional Valve Coils



### Benefits of using Hydraforce Standard Coils

- **High Quality Materials**  
HydraForce coils are made with high quality, Class H magnetwire and insulation materials.
- **More Ampere Turns**  
More copper wire turns deliver more magnetic ux per current input.
- **Rugged Casing**  
Coils are housed in a durable 30% glass- lled thermoplastic casing, providing a rigid base for coil terminations.
- **Superior Frame Density**  
Thick iron surrounds the copper winding, increasing the coil's ux density and therefore its power as an electromagnet.
- **Multiple Termination Options**  
HydraForce offers many standard types of electrical connections, and will consider OEM requests for special terminations.
- **DC Windings**  
All windings are DC. AC service coils are internally full-wave-recti ed, so cartridges are voltage-interchangeable and do not exhibit AC “buzz” or suffer burn-out due to partial armature shift. HydraForce DC coils are UL Listed under File #AU2326.
- **Heat Rise**  
Rather than using heat sinks or external cooling methods, HydraForce uses larger coils for lower heat rise, stronger electromagnetic force and longer coil life. HydraForce coils canbe operated continuously at ambient temperatures to 100°C without challenging the coil's insulation system.
- **Custom Coils**  
HydraForce can provide windings precisely-tailored for special OEM applications. Some of the common windings are listed on the following page. Consult the factory if these do not meet your requirements.



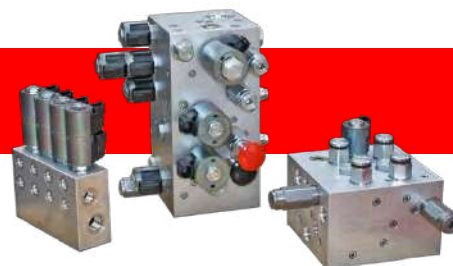
| 08, 80 Size Coil Data<br>(14.7 Watts) |                                   |                                 |
|---------------------------------------|-----------------------------------|---------------------------------|
| Volts                                 | Resistance<br>(DC) @ 20°C<br>Ohms | Initial<br>Current Draw<br>Amps |
| <b>DC Service</b>                     |                                   |                                 |
| 6*                                    | 2.46                              | 2.44                            |
| 10                                    | 6.8                               | 1.47                            |
| 12                                    | 9.8                               | 1.22                            |
| 20*                                   | 27.2                              | 0.74                            |
| 24                                    | 39.3                              | 0.61                            |
| 30*                                   | 61.4                              | 0.49                            |
| 36                                    | 88.3                              | 0.41                            |
| 48                                    | 156.6                             | 0.31                            |
| 72*                                   | 352.4                             | 0.20                            |
| <b>AC Service</b>                     |                                   |                                 |
| 24                                    | 31.2                              | 0.61                            |
| 115                                   | 765.5                             | 0.13                            |
| 230                                   | 3035.0                            | 0.06                            |

| 10, 38, 58, 12, 52, 16, 56 Size<br>Coil Data (20 Watts) |                                   |                                 |
|---------------------------------------------------------|-----------------------------------|---------------------------------|
| Volts                                                   | Resistance<br>(DC) @ 20°C<br>Ohms | Initial<br>Current Draw<br>Amps |
| <b>DC Service</b>                                       |                                   |                                 |
| 6*                                                      | 1.8                               | 3.33                            |
| 10                                                      | 4.8                               | 2.08                            |
| 12                                                      | 7.2                               | 1.67                            |
| 20*                                                     | 19.0                              | 1.05                            |
| 24                                                      | 28.8                              | 0.83                            |
| 30*                                                     | 43.2                              | 0.69                            |
| 36                                                      | 64.8                              | 0.56                            |
| 48                                                      | 110.2                             | 0.44                            |
| 72*                                                     | 249.8                             | 0.29                            |
| <b>AC Service</b>                                       |                                   |                                 |
| 24                                                      | 23.6                              | 0.83                            |
| 115                                                     | 568.0                             | 0.17                            |
| 230                                                     | 2304.0                            | 0.09                            |

| 70 Size Coil Data<br>Proportional Coil Data |                                   |                                        |
|---------------------------------------------|-----------------------------------|----------------------------------------|
| Volts                                       | Resistance<br>(DC) @ 20°C<br>Ohms | Nominal I-Max.<br>Current Draw<br>Amps |
| 12                                          | 5.0                               | 1.50                                   |
| 24                                          | 20.0                              | 0.75                                   |

| EHPR Coil Data<br>Proportional Coil Data |                                   |                                        |
|------------------------------------------|-----------------------------------|----------------------------------------|
| Volts                                    | Resistance<br>(DC) @ 20°C<br>Ohms | Nominal I-Max.<br>Current Draw<br>Amps |
| 10                                       | 3.1                               | 1.50                                   |
| 12                                       | 5.4                               | 1.20                                   |
| 20                                       | 12.5                              | 0.75                                   |
| 24                                       | 21.7                              | 0.60                                   |

## Standard and Proportional Valve Coils

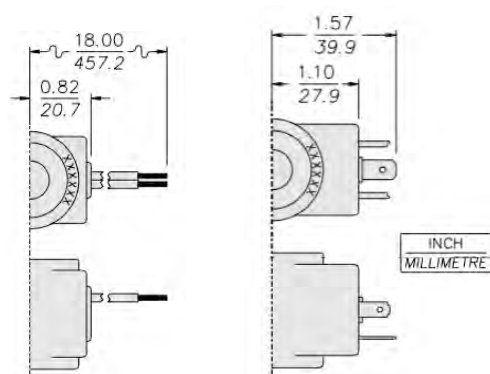


### Coil Information

- AC service coils are internally rectified, and can be used in 50 or 60 cycle (Hz) lines.
- Special voltages and terminations are available for OEM applications; consult factory.
- Coil should always be installed with lettering facing up.
- Standard coils are not hermetically sealed. For applications requiring water- or weather-resistant coils, see page 3.400.1
- AC voltage service with transient surges over 1000 volts may require that a varistor be placed in parallel at the coil.
- EG option coils do not use ground terminal. Pins 1 and 2 are not polarity-sensitive.

| Voltage | Varistor Part No.                                  | Joule Rating Required |
|---------|----------------------------------------------------|-----------------------|
| 115     | GE: V150LA10A<br>Siemens: S10R150<br>or equivalent | 45 minimum            |
| 230     | GE: V250LA40A<br>Siemens: S20R250<br>or equivalent | 130 minimum           |

### Series 08, 80, 88, 98 Coil Information

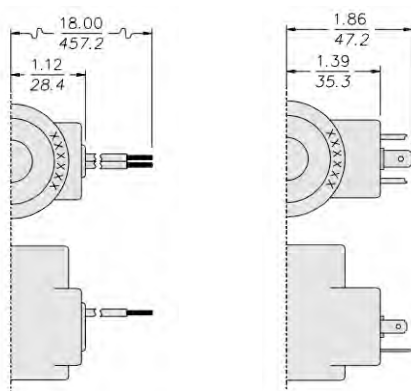


**L**  
Dual Leads  
18 Gauge

**G**  
DIN 43650  
Connector

| Voltage  | Part Number Suffix |         |
|----------|--------------------|---------|
|          | L                  | G       |
| 12 VDC   | 6302012            | 6306012 |
| 24 VDC   | 6302024            | 6306024 |
| 36 VDC   | 6302036            | 6306036 |
| *24 VAC  | -                  | 6316024 |
| 115* VAC | -                  | 6316115 |
| *230 VAC | -                  | 6316230 |

### Series 10, 12, 16, 38, 58 Coil Information

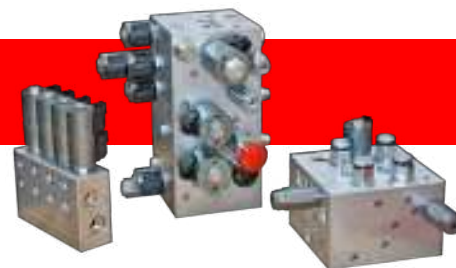


**L**  
Dual Leads  
18 Gauge

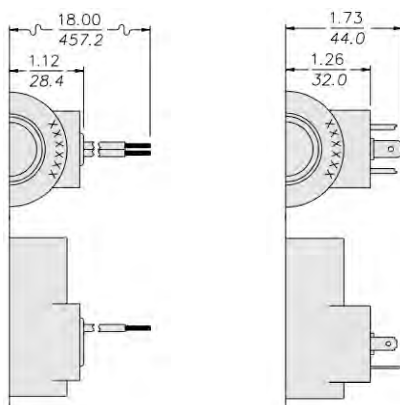
**G**  
DIN 43650  
Connector

| Voltage  | Part Number Suffix |         |
|----------|--------------------|---------|
|          | L                  | G       |
| 12 VDC   | 6352012            | 6356012 |
| 24 VDC   | 6352024            | 6356024 |
| 36 VDC   | 6352036            | 6356036 |
| *24 VAC  | -                  | 6366024 |
| 115* VAC | -                  | 6366115 |
| *230 VAC | -                  | 6366230 |

## Standard and Proportional Valve Coils



### Size 70 Coil Information

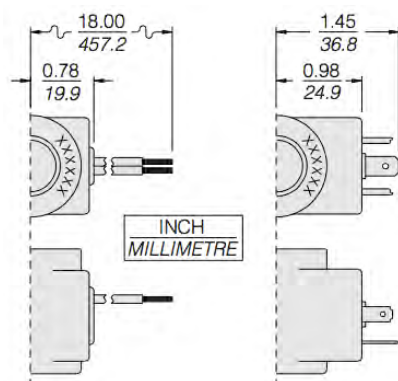


**L**  
Dual Leads  
18 Gauge

**G**  
DIN 43650  
Connector

| Voltage | Part Number Suffix |         |
|---------|--------------------|---------|
|         | L                  | G       |
| 12 VDC  | 6507212            | 6507612 |
| 24 VDC  | 6507224            | 6507624 |

### Series EHPR08 Coil Information

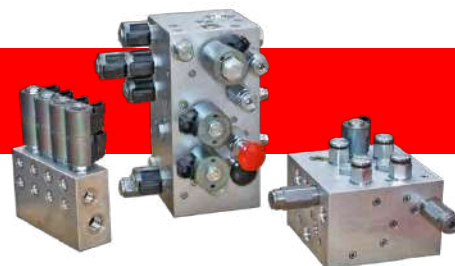


**L**  
Dual Leads  
18 Gauge

**G**  
DIN 43650  
Connector

| Voltage | Part Number Suffix |         |
|---------|--------------------|---------|
|         | L                  | G       |
| 12 VDC  | 6451212            | 6451612 |
| 24 VDC  | 6451224            | 6451624 |

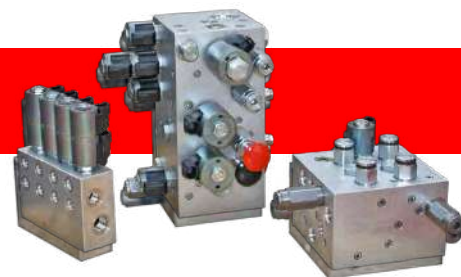
## Standard and Proportional Valve Coils



### Coil Pricing

| Part Number | Valve Coils                | Suffix | List      |
|-------------|----------------------------|--------|-----------|
| 6302012     | Series 08,80,88,98 Coil    | L      | \$ 46.00  |
| 6302024     | Series 08,80,88,98 Coil    | L      | \$ 46.00  |
| 6302036     | Series 08,80,88,98 Coil    | L      | \$ 69.00  |
| 6306012     | Series 08,80,88,98 Coil    | G      | \$ 69.00  |
| 6306024     | Series 08,80,88,98 Coil    | G      | \$ 69.00  |
| 6306036     | Series 08,80,88,98 Coil    | G      | \$ 75.00  |
| 6316024     | Series 08,80,88,98 Coil    | G      | \$ 98.00  |
| 6316115     | Series 08,80,88,98 Coil    | G      | \$ 98.00  |
| 6316230     | Series 08,80,88,98 Coil    | G      | \$ 98.00  |
| 6352012     | Series 10,12,16,38,58 Coil | L      | \$ 57.00  |
| 6352024     | Series 10,12,16,38,58 Coil | L      | \$ 57.00  |
| 6352036     | Series 10,12,16,38,58 Coil | L      | \$ 75.00  |
| 6356012     | Series 10,12,16,38,58 Coil | G      | \$ 75.00  |
| 6356024     | Series 10,12,16,38,58 Coil | G      | \$ 75.00  |
| 6356036     | Series 10,12,16,38,58 Coil | G      | \$ 95.00  |
| 6366024     | Series 10,12,16,38,58 Coil | G      | \$109.00  |
| 6366115     | Series 10,12,16,38,58 Coil | G      | \$109.00  |
| 6366230     | Series 10,12,16,38,58 Coil | G      | \$ 109.00 |
| 6507212     | Size 70 Coil               | L      | \$ 75.00  |
| 6507224     | Size 70 Coil               | L      | \$ 75.00  |
| 6507612     | Size 70 Coil               | G      | \$ 75.00  |
| 6507624     | Size 70 Coil               | G      | \$ 75.00  |
| 6451212     | Series EHPR08 Coil         | L      | \$ 52.00  |
| 6451224     | Series EHPR08 Coil         | L      | \$ 52.00  |
| 6451612     | Series EHPR08 Coil         | G      | \$ 52.00  |
| 6451624     | Series EHPR08 Coil         | G      | \$ 52.00  |

## Standard and Proportional Valve Coils



### E Water-Proof / Weather-Resistant Coils

New Series E coils are the latest innovation in coil technology from Hydraforce. They are designed to meet the demanding requirements of mobile and industrial applications where weather resistance is required. Models with Deutsch DT and Metri-Pack® integral connectors and new dual leadwire models meet or exceed all IP69K standards for weather resistance, offering superior reliability under the most demanding conditions. Series E coils have passed what is known in the construction, agricultural and mobile equipment markets as the “Thermal Shock Dunk Test.”

Series E coils feature a new, fully encapsulated coil winding technology. Deutsch and Metri-Pack® connectors are molded into the coil encapsulation, assuring IP69K weather resistance. An external metal shell serves as the element to concentrate the magnetic flux for the coil winding and also functions as a rugged container for the coil. No O-rings or waterproofing kits are required.

Models are available to fit most HydraForce valves. In most applications, these coils can be used to retrofit HydraForce valves already in field operation and will offer superior weather resistance.

- **Thermal Shock Dunk Test Rated**

Series E coils with leadwires, Deutsch DT and Metri-Pack® connectors have passed what is known in the construction, agricultural and mobile equipment markets as the “Thermal Shock Dunk Test.”

- **Easy Installation**

No O-rings, external sealing, or waterproofing kits required.

- **IP69K Rated with Integral Connectors and with New Dual Leadwires**

Models with Deutsch DT and Metri-Pack® connectors as well as the new dual leadwire models are rated for IP69K. DIN and dual spade connections are rated for IP65.

- **Fully Encapsulated Windings**

Coils are fully encapsulated for zero leak paths when ordered with integral connector options.

- **Field Retrofit-able**

In most cases, Series E coils can be used to replace existing coils on HydraForce valves already in operation.

- **Rugged Metal Shell**

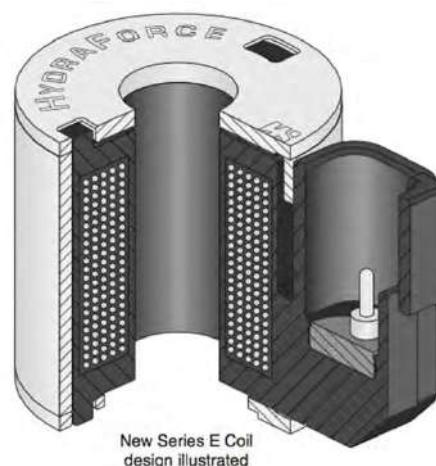
The rugged external metal shell provides exceptional protection against physical damage, ensuring durability under harsh operating conditions. It is salt spray rated for 1000 hours per ASTM B117 specifications.

- **High Temperature Operation**

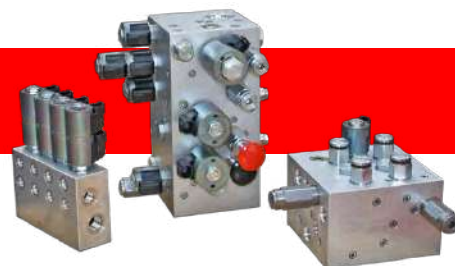
Class N 200°C (392°F) rated magnet wire and insulation materials allow high temperature operation and ensure long life under demanding conditions. Continuous-duty operation up to 100°C and 115% of nominal voltage.

- **Shock Resistant**

Integral grommet for Deutsch DT connectors increases durability under conditions of high random shock.

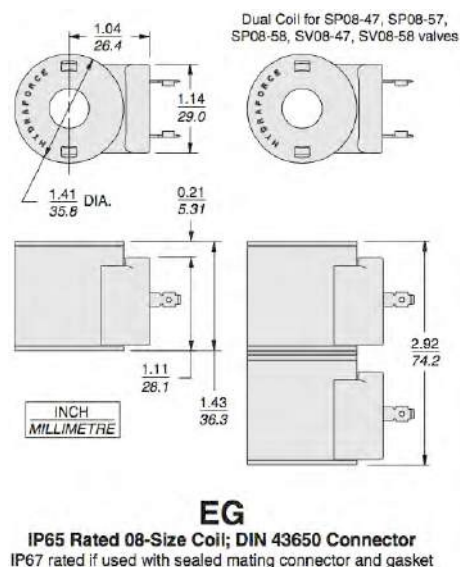
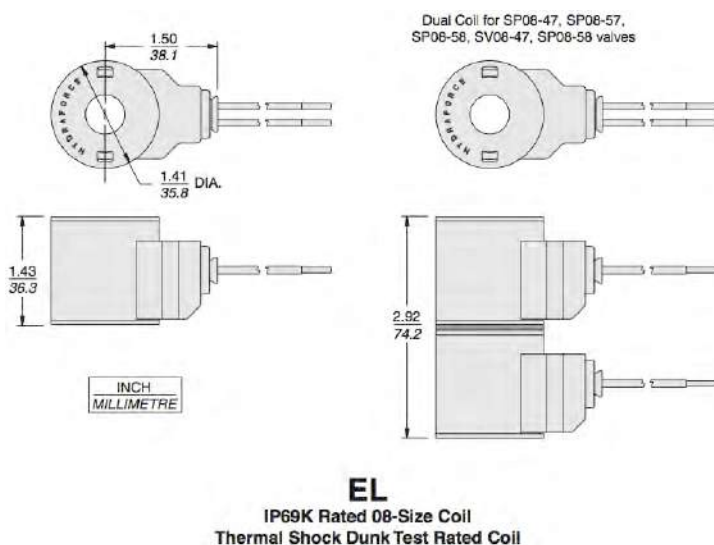
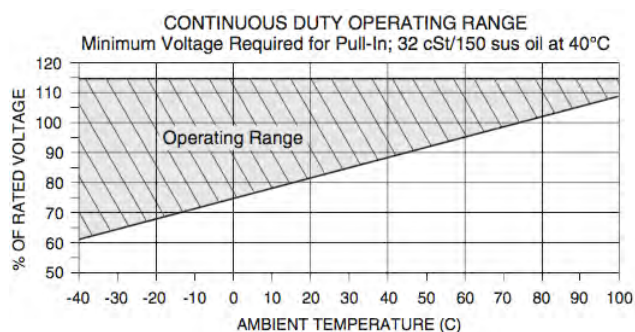
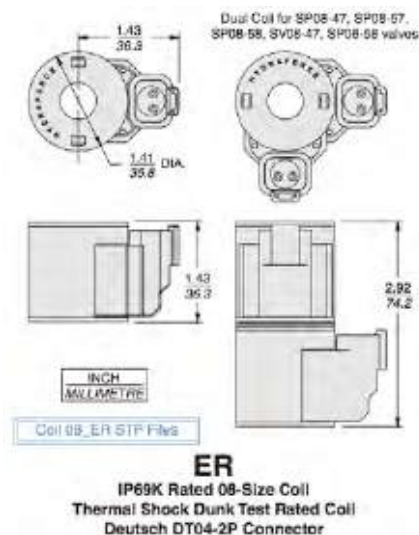


## Standard and Proportional Valve Coils



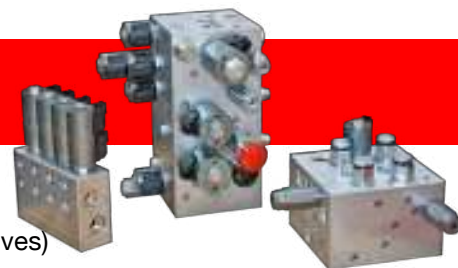
### 08-Size Series E Coils

(also for use 98-size screw-in spool-type valves)



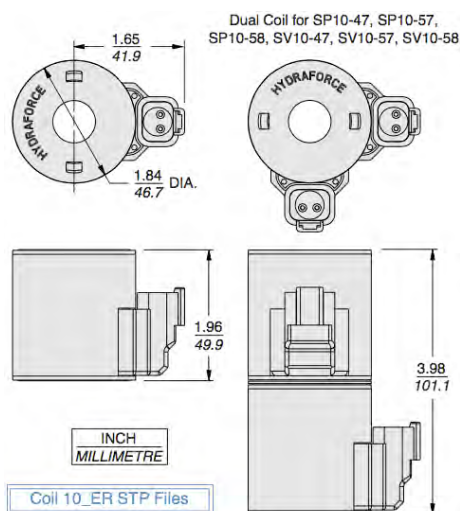
| ER Coil Part No. | EL Coil 18" Wire Part No. | EG Coil Part No. | Operating Voltage | Resistance at 20°C | Initial Current Draw | Power      | Coil Weight |
|------------------|---------------------------|------------------|-------------------|--------------------|----------------------|------------|-------------|
| 4303612          | 4305112                   | 4305862          | 12 VDC            | 8.8 ohms           | 1.4 amps             | 17.2 watts | 136g        |
| 4303624          | 4305124                   | 4305864          | 24 VDC            | 33.8 ohms          | 0.7 amps             | 16.6 watts | 136g        |

## Standard and Proportional Valve Coils

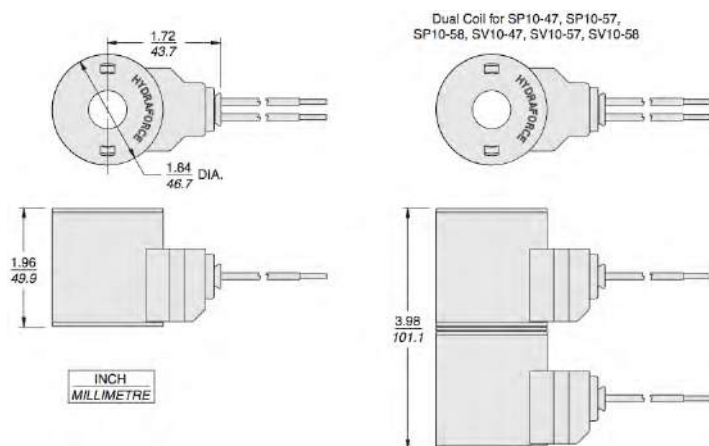
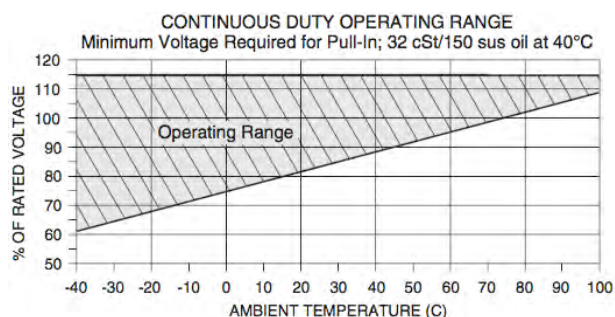


### 10-Size Series E Coils

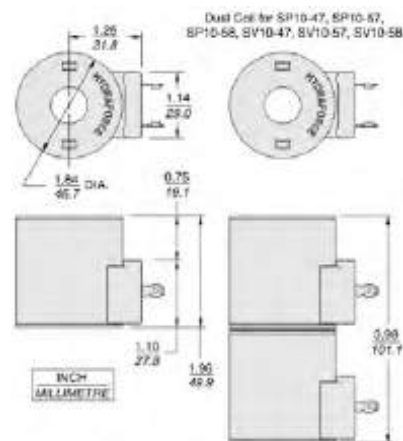
(also for use on 12, 16, 20, 38 & 58 size poppet valve and 90-size spool valves)



**ER**  
IP69K Rated 10-Size Coil  
Thermal Shock Dunk Test Rated Coil  
Deutsch DT04-2P Connector



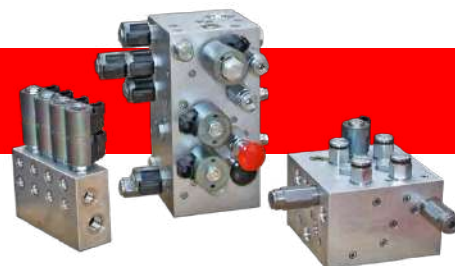
**EL**  
IP69K Rated 10-Size Coil — Thermal Shock Dunk Test Rated Coil



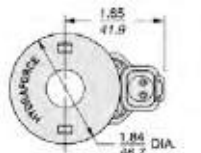
**EG**  
IP65 Rated 10-Size Coil; DIN 43650 Connector

| ER Coil Part No. | EL Coil 18" Wire Part No. | EG Coil Part No. | Operating Voltage | Resistance at 20°C | Initial Current Draw | Power      | Coil Weight |
|------------------|---------------------------|------------------|-------------------|--------------------|----------------------|------------|-------------|
| 4303712          | 4305712                   | 4305882          | 12 VDC            | 7.1 ohms           | 1.7 amps             | 20.5 watts | 408g        |
| 4303724          | 4305724                   | 4305884          | 24 VDC            | 28.5 ohms          | 0.8 amps             | 18.2 watts | 408g        |

## Standard and Proportional Valve Coils

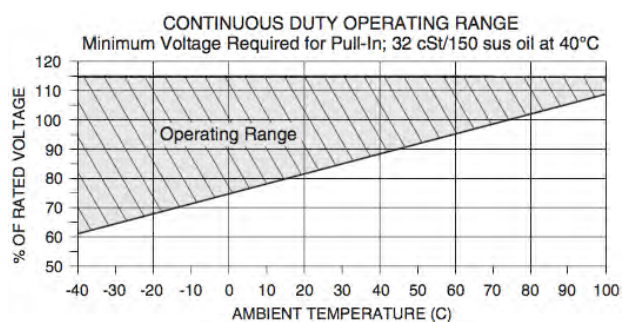


### 70-Size Series E Coils



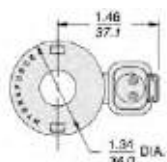
**ER**

IP69K Rated 70-Size Coil  
Thermal Shock Dunk Test Rated Coil  
Deutsch DT04-2P Connector



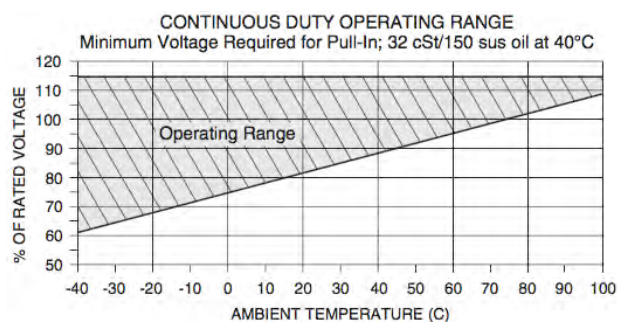
| ER Coil Part No. | Operating Voltage | Resistance at 20°C | Initial Current Draw | Power      | Coil Weight |
|------------------|-------------------|--------------------|----------------------|------------|-------------|
| 4303212          | 12 VDC            | 4.5 ohms           | 2.7 amps             | 32.8 watts | 408g        |
| 4303224          | 24 VDC            | 17.9 ohms          | 1.3 amps             | 30.3 watts | 408g        |

### EHPS-Size Series E Coils



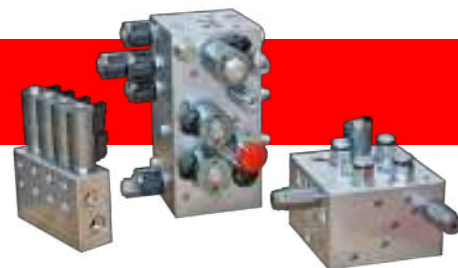
**ER**

IP69K Rated 08-Size Coil  
Thermal Shock Dunk Test Rated Coil  
Deutsch DT04-2P Connector  
Mating Connector: Deutsch No. DT08-25  
HP Part No. 4001417

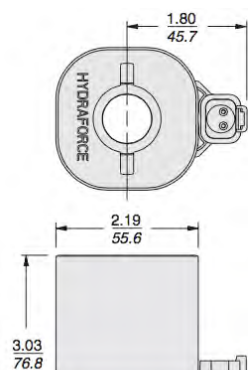


| ER Coil Part No. | Operating Voltage | Resistance at 20°C | Initial Current Draw | Power      | Coil Weight |
|------------------|-------------------|--------------------|----------------------|------------|-------------|
| 4304712          | 12 VDC            | 5.4 ohms           | 2.2 amps             | 26.1 watts | 136g        |
| 4304724          | 24 VDC            | 21.7 ohms          | 1.1 amps             | 26.3 watts | 136g        |

## Standard and Proportional Valve Coils



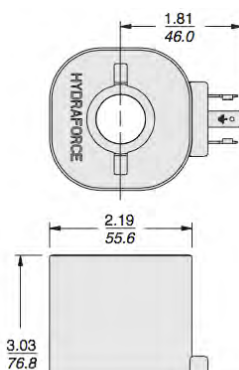
### 12-Size Series E Coils



Coil 12\_ER STP Files

**ER**

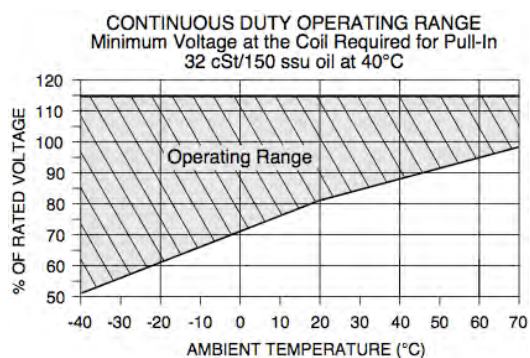
IP69K Rated 12-Size Coil  
Thermal Shock Dunk Test Rated  
Deutsch DT04-2P Connector



Coil 12\_EG STP Files

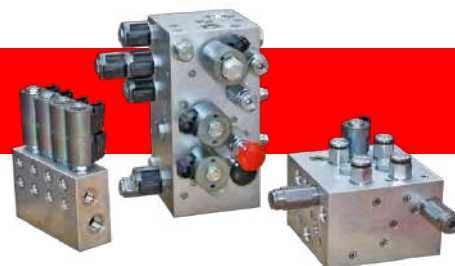
**EG**

IP65 Rated 12-Size Coil  
DIN 43650 Connector  
Can be IP67 rated if used with



| ER Coil Part No. | EG Coil Part No. | Operating Voltage | Resistance at 20°C | Initial Current Draw | Power      | Coil Weight |
|------------------|------------------|-------------------|--------------------|----------------------|------------|-------------|
| 4301212          | 6956012          | 12 VDC            | 4.6 ohms           | 2.6 amps             | 31.1 watts | 1 kg        |
| 4301224          | 6956024          | 24 VDC            | 18.3 ohms          | 1.3 amps             | 31.0 watts | 1 kg        |

## Standard and Proportional Valve Coils



### E Coil Pricing

| Part Number | Valve Coils             | Suffix | List      |
|-------------|-------------------------|--------|-----------|
| 4303612     | 08-Size Series E Coils  | ER     | \$ 69.00  |
| 4303624     | 08-Size Series E Coils  | ER     | \$ 69.00  |
| 4305112     | 08-Size Series E Coils  | EL     | \$ 57.00  |
| 4305124     | 08-Size Series E Coils  | EL     | \$ 57.00  |
| 4305862     | 08-Size Series E Coils  | EG     | \$ 69.00  |
| 4305864     | 08-Size Series E Coils  | EG     | \$ 69.00  |
| 4303712     | 10-Size Series E Coils  | ER     | \$ 75.00  |
| 4303724     | 10-Size Series E Coils  | ER     | \$ 75.00  |
| 4305712     | 10-Size Series E Coils  | EL     | \$ 65.00  |
| 4305724     | 10-Size Series E Coils  | EL     | \$ 65.00  |
| 4305882     | 10-Size Series E Coils  | EG     | \$ 75.00  |
| 4305884     | 10-Size Series E Coils  | EG     | \$ 75.00  |
| 4303212     | 70-Size Series E Coils  | ER     | \$ 75.00  |
| 4303224     | 70-Size Series E Coils  | ER     | \$ 75.00  |
| 4304712     | EHPS-Size Series E Coil | ER     | \$ 46.00  |
| 4304724     | EHPS-Size Series E Coil | ER     | \$ 46.00  |
| 4301212     | 12-Size Series E Coils  | ER     | \$ 138.00 |
| 4301224     | 12-Size Series E Coils  | ER     | \$ 138.00 |
| 6956012     | 12-Size Series E Coils  | EG     | \$ 138.00 |
| 6956024     | 12-Size Series E Coils  | EG     | \$ 138.00 |

## Standard and Proportional Valve Coils

### Coil Installation

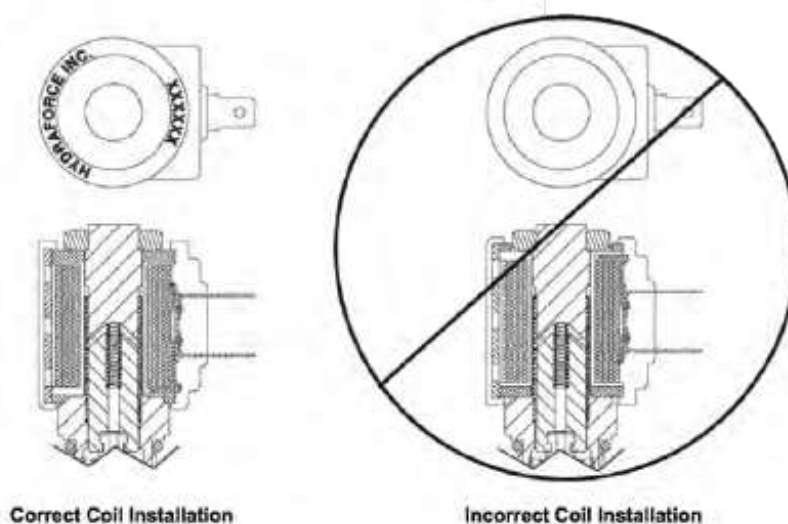


Figure 1: Source Hydraforce <http://www.hydraforce.com/Techref/Ref-pdf/9-020-1.pdf> 2015/07/22

### Torque Values

| Cartridge Installation Torque                                                                                                                 |         |             |                                                      |                               |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|------------------------------------------------------|-------------------------------|-----------------|
| Listed by valve size, then in alpha-numeric order by valve model number - refer to Catalog if your valve's torque setting is not listed here. |         |             |                                                      |                               |                 |
| General Guidelines                                                                                                                            |         |             | Special Torque Values for Specified Cartridge Valves |                               |                 |
| Valve Size                                                                                                                                    | Ft-lbs  | Nm          | Model                                                | Ft-lbs                        | Nm              |
| 04                                                                                                                                            | 12-14   | 16.3-19.0   | CP42-M4X                                             | 65-75                         | 88.4-102        |
| 04-BX                                                                                                                                         | 4-5     | 5.4-6.8     | CV50-20                                              | 24-26                         | 32.6-35.4       |
| 07, 08, 09                                                                                                                                    | 19-21   | 25.8-28.5   | EC08                                                 | 19-21                         | 25.8-28.5       |
| 58                                                                                                                                            | 24-26   | 32.5-35.3   | EC10-40                                              | 33-37                         | 44.7-50.2       |
| 10                                                                                                                                            | 24-26   | 32.5-35.3   | EC12-42, -43                                         | 73-77                         | 99-104.4        |
| 50                                                                                                                                            | 33-37   | 44.7-50.2   | EC16-32, -42, -43                                    | 98-101.7                      | 132.8-138.3     |
| 12                                                                                                                                            | 33-37   | 44.7-50.2   | EC42-M40, -M42, -M43                                 | 65-75                         | 88.4-102        |
| 52                                                                                                                                            | 46-54   | 62.4-73.2   | ED56-42, -43                                         | 98-102                        | 132.8-138.2     |
| 16                                                                                                                                            | 46-54   | 62.4-73.2   | EPFR50-S35                                           | 24-26                         | 32.6-35.4       |
| 56                                                                                                                                            | 33-37   | 44.7-50.2   | EPFR52-S35                                           | 33-37                         | 44.7-50.2       |
| 20                                                                                                                                            | 65-75   | 88.1-101.7  | EPFR58-35                                            | 19-20                         | 25.8-28.5       |
| 42M20                                                                                                                                         | 110-130 | 149.1-176.3 | EV58-34                                              | 19-21                         | 25.8-28.5       |
|                                                                                                                                               |         |             | FD50-44, -45                                         | 46-54                         | 63.4-73.2       |
|                                                                                                                                               |         |             | FD52-45                                              | 73-77                         | 99-104.4        |
|                                                                                                                                               |         |             | FD56-44, -45                                         | 98-102                        | 132.8-138.3     |
|                                                                                                                                               |         |             | FR16-20F                                             | 98-102                        | 132.8-138.3     |
|                                                                                                                                               |         |             | FR50-20F, -23, -28                                   | 33-37                         | 44.7-50.2       |
|                                                                                                                                               |         |             | HS50-42, -43                                         | 24-26                         | 32.5-35.4       |
|                                                                                                                                               |         |             | HS52-42, -43                                         | 33-37                         | 44.7-50.2       |
|                                                                                                                                               |         |             | LS50-30                                              | 24-26                         | 32.6-35.4       |
|                                                                                                                                               |         |             | PE42-S67X                                            | 65-75                         | 88.4-102        |
|                                                                                                                                               |         |             | PR50-38                                              | 25-27                         | 33.9-36.6       |
|                                                                                                                                               |         |             | PRES50-30                                            | 50-55                         | 67.8-74.6       |
|                                                                                                                                               |         |             | PV42-M30                                             | 65-75                         | 88.4-102        |
|                                                                                                                                               |         |             | RVCV56-20                                            | 147-153                       | 199.3-207.4     |
|                                                                                                                                               |         |             | RVD50                                                | 47-53                         | 63.7-71.9       |
|                                                                                                                                               |         |             | GRVD50, RVD50-20                                     | 47-53                         | 63.7-71.9       |
|                                                                                                                                               |         |             | SF20-22, -23                                         | 65-75                         | 88.4-102        |
|                                                                                                                                               |         |             | SP08-57D (M)                                         | 25-30                         | 33.9-40.7       |
|                                                                                                                                               |         |             | SP10-20, -21, -24                                    | 33-37                         | 44.7-50.2       |
|                                                                                                                                               |         |             | SV12-24, -25, -31                                    | -33, -34, -40R, -41, -42, -60 | 52-60 70.7-81.3 |
|                                                                                                                                               |         |             | SV38-20, -26, -28                                    | -30, -31J, -38                | 19-21 25.8-28.5 |
|                                                                                                                                               |         |             | SV58-20, -21, -21P, -25, -30, -40, -41               | 19-21                         | 25.8-28.5       |
|                                                                                                                                               |         |             | SV80-61                                              | 24-26                         | 32.6-35.4       |
|                                                                                                                                               |         |             | SV88-20                                              | 19-21                         | 25.8-28.5       |
|                                                                                                                                               |         |             | SVCL10-30, -32                                       | 33-37                         | 44.7-50.2       |
|                                                                                                                                               |         |             | TS38-20, -21                                         | 19-21                         | 25.8-28.5       |
|                                                                                                                                               |         |             | TS80-30                                              | 24-25                         | 32.6-33.9       |
|                                                                                                                                               |         |             | TS90-31                                              | 24-25                         | 32.6-33.9       |
|                                                                                                                                               |         |             | TS98-30, 31                                          | 24-25                         | 32.6-33.9       |

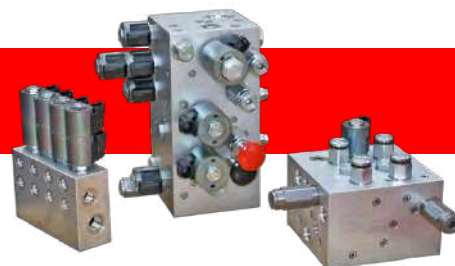
| Drop-In Valves - Mounting Screw Torque |                |                            |
|----------------------------------------|----------------|----------------------------|
| Model Code                             | Screw Part No. | Torque                     |
| SV98-T39, T40                          | 4000039        | 2.2-3 ft. lb./ 3-4 Nm      |
| TS98-T34                               |                |                            |
| EHPR98-T33, T35, T38                   | 4001015        | 0.9-1.1 ft.lb./ 1.2-1.5 Nm |

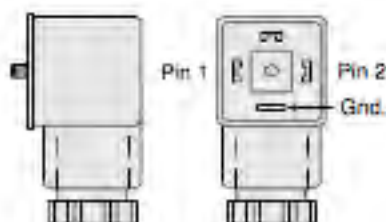
| Adjustment Option A, B, C, L Style Nut/Cap Torque   |                                                     |                        |
|-----------------------------------------------------|-----------------------------------------------------|------------------------|
| Model Code                                          | Nut/Cap Part No.                                    | Torque                 |
| CR, FC, FR, FRRV, KS, NV, PR, PS, RV, RVCV, RVD, UP | 7004400<br>7006700<br>7006750<br>7046100<br>7054670 | 5-7 ft. lb./6.8-9.5 Nm |

Figure 2: Source Hydraforce <http://www.hydraforce.com/Techref/Ref-pdf/9-020-1.pdf> 2015/07/22

## Standard and Proportional Valve Coils



### Hirschman Plug Wiring (DIN)



**DIN 43650**  
Cable Gland PG 9  
(7 mm nominal cable diameter)  
HF Part No. 6110002  
or Cable Gland PG 11  
(9 mm nominal cable diameter)  
HF Part No. 6110005

**Figure 3:** Source Hydraforce <http://www.hydraforce.com/electro/Elec-pdf/3-200-1.pdf> 2015/07/22

## Rules - Of - Thumb

- For every 1 kW of drive, the equivalent of 5 lpm @ 100 Bar can be produced
- To idle a pump when it is unloaded will require about 5% of its full rated power.

## Fluid Power Formulas

- For a pump/motor,  
 $\text{Torque (Nm)} = \text{Power (kW)} \times 9543 / \text{Speed (rpm)}$
- Force developed by a cylinder,  
 $\text{Force (N)} = \text{Bore Area (cm}^2\text{)} \times \text{Pressure (Bar)} \times 10$

## Conversions

- 1 U.S. gallon = 231 in<sup>3</sup> = 3.785 L
- 1 L = 0.2642 U.S. gallon = 61.0303 in<sup>3</sup>
- 1 in<sup>3</sup> = 16.387 cc
- 1 Imperial gallon = 1.2 U.S. gallon
- 1 Bar at sea level = 14.504 PSI
- 1 HP = 0.746 kW
- 1 Atmosphere = 1.013 Bar
- 1 km/h = 0.62 mph
- 1 m = 3.28 ft = 39.37 in
- 1 Nm = 0.7376 foot-lbs

## Some Common Fluid Power Symbols



Fixed Pump



Var. Displ. Pump



Fixed Motor



Prime Mover



3-Position,  
4-way valve



Relief Valve



Pressure  
Reducing Valve



Fixed orifice



Gauge



Accumulator



Cooler



Filter



Needle Valve



Flow Control



Check Valve



Cylinder



**Auckland | Taupo | Christchurch | Nelson | Melbourne | Brisbane**



Auckland



Christchurch



Melbourne



Brisbane

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