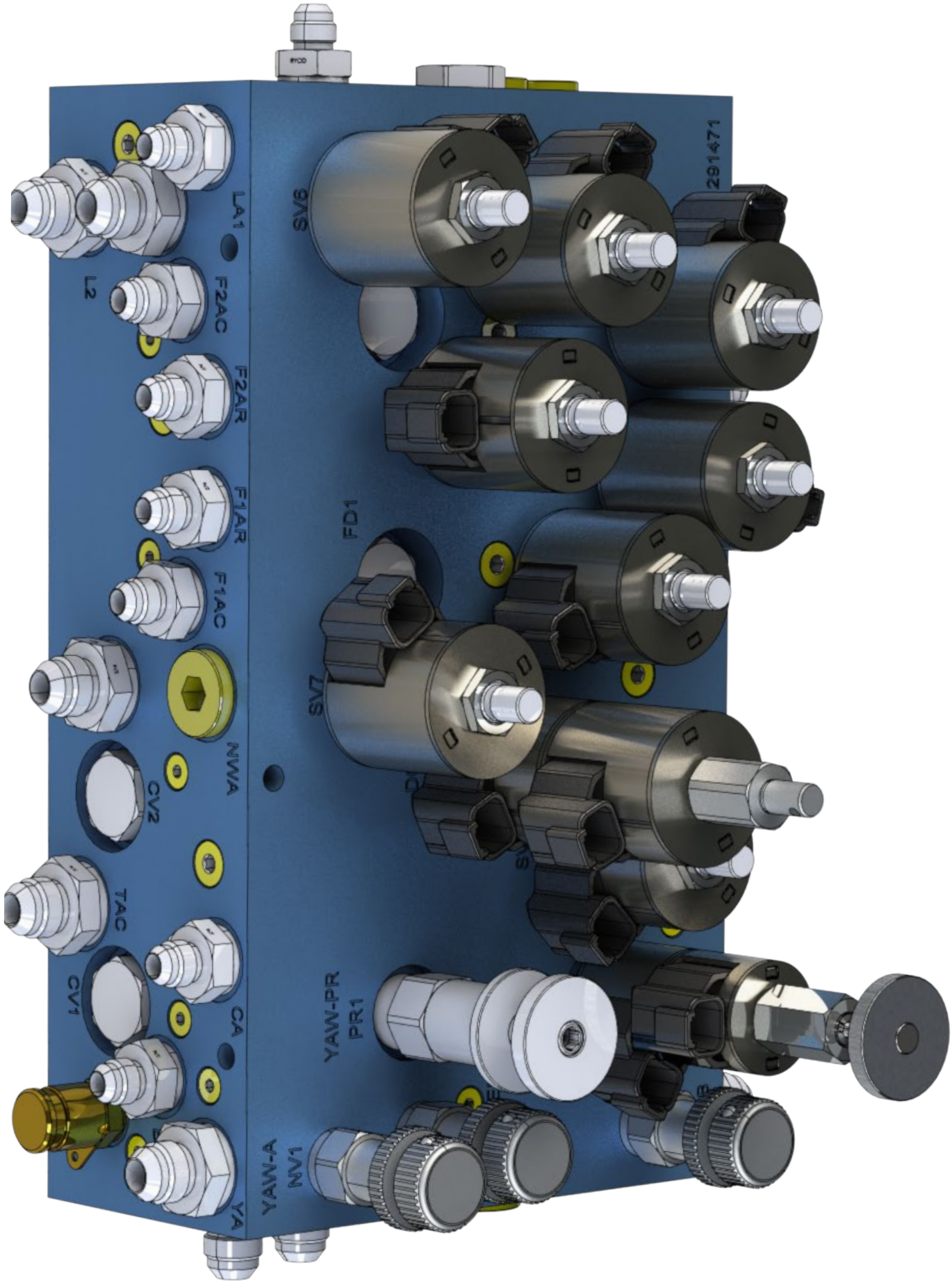
Product Catalogue and Price List

OILPATH
VALVE & MANIFOLD MANUFACTURING

Tell us your hydraulic valve problems and we'll help you find the solution!

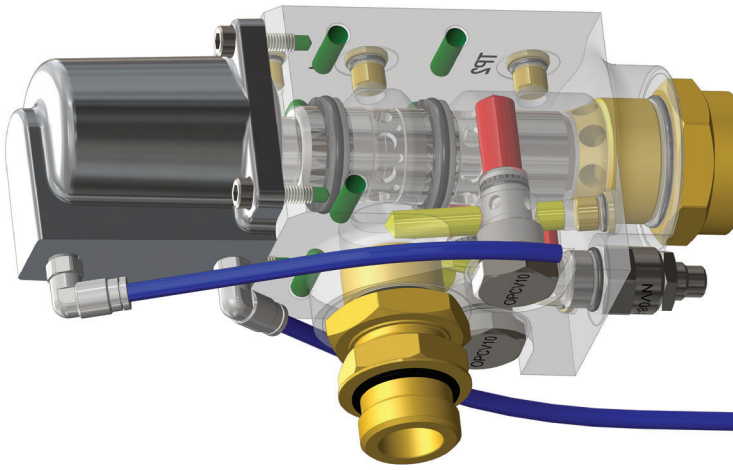
OILPATH
VALVE & MANIFOLD MANUFACTURING



ABOUT US

Oilpath have been manufacturing hydraulic valves since 1977, steadily developing our product range, now we are a specialist designer and manufacturer of standard and specialised hydraulic control valves, standard and custom manifolds, for the agricultural, industrial, mobile, mining OEM and the hydraulic reseller market in Australia and overseas.
Oilpath proudly are the only designer and manufacturer of hydraulic spool valves in Australia, this range includes our propriety range of OP cast iron monoblock and slice directional control valves, Cetop 3 valves and special purpose tipping valves

Oilpath is proud to be partners with HydraForce, we are the largest importer and stockist of their comprehensive range of high performance cartridge valves and electronic control systems.
Our Experienced Engineers are available to discuss your specifications to ensure efficient, economical and compact hydraulic valving.



Oilpath has successfully designed and commercialised a comprehensive range of hydraulic valving products for the transport, mobile, agricultural, mining and industrial markets,
now sold worldwide.

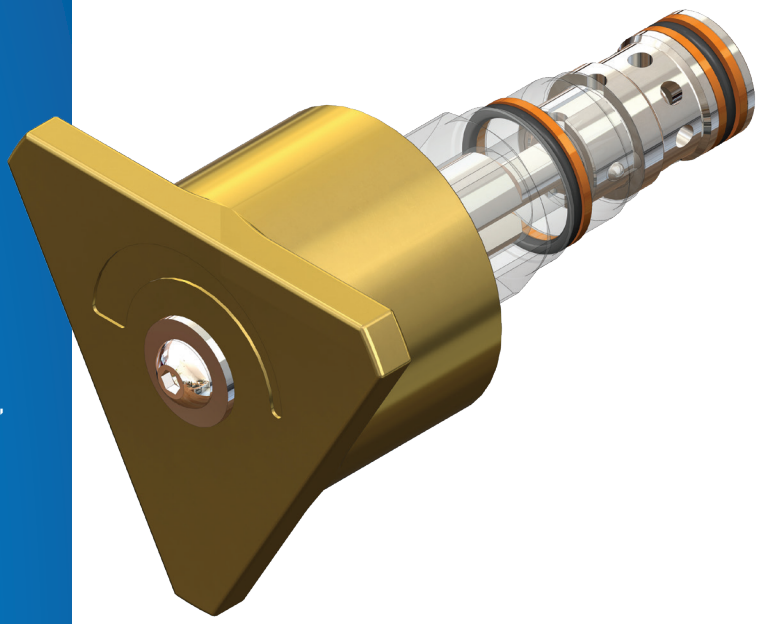
OILPATH
VALVE & MANIFOLD MANUFACTURING

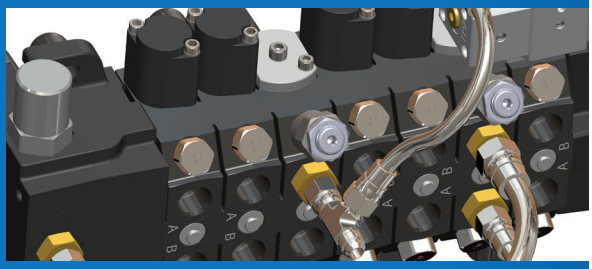
DESIGN & MANUFACTURING

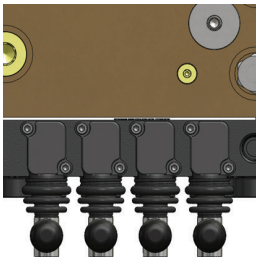
Engineering design is deep seeded in Oilpath's history and stems back to the 1970's when Oilpath's founder was pioneering hydraulic control valve manufacturing here in Australia, providing locally made equipment for a growing market.

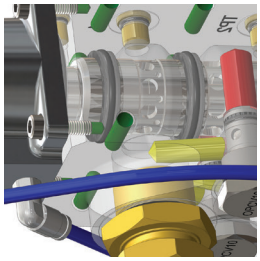
In more recent times Oilpath has successfully designed and commercialised a comprehensive range of hydraulic valving products for the transport, mobile, agricultural, mining and industrial markets, now sold worldwide.

If your project requires development of hydraulic valving solutions prior to volume production, Oilpath has a long history of involvement in working with Manufacturers to take "concept to commercialisation".









Oilpath has dedicated staff to liaise with your Engineers and Designers to work through the many issues that arise during the prototyping phase of new product introduction. With this background, proven track record and Design Resources at hand, Oilpath will work with you to bring your concept or complex hydraulic valving project to fruition

With a focus on quality, function and performance, at Oilpath we want to make it easy for you to make the most informed and best choice when it comes to your next hydraulic valving equipment purchase.

Oilpath will work with you to bring your concept or complex hydraulic valving project to fruition.

MINING

This mainstay of Australian industry has long been an integral component of Oilpath. From complex processing equipment custom manufactured hydraulics through to special hydraulic cartridge valve and mining vehicle hydraulic jacking pumps, Oilpath has valving manufacturing experience covering the diverse cross-section of this multibillion dollar market.

There is no industry demanding higher levels of service and reliability than Mining. Commitment to lead times is vital, with commissioning delays often running into significant costs for the customer. Oilpath's structured manufacturing systems and highly service driven culture combine perfectly to 'deliver the goods', whether it be individual components through to complex manufactured Hydraulic Manifolds.

INDUSTRIAL

Oilpath also has a global industry partner; HydraForce Inc. HydraForce offers one of the most comprehensive lines of high quality hydraulic cartridge valves for the mobile and industrial equipment markets. They design high performance valves and electronic control systems to meet virtually any need encountered in machine design. Oilpath utilise HydraForce Cartridge Valves and Electronic control systems in all market sectors. Oilpath valving solutions are utilised in a wide range of industrial applications such as Elevating Work Platforms, Winches and Skid Loaders.

AGRICULTURE

Oilpath Hydraulic Control Valves have been the Agricultural Industry benchmark since the 1970's The OP20 valve has been utilised on a wide range of equipment from Wool Presses, Post Hole Drivers and Front End Loading attachments and is now the only Australian owned and manufactured Hydraulic Control Valve in the market. Oilpath are a market leader in the design and manufacturing of Hydraulic Control Manifolds for the state of the art agricultural equipment. Oilpath Manifolds are utilised on a wide range of machinery such as Air Seeders, Sugar Cane Harvesters and Tillage equipment.

RAIL, TRANSPORT & MOBILE

The diversity of Oilpath's manufacturing capabilities combined with industry specific experience provides a powerful and competitive resource for Transport and Mobile industry manufacturers. Long associations with industry icons is testimony to Oilpath's ability to deliver to the demanding criteria of major and complex Hydraulic Valving projects. Whether your requirements include complex castings, machined engineering plastics or manufactured assemblies, ask one of our specialist sales people to call in and discuss your current or upcoming requirements.

OILPATH
VALVE & MANIFOLD MANUFACTURING

2019 Price List

www.oilpathhydraulics.com.au

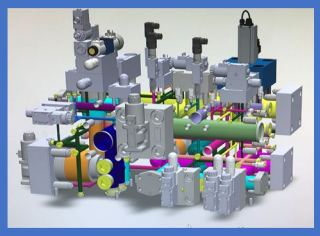
OILPATH
VALVE & MANIFOLD MANUFACTURING

THE AUSTRALIAN DESIGNER & MANUFACTURER OF DIRECTIONAL CONTROL VALVES & CUSTOM MANIFOLDS

2019 PRICE LIST

OILPATH
VALVE & MANIFOLD MANUFACTURING

Directional Control Valves, Design & Manufacture of Custom and Standard Hydraulic Manifolds & Valve Packages



HYDRAFORCE
POWER FORWARD

Australian Partners for HydraForce Cartridge Valves and Control Equipment

VALVOLE ITALIA

Counterbalance Cartridges and Parts-in Body Counterbalance Solutions

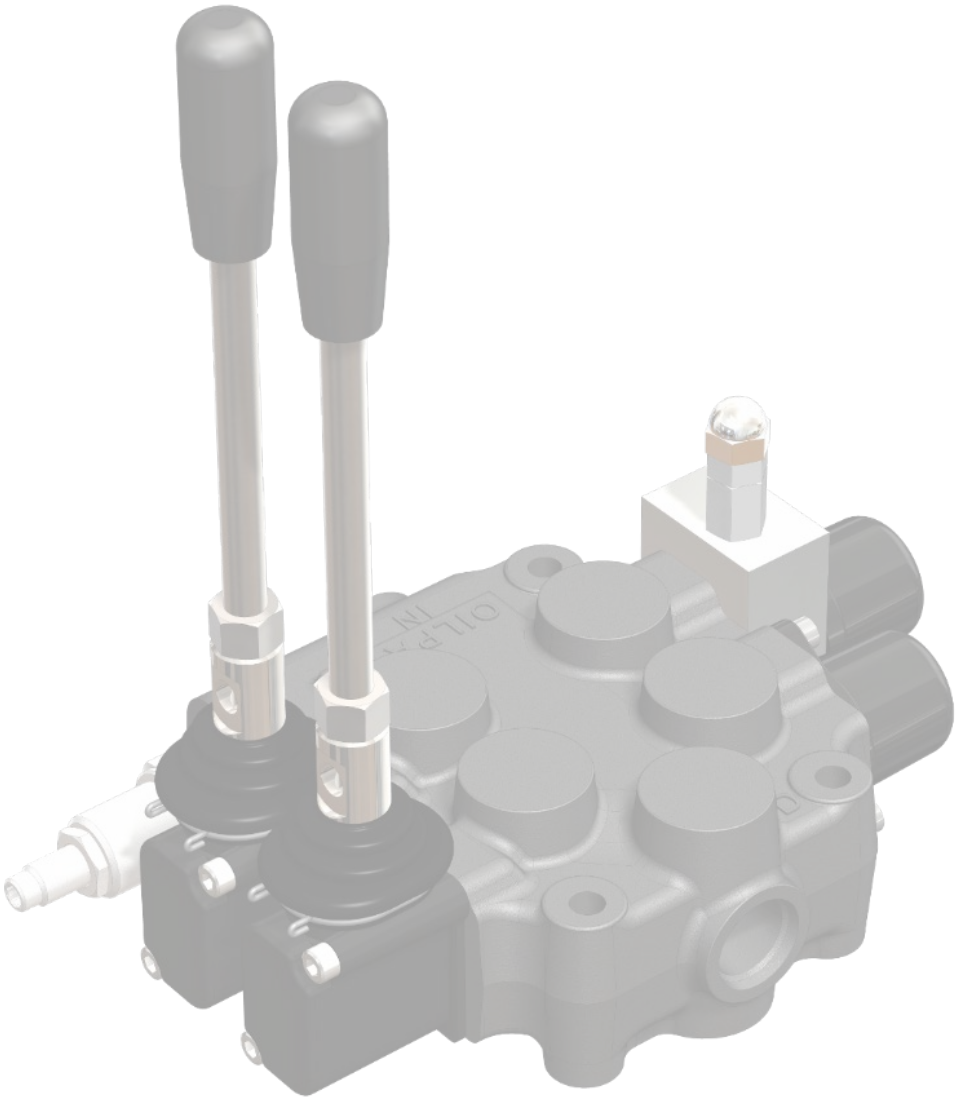
GENUINE OILPATH
When it's Oilpath, it works!

Mazak Machine Tools

Phone: 08 82774933 sales@oilpathhydraulics.com.au

Various Oilpath products are protected by Australian Registered Designs and International Patents

OILPATH
VALVE & MANIFOLD MANUFACTURING



sales@oilpathhydraulics.com.au
Phone 08 82774933

Disclaimer

"Oilpath is not responsible for any errors or omissions, or for the results obtained from the use of the information in this price list. All information in this document is provided "as is", with no guarantee of completeness, accuracy, timeliness or of the results obtained from the use of this information..."

The OP11 Directional Valve Series provides a compact range of manually operated directional valves for low flow applications. Because of the physical size of OP11 valves are ideally suited for mounting on small machines where most other valves would be 'out of place'. Like all Oilpath DCV's the handle assembly is fully enclosed to reduce the likelihood of corrosion affecting the handle mechanism. The handle bracket and spring end cover are made from glass filled nylon that has better impact and wear properties than aluminium. Each valve is supplied with a 3/8" bspt plug that can be easily inserted into a pre-tapped gallery to create Power Beyond (H.P.C.) and closed centre facility.

OVERALL SPECIFICATIONS

- Number of Spools.....1 to 4
- Maximum working pressure.....345 bar (5000 psi)
- Rated flow.....45 ltrs/min (10 Imp. gpm)
- MATERIAL SPECIFICATIONS Body.....High tensile strength Australian cast iron
  Spools.....Hardened steel
- Seals.....Buna - N

STANDARD FEATURES

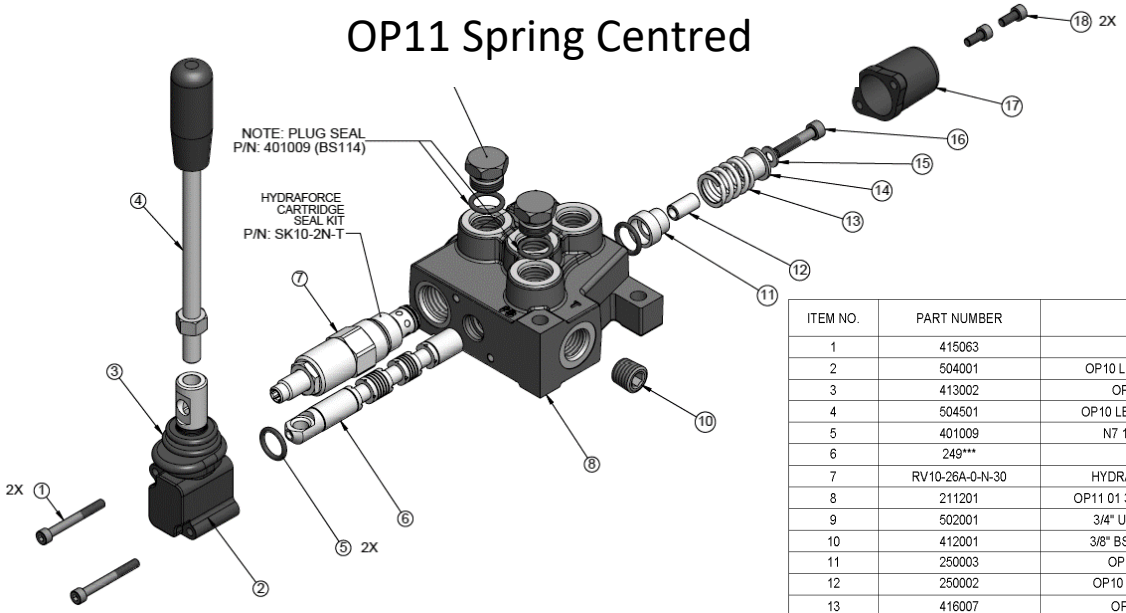
- Parallel circuit
- Integral HydraForce direct acting relief valve, adjustable [Set at 175 bar (5000 psi)]
- Optional side/top inlet and outlet ports
- 3/4" UN O-Ring inlet, outlet and work ports
- Open or closed centre positions, 3-way or 4-way operation, motor spool and other spool options
- Hardened steel non-return check

OPTIONS

- Micro switch actuation on spool shift
- 2 and 3 position detent & spring centred detent
- Pneumatic spool actuation
- Closed circuit & power beyond
- Electric limit switch

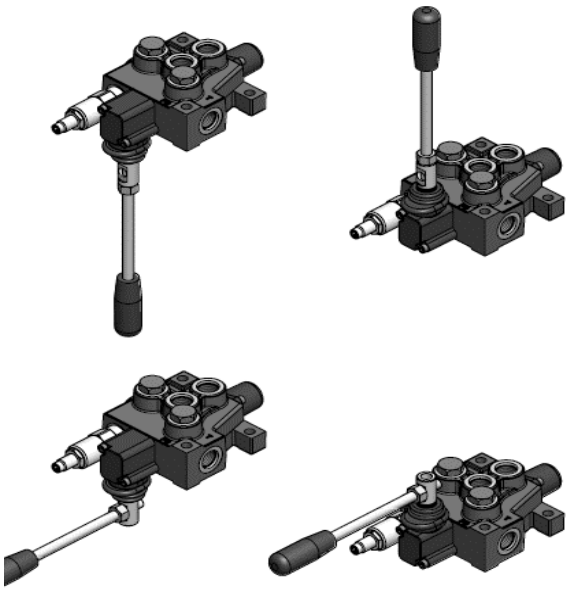
Note 4 spool valves remain as OP10 designation

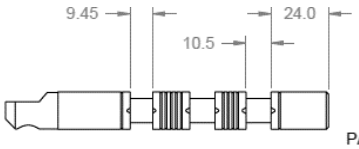
OP11 Spring Centred



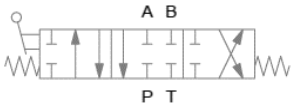
ITEM NO.	PART NUMBER	DESCRIPTION	SPRG CNTRD/QTY
1	415063	M5 x 45 SHCS	2
2	504001	OP10 LEVER BOX ASSEMBLY	1
3	413002	OP10 Lever Box Boot	1
4	504501	OP10 LEVER STEM ASSEMBLY	1
5	401009	N7 114 NITRILE O RING	2
6	249***	OP10 * Spool	1
7	RV10-26A-0-N-30	HYDRAFORCE CARTRIDGE	1
8	211201	OP11 01 3/4" UNF FIN. MACHINED	1
9	502001	3/4" UNF PLUG ASSEMBLY	2
10	412001	3/8" BSPT PRESSURE PLUG	1
11	250003	OP10 Long Spring Cup	1
12	250002	OP10 Spring Centering Bush	1
13	416007	OP S/C SPRING STD	1
14	250001	OP10 Short Spring Cup	1
15	418008	1/4" x 1/2" ZP Washer	1
16	415004	M6 x 30 SHCS	1
17	340001	OP10 Spring Cap	1
18	415005	M5 x 12 SHCS	2

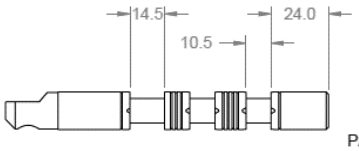
NOTE: ALTERNATE HANDLE ORIENTATION FOR OP11 VALVE



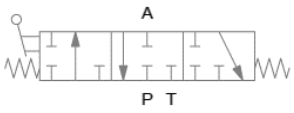


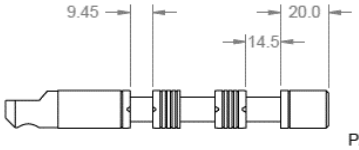
D Spool
PART NO: 249002



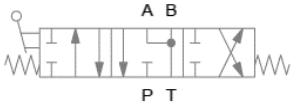


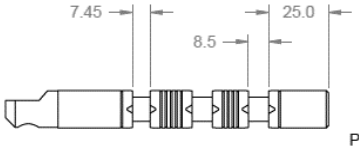
S Spool
PART NO: 249003



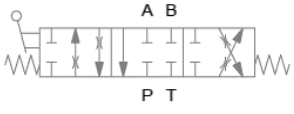


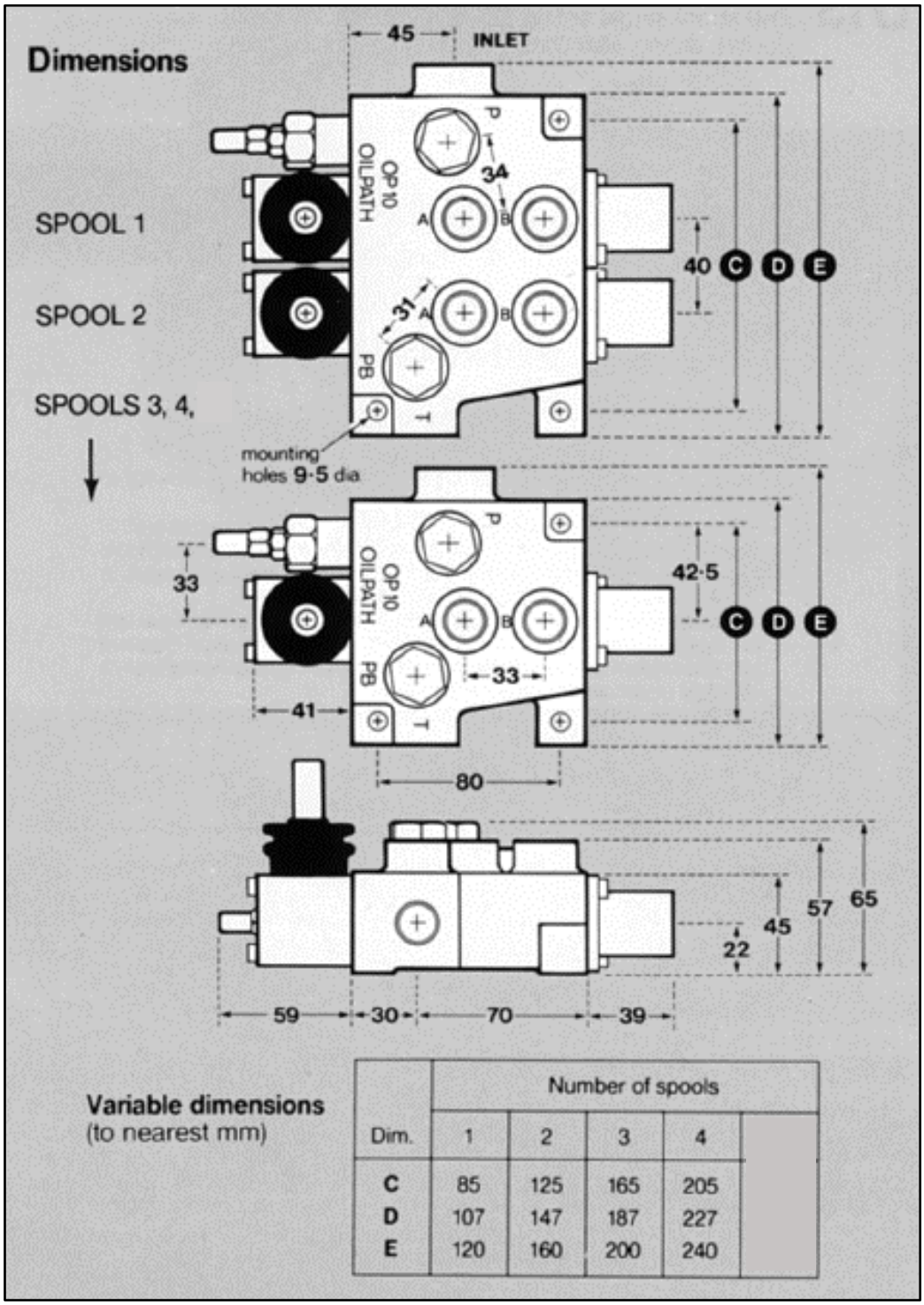
M Spool
PART NO: 249004





Q Spool
PART NO: 249017





Variable dimensions
(to nearest mm)

Dim.	Number of spools			
	1	2	3	4
C	85	125	165	205
D	107	147	187	227
E	120	160	200	240

ORDERING INFORMATION

OP11 (OP10) valves can be ordered by quoting a number/letter group sequence as follows:
Valve series; Spool configuration; Relief setting; Options required

Valve Model
OP11
OP10 (4 spool only)

Spool Types	
D	Double Acting
Q	Double Acting low flow version
S	Single Acting
M	Motor Spool

Relief Setting
Specify Relief Valve Pressure Setting 100 - 5000 psi HydraForce Relief Valves on OP11
No Setting required with NR option
400 - 5000 psi Oilpath Relief valves on OP10-4

Options	
PB	High pressure carry over. Plug supplied in package as standard
CC	Closed Centre
NR	Relief valve not required
SCDA	Spring centred dented to port A
SCDB	Spring centred dented to port B
A	Air Control (OP118) supplied only with manual override
D	Three position detent
E	Electric limit switch followed by numeral indicating spools

OP11	D	2000	PB	Single Double acting spool 2000psi relief high pressure carry over
OP11	DS	2500	D2	Double 1st spool double acting spring centred 2nd spool single acting detented
OP11	DDD	1500	D1A23	Triple all double acting spools 1500 psi relief detent on 1st spool pneumatically operated 2nd & 3rd spools
OP10	DDDM	3500	SCDB23	OP10 four spool with double acting spools on 1,2,3, motor spool on 4 3500 psi relief spring centred to B on 2nd & 3rd spool

OP10 & OP11 Directional Control Valve Pricing

Part Number	Description	List Price for Base Valve	Standard Double Acting (no options)
0111xxxx	Single Spool Valve	334	290
0112xxxx	Two Spool Valve	513	446
0113xxxx	Three Spool Valve	681	592
0104xxxx	Four Spool Valve	840	730

OP10 & OP11 Options Pricing (on new builds)

OPTIONS for OP11/10	Part Number	Description	List Price
D1	507020	Detent per spool, (three pos.) factory fitted # indicates pos.	39
CC	511048	OP10 Pressure Relief Blanking Plug kit, for closed centre	39
	511014	OP11 Pressure Relief Blanking Plug kit, for closed centre	48
E1	503003	Electric Limit Switch for single spool valve, factory fitted Note: Micro switch is not included in price	113
E12	503004	Electric Limit Switch for double spool valve, factory fitted Note: Micro switch is not included in price	209
E123	503005	Electric Limit Switch for triple spool valve, factory fitted Note: Micro switch is not included in price	289
E1234	503006	Electric Limit Switch for four spool valve, factory fitted Note: Micro switch is not included in price	377
	503010	Micro Switch for above kits, (one per valve) standard micro switch. This switch has a weather-proof rating to IP67	84
13A	248013	Optional micro switch sleeve for S/A spools with code E, kit only (add on spool)	20
Q		Optional D/A spool with metering for low flow DC power units	POA
SCDA	509018	Spring Centred Detent with det. acting on A port is pressurised	130
SCDB	509012	Spring Centred Detent with det. acting on B port is pressurised	130
S/O	509010	Spring offset to “B” (No centre position)	43
A1		OP118 Air Kit with handle control	234
MU		Valve prepared for a Marine environment	34

Note: 4 spool valves remain as OP10 designation with Oilpath integrated lift drop check and relief valve.

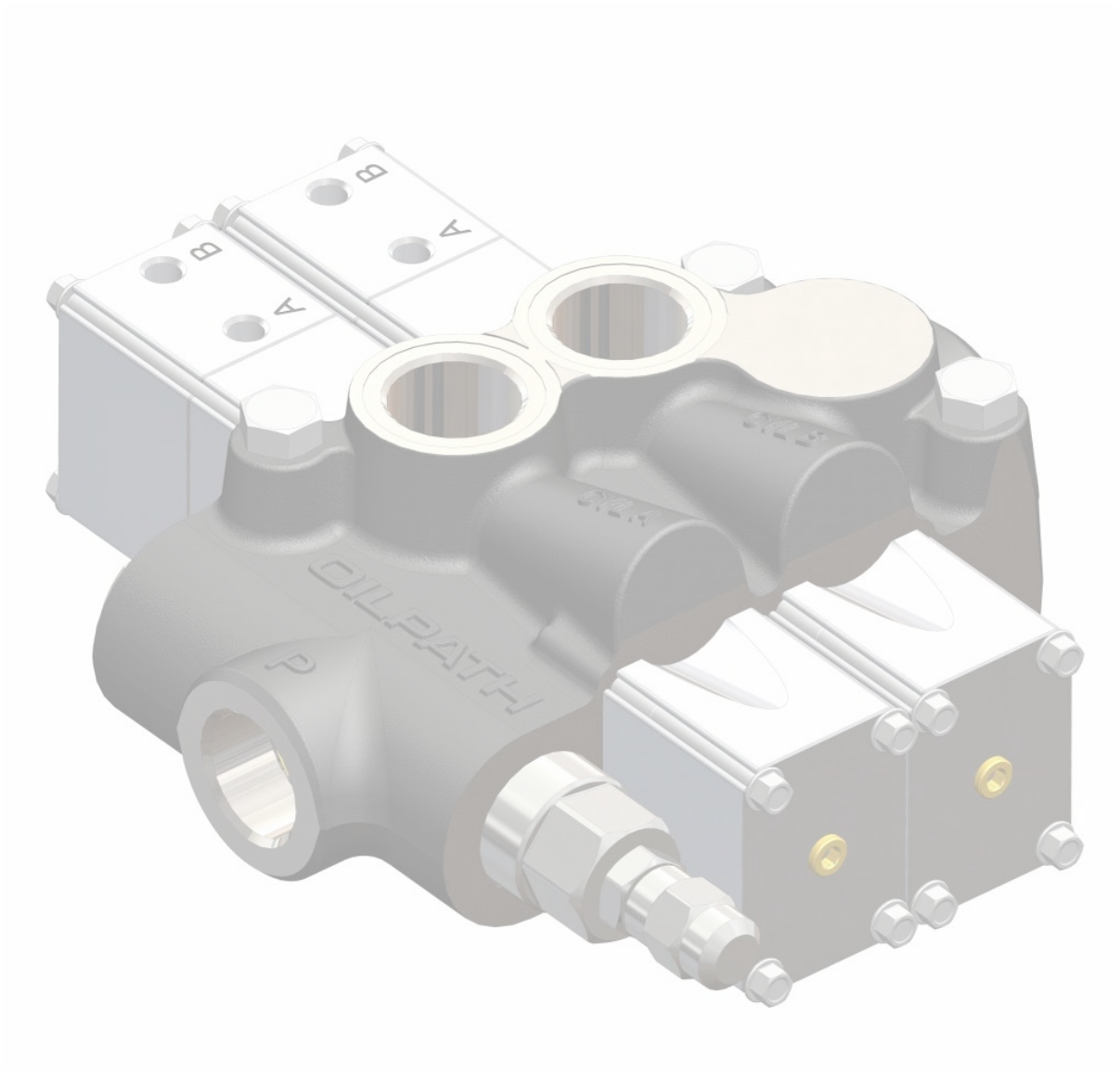
OP11 valves contain a separate lift drop check and a HydraForce Pressure Relief Valve

sales@oilpathhydraulics.com.au
Phone 08 82774933

OP10/11 SPARES

		List Price
RV50-26A-0-P-50	HydraForce Relief Valve up to 5000 psi	160
RV10-26A-0-N-30	HydraForce Relief Valve up to 3000 psi	144
512011	Seal Kit Single Spool	28
512015	Seal Kit Double Spool	31
512043	Seal Kit Triple Spool	34
512017	Seal Kit Four Spool	37
511048	CC OP10 Pressure Relief Blanking Plug kit, for closed centre	43
511014	OP11 Pressure Relief Blanking Plug kit, for closed centre	54
509018	SCDA spring Centred Detent with det. acting on A port is pressurised	140
509012	SCDB Spring Centred Detent with det. acting on B port is pressurised	140
509001	Spring Centring Kit to suit all spools, without spring cap	38
507020	D1 Detent per spool, (three pos.) kit, or factory fitted # indicates pos.	42
506081	OP118 Air Kit for OP11	244
505016	Relief Valve complete cartridge including lift drop check	116
504504	Handle Lever Stainless Steel 10mm diameter	35
504503	Handle Lever complete with nut and rubber knob M8	31
504501	Handle Lever complete with nut and rubber knob	31
504027	Lever Box with shift leg & rubber boot but no handle	96
503010	Micro Switch, (one per valve) standard micro switch This switch has a weather-proof rating to IP67	92

503009	13A Optional micro switch sleeve for S/A spools with code E, kit only	130
503006	E1234 Electric Limit Switch for four spool valve kit Note: Micro switch is not included in price	406
503005	E123 Electric Limit Switch for triple spool valve kit	313
503004	E12 Electric Limit Switch for double spool valve kit	226
503003	E1 Electric Limit Switch for single spool valve, kit or factory fitted	130
416220	Rubber Boot Bottom Clips	4
416219	Rubber Boot Top Clips	4
416009	Relief Valve Main Spring Z (not required for HydraForce Cartridges)	24
416008	Relief Valve Main Spring X (not required for HydraForce Cartridges)	24
416005	Relief Valve Main Spring Y (not required for HydraForce Cartridges)	24
413002	Rubber Boot for lever box	11
340001	Spring Cap supplied without M5 cap screws	27
249017	Q Optional D/A spool with metering for low flow DC power units	POA
249004	Motor Spool with no spring centring mechanism	116
249003	Single Acting Spool with no spring centring mechanism	116
249002	Double Acting Spool with no spring centring mechanism	116
	With spring centring mechanism ADD	38 (not required for HydraForce Cartridges)



sales@oilpathhydraulics.com.au
Phone 08 82774933

The OP20 Directional Valve Series provides an 80-118 lpm range of manually operated directional valves. The physical size of OP20 valves is ideally suited for mounting on small and large machines and has a higher flow range than other valves of this size. Like all Oilpath DCV's the handle assembly is fully enclosed to reduce the likelihood of corrosion affecting the handle mechanism. The handle bracket and spring end cover are made from glass filled nylon that has better impact and wear properties than aluminium. The OP20 has individual lift drop checks in the end of each spool giving the valve a unique feature in having a checks to maintain lift individually for all appropriate valve functions. (e.g. a 5 spool double acting valve has 10 lift drop checks). Closed centre and power beyond are also available with the use of plugs.

OVERALL SPECIFICATIONS

- Number of Spools.....1 to 5
- Maximum working pressure.....280 bar (4000 psi)
- Rated flow.....118 ltrs/min (25 gpm)
- MATERIAL SPECIFICATIONS Body.....High tensile strength Australian cast iron
- Spools.....Hardened steel
- Seals.....Buna - N

STANDARD FEATURES

- Series Parallel circuit
- Integral HydraForce direct acting relief valve, adjustable [Set at 175 bar (4000 psi)]
- Optional side/top outlet ports
- 7/8"un O-ring inlet, outlet & work ports (options include ¾ bspp, ¾ bspt & 1-1/16" un)
- Open or closed centre positions, 3-way or 4-way operation, motor spool and other spool options
- Individual steel ball non-return checks located in spools

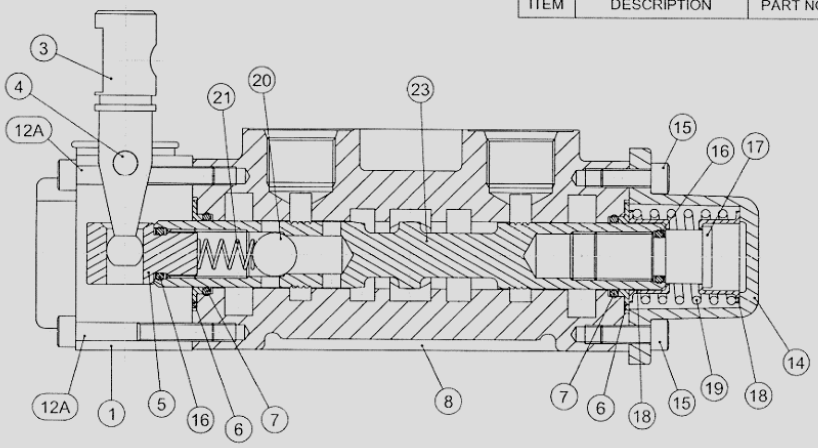
OPTIONS

- Micro switch actuation on spool shift
- 2 and 3 position detent & spring centred detent
- Pneumatic spool actuation
- Electric over air
- Closed circuit & power beyond
- Cable control

sales@oilpathhydraulics.com.au
Phone 08 82774933

ITEM	DESCRIPTION	PART NO
25	OP20 L SPOOL	249010
24	OP20 M SPOOL	249008
23	OP20 S SPOOL	249007
22	OP20 D SPOOL	249006
21	S/C SPRING STRONG	416036
20	9/16" STEEL BALL	417002

ITEM	DESCRIPTION	PART NO
19	SPRING CENTRE	416013
18	SPRING CAP	248017
17	SPRING STUD	248002
16	O RING BS112	401007
15	M6 x 16 SHCS	415016
14	SPRING CAP	340004
13	DETENT SLEEVE	246004
12A	M6 x 45 SHCS	415011
12	SPRING DETENT	416004
11	Ø1/4" STEEL BALL	417005
10	PISTON DETENT	238005
9	O RING WASHER	251002
8	VALVE BODY OP20	212005
7	O RING BS118	401012
6	STEP WASHER	251001
5	SPOOL EYE	248003
4	PIVOT PIN	236008
3	SHIFT LEG	232002
2	RUBBER BOOT	413001
1	LEVER BOX	230005

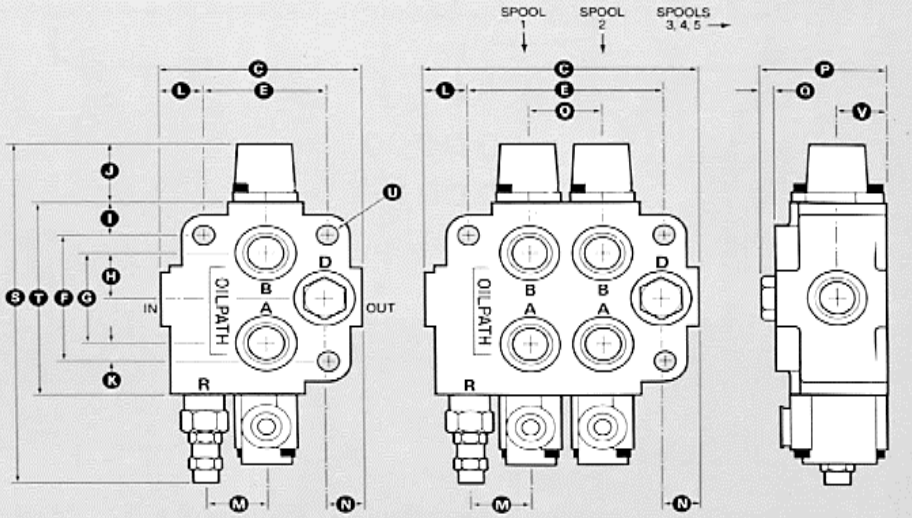


Dimensions (to nearest mm)					
	Number of spools				
Dim.	1	2	3	4	5
C	129	177	225	273	321
E	79	127	175	223	271
F	89				
G	67				
H	34				
I	27				
J	43				
K	11				
L	27				
M	39				
N	23				
O	48				
P	74				
Q	7				
S	252 (acorn nut closed)				
T	143				
U	Mounting hole 10.3 dia.				
V	33				

C, E; variable dimensions
F - V; fixed dimensions

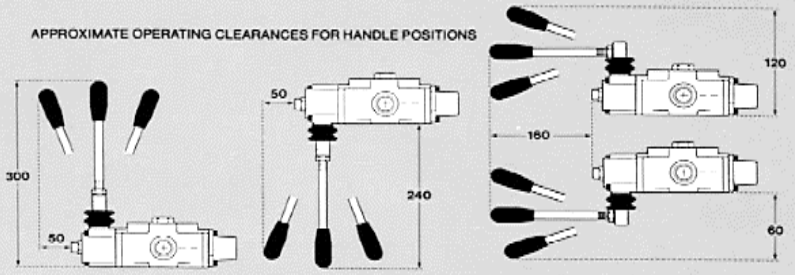
Specifications given in this brochure are correct at time of publication. The manufacturer reserves the right to change specifications without notice.

DESIGNED & MANUFACTURED IN AUSTRALIA



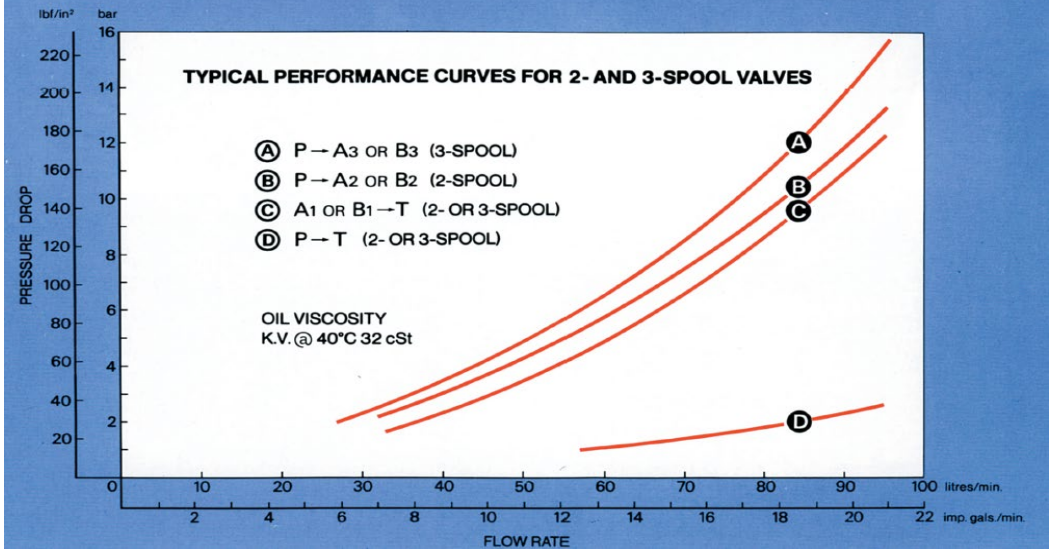
Notes:
1. When spool travels into body, port A becomes action. When spool is extended out from neutral, port B is action. This applies to all configurations.
2. Port D is alternate outlet. When high pressure carry over is fitted, port D is connected to tank unrestricted.

APPROXIMATE OPERATING CLEARANCES FOR HANDLE POSITIONS

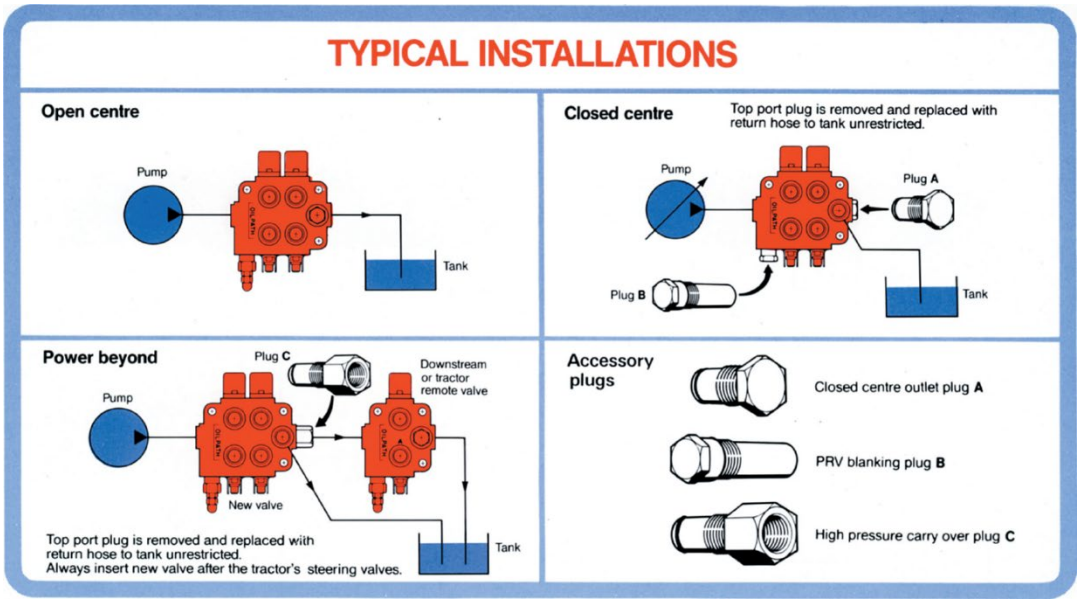


SPECIFICATIONS

All valve bodies precision honed to the spools fitted	Relief valve adjustment range 4.14 MPa—20.68 MPa (600 psi—3000 psi)
High quality close grain castings	Outlet port 1 1/16 in. UNF 12 TPI 'O' ring. Remaining ports 7/8 in. UNF 14 TPI 'O' ring. **Note:** When high pressure carry over cap is fitted for power beyond, outlet port becomes 7/8 in. UNF 14 TPI 'O' ring.
Series parallel circuit	
Maximum working pressure 20.68 MPa (3000 psi)	



Note: For pressure drop figures for individual Valves, please visit www.oilpathhydraulics.com.au



sales@oilpathhydraulics.com.au
Phone 08 82774933

Spool Type	
D	Double Acting
S	Single Acting
M	Motor Control
K	Flow Control not pressure compensated in multi spool vales only
L	Double Acting Spool with no load checks
P	Pressure Compensated Flow Control in multi spool vales only
Please Note: Maximum tank pressure is 250 psi on OP20 valves	

Relief Setting
Specify pressure within a range of 600-4000 psi

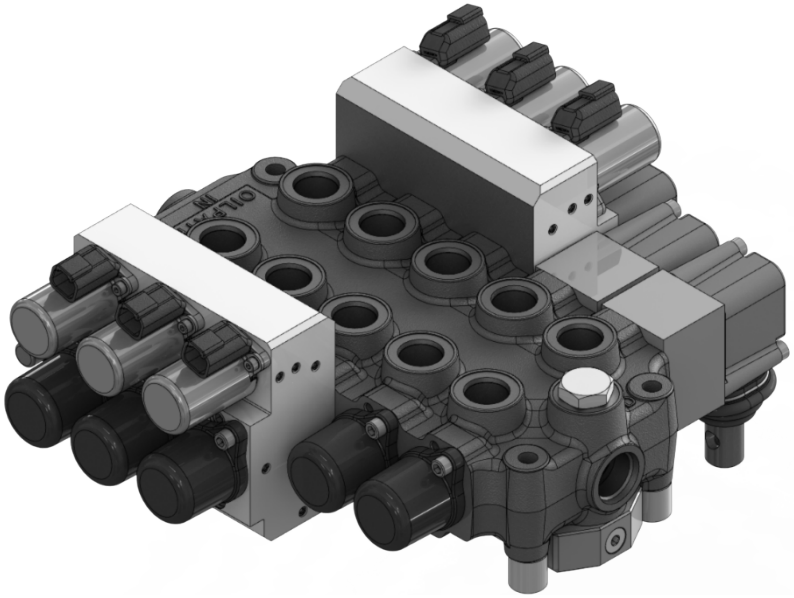
Options			
PB	High Pressure carry over	D	Three Position Detent
CC	Closed Centre	W	Air Control OP106
NR	No Relief	BF	Bottom face Outlet
SCDA	Spring centred detent to "A"	SCDB	Spring centred detent to "B"
H	Handle on auxiliary control e.g. W1H1	HI FLOW	Hi Flow, increasing flow to120 l/min with 3/4"bspp or 1-1/16" un 3/4"bspt, R2 relief
OP106S	Electric over air solenoid control state voltage required e.g. OP106S24V	MU	special plating and hardware for mine or marine use
RESTA	Restricted detent to "A" port	RESTB	Restricted detent to "B" port

OP20D	2000	PB	Single Double acting spool 2000psi relief high pressure carry over
OP20DDS	2500	W123H123	Triple 1st & 2nd spool double acting 3rd spool single acting 2500 psi relief with air and handle operation on all spools
OP20DSSS	1500	SCDB1	Four spool valve 1st spool double acting spools 2nd 3rd &4th spools single acting 1500 psi relief with spring centred detent to “B” detent on 1st spool
OP20DDDDM	3500	SCDB23	Five spool with double acting spools on 1,2,3, & 4 and motor spool on 5th spool 3500 psi relief spring with 24volt solenoid unloading relief valve

`

sales@oilpathhydraulics.com.au
Phone 08 82774933

Proportional Electrical / Hydraulic Spool Actuation for OP20 Control Valves



OP20 configured with 3 solenoid actuated spools with manual override and 2 manually operated spools (in the upside-down configuration). Typically utilised in Tilt Tray applications

The OP20, Australia's benchmark 80 lpm directional control valve is now available with on/off – proportional control powered by World Class HydraForce 12 or 24 volt drop in cartridges.

FEATURES:

- On / Off plus Proportional capability
- Low Current draw:
  - 12-volt 1.3 amp Maximum
  - 24-volt 0.65 amp Maximum
- Coils have a 100% duty cycle @ + or – 15% of specified voltage
- Ambient Air temperature -40° C to 80° C
- Operating temperature -40° C to 149° C
- High Pressure Waterproof coils IP69K

OPTIONS:

- 12-volt or 24-volt coils
- 2, 3,4,5 spool valve configurations
- Double acting, Single acting, and motor spools available
- Manual override on all spools.

PRICING

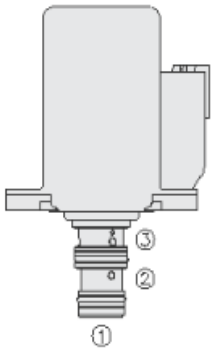
- Pricing upon application for each configuration *

sales@oilpathhydraulics.com.au
Phone 08 82774933

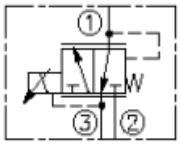
HydraForce cartridge utilised for actuating spool movement

EHPR98-T33 — Proportional, Reducing / Relieving, Drop-in

STP file for EHPR98-T33.
Request a quote.



SYMBOL:



DESCRIPTION

A drop-in, flange mount, direct-acting, hydraulic pressure reducing/relieving valve, which can be infinitely adjusted across a prescribed range using a variable electric input. Pressure output is proportional to DC current input. The E-coil is an integral part of the valve assembly, and cannot be replaced or field-serviced.

OPERATION

The **EHPR98-T33** allows free flow from 1 to 3 when no current is applied to the coil. When the coil is energized, 2 is connected to 1. Increasing current applied to the coil will increase the control (reduced) pressure proportionally. If pressure at 1 exceeds the setting induced by the coil, pressure from 1 is relieved to 3.
Note: Back pressure on port 3 becomes additive to the pressure setting at a 1:1 ratio.

FEATURES

12 or 24 VDC coils in Australia

- Economical drop-in style.
- Integral waterproof coil standard.
- Corrosion-resistant plating.
- Manual override and screen options.
- Several push-on termination options.

RATINGS

Max. Inlet Pressure: 241 bar (3500 psi)
Max. Tank Pressure at port 3: 34.5 bar (500 psi)
Max. Control Current: 1.38 amps for 10 VDC coil; 1.30 amps for 12 VDC coil; 0.69 amps for 20 VDC coil; 0.65 amps for 24 VDC coil
Control Pressure at Maximum Control Current: 30 bar (435 psi)
Resistance: 4.2 ohm (10V), 5.1 ohm (12V), 17.0 ohm (20V), 19.3 ohm (24V)
Inductance: 80 mH (12V)
Hysteresis: 4% with 100 Hz PWM
Rated Flow: 3.8 lpm (1.0 gpm)
Maximum Internal Leakage: De-energized: 200 ml/min (12 cu. in./min) @ 241 bar (3500 psi); Energized @ Imax: 400 ml/min (24 cu. in./min) @ 241 bar (3500 psi).
Step Response: T_{ON} <30 ms; T_{OFF} <12 ms
Temperature:-40° to 149°C (-40° to 300°F) with HNBR seals
-26° to 204°C (-15° to 400°F) with Fluorocarbon seals
-54° to 107°C (-65° to 225°F) with Polyurethane seals
Ambient Air Temperature: -40° to 80°C (-40° to 176°F)
Environmental Rating: IP69K
Filtration: See page 9.010.1
Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 7.4 to 420 cSt (50 to 2000 sus); See Temperature and Oil Viscosity, page 9.060.1
Installation: Flange Mount
Mounting Screws: M4 x 0.7 x 12 Long; Part No. 4001015 (not provided with valve)
Cavity: VC-T009; See page 9.111.1
Cavity Tool: CT-T009R0-x-G; See page 8.600.1
Seal Kit: SKEHPR98-T3x; See page 8.650.1

OP20 Directional Control Valve Pricing

Part Number	Description	List Price Base Valve	Standard Double Acting List Price (no options)
0201xxxx	Single Spool Valve	449	390
0202xxxx	Two Spool Valve	661	575
0203xxxx	Triple Spool Valve	891	775
0204xxxx	Four Spool Valve	1141	992
0205xxxx	Five Spool Valve	1408	1224

OP20 Options Pricing (on new builds)

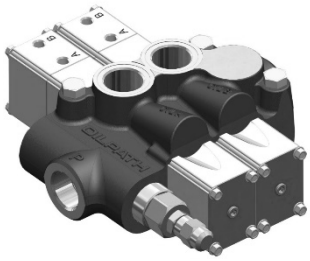
OPTIONS for OP20	Part Number	Description	List Price
P	-	Priority Flow Control Spool Factory fit only, lead time applies	346
K	-	Spool includes friction detent and can only be factory fitted	95
L	-	L Spool is D/A and has no load checks, used for high flows applications	37
D1	507007	Detent per spool, (3 position) factory fit, # indicates position	44
SCDB	509020	Spring Centred Detent with det. Acting on B port is pressurised	133
SCDA	509007	Spring Centred Detent with det. acting on A port is pressurised	133
PB	511003	High Pressure Carry over plug for power beyond “Hi-Cap”	25
PBH	511005	High Pressure Carry over plug 1- 1/16” UNF Hi - Flow	60
CC	511047	Closed Centre Plug (Plug A) part of kit for closed centre	24
NR	511002	Pressure Relief Plug (Plug B) part of kit for closed centre	23
LW	-	Pressure Relief Lock Wire (lead seal)	25
BF	-	Bottom Face Outlet available only as special build from factory	POA
S/O	-	Spring Offset P-B (No Centre Position)	31

MU	-	Mine Use per spool, factory build only, nylon end caps and plated spool	31
W1	506023	OP106 air shift	187
-	506028	OP106 Solenoid manifold kit (includes manifold, screws and 'O' rings. 12or 24 volt DC	95
	506027	OP106 Solenoid kit (includes manifold kit, and 2 off solenoid valves	410
-	506025	OP106 Solenoid Air kit (incl. OP106 kit, manifold, and 2 off solenoid valves 24 volt DC	575
-	506031	same as above for 12volt DC	575
H1	-	Used only in price build for new assembly requiring dual control, (e.g.) lever and air or lever and cable.	117
HI- FLOW	-	Special D/A or S/A spools with load checks for 25 gpm for Tippers and fitted into single or double spool valves with 3/4" bspt ports & R2 Relief per valve	44
-	-	If above spools are ordered with 1 1/16"un service ports, per spool and in a valve with R1 or R2 relief cavity.	44
FBC	-	Port relief cavity last spool - suit RV08-20A not including cartridge	74
Port Relief	RV08-20A-0-N-XX	Relief Valve	110
-	CP08-20-N	Plug VC08-2to suit above cavity (CP08-20N)	23
AS xx	SVRV10-26X	Relief and solenoid unloading adaptor, nominate voltage and pressure.	319

OP20 Spare Parts Pricing

Part Number	DESCRIPTION	LIST PRICE
MU for Spool	For Marine or mine use ADD on per spool (exchange for like)	28
513044	Motor Spool with spring centring mechanism	164
513037	L Spool with spring centring mechanism	164
513034	Double Acting Hi Flo Spool with spring centring mechanism	153
513029	Single Acting Hi-Flo Spool with spring centring mechanism	153
513028	Single Acting Spool with spring centring mechanism	153
513027	Double Acting Spool with spring centring mechanism	153
512055	OP106 Seal Kit all seals	37
512002	Seal Kit Single Spool all seals and metal step washers	38
512008	Seal Kit Double Spool all seals and metal step washers	50
512029	Seal Kit Triple Spool all seals and metal step washers	62
512004	Seal Kit Four Spool all seals and metal step washers	70
512005	Seal Kit Five Spool all seals and metal step washers	82
512021	OP105 Seal Kit all seals	POA
512019	OP104 Seal Kit all seals	POA
512016	OP103 Seal Kit all seals	11
512007	Proportional Air Seal Kit (old kit with stainless steel piston)	11
512003	Proportional Air Seal Kit (new kit with aluminium piston)	90
511047	CC Closed Centre Plug (Plug A) part of kit for closed centre	26
511005	PBH High Pressure Carry over plug 1- 1/16” UNF Hi - Flow	64
511003	PB High Pressure Carry over plug for power beyond “Hi-Cap”	27
511002	NR Pressure Relief Plug (Plug B) part of kit for closed centre	25
509020	SCDB Spring Centred Detent with det. Acting on B port is pressurised	143
509017	Spring Centring Kit to suit all spools, supplied without spring cap	50
509007	SCDA Spring Centred Detent with det. acting on A port is pressurised	143
507007	D1 Detent per spool, (3 position) kit,	46
506028	OP106 Solenoid manifold kit (includes manifold, screws & ‘O’ rings 12 v DC	102
506034	OP106 Solenoid manifold kit (includes manifold, screws & ‘O’ rings 24 v DC	102
506027	OP106 Solenoid kit (includes manifold kit, and 2 off solenoid valves 24 v DC	439

506025	OP106 Solenoid Air kit (incl. OP106 kit, manifold, and 2 off solenoid valves 24v)	617
506023	W1 OP106 air shift	201
505025	Relief Valve R2 cartridge set to 2000 psi	207
505020	Relief Valve R1 (standard) cartridge, set to 2000 psi	153
504502	Handle Lever complete with nut and rubber knob	31
504028	Lever Box with shift leg & rubber boot but no handle	135
504015	H, Kit B used when converting standard lever assembly valve to dual control, (e.g.) lever and air or lever and cable.	103
504014	H, Kit A used when fitting dual control, with air or cable already fitted.	166
504010	Handle Assembly Old Style not including handle lever	147
502019	Spool Eye New Style to suit lever box handle (current style)	29
413001	Rubber Boot for lever box	11
340004	Spring Cap supplied without M6 cap screws	31
249011	L Spool only	126
249008	Motor Spool only	134
249007	Single Acting Spool only	126
249006	Double Acting Spool only	126



**patents pending*

The OP22 pneumatically actuated hydraulic directional control valve is the benchmark in the tipping industry for efficiency, unlike other products utilised in this application the Oilpath OP22 is specifically designed as a tipping valve and has various patents protecting the design. The Oilpath engineers designed the galleries inside the valve casting to provide minimal pressure drop especially in the return to tank line which allows the most efficient hoist down times in the industry.

Note: Oilpath re-designed its high-performance differential area direct acting relief valve which now as well as providing minimal pressure drop and incredible stability (see charts) has a feature that makes it impossible to inadvertently over pressurize the system past 3,200 psi.

OVERALL SPECIFICATIONS

- Rated Flow……160 lpm.
- Maximum working pressure……220 bar (3200 psi)
- Working ports……1”bspp
- Tank Port……1 ¼”bspp

MATERIAL SPECIFICATIONS BODY

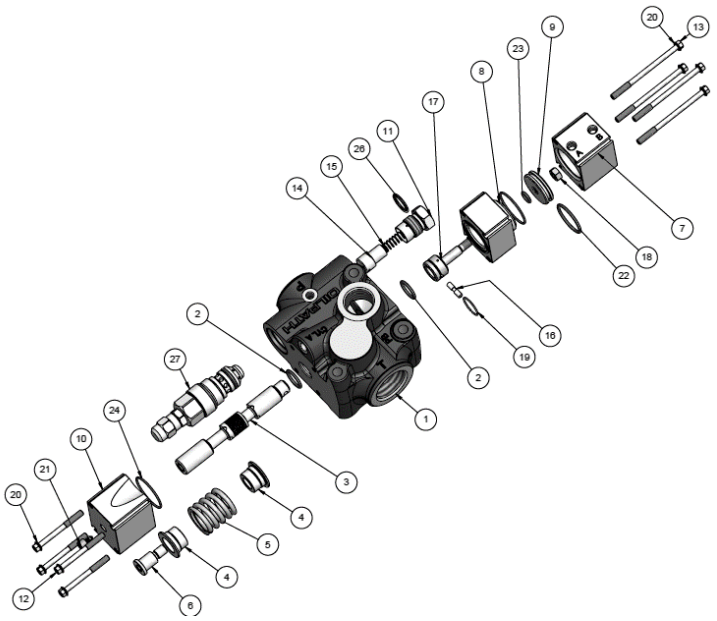
- Body……High tensile strength cast iron
- Spools…… Hardened steel spools
- Seals……Buna - N

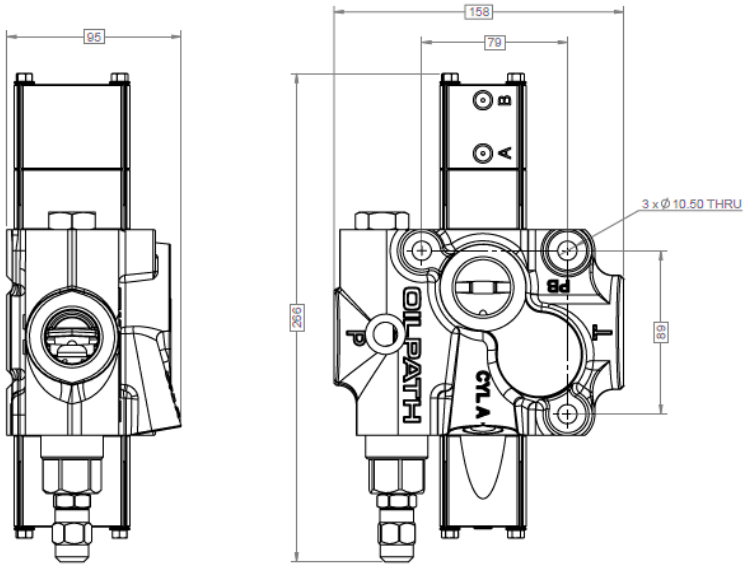
STANDARD FEATURES

- Relief Valve……Oilpath R3 Full Flow Direct Acting
- Pneumatic Ports……1/8” bspp
- Test Points……¼” bspp “A” “B” & ”P” for setting & aux functions
- Vacuum Elimination……Pneumatic actuator system has a vacuum elimination feature minimising the ingestion of moisture

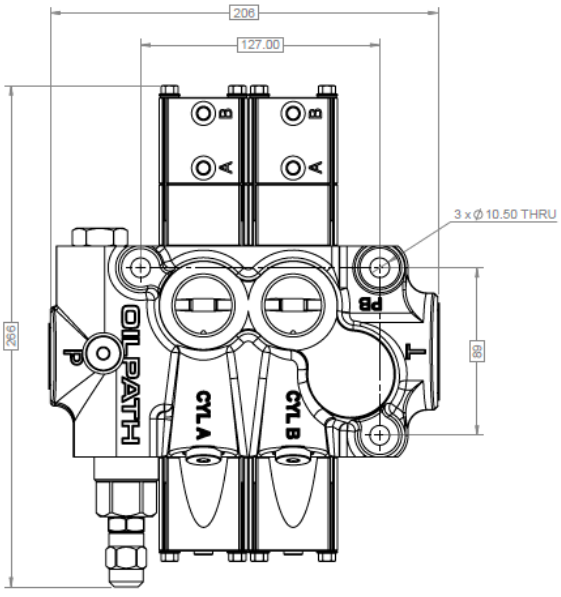
sales@oilpathhydraulics.com.au
Phone 08 82774933

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	202101	OP22 SINGLE SPOOL CASTING R3 RELIEF	1
2	401010	BS 116 NITRILE ORING	2
3	249335	SPOOL	1
4	250031	Spring Cup - OP22	2
5	416310	Spring Centre Spring	1
6	244021	Centre Stud - OP22 Spool	1
7	253159	Air Cylinder - Extruded Aluminium	1
8	253161	Housing Extension	1
9	238080	Air Piston - OP22	1
10	253160	Spring Cap - Extruded Aluminium	1
11	240336	OP22 Lift Drop Check Plug	1
12	415511	M6 x 60 Small Hex Forged Bolt (Grade 4.6)	4
13	415512	M6 x 90 Small Hex Forged Bolt (Grade 4.6)	4
14	241059	OP22 Lift Drop Check Poppet	1
15	416022	OP25 Load Check Spring	1
16	236035	Clevis Pin - OP22	1
17	237028	Piston Rod - OP22	1
18	408008	M8 Nut - Stainless Steel Grade 304	1
19	404002	Wire Circlip - OP103	1
20	415121	5 X 9 X 0.08M ZPRL W-TN RIBBED LOCK WASHER ZINC PLATED	8
21	505052	1/8" BSPT Breather Valve Assembly	1
22	401196	BS 125 NITRILE O RING	1
23	401113	BS 110 NITRILE O RING	1
24	401324	BS 029 NITRILE O RING	2
25	401493	BS 028 NITRILE ORING	1
26	401095	BG 910 NITRILE O RING	1
27	505069	R3 Relief Valve	1
28	Spring - Vent Valve	Check Valve Spring 3.4 bar	1

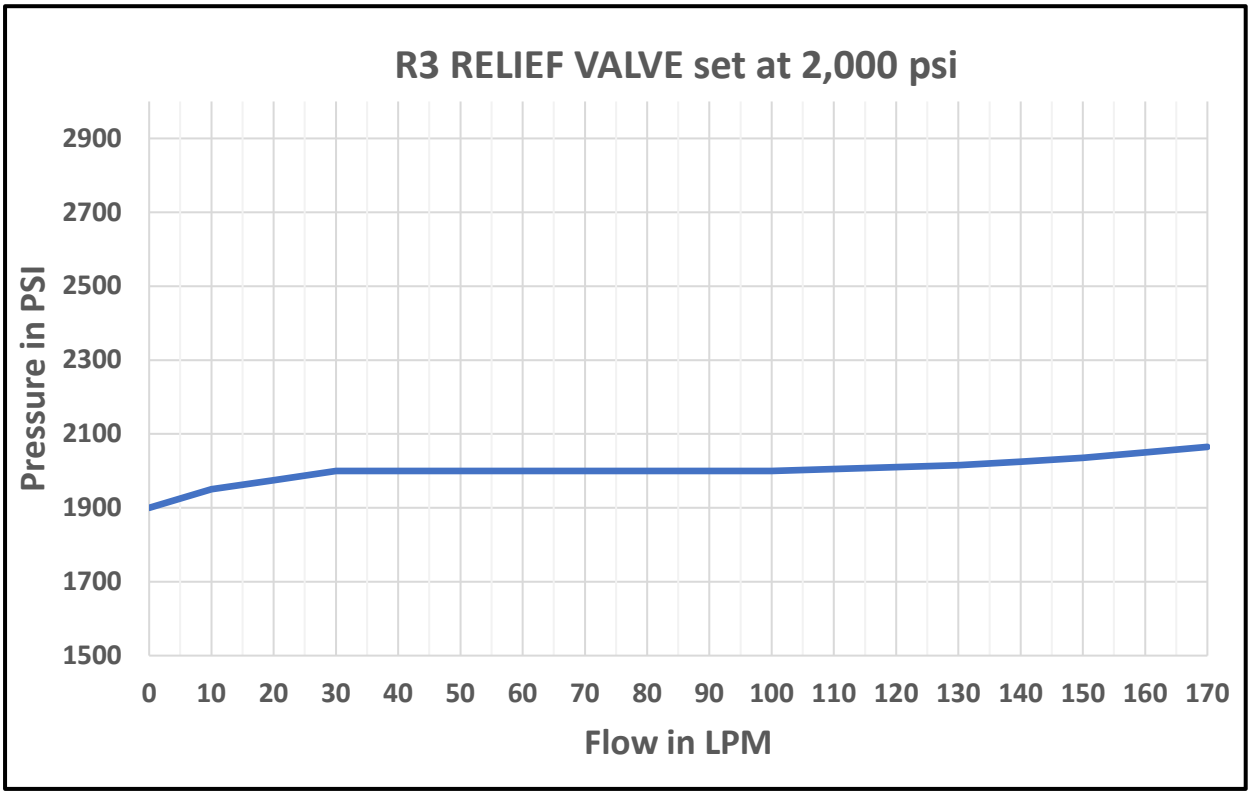


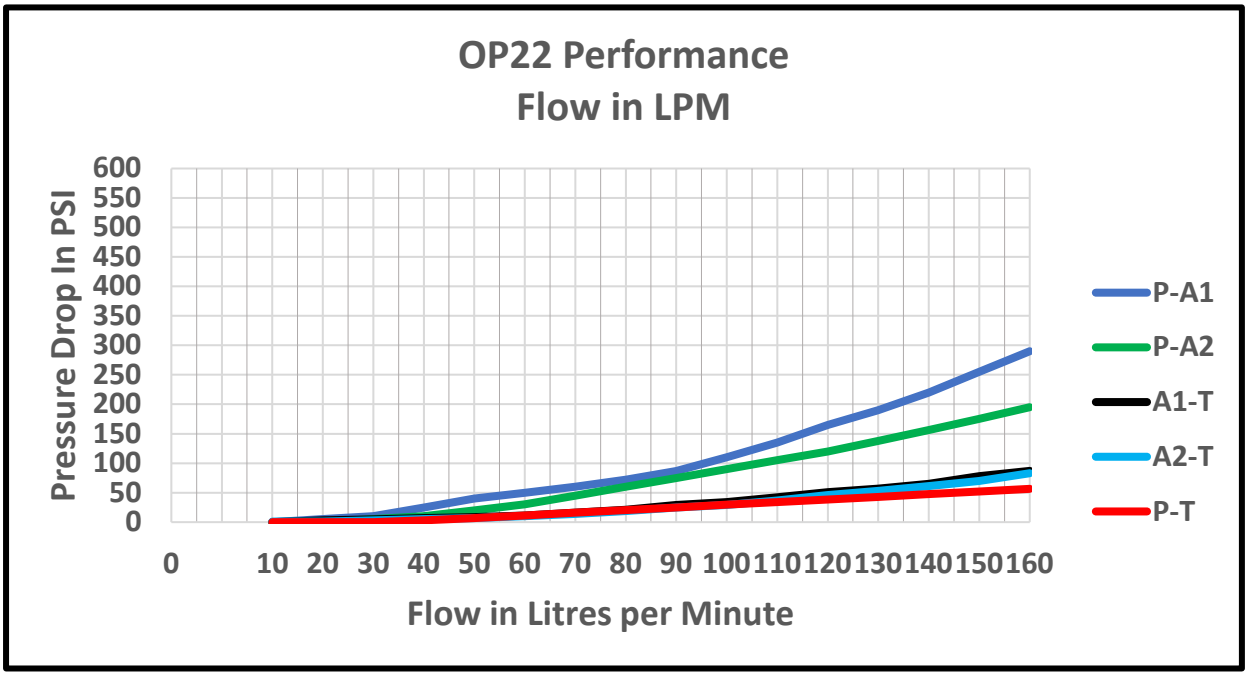


OP22 -1 Single Spool Truck Valve



OP22 Single Spool Truck Valve





sales@oilpathhydraulics.com.au
Phone 08 82774933

OP22 Truck Valve Pricing

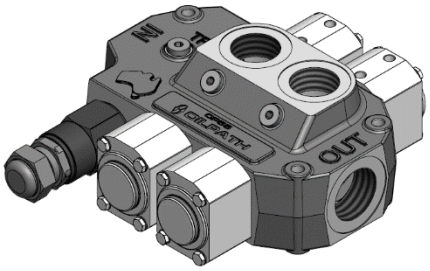
Part Number	DESCRIPTION OP22-1 SINGLE SPOOL	LIST PRICES Qty 10+	Qty 5 - 9	Qty 1-4
02210003	OP22 SINGLE SPOOL R3 1"BSPP 1/8" BSPP PRESSURE PORT SWITCH 1/8" TEST POINT	456	500	620
Part Number	**DESCRIPTION OP22 DOUBLE SPOOL**	**LIST PRICES Qty 10+**	**Qty 5 - 9**	**Qty 1-4**
02220007	OP22 SS A12 R3 1"BSPP - P,A,B 1-1/4"BSPP-T NO PORT RELIEF CAVITY (STD)	790	930	1,070

OP22 Spares

Part Number	Description	LIST PRICE
512098	OP22 Seal kit	46
505069	OP22 R3 Relief Valve Cartridge	258
505052	OP22 Spring Chamber Vent	40
504060	OP22 Optional Handle Assembly	NO LONGER AVAILABLE

sales@oilpathhydraulics.com.au
Phone 08 82774933

*patents pending



The OP55 is a larger derivative of the OP22, the benchmark in the tipping industry for efficiency, similar to the OP22, the OP55 is specifically designed as a tipping valve and has various patents protecting the design. The Oilpath engineers designed the galleries inside the valve casting to provide minimal pressure drop especially in the return to tank line which allows the most efficient hoist down times in the industry.

Oilpath also designed a high-performance differential area direct acting relief valve that provides minimal pressure drop and incredible stability. (see charts)

OVERALL SPECIFICATIONS

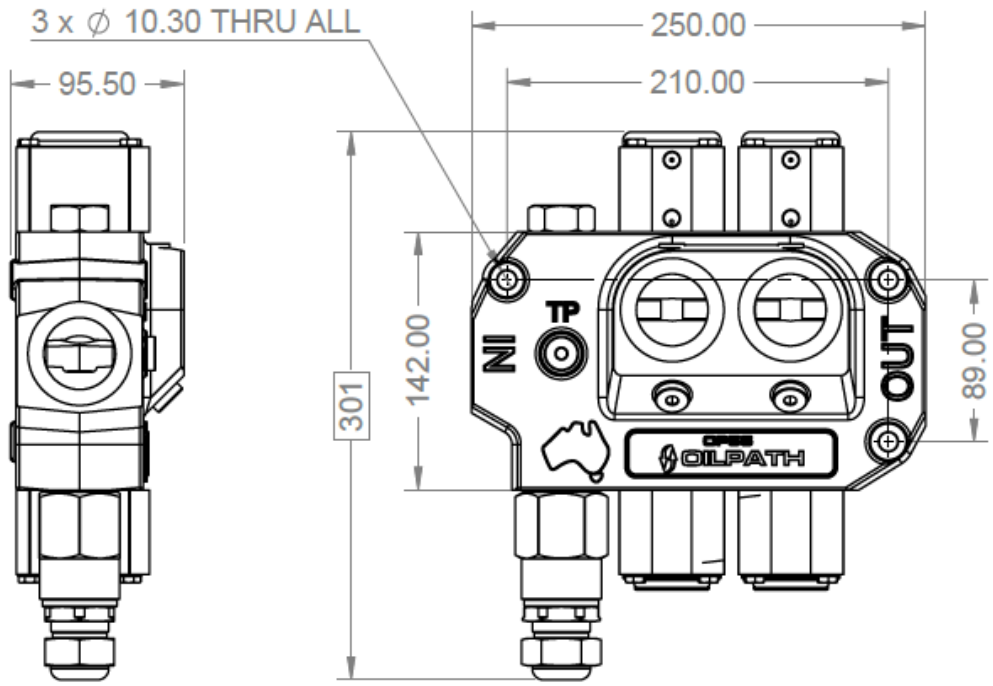
- Rated Flow.....250 lpm.
- Maximum working pressure.....250 bar (3500 psi)
- Working ports.....1" bspp or 1 ¼"bspp
- Tank Port..... 1 ¼"bspp 1 ½ "bspp

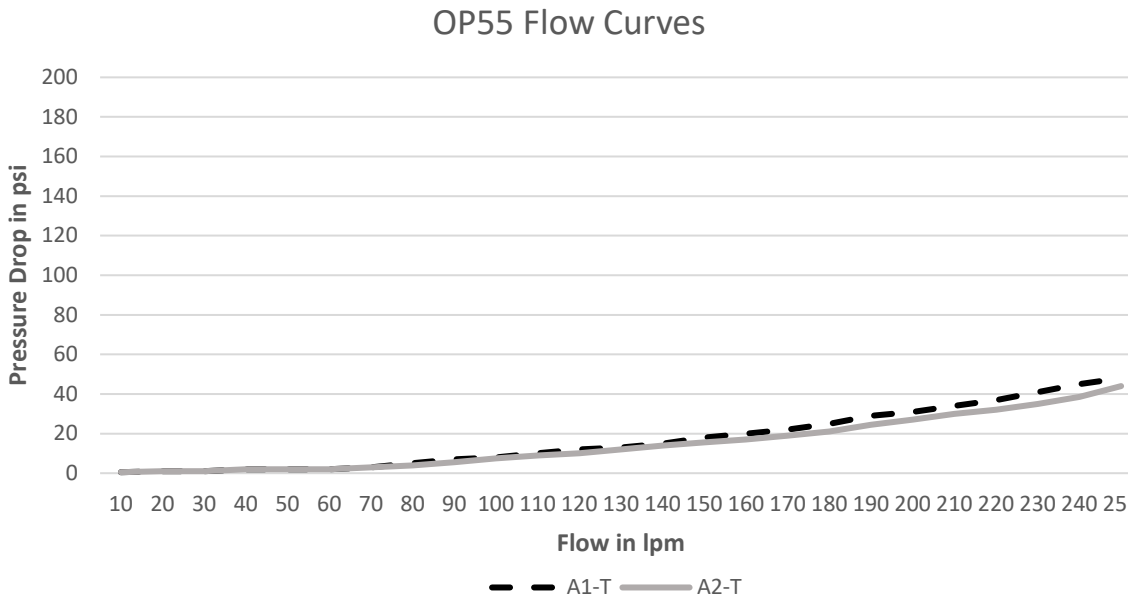
MATERIAL SPECIFICATIONS BODY

- Body.....High tensile strength cast iron
- Spools..... Hardened steel spools
- Seals.....Buna - N

STANDARD FEATURES

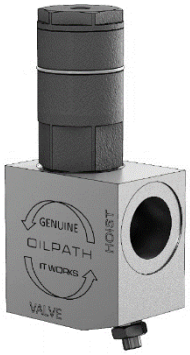
- Relief Valve.....Oilpath R55 Full Flow Direct Acting
- Pneumatic Ports.....1/8" bspp
- Test Points.....¼" bspp "A" "B" & "P" for setting & aux functions
- Tank Return.....Large internal galleries for fast lowering performance

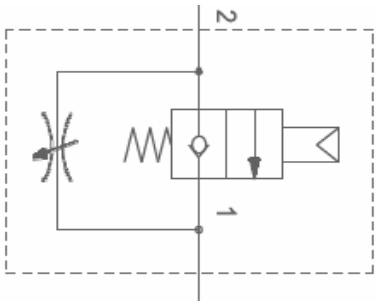




Part Number	DESCRIPTION	LIST PRICES Qty 10+	Qty 5 - 9	Qty 1-4
05500002	OP55 SS A 12 R55 1 BSPP P,A&B 1-1/4" BSPP TANK 2500 OILPATH STD	1,050	1,190	1,390

**Patents Pending*





The Oilpath OP-APV-16-22 is the third generation of this market leading hoist blocking product that was designed in Australia and is manufactured in Australia utilising premium materials with "world class" manufacturing tolerances and techniques.

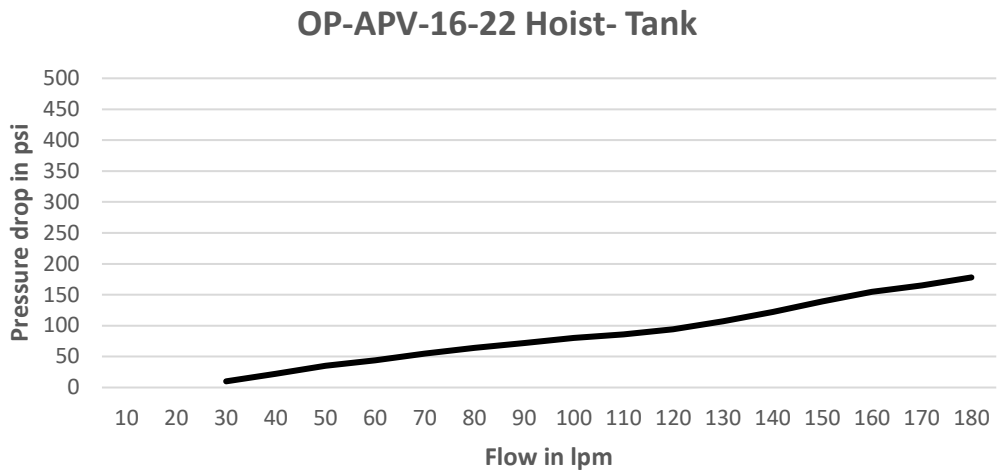
The latest revision provides an even lower pressure drop through the body utilising patented technology. The design also incorporates a large ratio "balanced" pneumatic cylinder which uses extremely low (2.1bar) air pressure to activate the system. The characteristics of the low-pressure requirement ensure efficient activation at times when little air is available and provides faster response times. Combining all these features guarantees the most efficient activation and hoist lowering times in the industry.

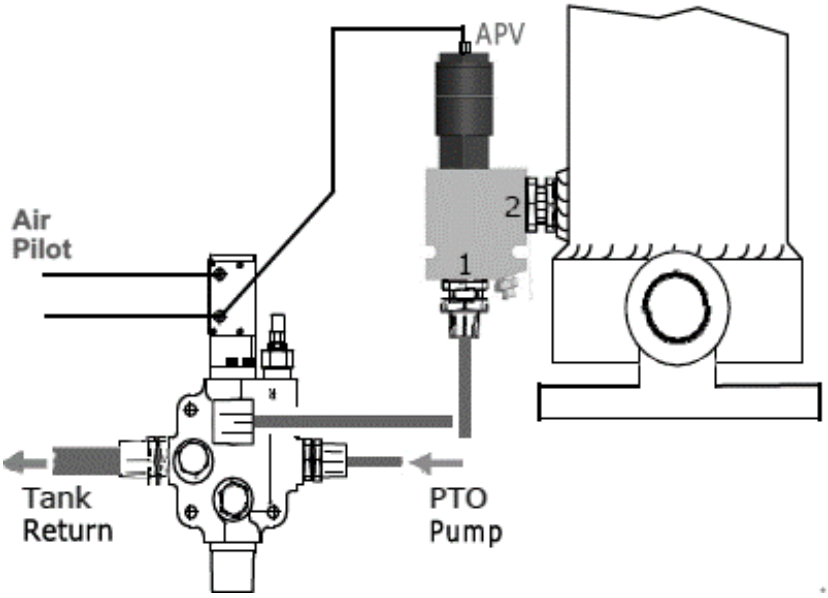
OVERALL SPECIFICATIONS

- Maximum working pressure.....210 bar (3000 psi)
- Rated flow.....180 ltrs/min

MATERIAL SPECIFICATIONS BODY

- Body .....High tensile Aluminium
- Seals.....Buna - N





Air Pilot Operation

Function	DC1	DC2	APV1
Raise	Pressure	Vent	Vent
Hold	Vent	Vent	Vent
Lower	Vent	Pressure	Pressure

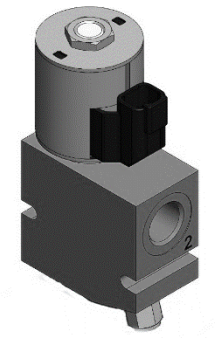
Important Information

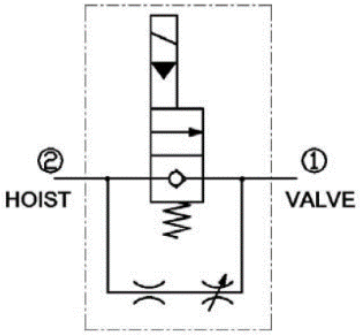
This valve must be installed by appropriately trained Hydraulics Operative as per the installation diagram above.

Do not attempt to disassemble this valve as it is designed to be maintenance free, any interference with this assembly will void all warranties and liabilities.

The only exception to the above is the external BS-029 neoprene “Breather” O-ring that needs to be replaced after 5 years or sooner if there are visible signs of deterioration.

Code	Description	List Prices 20+	10-19	5-9	<5
690222 OILPATH	OP-APV-16-22 HOIST BLOCKING VALVE 1" BSPP - OILPATH LOGO	520	580	680	820





Oilpath Electric Hoist Blocking Valves utilise HydraForce normally closed poppet valves in conjunction with an Oilpath manufactured aluminum body and a manual override system from the pneumatic hoist block valve.

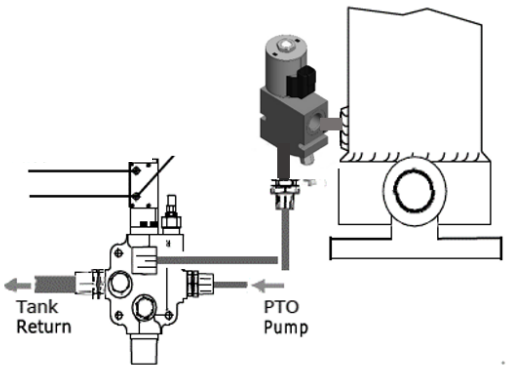
This valve utilises the world class HydraForce hardened steel poppet system and high-quality solenoids combination providing fast reliable operation and low leakage.

OVERALL SPECIFICATIONS

- Maximum working pressure.....210 bar (3000 psi)
- Sizes..... 57 lpm 1/2 " bspp & 115 lpm 3/4 "bspp
- Voltage.....12 or 24-volt Deutsch Coils

MATERIAL SPECIFICATIONS BODY

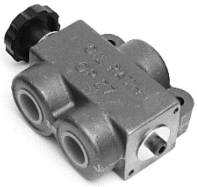
- Body .....High tensile Aluminium
- Seals.....Buna - N

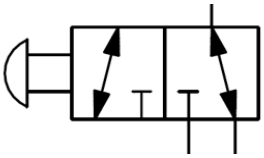


Air Pilot Operation

Function	DC1	DC2	APV1
Raise	Pressure	Vent	Vent
Hold	Vent	Vent	Vent
Lower	Vent	Pressure	Pressure

Part No	Flow l/min	Voltage	List Price 5+	List Price <5
690052	57	24	290	350
690053	115	24	326	386
690106	115	12	346	406
690107	57	12	190	350





The OP27 Three Port Valve Series is a manually operated spool type 3-way 2-position selector valve. The high-quality cast-iron valve body is cast in Australia machined at Oilpath's Adelaide facility along with the chrome plated hardened steel spools. The range also includes alternative actuation methods.

OVERALL SPECIFICATIONS

- Maximum working pressure.....210 bar (3000 psi)
- Maximum Casting shock pressure.....840 bar (12,000 psi)
- Rated flow.....118 ltrs/min (100. gpm)

MATERIAL SPECIFICATIONS

- Body..... High tensile strength Australian cast iron
- Spools.....Hardened steel chrome plated
- Seals.....Buna - N

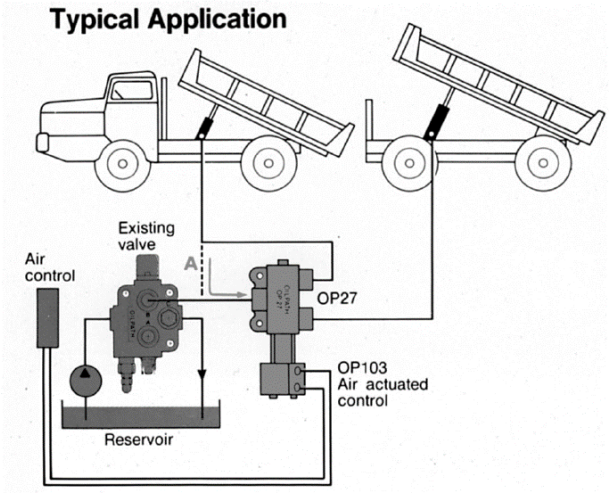
STANDARD FEATURES

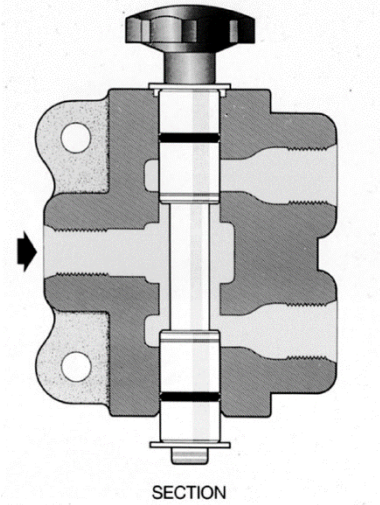
- 3-way 2-position circuit
- ¾" bspt Ports
- Simple push pull operation with Knob Actuator
- Front inlet port position
- Easily added to an existing OP20 Circuit

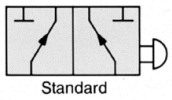
OPTIONS

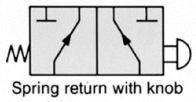
- Handle Operation (OP20 Handle)
- Air Operation
- Detent System
- Spring Offset
- Roller Cam with Spring Offset3/8"bspp
- Alternative ports include 7/8"un, 1-1/16"un, 1-5/16"un, ¾"bspp, 1"bspp, ½" bspt &1"bspt.

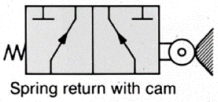
sales@oilpathhydraulics.com.au
Phone 08 82774933

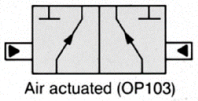






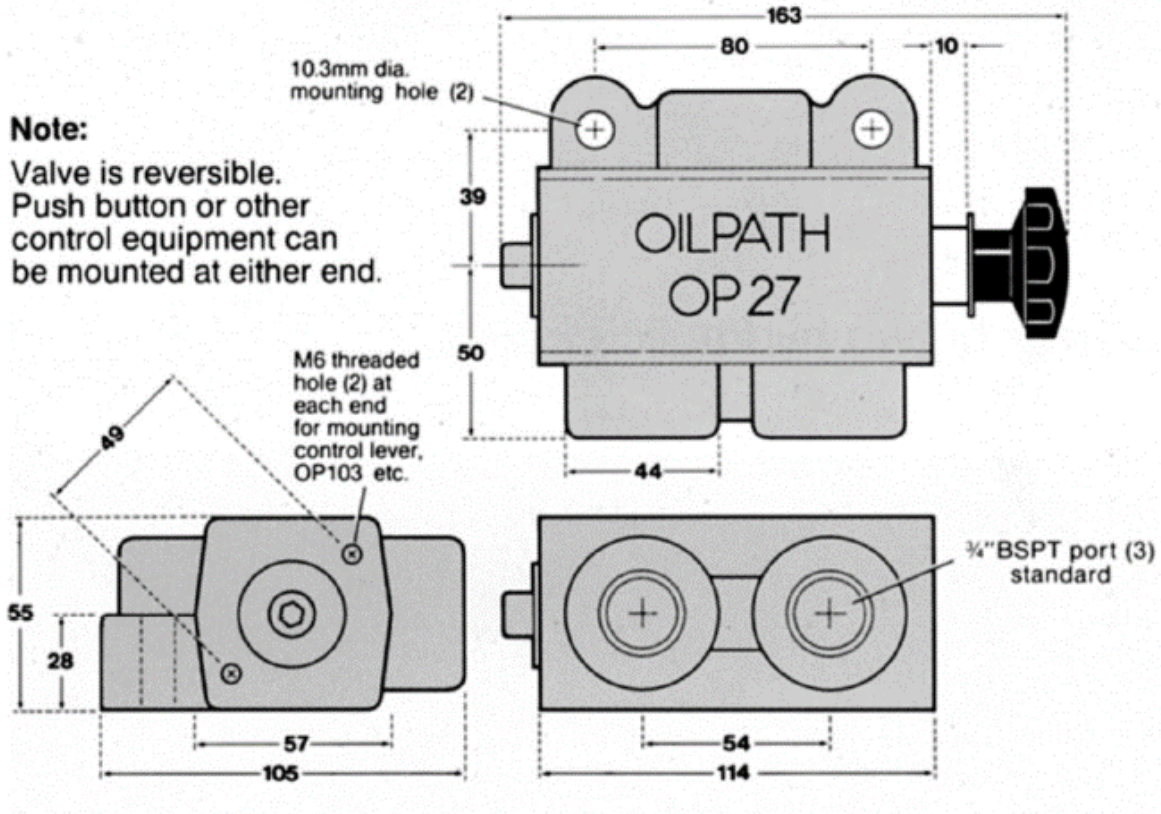






Dimensions

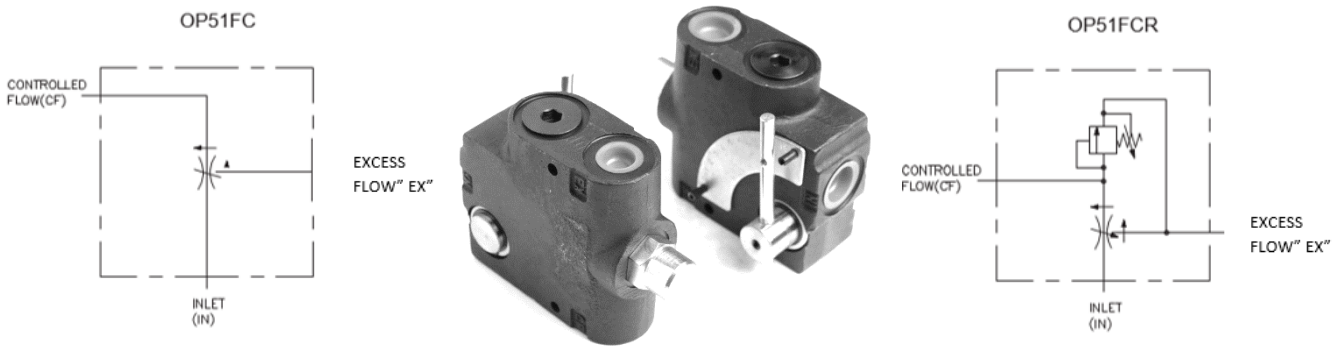
Note:
Valve is reversible.
Push button or other control equipment can be mounted at either end.



OP27 Valve Pricing

Part Number	Description	List Price
02700100	3/4” Ports and fitted with a plastic knob	226
02701300	3/4” Ports and fitted with spring offset kit	244
02706002	3/4” Ports and fitted with spring offset kit & new style air kit	358
	OP27 Options Pricing	
Code	**Description**	**List Price**
H	Handle operated, OP20 style	72
D	Detent	128
P	Plunger Activation Option (must include S/O option)	POA
CR	Cam roller (must include S/O option)	157
	OP27 Spares Pricing	
Part Number	**DESCRIPTION**	**LIST PRICE**
512036	Seal Kit (Spool O rings)	12
509013	Spring offset kit	42
507017	Detent kit	293
506044	B1 Air Kit (used with s/off)	148
504028	Lever Box Assembly	135
420003	Plastic Knob without washer	42
249001	Spool without knob or washers, plain	145

sales@oilpathhydraulics.com.au
Phone 08 82774933



The model OP51FC is a pressure compensated swing arm adjustable flow control valve. By swinging the arm thru 90 °, the flow out the CF or controlled flow port can be varied within the range given in the specification.

Any remaining flow is bypassed to the EX or excess flow port. This flow can be used to power another circuit or can be returned to tank. Once the controlled flow is set, it will remain nearly constant with variations in pressure on either the controlled or excess flow ports.

Please note, if during operation the controlled flow port is blocked, then the valve will compensate in such a manner that there will also be no flow at the EX or excess flow port. With no relief valve to protect the flow in the circuit upstream, pump failure and or component damage will occur. If this situation could occur then it is recommended to fit an extra relief valve upstream or use the model OP51FCR valve.

- valve can also be used as a restrictive flow control by plugging the excess flow port.
- The valve model FCR51 has a built-in adjustable pressure relief. For this model, the excess flow port, labelled (**EX) must** be connected to tank.
- It should be noted that whenever these or any valve is used to bypass or restrict flow, heat will be generated. Steps may be required to keep system oil temperature from becoming too high.

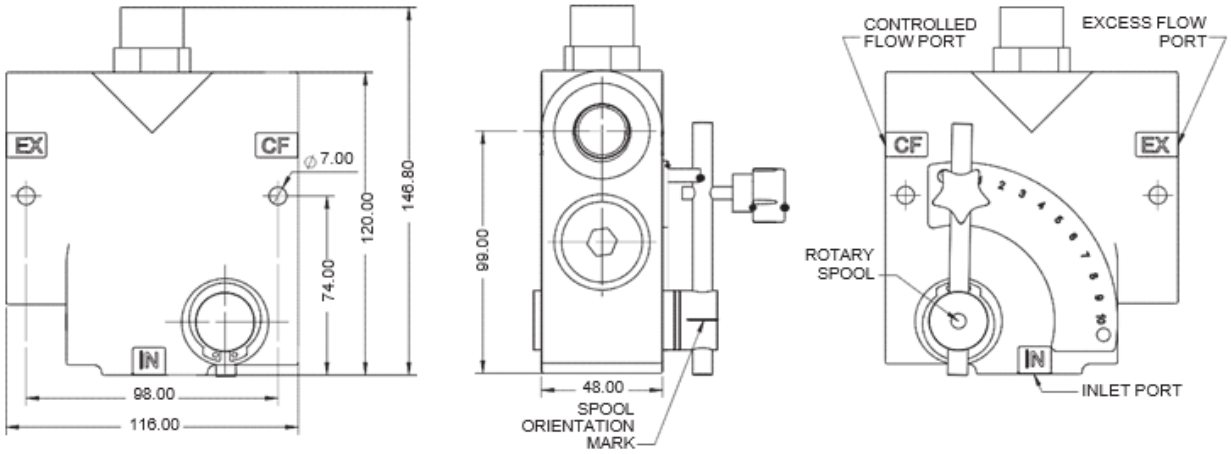
OVERALL SPECIFICATIONS

- Maximum working pressure.....210 bar (3000 psi)
- Rated flow.....114 l.p.m

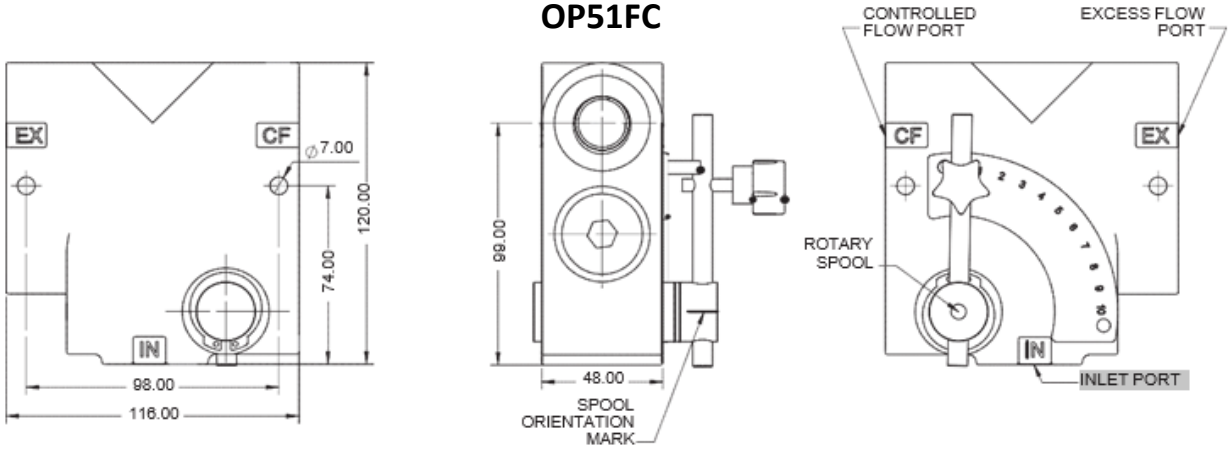
MATERIAL SPECIFICATIONS BODY

- Body .....High tensile strength cast iron
- Spools.....Hardened steel chrome plated spools
- Seals.....Buna - N

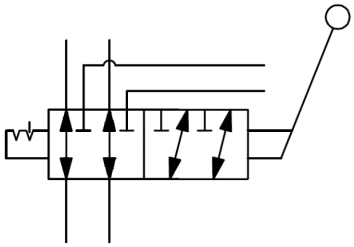
OP51FCR



OP51FC



Model No.	Port Thread	Relief Valve	Flow US gpm	Flow l/min	Weight	List Price
OP51FC- 1/2	1/2" BSPP	No	0 - 16	0 - 60	3.8 kg	210
OP51FC - 3/4	3/4" BSPP	No	0 - 30	0 - 113	3.8 kg	210
OP51FCR - 1/2	1/2" BSPP	Yes	0 - 16	0 - 60	4.0 kg	230
OP51FCR - 3/4	3/4" BSPP	Yes	0 - 30	0 - 113	4.0 kg	230



The OP80 Six Port Valve Series is a manually operated spool type 6-way 2-position selector valve. The high-quality cast-iron valve body is cast in Australia machined at Oilpath's Adelaide facility along with the plated hardened steel. The range also includes alternative actuation methods.

OVERALL SPECIFICATIONS

- Maximum working pressure.....210 bar (3000 psi)
- Maximum Casting shock pressure.....840 bar (12,000 psi)
- Rated flow.....118 ltrs/min (100. gpm)

MATERIAL SPECIFICATIONS BODY

- Body .....High tensile strength Australian cast iron
- Spools.....Hardened steel hard chrome plated
- Seals.....Buna - N

STANDARD FEATURES

- 6-way 2-position circuit
- 1/2" bspt Ports
- Simple push pull operation with Knob Actuator
- Front inlet port position
- Easily added to an existing OP20 Circuit

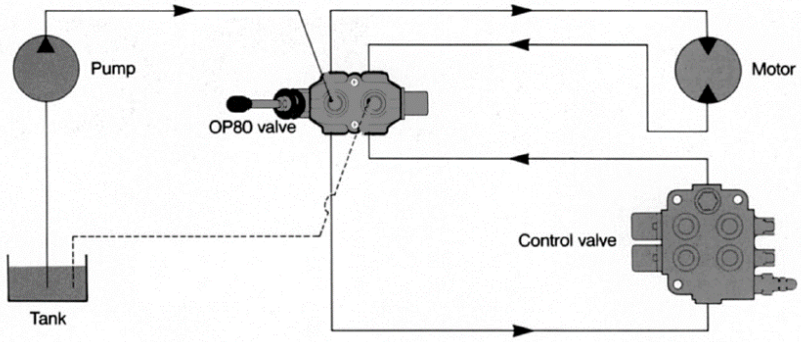
OPTIONS

- Handle Operation (OP20 Handle)
- Air Operation
- Detent System
- Spring Offset
- Alternative ports include 7/8"un, 1-1/16"un, ¾"bspt, ¾"bspp

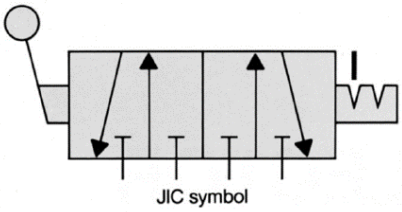
sales@oilpathhydraulics.com.au
Phone 08 82774933

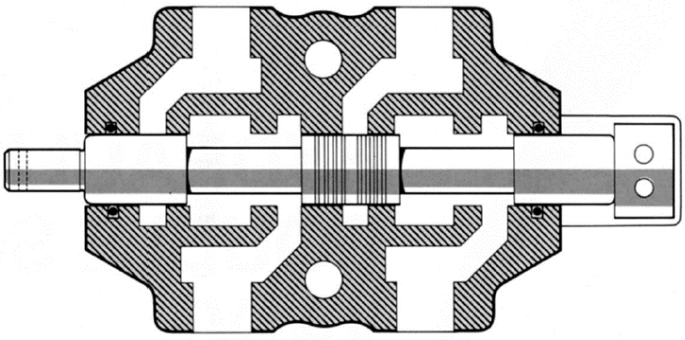
Typical application

In this circuit OP80 valve is directing hydraulic pressure from pump to either a motor or a control valve.

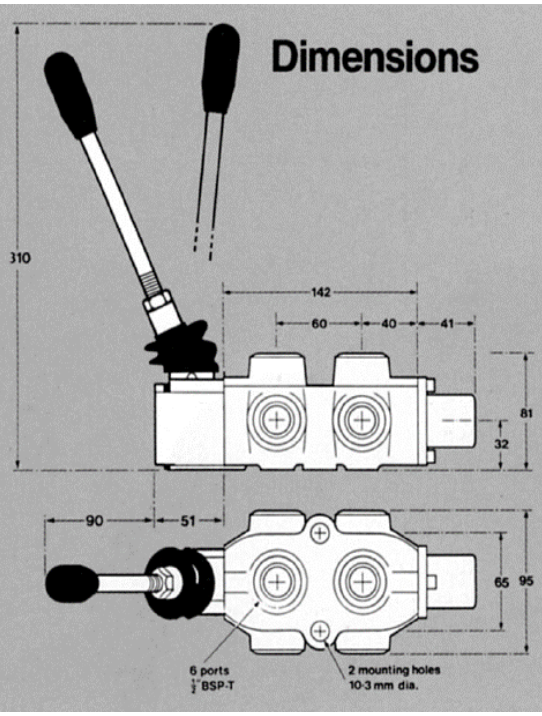


Schematic

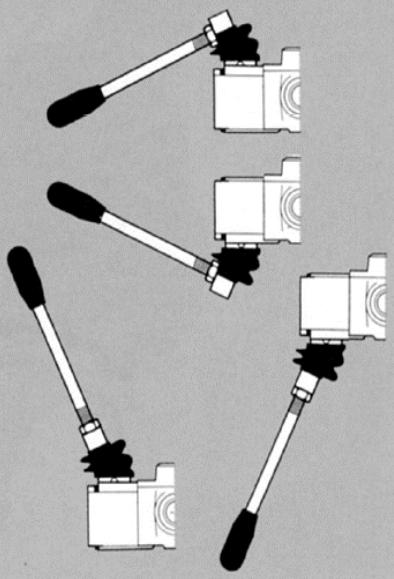




Dimensions



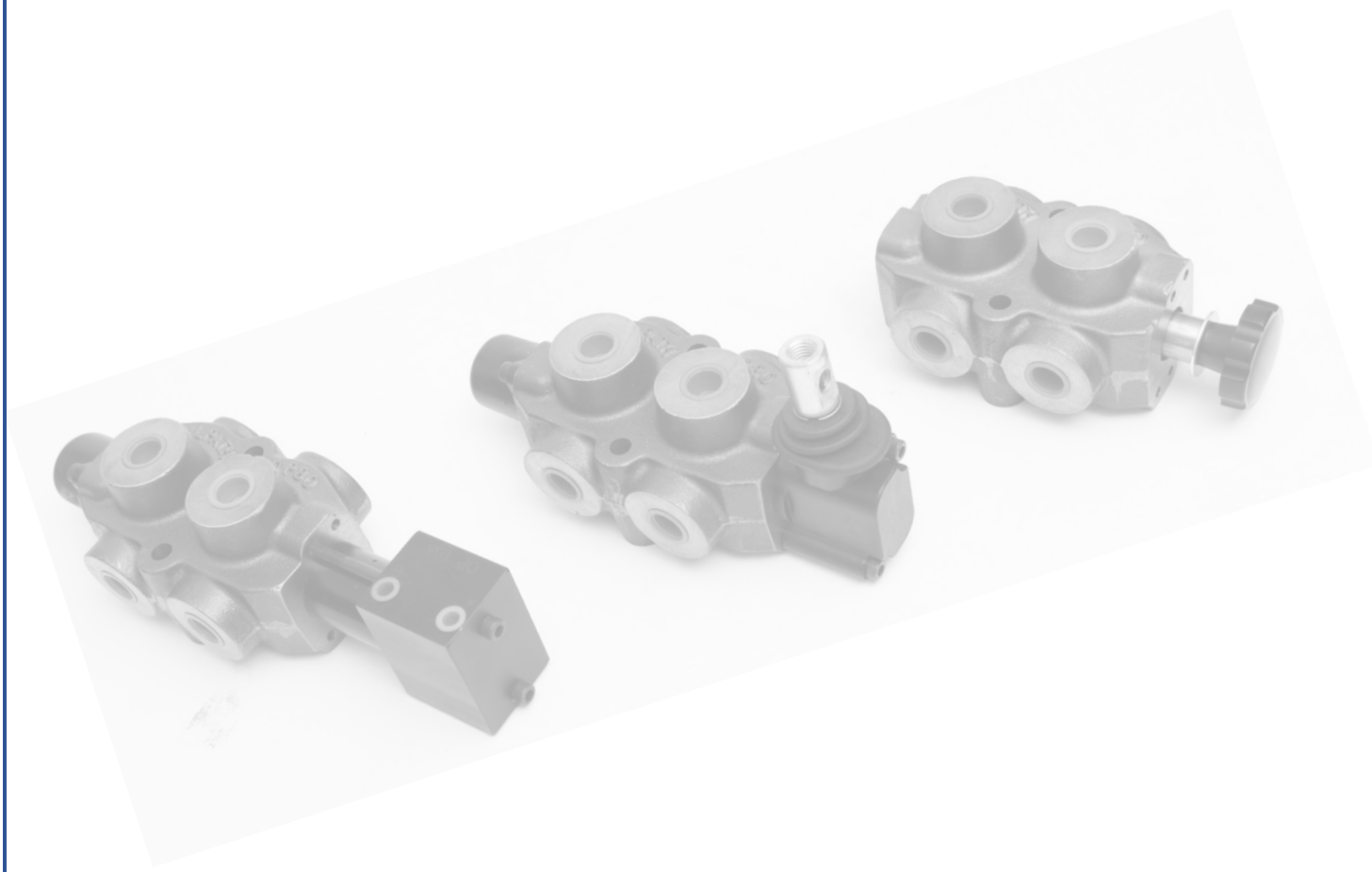
Convenient linkage enables easy repositioning of handle



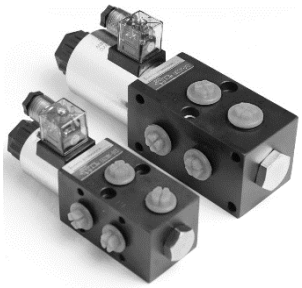
sales@oilpathhydraulics.com.au
Phone 08 82774933

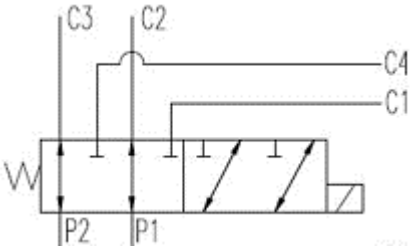
OP80 Six Port Selector Valve Price List

Part Number	Description	List Price
08000001	OP80 1/2”BSPT fitted with 2 position detent and OP20 style handle	373
08001000	OP80 1/2”BSPT K fitted with a black plastic knob (push pull)	322
08063000	Fitted with Air Kit and spring offset kit	461
	OP80 Options Price List	
Part Number	**Description**	**List Price**
MU	Marine use lever box and end cap	98
	OP80 Spares Price List	
Part Number	**DESCRIPTION**	**LIST PRICE**
512037	Seal kit (Spool O rings)	6
509014	Spring offset kit	40
507002	Detent Kit Complete assembly	117
506044	B1 Air Kit (used with s/off)	148
504502	Handle Lever complete with nut and rubber knob	31
504028	OP80 Lever Box	135



sales@oilpathhydraulics.com.au
Phone 08 82774933





The OP80S is a stackable 6 port/2 way change over valve designed to be used when extra circuits are to be operated from one control lever on machines such as fork lift trucks, agricultural front-end loader, telescopic handlers, and in transmission circuits.

OVERALL SPECIFICATIONS

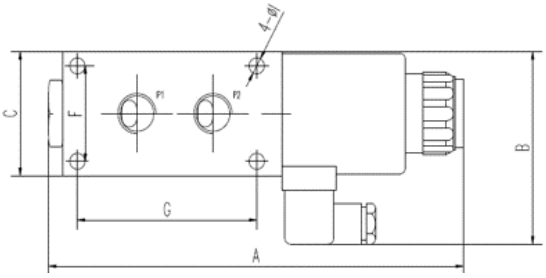
- Maximum working pressure.....250 bar (3500 psi)
- Maximum Casting shock pressure.....840 bar (12,000 psi)
- Rated flow 3/8"bspp.....40 ltrs/min
- Rated flow 1/2"bspp.....60 ltrs/min

MATERIAL SPECIFICATIONS BODY

- Body .....High tensile strength cast iron
- Spools.....Hardened steel chrome plated spools
- Seals.....Buna - N

STANDARD FEATURES

- 6-way 2-position circuit
- 3/8 or 1/2" bspp Ports
- 12 or 24 volt solenoid operated

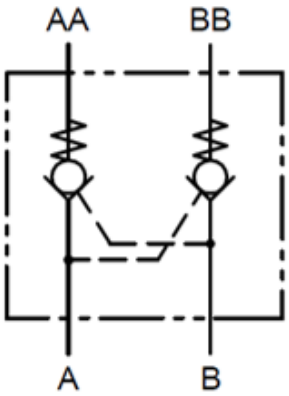


	A	B	C	D	E	F	G	H	I	J
OP80S-3/8" BSPP	175.2	84	52	36	57.5	38	42	6.4	6	52
OP80S-1/2" BSPP	229	100.6	65	46	70	50	99	8	8.4	65

Part Number	Description	List Price
08103812	OP80S-3/8" BSPP 12 VOLT DC	250
08103824	OP80S-3/8" BSPP 24 VOLT DC	250
08101212	OP80S-1/2" BSPP 12 VOLT DC	310
08101224	OP80S-1/2" BSPP 24 VOLT DC	310

OP101

Pilot Operated Double Lock Valve



Oilpath OP101 Lock valves are designed and manufactured in Australia utilising quality materials and modern machining techniques.

The pilot piston is made from hardened steel and is precision fitted to the aluminum body and activates chrome steel check valve balls the provide minimal leakage.

OVERALL SPECIFICATIONS

- Maximum working pressure.....210 bar (3000 psi)
- Sizes..... 55 lpm
- Type.....OP101-I for in-line applications
- Type.....OP101-C direct cylinder mount applications
- Port Size..... 1/2”bspt

MATERIAL SPECIFICATIONS BODY

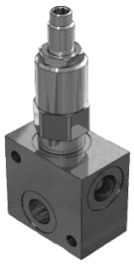
- Body .....High tensile aluminium
- Components.....Hardened steel balls and pilot piston
- Seals.....Buna – N

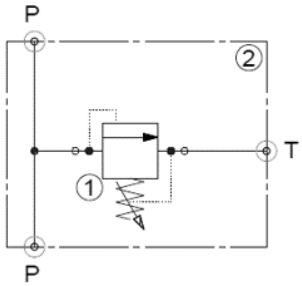
OPTIONS

- Port Size.....3/4”UNF

Model Number	Part Number	Description	List Price
OP101-C	10100100	Cylinder mounted with ½”BSPT ports	213
OP101-C	10100600	Cylinder mounted with ¾” unf ports	213
OP101-I	10100200	In-Line with ½” BSPT ports	204
OP101-I	10100800	In-Line with ¾” unf ports	204

sales@oilpathhydraulics.com.au
Phone 08 82774933





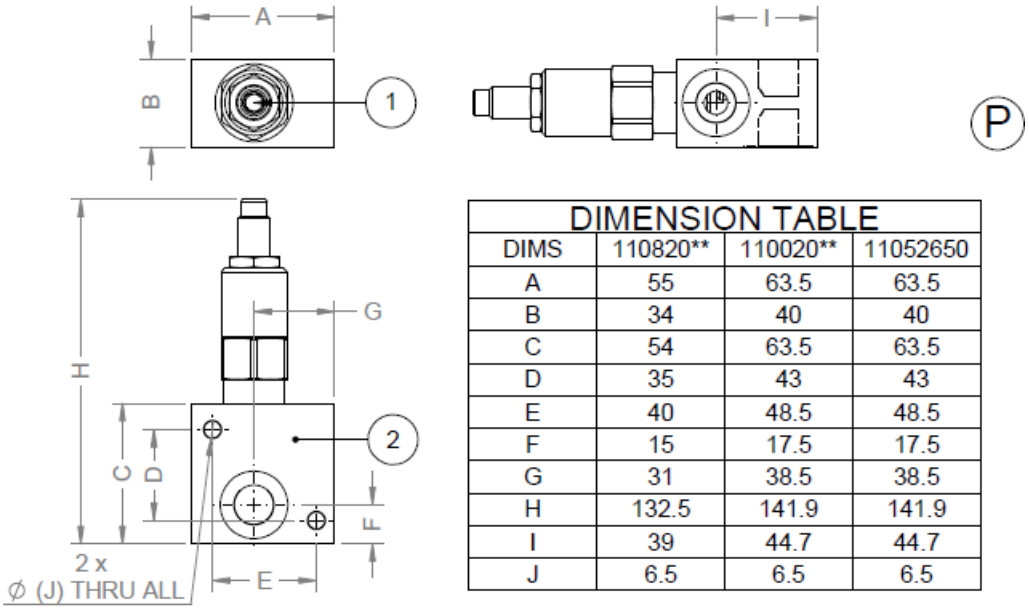
Oilpath OP110 through ported in-line relief valves are designed and manufactured in Australia utilising quality materials and HydraForce relief valve cartridges.

OVERALL SPECIFICATIONS

- Maximum working pressure.....50-210 bar (750-3000 psi)
- Sizes..... 28-113 lpm
- Port Size.....3/8" or 1/2" bspp

MATERIAL SPECIFICATIONS BODY

- Body .....High tensile aluminium
- Components.....HydraForce Relief Valve Cartridges
- Seals.....See Chart

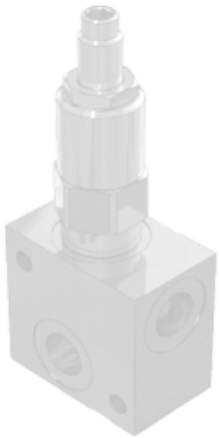


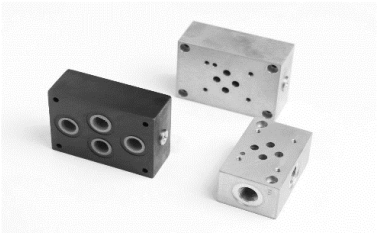
DIMENSION TABLE			
DIMS	110820**	110020**	11052650
A	55	63.5	63.5
B	34	40	40
C	54	63.5	63.5
D	35	43	43
E	40	48.5	48.5
F	15	17.5	17.5
G	31	38.5	38.5
H	132.5	141.9	141.9
I	39	44.7	44.7
J	6.5	6.5	6.5

PART No.	CARTRIDGE	LINE BODY PART NO.	PRESSURE RANGE	NOMINAL FLOW	List Price
11082005	RV08-20A-O-N-5	222121 (ALLOY)	50 - 500	23 l/min	174
11082009	RV08-20A-O-N-9	222121 (ALLOY)	100 - 1100	23 l/min	174
11082018	RV08-20A-O-N-18	222121 (ALLOY)	250 - 2300	23 l/min	174
11082033	RV08-20A-O-N-33	222121 (ALLOY)	250 - 3600	23 l/min	174
11002006	RV10-20A-O-N-6	222009 (ALLOY)	50 - 600	38 l/min	178
11002012	RV10-20A-O-N-12	222009 (ALLOY)	150 - 1200	38 l/min	178
11002023	RV10-20A-O-N-23	222009 (ALLOY)	250 - 2300	38 l/min	178
11002033	RV10-20A-O-N-33	222009 (ALLOY)	250 - 3300	38 l/min	178
11002604	RV10-26A-O-N-4	222009 (ALLOY)	100 - 400	113 l/min	188
11002615	RV10-26A-O-N-15	222009 (ALLOY)	150 - 1500	113 l/min	188
11002630	RV10-26A-O-N-30	222009 (ALLOY)	400 - 3000	113 l/min	188
11052650	RV50-26A-O-P-50	222509 (STEEL)	400 - 5000	113 l/min	239

Body Porting Details

ALL PORTS: 222009 = 1/2" BSP-P
ALL PORTS: 222121 = 3/8" BSP-P
ALL PORTS: 222509 = 1/2" BSP-P





Oilpath OP111 cetop 3 and cetop 5 sub plates are designed and manufactured in Australia utilising quality materials. These subplates have various outlet porting options including side or bottom.

OVERALL SPECIFICATIONS

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Maximum working pressure..... DuraBar 345 bar (5000 psi)
- Sizes..... Cetop 3 and 5
- Port Size.....3/8" in Cetop 3 & 1/2" bspp in Cetop 5

MATERIAL SPECIFICATIONS BODY

- Body .....High tensile aluminium or Durbar

Product Type	Part Number	Description Cetop 3 Products	List Price
OP111-A	111001	Single Cetop 3 alloy sub-plate, side ported 3/8"BSPP	81
OP111-A-C	111005	Single Cetop 3 cast iron as above but for 350 bar	108
OP111-B	111003	Single Cetop 3 alloy sub-plate, rear ported 3/8" BSPP	113
OP111-B-C	111006	As above but produced in cast iron for 350 bar rating.	172
OP111-A-R-*	111013	Cetop 3, Alloy, RV08-20A-0-N relief cartridge, 2 - 210 bar 40 l/min. Sub-plate with Pilot Operated Pressure Relief Valve	394

Product Type	Part Number	Description Cetop 5 Products	List Price
OP1115-A	111501	Single Cetop 5 alloy sub-plate, side ported 1/2"BSPP	125
OP1115-A- C	111502	Single Cetop 5 Steel as above but for 350 bar	155
OP1115-B	111503	Single Cetop 5 alloy sub-plate, rear ported 1/2" BSPP	125
OP1115-B-C	111504	As above but produced in steel for 350 bar rating.	155

Oilpath cetop 3 & 5 bar manifolds are manufactured with an industry standard 10-2 cavity and can be provided with HydraForce relief valves and other cartridge configurations.

OP112-* CETOP3 MANIFOLD – PARALLEL ALLOY with 10-2 relief cavity
P & T Ports 1/2" BSPP, Service Ports 3/8" BSPP

Product Type	Part Number	Description	List Price
OP112-1	112001	Single Station	111
OP112-2	112002	Two Station	148
OP112-3	112003	Three Station	189
OP112-4	112004	Four Station	225
OP112-5	112005	Five Station	278
OP112-6	112006	Six Station	322

OP112-*-S CETOP3 MANIFOLD – SERIES ALLOY with 10-2 relief cavity
P & T Ports 1/2" BSPP, Service Ports 3/8" BSPP

Product Type	Part Number	Description	List Price
OP112-2-S	112072	Two Station in series	163
OP112-3-S	112073	Three Station in series	204
OP112-4-S	112074	Four Station in series	240
OP112-5-S	112075	Five Station in series	293
OP112-6-S	112076	Six Station in series	338

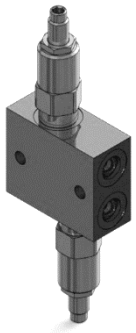
OP114-* CETOP 5 MANIFOLD - PARALLEL ALLOY with 10-2 relief cavity
P & T Ports 3/4 " BSPP, Service Ports 1/2" BSPP

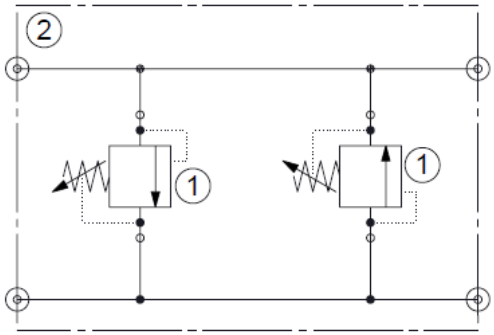
Product Type	Part Number	Description	List Price
OPS114-1	114001	Single Station	175
OPS114-2	114002	Double Station	277
OPS114-3	114003	Three Station	365
OPS114-4	114004	Four Station	464
OPS114-5	114005	Five Station	589
OPS114-6	114006	Six Station	665
		Cartridge Valves for all Manifolds	
		RV10-26A-0-N-30 HydraForce Relief Valve	144
		SVRV10-26-0-N-* Solenoid Relief / Unloader	379

Note: Other manifold configurations and material can be manufactured to order

OP115

Cross-Line Relief Valve





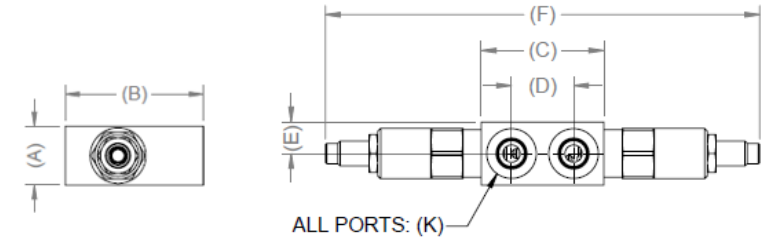
Oilpath OP115 cross line relief valves are designed and manufactured in Australia utilising quality materials and HydraForce relief valve cartridges.

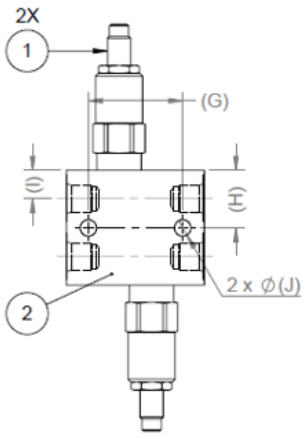
OVERALL SPECIFICATIONS

- Maximum working pressure.....50-210 bar (750-3000 psi)
- Sizes..... 28-113 lpm
- Port Size.....3/8” or 1/2” bspp

MATERIAL SPECIFICATIONS BODY

- Body .....High tensile aluminium
- Components.....HydraForce Relief Valve Cartridges
- Seals.....See Chart





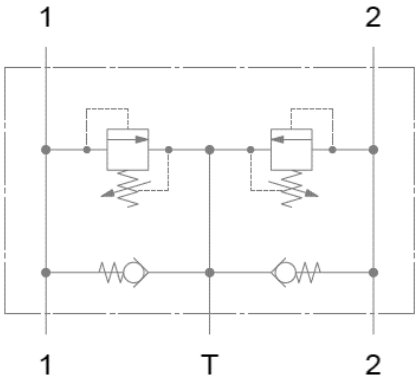
DIMENSION TABLE		
DIMS	115820**	115020**
A	31.75	36.32
B	74.42	87.12
C	61.72	74.42
D	31.24	37.81
E	15.88	18.16
F	218.81	230.55
G	50.80	63.50
H	30.99	37.34
I	15.24	18.29
J	8.70	8.70
K	SAE 6	SAE 10

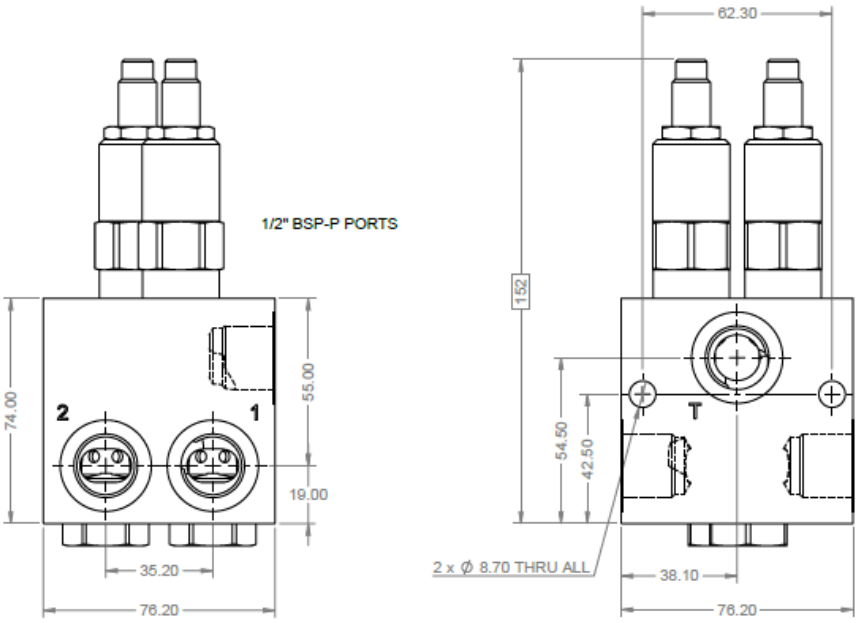
sales@oilpathhydraulics.com.au
Phone 08 82774933

PART No.	CARTRIDGE LINE BODY PART NO. PRESSURE RANGE (PSI) NOMINAL FLOW	List Price
11582005	RV08-20A-O-N-5 7070160 (ALLOY) 50 - 500 23 l/min	213
11582009	RV08-20A-O-N-9 7070160 (ALLOY) 100 - 1100 23 l/min	213
11582018	RV08-20A-O-N-18 7070160 (ALLOY) 250 - 2300 23 l/min	213
11582033	RV08-20A-O-N-33 7070160 (ALLOY) 250 - 3600 23 l/min	213
11502006	RV10-20A-O-N-6 7070170 (ALLOY) 50 - 600 38 l/min	243
11502012	RV10-20A-O-N-12 7070170 (ALLOY) 150 - 1200 38 l/min	243
11502023	RV10-20A-O-N-23 7070170 (ALLOY) 250 - 2300 38 l/min	243
11502033	RV10-20A-O-N-33 7070170 (ALLOY) 250 - 3300 38 l/min	243
11502604	RV10-26A-O-N-4 7070170 (ALLOY) 100 - 400 113 l/min	264
11502615	RV10-26A-O-N-15 7070170 (ALLOY) 150 - 1500 113 l/min	264
11502630	RV10-26A-O-N-30 7070170 (ALLOY) 400 - 3000 113 l/min	264

For cartridge performance data see HydraForce website @ www.hydraforce.com

Oilpath 100 lpm Cross Line Relief with Anti-Cavitation Checks, incorporating HydraForce Pilot operated Relief Vales and anti-cav. Check Valves.





FEATURES

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Port sizes.....1/2” bspp
- Cartridges.....HydraForce

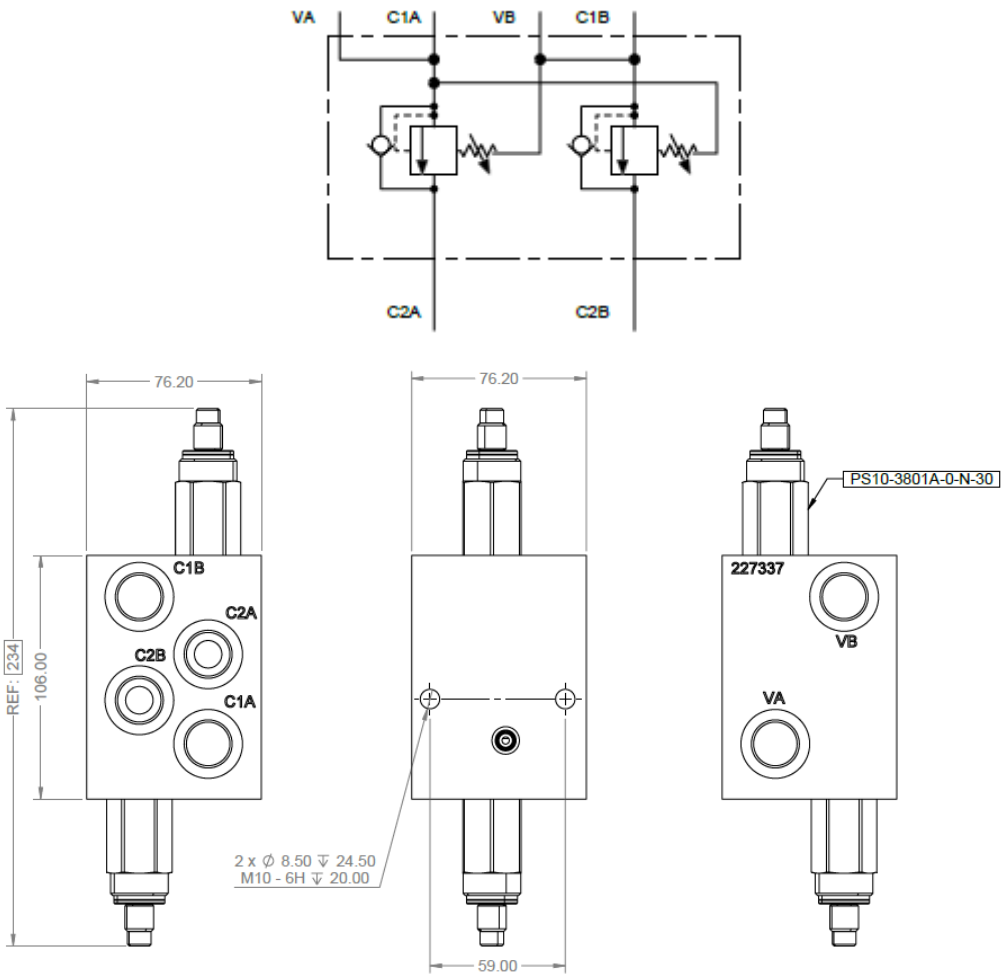
MATERIAL SPECIFICATIONS BODY

- Body .....High tensile aluminium

Part No.	Description	List Price
12900001	Oilpath 100 lpm Cross Line Relief with Anti-Cavitation Checks	542

*** Contact factory for alternative sizing and options**

Oilpath 100 lpm Double Sequence Valve including reverse flow check valves, with adjustment range between 10-210 bar.



FEATURES

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Port sizes.....1/2" bspp
- Cartridges.....HydraForce

MATERIAL SPECIFICATIONS BODY

- Body .....High tensile aluminium

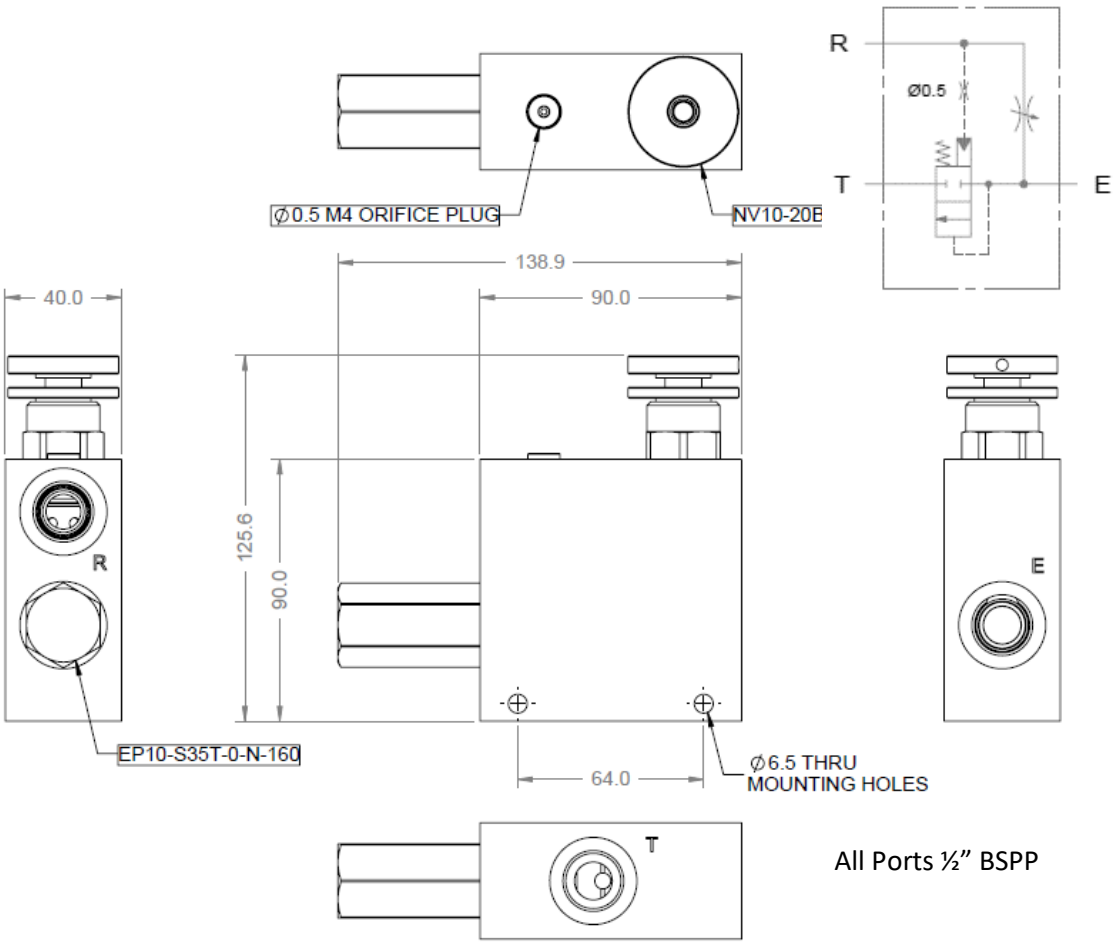
Part No.	Description	List Price
15600001	Oilpath 100 lpm Double Sequence Valve including reverse flow check valves	**565**

*** Contact factory for alternative sizing and options**

OP157

3-way pressure compensated flow regulator

Oilpath pressure compensated, three-way bypass type with maximum inlet flow of 90 lpm, maximum regulated flow of 55 lpm and maximum pressure of 210 bar.



All Ports ½" BSPP

FEATURES

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Port Size.....1/2"bspp
- Cartridges.....HydraForce

MATERIAL SPECIFICATIONS BODY

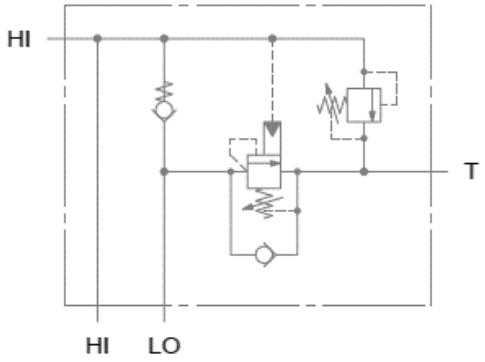
- Body .....High tensile aluminium

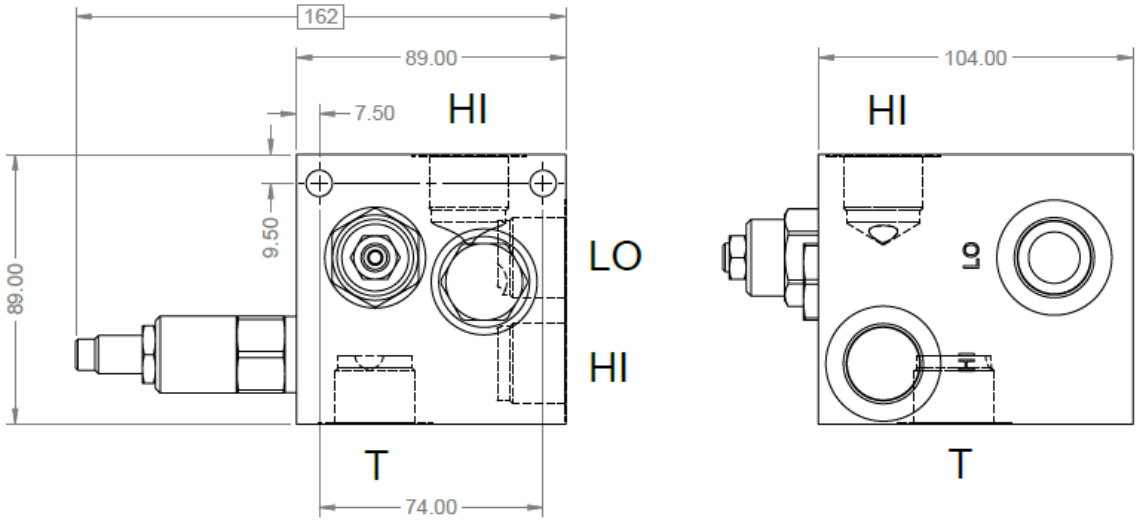
Part No.	Description	List Price
15700001	3-way pressure compensated flow regulator	326

*** Contact factory for alternative sizing and options**

sales@oilpathhydraulics.com.au
Phone 08 82774933

Oilpath 120 lpm Hi-Low Pump System Manifold with ¾" bspp ports utilising highly efficient and reliable HydraForce cartridge valves.





FEATURES

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Port size.....3/4" bspp
- Cartridges.....HydraForce

MATERIAL SPECIFICATIONS BODY

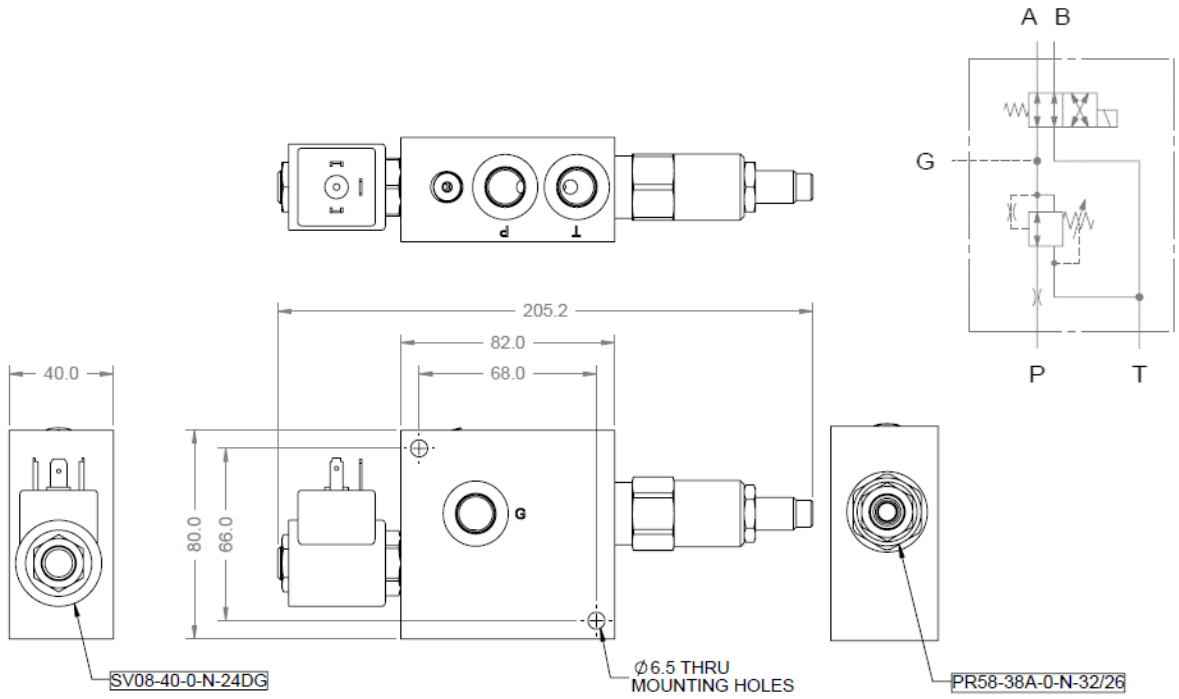
- Body .....High tensile aluminium

Part No.	Description	List Price
12800001	Oilpath 120 lpm Hi-Low Pump System Manifold with ¾" bspp ports	**630**

*** Contact factory for alternative sizing and options**

sales@oilpathhydraulics.com.au
Phone 08 82774933

Oilpath OP137 Quick Hitch Valve is an economically priced, ultra-compact, quality valve, utilising HydraForce dirt tolerant cartridges. Available with 12 or 24 volt coils



ALL PORTS 9/16" UNF

FEATURES

- Maximum working pressure..... 350 bar (5000 psi)
- Port Size.....9/16”unf
- Gauge Port.....1/4”bspp
- Cartridges.....HydraForce
- Reduced pressure to cylinder
- Orifice allows connection to high flow circuits

MATERIAL SPECIFICATIONS BODY

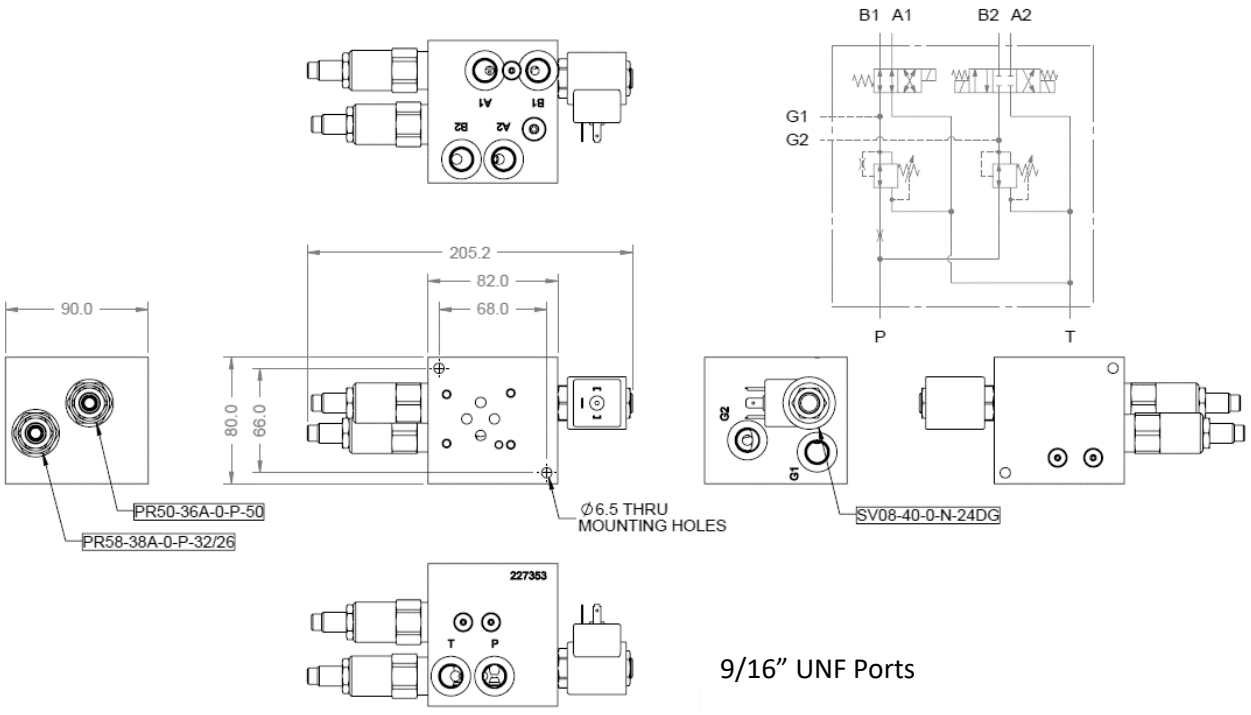
- Body .....Ductile Iron

Part No.	Description	List Price
13710012	OP137 Quick Hitch Valve 12 volt	563
13710024	OP137 Quick Hitch Valve 24 volt	563

*** Contact factory for alternative sizing and options**

sales@oilpathhydraulics.com.au
Phone 08 82774933

Oilpath OP140 Quick Hitch & Valve is an economically priced, compact, quality valve, utilising HydraForce dirt tolerant cartridges. Available with 12 or 24 volt coils



9/16" UNF Ports

FEATURES

- Maximum working pressure.....0-350 bar (5000 psi)
- Port size.....9/16"unf
- Gauge Port.....1/4"bspp
- Cartridges.....HydraForce
- Reduced pressure to cylinder
- Orifice allows connection to high flow circuits

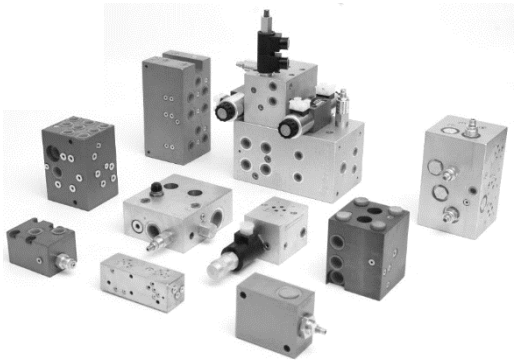
MATERIAL SPECIFICATIONS BODY

- Body .....Ductile Iron

Part No.	Description	List Price
14000012	OP140 Quick Hitch & Tilt Valve 12 volt. (does not include Cetop 3 valve)	889
14000024	OP140 Quick Hitch & Tilt Valve 24 volt. (does not include Cetop 3 valve)	889

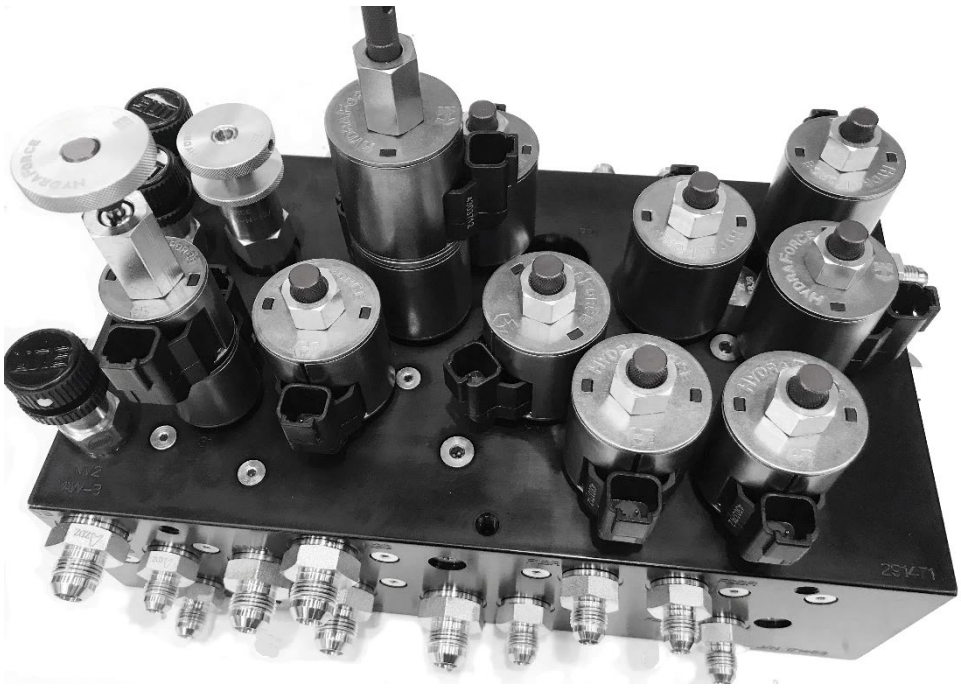
*** Contact factory for alternative sizing and options**

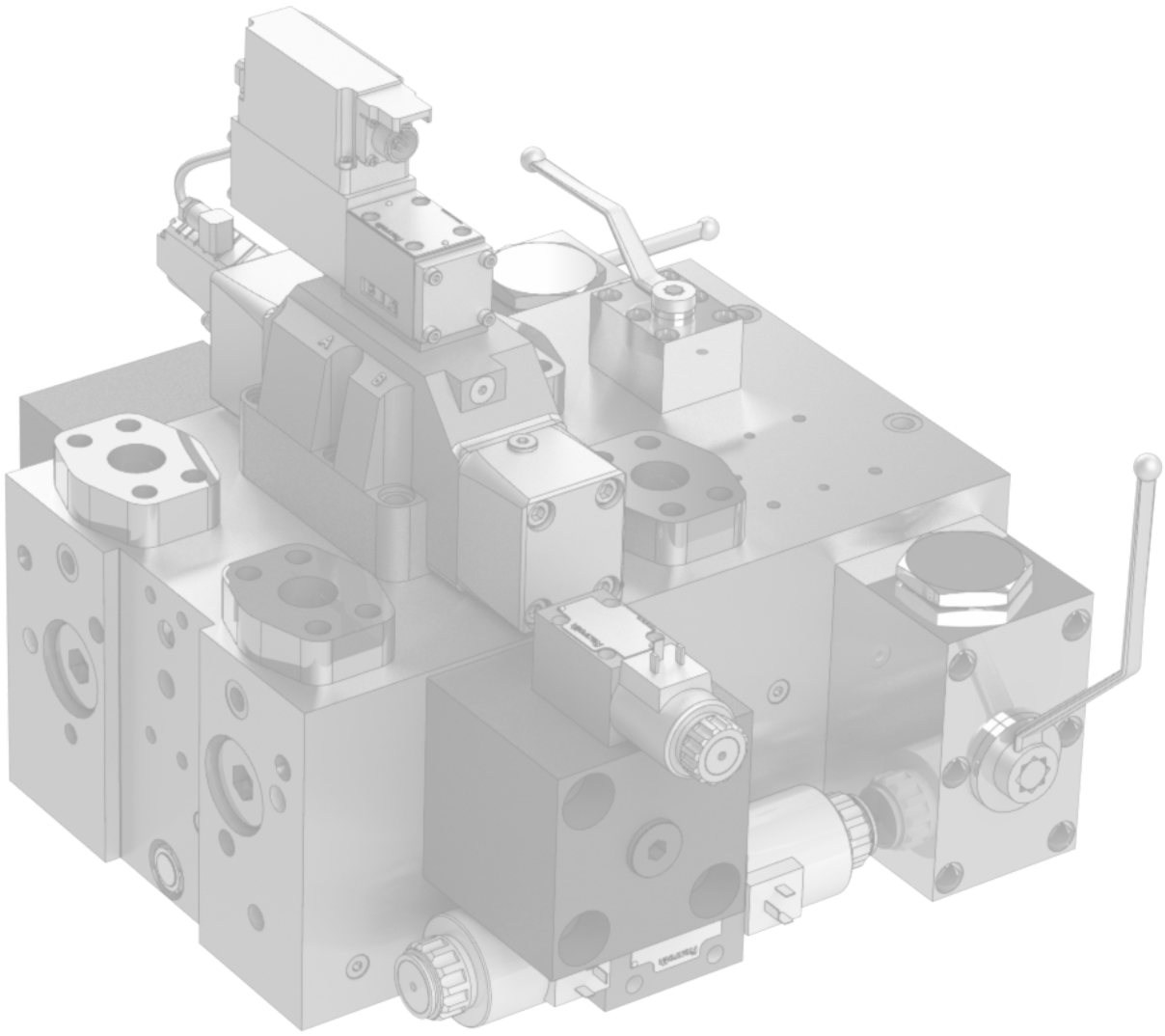
Please contact Oilpath to discuss your manifold requrements with our award winning engineers



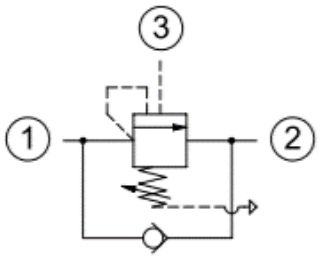
At Oilpath we believe that better performance comes from working together, and our engineers and field representatives will work with you to design your hydraulic control system. We understand that optimizing the performance of your machine starts with creative hydraulic integrated circuits, and when you work with Oilpath we utilize HydraForce cartridge valves and control equipment, therefore you can select from the broadest product range in the industry.

Our design staff will collaborate with you and verify your design prior to manufacturing a prototype. Then we'll make any necessary refinements and engineer your product to meet your exact specifications. With proprietary innovations like HydraForce I-Design, Solidworks MD Tools CAD software & Peps Manifold Expert CAM your hydraulic control schematic is easier than ever. The result is a performance- and configuration-optimized hydraulic solution that is designed exclusively for you.





sales@oilpathhydraulics.com.au
Phone 08 82774933



VALVOLE ITALIA®

Oilpath Counterbalance Cartridges from Valvole Italia

Oilpath are delighted to announce that it has entered the Counterbalance Market, we accomplished this by striking a partnership with Valvole Italia a specialist Load Holding Company formed by engineers from the counterbalance division of Oil Control, focused exclusively on the design and manufacturing of load holding product. HydraForce utilise Valvole Italia counterbalance cartridges in an increasing amount in their custom manifold division.

Oilpath are stocking a range of T11A & T2A and parts in body counterbalance product that are extremely competitively priced and technically superior to product already in the market. Oilpath have built stock in standard configurations and will stock other configurations when demand dictates, please ask about special built to specification product required.

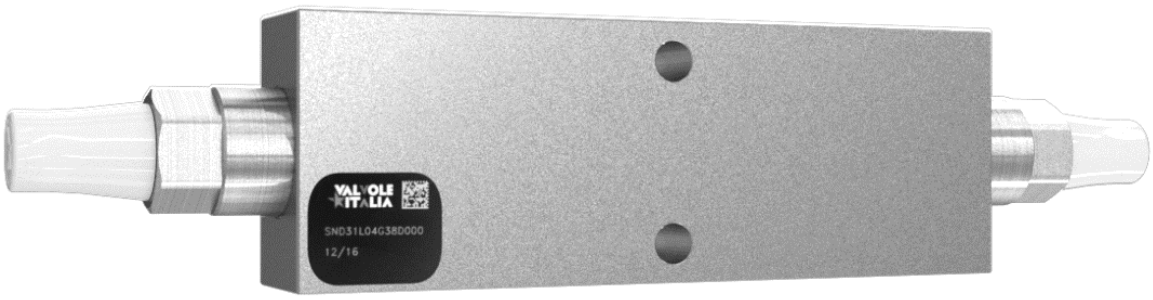
Product Strengths

- Modular concepts available utilising same internal components
- Stainless Steel and Nickel-plated options
- Customisable pistons for specific applications optimising performance
- Cartridges proven through severe durability tests
- Proven superior stability over all other valves in market
- Superior pressure drop performance
- T11A GT Series suitable for 75 lpm with 26 bar pressure drop
- Valves designed & manufactured by a pure Load Holding Company
- T11A cartridges manufacture with smaller inscribed hexagon heads (19mm)

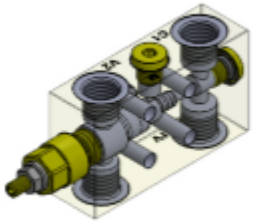
Other Counterbalance Products Available

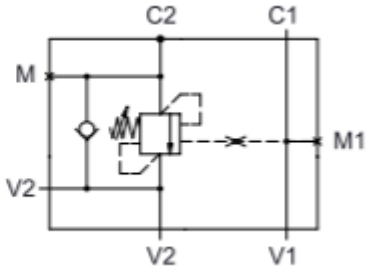
Please be aware that other counterbalance products are available in Industry standard cavity, Vented Cartridges, Rotary Actuator Cartridges, Parts in a body, and other counterbalance solutions. Please call Oilpath to discuss your requirements.

PART No.	Counterbalance Cartridge Description	List Price
C000D240021100A **(CBCL-LJN)**	LOAD CONTROL T11A 60 L/MIN 2:1 2000-5000PSI	140
C040M210031100A	LOAD CONTROL T11A 30 L/MIN 3:1 1000-4000PSI	140
C000M140031100A **(CBCA-LHN)**	LOAD CONTROL T11A 60 L/MIN 3:1 1000-3000 PSI	140
C200M110031100A	LOAD CONTROL T11A 75 L/MIN 3:1 1000-2200PSI	154
C000D210040200A **(CBEA-LHN)**	LOAD CONTROL T2A 120 L/MIN 4:1 2000-5000PSI	200
C000T130051100A **(CBCG-LKN)**	LOAD CONTROL T11A 60 L/MIN 5:1 700-3000 PSI	140
C000D285051100A **(CBCG-LJN)**	LOAD CONTROL T11A 60 L/MIN 5:1 3045-5200PSI	140
C000D310101100A **(CBCH-LJN)**	LOAD CONTROL T11A 60 L/MIN 10:1 2000-5000PSI	140

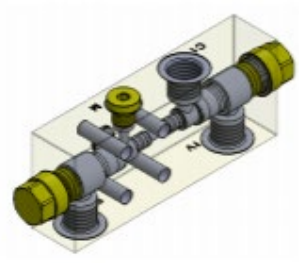


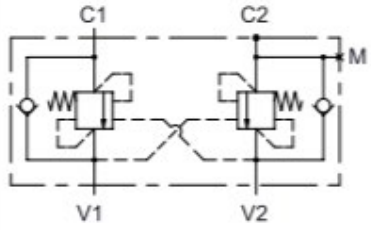
PART No.	Counterbalance Complete Parts in Body Description	List Price
SNS79L04G14D000	SINGLE C/BAL 4:1 350 BAR 1/4"BSPP	148
SNS31L04G38D000	SINGLE C/BAL 4:1 350 BAR 3/8” BSPP	154
SND79L04G14D000	DUAL C/BAL 4:1 350 BAR 1/4" BSPP	230
SND31L04G38D000	DUAL C/BAL 4:1 350 BAR 3/8" BSPP	240
SND31L04G12D000	DUAL C/BAL 4:1 350 BAR 1/2"BSPP	255
PJ17073	DUAL C/BAL 4:1 350 BAR - END C1,C2. PORTS ADJACENT TO CARTRIDGES FOR CONVENIENT CYLINDER MOUNTING 1/2"BSPP	313



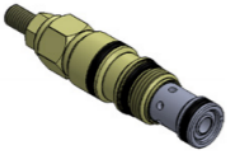


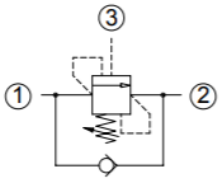
Typical Single Counterbalance Parts-in-body.





Typical Double Counterbalance Parts-in-body.





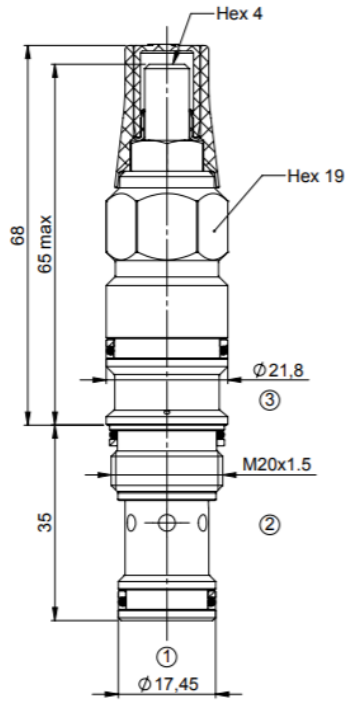
Typical Valvole Counterbalance Cartridge Example

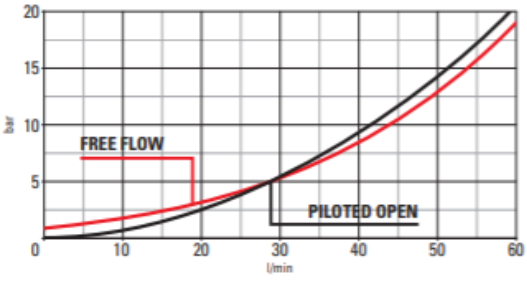
C000M140031100A

(CBCA-LHN)

3:1 Ratio

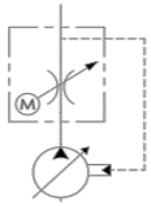
Performance Curves



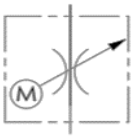


sales@oilpathhydraulics.com.au
Phone 08 82774933

sales@oilpathhydraulics.com.au
Phone 08 82774933



Example Schematic with 10182LS Line Body.



Hydraulic Symbol

Source Motorised Flow Control cartridges provide economical and simple electrical control for flows up to 190 lpm. It utilises a 12- or 24-volt DC motor to open or close a rotary spool valve. This rate is changed by providing a 12- or 24-volt signal to either increase or decrease the valve opening. In its simplest form, the control element is a DPDT three position-momentary-contact toggle or rocker switch or two DP momentary-contact push buttons.

If a more sophisticated control is desired, the loop can be closed by using a control amplifier and relay circuit in conjunction with feedback from a flow or speed sensor. The valve requires no power to maintain its flow setting. A 12-or24-volt DC is applied only while changing the flow rate and even then shut off to hold flow rate at the desired setting. In the event of a power failure or system shutdown, the system will remain at its current flow setting until power is restored and a command signal is once again supplied. Valve design allows for manual override in cases of electrical failure.

The valve is internally protected and will automatically shut down the internal drive when either the full open or full closed position are reached.

FEATURES

- Internally Protected
- Requires no power to maintain setting
- Simple to use
- Economical
- Flexible
- Efficient
- Safe

DESCRIPTION

MFC-10 and MFC-16 are cartridge design and fit generic 10-2 and 16-2 cavities respectively.

OPERATING SPECIFICATIONS

Operating Pressure 3000 psi max

Flow Rating (based on 100 psi delta P with valve fully open)		Speed in Seconds
0-5 gpm	MFC-10-5- (voltage 12 or 24)	3.5 (-03 option)
0-15 gpm	MFC-10-15- (voltage 12 or 24)	7.0 (-07 option)
0-20 gpm	MFC-16-20- (voltage 12 or 24)	24.0 (-24 option)
0-35 gpm	MFC-16-35- (voltage 12 or 24)	48.0 (-48 option)
0-50 gpm	MFC-16-50- (voltage 12 or 24)	

Larger valves (20-2) available on request

All Prices available on request starting from $1,303 List Price

Application notes on sizing motorized flow controls

The pressure drop curves shown are with the valve at full open.

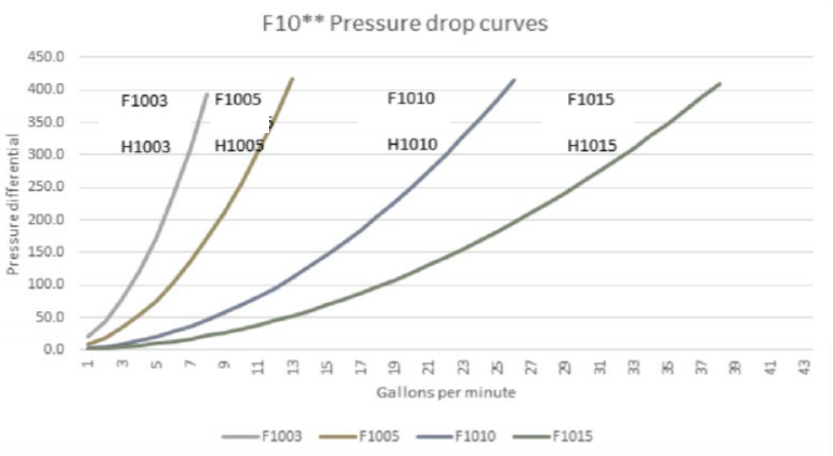
There may be a small variance from valve to valve due to tolerances in each valve. The pressure drop curves represent theoretical calculations and should only be used as a general guideline when sizing a motorized flow control.

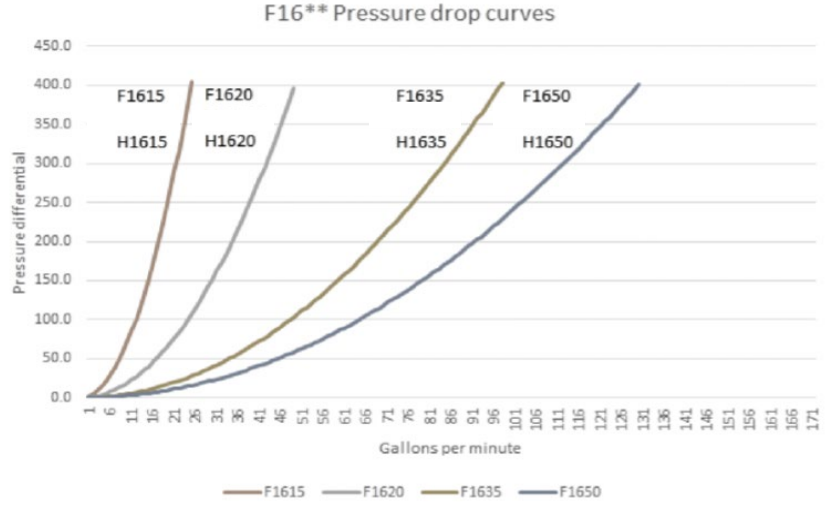
Motorized flow control sizing example:

In a circuit that is using a 100 psi compensator and one of our F1010 size valves, the expected maximum flow would be about 12GPM.

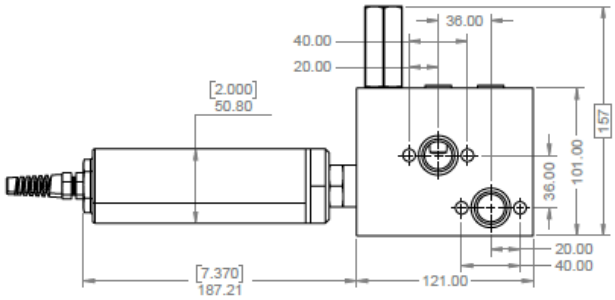
If you were to use the same F1010 valve in a load sensing circuit with a 350 PSI compensator your expected maximum flow output would increase greatly to 24gpm.

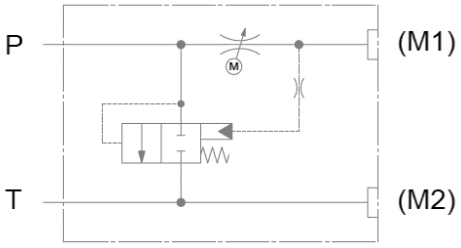
By sizing the valve as close as possible to the maximum expected flow and pressure drop you will have the best resolution possible.

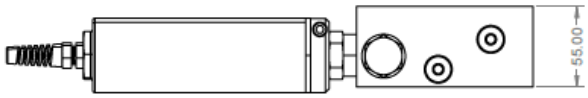


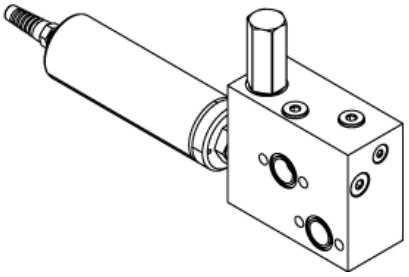


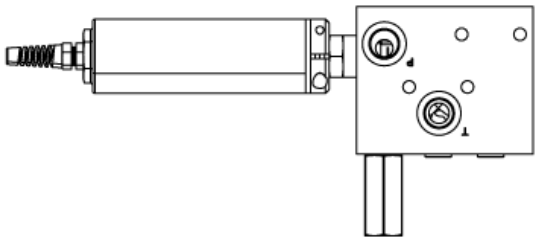
Oilpath 60 lpm Pressure Compensated Motorised Flow Control with OMP/OMR motor mounting interface and Source Motorised Flow Control Cartridge. 12 v or 24 volt system.











FEATURES

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Flow adjustment.....0-60 lpm
- Port Sizes.....1/2”bspp
- Flow control open to close timing.....7 seconds

MATERIAL SPECIFICATIONS BODY

- Body .....High tensile aluminium

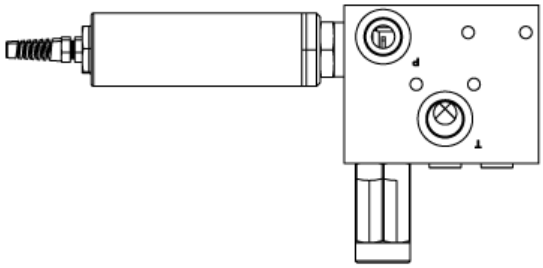
Part No.	Description	List Price
70000012	60 lpm Pressure Compensated Motorised Flow Control. 7 second timing 12 volt	1,710
70000024	60 lpm Pressure Compensated Motorised Flow Control. 7 second timing 24 volt	1,710

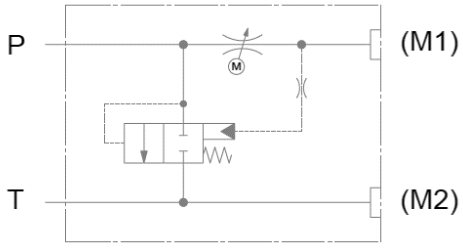
*** Contact factory for alternative sizing and flow control timing**

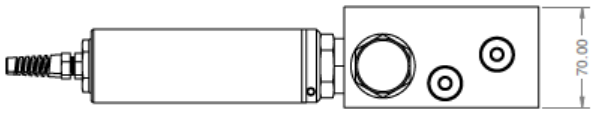
OP701

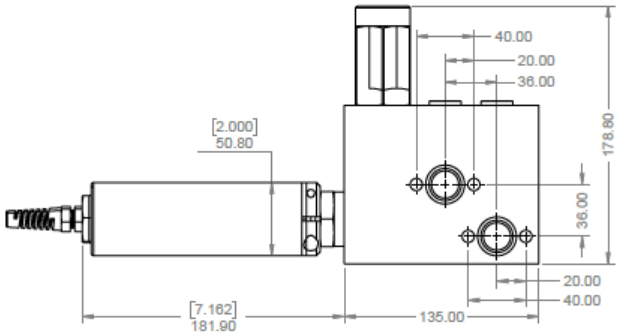
120 lpm Motorised Flow Control with Pressure Compensation

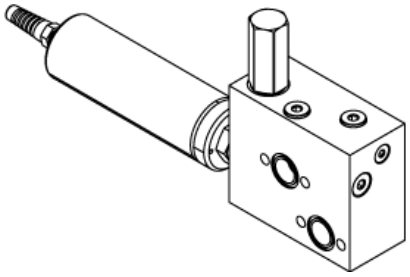
Oilpath 120 lpm Pressure Compensated Motorised Flow Control with OMP/OMR motor mounting interface and Source Motorised Flow Control Cartridge. 12 v or 24 volt system.











FEATURES

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Flow Adjustment.....0-120 lpm
- Flow control open to close timing.....7 seconds
- Port sizes.....3/4”bspp

MATERIAL SPECIFICATIONS BODY

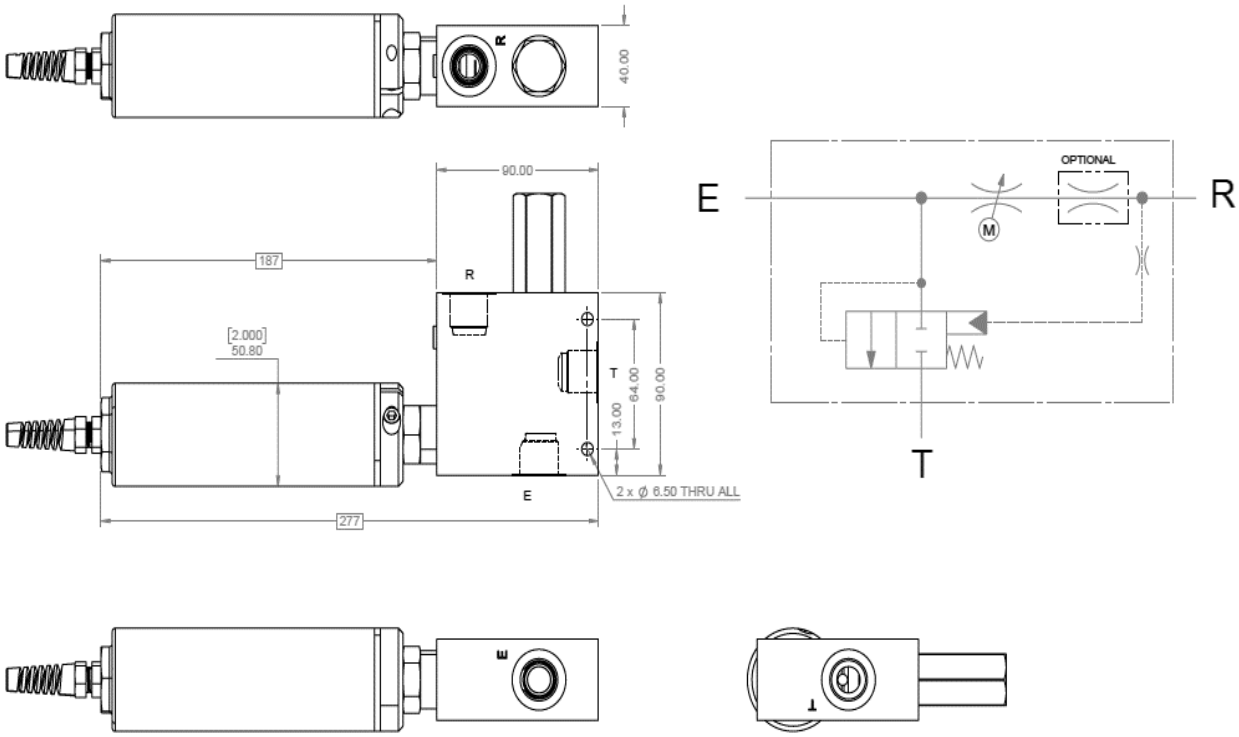
- Body .....High tensile aluminium

Part No.	Description	List Price
70100012	120 lpm Pressure Compensated Motorised Flow Control. 7second timing 12 volt	1,854
70100024	120 lpm Pressure Compensated Motorised Flow Control. 7second timing 24 volt	1,854

*** Contact factory for alternative sizing and flow control timing**

sales@oilpathhydraulics.com.au
Phone 08 82774933

Oilpath 60 lpm Pressure Compensated (by-pass style) Motorised Flow Control with Source Motorised Flow Control Cartridge. 12 v or 24 volt system. Regulated flow adjustment range 0-50 lpm.



FEATURES

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Regulated Flow adjustment.....0-50 lpm
- Flow control open to close time.....7 seconds
- Port sizes.....1/2”bspp

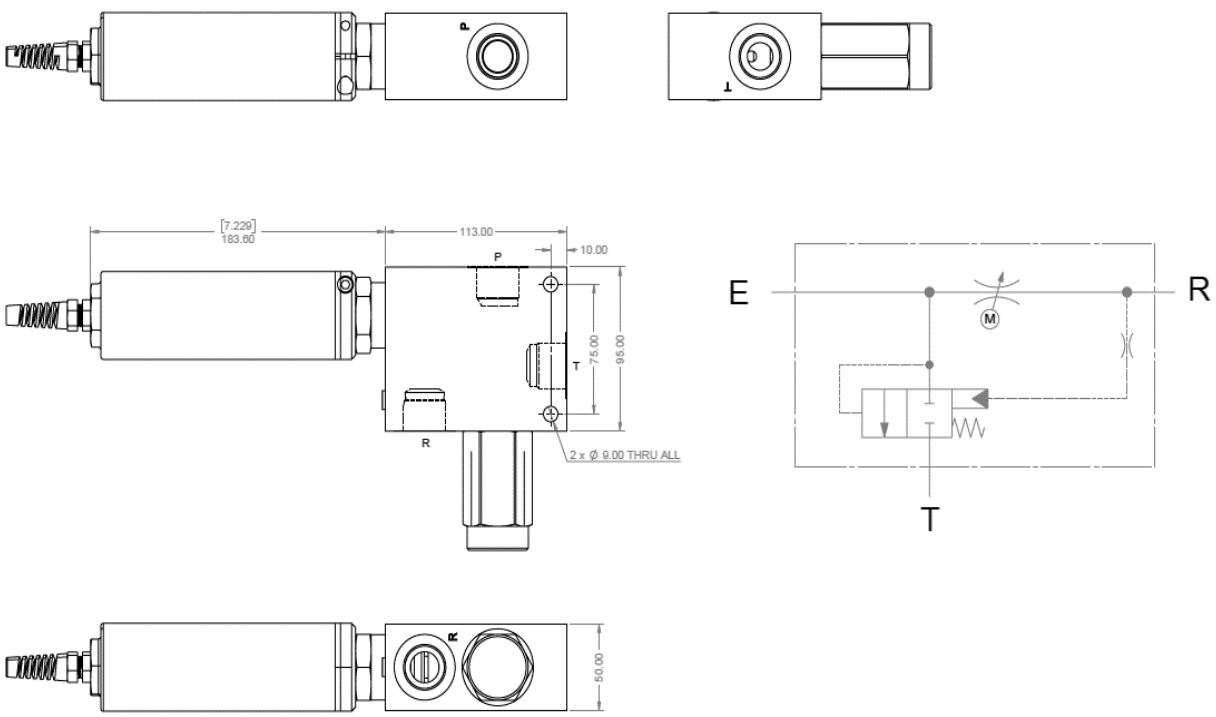
MATERIAL SPECIFICATIONS BODY

- Body .....High tensile aluminium

Part No.	Description	List Price
72000012	60 lpm Pressure Compensated Motorised Flow Control. Regulated flow 0-50 lpm 7 second timing 12 volt	1,595
72000024	60 lpm Pressure Compensated Motorised Flow Control. Regulated flow 0-50 lpm 7 second timing 24 volt	1,595

*** Contact factory for alternative sizing and flow control timing**

Oilpath 120 lpm Pressure Compensated (by-pass style) Motorised Flow Control with Source Motorised Flow Control Cartridge. 12 v or 24 volt system. Regulated flow adjustment range 0-110 lpm.



FEATURES

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Regulated Flow adjustment.....0-110 lpm
- Flow control open to close timing.....7 seconds
- Port sizes.....3/4”bspp

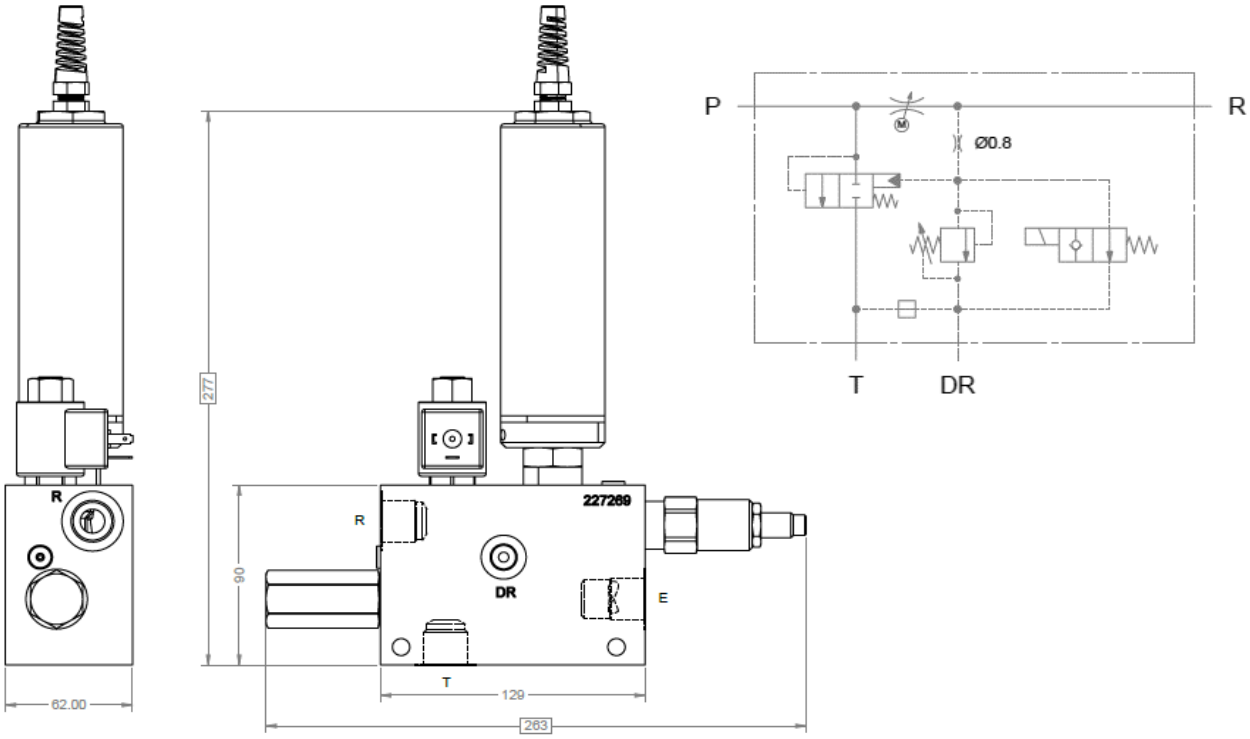
MATERIAL SPECIFICATIONS BODY

- Body .....High tensile aluminium

Part No.	Description	List Price
72100012	120 lpm Pressure Compensated Motorised Flow Control. Regulated flow 0-110 lpm 7 second timing 12 volt	1,740
72100024	120 lpm Pressure Compensated Motorised Flow Control. Regulated flow 0-110 lpm 7 second timing 24 volt	1,740

*** Contact factory for alternative sizing and flow control timing**

Oilpath 60 lpm inlet Motorised Flow Control with Pressure Compensation, unloader and relief with Source Motorised Flow Control Cartridge. 12 v or 24 volt system. Regulated flow adjustment range 0-50 lpm. With a relief and unloading facility on priority line.



FEATURES

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Regulated Flow adjustment.....0-50 lpm
- Flow control open to close time .....7 seconds
- Port sizes.....1/2"bspp

MATERIAL SPECIFICATIONS BODY

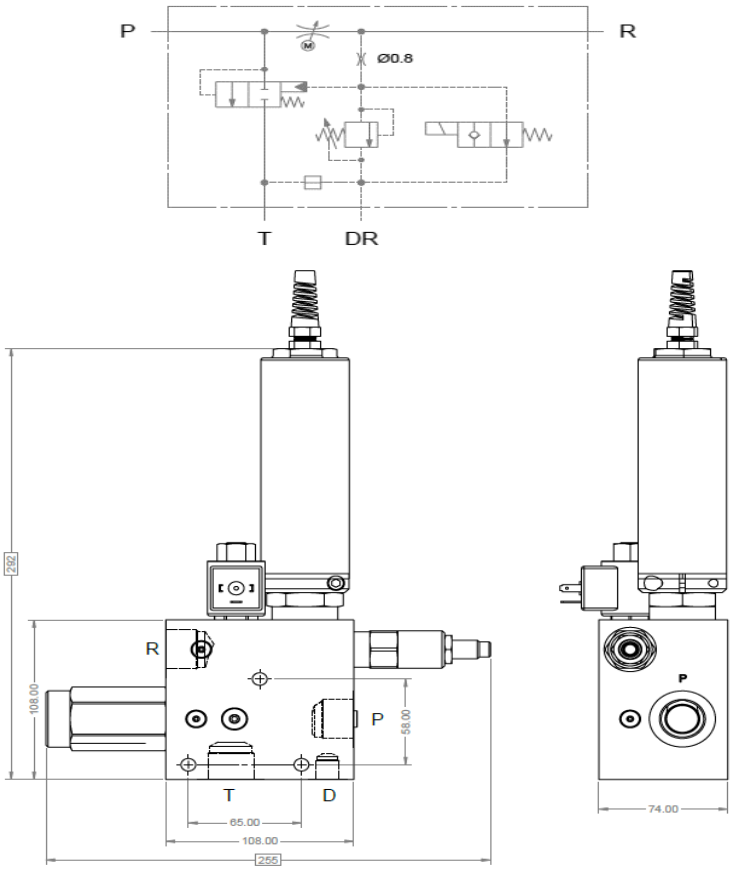
- Body .....High tensile aluminium

Part No.	Description	List Price
72200012	60 lpm Motorised Flow Control with Pressure Compensation and unloader relief function. 7 second timing 12 volt	1,958
72200024	60 lpm Motorised Flow Control with Pressure Compensation and unloader relief function. 7 second timing 24 volt	1,958

*** Contact factory for alternative sizing and flow control timing**

sales@oilpathhydraulics.com.au
Phone 08 82774933

Oilpath 120 lpm inlet Motorised Flow Control with Pressure Compensation, unloader and relief with Source Motorised Flow Control Cartridge. 12 v or 24 volt system. Regulated flow adjustment range 0-110 lpm. With a relief and unloading facility on priority line.



FEATURES

- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Regulated Flow adjustment.....0-110 lpm
- Flow open to close time.....7 seconds
- Port sizes.....3/4"bspp

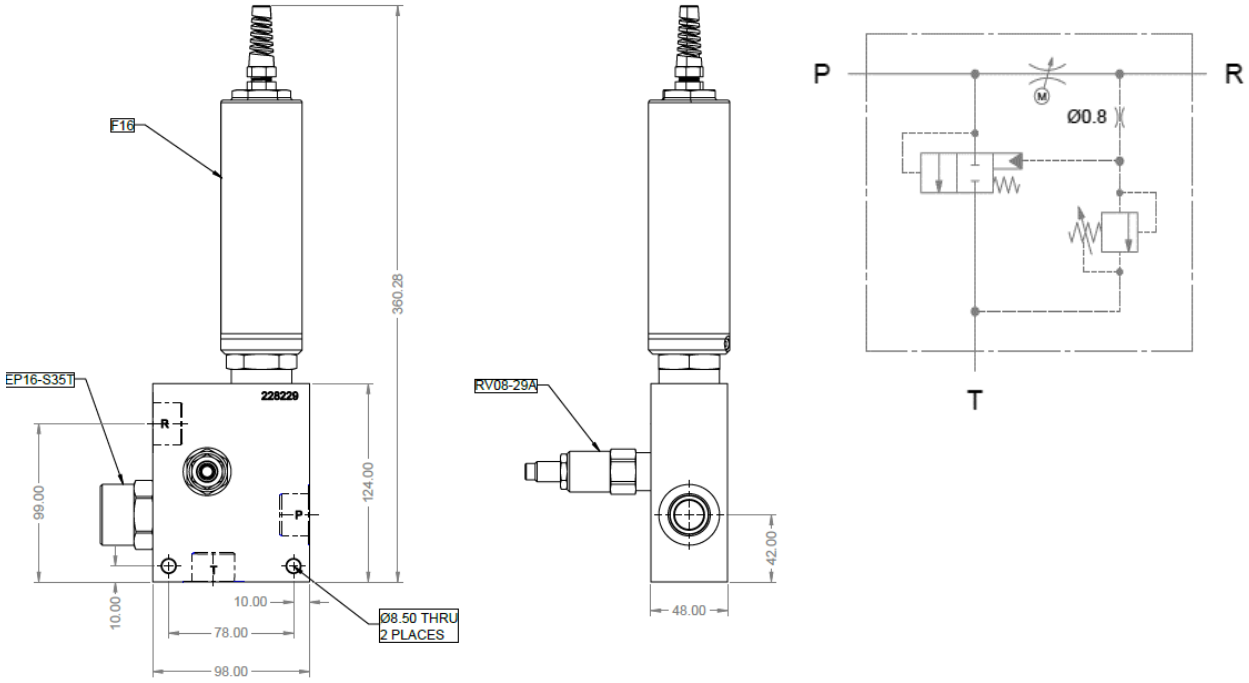
MATERIAL SPECIFICATIONS BODY

- Body .....High tensile aluminium

Part No.	Description	List Price
72300012	120 lpm Motorised Flow Control with Pressure Compensation and unloader relief function, 7 second timing, 12 volt	2,092
72300024	120 lpm Motorised Flow Control with Pressure Compensation and unloader relief function, 7 second timing,24 volt	2,092

*** Contact factory for alternative sizing and flow control timing**

Oilpath 120 lpm inlet Motorised Flow Control with Pressure Compensation by-pass style, with relief on regulated flow line. Source Motorised Flow Control Cartridge. 12 v or 24 volt system. Regulated flow adjustment range 0-110 lpm.



FEATURES

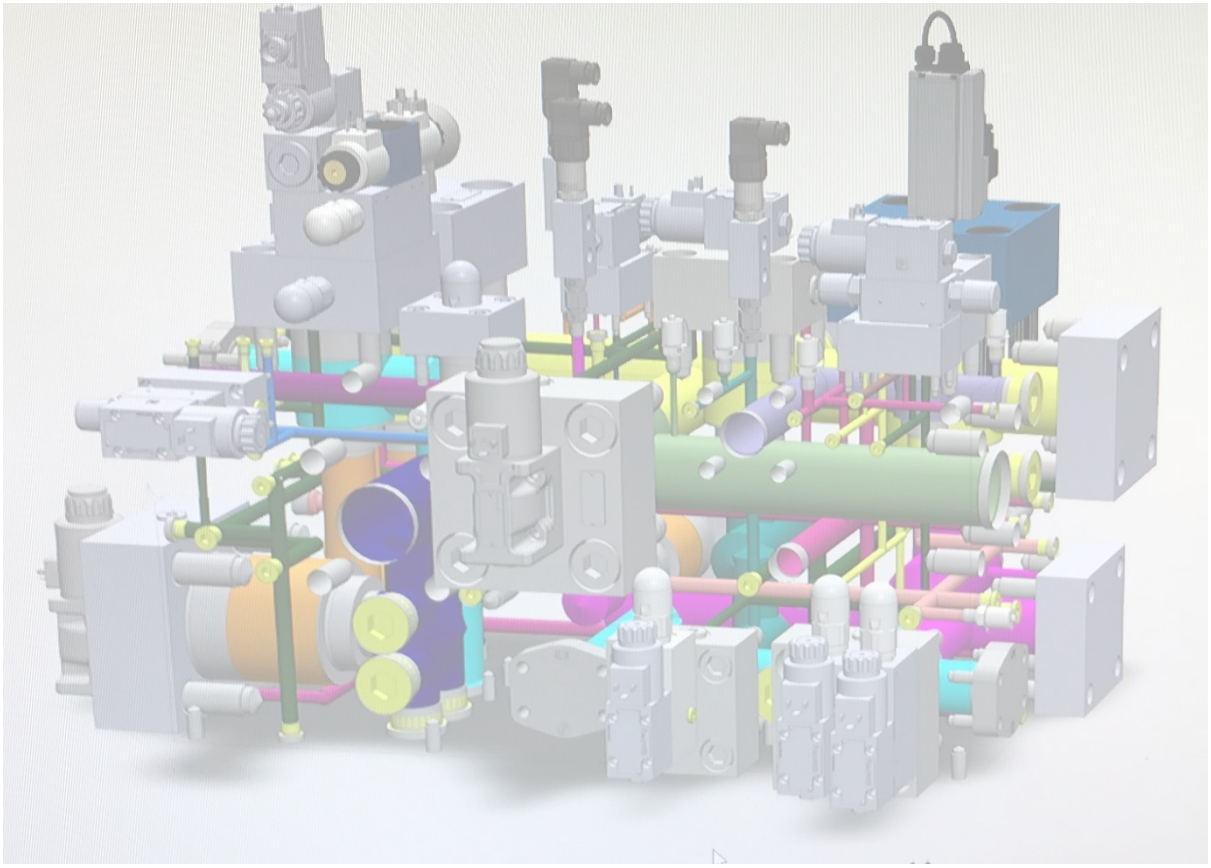
- Maximum working pressure..... Aluminium 210 bar (3000 psi)
- Regulated Flow adjustment.....0-110 lpm
- Flow control open to close time.....7 seconds
- Port sizes.....3/4”bspp

MATERIAL SPECIFICATIONS BODY

- Body .....High tensile aluminium

Part No.	Description	List Price
72400012	120 lpm Motorised Flow Control with Priority and relief function, 7 second timing 12 volt	1,822
72400024	120 lpm Motorised Flow Control with Priority and relief function, 7 second timing 24 volt	1,822

*** Contact factory for alternative sizing and flow control timing**



sales@oilpathhydraulics.com.au
Phone 08 82774933

OILPATH
VALVE & MANIFOLD MANUFACTURING

Australian Athourised Distributor
Stocking in excess of 1,200 HydraForce Line items incl: cartridges, line bodies & electronics

Phone 08 82774933
sales@oilpathhydraulics.com.au

Product Guide

Hydraulic Cartridge Valves
Manifold Systems
Electronic Controls

HYDRAFORCE
POWER FORWARD

HydraForce®

POWER FORWARD

With a unique blend of customized design solutions and superior product performance, HydraForce is leading the way in manufacturing the highest quality hydraulic cartridge valves, manifolds and electro-hydraulic controls.

Our Vision
To be an independent provider of innovative technical solutions that can change the world

Our Mission
To create world wide customer delight by providing the highest quality products and the most responsive customer support in the world at a globally competitive cost

While custom design solutions are our specialty, HydraForce also provides many standard products. This Product Guide is a quick reference to the products available from HydraForce and its 120 stocking distributors. If you don't see what you need, contact HydraForce or your distributor for application support.

Hydraulic Cartridge Valves
HydraForce is the largest manufacturer of cartridge-style hydraulic valves in the world with a range of products that encompasses flow, directional and pressure controls, solenoid and electro-proportional options. Standard valves are grouped by category, with ISO graphic symbols, flow, and pressure ratings.

Multifunction Valves
HydraForce multifunction valves incorporate two or more hydraulic functions in a single valve, allowing the design of a lighter, more compact valve package.

HyPerformance™ Valves
Designed for pressures up to 350 bar (5075 psi), HyPerformance or H-series valves meet more rigorous performance testing standards than standard models.

High Quality, Precision Manufacturing
HydraForce uses the most advanced equipment and processes for machining, assembly, and product testing. By maintaining precise control of the fit and clearances in critical valve subassemblies, HydraForce is able to create high quality products that perform consistently. Precise procedures and state-of-the-art assembly equipment enable HydraForce to meet critical tolerances for more efficient hydraulic circuits.

Our equipment includes the following:

- Automated honing/bore-sizing equipment to 0.00005 tolerances
- Automated parts cleaning and assembly equipment

Product Qualification
HydraForce's product qualification policy includes fatigue and pressure testing to NFPA T2.6.1. Standard products are tested for at least one-million cycle capability. Other qualification testing can be done to meet specific customer requirements.

Manifold Systems
Optimizing the performance of your machine starts with creative hydraulic integrated circuits. Our design staff will collaborate with you and verify your design prior to manufacturing a prototype. Then we'll make any necessary refinements and engineer your product to meet your exact specifications. With proprietary innovations like our i-Design manifold tool, designing your hydraulic control schematic is easier than ever. The result is a performance- and configuration-optimized hydraulic solution that is designed exclusively for you.

Every HydraForce manifold is hydraulic function tested to a documented customer or product-specific test procedure. Manifolds produced at our U.S., U.K., and China facilities conform to the requirements of the ISO 9001 Certified Standard. HydraForce will mount customer specified fittings or other components not of our manufacture on request.

HydraForce can provide the following options for your custom hydraulic control system manifold:

- Steel, aluminum, cast or ductile iron manifold blocks
- Anodized or zinc plating for protection in severe environments
- Industry-common valve cavities
- Fittings, CETOP valves, and accessory components available
- “FastTrak” service for quick delivery of a working prototype
- i-Design hydraulic system design software available free of charge to qualified users

info.hydraforce.com/downloadi-design

Electronic Controls
HydraForce is pleased to offer a full line of electronic vehicle control products integrating engine, transmission, and other machine functions into a common J1939 or ISO 11783 CAN data link control circuit.

These systems consist of rugged, field-proven components suitable for heavy-duty operating conditions. PWM digital signal logic maximizes efficiency, response, and signal integrity under harsh environmental conditions. Reliability has been proven through extensive testing, as well as years of real-world application experience.

This is a complete line of the most rugged, heavy-duty vehicle machine controllers, monitors, displays, and electrical connectors for motion control and integrated machine control applications in mobile, off-highway and material handling equipment.

www.hydraforce.com/electronics

- Reliable operation in the most demanding mobile equipment applications
- Operating temperatures from -40 to 85 °C (-40 to 185 °F)
- Chemical splash immunity
- Moisture resistance to IP67 specifications
- Fully resistant to EMI/RFI
- Vibration resistant to 8 G_{rms} (random) 24–200 Hz, 3-axis

INTEGR8
ENGINEERED HYDRAULIC CONTROL SOLUTIONS

INTEGR8
As an industry leader, HydraForce offers a unique series of innovative engineered hydraulic control solutions called INTEGR8. These solutions are designed to save engineering time and maximize efficiency. Specifically, they take the guesswork out for the most common hydraulic functions by providing engineered circuits featuring the best valve configurations. Now i-Design features a built-in library of INTEGR8 circuits to accelerate the design process.

All INTEGR8 circuits are 100% logic and function tested.

At HydraForce we believe that better performance comes from working together.

Our engineers and field representatives work with you to design your hydraulic control system. When you work with HydraForce, you can select from the broadest product range in the industry.

All HydraForce products meet global quality standards including ISO 9001, QS 9000. Every cartridge valve, manifold, and electrohydraulic control goes through rigorous testing and inspection to perform beyond industry standards.

Contact us for additional product information:

US: +1-847-793-2000
UK: +44-121-333-1800
China: +86-519-6988-1200

HydraForce Electronic Control Units
HydraForce offers a line of general-purpose CoDeSys™ programmable controllers that work well as stand-alone controllers or integrate 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.

HydraForce Electronic Valve Drivers
HydraForce electronic valve drivers are available for a variety of electrohydraulic machine control functions. Whether you need simple closed-loop speed control, a fan control, or lift/lower, extend/retract, and dump controls, there is a HydraForce ExDR valve driver for your application. Vigorously tested and durable enough for mobile applications, and with SAE J1939 and CAN Open networking, these drivers fit into any system architecture.

Firmware Personalities
The ExDR drivers are available in multiple specialized personalities. These preprogrammed firmware choices are fully configurable using HF-Impulse, a free utility available for download from the HydraForce electronics portal.

- EVDR — General 1 or 2 coil proportional valve driver
- ETDR — Time-based driver useful for shift/clutch controls
- EFDR — Fan speed control with reversing feature
- ECDR — Fully configurable with user-developed function diagram built from preprogrammed and tested function blocks

ExDR-0101A
This single I/O driver features on-coil mounting, flexible input choices, and is configurable with the easy-to-use HF-Impulse software available for free download. It supports serial communication for configuration only. Personalities include EVDR/ETDR.

ExDR-0201A
With SAE J1939 and CAN Open networking capabilities, this proportional hydraulic valve driver accepts inputs from virtually any analog or CAN-capable input device. It provides closed-loop control of one or two proportional solenoids, and mounts on the coil with an integrated DT06-2S Deutsch™ connector. Personalities include EVDR/EFDR/ECDR.

ECDR-0203A
The ECDR-0203A features SAE J1939 and CAN Open networking capabilities, closed-loop control of one or two proportional solenoids, and three configurable analog or digital inputs. The ECDR firmware personality allows the user to build complex control schemes using preprogrammed and tested function blocks in a simple logic diagram.

ECDR-0506A
Like the ECDR-0203A, the ECDR-0506A also features SAE J1939 and CAN Open networking capabilities, and the ECDR firmware personality. The I/O includes four closed-loop and one open-loop solenoid control, and up to six configurable analog or digital inputs.

Displays
HydraForce offers operator display/input devices. These rugged units are programmable operator panels specifically designed for use with hydraulically powered mobile equipment. They offer the operator convenient and state-of-the-art control of hydraulic functions. The 4.3 or 7 inch (109/177 mm) displays feature 8 or 12 programmable soft keys, three hard keys, video input, programming tool, and CAN communications.

ECBP Electronic CAN Button Panels
HydraForce ECBP panels are CAN capable input devices that really simplify your vehicle control wiring. A handsome addition to any cab or control panel, these units feature 16 color LED lighting, momentary/on-off/on-off-on cam configurable action, and available custom etching. Banks of four through eight buttons are possible. HF-Impulse supports operation and configuration of the ECBP panels.

Sensors and Accessories
HydraForce extends machine system integration with pressure and temperature sensors, and all connectors and accessories necessary build complete machine control systems. HydraForce sensors allow machines to respond optimally to changing operating conditions of the system.

HF-Impulse Software
Available for free download from the HydraForce electronics portal, HF-Impulse is a complete support and configuration tool for HydraForce electronic products. Using this custom software, you can set operating parameters, update firmware, service deployed equipment, or build complex logic schemes without writing a single line of code. HF-Impulse is continually updated to support the growing line of HydraForce electronics.

Electronics

HydraForce electronic control units

Item no.	Model	Input/Output	CAN
4000350	ECU-0809	8/9	Yes
4000352	ECU-2415	24/15	Yes
4000356	ECU-2820	28/20	Yes
4000343	ECU-3233A (1 MB RAM)	32/33	Yes
4000344	ECU-3233B (3 MB RAM)	32/33	Yes

Drivers and controllers

Item no.	Model	Input/Output	CAN
4204800	EVDR-0101A	1/1	No
4204810	ETDR-0101A	1/1	No
4204700	EVDR-0201A	2/1	Yes
4204710	EFDR-0201A	2/1	Yes
4204740	ECDR-0201A	2/1	Yes
4208230	ECDR-0203A	2/3	Yes
4208560	ECDR-0506A	5/6	Yes

Display/operator input devices

Item no.	Model	Display size	Inputs	Outputs
4000401	A3F - Touch screen	109 mm (4.3 in)	4 analog/digital 1 video	3 digital
4000400	A3S	109 mm (4.3 in)	None	None
4000408	A6F - Touch screen	177 mm (7 in)	4 analog/digital 3 video	3 digital
4000407	A6S	177 mm (7 in)	1 video	None

ECBP electronic CAN button panels

Item no.	Description
4000384	ECBP-4, 4-Button CAN Rocker Switch Panel
4000385	ECBP-5, 5-Button CAN Rocker Switch Panel
4000386	ECBP-6, 6-Button CAN Rocker Switch Panel
4000387	ECBP-7, 7-Button CAN Rocker Switch Panel
4000388	ECBP-8, 8-Button CAN Rocker Switch Panel

Heavy-duty pressure sensors

Item no.	Voltage	Pressure rating
4000650	5 Vdc	0 to 34 bar (500 psi)
4000651	5 Vdc	0 to 103 bar (1500 psi)
4000652	5 Vdc	0 to 207 bar (3000 psi)
4000653	5 Vdc	0 to 345 bar (5000 psi)
4000654	5 Vdc	0 to 414 bar (6000 psi)
4000655	9 to 36 Vdc	0 to 34 bar (500 psi)
4000656	9 to 36 Vdc	0 to 103 bar (1500 psi)
4000657	9 to 36 Vdc	0 to 207 bar (3000 psi)
4000658	9 to 36 Vdc	0 to 345 bar (5000 psi)
4000659	9 to 36 Vdc	0 to 414 bar (6000 psi)

Thermistor temperature sensors

Item no.	Model	Temp range	Output signal
4206200	ERT-120	-40 to 150 °C (-40 to 300 °F)	436 to 5428 Ω

Refer to the HydraForce catalog for additional information and specifications. Complete technical information, including user manuals, are available on the HydraForce electronics portal at www.hydraforce.com/electronics.

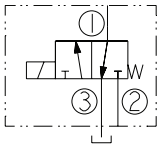
Next Generation (G3) Cartridge Valves

HydraForce has a complete range of control solutions for pilot control, diesel engine and powertrain systems, and transmissions. Fuel efficiency and emissions standards continue to drive the demand for more efficient, reliable powertrain systems. HydraForce meets the demand by providing the next generation of precise, customizable controls.

- Optimized actuator magnetic force
- Low current draw
- Zinc-nickel plated
- Maximized flow capacity
- IP69K ingress protection
- Low hysteresis
- Top-mounted connectors

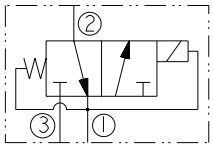
G3 Valves

Solenoid valve, 2-position, 3-way, drop-in



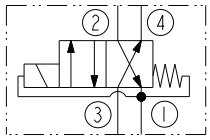
Model	Pressure bar (psi)	Flow lpm (gpm)
SV98-G38	45 (650)	30 (8)

Solenoid valve, 2-position, 3-way, drop-in



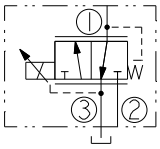
Model	Pressure bar (psi)	Flow lpm (gpm)
SV90-G39	45 (650)	30 (8)

Solenoid valve, 2-position, 4-way, drop-in



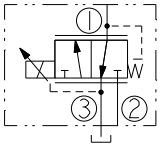
Model	Pressure bar (psi)	Flow lpm (gpm)
SV90-G40R	45 (650)	30 (8)

Proportional pressure reducing/relieving valve, drop-in



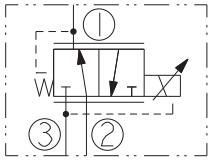
Model	Pressure bar (psi)	Flow lpm (gpm)
EHPR98-G33	45 (650)	4 (1)

Proportional pressure reducing/relieving valve, drop-in



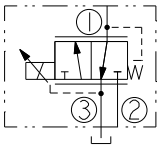
Model	Pressure bar (psi)	Flow lpm (gpm)
EHPR98-G35	45 (650)	6 (2)

Proportional pressure reducing/relieving valve, drop-in



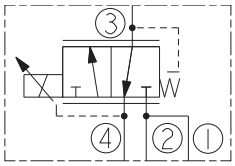
Model	Pressure bar (psi)	Flow lpm (gpm)
EHPR98-G37	45 (650)	18 (5)

Proportional pressure reducing/relieving valve, drop-in



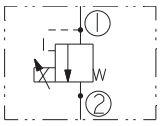
Model	Pressure bar (psi)	Flow lpm (gpm)
EHPR98-G38	35 (500)	30 (8)

Proportional pressure reducing/relieving valve, drop-in



Model	Pressure bar (psi)	Flow lpm (gpm)
TS90-G34	35 (500)	34 (9)
TS92-G34	35 (500)	60 (16)

Proportional pressure relief valve, drop-in



Model	Pressure bar (psi)	Flow lpm (gpm)
TS98-G21	83 (1200)	6 (1.5)

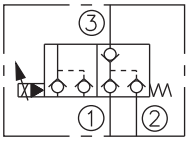
HydraForce multifunction valves incorporate two or more functions into a single valve, allowing for the design of a lighter, more compact valve package. Multifunction valves reduce manifold size, number of ports, and machining costs, while increasing flow passage efficiency. The result is more responsive machine performance and efficient use of available horsepower.

- Directional valves with isolated load-sense checks
- Solenoid valves with internal flow checks
- Solenoid valves with Integrated pressure relief
- Proportional flow controls with integrated pressure compensation
- Logic elements with built-in relief
- Logic elements with flow regulation
- Flow controls with adjustable pressure relief

Multifunction Valves

Solenoid valve, poppet type, normally closed, load sense port

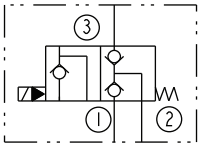
US Pat. 7,921,880



Model	Pressure bar (psi)	Flow lpm (gpm)
SVCL10-30	240 (3500)	57 (15)

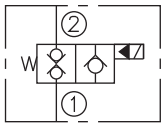
Solenoid valve, poppet type, normally open, load sense port

US Pat. 7,921,880



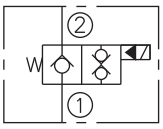
Model	Pressure bar (psi)	Flow lpm (gpm)
SVCL10-32	250 (3625)	57 (15)

Solenoid valve, poppet type, normally closed, internal outlet flow check



Model	Pressure bar (psi)	Flow lpm (gpm)
SVCV08-20	207 (3000)	23 (6)

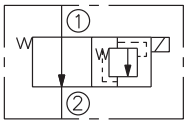
Solenoid valve, poppet type, normally open, internal outlet flow check



Model	Pressure bar (psi)	Flow lpm (gpm)
SVCV08-21	207 (3000)	23 (6)

Solenoid valve, normally open, integral pressure relief

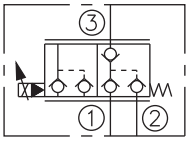
US Pat. 7,137,406



Model	Pressure bar (psi)	Flow lpm (gpm)
SVRV10-26	297 (4300)	76 (20)
SVRV12-26F	297 (4300)	189 (50)

Proportional flow control, normally closed, isolated load sense port

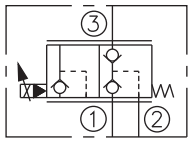
US Pat. 7,921,880



Model	Pressure bar (psi)	Flow lpm (gpm)
SPCL10-30	250 (3625)	57 (15)
SPCL16-30	250 (3625)	152 (40)

Proportional flow control, normally closed, load sense port

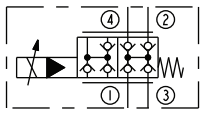
US Pat. 7,921,880



Model	Pressure bar (psi)	Flow lpm (gpm)
SPCL10-32	250 (3625)	57 (15)
SPCL16-32	250 (3625)	152 (40)

Proportional directional valve, 2-position, 4-way, normally closed, isolated load sense port

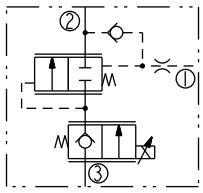
US Pat. 7,921,880



Model	Pressure bar (psi)	Flow lpm (gpm)
SPCL10-40	250 (3625)	132 (35)
SPCL16-40	250 (3625)	152 (40)

Proportional flow control valve with integral compensator

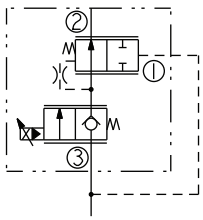
US Pat. 7,261,030



Model	Pressure bar (psi)	Flow lpm (gpm)
HSPEC10-30A	350 (5075)	35 (9)
HSPEC12-30A	350 (5075)	70 (18)
HSPEC16-30	350 (5075)	132 (35)

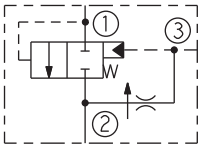
Proportional flow control valve with integral compensator

US Pat. 7,261,030



Model	Pressure bar (psi)	Flow lpm (gpm)
HSPEC10-34	350 (5075)	34 (9)
HSPEC12-34	350 (5075)	61 (16)

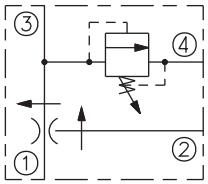
Logic element with flow regulator



Model	Pressure bar (psi)	Flow lpm (gpm)
EPFR58-35	345 (5000)	38 (10)
EPFR50-S35	345 (5000)	76 (20)
EPFR52-S35	345 (5000)	151 (40)
EPFR16-S35	240 (3500)	189 (50)

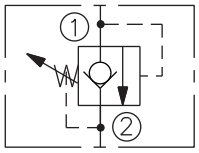
Flow control with adjustable pressure relief

US Pat. 7,063,100



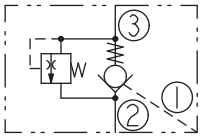
Model	Pressure bar (psi)	Flow lpm (gpm)
FRRV10-41F	207 (3000)	38 (10)
FRRV12-41F	207 (3000)	76 (20)

Relief valve, direct acting with anti-cavitation check



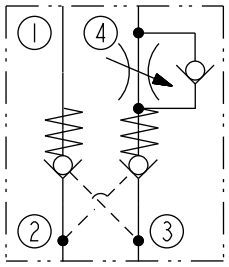
Model	Pressure bar (psi)	Flow lpm (gpm)
RVCV56-20	420 (6100)	175 (46)

Check, pilot to open, integrated thermal relief



Model	Pressure bar (psi)	Flow lpm (gpm)
PC10-38	240 (3500)	45 (12)

Dual PO check with adjustable flow control

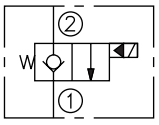


Model	Pressure bar (psi)	Flow lpm (gpm)
DCFC08-40	207 (3000)	19 (5)

- Continuous-duty coils with a wide range of voltages, terminations, and diode options
- Designed for mobile operating environments including low voltage, high and low temperatures, and exposed environmental conditions
- Industry common cavity sizes -07, -08, -10, -12, -16, -20, as well as drop-in-style construction
- Series E water/weather-resistant coils with integral connectors rated up to IP69K
- Manual override option on most models
- Integral position sensors available on some models

Solenoid Valves

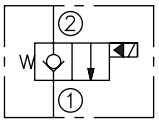
Solenoid valve, piloted poppet type, normally closed



Model	Pressure bar (psi)	Flow lpm (gpm)
SF08-20	345 (5000)	19 (5)

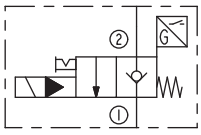
Solenoid valve, poppet type, normally closed

*** available with position sensor**



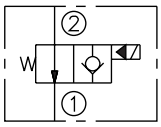
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-20	207 (3000)	23 (6)
SV08-20J	207 (3000)	23 (6)
HSV10-20	350 (5075)	76 (20)
SV10-20, SV10-P20A*	240 (3500)	57 (15)
HSV12-20	350 (5075)	114 (30)
SV12-20, SV12-P20A*	240 (3500)	114 (30)
SV16-20	240 (3500)	95 (25)

Solenoid valve, poppet type, normally closed, integral position sensor



Model	Pressure bar (psi)	Flow lpm (gpm)
SV58-P20A	345 (5000)	19 (5)

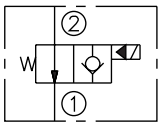
Solenoid valve, piloted poppet type, normally open



Model	Pressure bar (psi)	Flow lpm (gpm)
SF08-21	345 (5000)	30 (8)

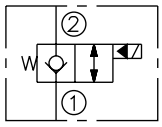
Solenoid valve, poppet type, normally open

*** available with position sensor**



Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-21	207 (3000)	30 (8)
HSV10-21	350 (5075)	76 (20)
SV10-21, SV10-P21A*	207 (3000)	68 (18)
SV12-21, SV12-P21A*	240 (3500)	114 (30)
HSV12-21	350 (5075)	114 (30)
SV16-21	207 (3000)	132 (35)

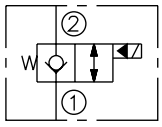
Solenoid valve, piloted poppet type, normally closed, bidirectional



Model	Pressure bar (psi)	Flow lpm (gpm)
SF08-22	345 (5000)	23 (6)
SF20-22	345 (5000)	303 (80)

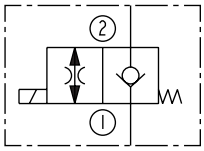
Solenoid valve, poppet type, normally closed, bidirectional

*** available with position sensor**



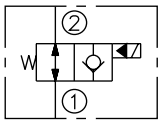
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-22	207 (3000)	27 (7)
HSV10-22	350 (5075)	76 (20)
SV10-22, SV10-P22A*	240 (3500)	57 (15)
HSV12-22	350 (5075)	114 (30)
SV12-22, SV12-P22A*	240 (3500)	114 (30)
SV16-22, SV16-P22A*	240 (3500)	151 (40)

Solenoid valve, needle type, normally closed



Model	Pressure bar (psi)	Flow lpm (gpm)
SL08-22	207 (3000)	1.5 (0.4)

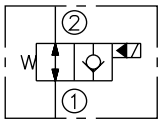
Solenoid valve, piloted poppet type, normally open, bidirectional



Model	Pressure bar (psi)	Flow lpm (gpm)
SF08-23	345 (5000)	30 (8)
SF20-23	345 (5000)	303 (80)

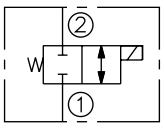
Solenoid valve, poppet type, normally open, bidirectional

*** available with position sensor**



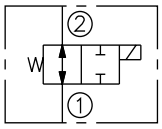
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-23	207 (3000)	30 (8)
HSV10-23	350 (5075)	76 (20)
SV10-23, SV10-P23A*	207 (3000)	68 (18)
HSV12-23	350 (5075)	114 (30)
SV12-23, SV12-P23A*	240 (3500)	114 (30)
SV16-23	207 (3000)	132 (35)

Solenoid valve, spool type, normally closed, bidirectional



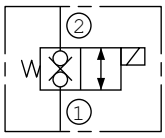
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-24	207 (3000)	17 (4)
HSV10-24	350 (5075)	30 (8)
SV10-24	207 (3000)	38 (10)
SV12-24	240 (3500)	76 (20)

Solenoid valve, spool type, normally open, bidirectional



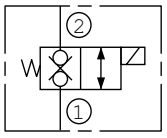
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-25	207 (3000)	10 (3)
HSV10-25	350 (5075)	30 (8)
SV10-25	207 (3000)	22 (6)
SV12-25	240 (3500)	76 (20)

Solenoid valve, blocking, normally closed, low flow



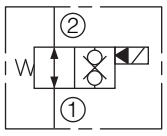
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-26	207 (3000)	1.9 (0.5)
SV38-26	207 (3000)	3.4 (0.9)

Solenoid valve, blocking, normally closed, bidirectional



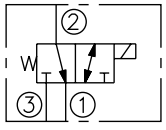
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-28	207 (3000)	11 (3)
HSV10-28	350 (5075)	76 (20)
SV10-28	240 (3500)	76 (20)
HSV12-28	350 (5075)	114 (30)
SV12-28	240 (3500)	114 (30)
SV38-28	207 (3000)	19 (5)

Solenoid valve, poppet type, normally open



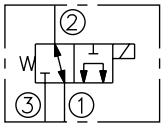
Model	Pressure bar (psi)	Flow lpm (gpm)
HSV10-29	350 (5075)	76 (20)
SV10-29	240 (3500)	76 (20)
HSV12-29	350 (5075)	114 (30)
SV12-29	240 (3500)	114 (30)

Solenoid valve, 2-position, 3-way



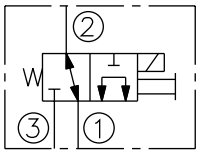
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-30	207 (3000)	15 (4)
SV38-30	207 (3000)	18 (5)
SV58-30	345 (5000)	15 (4)

Solenoid valve, 2-position, 3-way



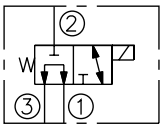
Model	Pressure bar (psi)	Flow lpm (gpm)
SV07-31	207 (3000)	6 (2)
SV08-31	207 (3000)	11 (3)
SV10-31	207 (3000)	22 (6)
SV12-31	240 (3500)	60 (16)

Solenoid valve, 2-position, 3-way



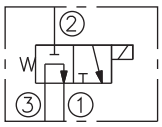
Model	Pressure bar (psi)	Flow lpm (gpm)
SV38-31J	207 (3000)	11 (3)

Solenoid valve, 2-position, 3-way



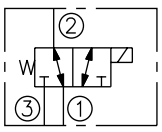
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-33	207 (3000)	11 (3)
SV12-33	240 (3500)	60 (16)

Solenoid valve, 2-position, 3-way



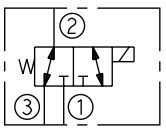
Model	Pressure bar (psi)	Flow lpm (gpm)
SV10-33	207 (3000)	19 (5)

Solenoid valve, 2-position, 3-way



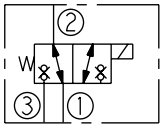
Model	Pressure bar (psi)	Flow lpm (gpm)
SV07-34	207 (3000)	13 (3)
SV10-34	207 (3000)	23 (6)
SV12-34	240 (3500)	60 (16)

Solenoid valve, 2-position, 3-way



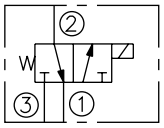
Model	Pressure bar (psi)	Flow lpm (gpm)
SV07-35	207 (3000)	11 (3)
SV08-35	207 (3000)	11 (3)

Solenoid valve, poppet type, normally closed, internally piloted, high flow



Model	Pressure bar (psi)	Flow lpm (gpm)
SV38-38	207 (3000)	11 (3)

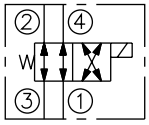
Solenoid valve, 2-position, 3-way, drop-in



Model	Pressure bar (psi)	Flow lpm (gpm)
SV98-T39	45 (650)	30 (8)

Solenoid directional valve, 2-position, 4-way, open transition

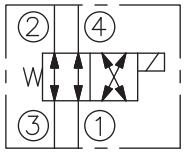
*** available with position sensor**



Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-40	207 (3000)	11 (3)
SV10-40, SV10-P40*	207 (3000)	23 (6)
SV58-40	345 (5000)	11 (3)

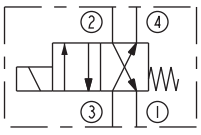
Solenoid directional valve, 2-position, 4-way, closed transition

*** available with position sensor**



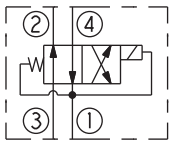
Model	Pressure bar (psi)	Flow lpm (gpm)
SV10-40A, SV10-P40A*	207 (3000)	38 (10)

Solenoid directional valve, 2-position, 4-way, open transition



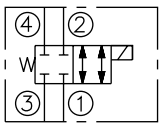
Model	Pressure bar (psi)	Flow lpm (gpm)
HSV10-40R	350 (5075)	23 (6)
SV12-40R	240 (3500)	60 (16)

Solenoid directional valve, 2-position, 4-way, drop-in



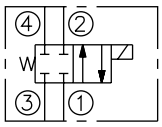
Model	Pressure bar (psi)	Flow lpm (gpm)
SV98-T40	30 (435)	30 (8)

Solenoid directional valve, 2-position, 4-way, normally closed



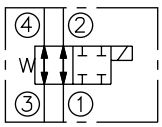
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-41	207 (3000)	13 (3)
SV10-41	207 (3000)	26 (7)
SV58-41	345 (5000)	26 (7)

Solenoid directional valve, 2-position, 4-way, normally closed



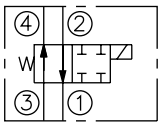
Model	Pressure bar (psi)	Flow lpm (gpm)
SV12-41	240 (3500)	60 (16)

Solenoid directional valve, 2-position, 4-way



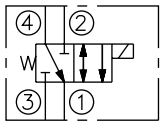
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-42	207 (3000)	11 (3)
SV10-42	207 (3000)	23 (6)

Solenoid directional valve, 2-position, 4-way



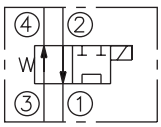
Model	Pressure bar (psi)	Flow lpm (gpm)
SV12-42	240 (3500)	60 (16)

Solenoid directional valve, 2-position, 4-way



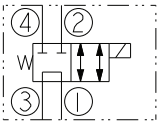
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-43	207 (3000)	11 (3)
SV10-43	207 (3000)	22 (6)

Solenoid directional valve, 2-position, 4-way



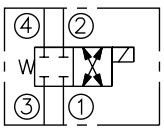
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-44	207 (3000)	11 (3)
SV10-44	207 (3000)	22 (6)

Solenoid valve, 4-way, 2-position, spool type



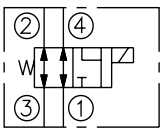
Model	Pressure bar (psi)	Flow lpm (gpm)
HSV10-44R	350 (5075)	23 (6)

Solenoid directional valve, 2-position, 4-way



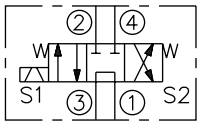
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-45	207 (3000)	11 (3)

Solenoid directional valve, 2-position, 4-way



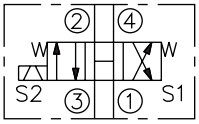
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-46	207 (3000)	11 (3)

Solenoid directional valve, 3-position, 4-way, tandem center



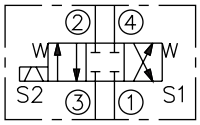
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-47A	207 (3000)	11 (3)
SV10-47A	240 (3500)	19 (5)

Solenoid directional valve, 3-position, 4-way, open center



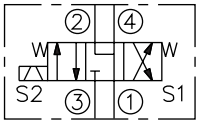
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-47B	207 (3000)	11 (3)
SV10-47B	240 (3500)	23 (6)

Solenoid directional valve, 3-position, 4-way, closed center



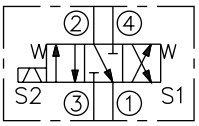
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-47C	207 (3000)	11 (3)
HSV10-47C	350 (5075)	38 (10)
SV10-47C	240 (3500)	23 (6)
HSV12-47C	350 (5075)	57 (15)

Solenoid directional valve, 3-position, 4-way, motor center



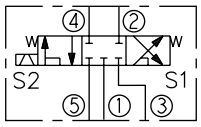
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-47D	207 (3000)	11 (3)
HSV10-47D	350 (5075)	34 (9)
SV10-47D	240 (3500)	23 (6)

Solenoid directional valve, 3-position, 4-way



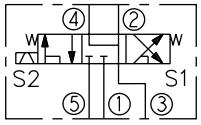
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-47E	207 (3000)	11 (3)
SV10-47E	250 (3625)	30 (8)

Solenoid directional valve, 3-position, 5-way, closed center, load sense port



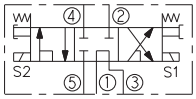
Model	Pressure bar (psi)	Flow lpm (gpm)
SV10-57C	250 (3625)	20 (5)

Solenoid directional valve, 3-position, 5-way, motor center, load sense port



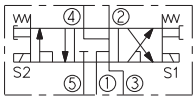
Model	Pressure bar (psi)	Flow lpm (gpm)
SV10-57D	250 (3625)	20 (5)

Solenoid directional valve, 3-position, 5-way, closed center, brake release port



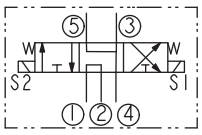
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-58C	207 (3000)	13 (3)
SV10-58C	250 (3625)	30 (8)

Solenoid directional valve, 3-position, 5-way, motor center, brake release port



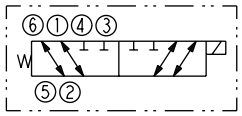
Model	Pressure bar (psi)	Flow lpm (gpm)
SV08-58D	240 (3500)	13 (4)
SV10-58D	250 (3625)	30 (8)

Solenoid directional valve, 3-position, 5-way, motor center, power beyond port



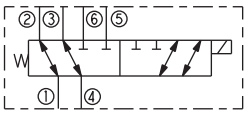
Model	Pressure bar (psi)	Flow lpm (gpm)
SV10-59D	207 (3000)	15 (4)

Solenoid selector valve, 2-position, 6-way



Model	Pressure bar (psi)	Flow lpm (gpm)
SV12-60	240 (3500)	45 (12)

Solenoid selector valve, 2-position, 6-way

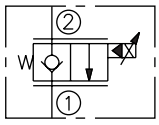


Model	Pressure bar (psi)	Flow lpm (gpm)
SV80-61	207 (3000)	8 (2)

- Designed for reliability in mobile machinery applications and exposed environmental conditions
- Excellent linearity and low hysteresis
- Hardened precision spools and cages for long life
- Industry common cavity sizes enable interchangeability with non-proportional valves
- Drop-in style, sealed, proportional clutch actuation, and piloting valves
- Series E water/weather-resistant coils with integral connectors rated up to IP69K
- Patented high strength solenoid tube for all 3-position HSP valves

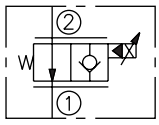
Electro-proportional Valves

Proportional flow control, poppet type, normally closed



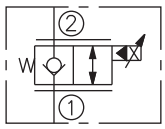
Model	Pressure bar (psi)	Flow lpm (gpm)
SP08-20	207 (3000)	22 (6)
SP08-20A	207 (3000)	30 (8)
HSP10-20	350 (5075)	53 (14)
SP10-20	250 (3625)	68 (18)
HSP12-20	350 (5075)	84 (22)
SP12-20	250 (3625)	100 (26)
HSP16-20	350 (5075)	265 (70)
SP16-20	250 (3625)	265 (70)

Proportional flow control, poppet type, normally open



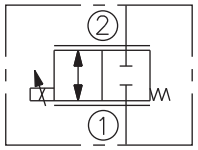
Model	Pressure bar (psi)	Flow lpm (gpm)
SP08-21	207 (3000)	23 (6)
HSP10-21	350 (5075)	53 (14)
SP10-21	250 (3625)	61 (16)
SP12-21	250 (3625)	200 (53)
HSP16-21	350 (5075)	95 (25)
SP16-21	250 (3625)	265 (70)

Proportional flow control, poppet type, normally closed, bidirectional



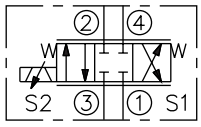
Model	Pressure bar (psi)	Flow lpm (gpm)
SP08-22	207 (3000)	30 (8)

Proportional flow control, spool type, normally closed, bidirectional



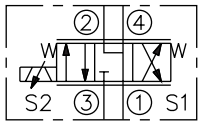
Model	Pressure bar (psi)	Flow lpm (gpm)
HSP08-24	350 (5075)	19 (5)
SP08-24	207 (3000)	11 (3)
SP10-24	207 (3000)	27 (7)

Proportional directional control, 3-position, 4-way, closed center



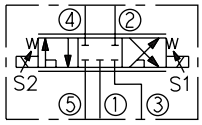
Model	Pressure bar (psi)	Flow lpm (gpm)
SP08-47C	240 (3500)	11 (3)
*HSP10-47C	350 (5075)	33 (9)
SP10-47C	248 (3600)	22 (6)
*HSP12-47C	350 (5075)	56 (15)
SP08-47CL	240 (3500)	8 (2)

Proportional directional control, 3-position, 4-way, motor center



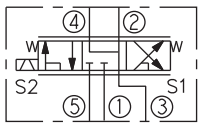
Model	Pressure bar (psi)	Flow lpm (gpm)
SP08-47D	240 (3500)	11 (3)
*HSP10-47D	350 (5075)	35 (9)
SP10-47D	207 (3000)	22 (6)
*HSP12-47D	350 (5075)	56 (15)
SP08-47DL	240 (3500)	8 (2)

Proportional directional valve, 3-position, 5-way, closed center, load sense port



Model	Pressure bar (psi)	Flow lpm (gpm)
SP10-57C	250 (3625)	23 (6)

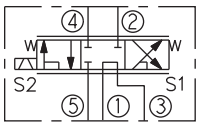
Proportional directional valve, 3-position, 5-way, motor center, load sense port



Model	Pressure bar (psi)	Flow lpm (gpm)
SP10-57D	250 (3625)	23 (6)
SP08-57D	240 (3500)	10 (3)

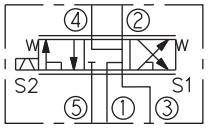
* US Pat. 8,253,063

Proportional directional valve, 3-position, 5-way, closed center, brake release port



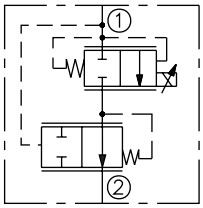
Model	Pressure bar (psi)	Flow lpm (gpm)
SP10-58C	250 (3625)	23 (6)

Proportional directional valve, 3-position, 5-way, motor center, load sense port, brake release



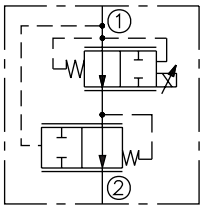
Model	Pressure bar (psi)	Flow lpm (gpm)
SP10-58D	250 (3625)	23 (6)
SP08-58D	240 (3500)	15 (4)

Pressure-compensated proportional flow control valve, normally closed



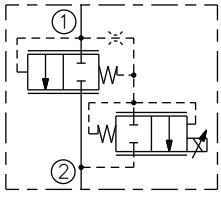
Model	Pressure bar (psi)	Flow lpm (gpm)
HPV12-20	350 (5075)	68 (18)
PV72-20	240 (3500)	64 (17)

Pressure-compensated proportional flow control valve, normally open



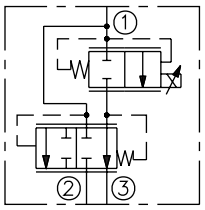
Model	Pressure bar (psi)	Flow lpm (gpm)
HPV12-21	350 (5075)	61 (16)
PV72-21	240 (3500)	56 (15)

Proportional flow control, normally closed



Model	Pressure bar (psi)	Flow lpm (gpm)
PV16-23	240 (3500)	170 (45)

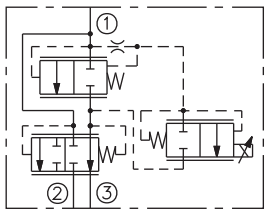
Proportional flow control, normally closed, priority bypass



Model	Pressure bar (psi)	Flow lpm (gpm)
PV08-30	240 (3500)	23 (6)
HPV12-30	350 (5075)	76 (20)
HPV16-30	350 (5075)	151 (40)
PV70-30	240 (3500)	30 (8)
PV72-30	240 (3500)	114 (30)
PV76-30A	240 (3500)	95 (25)

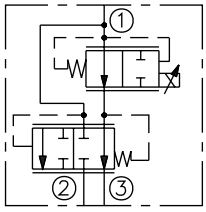
Proportional flow control, 2-stage, normally closed, priority bypass

US Pat. 6,966,329



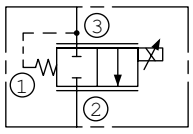
Model	Pressure bar (psi)	Flow lpm (gpm)
PV42-M30	240 (3500)	190 (50)

Proportional flow control, normally open, priority bypass



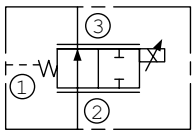
Model	Pressure bar (psi)	Flow lpm (gpm)
HPV12-31	350 (5075)	76 (20)
HPV16-31	350 (5075)	151 (40)
PV70-31	240 (3500)	50 (13)
PV72-31	240 (3500)	114 (30)

Proportional flow control, normally closed



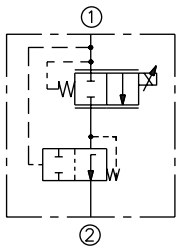
Model	Pressure bar (psi)	Flow lpm (gpm)
PV70-33	207 (3000)	30 (8)
PV72-33	240 (3500)	75 (20)

Proportional flow control, normally open



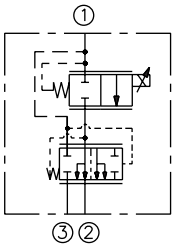
Model	Pressure bar (psi)	Flow lpm (gpm)
PV70-35	207 (3000)	30 (8)
PV72-35	207 (3000)	75 (20)

Proportional flow regulator, normally closed



Model	Pressure bar (psi)	Flow lpm (gpm)
PFR70-33x-E	207 (3000)	30 (8)
PFR72-33x-L	207 (3000)	60 (16)

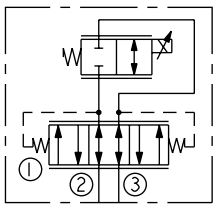
Proportional flow regulator, normally closed, priority bypass



Model	Pressure bar (psi)	Flow lpm (gpm)
PFR70-33x-F	207 (3000)	30 (8)
PFR70-33x-J	207 (3000)	30 (8)
PFR72-33x-J	207 (3000)	60 (16)

Pressure compensated proportional flow control, normally closed

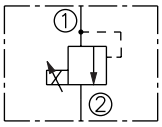
US Pat. 6,167,906



Model	Pressure bar (psi)	Flow lpm (gpm)
ZL70-30	240 (3500)	20 (5)

* US Pat. 8,253,063

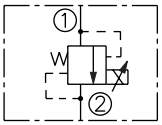
Proportional pressure control valve, relief, increasing pressure with current



Model	Pressure bar (psi)	Flow lpm (gpm)
TS08-20	35 (500)	4 (1)
TS38-20	248 (3600)	11 (3)
TS58-20	345 (5000)	8 (2)

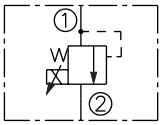
Proportional pressure control valve, relief, decreasing pressure with current

US Pat. 6,267,350



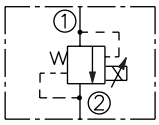
Model	Pressure bar (psi)	Flow lpm (gpm)
TS38-21	240 (3500)	1.1 (0.3)
TS58-21F	393 (5700)	1.9 (0.5)

Proportional pressure control valve, pilot operated, relief, increasing pressure with current



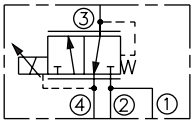
Model	Pressure bar (psi)	Flow lpm (gpm)
TS10-26	240 (3500)	95 (25)
TS12-26	240 (3500)	189 (50)

Proportional pressure control valve, pilot operated, relief, decreasing pressure with current



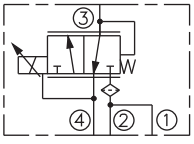
Model	Pressure bar (psi)	Flow lpm (gpm)
TS08-27	240 (3500)	25 (6)
TS10-27	275 (4000)	76 (20)
TS12-27	240 (3500)	186 (49)

Proportional pressure reducing/relieving valve, pilot operated



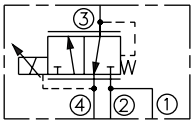
Model	Pressure bar (psi)	Flow lpm (gpm)
TS98-30	24 (350)	30 (8)

Proportional pressure reducing/relieving valve, pilot operated



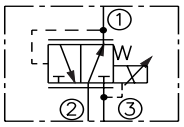
Model	Pressure bar (psi)	Flow lpm (gpm)
TS90-31	207 (3000)	38 (10)

Proportional pressure reducing/relieving valve, pilot operated, drop-in



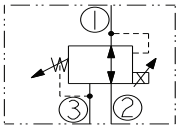
Model	Pressure bar (psi)	Flow lpm (gpm)
TS98-T34	30 (435)	30 (8)

Proportional pressure reducing/relieving valve, pilot operated



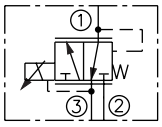
Model	Pressure bar (psi)	Flow lpm (gpm)
TS10-36	240 (3500)	57 (15)
TS12-36	275 (4000)	189 (50)

Proportional pressure reducing/relieving valve, pilot operated, decreasing pressure with current



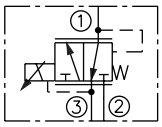
Model	Pressure bar (psi)	Flow lpm (gpm)
TS12-37F	276 (4000)	190 (50)

Proportional pressure reducing/relieving valve



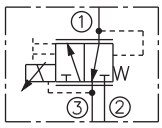
Model	Pressure bar (psi)	Flow lpm (gpm)
EHPR08-33	207 (3000)	4 (1)

Proportional pressure reducing/relieving valve, drop-in



Model	Pressure bar (psi)	Flow lpm (gpm)
EHPR98-T33	240 (3500)	4 (1)

Proportional pressure reducing/relieving valve, drop-in

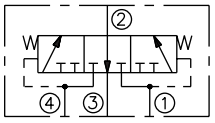


Model	Pressure bar (psi)	Flow lpm (gpm)
EHPR98-T35	103 (1500)	6 (2)
EHPR98-T38	240 (3500)	19 (5)
EHPR98-T38B	240 (3500)	19 (5)

- Industry-common cavity sizes -04, -08, -10, -12, -16, -20 and -42
- Hydraulically piloted or manually-operated directional and logic valves enable circuit flexibility and performance optimization
- Proportional, piloted 3-position, 4-way directional valves for flow rates up to 170 lpm (45 gpm)
- Hardened precision seats, spools and cages for long life and low leakage

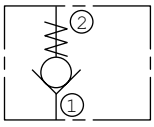
Directional Valves

Brake shuttle



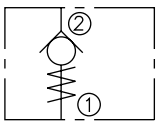
Model	Pressure bar (psi)	Flow lpm (gpm)
BV10-40	240 (3500)	8 (2)
HBV10-40	345 (5000)	8 (2)

Check valve



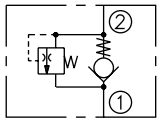
Model	Pressure bar (psi)	Flow lpm (gpm)
CV04-20	240 (3500)	5 (1.5)
CV04-B20	240 (3500)	5 (1.3)
HCV06-20	350 (5075)	19 (5)
CV08-20	240 (3500)	30 (8)
HCV08-20	350 (5075)	30 (8)
CV10-20	240 (3500)	75 (20)
HCV10-20	350 (5075)	76 (20)
CV50-20	345 (5000)	57 (15)
CV12-20	240 (3500)	95 (25)
HCV12-20	350 (5075)	95 (25)
CV16-20	240 (3500)	151 (40)
HCV16-20	350 (5075)	151 (40)
CV42-M20	240 (3500)	378 (100)
HCV42-M20	350 (5075)	303 (80)

Check valve



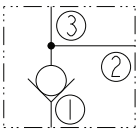
Model	Pressure bar (psi)	Flow lpm (gpm)
CV08-21	240 (3500)	30 (8)
CV12-21	240 (3500)	114 (30)
CV10-24	240 (3500)	57 (15)

Check valve



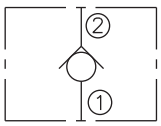
Model	Pressure bar (psi)	Flow lpm (gpm)
CV10-28	240 (3500)	45 (12)

Check valve



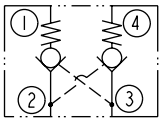
Model	Pressure bar (psi)	Flow lpm (gpm)
HCV16-30	350 (5075)	151 (40)

Check valve disk



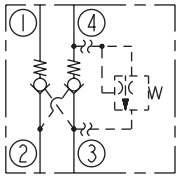
Model	Pressure bar (psi)	Flow lpm (gpm)
CVD08	250 (3625)	1.9 (0.5)
CVD10	250 (3625)	1.9 (0.5)

Pilot operated check valve, dual



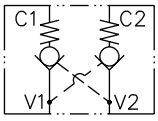
Model	Pressure bar (psi)	Flow lpm (gpm)
DC08-40	240 (3500)	19 (5)

Pilot operated check valve, dual, optional thermal relief



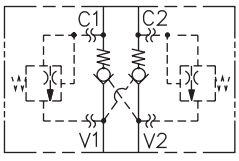
Model	Pressure bar (psi)	Flow lpm (gpm)
DC10-40	240 (3500)	30 (8)

Pilot operated check valve, dual cartridges in manifold



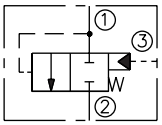
Model	Pressure bar (psi)	Flow lpm (gpm)
DCV08	240 (3500)	30 (8)
HDCV16	350 (5075)	151 (40)

Pilot operated check valve with thermal relief, dual cartridges in manifold



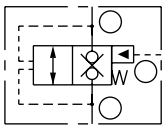
Model	Pressure bar (psi)	Flow lpm (gpm)
DCV10	240 (3500)	76 (20)

Logic element, spool type, 2-position, 2-way, externally piloted



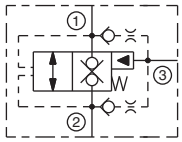
Model	Pressure bar (psi)	Flow lpm (gpm)
EP08-35	345 (5000)	38 (10)
EP10-S35	345 (5000)	76 (20)
EP12-S35	345 (5000)	151 (40)
EP16-S35	240 (3500)	189 (50)
HEP16-S35	350 (5075)	190 (50)
EP20-S35	345 (5000)	379 (100)
HEP42-S35	350 (5075)	379 (100)

Logic element, poppet type, 2-position, 2-way, externally piloted



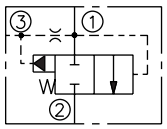
Model	Pressure bar (psi)	Flow lpm (gpm)
EP10-S38	350 (5075)	114 (30)
EP20-S38	240 (3500)	303 (80)
HEP42-S38	350 (5075)	284 (75)

Logic element, poppet type, 2-position, 2-way, externally piloted



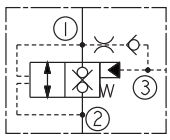
Model	Pressure bar (psi)	Flow lpm (gpm)
HEP16-S39	350 (5075)	190 (50)
EP20-S39	240 (3500)	285 (75)
HEP42-S39	350 (5075)	284 (75)

Logic element, spool type, vented



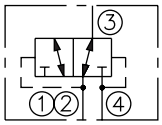
Model	Pressure bar (psi)	Flow lpm (gpm)
EV58-34	345 (5000)	38 (10)
EV10-S34	345 (5000)	76 (20)
EV12-S34	345 (5000)	151 (40)
EV16-S34	240 (3500)	189 (50)
HEV16-S34	350 (5075)	190 (50)
EV20-S34	345 (5000)	379 (100)
HEV42-S34	350 (5075)	379 (100)

Logic element, poppet type, vent to open



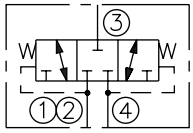
Model	Pressure bar (psi)	Flow lpm (gpm)
HEV12-S38	350 (5075)	114 (30)

Low side (hot oil) shuttle valve, springless



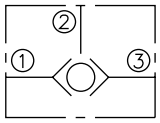
Model	Pressure bar (psi)	Flow lpm (gpm)
HS10-42	207 (3000)	38 (10)
HS50-42	207 (3000)	38 (10)
HS52-42	345 (5000)	45 (12)

Low side (hot oil) shuttle valve



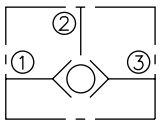
Model	Pressure bar (psi)	Flow lpm (gpm)
HS50-43	345 (5000)	132 (35)
HS52-43	345 (5000)	113 (30)

Load shuttle, ball type, down-hole mount



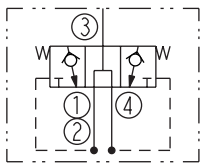
Model	Pressure bar (psi)	Flow lpm (gpm)
LS04-B30	240 (3500)	5 (1.3)
HLS06-B30	350 (5075)	8 (2)

Load shuttle, ball type



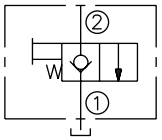
Model	Pressure bar (psi)	Flow lpm (gpm)
HLS06-30	350 (5075)	8 (2)
LS08-30	240 (3500)	19 (5)
LS10-30	240 (3500)	30 (8)
LS50-30	345 (5000)	30 (8)

Load shuttle, inverted



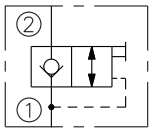
Model	Pressure bar (psi)	Flow lpm (gpm)
LS10-41	240 (3500)	15 (4)

Manual 2-position, 2-way valve, pull to open, spring return



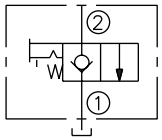
Model	Pressure bar (psi)	Flow lpm (gpm)
MP08-20	207 (3000)	53 (14)
MP10-20	207 (3000)	57 (15)

Manual 2-position, 2-way valve, pull to open, push to close



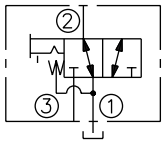
Model	Pressure bar (psi)	Flow lpm (gpm)
MP10-21	207 (3000)	57 (15)

Manual 2-position, 2-way valve, pull to open, with lock



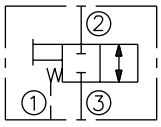
Model	Pressure bar (psi)	Flow lpm (gpm)
MP10-22	207 (3000)	57 (15)

Manual 2-position, 3-way valve, pull to shift, blocked transition



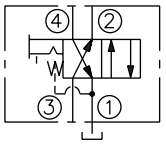
Model	Pressure bar (psi)	Flow lpm (gpm)
MP08-30	240 (3500)	25 (7)
MP58-30	345 (5000)	25 (7)

Manual 2-position, 2-way valve, pull to open, spring return, vented spring



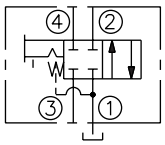
Model	Pressure bar (psi)	Flow lpm (gpm)
MP08-34	240 (3500)	38 (10)

Manual 2-position, 4-way valve, pull to shift, spring return, open transition



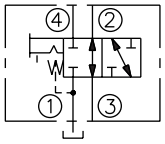
Model	Pressure bar (psi)	Flow lpm (gpm)
MP08-40	240 (3500)	12 (3)
MP10-40	207 (3000)	22 (6)

Manual 2-position, 4-way valve, pull to shift, spring return, closed transition



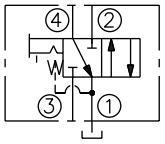
Model	Pressure bar (psi)	Flow lpm (gpm)
MP08-41	240 (3500)	12 (3)
MP10-41	207 (3000)	12 (3)

Manual 2-position, 4-way valve, pull to shift, spring return, closed transition



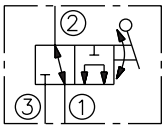
Model	Pressure bar (psi)	Flow lpm (gpm)
MP10-42	207 (3000)	12 (3)

Manual 2-position, 4-way valve, pull to shift, spring return, open transition



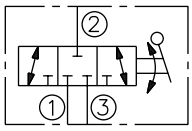
Model	Pressure bar (psi)	Flow lpm (gpm)
MP10-43	207 (3000)	12 (3)

Manual rotary, 2-position, 3-way valve, blocked transition



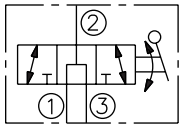
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-31	240 (3500)	38 (10)

Manual rotary, 3-position, 3-way valve, closed center



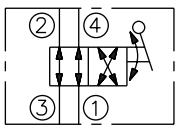
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-37A	240 (3500)	38 (10)

Manual rotary, 3-position, 3-way valve, open center



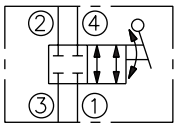
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-37B	240 (3500)	38 (10)

Manual rotary, 2-position, 4-way valve, blocked transition



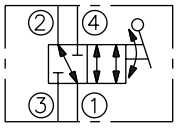
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-40	240 (3500)	11 (3)

Manual rotary, 2-position, 4-way valve, blocked transition



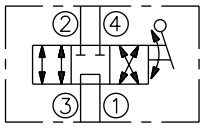
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-41	240 (3500)	11 (3)

Manual rotary, 2-position, 4-way valve, open transition, port 4 blocked



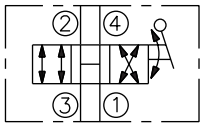
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-43	240 (3500)	11 (3)

Manual rotary, 3-position, 4-way valve, tandem center



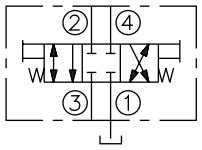
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-47A	240 (3500)	11 (3)

Manual rotary, 3-position, 4-way valve, open center



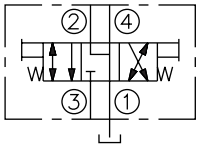
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-47B	240 (3500)	11 (3)

Manual rotary, 3-position, 4-way valve, closed center



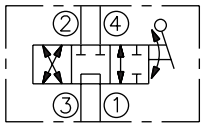
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-47C	240 (3500)	11 (3)

Manual rotary, 3-position, 4-way valve, motor center



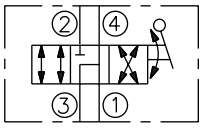
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-47D	240 (3500)	11 (3)

Manual rotary, 3-position, 4-way valve, tandem center



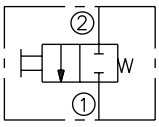
Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-47F	240 (3500)	11 (3)

Manual rotary, 3-position, 4-way valve, motor center



Model	Pressure bar (psi)	Flow lpm (gpm)
MR10-47G	240 (3500)	11 (3)

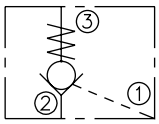
Manual valve, push to open



Model	Pressure bar (psi)	Flow lpm (gpm)
MV06-20	240 (3500)	115 (30)
MV08-22	207 (3000)	38 (10)

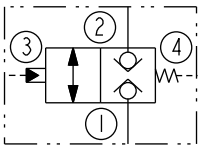
Check, pilot to open

see catalog for pilot ratio



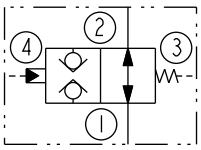
Model	Pressure bar (psi)	Flow lpm (gpm)
PC08-30	240 (3500)	26 (7)
HPC08-30	350 (5075)	30 (8)
PC10-30	240 (3500)	26 (7)
PC10-32	240 (3500)	30 (8)

Piloted directional element, balanced poppet, bidirectional, normally closed



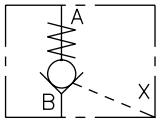
Model	Pressure bar (psi)	Flow lpm (gpm)
HPC42-J48	350 (5075)	380 (100)

Piloted directional element, balanced poppet, bidirectional, normally open



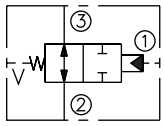
Model	Pressure bar (psi)	Flow lpm (gpm)
HPC42-J49	350 (5075)	380 (100)

Check, pilot to open



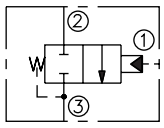
Model	Pressure bar (psi)	Flow lpm (gpm)
PCV10	240 (3500)	60 (16)
HPCV16	350 (5075)	151 (40)
PCV16	240 (3500)	151 (40)

Spool valve, piloted, 2-position, 2-way, normally open, external vent



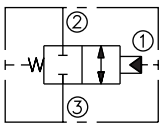
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-30	240 (3500)	38 (10)
PD12-30	240 (3500)	113 (30)

Spool valve, piloted, 2-position, 2-way, normally closed, internal vent



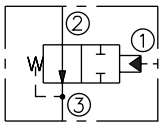
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-32	240 (3500)	38 (10)
PD12-32	240 (3500)	113 (30)

Spool valve, piloted, 2-position, 2-way, normally closed, external vent



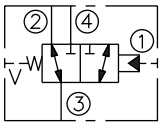
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-34	240 (3500)	38 (10)
PD12-34	240 (3500)	113 (30)

Spool valve, piloted, 2-position, 2-way, normally closed, internal vent



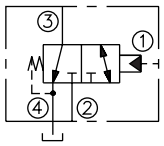
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-35	240 (3500)	38 (10)
PD12-35	240 (3500)	113 (30)

Spool valve, piloted, 2-position, 3-way, external vent



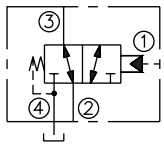
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-40	240 (3500)	38 (10)
PD12-40	240 (3500)	113 (30)
PD16-40	240 (3500)	170 (45)
PD42-M40	345 (5000)	265 (70)

Spool valve, piloted, 2-position, 3-way, internal vent, open transition



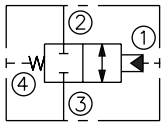
Model	Pressure bar (psi)	Flow lpm (gpm)
PD08-41	241 (3500)	8 (2)
PD10-41	240 (3500)	45 (12)
PD12-41	240 (3500)	113 (30)
PD16-41	240 (3500)	189 (50)
PD42-M41	345 (5000)	265 (70)

Spool valve, piloted, 2-position, 3-way, internal vent, open transition



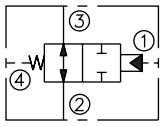
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-42	240 (3500)	38 (10)
PD12-42	240 (3500)	113 (30)
PD16-42	240 (3500)	189 (50)
PD42-M42	345 (5000)	265 (70)

Spool valve, piloted, 2-position, normally closed



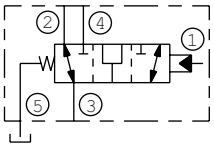
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-44	240 (3500)	32 (8)
PD12-44	240 (3500)	113 (30)
PD16-44	240 (3500)	189 (50)
HPD16-44	350 (5075)	170 (45)
HPD42-M44	350 (5075)	265 (70)

Spool valve, piloted, 2-position, normally open



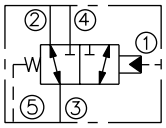
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-45	240 (3500)	45 (12)
PD12-45	240 (3500)	113 (30)
PD16-45	240 (3500)	189 (50)
HPD16-45	350 (5075)	170 (45)
PD42-M45	345 (5000)	265 (70)
HPD42-M45	350 (5075)	265 (70)

Spool valve, piloted, 2-position, 3-way, open transition



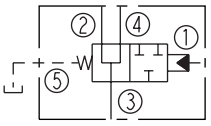
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-50	240 (3500)	38 (10)

Spool valve, piloted, 2-position, 3-way, open transition



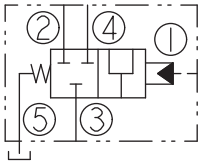
Model	Pressure bar (psi)	Flow lpm (gpm)
PD12-S50	240 (3500)	95 (25)
HPD16-S50	350 (5075)	151 (40)
PD16-S50	240 (3500)	170 (45)
PD42-S50	345 (5000)	265 (70)
HPD42-S50	350 (5075)	265 (70)

Spool valve, piloted, 2-position, 3-way



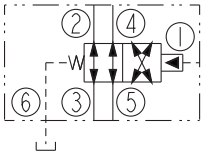
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-51	240 (3500)	45 (12)
HPD16-S51	350 (5075)	151 (40)
PD16-S51	240 (3500)	151 (40)
HPD42-S51	240 (3500)	246 (65)

Spool valve, piloted, 2-position, 3-way



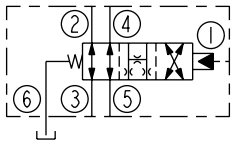
Model	Pressure bar (psi)	Flow lpm (gpm)
HPD16-S52	350 (5075)	151 (40)
HPD42-S52	350 (5075)	265 (70)

Spool valve, piloted, 2-poition, 4-way



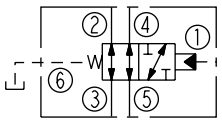
Model	Pressure bar (psi)	Flow lpm (gpm)
HPD16-S60	350 (5075)	95 (25)
HPD42-S60	350 (5075)	189 (50)

Spool valve, piloted, 2-position, 4-way, open transition



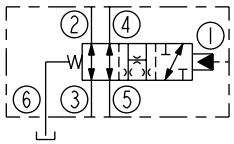
Model	Pressure bar (psi)	Flow lpm (gpm)
PD12-S60N	345 (5000)	56 (15)
PD16-S60N	240 (3500)	95 (25)
PD42-S60N	324 (4700)	189 (50)

Spool valve, piloted, 2-position, 4-way



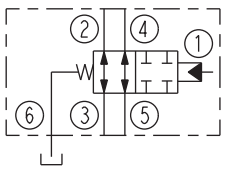
Model	Pressure bar (psi)	Flow lpm (gpm)
HPD42-S61	350 (5075)	189 (50)
HPD16-S61	350 (5075)	152 (40)

Spool valve, piloted, 2-position, 4-way, open transition



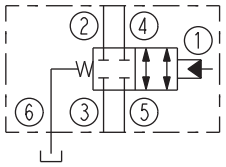
Model	Pressure bar (psi)	Flow lpm (gpm)
PD12-S61N	240 (3500)	56 (15)
PD16-S61N	240 (3500)	151 (40)

Spool valve, piloted, 2-position, 4-way



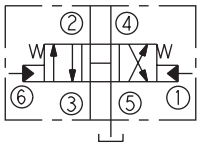
Model	Pressure bar (psi)	Flow lpm (gpm)
PD10-S62	250 (3625)	53 (14)
HPD42-S62	350 (5075)	189 (50)
HPD16-S62	350 (5075)	152 (40)

Spool valve, piloted, 2-position, 4-way



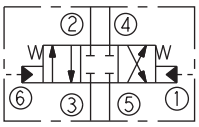
Model	Pressure bar (psi)	Flow lpm (gpm)
PD16-S63	240 (3500)	151 (40)
HPD42-S63	350 (5075)	189 (50)
HPD16-S63	350 (5075)	152 (40)

Spool valve, piloted, 3-position, 4-way, open center



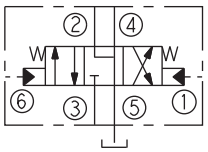
Model	Pressure bar (psi)	Flow lpm (gpm)
PD42-S67B	324 (3625)	189 (50)

Spool valve, piloted, 3-position, 4-way, closed center



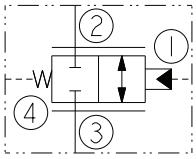
Model	Pressure bar (psi)	Flow lpm (gpm)
HPD12-S67C	350 (5075)	57 (15)
PD16-S67C	240 (3500)	95 (25)
HPD16-S67C	350 (5075)	95 (25)
HPD42-S67C	350 (5075)	189 (50)

Spool valve, piloted, 3-position, 4-way, motor center



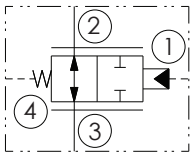
Model	Pressure bar (psi)	Flow lpm (gpm)
HPD12-S67D	350 (5075)	57 (15)
PD16-S67D	240 (3500)	95 (25)
HPD16-S67D	350 (5075)	95 (25)
HPD42-S67D	350 (5075)	189 (50)

Piloted proportional spool valve, normally closed



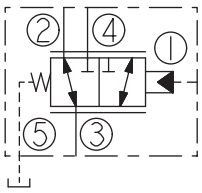
Model	Pressure bar (psi)	Flow lpm (gpm)
HPE16-44	350 (5075)	95 (25)
HPE42-M44	350 (5075)	170 (45)

Piloted proportional spool valve, normally open



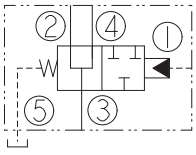
Model	Pressure bar (psi)	Flow lpm (gpm)
HPE16-45	350 (5075)	95 (25)
HPE42-M45	350 (5075)	170 (45)

Spool valve, piloted, proportional, 3-way



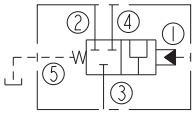
Model	Pressure bar (psi)	Flow lpm (gpm)
HPE42-S50	350 (5075)	170 (45)

Spool valve, piloted, proportional, 3-way



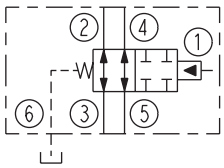
Model	Pressure bar (psi)	Flow lpm (gpm)
HPE42-S51	350 (5075)	170 (45)

Spool valve, piloted, proportional, 3-way



Model	Pressure bar (psi)	Flow lpm (gpm)
HPE42-S52	350 (5075)	170 (45)

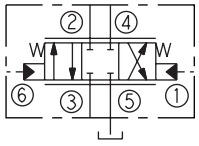
Spool valve, piloted, proportional, 4-way



Model	Pressure bar (psi)	Flow lpm (gpm)
HPE42-S62	350 (5075)	170 (45)

Spool valve, piloted, proportional, 3-position, 4-way, closed center

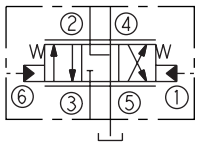
US Pat. 6,554,014



Model	Pressure bar (psi)	Flow lpm (gpm)
PE12-S67C	345 (5000)	45 (12)
HPE16-S67C	350 (5075)	95 (25)
PE16-S67C	345 (5000)	90 (24)
HPE42-S67C	350 (5075)	170 (45)
PE42-S67C	345 (5000)	170 (45)

Spool valve, piloted, proportional, 3-position, 4-way, motor center

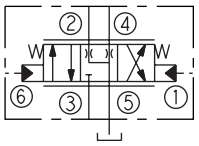
US Pat. 6,554,014



Model	Pressure bar (psi)	Flow lpm (gpm)
PE12-S67D	345 (5000)	45 (12)
HPE16-S67D	350 (5075)	95 (25)
PE16-S67D	345 (5000)	90 (24)
PE42-S67D	345 (5000)	170 (45)
HPE42-S67D	350 (5075)	170 (45)

Spool valve, piloted, proportional, 3-position, 4-way, motor center

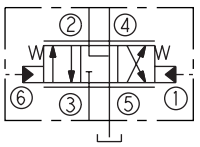
US Pat. 6,554,014



Model	Pressure bar (psi)	Flow lpm (gpm)
PE12-S67H	345 (5000)	45 (12)
HPE16-S67H	350 (5075)	95 (25)
PE16-S67H	345 (5000)	90 (24)
PE42-S67H	345 (5000)	170 (45)
HPE42-S67H	350 (5075)	170 (45)

Spool valve, piloted, proportional, 3-position, 4-way, motor center

US Pat. 6,554,014

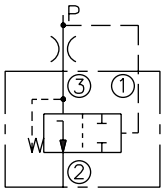


Model	Pressure bar (psi)	Flow lpm (gpm)
PE12-S67K	345 (5000)	45 (12)
HPE16-S67K	350 (5075)	95 (25)
PE16-S67K	345 (5000)	90 (24)
PE42-S67K	345 (5000)	170 (45)
HPE42-S67K	345 (5000)	170 (45)

- Variable or fixed orifice restrictor valves
- Pressure compensated flow regulators
- Pressure compensators for restrictive, bypass and priority circuits, with load-sensing system compatibility
- Optional settings and adjustment styles available
- Flow dividers/combiners for cylinder synchronizing and anti-stall applications
- Industry common cavity sizes

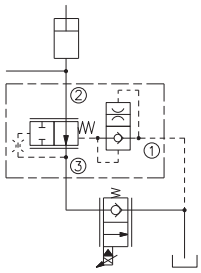
Flow Control Valves

Pressure compensator



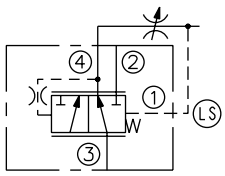
Model	Pressure bar (psi)	Flow lpm (gpm)
EC10-30	207 (3000)	30 (8)
EC12-30	240 (3500)	58 (15)
EC50-30	345 (5000)	30 (8)

Pressure compensator



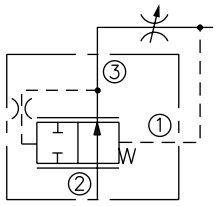
Model	Pressure bar (psi)	Flow lpm (gpm)
EC12-34	240 (3500)	83 (22)
HEC12-34	350 (5075)	83 (22)
EC16-34	240 (3500)	170 (45)

Pressure compensator with static load sense



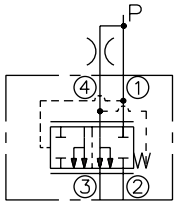
Model	Pressure bar (psi)	Flow lpm (gpm)
EC10-42	240 (3500)	38 (10)
EC50-42	345 (5000)	38 (10)
EC12-42	345 (5000)	76 (20)
HEC12-42	350 (5075)	95 (25)
EC42-M42	240 (3500)	303 (80)
EC16-42	240 (3500)	190 (50)
EC56-42	345 (5000)	150 (40)

Pressure compensator



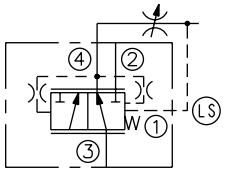
Model	Pressure bar (psi)	Flow lpm (gpm)
EC08-32	240 (3500)	11 (3)
EC10-32	207 (3000)	38 (10)
EC12-32	240 (3500)	57 (15)
HEC12-32	350 (5075)	83 (22)
EC16-32	240 (3500)	152 (40)
HEC16-32	350 (5075)	151 (40)

Pressure compensator, bypass type



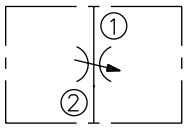
Model	Pressure bar (psi)	Flow lpm (gpm)
EC10-40	207 (3000)	38 (10)
EC12-40	240 (3500)	80 (21)
EC16-40	240 (3500)	180 (48)

Pressure compensator with dynamic load sense



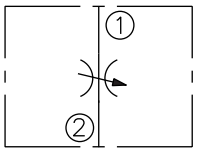
Model	Pressure bar (psi)	Flow lpm (gpm)
EC10-43	240 (3500)	34 (9)
EC50-43	345 (5000)	45 (12)
EC12-43	345 (5000)	95 (25)
HEC12-43	350 (5075)	95 (25)
EC16-43	240 (3500)	190 (50)
HEC32-43	350 (5075)	530 (140)
EC42-M43	240 (3500)	303 (80)

Needle valve, positive shut-off



Model	Pressure bar (psi)	Flow lpm (gpm)
NV08-21	240 (3500)	38 (10)
NV10-21	240 (3500)	57 (15)

Needle valve, fine adjustment

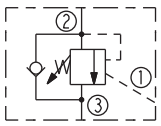


Model	Pressure bar (psi)	Flow lpm (gpm)
NV08-23	240 (3500)	38 (10)

- Pressure relief, reducing/relieving, unloading and sequencing operations
- Industry common cavity sizes up to -16 303 lpm (80 gpm)
- Pilot-operated, direct-acting, and differential-area pressure regulators for all application conditions
- RVD valve offers fast response with low pressure rise, low hysteresis, and low internal leakage
- Operating pressures up to 350 bar (5075 psi)
- Optional spring ranges and adjustment styles
- Externally plumbed pressure reducing options

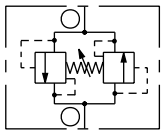
Pressure Control Valves

Counterbalance valve



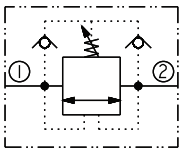
Model	Pressure bar (psi)	Flow lpm (gpm)
CB10-30	207 (3000)	19 (5)

Relief valve, bidirectional



Model	Pressure bar (psi)	Flow lpm (gpm)
CR10-28	240 (3500)	60 (16)

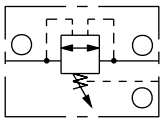
Relief valve, bidirectional



Model	Pressure bar (psi)	Flow lpm (gpm)
CR08-28H	276 (4000)	38 (10)

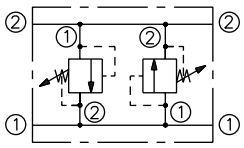
Relief valve, bidirectional, vented

US Pat. 7,069,945



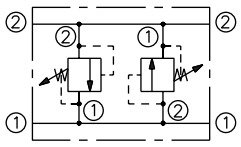
Model	Pressure bar (psi)	Flow lpm (gpm)
CR08-38	207 (3000)	30 (8)

Crossover relief valve, direct acting, dual cartridges in manifold



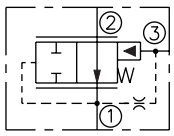
Model	Pressure bar (psi)	Flow lpm (gpm)
CRV08-20	228 (3300)	22 (6)
CRV10-20	240 (3500)	38 (10)

Crossover relief valve, differential area, dual cartridges in manifold



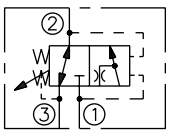
Model	Pressure bar (psi)	Flow lpm (gpm)
CRV08-22	180 (2600)	30 (8)
CRV10-22	240 (3500)	113 (30)

Logic element, spool type, pressure reducing



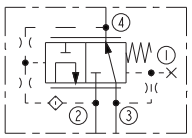
Model	Pressure bar (psi)	Flow lpm (gpm)
ER10-S30	345 (5000)	68 (18)
ER12-S30	345 (5000)	114 (30)

Kickdown sequence valve, internal pilot/ drain



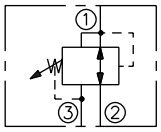
Model	Pressure bar (psi)	Flow lpm (gpm)
KS10-30	207 (3000)	11 (3)

Torque divider



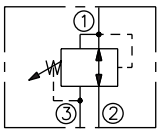
Model	Pressure bar (psi)	Flow lpm (gpm)
HTD10-40	350 (5075)	57 (15)

Pressure reducing/ relieving valve



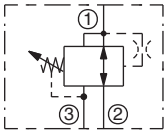
Model	Pressure bar (psi)	Flow lpm (gpm)
PR08-32	240 (3500)	11 (3)
PR10-32	207 (3000)	30 (8)

Pressure reducing/ relieving valve, pilot operated



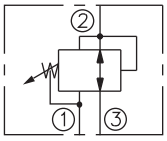
Model	Pressure bar (psi)	Flow lpm (gpm)
PR10-36	240 (3500)	56 (15)
PR50-36	345 (5000)	56 (15)
PR12-36	275 (4000)	189 (50)

Pressure reducing/ relieving valve, direct acting



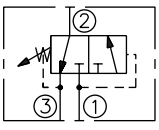
Model	Pressure bar (psi)	Flow lpm (gpm)
PR58-38	345 (5000)	19 (5)
PR50-38	345 (5000)	72 (19)

Pressure reducing/ relieving valve



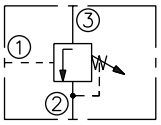
Model	Pressure bar (psi)	Flow lpm (gpm)
PRES50-30	345 (5000)	11 (3)

Sequence valve with internal pilot and drain



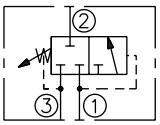
Model	Pressure bar (psi)	Flow lpm (gpm)
PS08-30	240 (3500)	22 (6)
PS10-30	207 (3000)	38 (10)
PS10-31	240 (3500)	22 (6)

Sequence valve with external pilot, internal drain



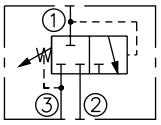
Model	Pressure bar (psi)	Flow lpm (gpm)
PS08-32	240 (3500)	19 (5)
PS10-32	207 (3000)	38 (10)
PS10-33	240 (3500)	23 (6)

Sequence valve with internal pilot and drain



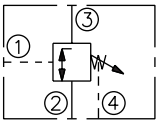
Model	Pressure bar (psi)	Flow lpm (gpm)
PS10-34	207 (3000)	117 (31)

Sequence valve with internal pilot, external drain



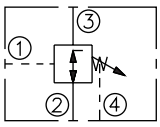
Model	Pressure bar (psi)	Flow lpm (gpm)
PS10-36	240 (3500)	56 (15)
PS50-36	331 (4800)	56 (15)

Sequence valve, normally closed with external pilot and drain



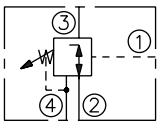
Model	Pressure bar (psi)	Flow lpm (gpm)
PS10-40	240 (3500)	38 (10)
PS50-40	345 (5000)	38 (10)

Sequence valve, normally open with external pilot and drain



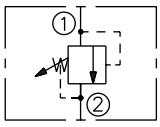
Model	Pressure bar (psi)	Flow lpm (gpm)
PS10-41	240 (3500)	38 (10)

Sequence valve, 3-way, external pilot and drain



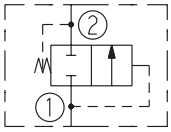
Model	Pressure bar (psi)	Flow lpm (gpm)
PS10-43	240 (3500)	38 (10)
PS50-43	414 (6000)	38 (10)

Relief valve, direct acting, poppet type



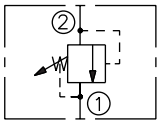
Model	Pressure bar (psi)	Flow lpm (gpm)
RV08-20	275 (4000)	23 (6)
RV58-20	345 (5000)	22 (6)
RV10-20	228 (3300)	38 (10)

Relief valve, pressure regulating, spool type



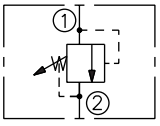
Model	Pressure bar (psi)	Flow lpm (gpm)
RV10-21F	228 (3300)	25 (7)

Relief valve, differential area, poppet type



Model	Pressure bar (psi)	Flow lpm (gpm)
RV08-22	248 (3600)	30 (8)
RV10-22	240 (3500)	114 (30)
RV50-22	345 (5000)	76 (20)

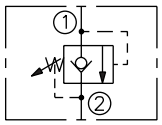
Relief valve, pilot operated, spool type



Model	Pressure bar (psi)	Flow lpm (gpm)
RV10-26	240 (3500)	114 (30)
RV50-26	345 (5000)	114 (30)
RV12-26	240 (3500)	170 (45)
RV16-26	275 (4000)	303 (80)
RV52-26	345 (5000)	170 (45)
RV56-26	345 (5000)	379 (100)

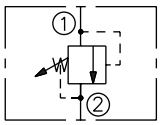
Relief valve, pilot operated with reverse-flow check

U.S. Pats. 7,069,945
7,069,945



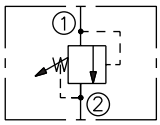
Model	Pressure bar (psi)	Flow lpm (gpm)
RV10-28	289 (4200)	114 (30)
RV50-28	345 (5000)	114 (30)

Relief valve, direct acting, poppet type, low flow



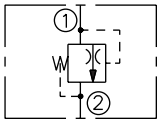
Model	Pressure bar (psi)	Flow lpm (gpm)
RV08-29	240 (3500)	1.9 (0.5)

Relief valve, direct acting, poppet type



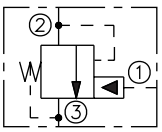
Model	Pressure bar (psi)	Flow lpm (gpm)
HRVD08-20	240 (3500)	53 (14)
RVD50-20	350 (5075)	114 (30)
RVD50-20P	385 (5575)	114 (30)

Thermal relief valve, poppet type



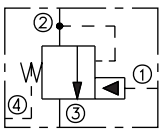
Model	Pressure bar (psi)	Flow lpm (gpm)
TR04-B20	414 (6000)	no rating

Unloading pilot, internal drain



Model	Pressure bar (psi)	Flow lpm (gpm)
UP10-31	207 (3000)	4 (1)

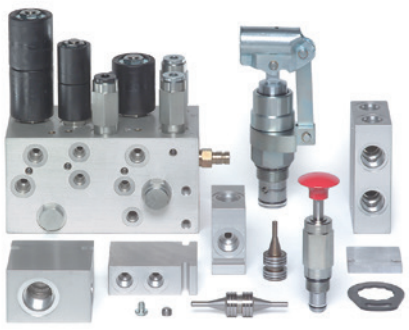
Remote sequence valve, unloading pilot



Model	Pressure bar (psi)	Flow lpm (gpm)
UP10-40	207 (3000)	4 (1)

Accessories

HydraForce Valve Size	Cavity Thread Size
04	7/16–20UNF–2B
07	5/8–18UNF–2B
08, 38, 58, 98	3/4–16UNF–2B
10, 50, 70	7/8–14UNF–2B
12, 52, 72	1-1/16–12UN–2B
16, 76	1-5/16–12UN–2B
20	1-5/8–12UN–2B
42	M42 x 2,0–6H



Valve Housings

Single cavity housings are available in a wide variety of port sizes for industry-common valve cavity sizes. Anodized aluminum housings are rated up to 240 bar (3500 psi). Steel and ductile iron housings are available in select sizes for high-pressures up to 350 bar (5075 psi).

Custom Manifold Accessories

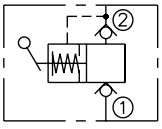
A full line of manifold accessories are available from stock including: cavity plugs, orifice discs, port plugs, orifice plugs, pilot pistons, screen cartridges, as well as cavity form tools and finishing tools.

Hand Pumps

Three versions of hand operated piston and check valve pumps are available for manual operation of piloted features like brake release or emergency lowering of power-down functions.

Hand Pumps

Hand pump
see catalog for operating force requirements



Model	Pressure bar (psi)	Disp. cm^3 (in^3)
HP10-20	207 (3000)	1.36 (0.083)
HP10-21	207 (3000)	10.6 (0.65)
HP16-21	207 (3000)	21.3 (1.3)

OILPATH
VALVE & MANIFOLD MANUFACTURING

Oilpath Hydraulics Pty Ltd
21 Deloraine Edwardstown
South Australia 5059

Phone: (08) 8277 4933
Free call: 1300 787 571

oilpath.com.au