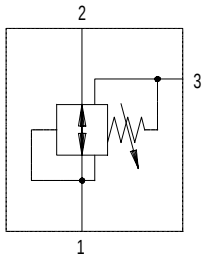
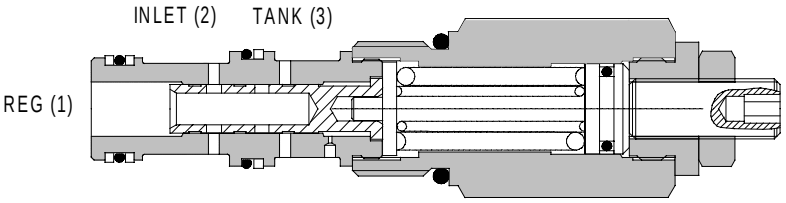
1PD SERIES PRESSURE REDUCING VALVE

DIRECT ACTING WITH REVERSE RELIEF

1PD20

SLIDING SPOOL TYPE





5

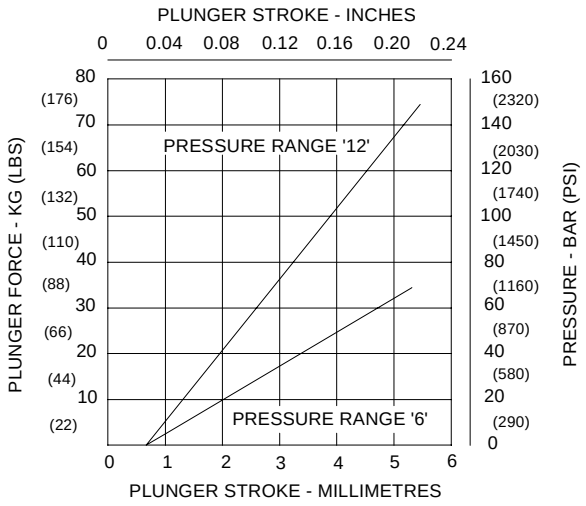
APPLICATION

To provide an adjustable regulated pressure which is lower than supply pressure, as when more than one operating pressure is required from one pump. Direct acting models are suited to lower flow applications and regulated pressures to 140 bar (2000 psi). This valve also acts as a relief valve, relieving from regulated line to tank if shock or surge pressures occur in the regulated line.

OPERATION

Normally open, the valve throttles or closes to maintain constant pressure in the regulated line. As in the other direct acting valves, the spring force holds the valve open.

PLUNGER ADJUSTMENT RANGE



FEATURES

Hardened steel working parts are individually match ground to assure long life, reliability and high accuracy.

SPECIFICATIONS

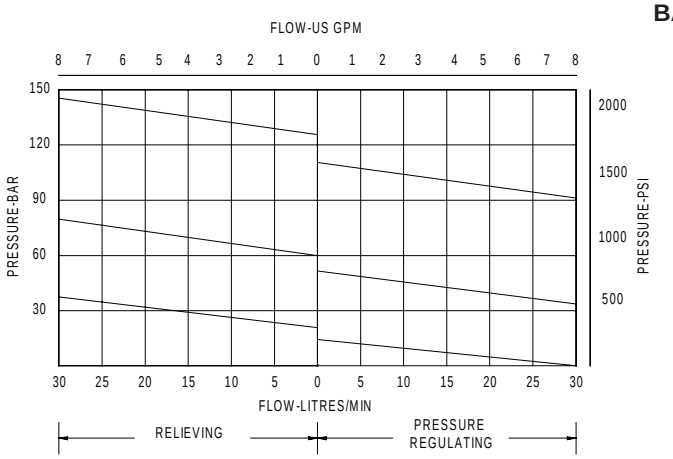
Figures based on: Oil Temp = 40°C Viscosity = 40 cSt

Rated Flow	30 litres/min (8 US GPM)
Max Setting	Up to 140 bar (2000 psi)
Max Inlet Pressure	350 bar (5000 psi)
Max Differential	210 bar (3000 psi) between 1 and 2
Cartridge Material	Working parts hardened and ground steel. External surfaces zinc plated
Body Material	Standard aluminium Add Suffix '377' for steel option
Mounting Position	Unrestricted
Cavity Number	A5572 (See Section 17)
Torque Cartridge into Cavity	60 Nm (44 lbs ft)
Weight	1PD20 0.24 kg (0.53 lbs) 1PD25 1.15 kg (2.53 lbs) 1PDC25 1.25 kg (2.75 lbs)
Seal Kit Number	SK339 (Nitrile) SK339V (Viton)
Recommended Filtration Level	BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp	-20°C to +90°C
Leakage	35 millilitres/min nominal
Nominal Viscosity Range	5 to 500 cSt

Integrated Hydraulics Limited Collins Road, Heathcote Industrial Estate, Warwick, CV34 6TF, England.
Tel: +44 (0) 1926 881171 Fax: +44 (0) 1926 315729 Website: www.integratedhydraulics.com

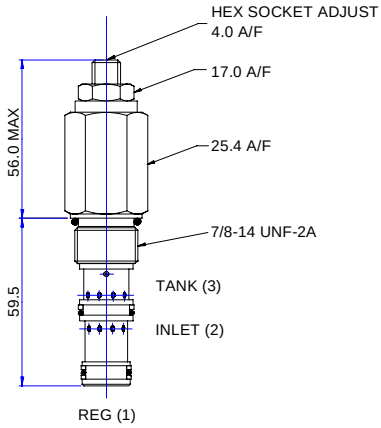
Integrated Hydraulics Limited

PRESSURE DROP



CARTRIDGE ONLY

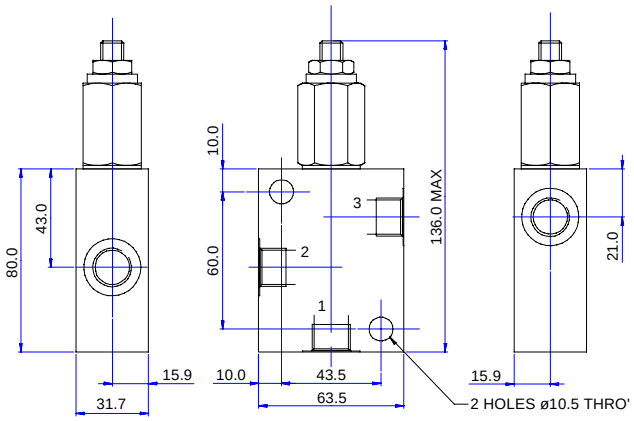
BASIC CODE: 1PD20



5

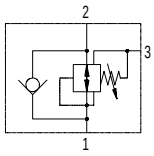
COMPLETE VALVE 3/8" PORTS

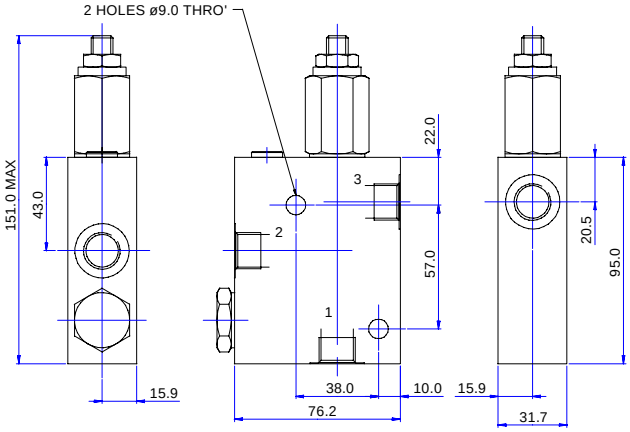
BASIC CODE: 1PD25



COMPLETE VALVE 3/8" PORTS

BASIC CODE: 1PDC25 (WITH REVERSE FLOW CHECK)





Where measurements are critical request certified drawings

ORDERING CODE EXAMPLE

1PD**	P	3W	12	S

Basic Code

Adjustment Means
P = Leakproof Screw Adjustment
R = Handknob Adjustment
C = Plunger Actuated
G = Tamperproof Cap
(See page 5-102 for dimensions)

Port Sizes - Bodied Valves Only
3W = 3/8" BSP **6T** = 3/8" SAE

Pressure Range @ zero flow
6 =20- 75 bar. Std setting 30 bar
12 =30-140 bar. Std setting 60 bar
Std setting made at zero flow (dead head)

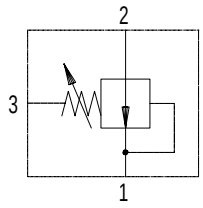
Seals
S = Nitrile (For use with most industrial hydraulic oils)
SV = Viton (For high temperature and most special fluid applications)

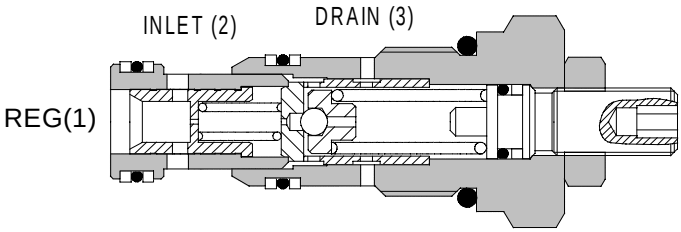
1PA SERIES PRESSURE REDUCING VALVE

PILOT OPERATED (ISO CAVITY NUMBER: 7789-22-6-0-90)

1PA60

SLIDING SPOOL TYPE





5

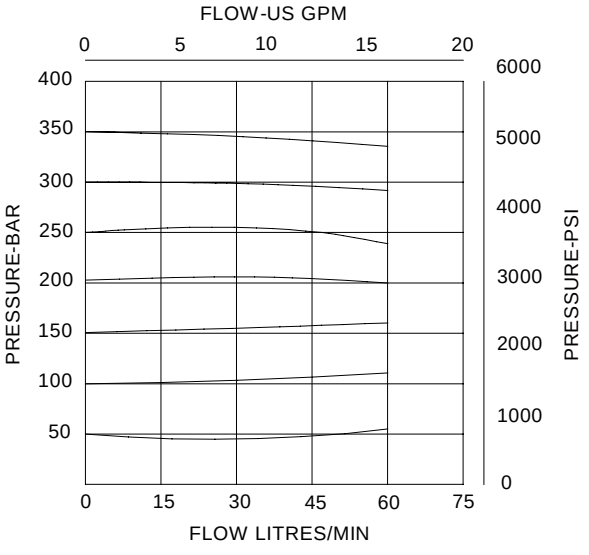
APPLICATION

To maintain a constant downstream pressure lower than the inlet pressure. Ideal for use in two systems or to protect low pressure actuators such as brake cylinders.

OPERATION

Normally open, the valve throttles or closes to maintain constant pressure in the regulated line. As in the other pilot operated valves, flow through the pilot section causes a pressure imbalance which closes the main section.

REGULATED PRESSURE



FEATURES

High capacity - of pilot operated design. Cartridge construction for use in your own manifold. Selectively matched, precision ground steel working parts assure long life.

SPECIFICATIONS

Figures based on: Oil Temp = 40°C Viscosity = 40 cSt

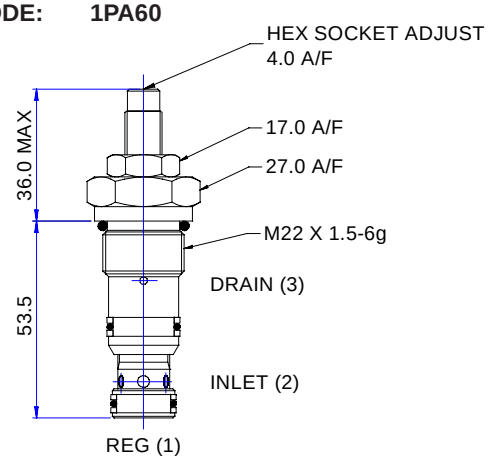
Rated Flow	60 litres/min (16 US GPM)
Max Setting	Inlet: 350 bar (5000 psi) Reg: 10-350 bar (150-5000 psi)
Max Differential	210 bar (3000 psi) between 1 and 2
Cartridge Material	Working parts hardened and ground steel. External surfaces zinc plated
Body Material	Standard aluminium Add Suffix '377' for steel option
Mounting Position	Unrestricted
Cavity Number	CVA-22-06-0 (See Section 17)
Torque Cartridge into Cavity	60 Nm (44 lbs ft)
Weight	1PA60 0.16 kg (0.35 lbs) 1PA65 0.50 kg (1.11 lbs) 1PA66 0.76 kg (1.62 lbs)
Seal Kit Number	SK618 (Nitrile) SK618V (Viton)
Recommended Filtration Level	BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp	-20°C to +90°C
Pilot Flow	300 millilitres/min @ standard setting
Nominal Viscosity Range	5 to 500 cSt

Integrated Hydraulics Limited Collins Road, Heathcote Industrial Estate, Warwick, CV34 6TF, England.
Tel: +44 (0) 1926 881171 Fax: +44 (0) 1926 315729 Website: www.integratedhydraulics.com

Integrated Hydraulics Limited

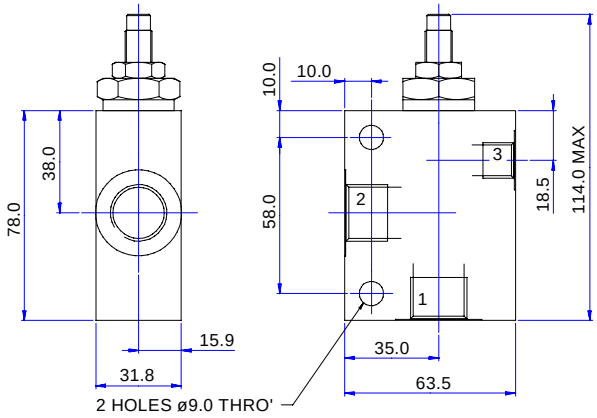
CARTRIDGE ONLY

BASIC CODE: 1PA60



COMPLETE VALVE 3/8" 1/2" PORTS

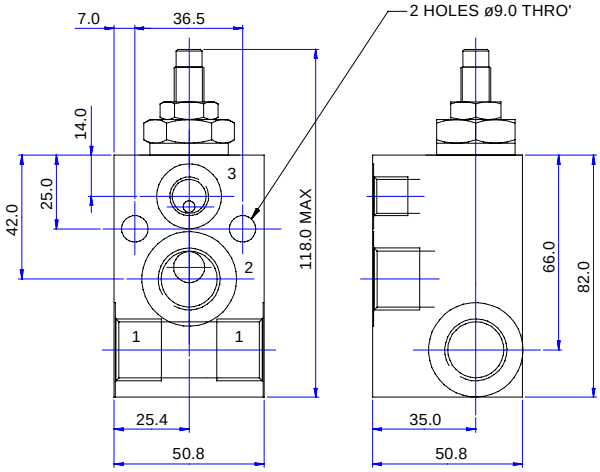
BASIC CODE: 1PA65



5

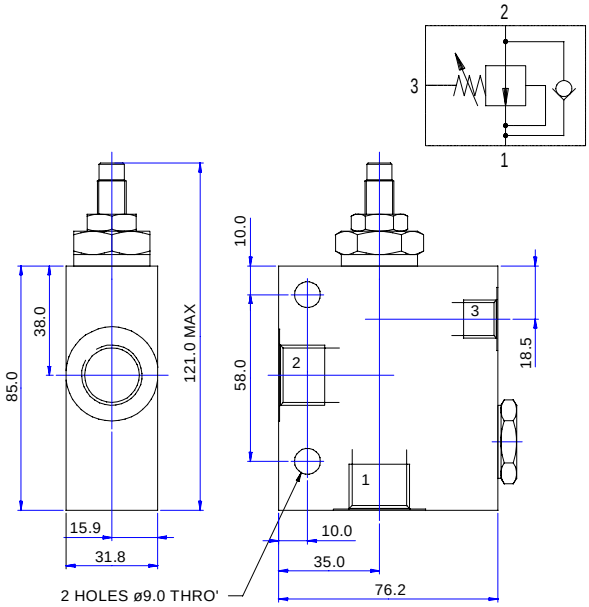
COMPLETE VALVE 1/2" PORTS

BASIC CODE: 1PA66



COMPLETE VALVE 3/8" 1/2" PORTS

BASIC CODE: 1PAC65 (WITH BUILT-IN CHECK)



Where measurements are critical request certified drawings

ORDERING CODE EXAMPLE

1PA**	P	3W	35	S

Basic Code

Adjustment Means
P = Leakproof Screw Adjustment
R = Handknob Adjustment
G = Tamperproof Cap
(See page 5-102 for dimensions)

Port Sizes - Bodied Valves Only
3W = 3/8" BSP **6T** = 3/8" SAE
4W = 1/2" BSP **8T** = 1/2" SAE
1/4" Drain Ports

Seals
S = Nitrile (For use with most industrial hydraulic oils)
SV = Viton (For high temperature and most special fluid applications)

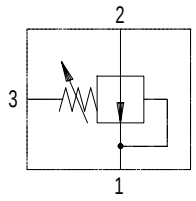
Pressure Range @ zero flow
10 =10-100 bar. Std setting 35 bar
20 =15-200 bar. Std setting 100 bar
35 =30-350 bar. Std setting 280 bar
Std setting made at zero flow (dead head)

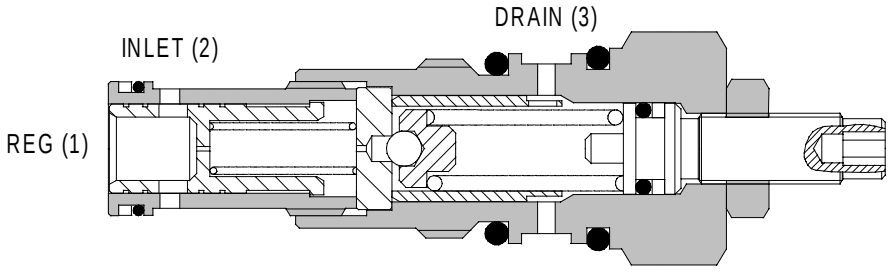
1PA SERIES PRESSURE REDUCING VALVE

PILOT OPERATED

1PA100

SLIDING SPOOL TYPE





5

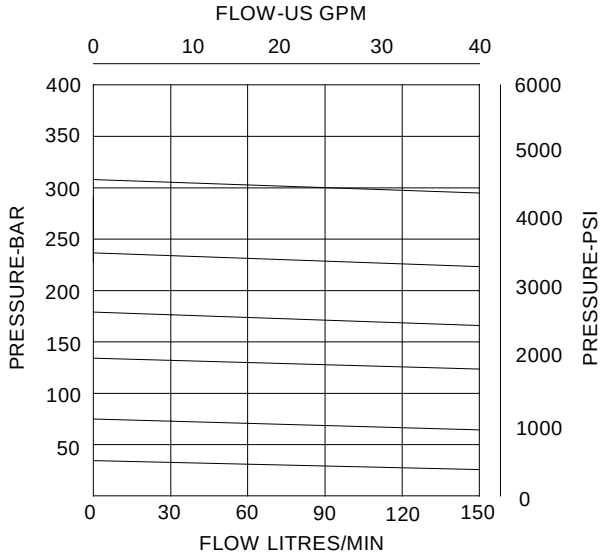
APPLICATION

To maintain a constant downstream pressure lower than the inlet pressure. Ideal for use in two pressure systems or to protect low pressure actuators such as brake cylinders.

OPERATION

This valve is normally open, allowing oil from the inlet to pass through to the regulated port of the cartridge. When the regulated pressure reaches the valve setting, the pilot section opens causing a pressure imbalance across the main spool which moves, throttling the inlet flow, preventing any further pressure rise in the regulated line.

REGULATED PRESSURE



FEATURES

Internal parts hardened, match ground and honed to give long, trouble-free life. Pilot style design allows for high flows and accurate performance.

SPECIFICATIONS

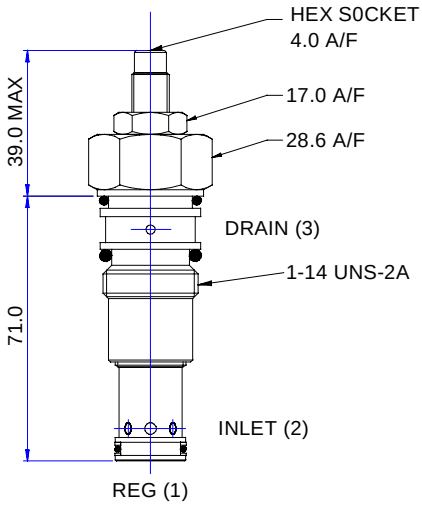
Figures based on: Oil Temp = 40°C Viscosity = 40 cSt

Rated Flow	100 litres/min (26 US GPM)
Pressure Range	10 to 350 bar (150 to 5000 psi)
Max Differential	210 bar (3000 psi) between 1 and 2
Cartridge Material	Working parts hardened and ground steel. External surfaces zinc plated
Body Material	Standard aluminium Add Suffix '377' for steel option
Mounting Position	Unrestricted
Cavity Number	A880 (See Section 17)
Torque Cartridge into Cavity	60 Nm (44 lbs ft)
Weight	1PA100 0.17 kg (0.37 lbs) 1PA150 0.60 kg (1.32 lbs)
Seal Kit Number	SK177 (Nitrile) SK177V (Viton)
Recommended Filtration Level	BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp	-20°C to +90°C
Pilot Flow	500 millilitres/min @ standard setting
Nominal Viscosity Range	5 to 500 cSt

Integrated Hydraulics Limited Collins Road, Heathcote Industrial Estate, Warwick, CV34 6TF, England.
Tel: +44 (0) 1926 881171 Fax: +44 (0) 1926 315729 Website: www.integratedhydraulics.com

CARTRIDGE ONLY

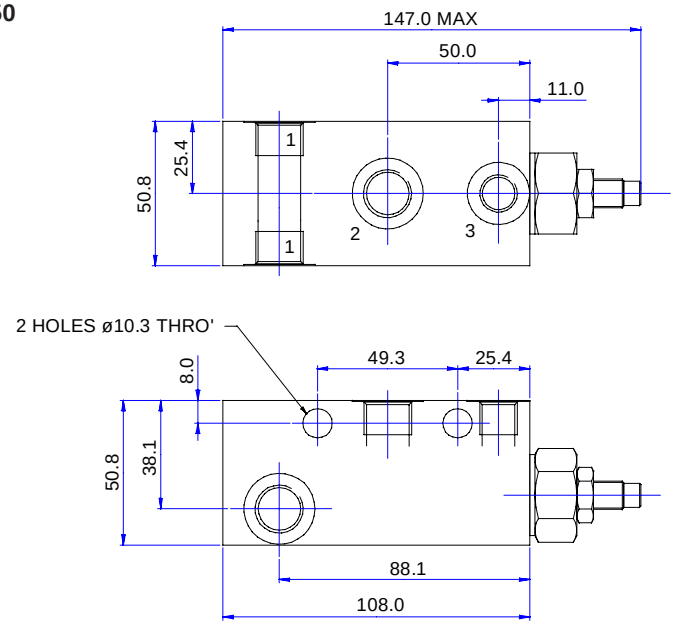
BASIC CODE: 1PA100



COMPLETE VALVE

1/2" 3/4" PORTS

BASIC CODE: 1PA150



Where measurements are critical request certified drawings

ORDERING CODE EXAMPLE

1PA***	P	4W	35	S

Basic Code

Adjustment Means
P = Leakproof Screw Adjustment
R = Handknob Adjustment
G = Tamperproof Cap
(See page 5-102 for dimensions)

Port Sizes - Bodied Valves Only
4W = 1/2" BSP **8T** = 1/2" SAE
6W = 3/4" BSP **12T** = 3/4" SAE
1/4" Drain Ports

Seals
S = Nitrile (For use with most industrial hydraulic oils)
SV = Viton (For high temperature and most special fluid applications)

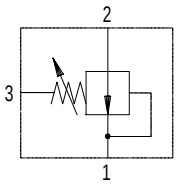
Pressure Range @ zero flow
7 =10- 70 bar. Std setting 20 bar
20 =15-200 bar. Std setting 100 bar
35 =30-350 bar. Std setting 280 bar
Std setting made at zero flow (dead head)

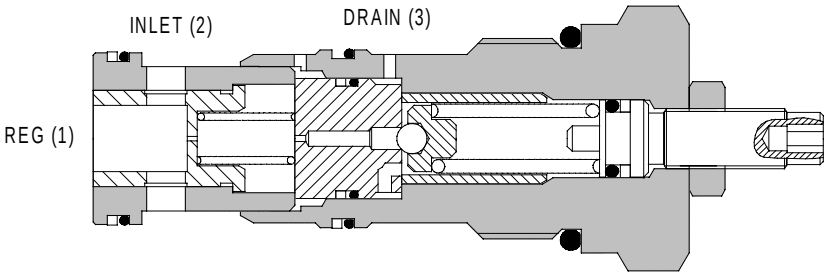
1PA SERIES PRESSURE REDUCING VALVE

PILOT OPERATED

1PA200

SLIDING SPOOL TYPE





5

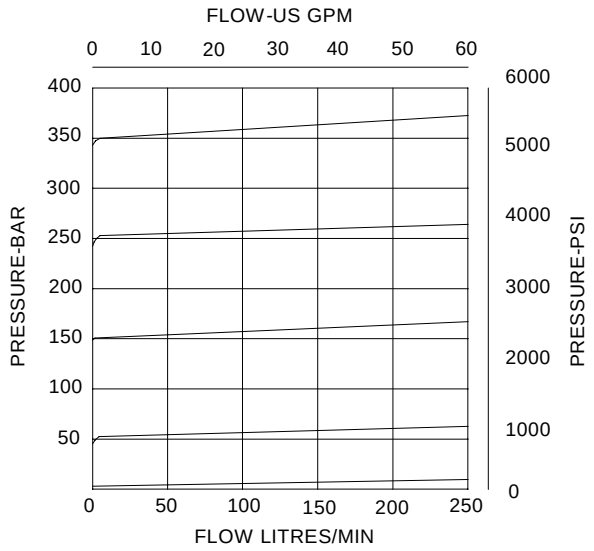
APPLICATION

To maintain a constant downstream pressure lower than the inlet pressure. Ideal for use in two pressure systems or to protect low pressure actuators such as brake cylinders. Note: where reverse flow is required, see 1PAA95, page number 5-161.

OPERATION

This valve is normally open, allowing oil from the inlet to pass through to the regulated port of the cartridge. When the regulated pressure reaches the valve setting, the pilot section opens causing a pressure imbalance across the main spool which moves, throttling the inlet flow, preventing any further pressure rise in the regulated line.

REGULATED PRESSURE



FEATURES

Internal parts hardened, match ground and honed to give long, trouble-free life. Pilot style design allows for high flows and accurate performance.

SPECIFICATIONS

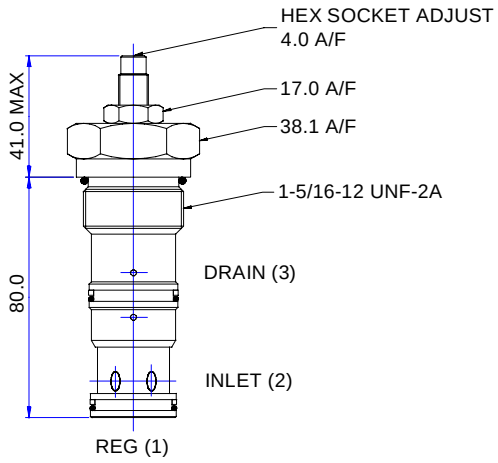
Figures based on: Oil Temp = 40°C Viscosity = 40 cSt

Rated Flow	200 litres/min (52 US GPM)
Max Setting	Inlet: 350 bar (5000 psi) Reg: 30-350 bar (435-5000 psi)
Max Differential	210 bar (3000 psi) between 1 and 2
Cartridge Material	Working parts hardened and ground steel. External surfaces zinc plated
Body Material	Standard aluminium Add Suffix '377' for steel option
Mounting Position	Unrestricted
Cavity Number	A3145 (See Section 17)
Torque Cartridge into Cavity	100 Nm (76 lbs ft)
Weight	1PA200 0.72 kg (1.59 lbs) 1PA250 1.06 kg (2.34 lbs)
Seal Kit Number	SK173 (Nitrile) SK173V (Viton)
Recommended Filtration Level	BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp	-20°C to +90°C
Pilot Flow	550 millilitres/min @ standard setting
Nominal Viscosity Range	5 to 500 cSt

Integrated Hydraulics Limited Collins Road, Heathcote Industrial Estate, Warwick, CV34 6TF, England.
Tel: +44 (0) 1926 881171 Fax: +44 (0) 1926 315729 Website: www.integratedhydraulics.com

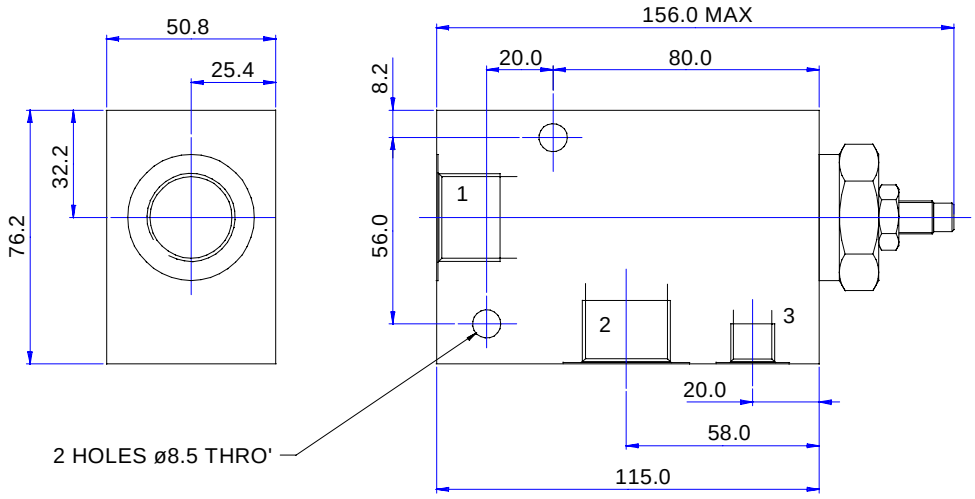
CARTRIDGE ONLY

BASIC CODE: 1PA200



COMPLETE VALVE 1" PORTS

BASIC CODE: 1PA250



Where measurements are critical request certified drawings

ORDERING CODE EXAMPLE

1PA***	P	8W	35	S

Basic Code

Adjustment Means
P = Leakproof Screw Adjustment
R = Handknob Adjustment
G = Tamperproof Cap
(See page 5-102 for dimensions)

Port Sizes - Bodied Valves Only
8W = 1" BSP **16T** = 1" SAE
1/4" Drain Ports

Seals
S = Nitrile (For use with most industrial hydraulic oils)
SV = Viton (For high temperature and most special fluid applications)

Pressure Range @ zero flow
35 =30-350 bar. Std setting 280 bar
Std setting made at zero flow (dead head)