



WEBTEC

WEBTEC PRODUCTS LIMITED











Hydraulic Directional Control Valves and Check Valves



**Quality Hydraulic Components
from the Webtec Range**

Hydraulic Directional Control Valves and Check Valves

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SV50 Rotary

Diverter Valve



THE DIRECTIONAL CONTROL VALVE of the rotary spool type consists of a rotor which is turned with respect to the valve body. When the rotor is placed in selected positions inlet and outlet ports are connected in various combinations permitting the start, stop or directional change of fluid under pressure. The functions specific to a valve depends primarily on rotor type selected.

Specifications

Maximum Pressure:
210 bar

Maximum Flow:
30 lpm

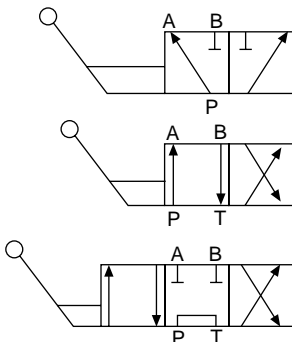
Porting:
3/8 BSP

Material:
steel spool in cast iron body

Weight:
1.24 kg

Mounting:
2 Bolt

Symbol



Features

- Provides a fast and positive control of oil to and from cylinders and motors.
- Customers can select from one of three spool types allowing flow to be diverted from one line to another or in a neutral position of pressure to tank.

Quality Hydraulic Components from the Webtec Range

ORDERING CODES Typical Code

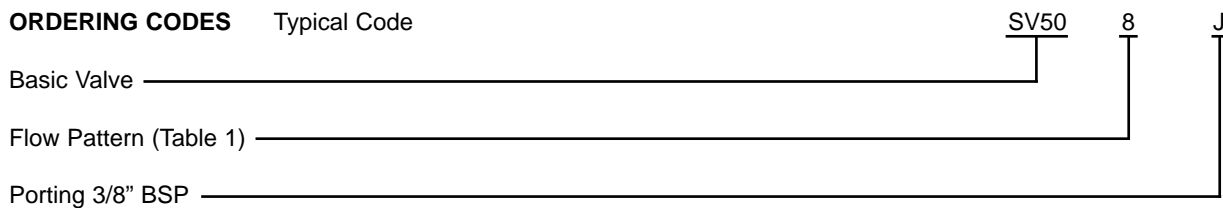
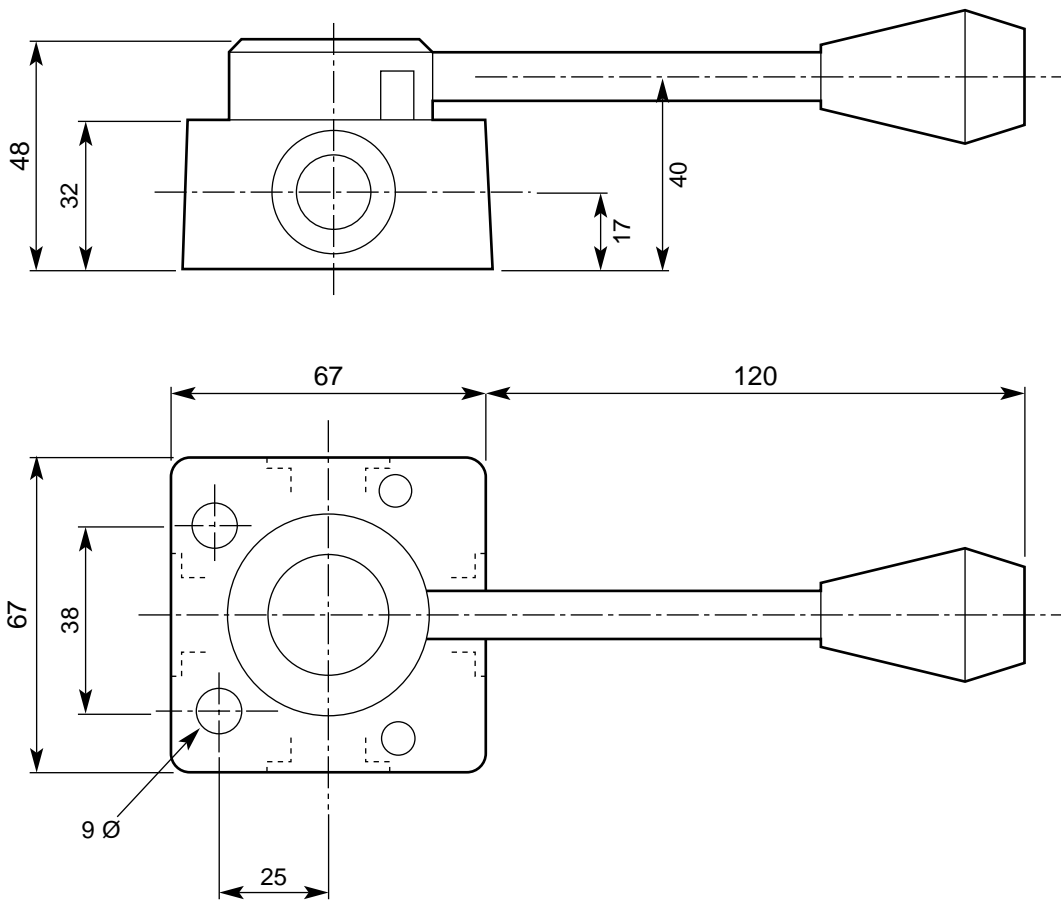


Table 1: Flow Patterns

Code	Flow Patterns
6	
8	
11	

INSTALLATION DETAILS
Dimensions in millimetres



SV80

Diverter Valve

A **DIVERTER VALVE** provides an alternative to the standard directional control valve when a neutral (centre) position is not required. It allows flow to be directed into either of two lines which enables fast changing from one system to another, or from one system to tank thus providing an idling circuit.

Other applications may be as a safety lock preventing accidental operation of separate functions which should not operate together and the selection of attachments as on a farm tractor.

Specifications

Maximum Working Pressure:
210 bar

Maximum Flow:
80 lpm

Porting:
see Table 2, ordering codes

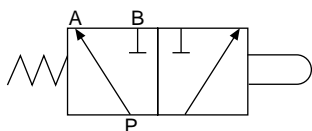
Material:
stainless steel spool in cast iron body

Weight:
2 kg (approx.)

Mounting:
two bolt

Symbol

For valve model number SV80-A-J-S
(see ordering codes)



Features

- Flow may be directed by mechanically pushing the spool with spring offset or by a mechanical push pull operation in which case the valve stem is threaded or fitted with a moulded knob.
- Customer can select from one of two spool types allowing flow to be diverted from one line to another or from system to tank.
- A choice of port threads are available.
- Special versions also available.

Quality Hydraulic Components from the Webtec Range

ORDERING CODES Typical Code

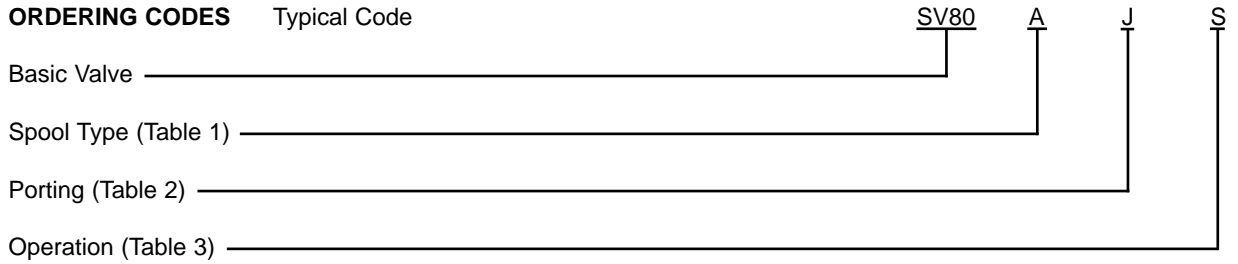


Table 1: Spool Type

Code	Spool Type
A	
B	

Table 2: Porting

Code	Porting
J	1/2" BSP
G	7/8" - 14 SAE
M	M22 x 1.5
A	1/2" NPT

Table 3: Operation

Code	Operation
S	Spring Offset, Mechanical Push
M	Manual, Push - Pull
T	Threaded, Push - Pull

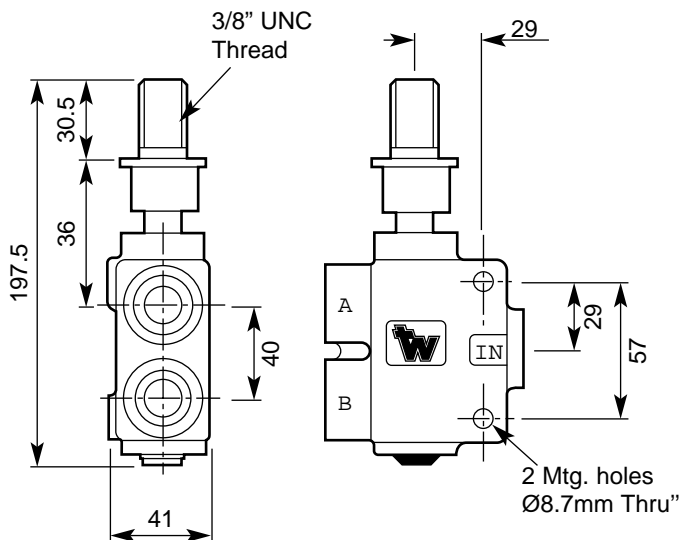
INSTALLATION DETAILS

Dimensions in millimetres

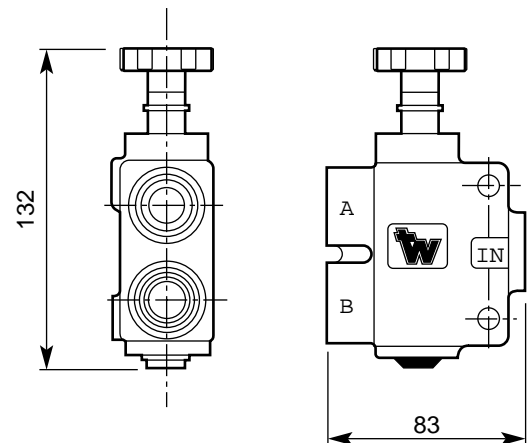
'A' Spool - Inlet to Port 'A' in position shown below

'B' Spool - All Ports closed in position shown below

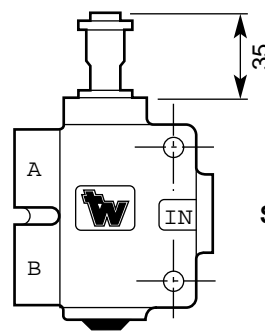
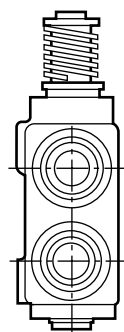
THREADED PUSH, PULL TYPE



MANUAL PUSH, PULL TYPE



Spool Movement 11 mm



SPRING OFFSET TYPE

DV80

Diverter Valve

A **DIVERTER VALVE** provides an alternative to the standard directional control valve when a neutral (centre) position is not required. It allows flow to be directed into either of two lines which enables fast changing from one system to another, or from one system to tank thus providing an idling circuit.

Other applications may be as a safety lock preventing accidental operation of separate functions which should not operate together and the selection of attachments as on a farm tractor.

Specifications

Maximum Working Pressure:
210 bar

Maximum Flow:
80 lpm

Porting:
see Table 2, ordering codes

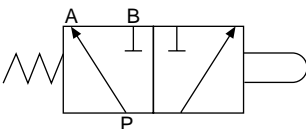
Material:
stainless steel spool in cast iron body

Weight:
2 kg (approx.)

Mounting:
two bolt

Symbol

For valve model DV80-A-J-B (see ordering codes)



Features

- Flow may be directed by mechanically pushing the spool with spring offset.
- Customer can select from one of two spool types allowing flow to be diverted from one line to another or from system to tank.
- A choice of port threads and spool end types are available.
- Spring and spool end protected from environment in sealed housing.
- Special versions also available

Quality Hydraulic Components from the Webtec Range

ORDERING CODES Typical Code

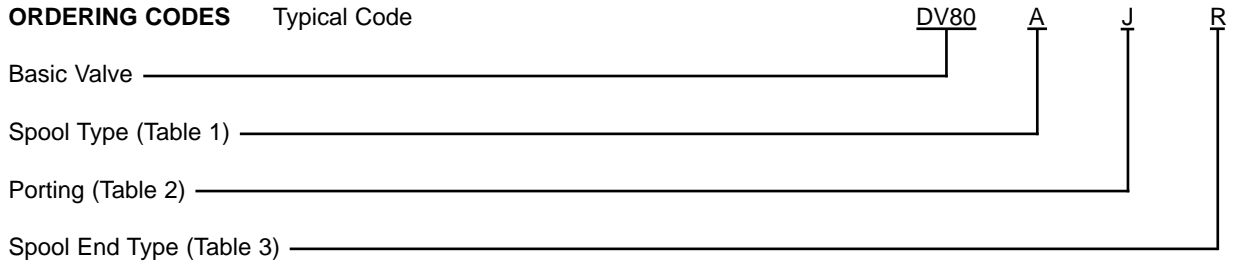


Table 1

Code	Spool Type
A	
B	

Table 2

Code	Porting
J	1/2" BSP
G	7/8" - 14 SAE

Table 3

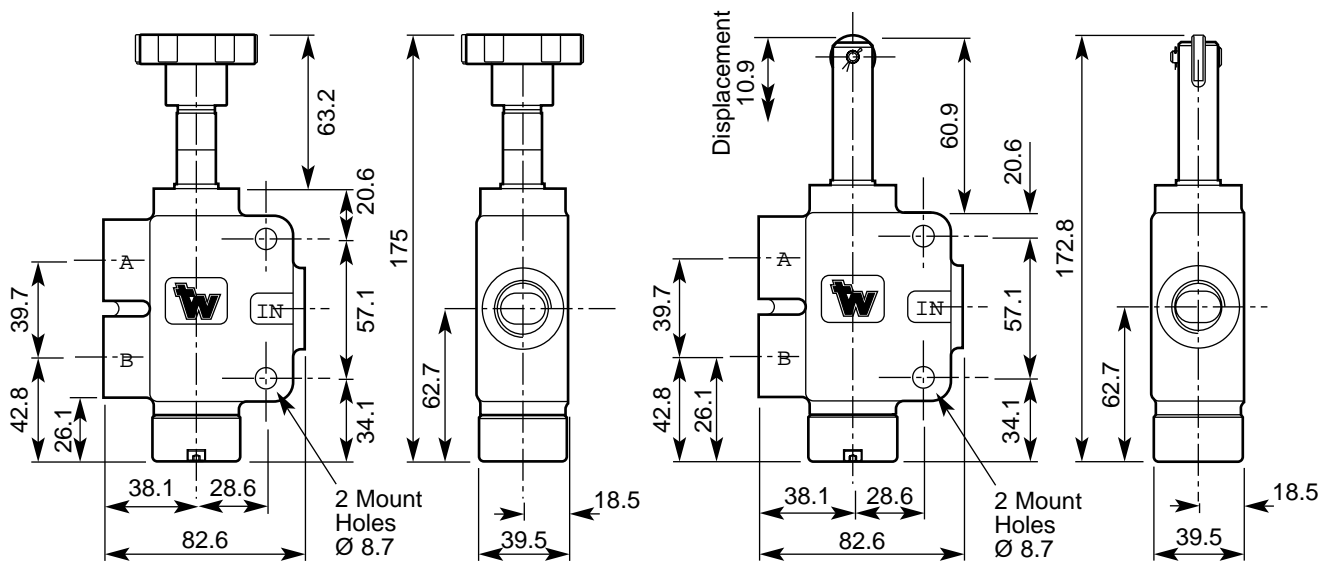
Code	Spool end type
R	Roller
B	Ball
M	Manual

INSTALLATION DETAILS

Dimensions in millimetres

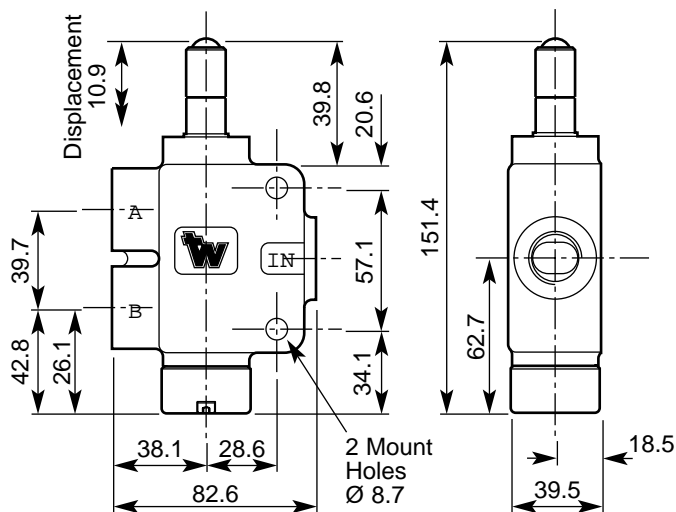
'A' Spool - Inlet to Port 'A' in position shown below

'B' Spool - All Ports closed in position shown below



MANUAL PUSH, PULL TYPE

ROLLER SPRING OFFSET



BALL SPRING OFFSET

1 AV Series

Directional Control Valve

A DIRECTIONAL CONTROL VALVE of the linear spool type consists of a cylindrical spool fitted inside a longitudinal bore of the valve housing. When the spool is placed in selected positions along the bore, inlet and outlet ports are connected in various combinations permitting the start, stop or directional change of fluid under pressure. The functions specific to a valve will depend primarily on the spool type selected.

Specifications

Maximum Working Pressure:
207 bar

Maximum Shock Flow:
345 bar

Flow Capacity:
113 lpm

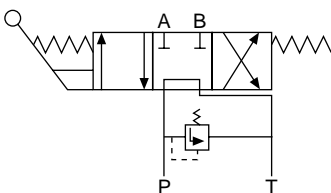
Porting:
3/4" - 14 BSPF (standard)

Material:
steel components in cast iron body.

Weight:
5.4 kg

Mounting:
Foot mounting brackets optional

Symbol



Features

- Provides fast, positive control of the flow of oil to and from cylinders and motors.
- Choice of spools provides for 3 or 4 way, tandems, open or closed centre operation.
- Alloy steel spools are heat treated, precision ground and fully balanced at all pressures.
- Cartridge type relief valve with hardened steel poppet may be direct acting or pilot operated.
- Detented type will hold valve in either of the selected positions until released by operation to spring centred position.
- Foot mounting brackets are optional on all models.
- Formed tube handles are standard.

Quality Hydraulic Components from the Webtec Range

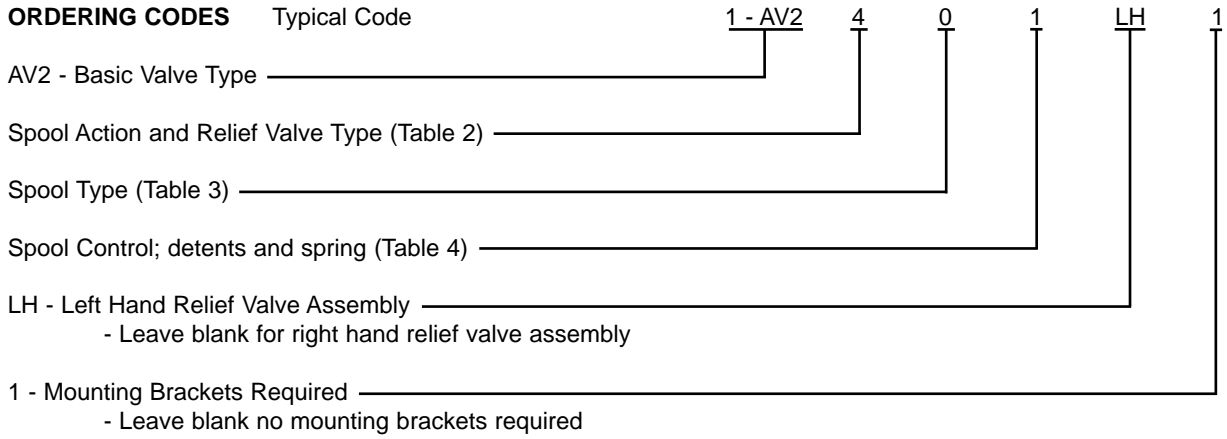


Table 2: Spool Action and Relief Valve Type

Code	Spool Action	R/V Type
1	4 - way	Pilot Operated
2	3 - way	Pilot Operated
3	3 - way	Brute Force (Direct Acting)
4	4 - way	Brute Force (Direct Acting)

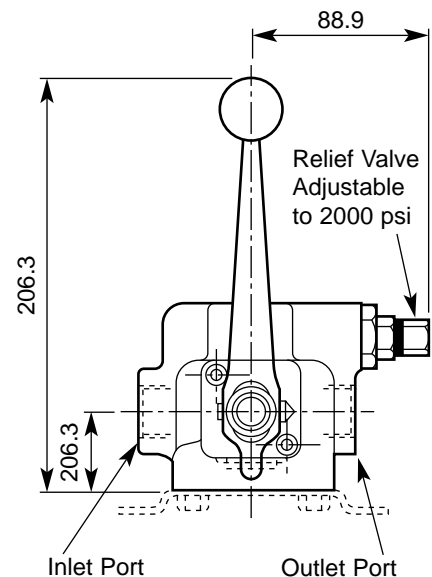
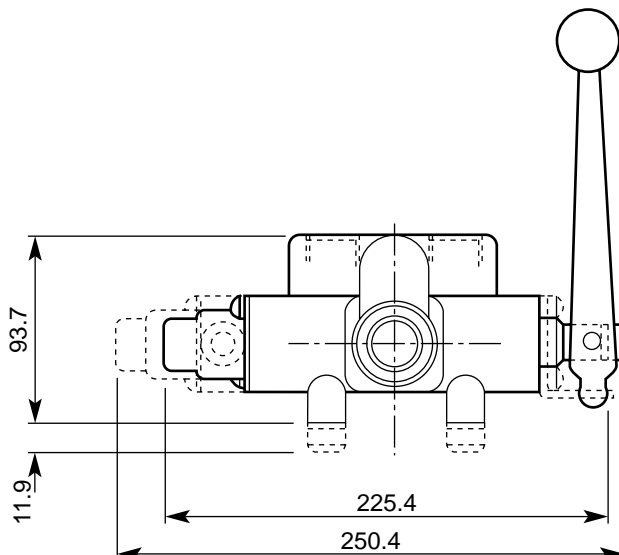
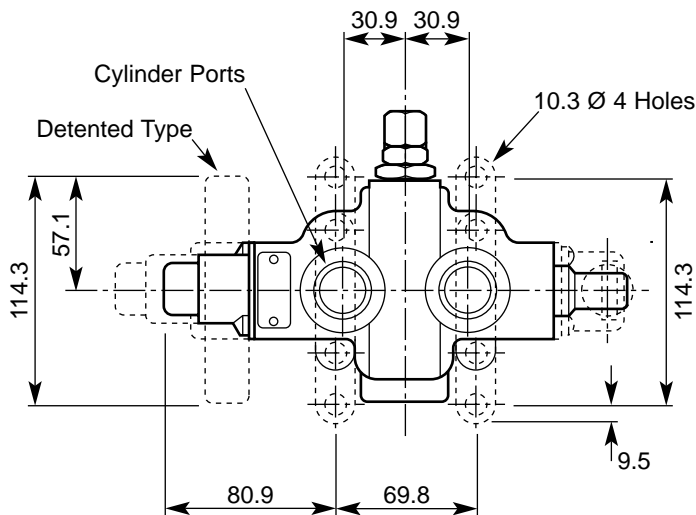
Table 3: Spool Type

Code	Double Acting	Description
0		Tandem Centre
1		Closed Centre
3		Open Centre

Code	Single Acting	Description
0		Tandem Centre
1		Closed Centre
3		Open Centre

Table 4: Spool Control detents and spring

Code	Description
1	Spring Centred - No Detents
3	Spring Centred - Detents both ways (Not available for codes 1 & 4 of (Table 2))
6	Not Spring Centred - No Detents



Series 180

Manual Directional Control Valve



THE DIRECTIONAL CONTROL VALVE of the rotary spool type consists of a rotor which is rotated with respect to the valve body. When the rotor is placed in selected positions inlet and outlet ports are connected in various combinations permitting the start, stop or directional change of fluid under pressure. The functions specific to a valve depends primarily on rotor type selected.

Specifications

Maximum Working Pressure:

700 bar
Spring centred models will not spring return to centre when operated over 207 bar.

Maximum Flow:

38 lpm
See table 3, ordering codes for available flow sizes.

Porting:

see Table 2, ordering codes

Material:

steel components in aluminium body

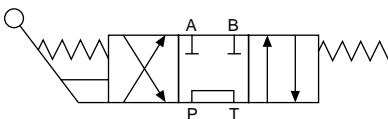
Weight:

1.13 kg

Mounting:

Pipe or manifold in any position

Symbol

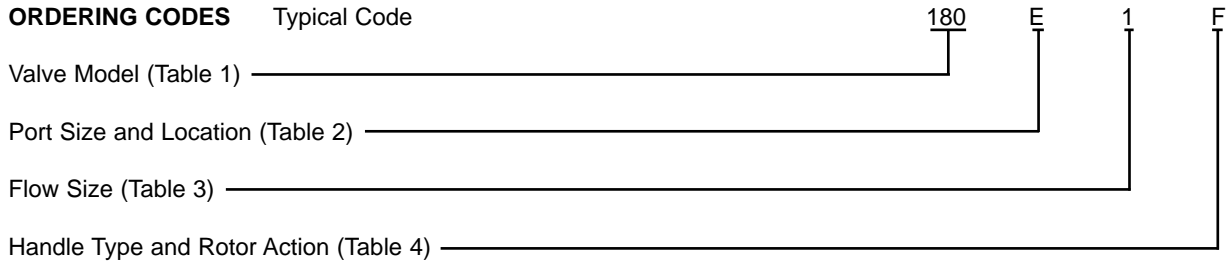


Features

- Pressure loaded seats working against optically flat rotors automatically compensated for valve wear to assure near zero leakage even after more than 500,000 cycles.
- Customer can select from numerous variations including 7 flow patterns, 3 flow ratings, many porting configurations, ball or offset ball operating handles, spring centring and detents.
- Valves may be in-line, panel or manifold mounted.
- High pressure cap available (max pressure 250 bar) enables valve to be used in series without drain.

Quality Hydraulic Components from the Webtec Range

ORDERING CODES Typical Code



NOTE: Models 185 and 187 available in 1 and 2 flow sizes only

Table 1: Valve Model

Code	Symbol
180	
181	
182	
183	
184	
185	
187	

Table 2: Port Size and Location

Code	C1	C2	C3	C4	P1	P2	T1	T2
A	3/8 ●	1/4	1/4	3/8 ●	3/8 ●	1/4	3/8 ●	1/4
C *	3/8 ●	.0	0	3/8 ●	3/8 ●	0	3/8 ●	0
E	3/8	1/4 ●	1/4 ●	3/8	3/8	1/4 ●	3/8	1/4 ●

Note:

1/4 = 1/4 NPTF

3/8 = 3/8 BSPF

0 = C'Bore for 014 'O' Ring ([4] 'O' Rings included)

● = Ports shipped plugged

* Manifold mounted models utilise 5/16 - 18 NC through bolts provided for mounting to manifold ('C' porting only)

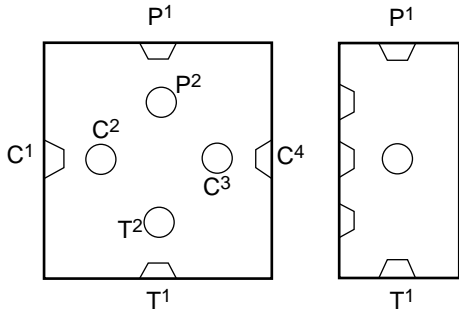


Table 3: Flow Size

Code	Description	Curve
		MAX Pressure
0	15 lpm Non - interflow*	A
		10,000 psi
1	26.5 lpm Low Interflow*	B
		5,000psi
2	38 lpm Medium Interflow*	C
		3,000psi

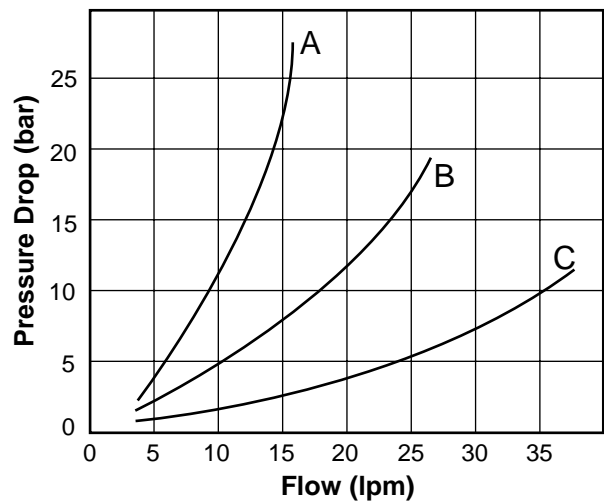
*Interflow = flow through valve in intermediate position

Table 4: Handle Type & Rotor Action

Code	Type	Action
D	Ball	Detented Action
E	Ball	Spring Centred Action
F	Offset Ball	Detented Action + Panel Mount
G	Offset Ball	Spring Centred Action + Panel Mount

Typical Performance Drop Curve

Established using Hydraulic oil with viscosity of 27.4 centisokes at 49°C

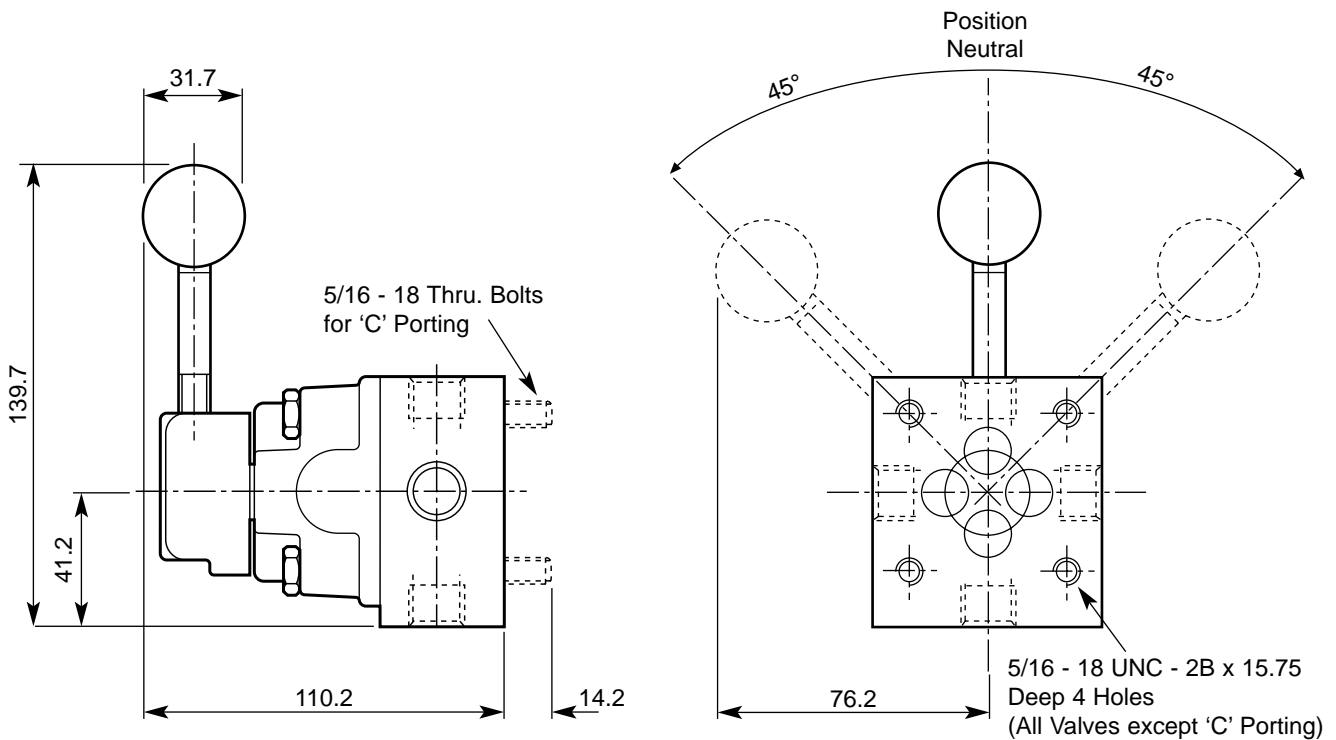
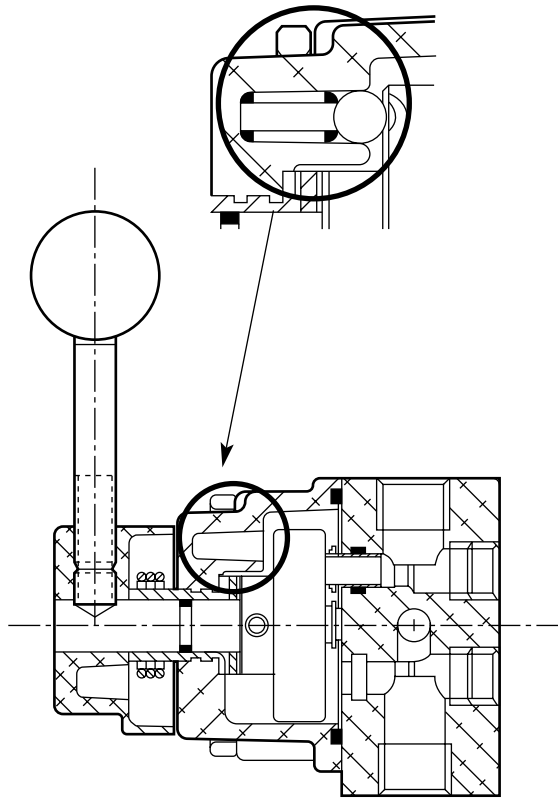


Note:

External drains are required when valves are connected in series. Consult Sales Office

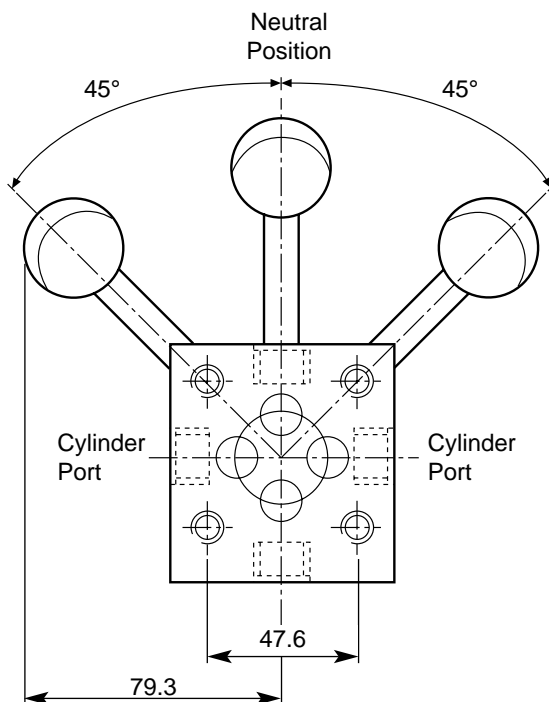
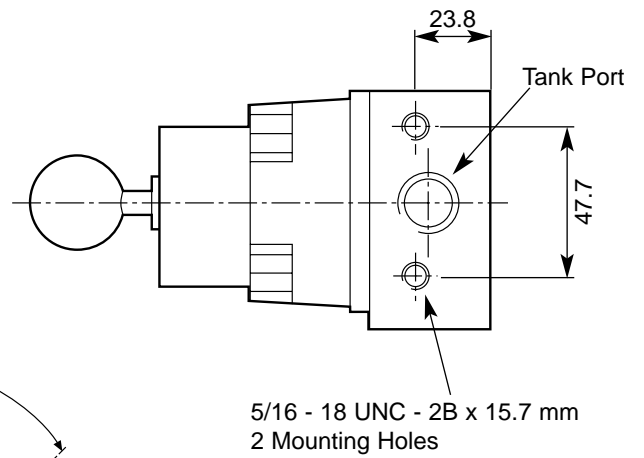
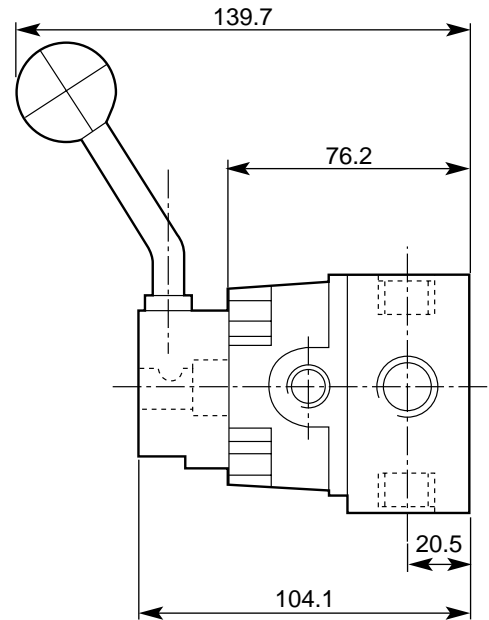
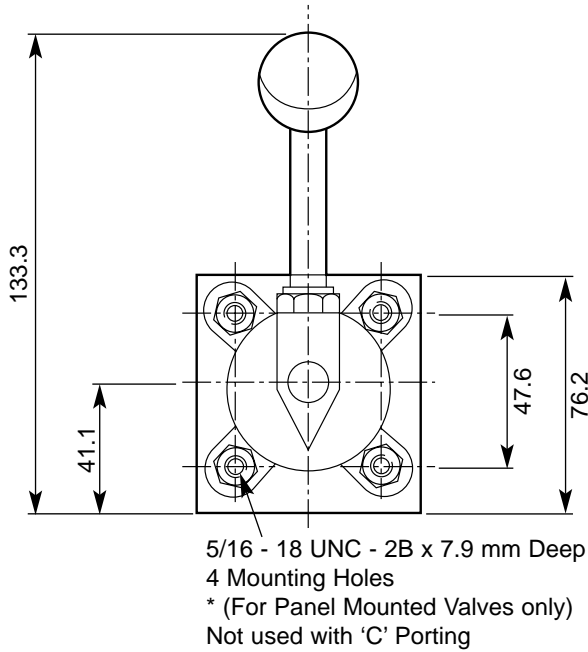
Quality Hydraulic Components from the Webtec Range

SECTIONAL VIEW



Quality Hydraulic Components from the Webtec Range

INSTALLATION DETAILS
PANEL MOUNTED
 Dimensions in millimetres



SOV Series

Shut Off Valve

SHUT OFF VALVES provide an In-line means of completely shutting off or metering the flow of hydraulic fluid in pipelines where constant full flow is not necessary. Applications may include the control of hydraulic Cylinder or Motor speed.

Specifications

Maximum Pressure:
340 bar (working)

Maximum Flow:
225 lpm

Porting:
See Table 1

Material:
Zinc plated steel body, hardened steel spindle, plastic knob.

Weight:
See Table 1

Mounting:
In-line

Symbol



Features

- In-line mounting.
- easy adjustment of flow rates using the hand wheel.
- flow range from 45 lpm to 225 lpm.
- zinc plated finish.

Quality Hydraulic Components from the Webtec Range

ORDERING CODES Typical Code

SOV 37

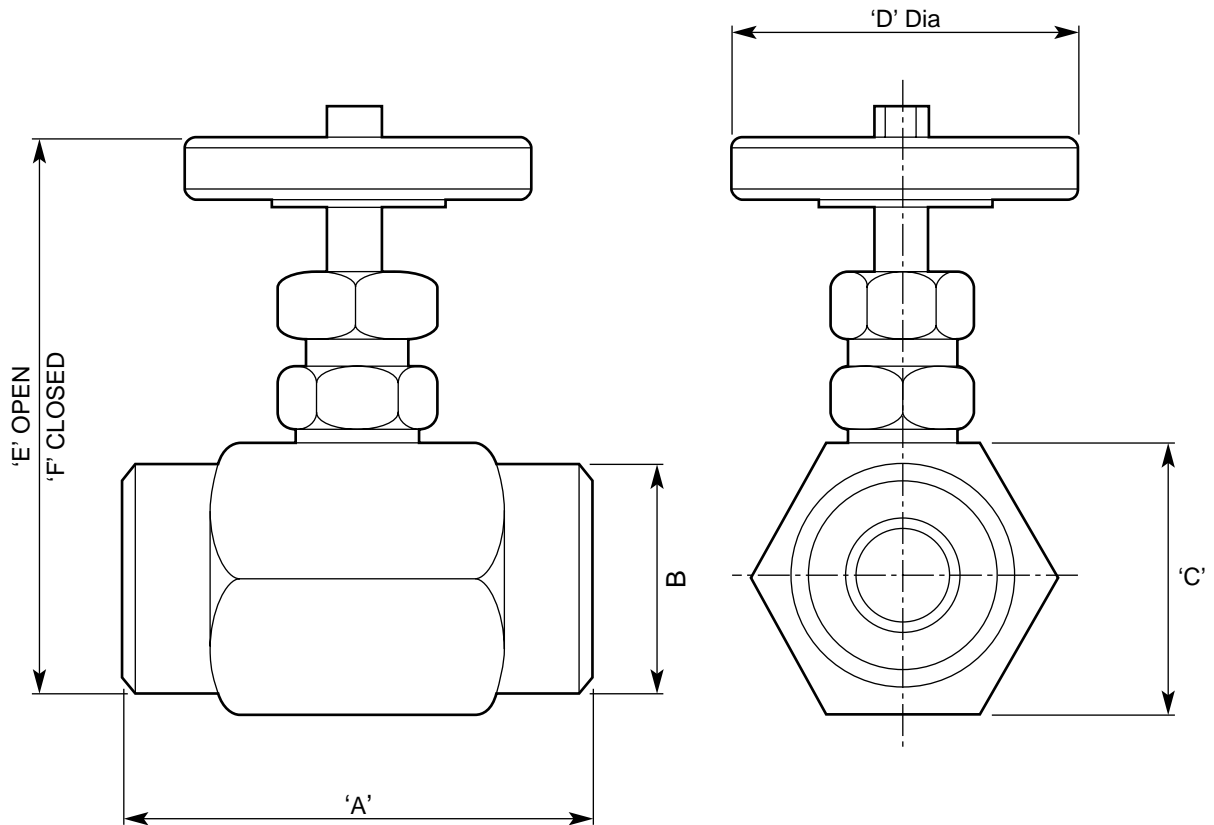
SOV - Shut Off Valve

Flow Size (Table 1)

Table 1: Flow Size

Code	Flow Capacity	Port Size	A	B	C	D	E	F	Weight
25	45 lpm	1/4" BSP	51	-	26 sq,	57	95	92	0.4 kg
37	180 lpm	3/8" BSP	66	34	38	57	114	106	0.75 kg
50	180 lpm	1/2" BSP	66	34	38	57	114	106	0.75 kg
75	225 lpm	3/4" BSP	90	41	52	63	125	120	1.25 kg

INSTALLATION DETAILS Dimensions in millimetres



NR Series

Non-Return Valve

CHECK (NON-RETURN) VALVES stop fluid flow in one direction while permitting free flow in the opposite direction. The force exerted by fluid entering the valve in the 'free flow' direction unseats a spring loaded poppet permitting fluid to pass. The fluid pressure required to unseat the poppet is known as the 'cracking' pressure. Both the spring force and the fluid force in the opposite direction push the poppet against the seat thus preventing fluid passage.

Specifications

Maximum Working Pressure:

210 bar

Cracking Pressure:

see Table 2, ordering codes

Rated Flow:

see Table 1, ordering codes

Porting:

see Table 1, ordering codes

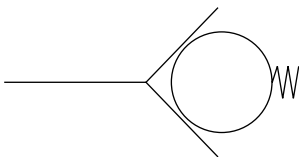
Material:

steel body

Weight:

see Table 1, ordering codes

Symbol



Features

- Straight through porting allows the valve to be connected directly in-line thus making the best use of restricted space.
- Customer can select from 7 valve sizes offering a range of flow ratings from 15 - 260 lpm and 4 'cracking' pressure settings ranging from 0.35 to 4.5 bar.

Quality Hydraulic Components from the Webtec Range

ORDERING CODES Typical Code

NR - Non-Return Valve

Valve Size (Table 1)

Cracking Pressure (Table 2)

NR

25

5

Table 1: Valve Size

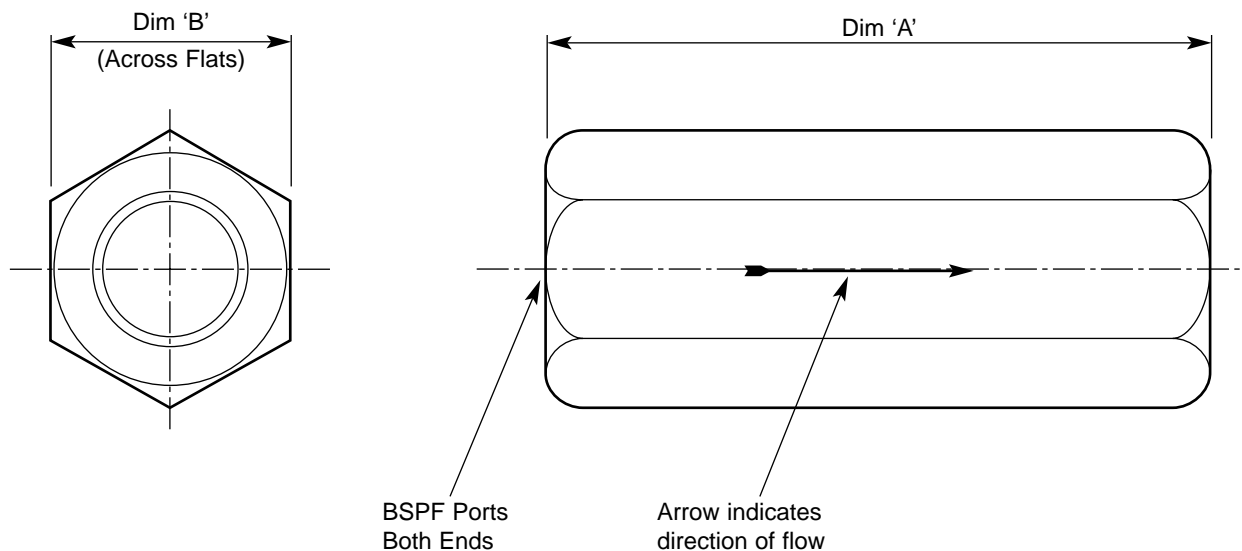
Code	Port Size BSP	Weight kg kg	Rated Flow lpm	Dim 'A' mm	Dim 'B' mm
25	1/4"	0.14	15	60	21.00
37	3/8"	0.18	27	70	23.81
50	1/2"	0.33	52	76	28.57
75	3/4"	0.71	85	108	38.00
100	1"	0.9	105	129	42.42
125	1 1/4"	2.3	175	133	63.50
150	1 1/2"	2.3	260	135	65.07

Table 2: Cracking Pressure

Code	Pressure
5	0.35 bar
15	1.03 bar
30	2.07 bar
65	4.5 bar

INSTALLATION DETAILS

Dimensions in millimetres (see Table 1 above)



Hydra-Check

Safety Fuse

THE HYDRA CHECK acts as a safety device by automatically locking a cylinder or other components should a hydraulic failure occur in the pressure line. A poppet within the body is held open by a light spring allowing flow in both directions at normal fluid velocities, but when hydraulic failure occurs, the reacting external force creates a return flow of greater velocity than normal. This velocity acts on the poppet and closes the valve creating a hydraulic lock to sustain the external force.

For maximum protection, the safety device should be located as close as possible to the cylinder or component.

Specifications

Maximum Working Pressure:
350 bar

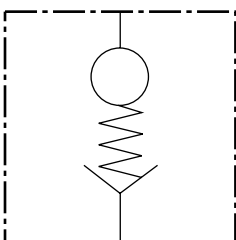
Flow Rate:
see Table 2, ordering codes

Porting:
see Table 1, ordering codes

Material:
all steel black oxide finish with guided steel poppet

Weight:
see Table 1, ordering codes

Symbol



Features

- Straight through porting allows the valve to be connected directly in-line thus making the best use of restricted space.
- Customer can select from 9 closing flows ranging from 10 to 90 lpm.
- All steel black oxide finish body.

Quality Hydraulic Components from the Webtec Range

ORDERING CODES Typical Code

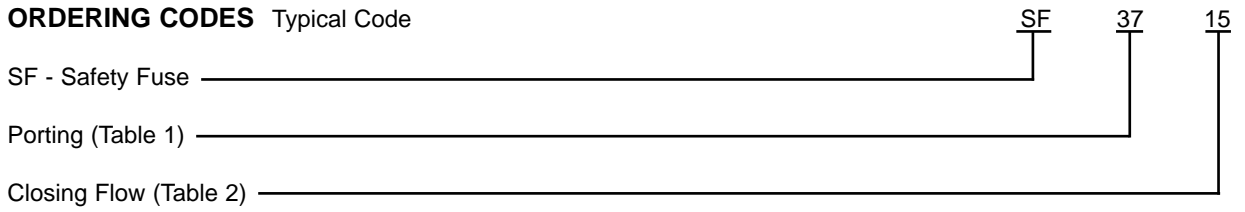


Table 1: Porting (Valve Size)

Code	A Thread	B mm	C mm	D mm	Wt. - kg
37	3/8" BSPP	47	13.50	23.81	0.12
50	1/2" BSPP	50	16.00	28.55	0.21

Table 2: Closing Flow - SF37

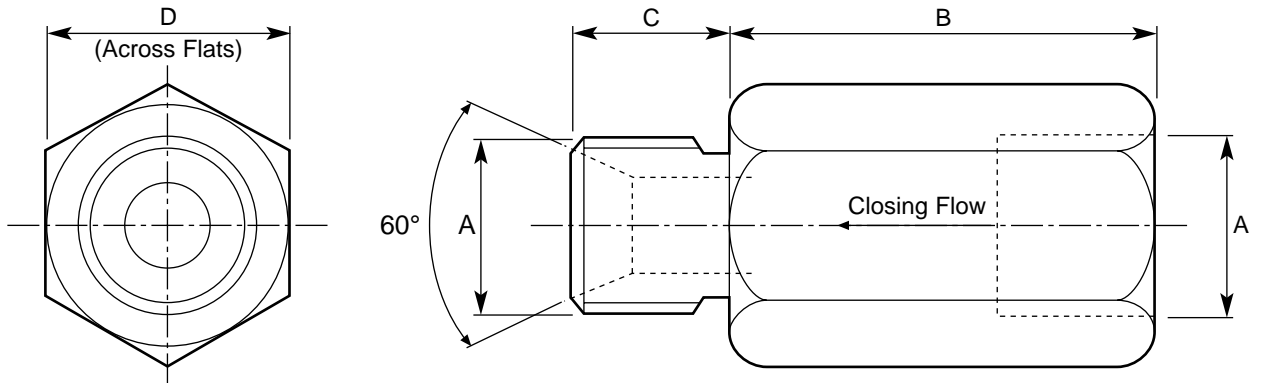
Code	Closing Flow
10	10 lpm
15	15 lpm
25	25 lpm
35	35 lpm
40	40 lpm

Table 2: Closing Flow - SF50

Code	Closing Flow
40	40 lpm
50	50 lpm
60	60 lpm
70	70 lpm
90	90 lpm

INSTALLATION DETAILS

Dimensions in millimetres (See Table 1)



SHV 20

Shuttle Valve

The **SHUTTLE VALVE** permits either of two input flows to be directed to a common outlet port. Flow entering one of the inlets causes a steel ball to travel along a centre bore to seal off the alternative inlet whilst leaving the outlet port free and allowing unimpeded oil flow through the valve.

Specifications

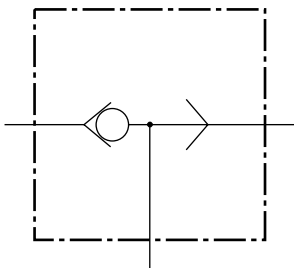
Maximum Working Pressure:
250 bar

Maximum Flow:
20 lpm

Porting:
1/4" BSP

Material:
Body and adaptor chemically
blacked steel.
Steel ball.

Symbol



Features

- Fast switching between 2 inlet flows.
- Free flow between inlet and outlet ports.
- 2 bolt mounting.
- Chemically blacked finish.

Quality Hydraulic Components from the Webtec Range

ORDERING CODES Typical Code

SHV - Shuttle Valve

20 - Flow Rating

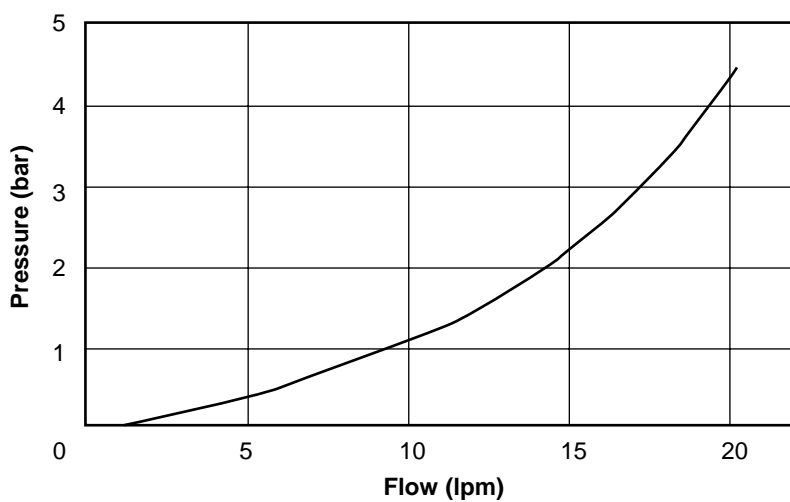
J - 1/4" BSP Porting

SHV

20

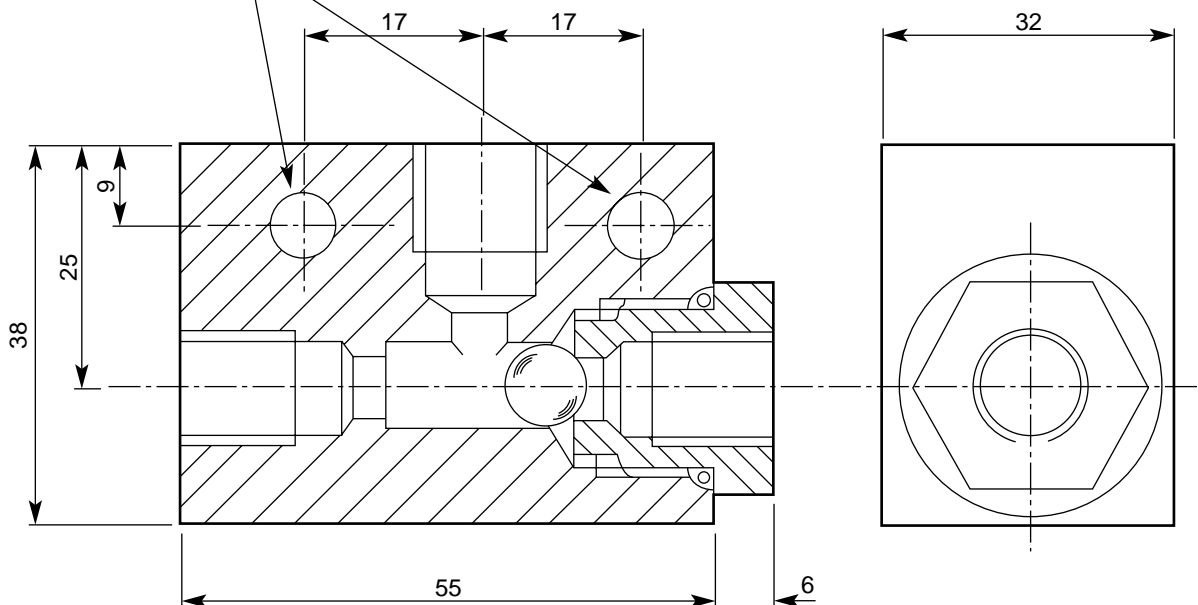
J

Typical Performance



INSTALLATION DETAILS
Dimensions in millimetres

Mounting Holes 6.5 dia



CP Series

Pilot Operated Check Valve In-line Type

CP SERIES PILOT OPERATED CHECK VALVES are used in hydraulic circuits where a positional load must not drift due to valve leakage. Applications include elevating, forklift, boom and crane equipment. These type of systems cannot tolerate the normal leakage of a directional control valve and require a positive check in the circuit to hold the load at any position.

In the typical circuit shown below a CP check valve with double pilot is being used to 'lock' a double acting cylinder. To extend the rod, oil flow is directed through check 'B'. This flow also moves a pilot piston which unseats 'A' allowing the rod end oil to flow through the check valve. To retract the rod, oil flow through 'A' unseats check 'B' allowing the piston end oil to return through 'B'. With the loss of pilot pressures, both checks will remain closed.

Specifications

Maximum Working Pressure:
207 bar

Standard Pressure Ratio:
4 to 1

Maximum Flow:
95 lpm

Maximum Leakage:
0.0025 lpm

Operating Temperature:
-54°C to 125°C

Porting:
see Table 2, ordering codes

Material:
hardened steel seats, balls and pistons in hi-tensile ductile iron body

Seal Compound:
Buna-N

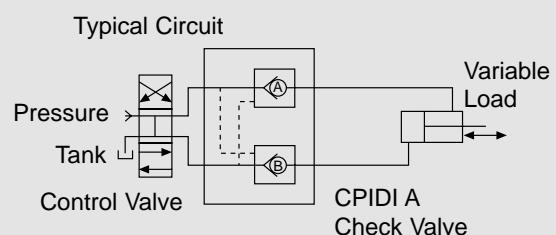
Weight:
1.25 kg



Features

- Valves are available with single or double pilot.
- Will prevent possible accidents by locking a cylinder or motor in place if a hose or tube breaks in the circuit between the pump and the valve.

Symbol



Quality Hydraulic Components from the Webtec Range

ORDERING CODES Typical Code

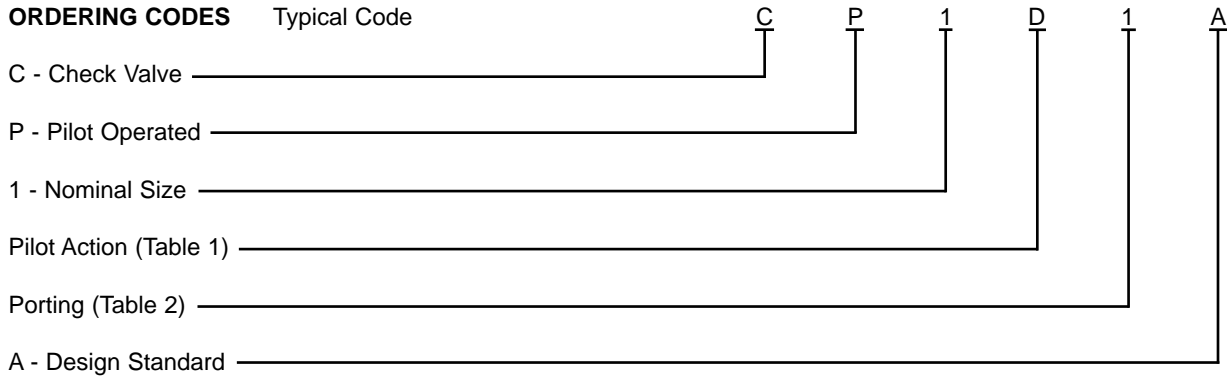


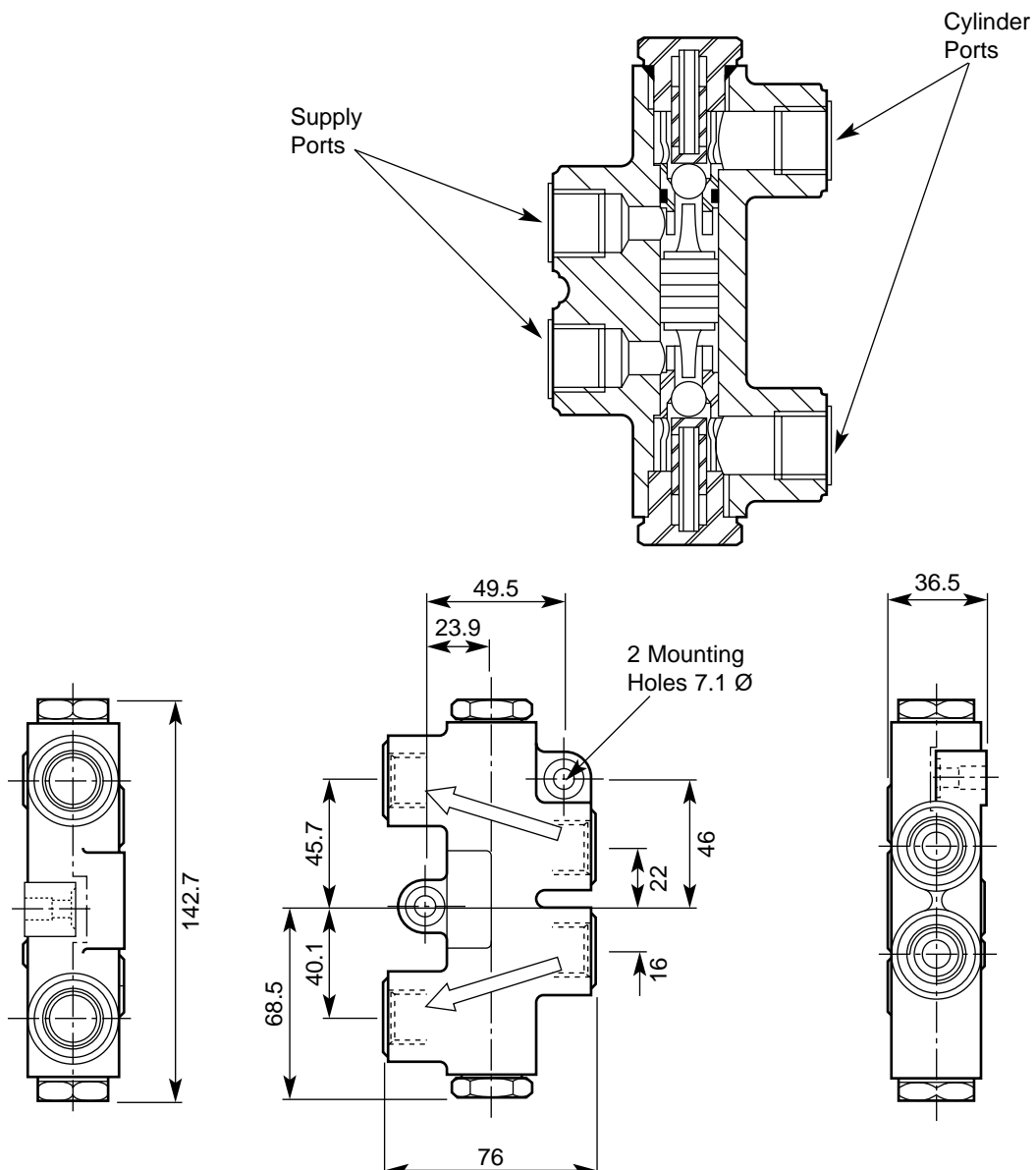
Table 1: Pilot Action

Code	Action
D	Double Pilot
S	Single Pilot

Table 2: Porting

Code	Thread
1	3/4" - 16 SAE (straight)
3	3/8" BSPF

INSTALLATION DETAILS Dimensions in millimetres



Manufacturers of Hydraulic Components and Test Equipment for the Mobile, Industrial and Agricultural Industries



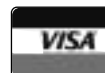
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Webtec Products Limited reserve the right to make improvements and changes to the specification without notice.