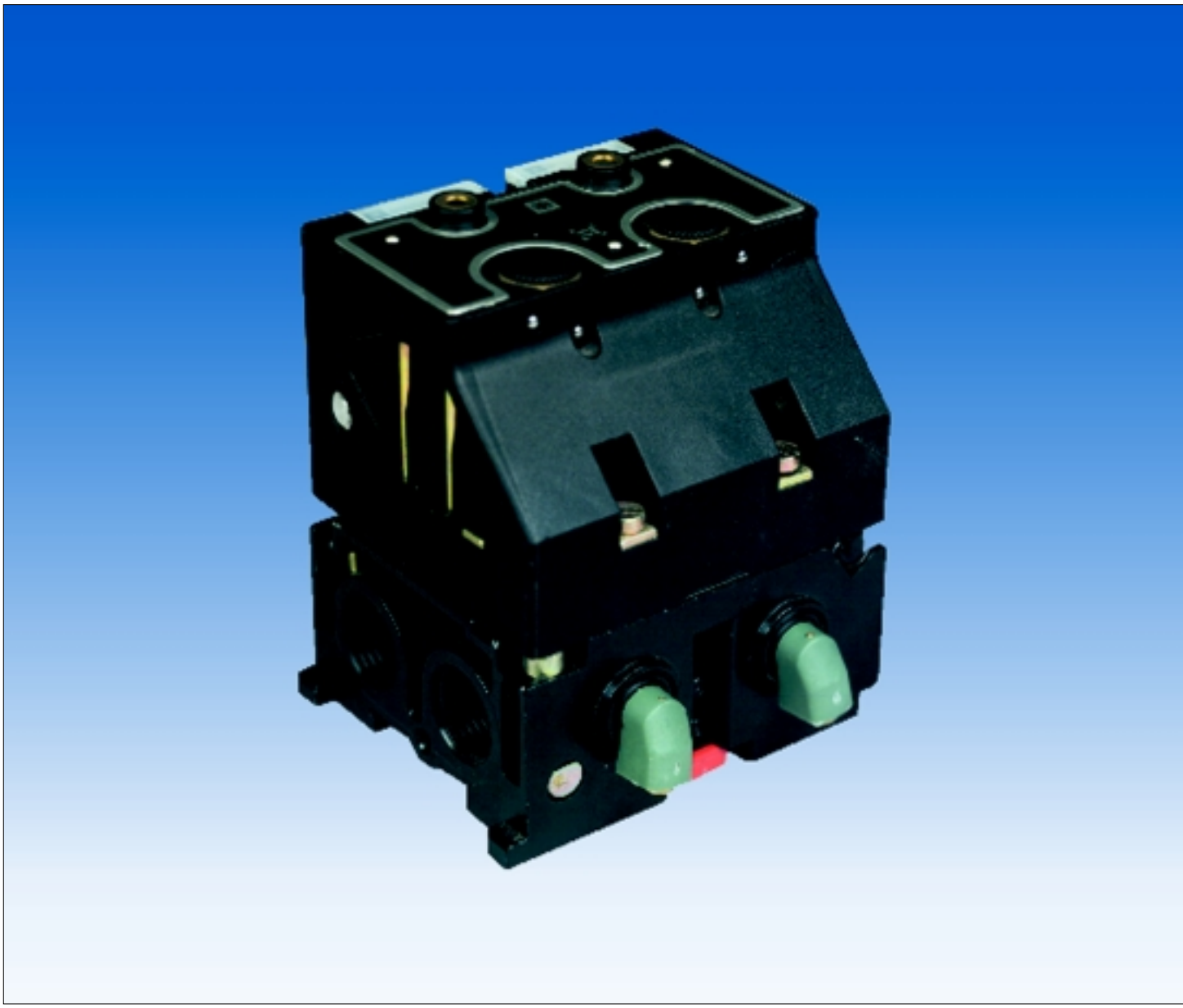
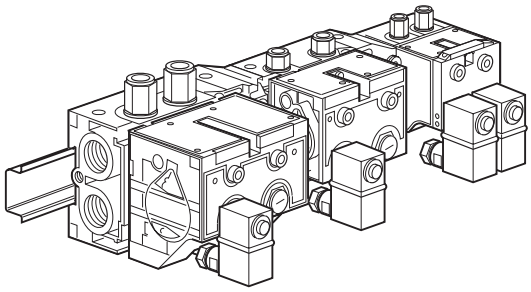
Parker
Pneumatic

P V D
Ceramic Valves



Home

- Ceramic slide plate; extremely long life
- Built in manual override
- Transfer modules to combine all sizes
- Selectable air pilot control
- Clip-on DIN rail



Specification

Material

Valve body impregnated	Polyamide 6,6 glass fibre
Seals	Polyurethane

Operating information

Supply pressure;
Pneumatically operated: 0-10 bar
Electrically operated, bistable: 3-10 bar
Electrically operated, monostable: 4-10 bar
(0 to 10 bar with pilots fed by PX)

Working temperature: -15 °C to +60 °C

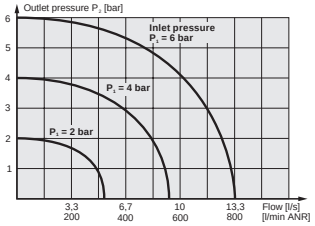
Size		1/8"	1/4"	3/8"-1/2"
Flow:	Qmax=	800	2000	4000 l/min
(acc. to ISO 6358)	Cv=	0,49	1,05	2,03
(Valve flow including manifold)				

Operating information

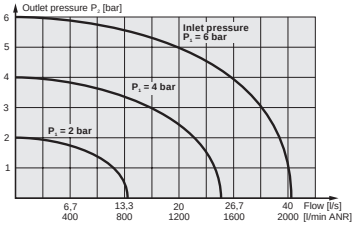
Flow characteristics

Flow capacities in accordance with ISO6358
All pressures = effective pressure
The curves in the diagrams below are typical only

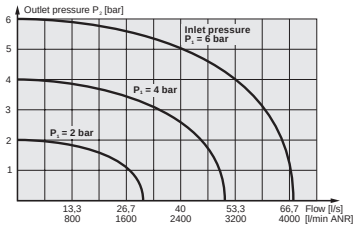
Size 1/8"



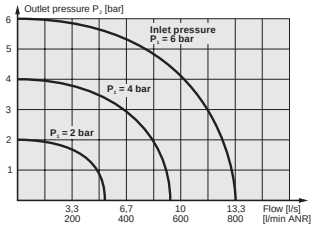
Size 1/4"



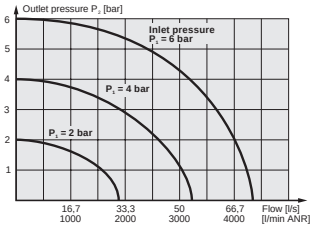
Size 3/8"-1/2"



Dump valves size 1/4"

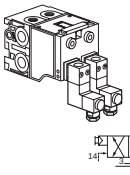
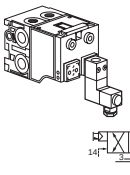


Dump valves size 1/2"



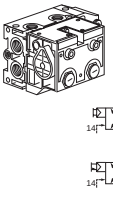
Size 1/8"

Pneumatically or electrically actuated with auxiliary manual control *

Symbol		Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
	1 P 3	G1/8	Air	Air	1,8/1,8	15/15	0,250	**PVD-B142128**	1
	4 2		Air	Spring	4,2/1,2	20/25	0,245	**PVD-B141128**	1
	14 12	Push-in swivel	Electric** 22x30	Electric**	4,2/1,2	20/20	0,260	**PVD-B142428**	1
	p x	Ø4 mm M5	Electric** 22x30	Spring	4,2/1,2	25/35	0,250	**PVD-B141428**	1
			Electric*** 15x15	Spring	4,2/1,2	20/20	0,260	**PVD-B142628**	3
			Electric*** 15x15	Electric***	4,2/1,2	30/50	0,260	**PVD-B141628**	3

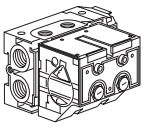
Size 1/4"

Pneumatically or electrically actuated with auxiliary manual control *

Symbol		Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
	1 P 2 3	G1/4	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	18/18 24/24	0,725	**PVD-C342229**	1
	4 12 14 p x	Push-in swivel Ø4 mm M5	Air/ Electric**	Spring	4,3/1,5 4,3/1,5	30/50 40/50	0,710	**PVD-C341229**	1

Size 3/8" - 1/2"

Pneumatically or electrically actuated with auxiliary manual control *

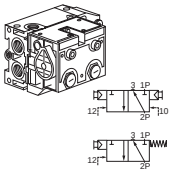
Symbol		Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
	1 P 3 4	G1/2 G3/8	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	25/25 40/40	1,240	**PVD-E242223**	1
	2 12 14 p x	Push-in swivel Ø 4 mm M5	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/50 80/100	1,210	**PVD-E241223**	1

* Bistable valves incorporate spring return manual control.
Monostable valves incorporate indexable manual control
** For electrical operation, use PVA-F10 Series solenoid actuator
*** For electrical operation use mini Series solenoid actuator

Note! The valve subbase has straight through air supply and exhaust galleries therefore any unused ports should be plugged using standard threaded blanking plugs

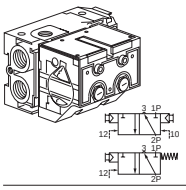
Dump valves 3/2 - size 1/4"

Pneumatically or electrically actuated with manual control

Symbol	Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
 1P 2P 3	G1/4 G3/8	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	25/25 40/40	0,695	**PVS-C332229**	1
10 12	Push-in swivel Ø4 mm	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 80/100	0,680	**PVS-C331229**	1

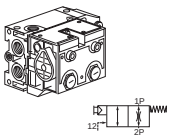
Dump valves 3/2 - size 1/2"

Pneumatically or electrically actuated with manual control

Symbol	Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
 1P 2P 3	G1/2	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	25/25 40/40	1,240	**PVS-E232222**	3
10 12	Push-in swivel Ø4 mm	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 80/100	1,210	**PVS-E231222**	1

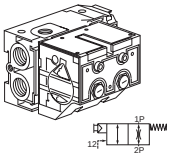
Soft start valves 2/2 - size 1/4"

Pneumatically or electrically actuated with manual control
Supplied complete with interchangeable bypass nozzles Ø0,6 - 0,9 - 1,2 mm

Symbol	Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
 1P 2P 10 12	G1/4 Push-in swivel Ø 4 mm	Air/ Electric**	Spring	4,3/1,5 4,3/1,5	30/50 40/50	0,680	**PVP-C321229**	1

Slow start valves 2/2 - size 1/2"

Pneumatically or electrically actuated with manual control
Supplied complete with interchangeable bypass snozzles Ø1 - 1,2 - 1,5 mm

Symbol	Connection Push-in/ Threaded	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
 1P 2P 12	G1/2 Push-in swivel Ø 4 mm	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 80/100	1,210	**PVP-E221222**	3

** For electrical operation, use PVA-F10 Series solenoid actuator

Note! The valve subbase has straight through air supply and exhaust galleries therefore any unused ports should be plugged using standard threaded blanking plugs

5 W / 6 VA solenoid actuators for power valves size 1/8", 1/4", 3/8"-1/2"

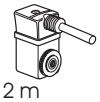
Without manual override

Without cable connector (22x30 mm)

Voltage	Order code	D
12 VDC	**PVA-F192J**	3
24 VDC	**PVA-F192B**	1
48 VDC	**PVA-F192E**	3
24 V 50/60Hz	**PVA-F191B**	3
48 V 50/60Hz	**PVA-F191E**	3
115 V 50Hz, 120 V 60Hz	**PVA-F191F**	3
230 V 50Hz, 240 V 60Hz	**PVA-F191M**	3

With unwired cable connector (22x30 mm)

Voltage	Order code	D
24 VDC	**PVA-F102B**	1
48 VDC	**PVA-F102E**	3
24 V 50/60Hz	**PVA-F101B**	1
48 V 50/60Hz	**PVA-F101E**	3
115 V 50Hz, 120 V 60Hz	**PVA-F101F**	1
230 V 50Hz, 240 V 60Hz	**PVA-F101M**	1
255 V 50Hz	**PVA-F101U**	3



With prewired cable connector (22x30 mm), cable length L=2 m

Voltage	Order code	D
24 VDC	**PVA-F102B0**	3
48 VDC	**PVA-F102E0**	3
24 V 50/60Hz	**PVA-F101B0**	3
48 V 50/60Hz	**PVA-F101E0**	3
115 V 50Hz, 120 V 60Hz	**PVA-F101F0**	3
230 V 50Hz, 240 V 60Hz	**PVA-F101M0**	3
255 V 50Hz	**PVA-F101U0**	3

With prewired cable connector (22x30 mm), cable length L=5 m

Voltage	Order code	D
24 VDC	**PVA-F102B1**	3
48 VDC	**PVA-F102E1**	3
24 V 50/60Hz	**PVA-F101B1**	3
48 V 50/60Hz	**PVA-F101E1**	3
115 V 50Hz, 120 V 60Hz	**PVA-F101F1**	3
230 V 50Hz, 240 V 60Hz	**PVA-F101M1**	3
255 V 50Hz	**PVA-F101U1**	3

* Versions available for use in explosive atmospheres:
- conforming to certification LCIE 866115 X,
- electrical equipment conforming to harmonised European standards
EN 500 14 dated March 1977 (NFC23 514 dated May 1982)
EN 500 19 dated March 1977 (NFC23 519 dated May 1982)
- marking code EExe II T4 (consult Technical Sales Department)

Electrical connector 22x30 mm	Order code	D
Connector to be wired (universal)	**PES-A10**	3
Connector to be wired with LED+Protection 24 V DC/AC	**PES-A2020B**	1
Connector to be wired with LED+Protection 230 VAC	**PES-A2001M**	3
Connector with 2 m cable (earth terminal opposite cable entry)	**PES-A12**	3
Connector with 2 m cable with LED+Protection (earth terminal opposite cable entry) 24 V DC/AC	**PES-A2220B**	3

Mini solenoid actuators 1,2 W / 1,6 VA for power valves size 1/8" type PVD-B14•628

Without manual override

Without cable connector (15x15 mm)

Voltage	Order code	D
12 VDC	**PS1-E2492J**	3
24 VDC	**PS1-E2492B**	3
48 VDC	**PS1-E2492E**	3
24 V 50/60Hz	**PS1-E2491B**	3
48 V 50/60Hz	**PS1-E2491E**	3
115 V 50Hz, 120 V 60Hz	**PS1-E2491F**	3
230 V 50Hz, 240 V 60Hz	**PS1-E2491M**	3

With unwired cable connector (15x15 mm)

Voltage	Order code	D
24 VDC	**PVA-H2492B**	1
48 VDC	**PVA-H2492E**	3
24 V 50/60Hz	**PVA-H2491B**	1
48 V 50/60Hz	**PVA-H2491E**	3
115 V 50Hz, 120 V 60Hz	**PVA-H2491F**	1
230 V 50Hz, 240 V 60Hz	**PVA-H2491M**	3

With prewired cable connector (15x15 mm), cable length L=2 m

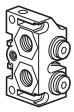
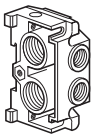
Voltage	Order code	D
24 VDC	**PVA-H2492B0**	3
48 VDC	**PVA-H2492E0**	3
24 V 50/60Hz	**PVA-H2491B0**	3
48 V 50/60Hz	**PVA-H2491E0**	3
115 V 50Hz, 120 V 60Hz	**PVA-H2491F0**	3
230 V 50Hz, 240 V 60Hz	**PVA-H2491M0**	3

With prewired cable connector (15x15 mm), cable length L=5 m

Voltage	Order code	D
24 VDC	**PVA-H2492B1**	3
48 VDC	**PVA-H2492E1**	3
24 V 50/60Hz	**PVA-H2491B1**	3
48 V 50/60Hz	**PVA-H2491E1**	3

Electrical connector 15x15mm (9,4 mm pin spacing)	Order code	D
Connector to be wired (universal)	**PES-C10**	3
Connector to be wired with LED+Protection 24 V DC/AC	**PES-C2020B**	3
Connector with 2 m cable (earth terminal opposite cable)	**PES-C12**	3
Connector with 2 m cable with LED+Protection (earth terminal opposite cable) 24 V DC/AC	**PES-C2220B**	3

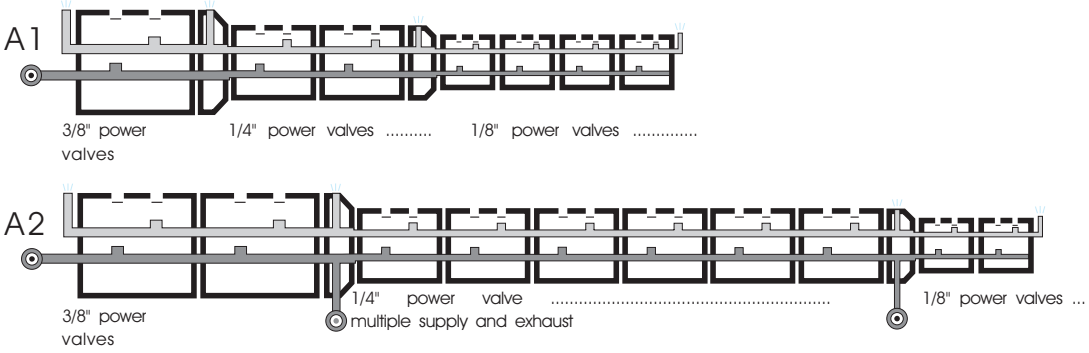
"Transfer/take-off" modules

	Application	Description		Connection	Weight Kg	Order code	D
 	Enables the combination of different size valves in the same manifold including 4/2 Power valves, 2/2 Soft Start and 3/2 Dump valves with common air supply and exhaust	Subbase adaptor plate 1/4" - 1/8"	1 P 2 1a 2a	G1/4 G1/8	0,110	**PVU-CB18**	1
		Subbase adaptor plate 1/2" - 1/4"	1 2 1a 2a	G1/2 G1/4	0,160	**PVU-EC19**	1

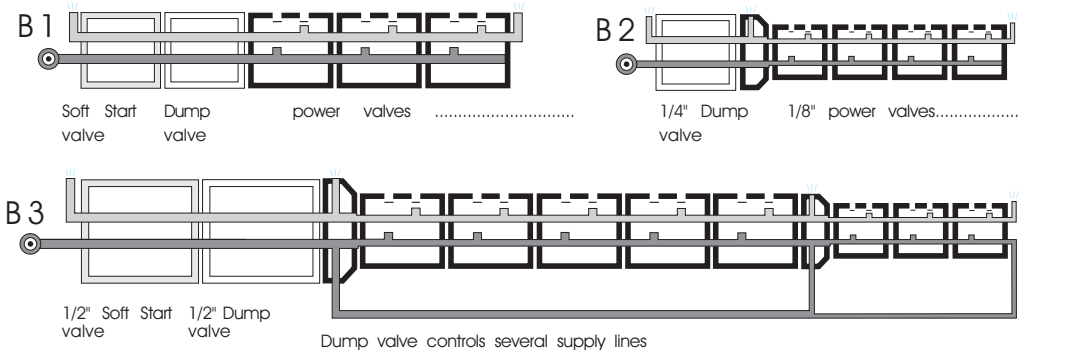
Applications

The "transfer/take-off" module enables different size valves to be combined in a single manifold, see A1.
The module can also be used for additional air supply inlets and exhaust outlets to increase flow, see A2.
Soft Start and Dump valves can be incorporated into a manifold of the same size valves, see B1, alternatively, to ensure adequate flow, a larger size than the power valves can be used, see B2.
The system enables various piping options including looping the air supply connections to improve flow, see B3, and parallel mounted combinations, see C1, but still under control of the main Dump valve

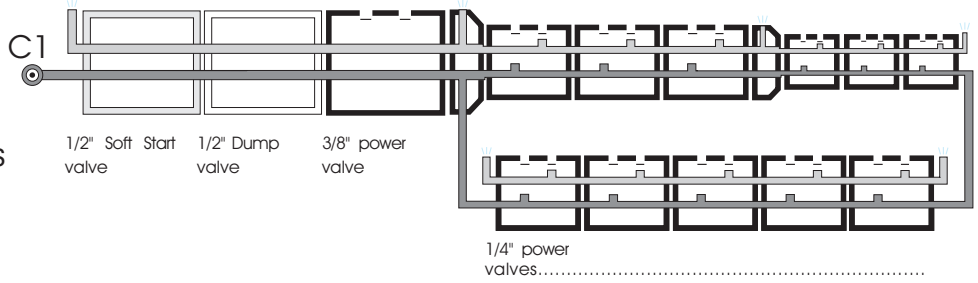
Combination of different size power valves



Dump and Soft Start valves combined with power valves



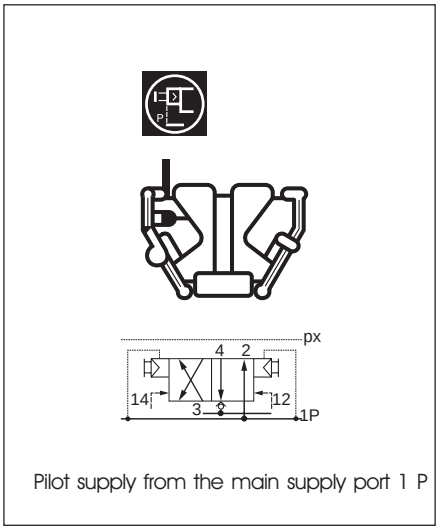
A modular system which can be easily adapted to suit specific needs



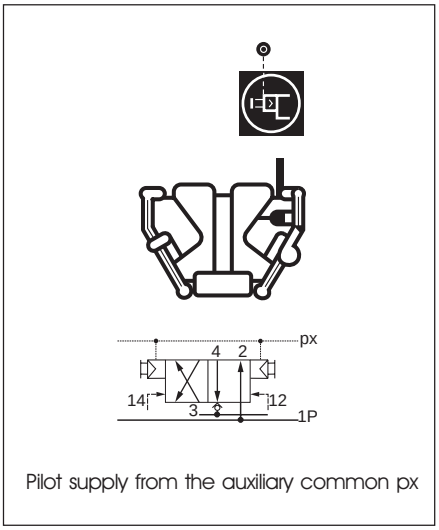
Pilot supply selection

Principle of pilot supply selection

The valves are mounted onto stackable subbases with the internal or external pilot supply being selected by reversing the seal between the valve and subbase.
With Pneumatic pilot versions of the valve, the supply would be required only for the manual override control.
With electrically operated valves, the supply would by required for the manual override control as well as the solenoid pilot actuators.
The drawings below show the two positions of the seal on a standard 4/2 valve, in one position the internal supply is fed from the main air supply Port 1, in the other position the external supply is fed from additional port "px" which is also common through the stacked subbases.



Pilot supply from the main supply port 1 P



Pilot supply from the auxiliary common px

The position of the seal is indicated by a "tag" protruding from the valve, subbase interface and when viewed from the top of the valve will correspond to appropriate diagram. This enables identification of the seal position without dismantling the valve.

Main applications with 4/2 valves

Solenoid operated valves

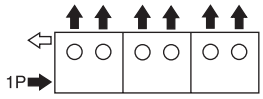
- Use of the "px" port enables external pilot supply to the solenoids and manual controls, therefore, vacuum or low pressure can be passed through the valve via Port 1

Pneumatic pilot operated valves

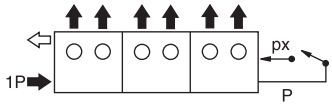
- With the seal set to position "1p" (factory set position), the manual controls will only operate with air supply to Port 1.
- With the seal set to position "px" the manual controls will only operate with air supply to Port "px"

Applications of 4/2 power valve combinations

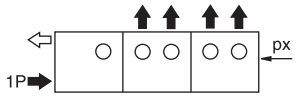
1. Internal pilot supplied from Port 1.
   With the seal in position to give internal pilot supply from Port 1, the solenoids and manual controls will only switch the valve when an air supply is available at Port 1, minimum of 3 bar for bistable and 4 bar for monostable



2. External pilot supply from Port "px" but linked to Port 1.
   With the seal in the other position, external pilot supply will be fed from the "px" Port.
   In this example "px" is linked to the main air supply in Port 1, this will enable isolating of the solenoids and manual controls by removing the "px" supply either manually or by an automatic interlock signal within the control system.

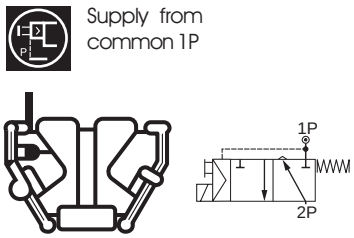


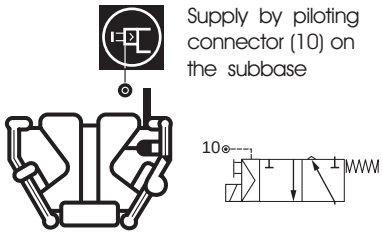
3. External pilot supply from Port "px" but independent of Port 1.
   The external pilot supply from "px" will directly feed the solenoids and manual controls, therefore, vacuum or low pressure can be passed through the valve via Port 1.
   This example also enable the valves to be set to the required position before main air supply is applied to Port 1.



Pilot supply selection for Dump valves

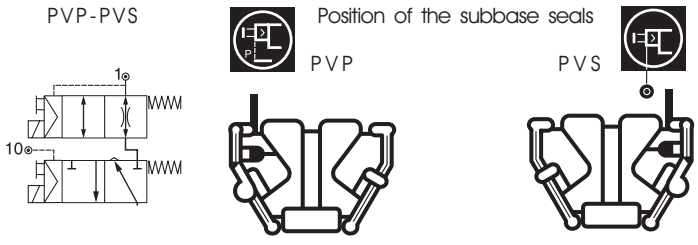
When using the 3/2 Dump valve, the "px" Port is not used.
The pilot supply would normally be supplied from Port 1 with the seal corresponding to the "P" position.
If the supply pressure is less than 4 bar, then with solenoid operation or manual control, an external pilot supply greater than 4 bar must be supplied to Port 10 with the seal being reversed as shown below.



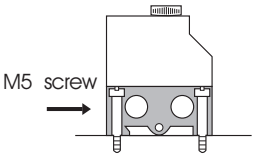


Pilot supply selection for Soft Start and Dump valve combinations

With the Soft Start valve mounted on the inlet side of the Dump valve, the pilot supply for the Soft Start is supplied from Port 1.
However, if the Dump valve is solenoid operated, then it should have an external pilot supply through Port 10 to enable consistant switching while pressure is built up through the Soft Start valve, see diagram below for seal positions.

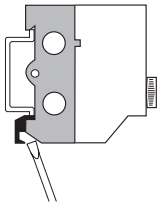


Installation

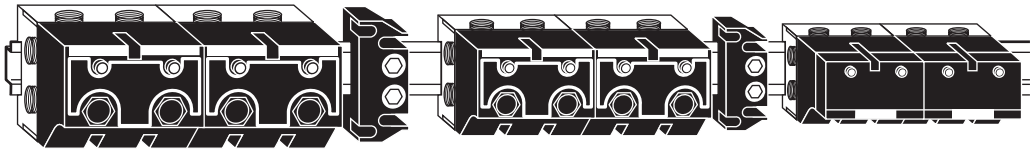


The valves can be used either individually or as part of a manifold, in both cases, they can be surface mounted with screws or by clip-on fixing to a DIN rail.
The units can be installed in a cabinet or directly onto suitable surface. Where a machine includes several cylinders in close proximity, then the ideal option would be to manifold mount the valves and install close to the cylinders.
To assemble a manifold, firstly join the subbases together using the built in swivel screws, then mount the valves on to the subbases.

Screw fixing



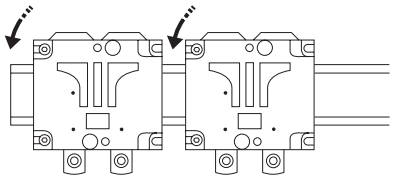
Mounting on DIN rail

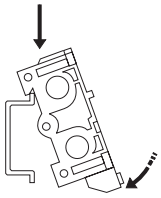


Combination of three different sizes of power valves in the same manifold

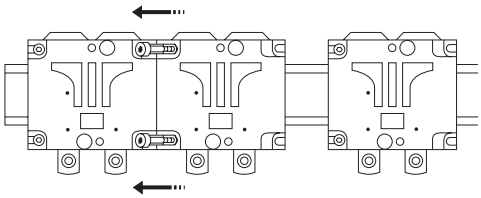
Mounting

Clip the subbases onto DIN rail

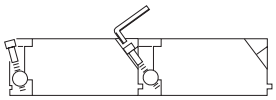




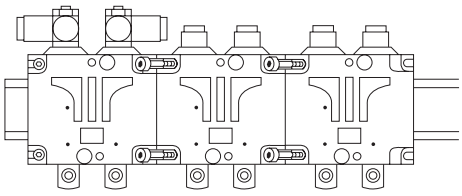
Join the subbases together by swivelling and tightening the screws

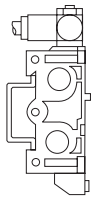


Allen key or screwdriver

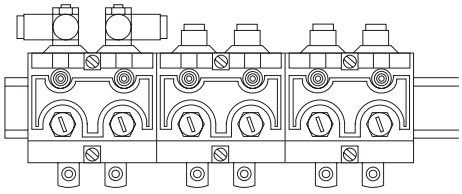


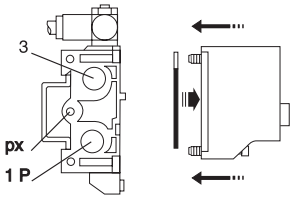
Install the pneumatic fittings





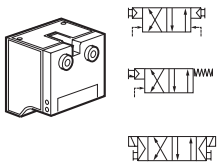
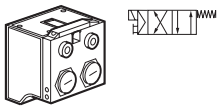
Mount the power valves after positioning the subbase seal for selection of the supply to the solenoid actuator and/or the auxiliary manual controls
- either by external pressure "px"
- or by main supply pressure (1)





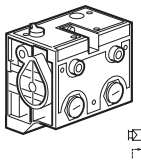
Power valves 4/2, size 1/8"

Separate components on PVU-B1428 subbase
Pneumatically or electrically actuated with manual control *

Symbol	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
	Air	Air	1,8/1,8	15/15	0,160	**PVD-B1421**	1
	Air	Spring	4,2/1,2	20/15	0,150	**PVD-B1411**	1
	Electric**	Electric**	4,2/1,2	20/20	0,170	**PVD-B1424**	3
	Electric**	Spring	4,2/1,2	25/35	0,160	**PVD-B1414**	1
	Electric***	Spring	4,2/1,2	20/20	0,170	**PVD-B1426**	3
	Electric***	Electric***	4,2/1,2	30/50	0,160	**PVD-B1416**	3

Power valves 4/2, sizes 1/4" and 3/8"-1/2"

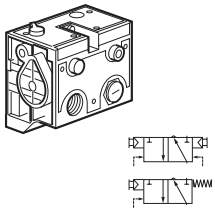
Separate components sizes 1/4" and 3/8" on
PVU-C3429 subbase and 1/2" on PVU-E1423 subbase
Pneumatically or electrically actuated with manual control *

Symbol	Size	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
	1/4"	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	18/18 24/24	0,295	**PVD-C3422**	1
	1/4"	Air/ Electric**	Spring	4,3/1,5 4,3/1,5	30/50 40/50	0,280	**PVD-C3412**	1
	1/2"	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	25/25 40/40	1,050	**PVD-E2422**	3
	1/2"	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 50/100	1,000	**PVD-E2412**	3

** For electrical operation, use PVA-F10 Series solenoid actuator
*** For electrical operation use mini Series solenoid actuator

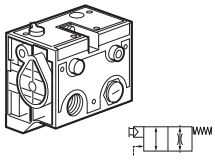
Dump valves 3/2 - sizes 1/4" and 1/2"

Separate components sizes 1/4" on PVU-C3329 subbase and 1/2" on PVU-E1322 subbase
Pneumatically or electrically actuated with manual control *

Symbol	Size	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
	1/4"	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	25/25 40/40	0,295	**PVS-C3322**	3
	1/4"	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 80/100	0,280	**PVS-C3312**	3
	1/2"	Air/ Electric**	Air/ Electric**	1,6/1,6 1,6/1,6	25/25 40/40	1,050	**PVS-E2322**	3
	1/2"	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 80/100	1,000	**PVS-E2312**	3

Soft Start valves 2/2 - sizes 1/4" and 1/2"

Separate components sizes 1/4" on PVU-C3229 subbase and 1/2" on PVU-E1222 subbase
Pneumatically or electrically actuated with manual control *

Symbol	Size	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Order code	D
	1/4"	Air/ Electric**	Spring	4,3/1,5 4,3/1,5	30/50 40/50	0,280	**PVP-C3212**	3
	1/2"	Air/ Electric**	Spring	4,7/1,4 4,7/1,4	50/30 80/100	1,000	**PVP-E2212**	3

** For electrical operation, use PVA-F10 Series solenoid actuator
*** For electrical operation use mini Series solenoid actuator

Spare parts

O-ring seals and gaskets for power valves 4/2 - Size 1/8"

Description	Base component	Weight Kg	Order code	D
1 pack of 10 gaskets for mounting between subbase and power valves	PVU-B14•• PVD-B••••	0,020	**PPR-V02**	3
1 pack of 30 O-ring seals for mounting between subbases : - 10 O-rings for px port - 20 O-rings for ports 1 and 3	PVU-B14••	0,014	**PPR-V07**	3
1 pack of 20 gaskets for mounting between power valves and solenoid actuators	PVD-B14•6•• PVA-H2••••	0,004	**PPR-V20**	1

O-ring seals and gaskets for power valves 4/2, 3/2 and 2/2 - Size 1/4"

Description	Base component	Weight Kg	Order code	D
1 pack of 10 gaskets for mounting between subbase and power valves 4/2	PVU-C34•• and PVD-C34••	0,026	**PPR-V28**	3
1 pack of 30 O-ring seals for mounting between subbases : - 10 O-rings for px port - 20 O-rings for ports 1 and 3	PVU-C14••/PVU-C34•• PVU-C23••/PVU-C33•• PVU-C22••/PVU-C32••	0,014	**PPR-V08**	3
1 pack of 10 gaskets for mounting between subbase and power valves 3/2 or 4/2	PVU-C33••/C32•• and PVS-C33••/PVP-C32••	0,026	**PPR-V29**	3

O-ring seals and gaskets for power valves 4/2, 3/2 and 2/2 - Size 3/8"

Description	Base component	Weight Kg	Order code	D
1 pack of 10 gaskets for mounting between subbase and power valves 4/2	PVU-E•••• and PVD-E••••	0,050	**PPR-V04**	3
1 pack of 30 O-ring seals for mounting between subbases : - 10 O-ring seals for px port - 20 O-ring seals for ports 1 and 3	PVU-E•••• PVU-E•••• PVU-E••••	0,030	**PPR-V09**	3
1 pack of 10 joints for mounting between subbase and power valves 3/2 or 2/2	PVU-E••••/E•••• and PVS-E•••	0,048	**PPR-V06**	3

Blanking plugs for 5W solenoid actuators - type PVA-F1••••

Description	Base component	Valve size	Weight Kg	Order code	D
1 pack of 20 blanking plugs for PVA-F1••• type solenoid PVD-• series actuators	PVD-C34•• PVS-C33•• PVP-C32•• PVD-E24•• PVS-E23•• PVP-E22••	1/4" and 3/8"	0,026	**PPR-V27**	3