



# **B Series Valves**

*High Flow Inline, Manifold Mounted,  
Solenoid & Pilot Operated,  
G1/8 and G1/4 Body ported*

*Catalogue no. PDE2582TCUK-ca  
Edition: September 06*



## Compact installation dimensions - flexible installation



Compact dimensions, direct body porting and integral mounting holes are all features of the B series valve range. Valves may be mounted singly or on compact modular manifolds that can be extended to accommodate changes in the machine control system.

## Manifold mounting



IEM stackable manifold system is designed to give maximum flexibility to system designers. Individual manifold bases stack together to form lightweight custom length manifold that can easily be modified to accommodate changes to system requirements. Bases are also available with built in flow controls to allow integrated speed controls for cylinders. Manifold can be DIN rail mounted simplifying installation.

## High reliability

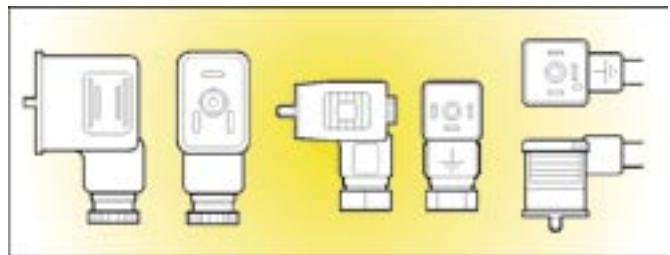
Valves easily comply with the requirements for component reliability in accordance with EU Machinery Directive standards EN292-2 and EN983.

## A wide range of solenoid valves

Solenoid operated versions of the B3 & B4 valves are fitted with interface to accept the 15mm wide solenoid and Form C / ISO 15217 connector. The valve has small installation dimensions, low energy consumption. The B5 is also available with the 22mm wide solenoid suitable for (EN175301-803 form B) connector.

The solenoid operators are available with or without manual overrides.

## Different solenoid connector options



A large range of solenoid connectors are available with or without suppression, LED and rectifier and complete with moulded lead.

## Maintenance

All B series valves have reliable function and long service life. Spare solenoid and repair kits are available.



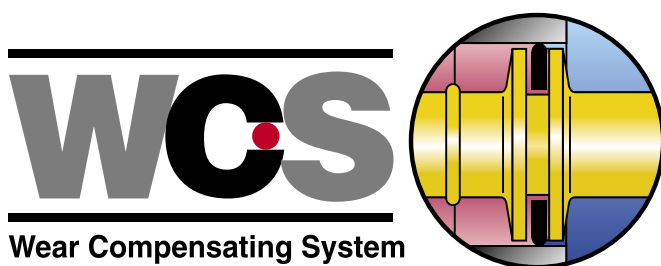
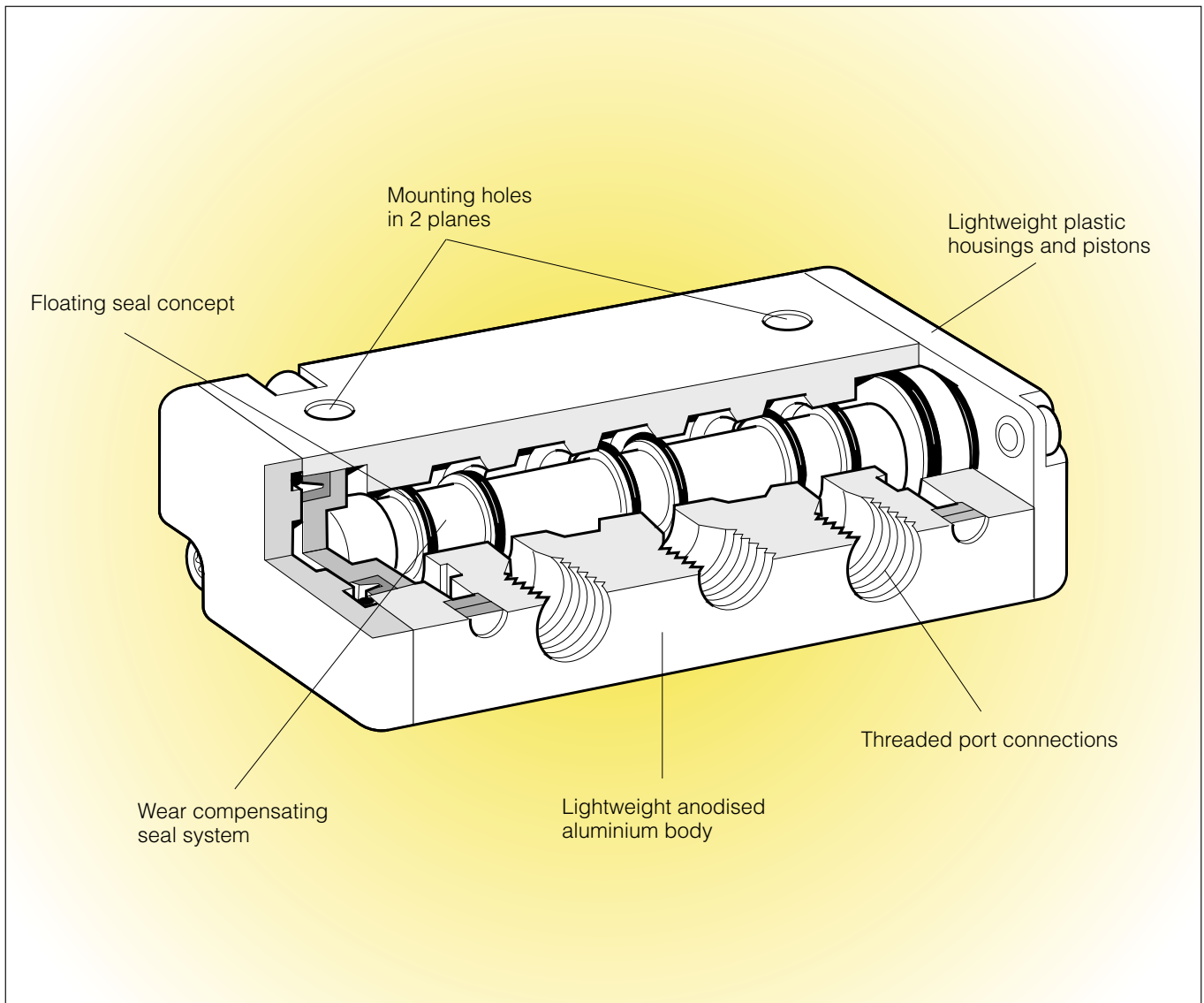
### WARNING

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## “Wear Compensating System”

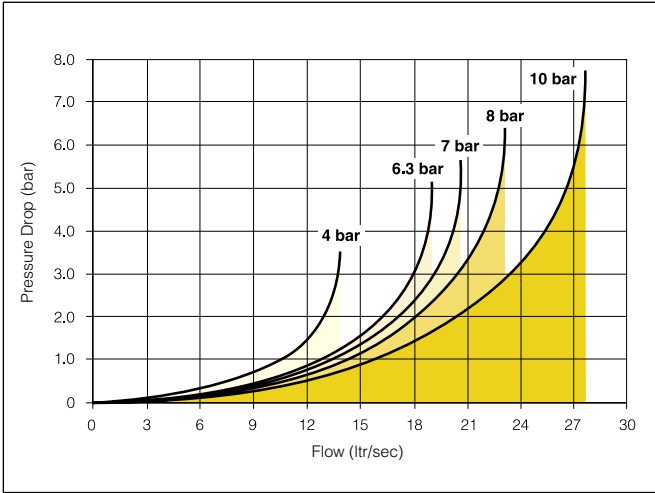
The B series valves are fitted with dynamic bi-directional spool seals suitable for vacuum or pressures up to 10 bar. Under pressure radial expansion of the seal occurs to maintain sealing contact with the valve bore.

This sealing method reduces friction gives lower pilot pressures, fast response and less wear. Valves do not require lubrication in operation but they can also be installed in systems that are lubricated.

## Flow characteristics

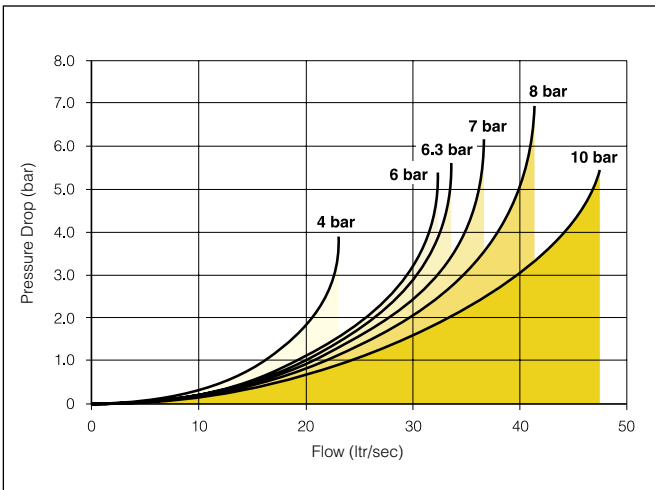
Flow capacities in accordance with ISO6358  
 All pressures = effective pressure  
 The curves in the diagram below are typical only

### Technical Data B3



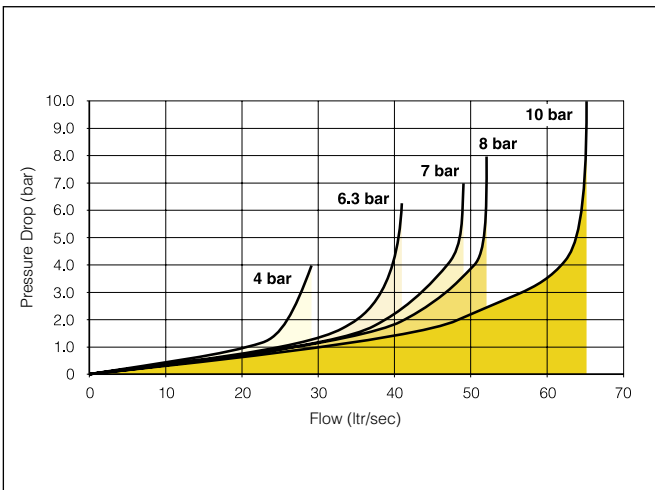
Port size	G1/8
Operating pressure.	Vacuum - 10 bar
Working temperature.	
Pneumatically operated valves.	-10°C to + 50°C
Solenoid operated valves.	-10°C to + 50°C
Response times:	
Single sol spring return	
Single sol air spring return	24/26ms
Double solenoid operated	13/15ms
Flow (acc. to ISO 6358)	c = 2.3 b = 0.45 Qn = 13 l/s Qmax = 16 l/s Cv = 0.75

### Technical Data B4



Port size	G1/4
Operating pressure.	Vacuum - 10 bar
Working temperature.	
Pneumatically operated valves.	-10°C to + 50°C
Solenoid operated valves.	-10°C to + 50°C
Response times:	
Single sol spring return	
Single sol air spring return	38/38ms
Double solenoid operated	23/24ms
Flow (acc. to ISO 6358)	c = 4.56 b = 0.30 Qn = 19.5 l/s Qmax = 32 l/s Cv = 1.2

### Technical Data B5



Port size	G1/4
Operating pressure.	Vacuum - 10 bar
Working temperature.	
Pneumatically operated valves.	-10°C to + 50°C
Solenoid operated valves.	-10°C to + 50°C
Response times:	
Single sol spring return	
Single sol air spring return	38/40ms
Double solenoid operated	16/18ms
Flow (acc. to ISO 6358)	Qn = 24 l/s Qmax = 37 l/s Cv = 1.4

## B3 valve

Valve body	Anodised aluminium
End covers	Anodised aluminium or Reinforced thermoplastic
Spool	Aluminium + nitrile rubber
Piston	Acetal plastic/ Anodised aluminium
U-rings, O-rings	Nitrile rubber
End cover sealings	Nitrile rubber
End cover screws	Stainless steel
Springs	Dacromet® - processed steel, Stainless steel
Mounting screws for solenoid	Stainless steel

## B3 Accessories

IEM manifold	Glass filled nylon
End plates	Anodised aluminium
Manifold connecting screws	Zinc plated steel

## B5 valve

Valve body	Anodised aluminium
Spool	Aluminium + nitrile rubber
Piston	Brass
Lining	Brass
End covers	Anodised aluminium
Sliding seals	Thermoplastic
U-rings, O-rings	Nitrile rubber
End cover sealings	Nitrile rubber
End cover screws	Stainless steel
Springs	Stainless steel
Mounting screws for solenoid	Zinc plated steel

## B5 Accessories

IEM manifold	Glass filled nylon
End plates	Anodised aluminium
Manifold connecting screws	Zinc plated steel

## B4 valve

Valve body	Anodised aluminium
Spool	Acetal plastic/ Anodised aluminium
Piston	Acetal plastic /Anodised aluminium
Lining	Reinforced thermoplastic
End covers	Anodised aluminium
Sliding seals	Thermoplastic
U-rings, O-rings	Nitrile rubber
End cover sealings	Nitrile rubber
Push button for manual changeover	Acetal plastic
End cover screws	Stainless steel
Springs	Stainless steel
Mounting screws for solenoid	Zinc-plated steel

## B4 Accessories

IEM manifold	Glass filled nylon
End plates	Anodised aluminium
Manifold connecting screws	Zinc plated steel

- G1/8 ports, 3/2, 5/2 and 5/3 functions
- Inlet-exhaust manifold facility
- DIN rail mounting
- Integral mounting holes
- 1.2 watt solenoid actuators
- FormC/ISO15217 connector



## Operating information

Working pressure	Vacuum - 10 bar	Flow (3/2) and (5/2) (acc. to ISO 6358)	C = 2,3 b = 0,45 Qn = 13 l/s Qmax = 16 l/s Cv = 0,6
Working temperature; Pneumatically actuated	-10°C to +60°C		
Electrically actuated	-10°C to +50°C		

**B 3**

<b>Basic series</b>
<b>B3</b> Ported valve

**2**

**5**

<b>Port size</b>
<b>5</b> G1/8

**B**

**B**

**5**

**49**

**H**

<b>Pilot source / Exh / Pilot exhaust</b>
<b>0</b> None (Air pilot only)
<b>B</b> Port 1 / Vented / Side

<b>Solenoid overrides / Lights</b>
<b>0</b> None (Air pilot only)
<b>B</b> Spring return, flush without light
<b>C</b> Locking, flush without light
<b>X</b> None (Solenoid valve less solenoid)

<b>Solenoid Enclosures</b>
<b>0</b> None (Air pilot only)
<b>5</b> 15mm connector
<b>X</b> None

<b>Pilot operator / Coil voltage</b>
<b>39</b> 12V 50Hz
<b>43</b> 24V 50Hz
<b>44</b> 48V 50Hz
<b>45</b> 12V DC
<b>49</b> 24V DC
<b>53</b> 110V 50Hz
<b>57</b> 220V 50Hz
<b>XX</b> Valve less solenoid operator



























<b>Operator function</b>		
<b>3 Port</b>		
<b>G</b>		3/2 N/C Single sol - air differential return
<b>J</b>		3/2 Double solenoid
<b>K</b>		3/2 N/C Remote air pilot - air differential return
<b>M</b>		3/2 Double remote air pilot
<b>R</b>		3/2 N/C Single sol - spring return
<b>S</b>		3/2 N/C Single sol - remote air pilot return
<b>U</b>		3/2 N/C Remote air pilot - spring return
<b>5 Port</b>		
<b>1</b>		5/2 Single sol - air differential return
<b>2</b>		5/2 Double solenoid
<b>3</b>		5/2 Remote air pilot - air differential return
<b>4</b>		5/2 Double remote air pilot
<b>5</b>		5/3 Double solenoid - all ports blocked (APB)
<b>6</b>		5/3 Double solenoid - cyl to exhaust ports (CE)
<b>7</b>		5/3 Double solenoid - press to cylinder ports (PC)
<b>8</b>		5/3 Double remote operated - all ports blocked (APB)
<b>9</b>		5/3 Double remote operated - (CE) ①
<b>0</b>		5/3 Double remote operated - (PC) ②
<b>A</b>		5/2 Single sol - remote air pilot return
<b>P</b>		5/2 Remote air pilot - spring return
<b>T</b>		5/2 Single sol - spring return

Shaded part numbers are standard

**Engineering level H**

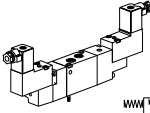
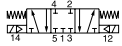
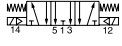
- ① Cyl to exhaust ports (CE)
- ② Press to cylinder ports (PC)

## Main data for Directional control valves, B3 Series

Symbol	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Voltage	Order code	Qty
<b>Pneumatically actuated 3/2 valves</b>								
	Air	Differential air	1,4/-	16/17	0,07		<b>B3K5000XXH</b>	1
	Air	Spring return	3,0/-	20/18	0,07		<b>B3U5000XXH</b>	1
	Air	Air	1,4/-	2/2	0,08		<b>B3M5000XXH</b>	1
<b>Pneumatically actuated 5/2 and 5/3 valves</b>								
	Air	Differential air	1,4/-	16/17	0,09		<b>B335000XXH</b>	1
	Air	Spring return	3,0/-	20/18	0,09		<b>B3P5000XXH</b>	1
	Air	Air	1,4/1,4	2/2	0,10		<b>B345000XXH</b>	1
	Air	Air	3,0/3,0	12/12	0,10		<b>B385000XXH</b>	1
	Closed centre position	Self centring						
	Vented centre position	Self centring						
	Pressurised centre position	Self centring						
<b>Electrically actuated 3/2 valves</b>								
	Electric	Differential air	1,4/-	12/14	0,12	24 VDC	<b>B3G5BB549H</b>	1
	Electric	Spring return	3,0/-	22/28	0,08	Less solenoid	<b>B3G5BXXXXH</b>	1
	Electric	Spring return	3,0/-	22/28	0,08	Less solenoid	<b>B3R5BB549H</b>	1
	Electric	Spring return	3,0/-	22/28	0,08	Less solenoid	<b>B3R5BXXXXH</b>	1
	Electric	Air	1,4/1/4	9/3	0,13	24 VDC	<b>B3S5BB549H</b>	1
	Electric	Air	1,4/1/4	9/3	0,09	Less solenoid	<b>B3S5BXXXXH</b>	1
	Electric	Electric	1,4/1/4	8/8	0,13	24 VDC	<b>B3J5BB549H</b>	1
	Electric	Electric	1,4/1/4	8/8	0,09	Less solenoid	<b>B3J5BXXXXH</b>	1
<b>Electrically actuated 5/2 valves</b>								
	Electric	Differential	1,4/-	12/14	0,12	24 VDC	<b>B315BB549H</b>	1
	Air	Air			0,09	Less solenoid	<b>B315BXXXXH</b>	1
	Electric	Spring return	3,0/-	22/28	0,12	24 VDC	<b>B3T5BB549H</b>	1
	Electric	Spring return	3,0/-	22/28	0,09	Less solenoid	<b>B3T5BXXXXH</b>	1
	Electric	Air	1,4/1/4	9/3	0,14	24 VDC	<b>B3A5BB549H</b>	1
	Electric	Air	1,4/1/4	9/3	0,10	Less solenoid	<b>B3A5BXXXXH</b>	1
	Electric	Electric	1,4/1/4	8/8	0,19	24 VDC	<b>B325BB549H</b>	1
	Electric	Electric	1,4/1/4	8/8	0,10	Less solenoid	<b>B325BXXXXH</b>	1



## Main data for Directional control valves, B3 Series

Symbol	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Voltage	Order code	Qty
<b>Electrically actuated 5/3 valves</b>								
	Electric	Electric	3,0/3,0	12/12	0,18	24 VDC	<b>B355BB549H</b>	1
	Closed centre position	Self centring			0,09	Less solenoid	<b>B355BXXXXH</b>	1
	Electric	Electric	3,0/3,0	12/12	0,18	24 VDC	<b>B365BB549H</b>	1
	Vented centre position	Self centring			0,09	Less solenoid	<b>B365BXXXXH</b>	1
	Electric	Electric	3,0/3,0	12/12	0,10	24 VDC	<b>B375BB549H</b>	1
	Pressurised centre position	Self centring			0,09	Less solenoid	<b>B375BXXXXH</b>	1

Internal air supply to differential pilots and solenoids via port 1

Silencers and push-in fittings are shown on page 27.



## Inlet Exhaust Manifolds for B3 series valves

### Standard Base without Flow Controls

Each kit contains:

- 1 pcs Manifold Base
- 2 pcs Mounting screws and nuts
- 3 pcs Tie Rods
- 1 pcs Body-to-base Gasket and
- 1 pcs Base-to-Base Gasket

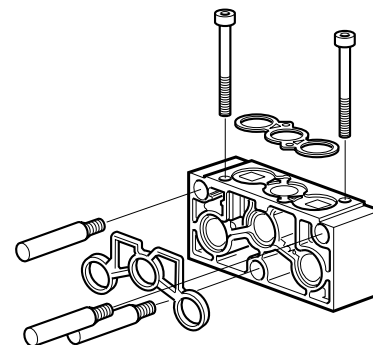
		Order code	Qty
<b>Manifold Base</b>	3/2 =	<b>PS2948F</b>	1
<b>Kit</b>	5/2 =	<b>PS2917F</b>	1

### Base with Flow Controls

Each kit contains:

- 1 pcs Manifold Base with Flow Controls
- 2 pcs Mounting screws and nuts
- 3 pcs Tie Rods
- 1 pcs Body-to-base Gasket
- 1 pcs Base-to-Base Gasket

		Order code	Qty
<b>Manifold Base</b>	3/2 =	<b>PS2949F</b>	1
<b>Kit</b>	5/2 =	<b>PS2918F</b>	1



## End plates

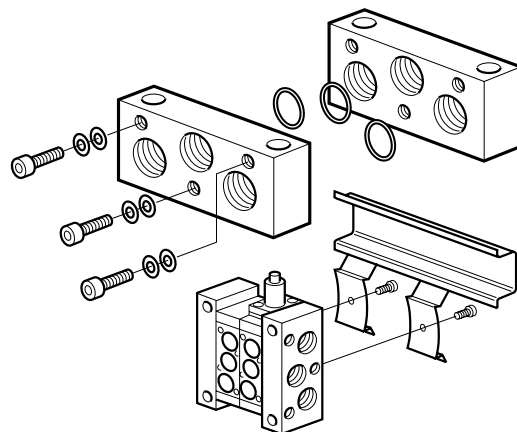
Standard End Plates may be used with either of above Manifold Bases

Each kit contains:

- 1 right and 1 left End Plate
- 3 pcs O-Rings
- 3 pcs Blanking Plugs
- 3 pcs Socket Head Cap Screws
- 3 pcs Flat Washers
- 3 pcs Lockwashers

		Order code	Qty
<b>Manifold End</b>	3/2 =	<b>PS2951F</b>	1
<b>plate kit</b>	5/2 =	<b>PS2916F</b>	1

		Order code	Qty
<b>DIN rail mounting</b>		<b>PS2970F</b>	1
<b>kit for IEM manifold</b>			



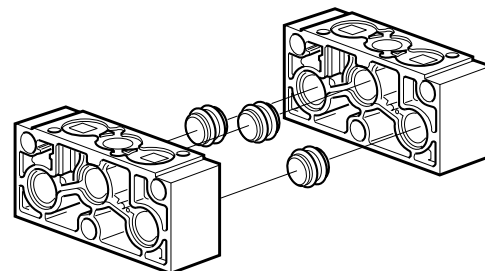
## Isolator Plug Kit

Used to isolate the 1, 3 or 5 gallery between two Manifold Bases

Each kit contains:

- 3 pcs Isolator Plugs complete with O-rings.

		Order code	Qty
<b>Isolator Plug Kit</b>		<b>PS2919F</b>	1



## Manifold Ported Plate

Each kit contains:

- 1 pcs Inlet Plate
- 2 pcs Mounting Screws
- 3 pcs G1/8 Plugs
- 1 pcs Gasket

		Order code	Qty
<b>Manifold</b>	3/2 =	<b>PS2967F</b>	1
<b>Ported Plate</b>	5/2 =	<b>PS2921F</b>	1

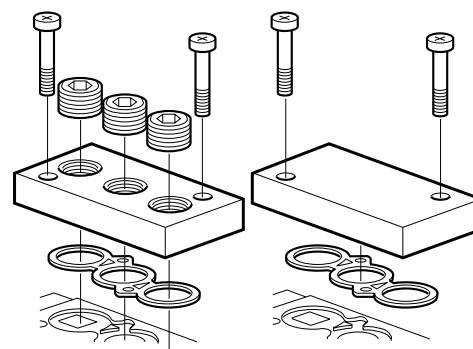
## Manifold Blanking Plate

Each kit contains:

- 1 pcs Cover Plate
- 2 pcs Mounting Screws
- 1 pcs Gasket

Used to blank off unused stations.

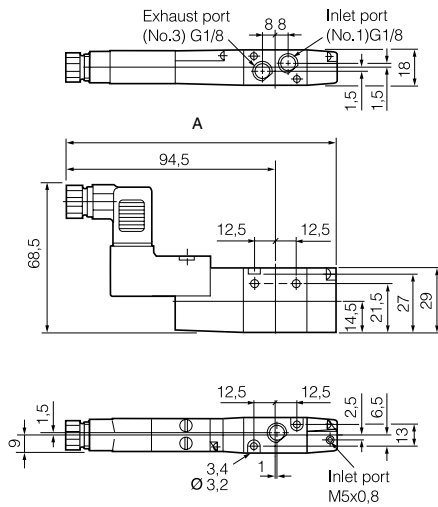
		Order code	Qty
<b>Manifold</b>	3/2 =	<b>PS2968F</b>	1
<b>Blanking Plate</b>	5/2 =	<b>PS2969F</b>	1



## Dimensions, B3 Valve Series

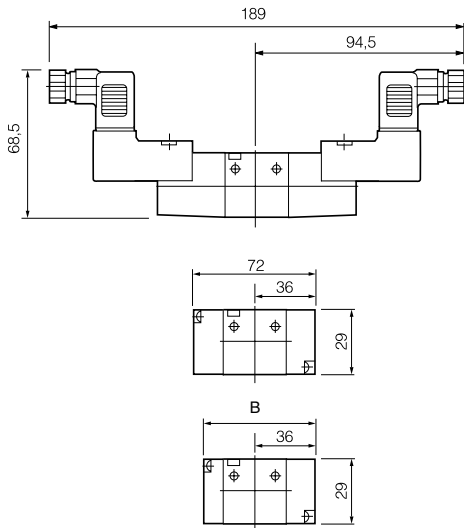
### 3/2 Body ported

Single solenoid operated air spring return / spring return



	Air differential return	Spring return
<b>A</b>	130,5	136,7

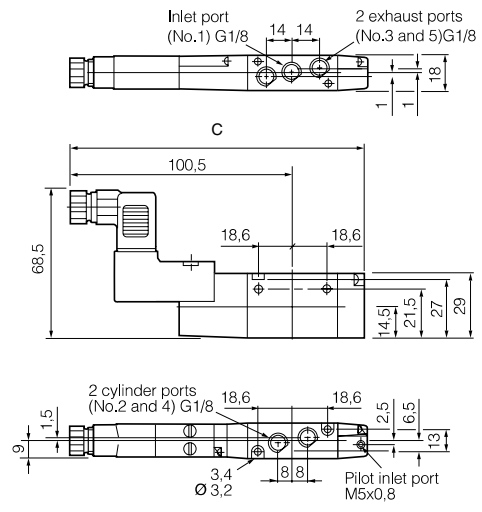
### Double solenoid operated



	Air differential return	Spring return
<b>B</b>	67,0	73,2

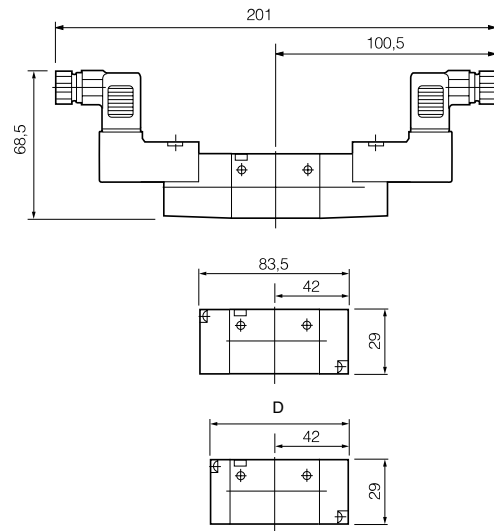
### 5/2 Body ported

Single solenoid operated air spring return / spring return



	Air differential return	Spring return
<b>C</b>	137,5	143,7

### Double solenoid operated

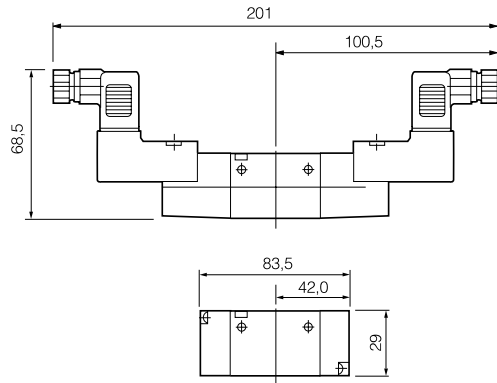


	Air differential return	Spring return
<b>D</b>	79,0	85,2

All dimensions in mm unless otherwise stated

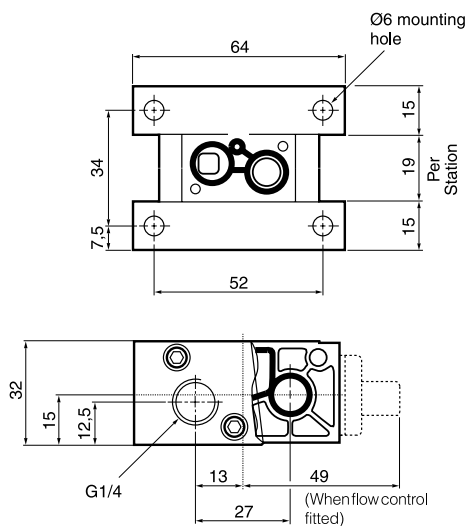
## Dimensions, B3 Valve Series

### 5/3 Body ported

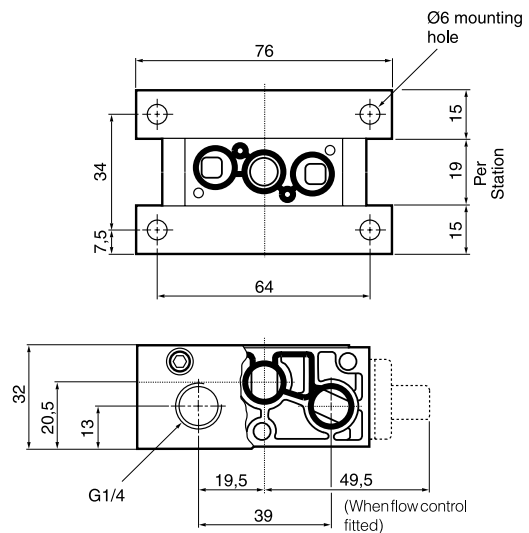


## Manifolds - IEM Inlet Exhaust Manifold System

### 3/2 Inlet Exhaust Manifold For B3 Body Ported Valves



### 5/2 Inlet Exhaust Manifold For B3 Body Ported Valves



All dimensions in mm unless otherwise stated

- G1/4 ports, 3/2, 5/2 and 5/3 functions
- Inlet-exhaust manifold facility
- DIN rail mounting
- Integral mounting holes
- 1.2 watt solenoid actuators
- Form C / ISO 15217 connector



## Operating information

Working pressure	Max 10 bar	Flow (3/2) and (5/2) (acc. to ISO 6358)	C = 4,56
Working temperature;			b = 0,30
Pneumatically actuated	-10°C to +60°C		Qn = 19,5 l/s
Electrically actuated	-10°C to +50°C		Cv = 1,2

**B 4**

<b>Basic series</b>
<b>B4</b> Ported valve

**2**

**6**

<b>Port size</b>
<b>6</b> G1/4

**A**

<b>Pilot source / Exh / Pilot exhaust</b>
<b>0</b> None (Air pilot only)
<b>A</b> Port 1 / Tapped / Side

**B**

<b>Solenoid overrides / Lights</b>
<b>0</b> None (Air pilot only)
<b>B</b> Spring return, flush without light
<b>C</b> Locking, flush without light
<b>X</b> None (Solenoid valve less solenoid)

**5**

<b>Solenoid Enclosures</b>
<b>0</b> None (Air pilot only)
<b>5</b> 15mm connector
<b>X</b> None (Valve less 15mm solenoid)

**49**

<b>Pilot operator / Coil voltage</b>
<b>39</b> 12V 50Hz
<b>43</b> 24V 50Hz
<b>44</b> 48V 50Hz
<b>45</b> 12V DC
<b>49</b> 24V DC
<b>53</b> 110V 50Hz
<b>57</b> 220V 50Hz
<b>XX</b> Remote pilot or valve less solenoid operator

**F**

**Engineering level F**

- ① Cyl to exhaust ports (CE)
- ② Press to cylinder ports (PC)

### Operator function

#### 3 Port

























<b>G</b>		3/2 N/C Single sol - air differential return
<b>J</b>		3/2 Double solenoid
<b>K</b>		3/2 N/C Remote air pilot - air differential return
<b>M</b>		3/2 Double remote air pilot
<b>R</b>		3/2 N/C Single sol - spring return
<b>S</b>		3/2 N/C Single sol - remote air pilot return
<b>U</b>		3/2 N/C Remote air pilot - spring return

#### 5 Port

<b>1</b>		5/2 Single sol - air differential return
<b>2</b>		5/2 Double solenoid
<b>3</b>		5/2 Remote air pilot - air differential return
<b>4</b>		5/2 Double remote air pilot
<b>5</b>		5/3 Double solenoid - all ports blocked (APB)
<b>6</b>		5/3 Double solenoid - cyl to exhaust ports (CE)
<b>7</b>		5/3 Double solenoid - press to cylinder ports (PC)
<b>8</b>		5/3 Double remote operated - all ports blocked (APB)
<b>9</b>		5/3 Double remote operated - (CE) ①
<b>0</b>		5/3 Double remote operated - (PC) ②
<b>A</b>		5/2 Single sol - remote air pilot return
<b>P</b>		5/2 Remote air pilot - spring return
<b>T</b>		5/2 Single sol - spring return

Shaded part numbers are standard

## Main data for Directional control valves, B4 Series

Symbol	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Voltage	Order code	Qty
<b>Pneumatically actuated 3/2 valves</b>								
	Air	Differential air	1,5/-	34/45	0,163		<b>B4K6000XXF</b>	1
	Air	Spring return	3,0/-	32/48	0,16		<b>B4U6000XXF</b>	1
	Air	Air	1,5/1,5	15/17	0,177		<b>B4M6000XXF</b>	1
<b>Pneumatically actuated 5/2 and 5/3 valves</b>								
	Air	Differential air	1,5/-	34/45	0,184		<b>B436000XXF</b>	1
	Air	Spring return	3,0/-	32/48	0,19		<b>B4P6000XXF</b>	1
	Air	Air	1,5/1,5	15/17	0,198		<b>B446000XXF</b>	1
	Air	Air	3,0/3,0	16/19	0,204		<b>B486000XXF</b>	1
	Closed centre	Self centring position						
	Air	Air	3,0/3,0	16/19	0,204		<b>B496000XXF</b>	1
	Pressurised	Self centring centre position						
<b>Electrically actuated 3/2 valves</b>								
	Electric	Differential air	1,5/-	34/45	0,206	24 VDC	<b>B4G6AB549F</b>	1
	Electric	Spring return	3,0/-	36/40	0,157	Less solenoid	<b>B4G6AXXXXF</b>	1
	Electric	Air	3,0/-	36/40	0,210	24 VDC	<b>B4R6AB549F</b>	1
	Electric	Air	1,5/1,5	15/17	0,161	Less solenoid	<b>B4R6AXXXXF</b>	1
	Electric	Air	1,5/1,5	15/17	0,220	24 VDC	<b>B4S6AB549F</b>	1
	Electric	Electric	1,5/1,5	15/17	0,170	Less solenoid	<b>B4S6AXXXXF</b>	1
	Electric	Electric	1,5/1,5	15/17	0,262	24 VDC	<b>B4J6AB549F</b>	1
	Electric	Electric	1,5/1,5	15/17	0,164	Less solenoid	<b>B4J6AXXXXF</b>	1
<b>Electrically actuated 5/2 valves</b>								
	Electric	Differential	1,5/-	34/45	0,227	24 VDC	<b>B416AB549F</b>	1
	Air	Air			0,178	Less solenoid	<b>B416AXXXXF</b>	1
	Electric	Spring return	3,0/-	36/40	0,227	24 VDC	<b>B4T6BB549F</b>	1
	Air	Air			0,178	Less solenoid	<b>B4T6BXXXXF</b>	1
	Electric	Air	1,5/1,5	15/17	0,241	24 VDC	<b>B4A6AB549F</b>	1
	Electric	Air	1,5/1,5	15/17	0,192	Less solenoid	<b>B4A6AXXXXF</b>	1

Symbol	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Voltage	Order code	Qty
<b>Electrically actuated 5/2 and 5/3 valves</b>								
 	Electric	Electric	1,5/1,5	15/15	0,283	24 VDC	<b>B426AB549F</b>	1
						0,185	Less solenoid	<b>B426AXXXXF</b>
	Electric	Electric	3,0/3,0	16/18	0,289	24 VDC	<b>B456AB549F</b>	1
	Closed centre position	Self centring				0,191	Less solenoid	<b>B456AXXXXF</b>
	Electric	Electric	3,0/3,0	16/18	0,289	24 VDC	<b>B466AB549F</b>	1
	Vented centre position	Self centring				0,191	Less solenoid	<b>B466AXXXXF</b>
	Electric	Electric	3,0/3,0	16/18	0,289	24 VDC	<b>B476AB549F</b>	1
	Pressurised centre position	Self centring				0,191	Less solenoid	<b>B476AXXXXF</b>

Internal air supply to differential pilots and solenoids via port 1  
 Silencers and push-in fittings are shown on page 27.

## Inlet Exhaust Manifolds for B4 series valves

### Standard Base without Flow Controls

Each kit contains:

- 1 pcs Manifold Base
- 2 pcs Mounting screws and nuts
- 2 pcs Tie Rods
- 1 pcs Body-to-base Gasket and
- 1 pcs Base-to-Base Gasket

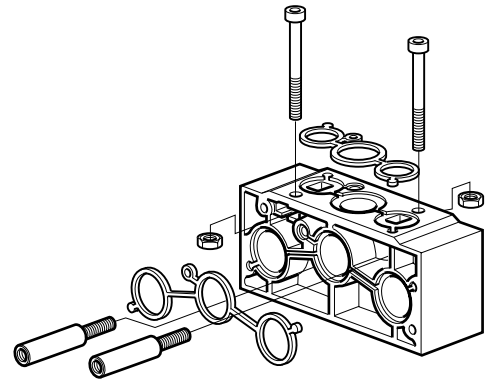
		Order code	Qty
Manifold Base Kit	3/2 =	PS4548F	1
	5/2 =	PS4517F	1

### Base with Flow Controls

Each kit contains:

- 1 pcs Manifold Base with Flow Controls
- 2 pcs Mounting screws and nuts
- 2 pcs Tie Rods
- 1 pcs Body-to-base Gasket
- 1 pcs Base-to-Base Gasket

		Order code	Qty
Manifold Base Kit	3/2 =	PS4549F	1
	5/2 =	PS4518F	1



## End plates

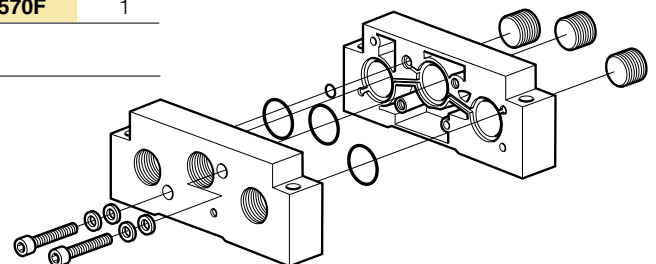
Standard End Plates may be used with either of above Manifold Bases

Each kit contains:

- 1 right and 1 left End Plate
- 3 pcs O-Rings
- 3 pcs Blanking Plugs
- 2 pcs Socket Head Cap Screws
- 2 pcs Flat Washers
- 2 pcs Lockwashers

	Port Size	Order code	Qty
Manifold End plate kit	3/8 BSP	3/2 = PS4551F	1
	3/8 BSP	5/2 = PS4516F	1

	Order code	Qty
DIN rail mounting kit for IEM manifold	PS4570F	1



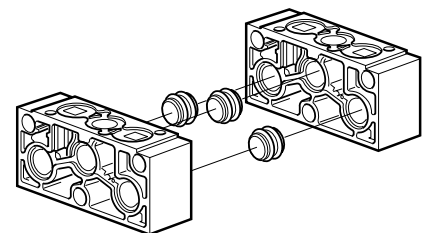
## Isolator Plug Kit

Used to isolate the 1, 3 or 5 gallery between two Manifold Bases

Each kit contains:

- 3 pcs Isolator Plugs complete with O-rings

	Order code	Qty
Isolator Plug kit	PS4519F	1



## Manifold Ported Plate

Each kit contains:

- 1 pcs Inlet Plate
- 2 pcs Mounting screws
- 3 pcs G1/4 Plugs
- 1 pcs Gasket

		Order code	Qty
Manifold Ported plate	3/2 =	PS4567F	1
	5/2 =	PS4521F	1

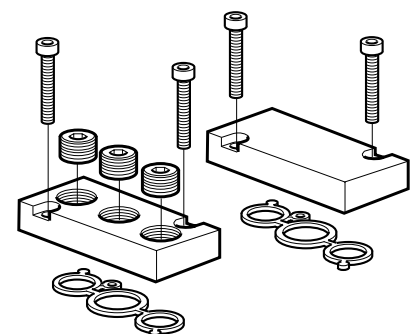
## Manifold Blanking plate

Each kit contains:

- 1 pcs Cover Plate
- 2 pcs Mounting Screws
- 1 pcs Gasket

Used to blank off unused stations.

		Order code	Qty
Manifold Blanking plate	3/2 =	PS4568F	1
	5/2 =	PS4569F	1

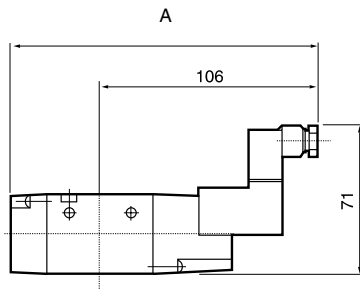




## Dimensions, B4 Valve Series

### 3/2 Body ported

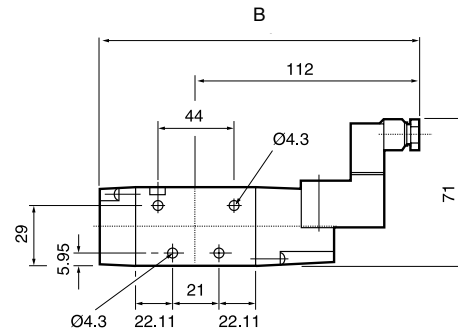
Single solenoid operated air spring return / spring return



	Air differential return	Spring return
<b>A</b>	154,0	156,0

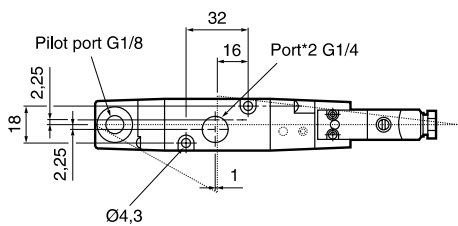
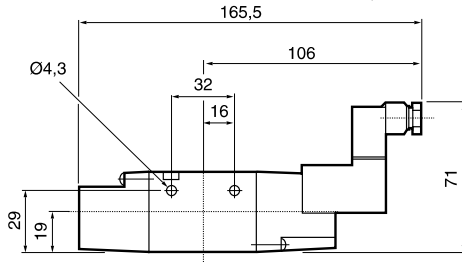
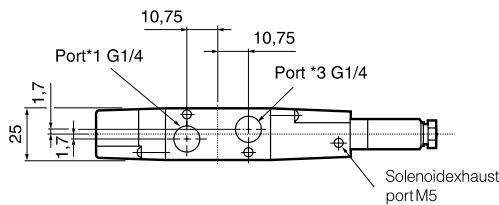
### 5/2 Body ported

Single solenoid operated air spring return / spring return

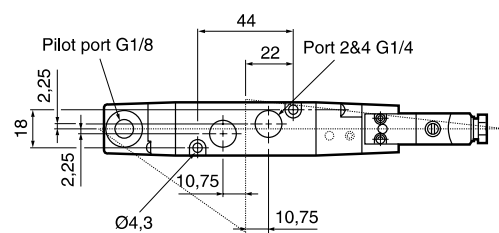
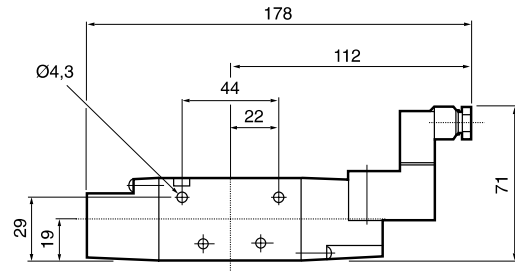
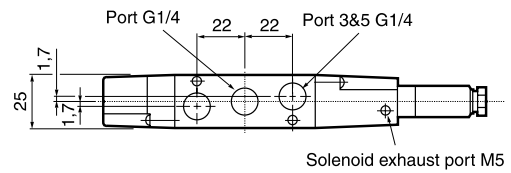


	Air differential return	Spring return
<b>B</b>	166,0	168,0

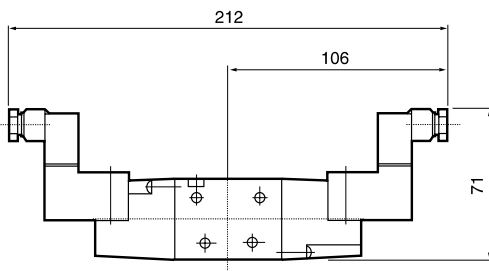
### Single solenoid operated air pilot return



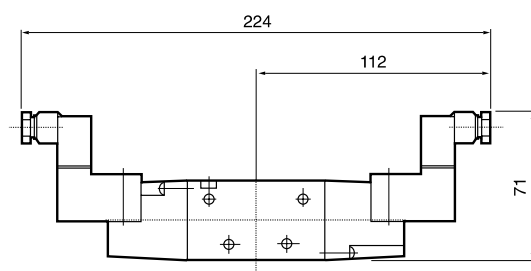
### Single solenoid operated air pilot return



### Double solenoid operated



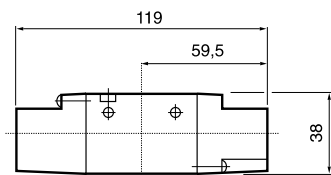
### Double solenoid operated



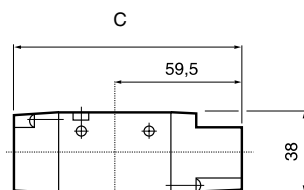
All dimensions in mm unless otherwise stated

## Dimensions, B4 Valve Series

### 3/2 Body ported Double air pilot operated

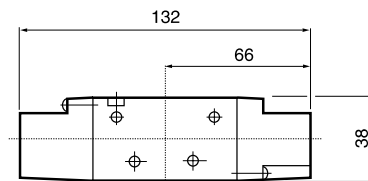


### Air pilot operated air spring return / spring return

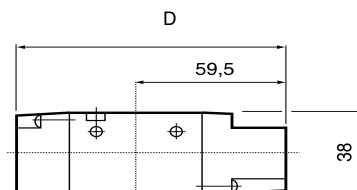


	Air differential return	Spring return
<b>C</b>	107,5	109,5

### 5/2 Body ported Double air pilot operated

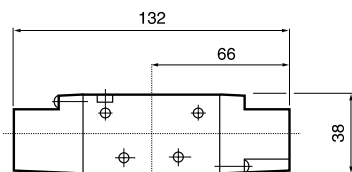


### Air pilot operated air spring return / spring return

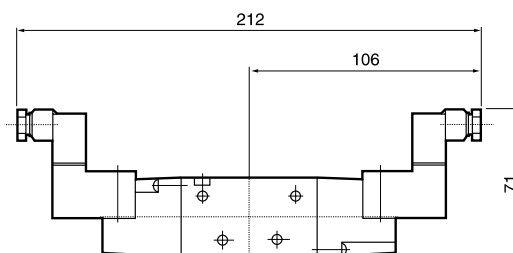


	Air differential return	Spring return
<b>D</b>	120,0	122,0

### 5/3 Body ported Double air pilot return

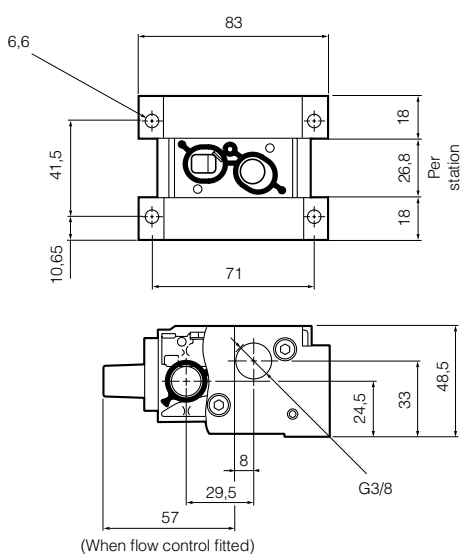


### 5/3 Body ported Double solenoid operated

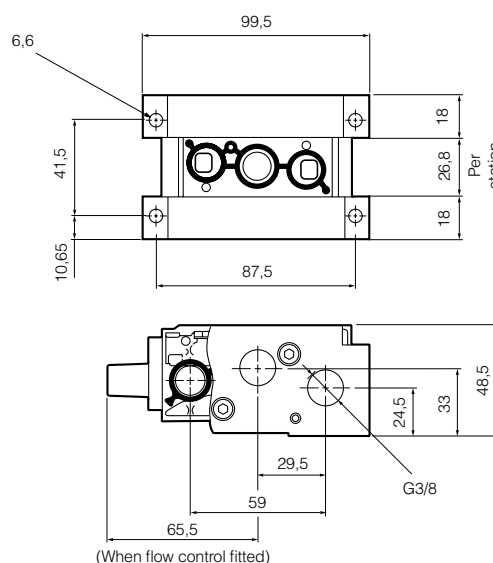


## Manifolds - IEM Inlet Exhaust Manifold System

### 3/2 Inlet Exhaust Manifold For B4 Body Ported Valves



### 5/2 Inlet Exhaust Manifold For B4 Body Ported Valves



All dimensions in mm unless otherwise stated

- G1/4 ports, 3/2, 5/2 and 5/3 functions
- Inlet-exhaust manifold facility
- Integral mounting holes
- 5 watt solenoid actuators
- EN175301-803 Industrial Form B connector



## Operating information

Working pressure	Max 10 bar	Flow (3/2) and (5/2) (acc. to ISO 6358)	Qn = 24 l/s Q max = 37 l/s Cv = 1,4
Working temperature; Pneumatically actuated	-10°C to +60°C		
Electrically actuated	-10°C to +50°C		

**B 5**

	<b>Basic series</b>
<b>B5</b>	Ported valve

**2**

**6**

	<b>Port size</b>
<b>6</b>	G1/4

**B**

**C**

**B**

**49**

**C**

	<b>Pilot source / Pilot exhaust</b>
<b>B</b>	Port 1 / Vented / Side

### Operator function

#### 3 Port

<b>J</b>		3/2 Double solenoid
<b>V</b>		3/2 N/C Single solenoid - air return / spring assist

#### 5 Port

<b>2</b>		5/2 Double solenoid
<b>5</b>		5/3 Double solenoid - all ports blocked (APB)
<b>6</b>		5/3 Double solenoid - cyl to exhaust ports (CE)
<b>7</b>		5/3 Double solenoid - press to cylinder ports (PC)
<b>E</b>		5/2 Single solenoid - air return / spring assist

	<b>Solenoid overrides / Lights</b>
<b>C</b>	Locking, flush without light
<b>X</b>	None

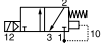
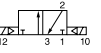
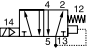
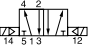
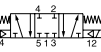
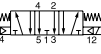

	<b>Solenoid Enclosures</b>
<b>B</b>	22mm Industrial Form B
<b>N</b>	Valve less 22mm solenoid coil
<b>X</b>	None

	<b>Pilot operator / Coil voltage</b>
<b>43</b>	24V 50Hz
<b>45</b>	12V DC
<b>49</b>	24V DC
<b>53</b>	110V 50Hz
<b>57</b>	220V 50Hz
<b>XX</b>	Valve less solenoid operator

**Engineering level C**

Shaded part numbers are standard

## Main data for Directional control valves, B5 Series (G1/4 threaded ports)

Symbol	Actuator	Return	Signal pressure min, bar at 6 bar actua./return	Changeover time, ms at 6 bar actua./return	Weight Kg	Voltage	Order code	Qty
<b>Electrically actuated 3/2 valves</b>								
	Electric	Air/Spring Assisted	2,4/2,4	24/26		24 VDC Less solenoid coil	<b>B5V6BCB49C</b>	1
							<b>B5V6BCNXXC</b>	1
	Electric	Electric	1,5/1/5	15/17		24 VDC Less solenoid coil	<b>B5J6BCB49C</b>	1
							<b>B5J6BCNXXC</b>	1
<b>Electrically actuated 5/2 valves</b>								
	Electric	Air/Spring Assisted	2,4/2,4	24/26		24 VDC Less solenoid coil	<b>B5E6BCB49C</b>	1
							<b>B5E6BCNXXC</b>	1
<b>Electrically actuated 5/2 valves</b>								
	Electric	Electric	1,5/1,5	15/15	0,283 0,185	24 VDC Less solenoid	<b>B526BCB49C</b>	1
							<b>B526BCNXXC</b>	1
	Electric	Electric Closed centre position	3,0/3,0	16/18	0,289 0,191	24 VDC Less solenoid	<b>B556BCB49C</b>	1
							<b>B556BCNXXC</b>	1
	Electric	Electric Vented centre position	3,0/3,0	16/18	0,289 0,191	24 VDC Less solenoid	<b>B566BCB49C</b>	1
							<b>B566BCNXXC</b>	1
	Electric	Electric Pressurised centre position	3,0/3,0	16/18	0,289 0,191	24 VDC Less solenoid	<b>B576BCB49C</b>	1
							<b>B576BCNXXC</b>	1

Order solenoid connectors separately, see page 25 for part numbers.

Internal air supply to differential pilots and solenoids via port 1  
Silencers and push-in fittings are shown on page 27.

## Inlet Exhaust Manifolds for B5 series valves

### Standard Base without Flow Controls

Each kit contains:

- 1 pcs Manifold Base
- 2 pcs Mounting screws and nuts
- 2 pcs Tie Rods
- 1 pcs Body-to-base Gasket and
- 1 pcs Base-to-Base Gasket

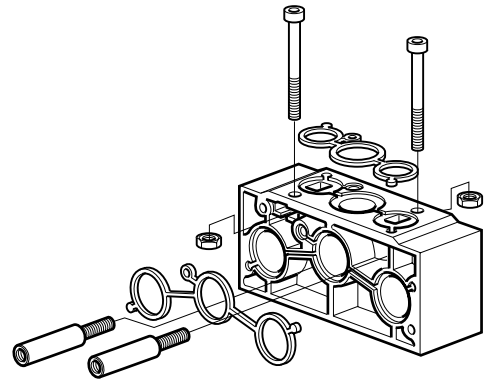
	Order code	Qty
<b>Manifold Base Kit</b>	<b>PS2817P</b>	1

### Base with Flow Controls

Each kit contains:

- 1 pcs Manifold Base with Flow Controls
- 2 pcs Mounting screws and nuts
- 2 pcs Tie Rods
- 1 pcs Body-to-base Gasket
- 1 pcs Base-to-Base Gasket

	Order code	Qty
<b>Manifold Base Kit</b>	<b>PS2818P</b>	1



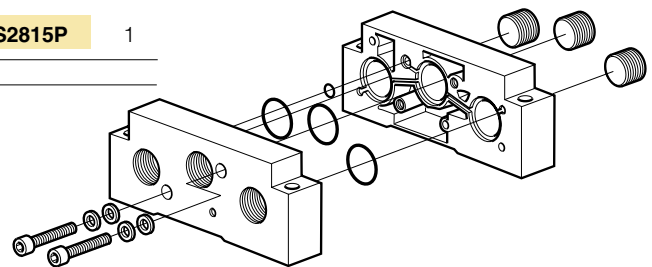
## End plates

Standard End Plates may be used with either of above Manifold Bases

Each kit contains:

- 1 right and 1 left End Plate
- 3 pcs O-Rings
- 3 pcs Blanking Plugs
- 2 pcs Socket Head Cap Screws
- 2 pcs Flat Washers
- 2 pcs Lockwashers

	Port Size	Order code	Qty
<b>Manifold End plate kit</b>	G3/8	<b>PS2815P</b>	1



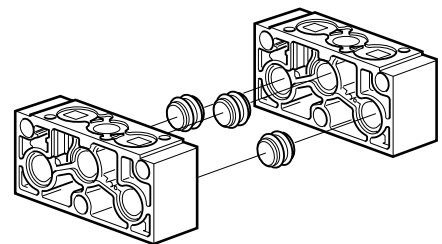
## Isolator Plug Kit

Used to isolate the 1, 3 or 5 gallery between two Manifold Bases

Each kit contains:

- 3 pcs Isolator Plugs complete with O-rings

	Order code	Qty
<b>Isolator Plug kit</b>	<b>PS2819P</b>	1



## Manifold Ported Plate

Each kit contains:

- 1 pcs Inlet Plate
- 2 pcs Mounting screws
- 3 pcs G3/8 Plugs
- 1 pcs Gasket

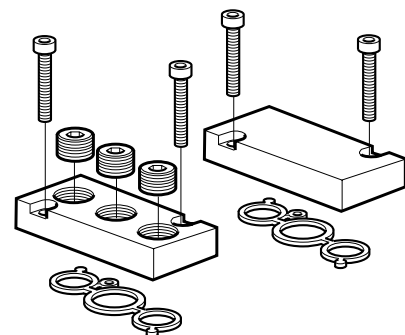
	Order code	Qty
<b>Manifold Ported plate</b>	<b>PS2821P</b>	1

## Manifold Blanking plate

Each kit contains:

- 1 pcs Cover Plate
  - 2 pcs Mounting Screws
  - 1 pcs Gasket
- Used to blank off unused stations.

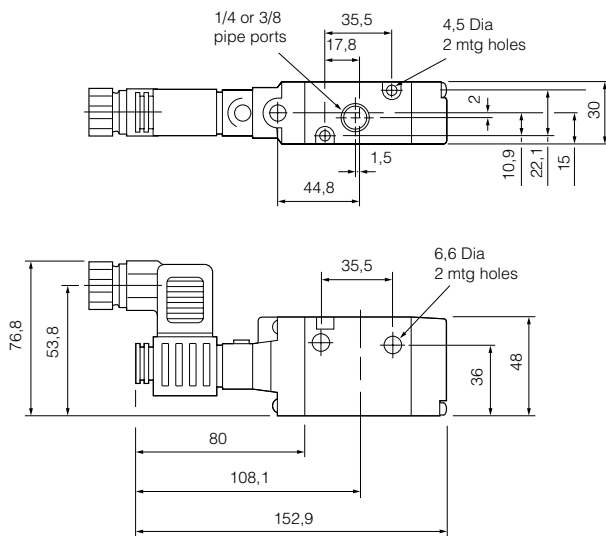
	Order code	Qty
<b>Manifold Blanking plate</b>	<b>PS2869P</b>	1



## Dimensions, B5 Valve Series

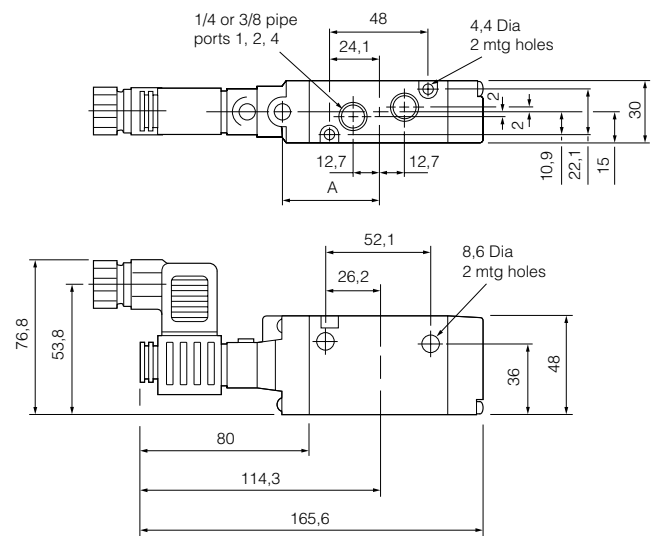
### 3/2 Body ported

Single solenoid operated air spring return / spring return



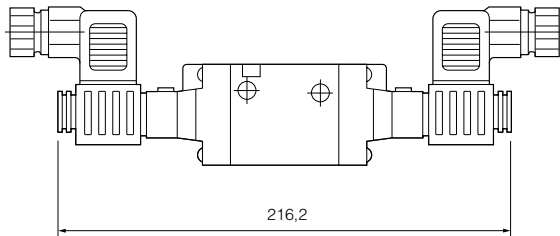
### 5/2 and 5/3 Body ported

Single solenoid operated air spring return / spring return

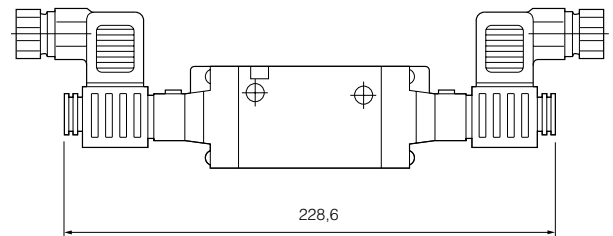


	2 Position	3 Position
A	51,1	62,7

### Double solenoid operated



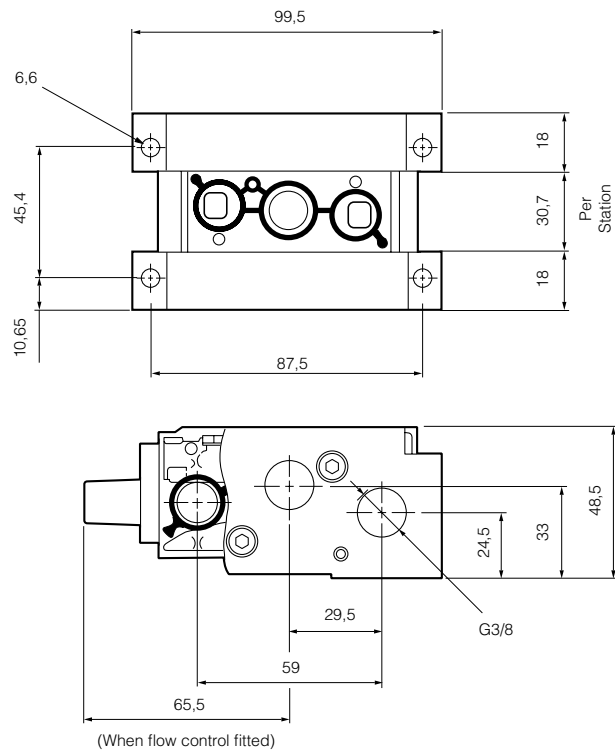
### Double solenoid operated



All dimensions in mm unless otherwise stated

## Manifolds - IEM Inlet Exhaust Manifold System

### 5/2 Inlet Exhaust Manifold For B5 Body Ported Valves



All dimensions in mm unless otherwise stated



## Valve supplied without solenoids

B3 and B4 valves are designed to accept 15mm solenoid operator / connector CECC/EN 175301-803 Form C/ISO 15217. Solenoid operated valves may be ordered without the solenoid operator and connector by substituting XXXX in positions 6 to 9 of the part number. Example B3T5BXXXXH is part number for 5/2 Single solenoid operated spring return valve without solenoid operator and standard connector. See Fig 1.



Fig 1.

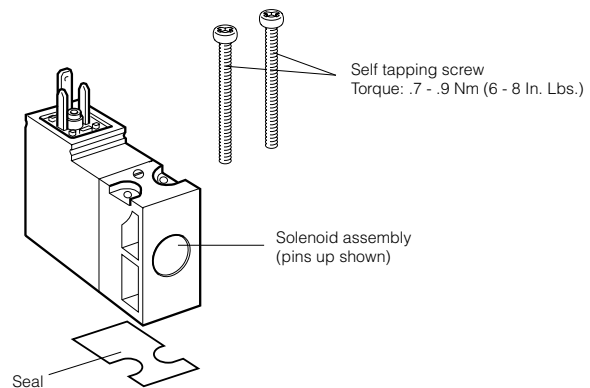
B5 valves are designed to accept 22mm solenoid operator/connector EN175301-803 Industrial Form B. Solenoid valves may be ordered without the coil and connector and are supplied with the solenoid operator fitted to the valve. See Fig 2. Example B5E6BCNXXC is part number for 5/2 Single solenoid operated valve fitted with the solenoid operator having flush locking M/O without coils and connectors.



Fig 2.

## 15mm Solenoid Operators for B3 and B4 Valves

Electrical connection EN 175302-803 C/ISO15217 (Ex DIN 43650C)



### Solenoids 15mm NC, standard

(Note! Mounting screws included with basic valve)

	Voltage	Weight Kg	Order code Without manual override	Weight Kg	Order code Override, blue, non locking flush	Weight Kg	Order code Override, yellow, locking flush
	12 VDC	0,038	<b>P2E-KV32B0</b> ④	0,038	<b>P2E-KV32B1</b> ④	0,038	<b>P2E-KV32B2</b> ④
	24 VDC	0,038	<b>P2E-KV32C0</b> ④	0,038	<b>P2E-KV32C1</b> ④	0,038	<b>P2E-KV32C2</b> ④
	48 VDC	0,038	<b>P2E-KV32D0</b> ④	0,038	<b>P2E-KV32D1</b> ④	0,038	<b>P2E-KV32D2</b> ④
	24 VAC 50Hz	0,038	<b>P2E-KV31C0</b> ④	0,038	<b>P2E-KV31C1</b> ④	0,038	<b>P2E-KV31C2</b> ④
	48 VAC 50/60Hz	0,038	<b>P2E-KV34D0</b> ④	0,038	<b>P2E-KV34D1</b> ④	0,038	<b>P2E-KV34D2</b> ④
	115 VAC 50Hz	0,038	<b>P2E-KV31F0</b> ④	0,038	<b>P2E-KV31F1</b> ④	0,038	<b>P2E-KV31F2</b> ④
	120 VAC 60Hz						
	230 VAC 50Hz	0,038	<b>P2E-KV31J0</b> ④	0,038	<b>P2E-KV31J1</b> ④	0,038	<b>P2E-KV31J2</b> ④
	240 VAC 60Hz						

### Solenoid coils for B5 valves

#### Solenoid coils to suit 'N' enclosure type 22mm 3-Pin EN 175301-803 Industrial Form B




Coil Voltage	Order code	Weight (kg)
24 VAC	<b>PS2828B42P</b>	0.093
12 VDC	<b>PS2828B45P</b>	0.093
24 VDC	<b>PS2828B49P</b>	0.093
110 VAC	<b>PS2828B53P</b>	0.093
230 VAC	<b>PS2828B57P</b>	0.093

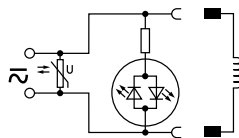
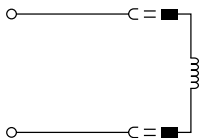
### Solenoid Operator Kit

Each kit contains:  
 1 large 'O' ring for operator base  
 1 small 'O' ring for operator base  
 2 mounting screws  
 1 solenoid/stem nut

	Order code	Qty
Non locking m/o	<b>PS2844BP</b>	1
Locking m/o	<b>PS2844CP</b>	1

## Solenoid Connectors / Cable Plugs EN175301-803

	Description	Order code 15mm Form C/ISO15217 Suitable for B3 & B4 valves	Order code 22mm Industrial Form B Suitable for B5 valves
With large headed screw suitable for mounting in inaccessible or recess position 	Standard IP65	<b>P8C-C</b>	
	24V DC LED and protection IP65	<b>P8C-C26C</b>	
	110V AC LED and protection IP65	<b>P8C-C21E</b>	
With standard screw 	Standard IP65 without flying lead	<b>P8C-D</b>	<b>3EV10V10</b>
	With LED and protection 24V AC/DC	<b>P8C-D26C</b>	<b>3EV10V20-24</b>
	With LED and protection 110V AC	<b>P8C-D21E</b>	<b>3EV10V20-110</b>
	With LED and protection 230V AC		<b>3EV10V20-230</b>
With cable 	Standard with 2m cable IP65	<b>P8L-C2</b>	
	Standard with 5m cable IP65	<b>P8L-C5</b>	
	24V AC/DC, 2m cable LED and protection IP65	<b>P8L-C226C</b>	
	24V AC/DC, 5m cable LED and protection IP65	<b>P8L-C526C</b>	<b>3EV10V20-24L5</b>
	24V AC/DC, 10m cable LED and protection IP65	<b>P8L-CA26C</b>	
	110V AC/DC, 2m cable LED and protection IP65	<b>P8L-C221E</b>	
	110V AC/DC, 5m cable LED and protection IP65	<b>P8L-C521E</b>	<b>3EV10V20-110L5</b>
	230V AC, 5m cable LED and protection IP65		<b>3EV10V20-230L5</b>

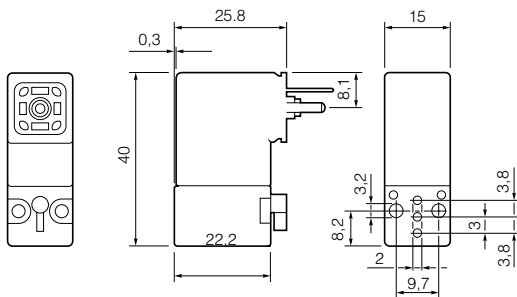


<b>P8C-C</b>
<b>P8C-D</b>
<b>P8L-C2</b>
<b>P8L-C5</b>
<b>3EV10V10</b>

<b>P8C-D26C</b>	<b>P8L-C226C</b>
<b>P8C-D21E</b>	<b>P8L-C526C</b>
<b>P8C-C26C</b>	<b>P8L-CA26C</b>
<b>P8C-C21E</b>	<b>P8L-C221E</b>
	<b>P8L-C521E</b>
<b>3EV10V20-24</b>	<b>3EV10V20-24L5</b>
<b>3EV10V20-110</b>	<b>3EV10V20-110L5</b>
<b>3EV10V20-230</b>	<b>3EV10V20-230L5</b>

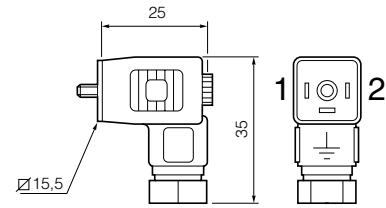
## Cable Plug Dimensions (mm)

Solenoid valves P2E- $\rightarrow$ V...



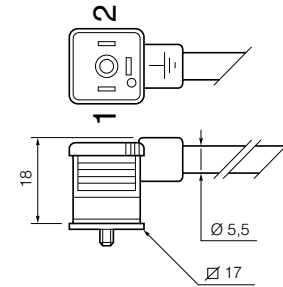
### Cable plugs

- P8L-C2
- P8LC5
- P8L-C226C
- P8L-C526C
- P8L-CA26C
- P8L-C221E
- P8L-C521E



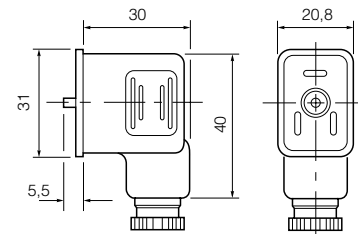
### Cable plugs

- P8C-C
- P8C-C26C
- P8C-C21E
- P8C-D
- P8C-D26C
- P8C-D21E



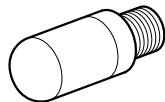
### Cable plugs

- 3EV10V10



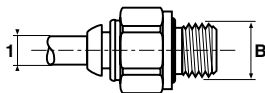
## Accessories, Service and Replacement Parts

### Silencers



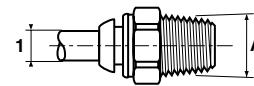
Port	Ordercode	Pack Qty
M5	P6M-PAC5	10
G1/8	P6M-PAB1	10
G1/4	P6M-PAB2	10

### Fittings



#### Male straight connectors - Parallel thread

Tube dia 1	Thread B	Ordercode	Box Qty
4	M5 x 0.8	F8PMB4M5	30
6	M5 x 0.8	F8PMB6M5	20



#### Male connector - BSPT

Tube dia 1	Thread A	Ordercode	Box Qty
4	1/8	F3PMB4-1/8	40
4	1/4	F3PMB4-1/4	30
6	1/8	F3PMB6-1/8	40
6	1/4	F3PMB6-1/4	40
8	1/4	F3PMB8-1/4	40
8	3/8	F3PMB8-3/8	30
10	3/8	F3PMB10-3/8	20
12	3/8	F3PMB12-1/2	10

# Accessories, Services and Replacement Parts B Series

B3,B4 and B5 Spool/Body repair kits contain:

- Spool
- Spool seals
- Lip seal – operator pistons
- Gaskets
- Spool springs
- Grease packet

## B3 series valves

3/2 solenoid and remote air pilot operated valves -Spool/Body Repair kit	<b>PS2971F</b>
5/2 solenoid and remote air pilot operated valves -Spool/Body Repair kit	<b>PS2901F</b>
5/3 APB solenoid and remote pilot operated valves - Spool/Body Repair kit	<b>PS2902F</b>

## Manifold gasket kits

3/2 IEM Gasket kit (10 valve/manifold gaskets)	<b>PS2980F</b>
5/2 IEM Gasket kit (10 valve/manifold gaskets)	<b>PS2981F</b>

## B4 series valves

3/2 solenoid and remote air pilot operated valves - Spool/Body Repair kit	<b>PS4571F</b>
5/2 solenoid and remote air pilot operated valves - Spool/Body Repair kit	<b>PS4501F</b>
5/3 solenoid and remote pilot operated valves – APB Spool/Body Repair kit	<b>PS4502F</b>
CE Spool/Body repair kit	<b>PS4503F</b>
PC Spool/Body repair kit	<b>PS4504F</b>

## Manifold gasket Kits.

3/2 IEM Gasket Kit (10 valve/manifold gaskets)	<b>PS4580F</b>
5/2 IEM Gasket Kit (10 valve/manifold gaskets)	<b>PS4581F</b>

## B5 series valves

3/2 solenoid and remote air pilot operated valves - Spool/Body Repair kit	<b>PS2871P</b>
5/2 solenoid and remote air pilot operated valves - Spool/Body Repair kit	<b>PS2801P</b>
5/3 solenoid and remote pilot operated valves – APB Spool/Body Repair kit	<b>PS2802P</b>
5/3 solenoid and remote pilot operated valves – CE Spool/Body repair kit	<b>PS 2803P</b>
5/3 solenoid and remote pilot operated valves – PC Spool/Body repair kit	<b>PS2804P</b>

## Manifold gasket Kits.

3/2 & 5/2 IEM Gasket kit PS2884P (10 valve/manifold gaskets)	<b>PS2884P</b>
--	----------------

## Solenoid coils for B5 valves

Solenoid coils to suit 'N' enclosure type 22mm 3-Pin Industrial Form B

Coil Voltage	Order code	Weight (kg)
24VAC	<b>PS2828B42P</b>	0.093
12VDC	<b>PS2828B45P</b>	0.093
24VDC	<b>PS2828B49P</b>	0.093
110VAC	<b>PS2828B53P</b>	0.093
230VAC	<b>PS2828B57P</b>	0.093

## Solenoid operator kit

Each kit contains:  
 1 Large 'O' ring for operator base  
 1 Small 'O' ring for operator base

Coil Voltage	Order code	Qty
Non locking m/o	<b>PS2844BP</b>	1
Locking m/o	<b>PS2844CP</b>	1