

**Working medium, air quality**

Working medium: Dry, filtered compressed air to ISO 8573-1 class 3.4.3.

**Recommended air quality for valves**

For best possible service life and trouble free operation, ISO 8573-1 quality class 3.4.3 should be used. This means 5µm filter (standard filter) dew point +3°C for indoor operation (a lower dew point should be selected for outdoor operation) and oil concentration 1.0 mg oil/m<sup>3</sup>, which is what a standard compressor with a standard filter gives.

**ISO 8573-1 quality classes**

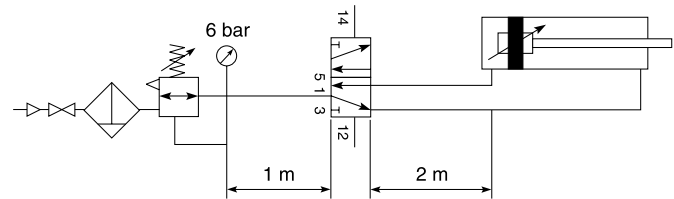
Quality class	Pollution		Water max. press. dew point (°C)	Oil max. concentration (mg/m <sup>3</sup> )
	particle size (µm)	max. concentration (mg/m <sup>3</sup> )		
1	0,1	0,1	-70	0,01
2	1	1	-40	0,1
3	5	5	-20	1,0
4	15	8	+3	5,0
5	40	10	+7	25
6	-	-	+10	-

**Typical cylinders speeds which can be achieved with Viking valves and different tube sizes.**

In the chart below you can find the suitable valves, tubes etc. for each cylinder size. If you have a tube length over 2 m, choose one tube size larger than in the chart.

Following data is valid:

- Supply pressure : min 7,0 bar
- Regulator pressure setting : 6,0 bar
- Pipe length between air treatment unit and valve : max 1 m
- Pipe length between valve and cylinder : max 2 m



Cylinder bore	<20	20-32	40-50	63	80	100	125	160	200
Cylinder port	M5	G1/8	G1/4	G3/8	G3/8	G1/2	G1/2	G3/4	G3/4
Tubing Ext/Int	4/2.7	6/4	8/6	10/8	10/8	12/9	14/11	18/15	20/18
			6/4	8/6	12/9	14/11			
P2LAX	G1/8	G1/8	G1/8	G1/8	G1/8				
P2LBX	G1/4	G1/4	G1/4	G1/4	G1/4	G1/4			
P2LCX			G3/8	G3/8	G3/8	G3/8	G3/8		
P2LDX				G1/2	G1/2	G1/2	G1/2	G1/2	G1/2

Cylinder speed < 0,5 m/s
  Cylinder speed < 1 m/s

Oversized
  Cylinder speed > 1 m/s

## Material specification

### P2LAX

#### Valve

Valve body	Anodised aluminium
End covers	Anodised aluminium
Lever housing	Acetal plastic
Spool	Aluminium + nitrile rubber
Piston	Acetal plastic/ Anodised aluminium
End cover sealings	Nitrile rubber
End cover screws	Stainless steel
Springs	Dacromet® - processed steel, Stainless steel
Lever	Reinforced polyamid plastic
Panel mounting nut	Polycarbonate plastic
Gaiter	Chloroprene rubber
Mounting screws for solenoid	Stainless steel

#### Accessories

Manifold bar	Anodised aluminium
Pressure bar	Anodised aluminium
Multiple manifolds	Anodised aluminium
End and intermediate blocks	Anodised aluminium

### P2LBX

#### Valve

Valve body	Anodised aluminium
End covers	Anodised aluminium
Lever housing	Anodised aluminium
Spool	Aluminium + nitrile rubber
Piston	Acetal plastic/ Anodised aluminium
End cover sealings	Nitrile rubber
End cover screws	Stainless steel
Springs	Dacromet® - processed steel, Stainless steel
Lever	Steel Zinc Plated
Gaiter	Chloroprene rubber
Mounting screws for solenoid	Stainless steel
Panel Washer	Nitrile
Twist Bush	Acetal
Helix Bush	Brass
Pin	Plated Steel
Twist Housing	Anodised Aluminium
Twist Knob	Polyamide 6
Panel mounting ring	Acetal
Lever Housings	Anodised Aluminium
Lever selector	Zinc Diecast

#### Accessories

Manifold bar	Anodised aluminium
Pressure bar	Anodised aluminium

### P2LCX

#### Valve

Valve body	Anodised aluminium
End covers	Anodised aluminium
Spool	Aluminium + nitrile rubber
Piston	Acetal plastic/ Anodised aluminium
End cover sealings	Nitrile rubber
End cover screws	Stainless steel
Springs	Dacromet® - processed steel, Stainless steel
Lever	Steel Zinc Plated
Gaiter	Chloroprene rubber
Mounting screws for solenoid	Stainless steel

### P2LDX

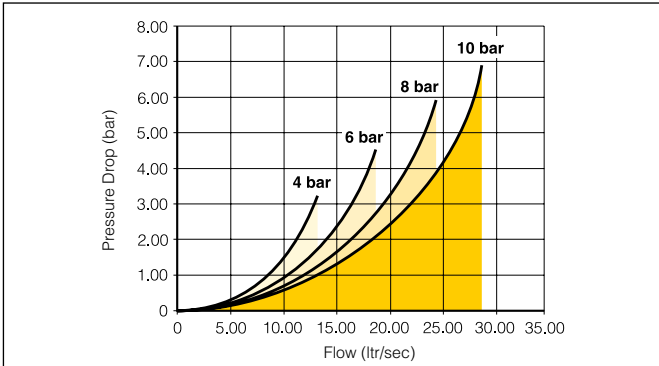
#### Valve

Valve body	Anodised aluminium
End covers	Anodised aluminium
Spool	Aluminium + nitrile rubber
Piston	Acetal plastic/ Anodised aluminium
End cover sealings	Nitrile rubber
End cover screws	Stainless steel
Springs	Dacromet® - processed steel, Stainless steel
Lever	Steel Zinc Plated
Gaiter	Chloroprene rubber
Mounting screws for solenoid	Stainless steel

**Flow characteristics**

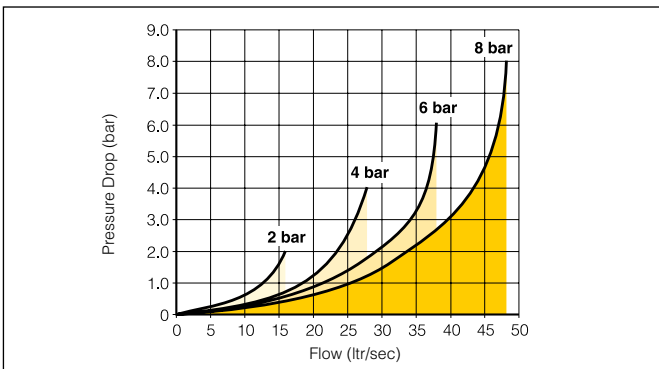
Flow capacities in accordance with ISO6358  
 All pressures = effective pressure  
 The curves in the diagram below are typical only

**Technical Data P2LAX**



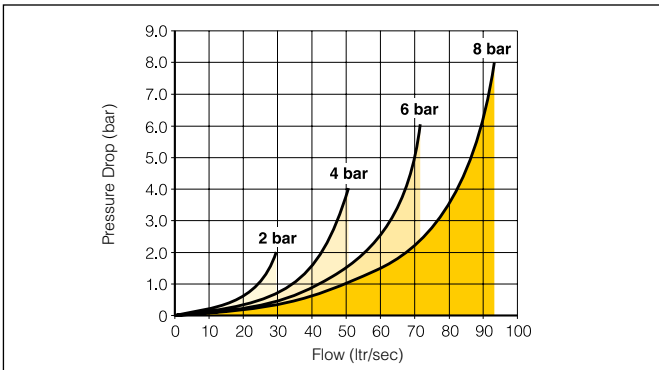
Port size	G1/8
Max operating pressure.	16 bar
Working temperature.	
Air pilot lever solenoid.	-40°C to + 60°C
Air pilot solenoid.	-10°C to + 50°C
Standard and food version.	-40°C to + 60°C
Mobile version.	-40°C to + 60°C
Flow (acc. to ISO 6358)	$c = 3,0 \text{ NI/s} \times \text{bar}$ $b = 0,2$ $Q_n = 11,0 \text{ l/s}$ $Q_{max} = 19,0 \text{ l/s}$ $C_v = 0,65$

**Technical Data P2LBX**



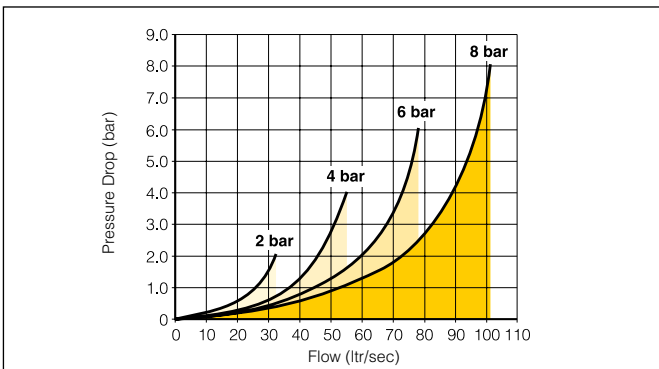
Port size	G1/4
Max operating pressure.	16 bar
Working temperature.	
Air pilot lever solenoid.	-40°C to + 60°C
Air pilot solenoid.	-10°C to + 50°C
Standard and food version.	-40°C to + 60°C
Mobile version.	-40°C to + 60°C
Flow (acc. to ISO 6358)	$c = 5,4 \text{ NI/s} \times \text{bar}$ $b = 0,2$ $Q_n = 21,5 \text{ l/s}$ $Q_{max} = 38,0 \text{ l/s}$ $C_v = 1,33$

**Technical Data P2LCX**



Port size	G3/8
Max operating pressure.	12 bar
Working temperature.	
Air pilot lever solenoid.	-40°C to + 60°C
Air pilot solenoid.	-10°C to + 50°C
Standard and food version.	-40°C to + 60°C
Mobile version.	-40°C to + 60°C
Flow (acc. to ISO 6358)	$c = 10,3 \text{ NI/s} \times \text{bar}$ $b = 0,22$ $Q_n = 41,0 \text{ l/s}$ $Q_{max} = 72,0 \text{ l/s}$ $C_v = 2,5$

**Technical Data P2LDX**



Port size	G1/2
Max operating pressure.	12 bar
Working temperature.	
Air pilot lever solenoid.	-40°C to + 60°C
Air pilot solenoid.	-10°C to + 50°C
Standard and food version.	-40°C to + 60°C
Mobile version.	-40°C to + 60°C
Flow (acc. to ISO 6358)	$c = 11,3 \text{ NI/s} \times \text{bar}$ $b = 0,3$ $Q_n = 44,3 \text{ l/s}$ $Q_{max} = 78 \text{ l/s}$ $C_v = 2,71$

Order chart - Viking Xtreme air pilot & manual valves - Xtreme operating pressure / temperature

<b>P</b>	<b>2</b>	<b>L</b>
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<b>Valve family</b>	
<b>P2L</b>	Viking inline valve

<b>Size</b>	
<b>A</b>	1/8
<b>B</b>	1/4
<b>C</b>	3/8
<b>D</b>	1/2

<b>Version</b>	
<b>X</b>	Xtreme duty spool

\* Xtreme duty spool suitable for max operating pressure 16 bar. (P2LAX + P2LBX) 12 bar (P2LCX + P2LDX) Temperature range -40°C to +60°C

<b>A</b>
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



<b>X</b>
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<b>5</b>
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<b>1</b>	<b>1</b>
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<b>Port thread</b>	
<b>11</b>	G1/8
<b>12</b>	G1/4
<b>13</b>	G3/8
<b>14</b>	G1/2
<b>91</b>	1/8 NPT
<b>92</b>	1/4 NPT
<b>93</b>	3/8 NPT
<b>94</b>	1/2 NPT
<b>1N *</b>	Namur G1/4
<b>9N *</b>	Namur 1/4 NPT

\* Not available in 3/2 version

<b>Valve type function</b>		
<b>Manual and pneumatic operated</b>		
<b>3</b>		3/2 valve
<b>5</b>		5/2 valve
<b>6</b>		5/3 valve closed centre position
<b>7</b>		5/3 valve pressurised centre
<b>8</b>		5/3 valve vented centre

Shaded part numbers are standard

<b>Pilot main actuator/return</b>	
<b>J ***</b>	Rotary button - 2 positions
<b>P</b>	Air signal
<b>S</b>	Spring (return only)
<b>V</b>	Lever, 2 positions, 90° to ports
<b>Z ***</b>	Lever, 2 positions, in line with ports
<b>1 **</b>	Lever, 3 positions self centred, 90° to ports
<b>2 **</b>	Lever, held 3 positions, 90° to ports
<b>5 ***</b>	Lever, 3 positions, self centered in line with port
<b>6 ***</b>	Lever, 3 positions, held in position in line with port
<b>7 ***</b>	Rotary button - 3 positions held in position

\*\* Not available in 3/2 version  
\*\*\* Only Available with port threads G1/4 and 1/4 NPT

## Pneumatic pilot operated valves - Xtreme operating pressure / temperature

Max operating pressure 16 bar (A &amp; B) 12 bar (C &amp; D). temp range -40°C to +60°C

Symbol	Size	Actuation	Return	Min Operating Pressure (bar)	Changeover time (ms) at 6 bar @20°C actua./return	Weight Kg	Order code
<b>3/2 valves, temperature -40°C to +60°C</b>							
	G1/8	Air signal	Air signal	1,5	5/5	0,30	<b>P2LAX311PP</b>
	G1/4			1,5	5/5	0,30	<b>P2LBX312PP</b>
	G3/8			1,5	8/8	0,45	<b>P2LCX313PP</b>
	G1/2			1,5	9/9	0,45	<b>P2LDX314PP</b>
	G1/8	Air signal	Spring	3,2	8/15	0,30	<b>P2LAX311PS</b>
	G1/4			3,5	10/20	0,30	<b>P2LBX312PS</b>
	G3/8			3,5	10/30	0,45	<b>P2LCX313PS</b>
	G1/2			3,5	10/30	0,45	<b>P2LDX314PS</b>
<b>5/2 valves, temperature -40°C to +60°C</b>							
	G1/8	Air signal	Air signal	1,5	5/5	0,14	<b>P2LAX511PP</b>
	G1/4			1,5	6/6	0,30	<b>P2LBX512PP</b>
	G3/8			1,5	8/8	0,45	<b>P2LCX513PP</b>
	G1/2			1,5	9/9	0,45	<b>P2LDX514PP</b>
	G1/8	Air signal	Spring	3,2	8/15	0,15	<b>P2LAX511PS</b>
	G1/4			3,5	10/20	0,32	<b>P2LBX512PS</b>
	G3/8			3,5	10/30	0,45	<b>P2LCX513PS</b>
	G1/2			3,5	10/30	0,45	<b>P2LDX514PS</b>
<b>5/3 valves, temperature -40°C to +60°C</b>							
	G1/8	Air signal	Air signal	3,5	10/20	0,15	<b>P2LAX611PP</b>
	G1/4	Closed centre	Self	3,5	12/22	0,33	<b>P2LBX612PP</b>
	G3/8	position	centring	3,5	15/35	0,50	<b>P2LCX613PP</b>
	G1/2			3,5	15/35	0,50	<b>P2LDX614PP</b>
	G1/8	Air signal	Air signal	3,5	10/20	0,15	<b>P2LAX811PP</b>
	G1/4	Vented centre	Self	3,5	12/22	0,33	<b>P2LBX812PP</b>
	G3/8	position	centring	3,5	15/35	0,50	<b>P2LCX813PP</b>
	G1/2			3,5	15/35	0,50	<b>P2LDX814PP</b>
	G1/8	Air signal	Air signal	3,5	10/20	0,15	<b>P2LAX711PP</b>
	G1/4	Pressurised	Self	3,5	12/22	0,33	<b>P2LBX712PP</b>
	G3/8	centre	centring	3,5	15/35	0,50	<b>P2LCX713PP</b>
	G1/2	position		3,5	15/35	0,50	<b>P2LDX714PP</b>