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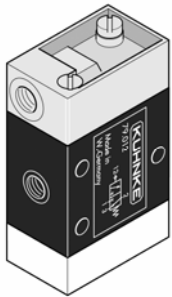
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# Miniature Valves

## Series 79, 81, 84 Spool Valves

Kuhnke Miniature Valves

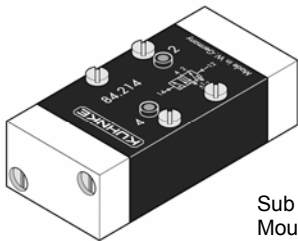
### Steel Spool Valves, Pneumatically Operated, M5 Ported



3/2  
Series 79



5/2  
Series 81



Sub base  
Mounted  
Series 84

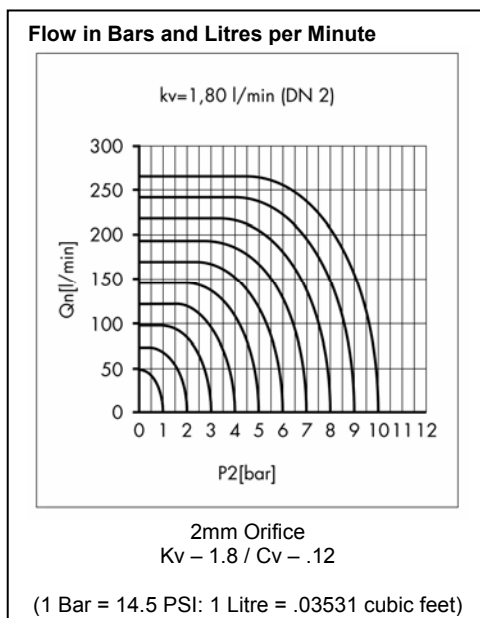
Series 79, 81 and 84 pneumatically operated spool valves are constructed of precision lapped steel spools and sleeves. Valves are available for in-line, manifold or sub base mounting.

A characteristic feature of these valves is a hardened and cut steel spool running in a similarly hardened and cut steel liner. The precision fit of these metal elements form the seal. The kinetic energies of the spool when switching over are absorbed by special cushioning in the covers and switching noise is reduced to a minimum.

This valve series contains a differential pressure valve which can be used for maintaining pressure in air systems. Valve has normal single air pilot spring return function, but with an additional port which can be used to return valve to normal position when secondary pressure reaches supply pressure.

Types: Standard valves are available in 2 mounting configurations, either sub base or in line. In-line (body ported) valves are mounted using (3) 3mm dia. holes through the body. In-line or sub base mounted valves can be used with Kuhnke accessories or can be mounted on custom manifolds or equipment.

### Technical Specifications



**Operating Pressure:**

10 bar Max.  
Min.- see actuation force.

**Vacuum:**

Not applicable.

**Flow Rate:**

See flow chart.

**Kv/Cv:**

$K_v - 1.8$   
 $C_v - 0.12$

**Orifice:**

2mm

**Connection:**

M5 ports

**Media:**

Filtered Air

**Materials:**

Aluminum housing, hardened steel spool and sleeve, Buna N seals, makrolon end caps.

**Average Mechanical Life:**

100 million operations

**Operating Ambient:**

-10°C to 70°C (12°F to 160°F)

**Operation:**

Via pneumatic input signal.

**Actuation Force:**

Min. with spring return- 2 bar.  
Min. with double pilot- 1.5 bar.

**Dimensions (mm):**

	3 Way	5 Way
In Line		
Valve -		
Height:	44	57
Width:	15	15
Depth:	25	25
Weight:	44g.	70g.

### Selection Chart

#### Differential Pressure Valve

A 3/2 or 5/2, in line air piloted valve is available for use in pressure compensating circuits. Valves can be used to maintain pressure in balancing or leveling applications.

A pilot pressure (min. 2 bar), is applied to control port 14, operating the spool and allowing flow. When pressure is equalized on the secondary side of the valve (connected via a second pilot port - 12), the valve is closed by the return spring.

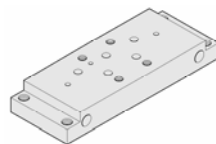
For a manifold mounted version, use valve **84212** and connect the secondary balance pressure to port 12 of the manifold or sub base section.

Description		Catalog number	
		In Line Mounted	Manifold Mounted
<b>3/2 Single Air Pilot Spring Return</b>		<b>79012</b>	---
<b>5/2 Single Air Pilot Spring Return</b>		<b>81012</b>	<b>84212</b>
<b>5/2 Double Air Pilot Detent</b>		<b>81014</b>	<b>84214</b>
<b>3/2 Differential Pressure Valve</b>		<b>79016</b>	---
<b>5/2 Differential Pressure Valve</b>		<b>81016</b>	---

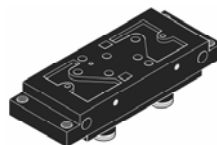
#### Sub bases / Manifolds

Manifold kits are available for both in-line or sub base mounted valves. See *accessories for miniature solenoid valves*. Single sub bases for mounting Series 83 or 84 valves are available in 2 versions:

An aluminum sub base, catalog number **84402-01** can be used to individually mount manifold valves. Base dimensions are 70mm L x 26mm W x 10mm H. Tapped holes (M4) at each corner are used for mounting the base. M5 porting is through the bottom.



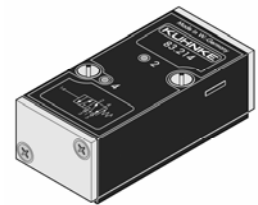
A special moulded sub base cat. no. **83450** has instant push in fittings for 4mm tubing and fully adjustable flow controls to provide a compact valve package. Dimensions are 70mm L x 25mm W x 19mm H.



#### Series 83 – Manifold Mounted, 5/2 Resilient Seal Spool Valves

Single Air Pilot **83212**  
Double Air Pilot, Detent **83214**

Pneumatically actuated resilient seal spool valves are also available. For technical details see solenoid operated Series 83 valves in the solenoid section of this catalogue.



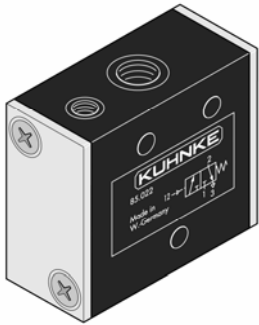
The Series 83 valve is manifold mounted, has red pop up indicators and uses standard Kuhnke M5 manifolds or sub bases. The body is a molded material.

# Miniature Valves

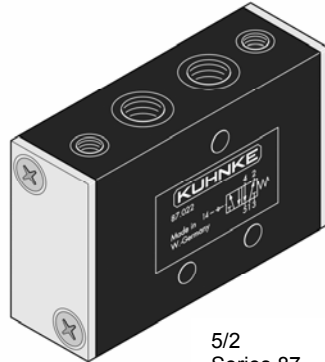
## Series 85, 87 Spool Valves

Kuhnke Miniature Valves

### Steel Spool Valves, Pneumatically Operated (1/8 Ports)



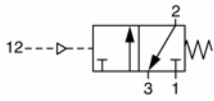
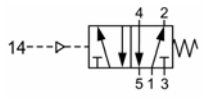
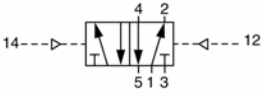
3/2  
Series 85



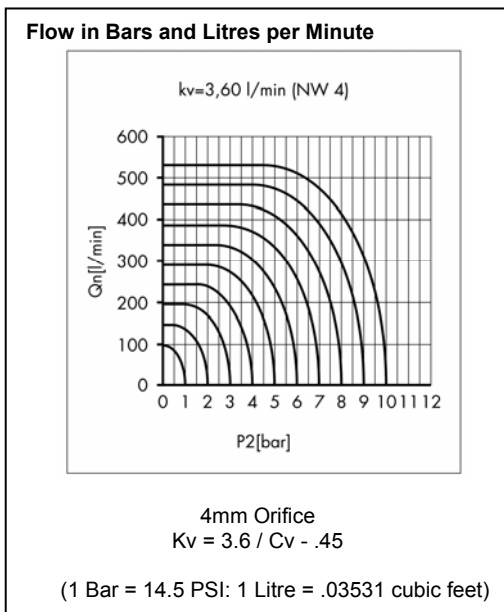
5/2  
Series 87

Series 85 and 87 pneumatically operated spool valves are constructed of precision lapped steel spools and sleeves.

In addition to in line mounting, 5/2 pneumatically operated valves can also be mounted on Kuhnke series 87 manifolds. See solenoid valve accessories.

Description	Catalogue Number	
	Metric Ports (European Std.)	NPT Ports (USA Std.)
<b>3/2</b> <b>Single Air Pilot</b> Spring Return 	<b>85022</b>	(Not Available)
<b>5/2</b> <b>Single Air Pilot</b> Spring Return 	<b>87022</b>	87122
<b>5/2</b> <b>Double Air Pilot</b> Detent 	<b>87024</b>	87124

### Technical Specifications



**Operating Pressure:**  
2 to 10 bar.

**Vacuum:**  
Not applicable.

**Flow Rate:**  
See flow chart.

**Kv/Cv:**  
Kv - 3.6  
Cv - 0.45

**Orifice:**  
4mm

**Connection:**  
1/8 ports

**Media:**  
Filtered Air

**Materials:**

Aluminum housing, hardened steel spool and sleeve, Buna N seals, plated end caps.

**Average Mechanical Life:**  
100 million operations

**Operating Ambient:**  
-10°C to 70°C (12°F to 160°F)

**Operation:**  
Operated by pneumatic signal.

**Dimensions (mm):**

	3 Way	5 Way
Height:	45	62
Width:	20	20
Depth:	40	40
Weight:	140g.	170g.