

Bushing Type Check Valve with One-touch Fittings

AKH/AKB Series



How to Order

Straight type **AKH04** - 00

Male connector type **AKH04 A** - **01 S**

Applicable tubing O.D.

Metric size	Inch size
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
03	ø5/32
07	ø1/4
09	ø5/16
11	ø3/8
13	ø1/2

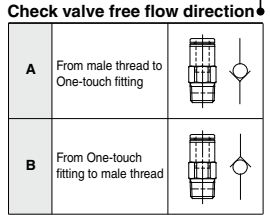
With seal (Standard)
* M5 and 10-32 UNF types are not required.

Thread type

Nil	Metric thread (M5)
	Unified thread (10-32 UNF)
	R
N	NPT

Port size

M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4
03	3/8
04	1/2



Applicable Tubing O.D./Port Size Combinations

Metric size	Model	Applicable tubing O.D.	Rt thread				Inch size							
			M5	1/8	1/4	3/8	1/2	Model	Applicable tubing O.D.	NPT thread				
	AKH04□	ø4	●	●										
	AKH06□	ø6	●	●	●									
	AKH08□	ø8		●	●									
	AKH10□	ø10			●	●	●							
	AKH12□	ø12				●	●							
	AKH03□	ø5/32		●	●									
	AKH07□	ø1/4		●	●									
	AKH09□	ø5/16			●	●								
	AKH11□	ø3/8				●	●	●						
	AKH13□	ø1/2					●	●						

Bushing type **AKB01** A - **01 S**

Body size

01	1/8
02	1/4
03	3/8
04	1/2

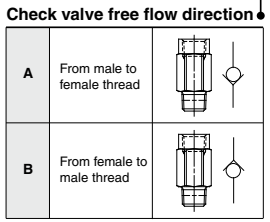
With seal (Standard)

Thread type

Nil	R
N	NPT

Port size

01	1/8
02	1/4
03	3/8
04	1/2



Female/Male Threads Combinations

R thread					NPT thread					
Model	Female thread Rc	Male thread R			Model	Female thread NPT	Male thread NPT			
AKB01□	1/8	●			AKB01□	1/8	●			
AKB02□	1/4		●		AKB02□	1/4		●		
AKB03□	3/8			●	AKB03□	3/8			●	
AKB04□	1/2				AKB04□	1/2				●

Bushing Type Check Valve with One-touch Fittings **AKH/AKB Series**



Specifications

Fluid	Air
Proof pressure	1.5 MPa
Operating pressure range	-100 kPa to 1 MPa
Cracking pressure	0.005 MPa (Note 1)
Ambient temperature and operating fluid temperature	-5 to 60°C (No freezing)
Applicable tubing material (Note 2)	Nylon, Soft nylon, Polyurethane

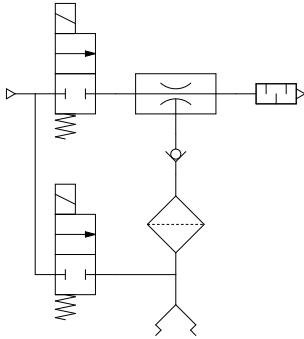
Note 1) The valve does not open fully at this pressure level.

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.

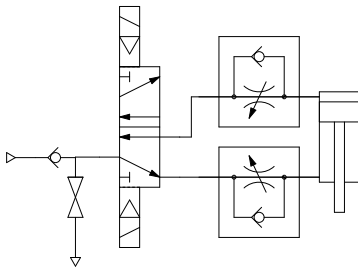
(Refer to pages 464 and 465 for details.)

Application Example for Bushing Type Check Valve with One-touch Fittings

Prevention of reverse flow to vacuum source * (Simple vacuum holding)

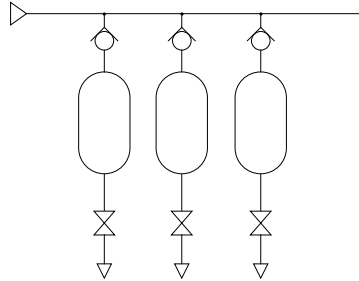


Drop prevention *



* A certain amount of leakage is allowed in the specifications of this product. Please note that it is not suitable for holding over an extended period of time.

Tank pressure reverse flow prevention



⚠ Specific Product Precautions

Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 543 to 546 for Flow Control Equipment Precautions.

Design/Selection

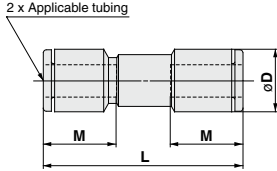
⚠ Caution

1. Even when using with the specification range listed in the catalog, when the IN side of the check valve is throttled, it may fail to open all the way and may generate vibration.
2. The cracking pressure is the pressure when the valve begins to open, and not the pressure when the valve is fully open.
3. The check valve has a construction, in which it is closed by the differential pressure generated when the inlet pressure (IN side) or outlet pressure (OUT side) solenoid valve is switched. Be aware that the check valve does not close completely and the outlet pressure (OUT side) may drop when the inlet pressure (IN side) drops gently and the differential pressure becomes smaller than the minimum operating pressure or cracking pressure.
4. It can not be sealed of valve by only built-in spring, so please use in an environment where differential pressure is generated.
5. Check valve can not be used for relief valve applications. Please use pressure control valve.

AKH/AKB Series

Dimensions

Straight type: AKH



Metric Size

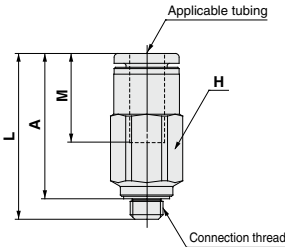
Applicable tubing O.D.	Model	øD	L	M	Sonic conductance dm ³ /(s·bar)	Critical pressure ratio	Weight (g)
4	AKH04-00	9.3	33.5	12.7	0.56	0.35	3
6	AKH06-00	11.6	37.1	13.5	1.3		5
8	AKH08-00	15.2	53.3	18.5	2.8		10
10	AKH10-00	18.5	63.6	21	4.8	0.5	17
12	AKH12-00	21.7	70.2	22	6.8		25

Inch Size

Applicable tubing O.D.	Model	øD	L	M	Sonic conductance dm ³ /(s·bar)	Critical pressure ratio	Weight (g)
5/32	AKH03-00	9.3	33.5	12.7	0.56	0.35	3
1/4	AKH07-00	12	39	13.6	1.3		6
5/16	AKH09-00	15.2	53.3	18.5	2.8		10
3/8	AKH11-00	18.5	63.6	21	4.8	0.5	17
1/2	AKH13-00	21.7	70.2	22	6.8		24

Male connector type: AKH

<For M5, UNF10-32>



Metric Size

Applicable tubing O.D.	Connection thread R	Model	H (Hexagon with across flats)	L	A*	M	Sonic conductance dm ³ /(s·bar)	Critical pressure ratio	Weight (g)
4	M5 x 0.8	AKH04□-M5	8	24.3	21.2	12.7	0.56	0.35	5
	1/8	AKH04□-01S	10	24.6	20.6				10
6	M5 x 0.8	AKH06□-M5		25.8	22.2	13.5	0.56		8
	1/8	AKH06□-01S	10	26.9	22.9				1.3
	1/4	AKH06□-02S	14	30	24				17
8	1/8	AKH08□-01S	14	31.7	27.7	18.5	1.3		16
	1/4	AKH08□-02S		42	36			24	
	3/8	AKH08□-03S	17		35.5				43
10	1/4	AKH10□-02S	17	54.3	48.3	21	4.8	45	
	3/8	AKH10□-03S		47.3	40.8			39	
	1/2	AKH10□-04S	22	49.3	41.3			80	
12	3/8	AKH12□-03S	19	60.5	54	22	6.8	62	
	1/2	AKH12□-04S	22	54.5	46.5			80	

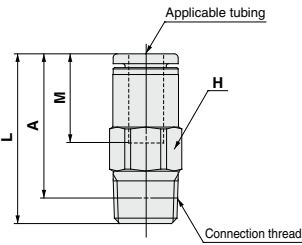
* Reference dimensions of R thread after installation.

Inch Size

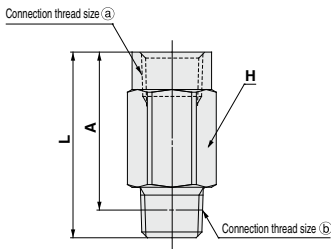
Applicable tubing O.D.	Connection thread NPT	Model	H (Hexagon with across flats)	L	A*	M	Sonic conductance dm ³ /(s·bar)	Critical pressure ratio	Weight (g)
5/32	10-32 UNF	AKH03□-U10/32	8	24.3	21.2	12.7	0.56	0.35	5
	1/8	AKH03□-N01S	11.11	24.6	20.6				10
1/4	10-32 UNF	AKH07□-U10/32		25.8	22.7	13.6	0.56		10
	1/8	AKH07□-N01S	11.11	26.9	22.9				1.3
	1/4	AKH07□-N02S	14.29	31	25				17
5/16	1/8	AKH09□-N01S	14.29	31.7	27.7	18.5	1.3		16
	1/4	AKH09□-N02S		42	36			24	
	3/8	AKH09□-N03S	17.46		35.5				43
3/8	1/4	AKH11□-N02S	17.46	54.2	48.3	21	4.8	47	
	3/8	AKH11□-N03S		47.2	40.7			40	
	1/2	AKH11□-N04S	22.23	49.2	41.2			79	
1/2	3/8	AKH13□-N03S	22.23	60.5	54	22	6.8	87	
	1/2	AKH13□-N04S	22.23	54.5	46.5			85	

* Reference dimensions of NPT thread after installation.

<For R, NPT>



Bushing type: AKB



Metric Size

Connection thread size R	Model	H	L	A*	Sonic conductance dm ³ /(s·bar)	Critical pressure ratio	Weight (g)
(a) 1/8 (b) 1/8	AKB01□-01S	14	23.7	19.7	1.3	0.35	18
1/4	AKB02□-02S	17	39.8	33.8			
3/8	AKB03□-03S	22	45.2	38.7	4.8	0.5	86
1/2	AKB04□-04S	24	56.2	48.2			

* Reference dimensions of R thread after installation.

Inch Size

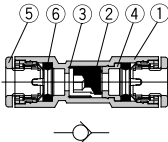
Connection thread size NPT	Model	H	L	A*	Sonic conductance dm ³ /(s·bar)	Critical pressure ratio	Weight (g)
(a) 1/8 (b) 1/8	AKB01□-N01S	14.29	24.2	20.2	1.3	0.35	18
1/4	AKB02□-N02S	17.46	40	34			
3/8	AKB03□-N03S	22.23	44.9	38.4	4.8	0.5	86
1/2	AKB04□-N04S	23.81	55.5	47.5			

* Reference dimensions of NPT thread after installation.

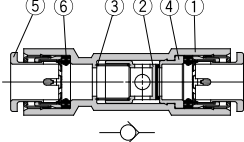
Construction

Straight type: AKH

ø4, ø6
ø5/32, ø1/4



ø8, ø10, ø12
ø5/16, ø3/8, ø1/2



Component Parts

No.	Description	Material	Note
1	Body	PBT	
2	Valve	NBR, Aluminum alloy	
3	Spring	Stainless steel	
4	Spacer	Brass	Electroless nickel plated
5	Cassette	—	
6	Seal	NBR	

Male connector type: AKH

	M5 type U10/32	ø4, ø6 ø8 x R1/8 ø5/32, ø1/4 ø5/16 x NPT1/8	ø8, ø10, ø12 ø5/16, ø3/8, ø1/2
Free flow One-touch fitting ↑ Male thread			
Free flow One-touch fitting ↓ Male thread			

Component Parts

No.	Description	Material	Note
1	Body	Brass	Electroless nickel plated
2	Valve	NBR, Aluminum alloy	
3	Spring	Stainless steel	
4	Spacer	Brass	Electroless nickel plated
5	Stopper	Stainless steel	
6	O-ring	NBR	
7	Cassette	—	
8	Seal	NBR	
9	Gasket	Stainless steel + NBR	

Bushing type: AKB

	R1/8 NPT1/8	R1/4, 3/8, 1/2 NPT1/4, 3/8, 1/2
Free flow Female thread ↑ Male thread		
Free flow Female thread ↓ Male thread		

Component Parts

No.	Description	Material	Note
1	Body	Brass	Electroless nickel plated
2	Valve	NBR, Aluminum alloy	
3	Spring	Stainless steel	
4	Spacer	Brass	Electroless nickel plated
5	Stopper	Stainless steel	
6	O-ring	NBR	