CKD

New Products

Air Operated Fine Pinch Valve

HYA Series



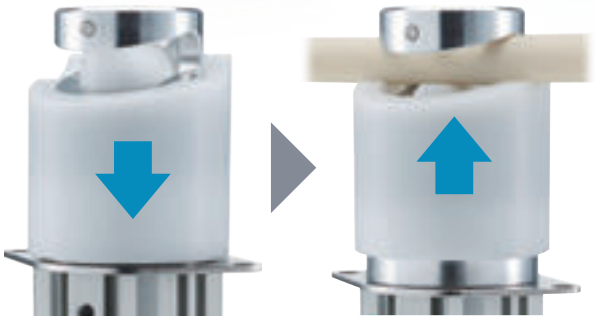
Fine pinch valve with applied pneumatic technology

Ideal for single-use applications.
Fluids can be controlled with no thermal effects on the surrounding environment.



Easy maintenance

The slit operates with a spring.
Tube attachment/removal is easy.



Supports a wide range of tubes

Pneumatic drive realizes high seal load.
Compatible with various tubes.

Model No.	Compatible tube O.D.
HYA-*1*	1/8" to 7/32" (ø3 to ø6)
HYA-*2*	1/4" to 3/8" (ø6 to ø10)
HYA-*3*	7/16" to 9/16" (ø10 to ø15)

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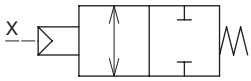
Air operated fine pinch valve

HYA Series

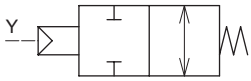
- NC (normally closed), NO (normally open), Double acting
- Compatible tube O.D.: 1/8" to 7/32", 1/4" to 3/8", 7/16" to 9/16"

RoHS CAD

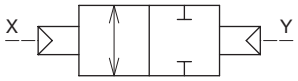
● NC (normally closed)



● NO (normally open)



● Double acting



Specifications

Item		HYA-1	HYA-2	HYA-3
Actuation		NC (Normally closed)	NO (Normally open)	Double acting
Working pressure	MPa	0 to 0.1 (*1)		
Fluid temperature	°C	0 to 40 (no freezing)		
Ambient temperature	°C	5 to 40		
Frequency	cycles/min	30 or less		
Mounting orientation		Unrestricted		
Pilot fluid		Compressed air		
Pilot fluid pressure	MPa	0.35 to 0.5		0.2 to 0.4
Recommended tubes (*2)		PharMed BPT tubing TYGON 3350 tubing		

*1: The maximum working pressure varies by tube, so confirm the specifications of the tube in use.
*2: Consult CKD when using a C-Flex tube or other tubes.

Individual specifications

Model No.	Compatible tube O.D.	Pilot port size	Weight (kg)
HYA-11*	1/8" to 7/32" (ø3 to ø6)	M5	0.32
HYA-21*			0.2
HYA-31*			0.2
HYA-12*	1/4" to 3/8" (ø6 to ø10)		0.5
HYA-22*			0.3
HYA-32*			0.3
HYA-13*	7/16" to 9/16" (ø10 to ø15)	Rc1/8	0.83
HYA-23*		M5	0.42
HYA-33*			0.42

How to order

HYA - 1 1 1

Model No.

Ⓐ Actuation

Ⓑ Compatible tube O.D.

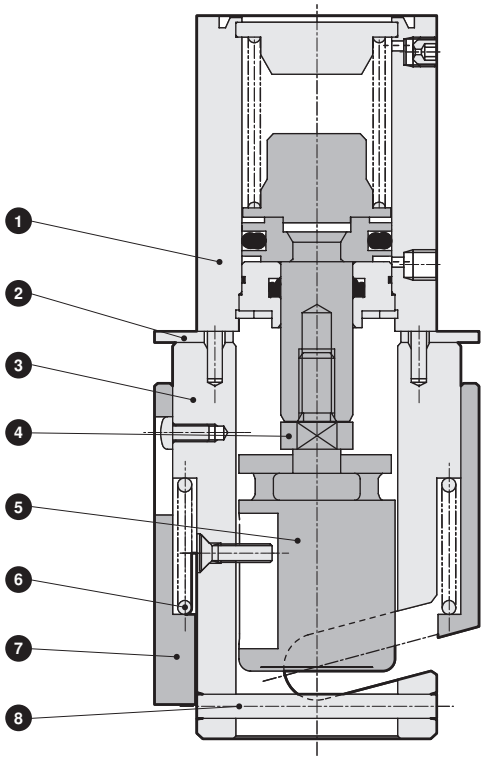
Ⓒ Tube wall thickness

Code	Description
Ⓐ Actuation	
1	Normally closed
2	Normally open
3	Double acting
Ⓑ Compatible tube O.D.	
1	1/8" to 7/32" (ø3 to ø6)
2	1/4" to 3/8" (ø6 to ø10)
3	7/16" to 9/16" (ø10 to ø15)

Ⓒ Tube wall thickness

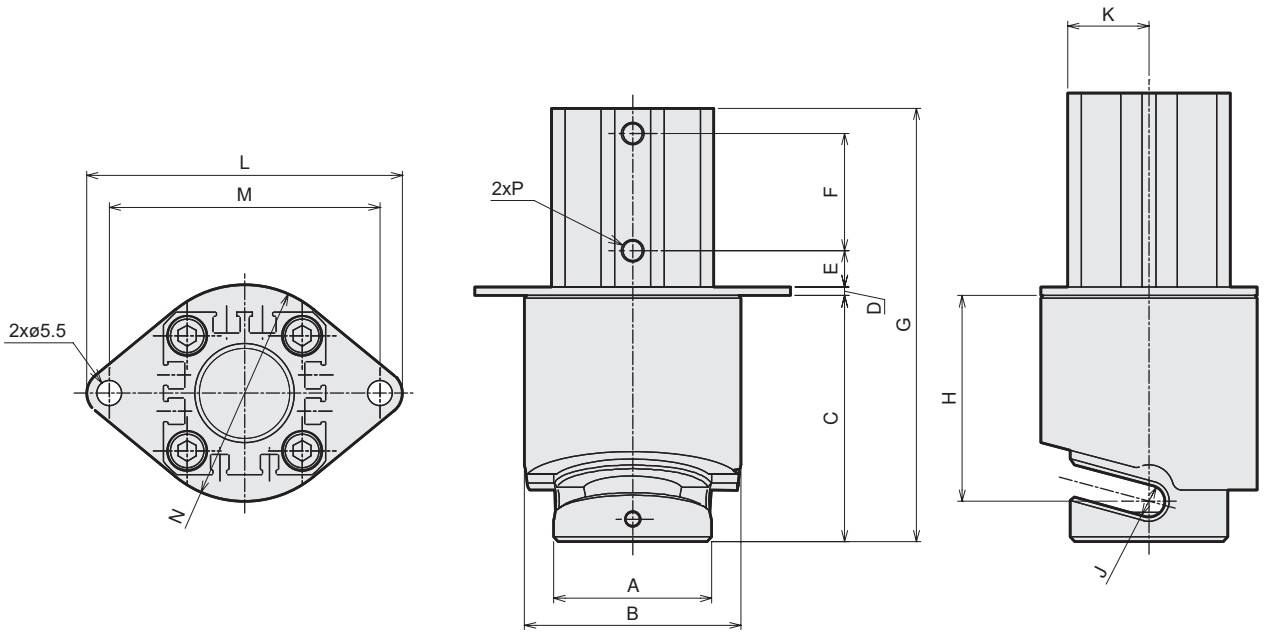
		Ⓑ Compatible tube O.D. 1	2	3
1	1/32" (0.79 mm)	●	●	
2	1/16" (1.59 mm)	●	●	●
3	3/32" (2.38 mm)		●	●
4	1/8" (3.18 mm)			●

Internal structure diagram and parts list



No.	Part name	Material	
1	Actuator assembly	-	SSD2
2	Bracket	SUS304	Stainless steel
3	Valve A	A5056	Aluminum
4	Fitting	SUS303	Stainless steel
5	Valve B	POM	Polyacetal resin
6	Holder spring	SUS304	Stainless steel
7	Holder	POM	Polyacetal resin
8	Parallel pin	SUS303	Stainless steel

Dimensions



Model No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P
HYA-11*	ø35	ø48	54.5	2	8	26	96	45.5	ø7	18	70	60	ø48	M5
HYA-12*	ø40	ø54	66	2	11	35.5	120.5	54	ø11	20	80	70	ø54	M5
HYA-13*	ø50	ø66	77.5	3	8	57	153.5	61	ø16	27	90	80	ø66	Rc1/8
HYA-21*	ø28	ø39	49	2	5.5	16	78	40	ø7	14.5	60	50	ø39	M5
HYA-22*	ø35	ø48	57.5	2	8	16	89	45	ø11	18	70	60	ø48	M5
HYA-23*	ø40	ø54	73.5	2	11	25.5	118	58	ø16	20	80	70	ø54	M5
HYA-31*	ø28	ø39	49	2	5.5	16	78	40	ø7	14.5	60	50	ø39	M5
HYA-32*	ø35	ø48	57.5	2	8	16	89	45	ø11	18	70	60	ø48	M5
HYA-33*	ø40	ø54	73.5	2	11	20.5	113	58	ø16	20	80	70	ø54	M5

Safety precautions: HYA Series Read safety precautions in "General Purpose Valves (No. CB-03-1SA)" as well.

Design/selection

⚠CAUTION

■ Pilot air

(1) Drain countermeasures
Compressed air contains a large amount of drainage (water, oil oxides, tar, foreign matter, etc.). This is a factor that significantly reduces the reliability of the pneumatic components. For drain countermeasures, improve air quality (clean air) by dehumidifying with an after cooler or dryer, removing foreign matter with a filter, using a tar removal filter, etc.

(2) Usable with no lubrication
This valve is pre-lubricated, so no lubricator is required. However, once lubrication has been started, it must be continued so that the lubricant does not run out. Use turbine oil Class 1 ISO VG32 (#90) or equivalent for lubrication.

(3) Filter
Mount a filter with a 5 μm or less filter element.

■ The actuator sliding section is greased, so the grease may spatter when air is discharged.

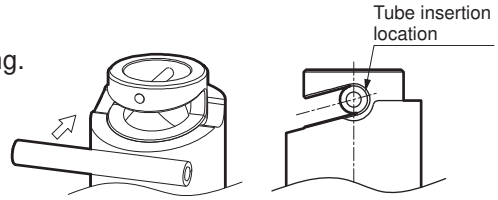
When using the product

⚠CAUTION

■ Set pilot pressure within the specified range.

■ Use appropriate torque to tighten the pilot port piping when connecting.

Port thread	Tightening torque (N·m)
M5	1 to 1.5
Rc1/8	3 to 5



■ Securely insert the tube to the prescribed position.

■ The performance may not be satisfied if a tube other than the recommended ones is used.

■ The tube's chemical resistance may not be compatible with the working fluid, or the fluid may adhere; confirm before use.

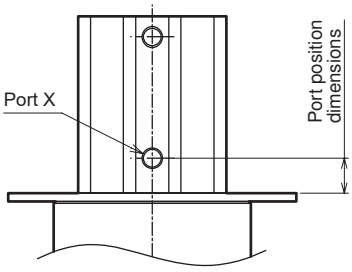
■ The tube's durability varies with the working conditions, such as working fluid, pressure, temperature, frequency, etc. Regularly replace the tube.

■ If the tube is left collapsed for long periods (24 hours or more), it may stick and fail to open. In this case, replace the tube or un-stick the tube by applying pressure or by hand.

■ The maximum working pressure varies by tube, so confirm the specifications of the tube in use. The application of pressure exceeding the maximum working pressure may damage the tube.

■ As compatible piping fittings on the port X side are limited, refer to the table below to select the fitting.

Model No.	Port size	Port position dimensions	Usable fitting O.D.	Inapplicable fittings
HYA-11*	M5	8	ø15 or less	-
HYA-12*		11		
HYA-13*	Rc1/8	8		GWS10-6 GML8-6 GWL10-6
HYA-21*	M5	5.5	ø11 or less	GWS6-M5
HYA-22*		8	ø15 or less	-
HYA-23*		11		
HYA-31*		5.5	ø11 or less	GWS6-M5
HYA-32*		8	ø15 or less	-
HYA-33*		11		



⚠CAUTION

When using CKD's recommended tubes in products, the Export Trade Control Ordinance does not apply; however, the Ordinance may apply to tubes prepared by the customer depending on their material. When exporting products of this kind, note that application to the Minister of Economy, Trade and Industry for export permission is required. (Refer to the Ordinance of the Ministry Specifying Goods and Technologies, Article 2, Section 2, 7.(a).)

If the goods and/or their replicas, the technology and/or software found in this catalog are to be exported from Japan, Japanese laws require the exporter makes sure that they will never be used for the development and/or manufacture of weapons for mass destruction.

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● Specifications are subject to change without notice.
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