

Internal Structure / Material / Dimensions

# (pinch valve for high purity fluids)

Direct acting 2, 3-port valve

# **HYN** Series

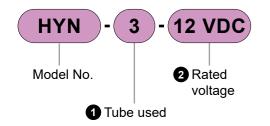
● NO (closed when energized), NC (open when energized), Universal

Working fluid: Water / pure water / chemical liquids

■ Tube attachment/removal method, compatible tube: ø3 × ø1, ø5 × ø3, ø8 × ø6



#### How to Order



SWD-T

SPD HYA

1 Tube used

Code	Description
3	ø3 × ø1
5	ø5 × ø3
8	ø8 x ø6

# 2 Rated voltage

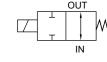
Code	Description
AC100V	100 VAC (50/60 Hz)
DC12V	12 VDC
DC24V	24 VDC

# Tube model No.

Tube model No.	Tube size (O.D.) × (I.D.) × (Length)
HYN-3-1-5000	ø3 × ø1 × 5 m
HYN-5-3-5000	ø5 × ø3 × 5 m
HYN-8-6-5000	ø8 × ø6 × 5 m

# Circuit diagram Code Common specifications

: NO (closed when energized)



2-port valve : NC (open when energized)



3-port



Item	пп	N-9	пп	G-N	П Т IN-0								
item	AC	DC	AC	DC	AC	DC							
Working fluid	Water / pure v	Vater / pure water / chemical liquids (fluids that do not corrode wetted part material											
Working pressure MPa	0	0 to 0.05 (refer to working pressure in individual specifications.)											
Fluid temperature °C	5 to 50												
Ambient temperature°C 0 to 40 (no freezing)													
Frequency cycles/min.	requency cycles/min. 60 or less												
Mounting orientation			Unrestric	ted (*1)									
Electrical Specifications													
Rating	Continuous	Continuous	Intermittent (*2)	Continuous	Intermittent (*2)	Continuous							
Rated voltage	100 V	12 V	100 V	12 V	100 V	12 V							
Rated voltage	(50/60 Hz)	24 V	(50/60 Hz) 24 V		(50/60 Hz)	24 V							
Voltage fluctuation range	fluctuation range ±10%												
Leakage current mA	Leakage current mA 2 or less (*3)												

- \*1: Avoid vertical mounting with the coil down to prevent fluid intrusion into the coil during abnormalities such as tube rupture. \*2: When using intermittent rating, keep the max. continuous power ON time within 10 minutes and the DUTY ratio one half or less.
- \*3: The leakage current from the control circuit must be equal to or less than the values shown in the table.
- \*4: For tightening torque of the mounting screw, refer to the recommended tightening torque below. Recommended
- tightening torque: HYN-3, N·m 0.2 to 0.4, HYN-5, N·m 8, port 0.5 to 0.7
- \*5: The performance may not be satisfied if a tube other than the recommended ones is used.
- \*6: When starting and switching retention, noise is generated temporarily. Check the compatibility of the control circuit.
- \$7: Solenoid valve has polarity. Connect the red lead wire to the plus (+) side.
- \*8: After the solenoid valve is completely switched ON or OFF, set an interval of 0.5 seconds or more before switching it the

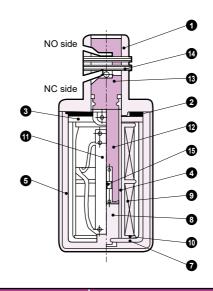
### Individual specifications

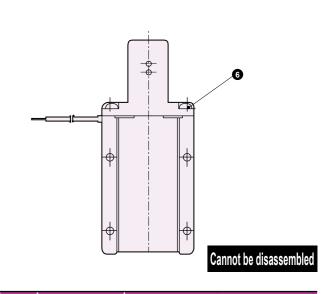
Item	Compatible tube (*1)	Working pressure	Power consumpti	on 12/24 VDC (w)	Max. current	100 VAC (A)	Heat resistance	Weight
Model No.	(Silicone tube)	(MPa)	Starting (*2)	Holding	Starting (*2)	Holding	Class	(kg)
HYN-3	ø3 × ø1	0 to 0.05	15	4	0.26	0.06	Class 120 (E)	0.18
HYN-5	ø5 × ø3	0 10 0.03	30	8	0.55	0.14	Class 130 (B)	0.36
HYN-8	ø8 x ø6	0 to 0.02	30	8	0.33	0.14	Ciass 130 (B)	0.37

- \*1: Use the above tube model No. for compatible tubes.
- \*2: Time from energizing to 200 ms.

# Internal Structure Diagram / Material

HYN

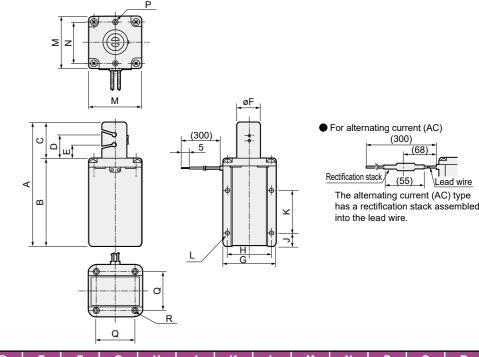




Part No.	Part name	Material		Part No.	Part name	Material			
1	Valve A	POM	Acetal resin	9	Coil	-	-		
2	Packing	NBR	Nitrile Rubber	10	Bobbin	PET	Polyethylene		
3	Frame B	SPC	Steel	11	Wiring section assembly	-	-		
4	Plunger guide	C2700	Copper	12	Plunger	SUS405	Stainless steel		
5	Cover	PA	Polyamide	13	Valve B	POM	Polyacetal resin		
6	Tapping screw	SUS304	Stainless steel	14	Spring pin	SUS420	Stainless steel		
7	Frame A	SPC	Steel	15	Return spring	SUS304	Stainless steel		
8	Stopper	SUS405	Stainless steel						

#### **Dimensions**

HYN



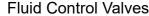
Model No.	Α	В	С	D	E	F	G	Н	J	K	L	M	N	Р	Q	R
HYN-3	81.5	57.5	24	17	10	16	34	28	9	28	4×M3 depth 7	34	28	2×M3 depth 5	-	-
HYN-5	98	65	33	23	13	25	43	36.5	11	36.5	4×M4 depth 7	43	-	-	36.5	4×M4 depth 7
HYN-8	103	65	38	27	14	30	43	36.5	11	36.5	4×M4 depth 7	43	-	-	36.5	4×M4 depth 7

SWD / MWD

SWD-T

SPD

HYA





# **Safety Precautions**

Be sure to read this section before use. Refer to "Fluid control valves (RJ-013AA)" for general precautions

Product-specific cautions: Direct acting 2, 3-port valve (fine pinch valve) HYN Series

# **Design / Selection**

# **▲** WARNING

#### ■ Ambient environment

Take appropriate safeguards when using this product in places where it may be exposed to water drops.

#### ■ Do not disassemble

Once disassembled, the product may not satisfy the required performance any longer even if reassembled.

# **A** CAUTION

SWD-T

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HYA

■ Check the compatibility of product component materials and working fluids. Also, do not allow fluid to come into contact with the product body.

■ Do not use for strong acids such as hydrochloric acid, hydrofluoric acid or nitric acid.

■Do not use for sodium hypochlorite (soda). (Compatible models only)

- Carefully select the solenoid valve, taking the chemical liquid characteristics into consideration. (Presence of crystal deposits when chemical liquids dry, effect on solenoid valve component materials if chemical liquids evaporate, etc.)
- ■When using these components for a chemical liquid having a low boiling point, such as hexane, the chemical liquid in the solenoid valve could evaporate due to heating of the coils, and cause bubbles, etc., in the solenoid valve and pipe. Use an AMD type air operated valve for chemical liquids if formation of bubbles, etc., poses a problem.
- ■When using the solenoid valve with negative pressure, such as for dispensing control, air may be sucked into the solenoid valve depending on the type of chemical liquid, type of connection fitting, and type of tube, etc. Check carefully before starting use.

■Use a smoothed power source with sufficient margin against power consumption for the power supply.

- For the DC type, use a high-capacity power supply. A full-wave or half wave rectified bridge is affected by ripples, so always use a stabilized power supply.
- Securely insert the tube to the prescribed position.
- Depending on the working fluid, the silicone tube may not be resistant to chemical liquids, or chemical liquids may adhere to it. Check this before
- Do not expose the coil to water.
- If a silicone tube is left attached for long periods, it could stick and prevent the tube from opening. If the tube sticks, replace the tube or un-stick the tube by applying pressure or by hand.
- ■Do not apply higher pressure than the working pressure. Otherwise the tube may dislocate.
- Working pressure and proof pressure
- Working pressure and proof pressure are as listed below. Carefully select the model with full understanding.
- Working pressure: Pressure at which the valve opens and closes normally.
- Proof pressure: Pressure which the valve withstands without any decrease in its functions or performance.
- The catalog specifications are satisfied, even when pressure exceeding the working pressure is temporarily applied, upon return to the working pressure.

MEMO

SWD / MWD

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For precautions regarding Installation and Adjustment, Use and Maintenance, CKD components product website (https://www.ckd.co.jp/kiki/en/)  $\rightarrow$  "Model No. $\rightarrow$  Instruction manual for details.