



## Diaphragm cylinder valve

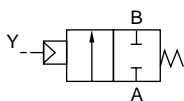
# LAD Series

- NC, NO, double acting
- Port size: Rc3/8, Rc1/2, Rc3/4, Rc1
- Working fluid: Pure water, water, air, N<sub>2</sub> gas

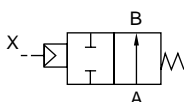


### JIS symbol

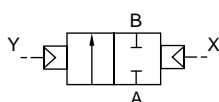
- NC



- NO



- Double acting



### Common specifications (PTFE diaphragm)

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	LAD1	LAD2	LAD3
Actuation	NC	NO	Double acting
Working fluid	Water, pure water, air, N <sub>2</sub> gas, non-corrosive/non-absorbable fluid (*1)		
Fluid temperature °C	5 (41°F) to 90 (194°F) (*2)		
Proof pressure (water pressure) MPa	0.9 (≈130 psi, 9 bar)		
Working pressure (A→B) MPa	0 (≈0 psi, 0 bar) to 0.3 (≈44 psi, 3 bar)		
Valve seat leakage cm <sup>3</sup> /min	0 (water pressure), 1 or less (pneumatic pressure)		
Back pressure MPa	0 (≈0 psi, 0 bar) to 0.1 (≈15 psi, 1 bar)		
Ambient temperature °C	0 (32°F) to 60 (140°F)		
Mounting orientation	Unrestricted		
Operating section	Pilot fluid	Air	
	Pilot pressure MPa	0.3 (≈44 psi, 3 bar) to 0.5 (≈73 psi, 5 bar)	0.3 to 0.4
	Pilot port size	Rc1/8 (*3)	

\*1 : Check the compatibility of product component materials, working fluids and atmosphere.

Strong acids and highly absorbable fluids cannot be used.

\*2 : 5 to 100°C for stainless steel body (SCS13).

\*3 : With stainless steel stiffening ring.

### Individual specifications (PTFE diaphragm)

Item Model No.	Port size	Orifice size mm	Cv	Frequency cycle/min.	Weight kg	
					PPS body	SCS13 body
LAD*-10A	Rc3/8	8	1.7	30 or less	0.15	0.3
LAD*-15A	Rc1/2	12	3.3	20 or less	0.28	0.6
LAD*-20A	Rc3/4	20	8.5	20 or less	0.55	1.1
LAD*-25A	Rc1	20	8.5	20 or less	0.60	1.2

### Common specifications (EPDM diaphragm)

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	LAD1	LAD2	LAD3
Actuation	NC	NO	Double acting
Working fluid	Water, air, N <sub>2</sub> gas, non-corrosive/non-absorbable fluid (*1)		
Fluid temperature °C	0 (32°F) to 60 (140°F) (no freezing)		
Proof pressure (water pressure) MPa	1.5 (≈220 psi, 15 bar) (refer to the proof pressure in the individual specifications.)		
Working pressure (A→B) MPa	0 (≈0 psi, 0 bar) to 0.5 (≈73 psi, 5 bar) (refer to the working pressure range in the individual specifications.)		
Valve seat leakage cm <sup>3</sup> /min	0 (water pressure), 0.12 or less (pneumatic pressure)		
Back pressure MPa	0 (≈0 psi, 0 bar) to 0.1 (≈15 psi, 1 bar)		
Ambient temperature °C	0 (32°F) to 60 (140°F)		
Mounting orientation	Unrestricted		
Operating section	Pilot fluid	Air	
	Pilot pressure MPa	0.3 (≈44 psi, 3 bar) to 0.5 (≈73 psi, 5 bar)	0.3 to 0.4
	Pilot port size	Rc1/8 (*2)	

\*1 : Check the compatibility of product component materials, working fluids and atmosphere.

Strong acids and highly absorbable fluids cannot be used.

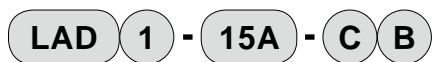
\*2 : With stainless steel stiffening ring.

### Individual specifications (EPDM diaphragm)

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item Model No.	Port size	Proof pressure (water pressure) MPa	Working pressure (A→B) MPa	Orifice size mm	Cv	Frequency cycle/min.	Weight kg	
							PPS body	SCS13 body
LAD*-10A	Rc3/8	1.5	0.5	8	1.7	30 or less	0.15	0.3
LAD*-15A	Rc1/2	1.5	0.5	12	3.3	20 or less	0.28	0.6
LAD*-20A	Rc3/4	1.2	0.4	20	8.5	20 or less	0.55	1.1
LAD*-25A	Rc1	1.2	0.4	20	8.5	20 or less	0.60	1.2

### How to order



Model No.

**A** Actuation

**B** Port size

**C** Material combination

**D** Other options

Code	Description	
<b>A Actuation</b>		
1	NC	
2	NO	
3	Double acting	
<b>B Port size</b>		
10A	Rc3/8	
15A	Rc1/2	
20A	Rc3/4	
25A	Rc1	
<b>C Material combination</b>		
	Body	Diaphragm
P	PPS	EPDM
C	PPS	PTFE
R	SCS13	EPDM
F	SCS13	PTFE
<b>D Other options</b>		
Blank	No option	
1	With flow rate adjustment	
B	Mounting plate	

[Example of model No.]

### LAD1-15A-CB

Model: Diaphragm cylinder valve LAD

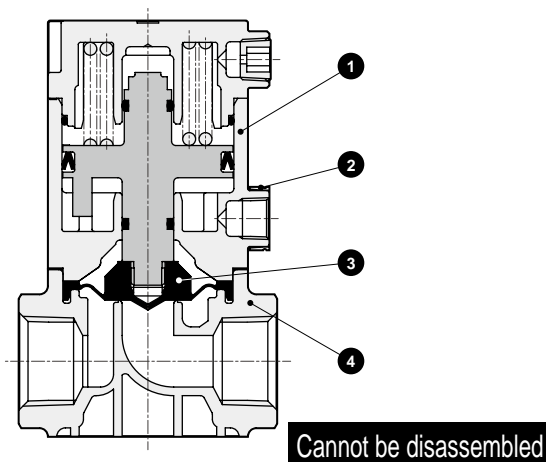
- A** Actuation : NC
- B** Port size : Rc1/2
- C** Material combination : Body - PPS, diaphragm - PTFE
- D** Other options : With mounting plate

\*1 : To add both the flow rate adjustment and mounting plate,specify as "1B".

\*2 : For the "indicator" option, contact CKD.

### Internal structure and parts list

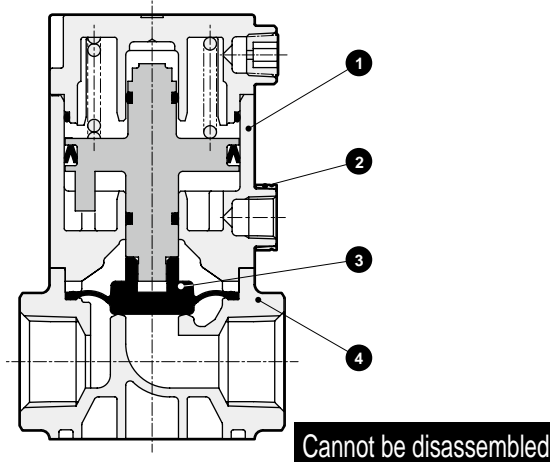
#### ● PTFE diaphragm



No.	Part name	Material	
1	Actuator assembly	PPS	Polyphenylene sulfide
		FKM	Fluoro rubber
2	Reinforcement ring	SUS 304	Stainless steel
3	Diaphragm	PTFE	Tetrafluoroethylene resin
4	Body	PPS	Polyphenylene sulfide
		(SCS13)	(Stainless steel casting)

( ) shows options.

#### ● EPDM diaphragm



No.	Part name	Material	
1	Actuator assembly	PPS	Polyphenylene sulfide
		FKM	Fluoro rubber
2	Reinforcement ring	SUS 304	Stainless steel
3	Diaphragm	EPDM,SUS303	Ethylene propylene rubber/stainless steel
4	Body	PPS	Polyphenylene sulfide
		(SCS13)	(Stainless steel casting)

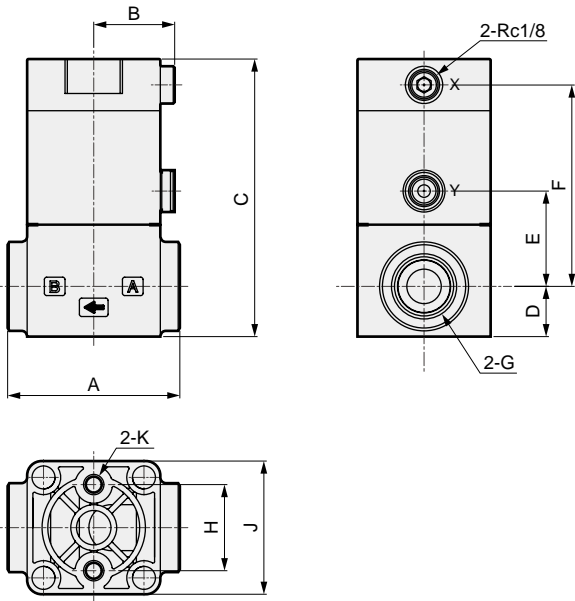
( ) shows options.

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S&B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combust
- Auto-Water
- Outdoor
- SpecFld
- Custom
- Ending

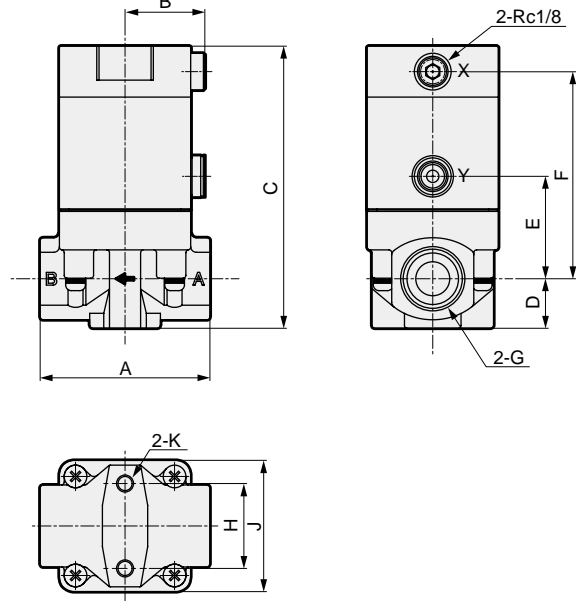
## Dimensions



### ● PPS body



### ● Stainless steel body

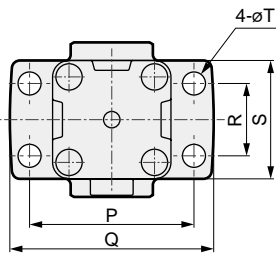


Model No.	A	B	C	D	E	F	G	H	J	K
LAD*-10A	47	23	77	14.5	25.5	55.5	Rc3/8	20	36	M5 depth 7
LAD*-15A	60	28	96.5	17.5	33	70	Rc1/2	30	46.5	M6 depth 8
LAD*-20A	75	35	114.5	22	40.5	83	Rc3/4	38	60	M6 depth 10
LAD*-25A	85	35	121.5	25.5	44	86.5	Rc1	38	60	M6 depth 10

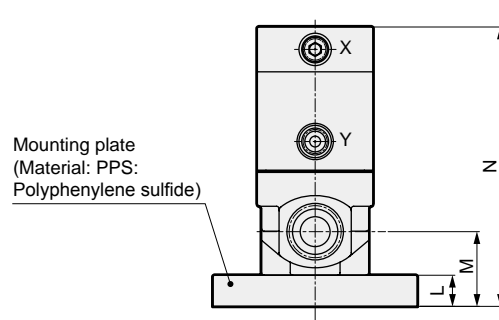
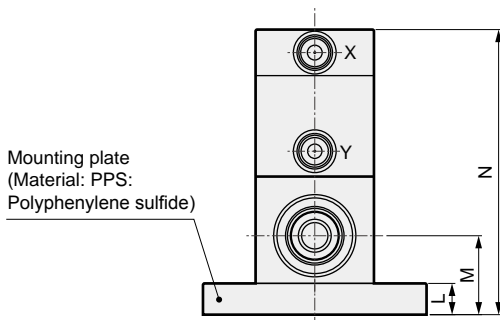
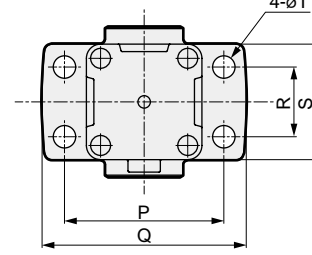
Model No.	A	B	C	D	E	F	G	H	J	K
LAD*-10A	47	23	80	14.5	28.5	58.5	Rc3/8	20	36	M5 depth 7
LAD*-15A	60	28	99.5	17.5	36	73	Rc1/2	30	46.5	M6 depth 8
LAD*-20A	75	35	117.5	22	43.5	86	Rc3/4	38	60	M6 depth 10
LAD*-25A	85	35	121.5	25.5	44	86.5	Rc1	38	60	M6 depth 10

## Optional dimensions

### ● Mounting plate (PPS body)



### ● Mounting plate (stainless steel body)

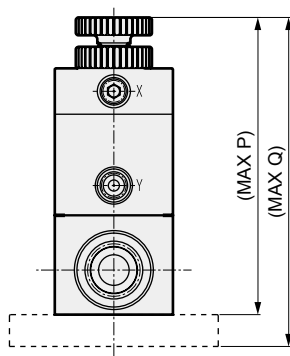


Model No.	L	M	N	P	Q	R	S	T
LAD*-10A	9.5	24	86.5	50	62	22	36	7
LAD*-15A	12.5	30	109	64	82	28	46.5	9
LAD*-20A	13	35	127.5	78	96	40	60	9
LAD*-25A	13	38.5	134.5	78	96	40	60	9

Model No.	L	M	N	P	Q	R	S	T
LAD*-10A	9.5	24	89.5	50	62	22	36	7
LAD*-15A	12.5	30	112	64	82	28	46.5	9
LAD*-20A	13	35	130.5	78	96	40	60	9
LAD*-25A	13	38.5	134.5	78	96	40	60	9

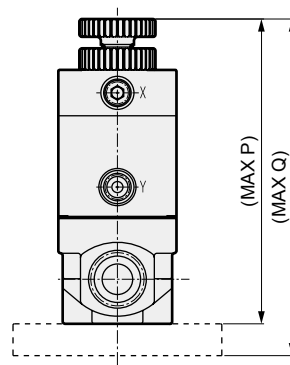
### Optional dimensions

#### ● With flow rate adjustment (PPS body)



Model No.	Q	
	no mounting plate	+mounting plate
LAD*-10A	102	111.5
LAD*-15A	120.5	133
LAD*-20A	145.5	158.5
LAD*-25A	152.5	165.5

#### ● With flow rate adjustment (stainless steel body)

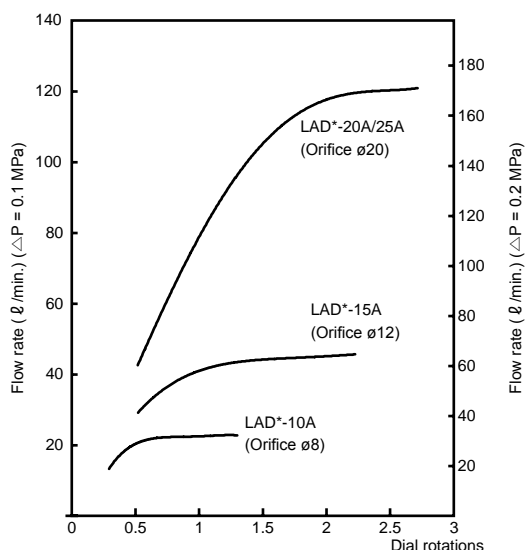


Model No.	Q	
	no mounting plate	+mounting plate
LAD*-10A	105	114.5
LAD*-15A	123.5	136
LAD*-20A	148.5	161.5
LAD*-25A	152.5	165.5

### Flow characteristics

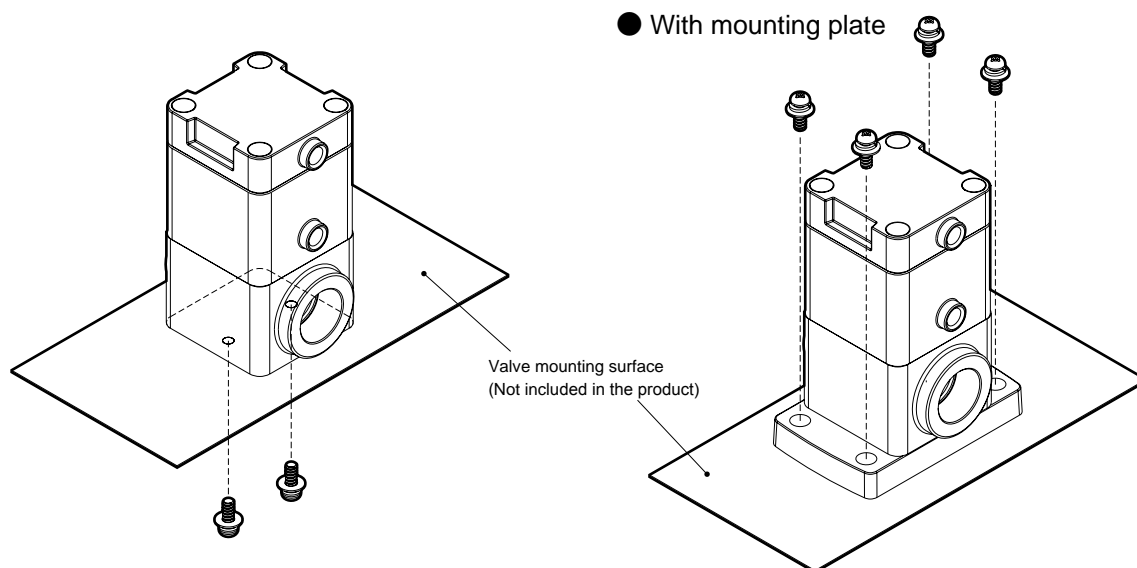
#### ● With flow rate adjustment (water)

##### Rotations - flow rate



\*1: During use, keep the adjusting dial open 1/4 or more rotation from the fully closed position for port size 10 A, and 1/2 or more rotation for other port sizes. If used below this level, vibration or flow rate fluctuation may occur depending on the working conditions.

### Mounting of product (example)



\*1 : Apply the recommended tightening torque (refer to the safety precautions).  
 \*2 : Mounting screws are not included in the product.

EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/AD
APK/ADK
DryAir
EX-XPLNprf
XPLNprf
HVB/HVL
S <sup>+</sup> B/NAB
LAD/NAD
Water-Rela
NP/NAP/NVP
SNP
CHB/G
MXB/G
Other valves
SWD/MWD
DustColl
CVE/CVSE
CCH/CPE/D
LifeSci
Gas-Combus
Auto-Water
Outdoor
SpecFld
Custom
Ending