

# Steam Valve: 2 Port Valve For Steam

## Series VND

2 Port Valve for Steam Max. 180°C

**By adopting of PTFE seal,  
the valve is suited for steam.**

Body material: Bronze, Stainless steel

**Large valve capacity**

### Wide variations

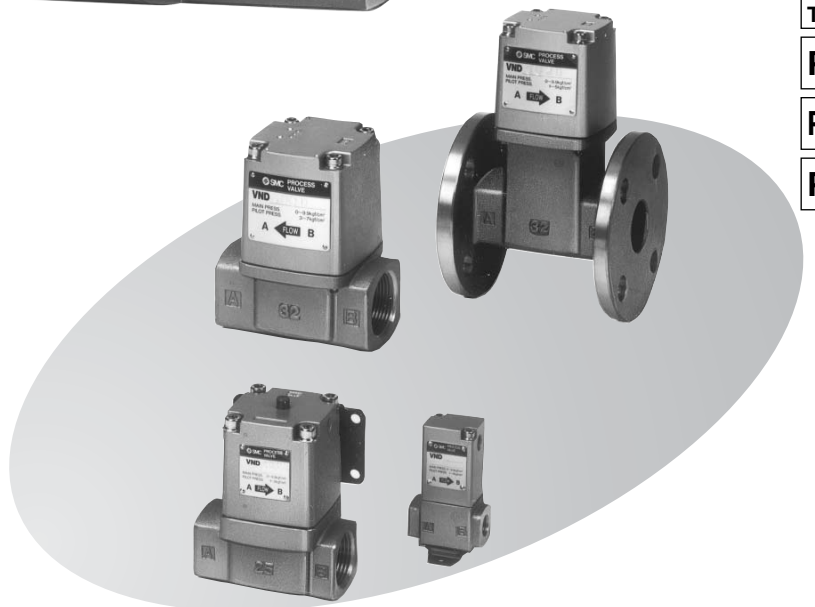
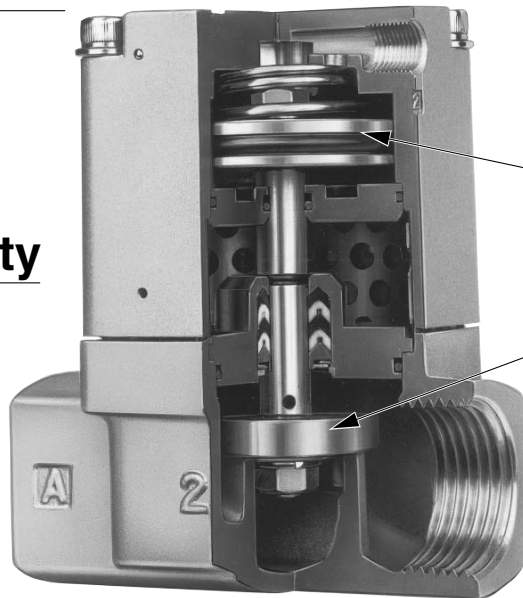
2 types — N.C., N.O.  
Threaded type (6A to 50A)  
Flange type (32F to 50F)

**With indicator light  
(Option)**

Possible to mount the operation confirmation indicator on all valves.

**Cylinder actuation  
by external pilot air**

**PTFE seal**



- VC
- VDW
- VQ
- VX2
- VX
- VX3
- VXA
- VN**
- LVC
- LVA
- LVH
- LVD
- LVQ
- LQ
- LVN
- TI/  
TIL
- PA
- PAX
- PB

# Series VND

## How to Order

**Air operated** VND 2 0  D S  15A

**Body option**

Nil	Standard
S*	Stainless steel body

\* Threaded type only

**Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

**Option**

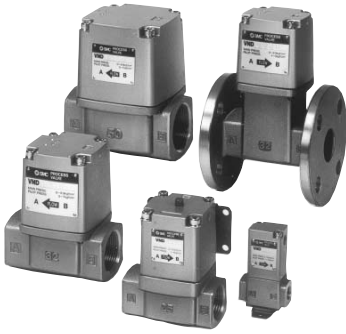
Nil	None
B*	With bracket (VN□-16)
L	With indicator light
BL*	With bracket and indicator light

\* Brackets (for valve size 1/2/3/4 only) will be assembled at the time of shipment.  
Bracket part no.  
Valve size 1: VN1-A16 (with thread)  
Valve size 2 to 4: VN□-16

**Valve size**      **Valve type**      **Port size**

Symbol	Orifice size (mm)	Symbol			Symbol	Port size Rc
		0 N.C.	2 N.O.	4 N.C.		
1	ø7	-	●	●	6A	1/8
		-	●	●	8A	1/4
		-	●	●	10A	3/8
2	ø15	●	●	-	10A	3/8
		●	●	-	15A	1/2
3	ø20	●	●	-	20A	3/4
4	ø25	●	●	-	25A	1
5	ø32	●	●	-	32A	1 1/4
		●	●	-	32F	1/4 B Flange
6	ø40	●	●	-	40A	1 1/2
		●	●	-	40F	1/2 B Flange
7	ø50	●	●	-	50A	2
		●	●	-	50F	2 B Flange

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### Model

Model	Port size		Orifice size ø (mm)	Flow characteristics Av x 10 <sup>-5</sup>	Weight (kg)
	Rc	Flange <small>Note</small>			
VND10□D-6A	1/8	—	7	26	0.3
VND10□D-8A	1/4	—		28	
VND10□D-10A	3/8	—		31	
VND20□D-10A	—	—	15	120	0.6
VND20□D-15A	1/2	—		130	
VND30□D-20A	3/4	—	20	240	0.9
VND40□D-25A	1	—	25	380	1.4
VND50□D-32A	1 1/4	—	32	440	2.3
VND50□D-32F	—	32			5.5
VND60□D-40A	1 1/2	—	40	920	3.6
VND60□D-40F	—	40			7.2
VND70□D-50A	2	—	50	1500	5.7
VND70□D-50F	—	50			10.8



Note) The companion flange is JIS B 2210 10K (standard) or its equivalent.

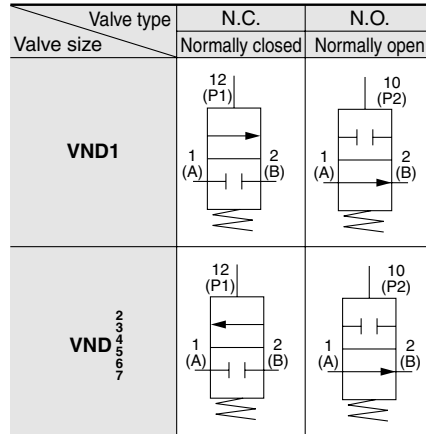
### Valve Specifications

Fluid		Steam	
Fluid temperature		-5 to 180°C *	
Ambient temperature		-5 to 60°C *	
Proof pressure		1.5 MPa	
Operating pressure range		0 to 0.97 MPa	
External pilot air	Pressure	N.C.	0.3 to 0.7 MPa
		N.O.	0.1 + 0.25 x (Operating pressure) to 0.25 + 0.25 x (Operating pressure) MPa Refer to below "Graph (1)".
	Temperature	Not required (Use turbine oil Class 1 ISO VG32, if lubricated.) -5 to 60°C *	

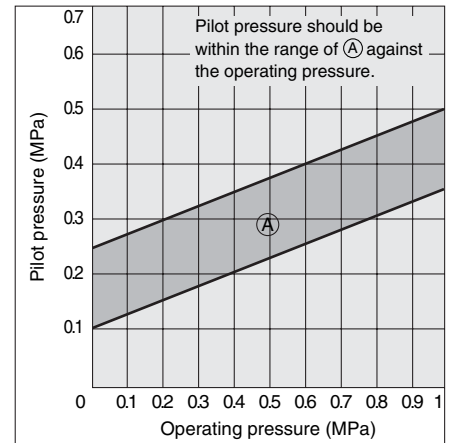


\* No freezing

### JIS Symbol



**Graph (1)**  
VND□ 02 D Pilot Pressure  
(N.O. type)



VC□

VDW

VQ

VX2

VX□

VX3

VXA

VN□

LVC

LVA

LVH

LVD

LVQ

LQ

LVN

TI/  
TIL

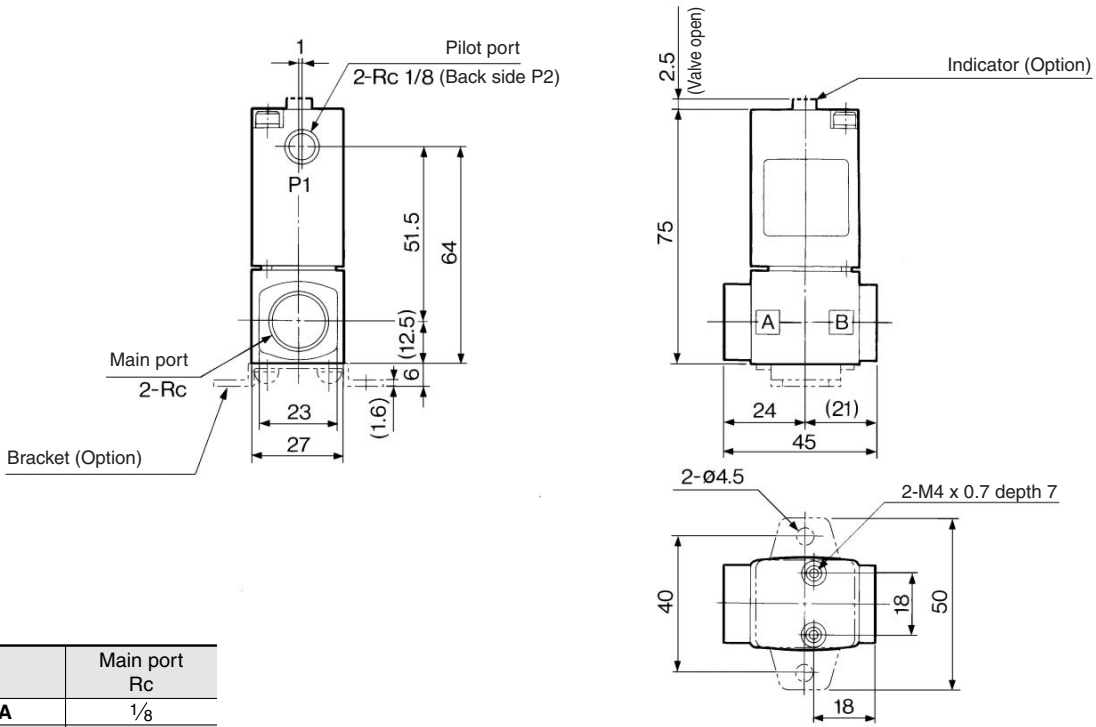
PA

PAX

PB

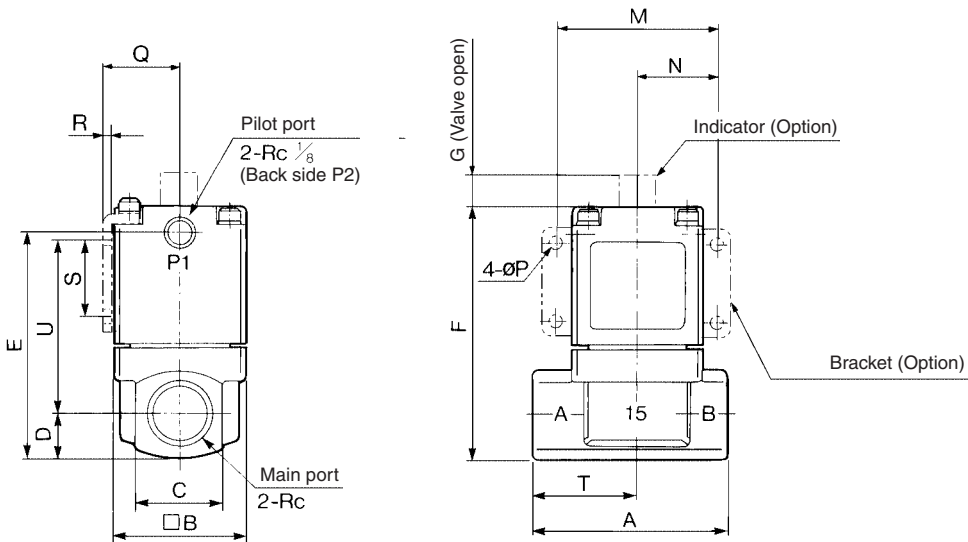
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## Port size 6A, 8A, 10A



Model	Main port Rc
VND10□D-6A	1/8
VND10□D-8A	1/4
VND10□D-10A	3/8

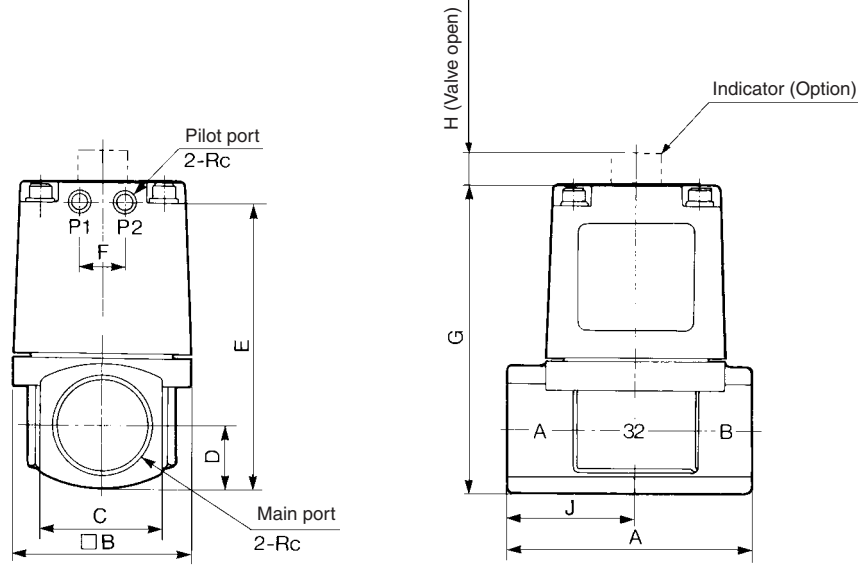
## Port size 10A, 15A, 20A, 25A



Model	Main port Rc	A	B	C	D	E	F	G	M	N	P	Q	R	S	T	U
VND20□D-10A	3/8	63	42	28	14	73.5	81.5	4	52	26	4.5	24.3	2.3	25	34	56
VND20□D-15A	1/2															
VND30□D-20A	3/4	80	50	35	17.5	85	93	5	62	31	5.5	28.3	2.3	30	43	61.5
VND40□D-25A	1	90	60	40	20	101	109	6	72	36	6.5	33.3	2.3	35	49	74

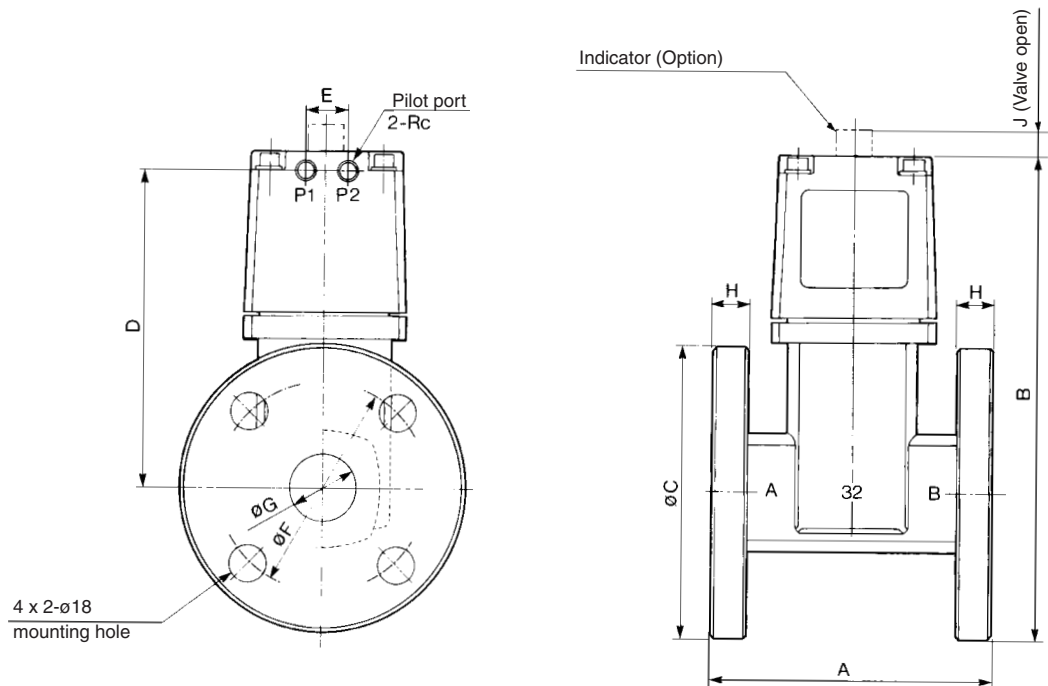
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## Port size 32A, 40A, 50A



Model	Main port Rc	Pilot port Rc	A	B	C	D	E	F	G	H	J
VND50□D-32A	1 1/4	1/8	105	77	53	26.5	121.5	20	130.5	8	55
VND60□D-40A	1 1/2	1/4	120	96	60	30	138	24	148	10	63
VND70□D-50A	2	1/4	140	113	74	37	161	24	171	12	74

## Port size Flange: 32F, 40F, 50F



Model	Applicable flange	Pilot port Rc	A	B	C	D	E	F	G	H	J
VND50□D-32F	32	1/8	130	211.5	135	135	20	100	36	12	8
VND60□D-40F	40	1/4	150	227	140	147	24	105	42	12	10
VND70□D-50F	50	1/4	180	251	155	163.5	24	120	54	14	12

- VC□
- VDW
- VQ
- VX2
- VX□
- VX3
- VXA
- VN□
- LVC
- LVA
- L VH
- LVD
- LVQ
- LQ
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# Series VND

## ⚠ Precautions

Be sure to read before handling.  
Refer to page 17-6-3 for Safety Instructions and Solenoid Valve Precautions.

### External Pilot

#### ⚠ Caution

##### Piping of pilot port (P1, P2)

P1 and P2 piping should be as follows according to the model.

Port	VND□□□□D	VND□□02D
P1	External pilot	Bleed port
P2	Bleed port	External pilot

Installing a silencer to the exhaust port and the bleed port is recommended for noise reduction and for dust entry prevention.

### Piping

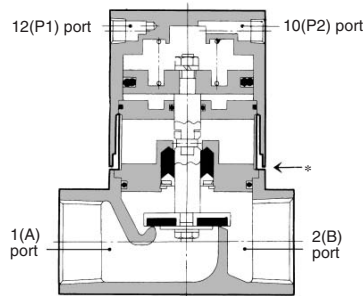
#### ⚠ Caution

To use the piping with a high temperature fluid, use heat resistant fittings and tubing (Self-align fittings, Teflon® tubing or Copper piping, etc.). Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.

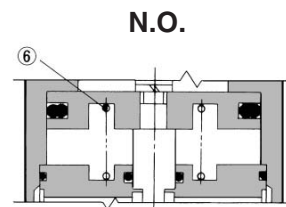
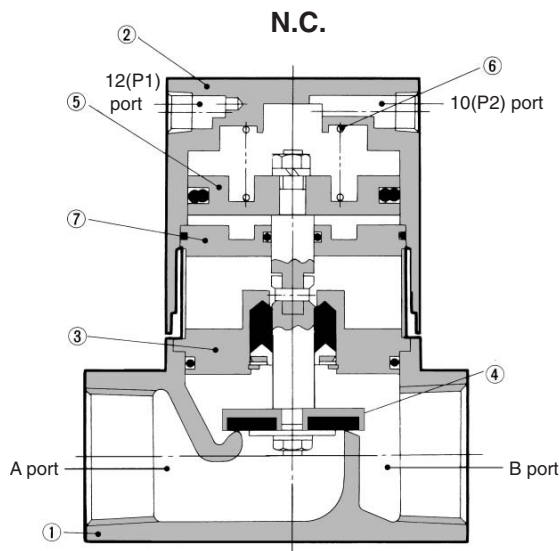
### Adiabatic Space

#### ⚠ Caution

There is a space between body and cover (\*: approximate 1 mm) for adiabatic effect.



## Construction



### Component Parts

No.	Description	Material	Note
①	Body	Bronze*	Clear coated
②	Cover assembly	Aluminum alloy	Platinum silver painted
③	Plate assembly	Brass*	PTFE, EPR, FKM
④	Valve element	Brass*, PTFE	—
⑤	Piston assembly	Aluminum alloy	—
⑥	Return spring	Piano wire	—
⑦	Second plate assembly	Aluminum alloy	—



\* Body option S is made of stainless steel.

### Working Principle

#### VND□□□□ (N.C.)

When fluid is exhausted from the P1 port, the valve ④ connected with the piston ⑤ is closed by the return spring ⑥.

##### • When valve opens

When pressurized air enters through the P1 port, the valve piston moves upward by the pilot air that enters below the piston and the valve element opens.

##### • When valve closes

When fluid is exhausted from the P1 port, the pilot air below the piston is exhausted and the valve element is closed by the return spring.

#### VND□□02□ (N.O.)

In contrast with the N.C., when air is exhausted from the P2 port, the return spring opens the valve element. Pressurized air that enters through the P2 port closes the valve element.