

Pilot operated 2-port valve for dust collector control  
(Large port size dust collector valve)

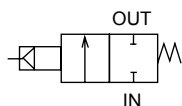
# PD3/PDV3-20A/25A/40A Series

- Air operated/with solenoid valve
- Port size: Rc3/4, Rc1, IN: Rc1<sup>1</sup>/<sub>2</sub>-OUT: φ48, Rc1<sup>1</sup>/<sub>2</sub>

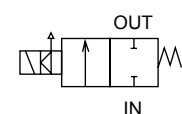


## JIS symbol

- PD3 (Air operated)



- PDV3 (With solenoid valve)



## Common specifications

Descriptions	Air operated		With solenoid valve	
	PD3		PDV3	
Working fluid	Air (no corrosive gas)			
Min. working pressure differential MPa	0.1 (≈15 psi, 1 bar)			
Max. working pressure differential MPa	0.7 (≈100 psi, 7 bar)			
Max. working pressure MPa	0.7 (≈100 psi, 7 bar)			
Proof pressure (water pressure) MPa	2.0 (≈290 psi, 20 bar)			
Fluid temperature °C	-10 (14°F) to 60 (140°F), -10 (14°F) to 100 (212°F) for fluoro rubber seal (no freezing)			
Ambient temperature °C	-10 (14°F) to 60 (140°F), -10 (14°F) to 100 (212°F) for fluoro rubber seal			
Atmosphere	Place free of corrosive gas and explosive gas			
Valve structure	Pilot operated poppet structure			
Valve seat leakage cm <sup>3</sup> /min	300 or less, urethane rubber used for sealant material: 50 or less			
Pilot port size	Rc1/8			
Mounting orientation	Unrestricted			
Working environment	Indoors/outdoors		Indoors	
<b>Electrical specifications</b>	<b>PDV3</b>			
Rated voltage	100 VAC (50/60 Hz)/110 VAC (60 Hz), 200 VAC (50/60 Hz)/220 VAC (60 Hz), 12 VDC, 24 VDC			
Voltage fluctuation range	-10 to +10% of rated voltage			
Apparent power (VA)	Holding	7.5(50 Hz), 5.5(60 Hz)		
	Starting	20(50 Hz), 17(60 Hz)		
Power consumption (W)	AC	4.0(50 Hz), 3.4(60 Hz)		
	DC	6.5		
Thermal class	Class 130 (B) (coil option 4A: Class 180 (H) or equivalent)			
Degree of protection	IP65 or equivalent (*1)			

\*1 : The T type terminal box is IP61 or equivalent.

## Individual specifications

Descriptions	Port size	Orifice size (mm)	Cv	Weight (kg)
<b>Model No.</b>				
● Air operated				
PD3-20A	Rc3/4	23	11	0.26
PD3-25A	Rc1	28	18	0.40
PD3-40A	IN:Rc1 <sup>1</sup> / <sub>2</sub> - OUT: <sup>O.D. φ48</sup> <sub>Length 52</sub>	37	45	0.86
PD3-40A-RC	Rc1 <sup>1</sup> / <sub>2</sub>	37	45	0.75
● With solenoid valve				
PDV3-20A	Rc3/4	23	11	0.41
PDV3-25A	Rc1	28	18	0.55
PDV3-40A	IN:Rc1 <sup>1</sup> / <sub>2</sub> - OUT: <sup>O.D. φ48</sup> <sub>Length 52</sub>	37	45	1.01
PDV3-40A-RC	Rc1 <sup>1</sup> / <sub>2</sub>	37	45	0.90

\*1 : For a solenoid valve for driving the air operated PD3, use FAB31-6-3 (page 52), AB31-01-3 (page 154), AB41E4-02-3-03T (explosion proof, page 382) or PJV3 (page 796).

\*2 : The combination of PD3 and PJV3 is recommended for outdoors.

\*3 : Contact CKD when using as a dust collector for ash treatment or combustion gas at a waste incinerator.

## How to order

● Air operated

**PD3** - **20A** - **N**

● With solenoid valve

**PDV3** - **20A** - **N** **2C** - **AC100V**

Model No.

**A** Port size

\*2

\*3

**B** Sealant

\*3

\*4

\*5

**C** Coil option

\*5

\*6

**D** Voltage

\*6

\*7

[Example of model No.]

**PDV3-20A-2C-AC100V**

Model : PDV3

**A** Port size : Rc3/4

**B** Sealant : Urethane rubber

**C** Coil option : Grommet lead wire

**D** Voltage : 100 VAC(50/60 Hz)/110 VAC(60 Hz)

Code		Content	Model No.	
			PD3	PDV3
<b>A Port size</b>				
<b>20A</b>		Rc3/4	●	●
<b>25A</b>		Rc1	●	●
<b>40A</b>		IN: Rc1½, OUT: O.D. φ48, length 52	●	●
<b>40A-RC</b>		Rc1½	●	●
<b>B Sealant</b>				
<b>Blank</b>		Urethane rubber	●	●
<b>N</b>		Nitrile rubber	●	●
<b>F</b>		Fluoro rubber	●	●
<b>C Coil option</b>				
<b>2C</b>	Std.	Grommet lead wire		●
<b>2CS</b>		Grommet lead wire with surge suppressor		●
<b>2E</b>		With DIN terminal box (G1/2)		●
<b>2ES</b>		With DIN terminal box/surge suppressor (G1/2)		●
<b>2G</b>		With DIN terminal box (Pg11)		●
<b>2H</b>		DIN terminal box/with lamp (Pg11)		●
<b>2HS</b>		DIN terminal box with lamp/surge suppressor (Pg11)		●
<b>2CG</b>	Option	Conduit (CTC19)		●
<b>2CH</b>		Conduit (G1/2)		●
<b>3T</b>		With T type terminal box (G1/2)		●
<b>3R</b>		T type terminal box with lamp (G1/2)		●
<b>3RS</b>		T type terminal box with lamp/surge suppressor (G1/2)		●
<b>4A</b>		Grommet lead wire (thermal class H or equivalent)		●
<b>D Voltage</b>				
<b>AC100V</b>		100 VAC(50/60 Hz)/110 VAC(60 Hz)		●
<b>AC200V</b>		200 VAC(50/60 Hz)/220 VAC(60 Hz)		●
<b>DC24V</b>		24 VDC		●
<b>DC12V</b>		12 VDC		●

\*1 : The combinations indicated with ● above are available.

\*2 : Pipe plug-in method is available for 20A. Contact CKD. (Custom order product)

\*3 : Item **B** Blank (sealant material: urethane rubber) is not available when port size is 40A or 40A-RC.

\*4 : When Item **B** is N or F (sealant material: nitrile rubber or fluoro rubber), the main valve material is nylon resin.

\*5 : For PDV3 Series, when Item **B** is F (sealant material: fluoro rubber), only 4A is available for Item **C** (coil option).

\*6 : When Item **C** (coil option) is 4A, only AC voltage is available.

\*7 : For voltages other than above, contact CKD.

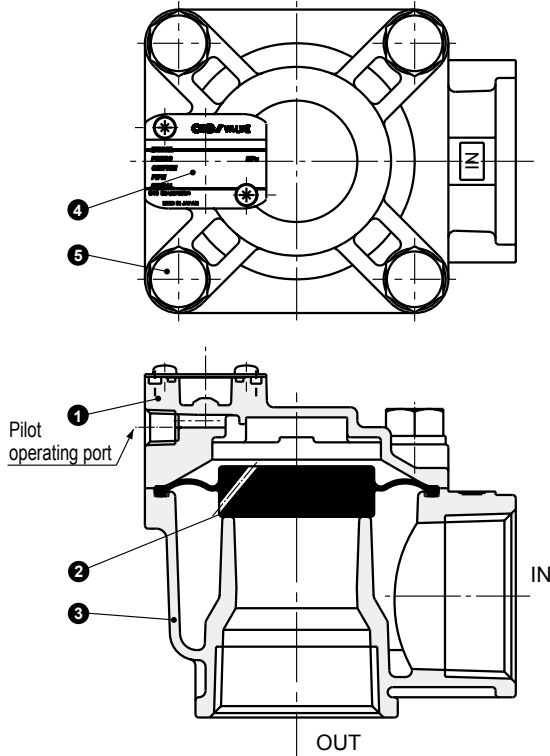
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/AD
APK/ADK
DryAir
EX-XPLNprf
XPLNprf
HVB/HVL
SAB/NAB
LAD/NAD
Water-Rela
NP/NAP/NVP
SNP
CHB/G
MXB/G
Other valves
SWD/MWD
DustColl
CVE/CVSE
CCH/CPE/D
LifeSci
Gas-Combus
Auto-Water
SpecFld
Custom
Ending

# PD3/PDV3 Series

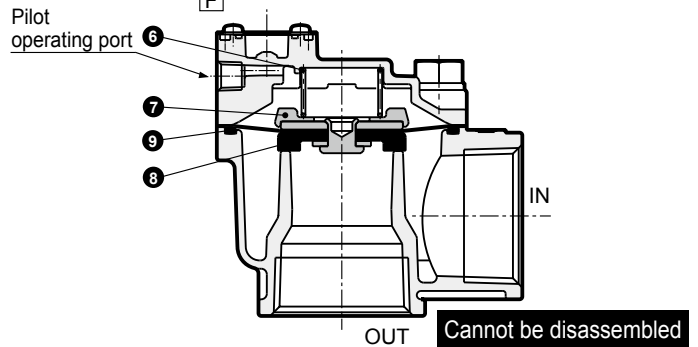
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/  
AD
- APK/  
ADK
- DryAir
- EX-  
XPLNprf
- XPLNprf
- HVB/  
HVL
- SAB/  
NAB
- LAD/  
NAD
- Water-  
Rela
- NP/NAP/  
NVP
- SNP
- CHB/G
- MXB/G
- Other  
valves
- SWD/  
MWD
- DustColl
- CVE/  
CVSE
- CCH /  
CPE/D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

## Internal structure and parts list: Air operated

● Sealant material: Urethane rubber  
PD3-20A/25A



● Sealant material: Nitrile rubber/fluoro rubber  
PD3-20A/25A/40A-NF \*1  
PD3-40A-RC-NF

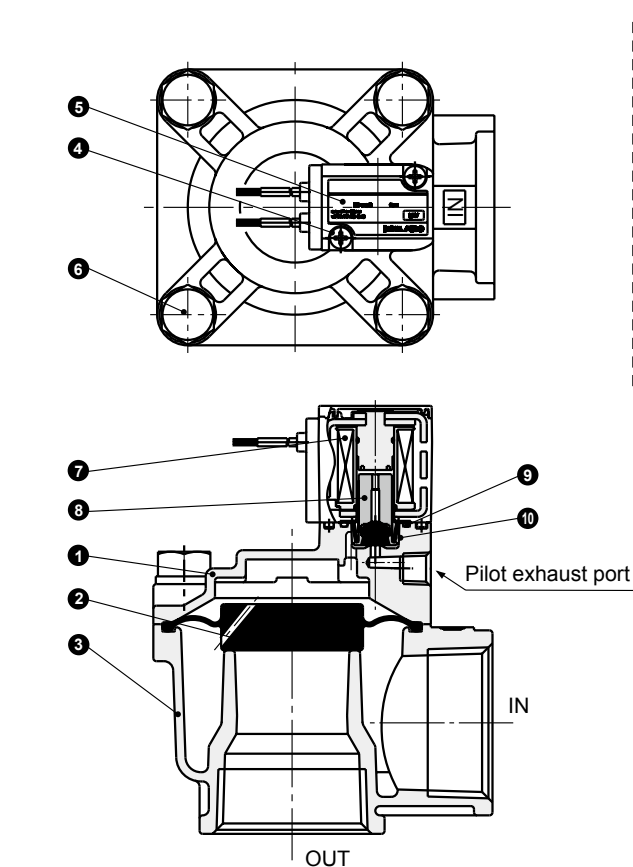


\*1 : The shape of 40A body is different from the figure above.

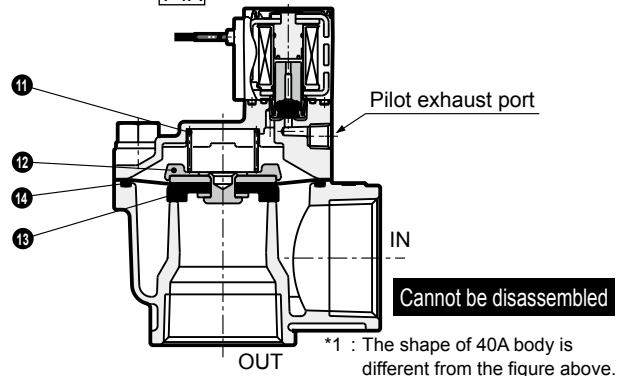
No.	Part name	Material
1	Cover	ADC12 Aluminum die-casting
2	Diaphragm	U Urethane rubber
3	Body	ADC12 Aluminum die-casting
4	Nameplate	A1200P Aluminum
5	Hexagon head bolt	SUSXM7 Stainless steel
6	Spring	SUS304 Stainless steel
7	Spacer	PA Nylon resin
8	Diaphragm assembly	SUS304, PA Stainless steel, nylon resin NBR or FKM Nitrile rubber or fluoro rubber
9	O-ring	NBR or FKM Nitrile rubber or fluoro rubber

## Internal structure and parts list: With solenoid valve

● Sealant material: Urethane rubber  
PDV3-20A/25A-2C (Grommet lead wire)



● Sealant material: Nitrile rubber/fluoro rubber  
PDV3-20A/25A/40A-N2C \*1  
PDV3-40A-RC-N2CF4A



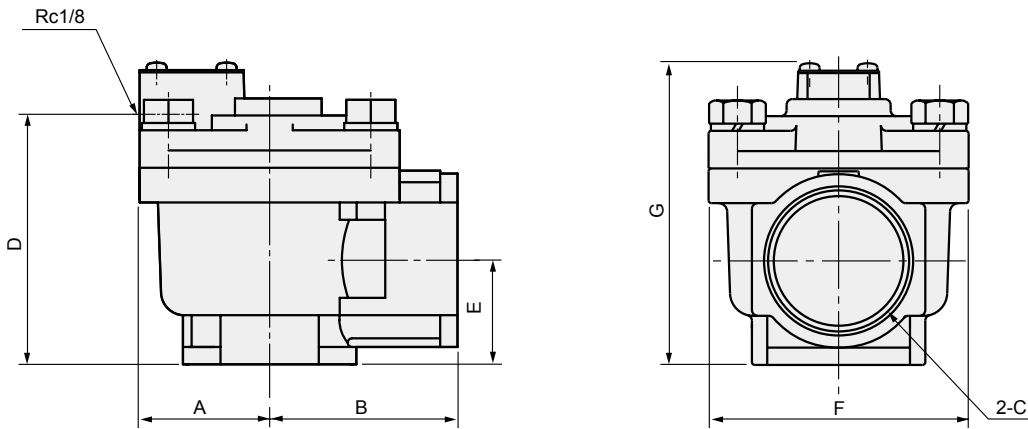
\*1 : The shape of 40A body is different from the figure above.

No.	Part name	Material
1	Cover	ADC12 Aluminum die-casting
2	Diaphragm	U Urethane rubber
3	Body	ADC12 Aluminum die-casting
4	Phillips pan head machine screw, captive spring washer	SWRM Carbon steel wire for cold rolling
5	Nameplate	PET Polyethylene terephthalate
6	Hexagon head bolt	SUSXM7 Stainless steel
7	Coil assembly	Class B molded coil
8	Plunger assembly	K-M31, NBR or FKM Stainless steel/nitrile rubber or fluoro rubber
9	O-ring	NBR or FKM Nitrile rubber or fluoro rubber
10	Plunger spring	SUS304 Stainless steel
11	Spring	SUS304 Stainless steel
12	Spacer	PA Nylon resin
13	Diaphragm assembly	SUS304, PA Stainless steel, nylon resin NBR or FKM Nitrile rubber or fluoro rubber
14	O-ring	NBR or FKM Nitrile rubber or fluoro rubber

## Dimensions: PD3 Series

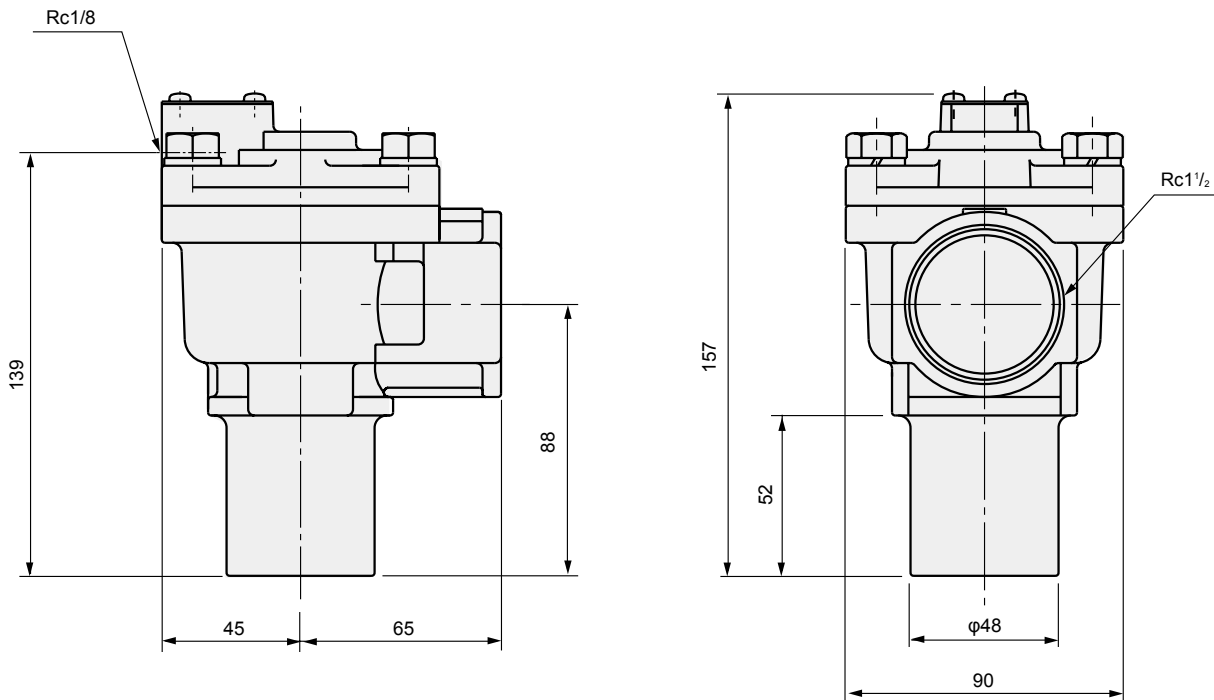


- Air operated  
PD3-20A/25A  
PD3-40A-RC



Model No.	A	B	C	D	E	F	G
PD3-20A	31.5	40	Rc3/4	64	31	60	83
PD3-25A	37.5	45	Rc1	76	39	71	95
PD3-40A-RC	45	65	Rc1 1/2	86	36	90	105

- Air operated  
PD3-40A



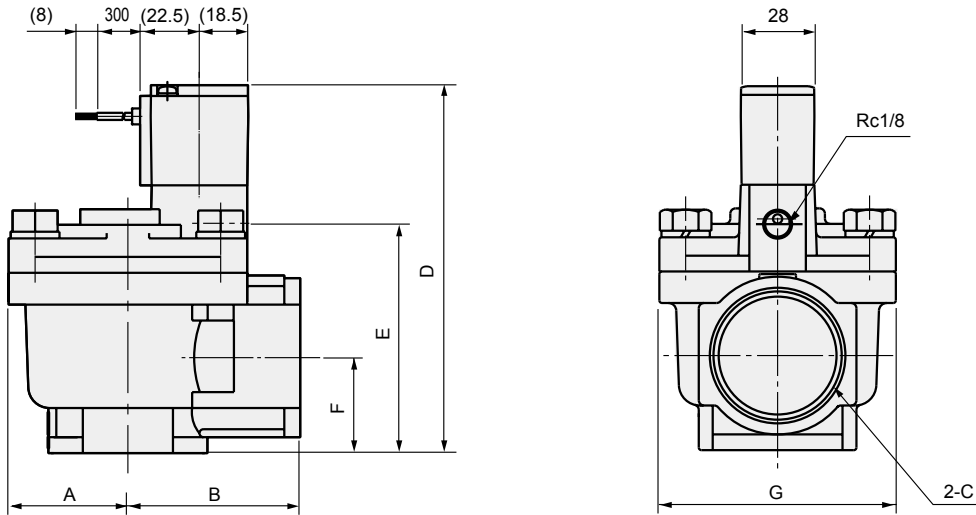
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/  
AD
- APK/  
ADK
- DryAir
- EX-  
XPLNprf
- XPLNprf
- HVB/  
HVL
- S◇B/  
NAB
- LAD/  
NAD
- Water-  
Rela
- NP/NAP/  
NVP
- SNP
- CHB/G
- MXB/G
- Other  
valves
- SWD/  
MWD
- DustColl
- CVE/  
CVSE
- CCH /  
CPE/D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

# PD3/PDV3 Series



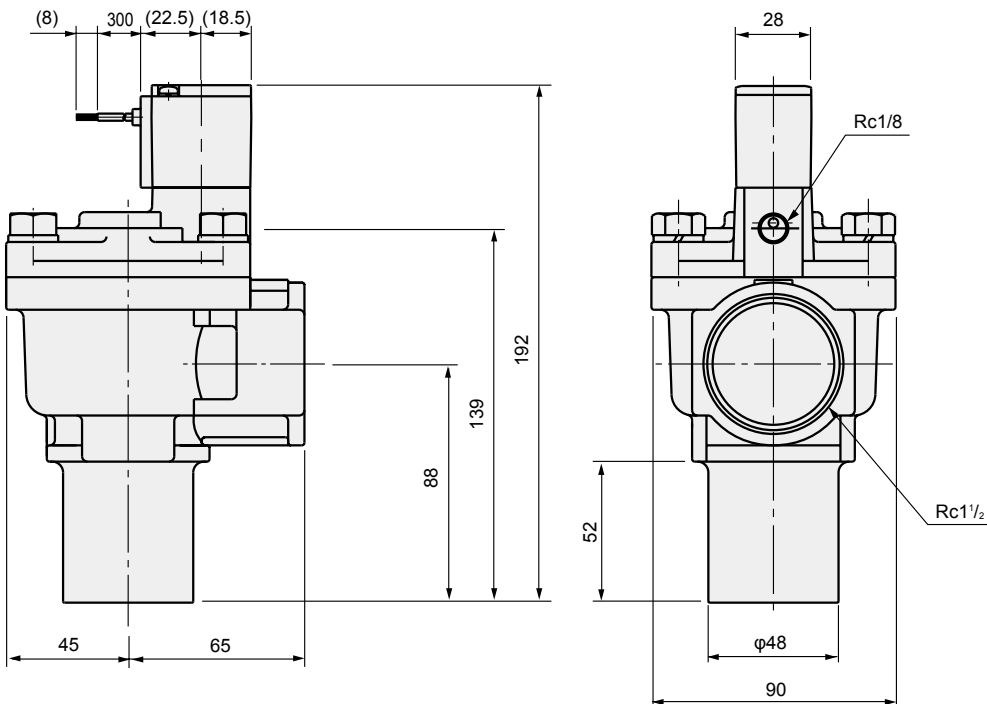
## Dimensions: PDV3 Series

- Grommet lead wire with solenoid valve  
PDV3-20A/25A-2C  
PDV3-40A-RC



Model No.	A	B	C	D	E	F	G
PDV3-20A	31.5	40	Rc3/4	117	64	31	60
PDV3-25A	37.5	45	Rc1	129	76	39	71
PDV3-40A-RC	45	65	Rc1½	140	87	36	90

- Grommet lead wire with solenoid valve  
PDV3-40A-2C

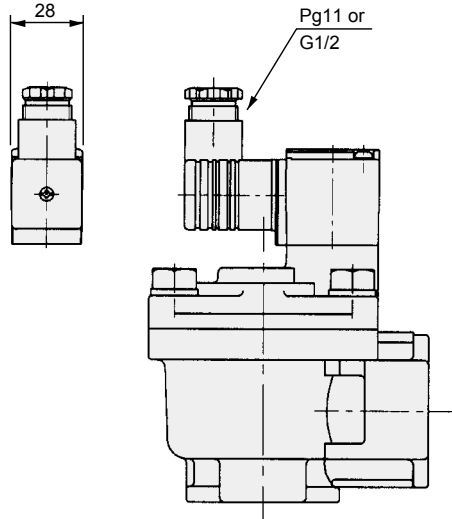


## Optional dimensions



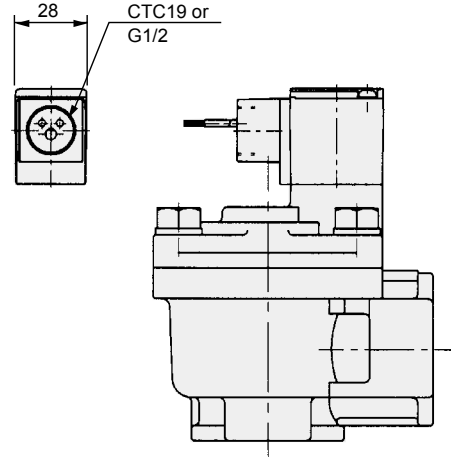
- DIN terminal box (with lamp/surge suppressor)  
DIN terminal box with lamp

PDV3-\*  
2E/2ES  
2G  
2H/2HS



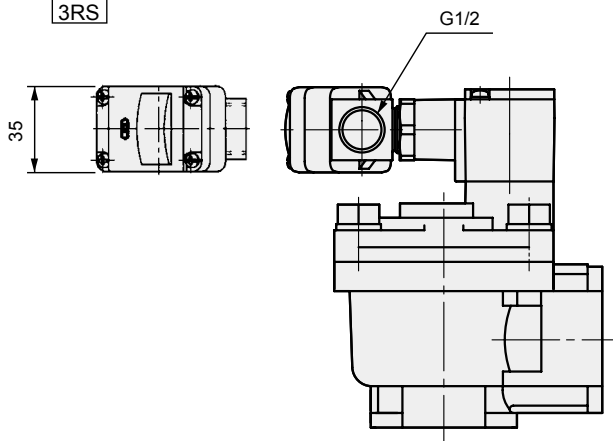
- Conduit (CTC19 / G1/2)

PDV3-\*  
2CG  
2CH



- T type terminal box (G1/2) (with lamp/surge suppressor)  
T type terminal box with lamp (G1/2)

PDV3-\*  
3T  
3R  
3RS



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 $\nabla$ 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
SpecFld
Custom
Ending



Large bore size pilot operated 2-port valve for dust collector control  
(Large port size dust collector valve)

# PD3/PDV3-65A/80A Series

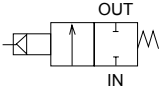
- Air operated/with solenoid valve
- Port size: Rc2<sup>1</sup>/<sub>2</sub>, Rc3



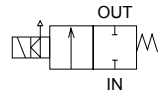
EXA  
FWD  
HNB/G  
USB/G  
FAB/G  
FGB/G  
FVB  
FWB/G  
FHB  
FLB  
AB  
AG  
AP/  
AD  
APK/  
ADK  
DryAir  
EX-  
XPLNprf  
XPLNprf  
HVB/  
HVL  
SAB/  
NAB  
LAD/  
NAD  
Water-  
Rela  
NP/NAP/  
NVP  
SNP  
CHB/G  
MXB/G  
Other  
valves  
SWD/  
MWD  
DustColl  
CVE/  
CVSE  
CCH /  
CPE/D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

## JIS symbol

- PD3 (air operated)



- PDV3 (with solenoid valve)



## Common specifications

Descriptions	Air operated	
	PD3	With solenoid valve PDV3
Working fluid	Air (no corrosive gas)	
Min. working pressure differential MPa	0.2 (≈29 psi, 2 bar)	
Max. working pressure differential MPa	0.8 (≈120 psi, 8 bar)	
Max. working pressure MPa	0.8 (≈120 psi, 8 bar)	
Proof pressure (water pressure) MPa	1.5 (≈220 psi, 15 bar)	
Fluid temperature °C	-10 (14°F) to 60 (140°F) (no freezing)	
Ambient temperature °C	-10 (14°F) to 60 (140°F)	
Atmosphere	Place free of corrosive gas and explosive gas	
Valve structure	Pilot operated poppet structure	
Valve seat leakage cm <sup>3</sup> /min	300 or less	
Pilot port size	Rc1/4	-
Mounting orientation	Unrestricted	
Working environment	Indoors/outdoors	Indoors
<b>Electrical specifications PDV3</b>		
Rated voltage	100 VAC(50/60 Hz)/110 VAC(60 Hz), 200 VAC(50/60 Hz), 220 VAC(50/60 Hz)	
Voltage fluctuation range	-10 to +10% of rated voltage	
Apparent power (VA)	Holding	7.5(50 Hz), 5.5(60 Hz)
	Starting	20(50 Hz), 17(60 Hz)
Power consumption (W) AC	4.0(50 Hz), 3.4(60 Hz)	
Thermal class	Class 130 (B)	
Degree of protection	IP65 or equivalent	

\*1 : Use PJVB-8-5 as a solenoid valve for driving the air operated PD3.

\*2 : Contact CKD when using as a dust collector for ash treatment or combustion gas at a waste incinerator.

\*3 : The combination of PD3 and PJVB-8-5 is recommended for outdoors.

## Individual specifications

Descriptions	Port size	Orifice size (mm)	Cv	Weight (kg)
<b>Model No.</b>				
● Air operated				
PD3-65A	Rc2 <sup>1</sup> / <sub>2</sub>	68	100	3.2
PD3-80A	Rc3	82	155	4.6
● With solenoid valve				
PDV3-65A	Rc2 <sup>1</sup> / <sub>2</sub>	68	100	3.4
PDV3-80A	Rc3	82	155	4.8

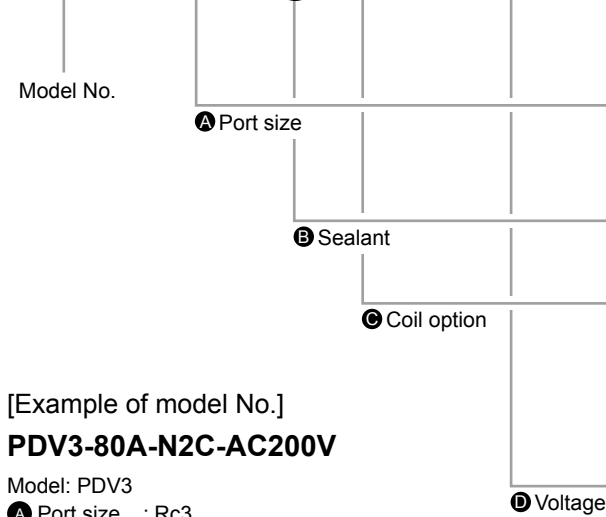
### How to order

- Air operated

**PD3 - 80A - N**

- With solenoid valve

**PDV3 - 80A - N 2C - AC200V**



[Example of model No.]

**PDV3-80A-N2C-AC200V**

Model: PDV3

- **A** Port size : Rc3
- **B** Sealant : Nitrile rubber
- **C** Coil option : Grommet lead wire
- **D** Voltage : 200 VAC(50/60 Hz)

		Model No.	
Code	Content	PD3	PDV3
<b>A Port size</b>			
65A	Rc2½	●	●
80A	Rc3	●	●
<b>B Sealant</b>			
N	Nitrile rubber	●	●
<b>C Coil option</b>			
2C	Standard Grommet lead wire		●
2E	Option With DIN terminal box (G1/2)		●
2G		With DIN terminal box (Pg11)	●
2H		DIN terminal box/with lamp (Pg11)	●
<b>D Voltage</b>			
AC100V	100 VAC(50/60 Hz), 110 VAC(60 Hz)		●
AC200V	200 VAC(50/60 Hz)		●
AC220V	220 VAC(50/60 Hz)		●

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
SAB/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
SpecFld
Custom
Ending

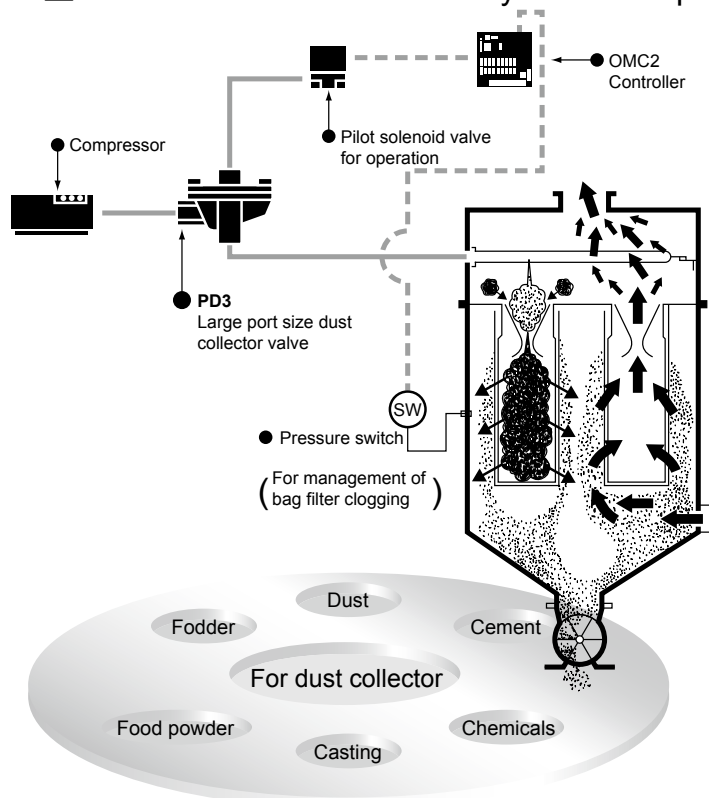
## Features

### (1) Large flow rate

Port sizes 65A and 80A added to the PD3/PDV3 Series.

### (2) RoHS compliant

## Dust collector valve control system example



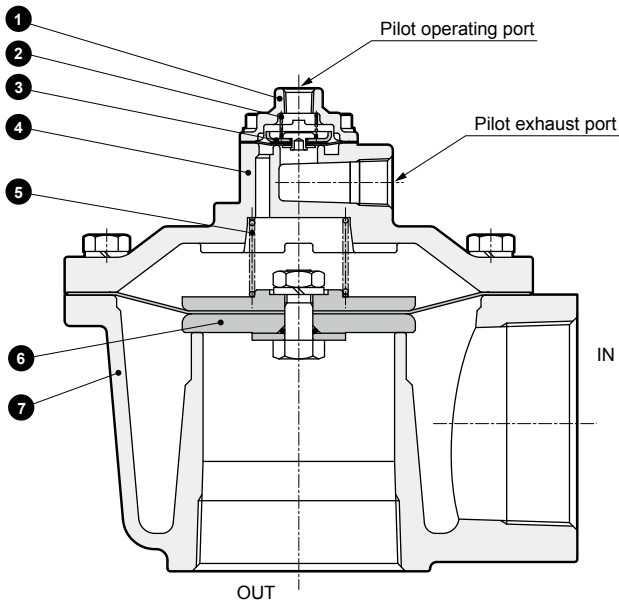


# PD3/PDV3-65A/80A Series

- 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 $\hat{\Delta}$ 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
- SpecFld
- Custom
- Ending

## Internal structure and parts list: Air operated

- Sealant material: Nitrile rubber
- PD3-65A/80A-N



**Cannot be disassembled**

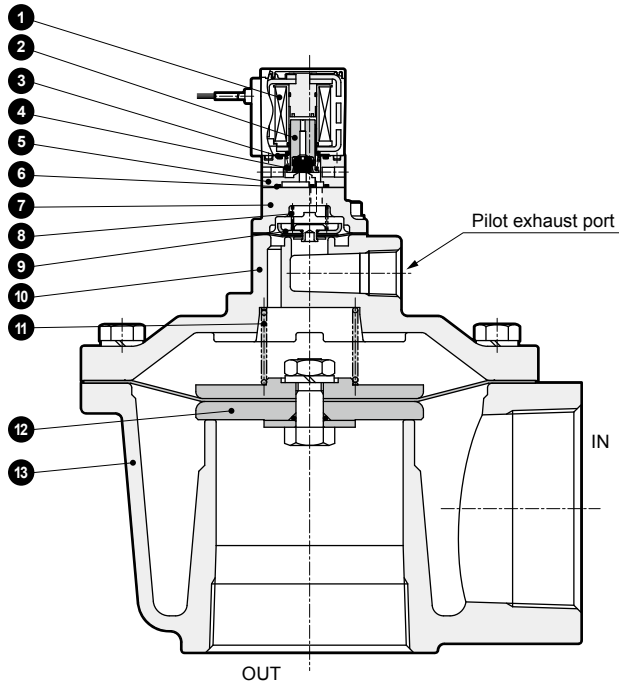
No.	Part name	Material
1	Cap	ADC12 Aluminum die-casting
2	Pilot spring	SUS304 Stainless steel
3	Pilot diaphragm assembly	SUS304,NBR: Stainless steel, nitrile rubber PTFE: Tetrafluoroethylene resin
4	Body	AC4C Aluminum casting
5	Mainspring	SUS304 Stainless steel
6	Main diaphragm assembly	SUS304,A2017: Stainless steel, aluminum NBR,PA: Nitrile rubber, nylon resin
7	Body	AC4C Aluminum casting

# PD3/PDV3-65A/80A Series

Internal structure and parts list

## Internal structure and parts list: With solenoid valve

- Sealant material: Nitrile rubber
- PDV3-65A/80A-N



**Cannot be disassembled**

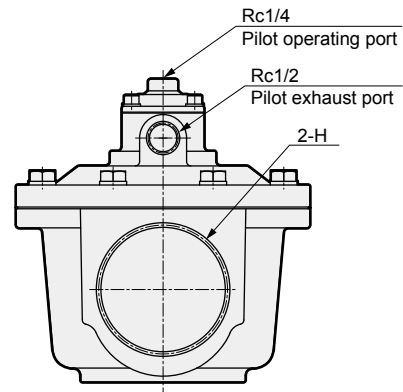
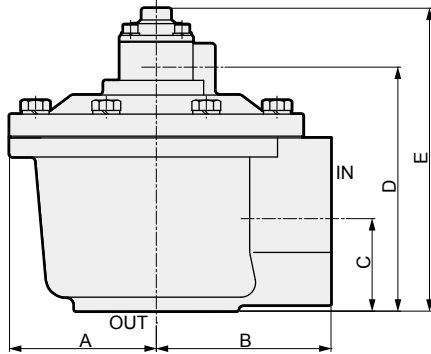
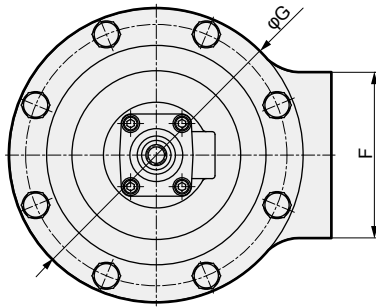
No.	Part name	Material
1	Coil assembly	Class B molded coil
2	Plunger assembly	K-M31,NBR; Stainless steel, nitrile rubber PET; Polyethylene terephthalate
3	O-ring	NBR; Nitrile rubber
4	Plunger spring	SUS304; Stainless steel
5	Body	PPS; Polyphenylene sulfide
6	Gasket	NBR; Nitrile rubber
7	Cap	AC4C; Aluminum casting
8	Pilot spring	SUS304; Stainless steel
9	Pilot diaphragm assembly	SUS304,NBR; Stainless steel, nitrile rubber, PTFE; tetrafluoroethylene resin
10	Body	AC4C; Aluminum casting
11	Mainspring	SUS304; Stainless steel
12	Main diaphragm assembly	SUS304,A2017; Stainless steel, aluminum NBR,PA; Nitrile rubber, nylon resin
13	Body	AC4C; Aluminum casting

- 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-  
Combus
- Auto-  
Water
- SpecFld
- Custom
- Ending

# PD3/PDV3-65A/80A Series

## Dimensions: PD3 Series

- Air operated
- PD3-65A/80A-N



Model No.	A	B	C	D	E	F	G	H
PD3-65A-N	92	117.5	48	141	181	92	φ184	Rc2 <sup>1</sup> / <sub>2</sub>
PD3-80A-N	100	119	63	166	206	110	φ200	Rc3

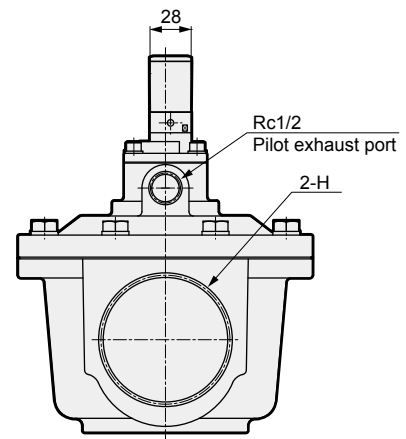
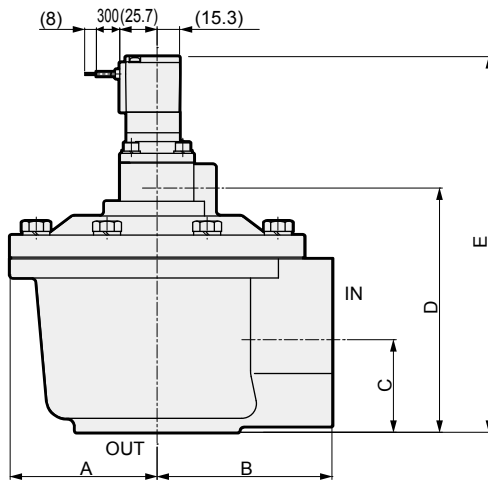
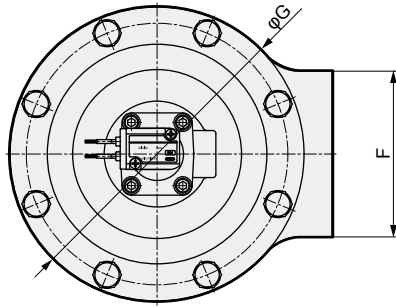
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/  
AD
- APK/  
ADK
- DryAir
- EX-  
XPLNprf
- XPLNprf
- HVB/  
HVL
- S<sup>Δ</sup>B/  
NAB
- LAD/  
NAD
- Water-  
Rela
- NP/NAP/  
NVP
- SNP
- CHB/G
- MXB/G
- Other  
valves
- SWD/  
MWD
- DustColl
- CVE/  
CVSE
- CCH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

# PD3/PDV3-65A/80A Series

## Dimensions

### Dimensions

- Grommet lead wire with solenoid valve
- PDV3-65A/80A-N2C

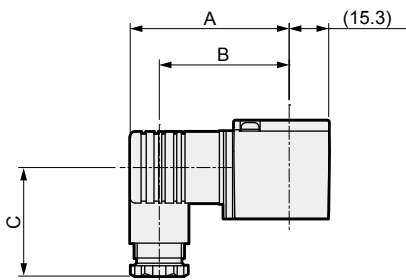


Model No.	A	B	C	D	E	F	G	H
PDV3-65A-N	92	117.5	48	141	230	92	φ184	Rc2 1/2
PDV3-80A-N	100	119	63	166	256	110	φ200	Rc3

### Optional dimensions

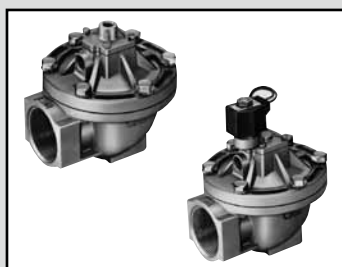
- DIN terminal box (with lamp)
- PDV3-65A/80A-N

2E  
2G  
2H



Model No.	A	B	C	D
PDV3-65A/80A-N2E	62.7	51.2	45	G1/2
PDV3-65A/80A-N2G	61.7	50.2	39	Pg11
PDV3-65A/80A-N2H	61.7	50.2	39	Pg11

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- Combus
Auto- Water
SpecFld
Custom
Ending



Pilot operated 2-port valve for dust collector control  
(Large port size dust collector valve)

# PD2/PDV2 Series

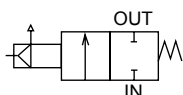
- Air operated/with solenoid valve
- Port size: Rc2



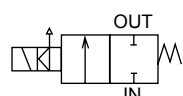
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/  
AD
- APK/  
ADK
- DryAir
- EX-  
XPLNprf
- XPLNprf
- HVB/  
HVL
- S $\Delta$ B/  
NAB
- LAD/  
NAD
- Water-  
Rela
- NP/NAP/  
NVP
- SNP
- CHB/G
- MXB/G
- Other  
valves
- SWD/  
MWD
- DustColl
- CVE/  
CVSE
- CCH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

## JIS symbol

- PD2 (Air operated)



- PDV2 (With solenoid valve)



## Specifications

Descriptions	Air operated	
	PD2-50A	With solenoid valve PDV2-50A
Working fluid	Air (no corrosive gas)	
Min. working pressure differential MPa	0.1 ( $\approx$ 15 psi, 1 bar)	
Max. working pressure differential MPa	0.7 ( $\approx$ 100 psi, 7 bar)	
Max. working pressure MPa	0.7 ( $\approx$ 100 psi, 7 bar)	
Proof pressure (water pressure) MPa	1.5 ( $\approx$ 220 psi, 15 bar)	
Fluid temperature °C	-10 (14°F) to 60 (140°F), -10 (14°F) to 100 (212°F) for fluoro rubber seal (no freezing)	
Ambient temperature °C	-10 (14°F) to 60 (140°F), -10 (14°F) to 100 (212°F) for fluoro rubber seal	
Atmosphere	Place free of corrosive gas and explosive gas	
Valve structure	Pilot operated poppet structure	
Valve seat leakage cm <sup>3</sup> /min	50 or less	
Port size	Rc2	
Orifice size mm	53	
Cv	62	
Pilot port size	Rc1/4	-
Weight kg	1.9	2.1
Mounting orientation	Unrestricted	
Working environment	Indoors/outdoors	Indoors
<b>Electrical specifications</b>	<b>PDV2</b>	
Rated voltage	100 VAC (50/60 Hz)/110 VAC (60 Hz), 200 VAC (50/60 Hz)/220 VAC (60 Hz), 12 VDC, 24 VDC/48 VDC/100 VDC	
Voltage fluctuation range	-10 to +10% of rated voltage	
Apparent power VA	12(50 Hz), 10(60 Hz)	
Power consumption W	11(DC)	
Thermal class	Class 130 (B) (coil option 4A: Class 180 (H))	

\*1 : For a solenoid valve for driving the air operated PD2-50A, use FAB31-8-3 (page 52), AB31-02-3 (page 154), AB41E4-02-3-03T (explosion-proof, page 382) or PJVB (page 796).

\*2 : Contact CKD when using as a dust collector for ash treatment or combustion gas at a waste incinerator.

\*3 : The combination of PD2 and PJVB is recommended for outdoors.

## How to order

- Air operated

PD2 - 50A - ○ - S

- With solenoid valve

PDV2 - 50A - ○ - 2E - S - AC100V

Model No.

Port size  
Rc2

**A** Sealant  
\*2

**B** Coil option  
\*2  
\*3

**C** Other options  
\*2

**D** Voltage  
\*3  
\*4

[Example of model No.]

**PDV2-50A-2E-S-AC100V**

Model: PDV2 (port size Rc2)

- A** Sealant : Nitrile rubber
- B** Coil option : With DIN terminal box (G1/2)
- C** Other options : With silencer
- D** Voltage : 100 VAC(50/60 Hz)/110 VAC(60 Hz)

		Model No.	
		PD2	PDV2
Code	Content		
<b>A Sealant</b>			
Blank	Nitrile rubber	●	●
F	Fluoro rubber	●	●
<b>B Coil option</b>			
Blank	Std. Grommet lead wire		●
2E	Option With DIN terminal box (G1/2)		●
2G		With DIN terminal box (Pg11)	●
2H		DIN terminal box with small lamp (Pg11)	●
3A		Open frame lead wire	●
3M		Open frame + HP terminal box (G1/2)	●
3N		Open frame + HP terminal box with lamp (G1/2)	●
4A	Open frame lead wire (thermal class H)		●
<b>C Other options</b>			
Blank	No option	●	●
S	Silencer (SLW-10A) (attached with the product)	●	●
<b>D Voltage</b>			
AC100V	100 VAC(50/60 Hz)/110 VAC(60 Hz)		●
AC200V	200 VAC(50/60 Hz)/220 VAC(60 Hz)		●
DC12V	12 VDC		●
DC24V	24 VDC		●
DC48V	48 VDC		●
DC100V	100 VDC		●

\*1 : The combinations indicated with ● above are available.

\*2 : For Item **A** F (sealant material: fluoro rubber), only Item **B** 4A (coil option) and Item **C** Blank (without option) are available.

\*3 : When Item **B** (coil option) is "blank" or 4A, only AC voltage is available.

\*4 : For voltages other than above, contact CKD.

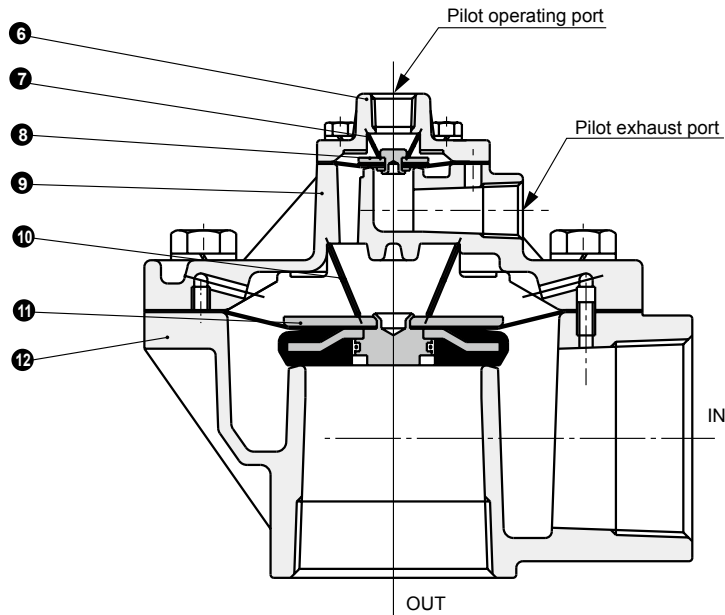
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/ AD
APK/ ADK
DryAir
EX- XPLNprf
XPLNprf
HVB/ HVL
S◇B/ NAB
LAD/ NAD
Water- Rela
NP/NAP/ NVP
SNP
CHB/G
MXB/G
Other valves
SWD/ MWD
DustColl
CVE/ CVSE
CCH / CPE/D
LifeSci
Gas- Combus
Auto- Water
SpecFld
Custom
Ending

# PD2/PDV2 Series

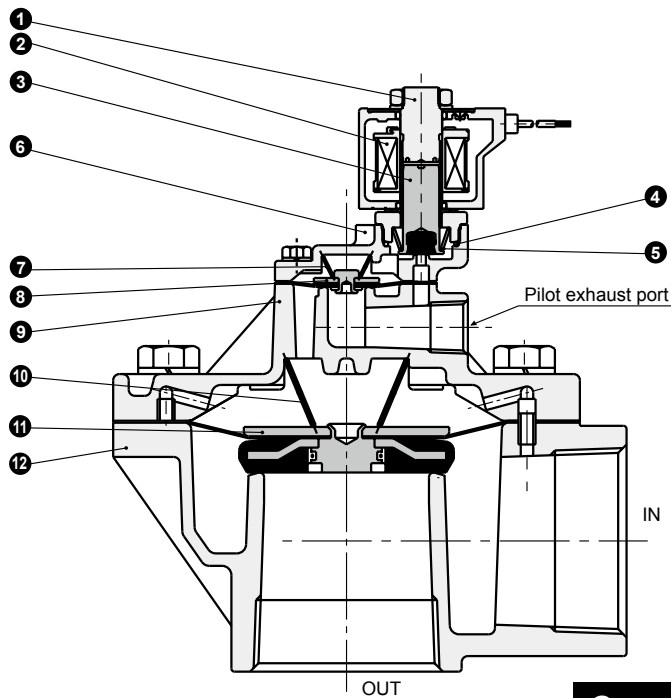
## Internal structure and parts list

- 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
- SAB/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
- SpecFld
- Custom
- Ending

● Air operated  
PD2-50A



● Grommet lead wire with solenoid valve  
PDV2-50A

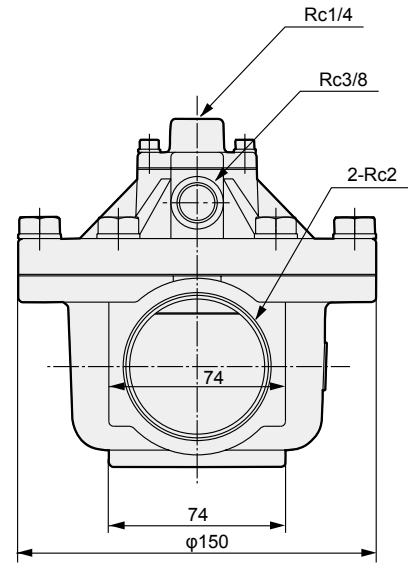
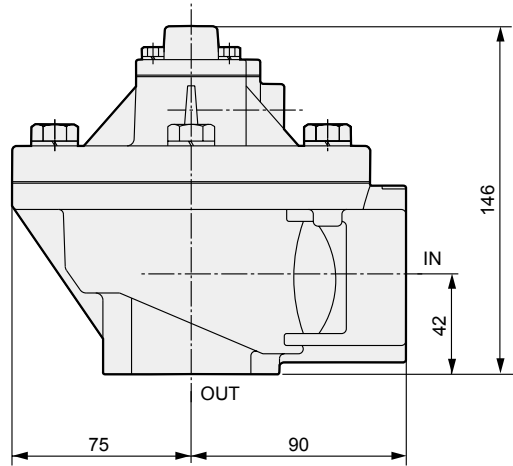


**Cannot be disassembled**

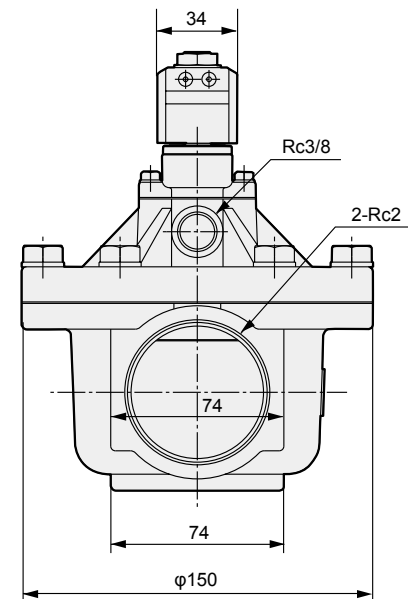
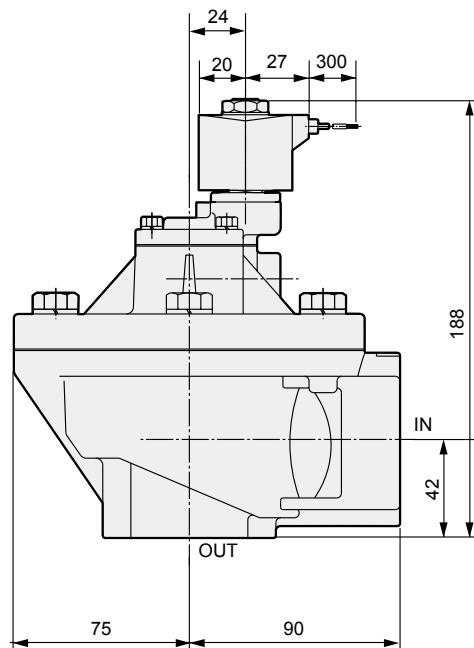
No.	Part name	Material	No.	Part name	Material
1	Core assembly	SUS405, 403, 316L	7	Pilot spring	SUS304
2	Coil assembly		8	Pilot diaphragm assembly	SUS304, NBR or FKM, PTFE
3	Plunger assembly	SUS405, NBR or FKM	9	Body	ADC12
4	O-ring	NBR or FKM	10	Mainspring	SUS304
5	Plunger spring	SUS304	11	Main diaphragm assembly	SUS304, 316L, NBR or FKM
6	Cap	ADC12	12	Body	ADC12

## Dimensions

- Air operated  
PD2-50A



- Grommet lead wire with solenoid valve  
PDV2-50A



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- Combus Auto- Water
SpecFld
Custom
Ending



# PD2/PDV2 Series

## Optional dimensions

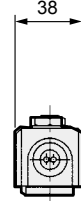
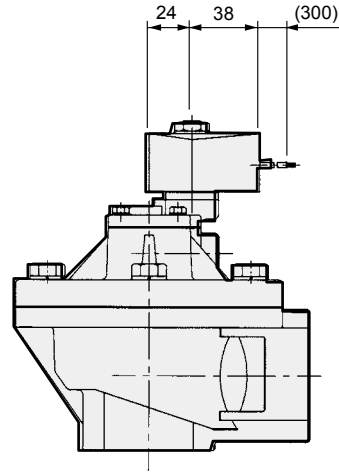
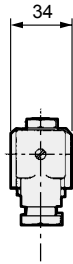
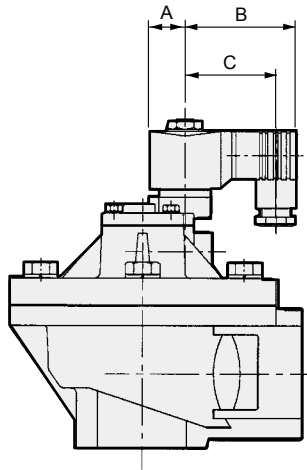
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/  
AD
- APK/  
ADK
- DryAir
- EX-  
XPLNprf
- XPLNprf
- HVB/  
HVL
- S $\nabla$ B/  
NAB
- LAD/  
NAD
- Water-  
Rela
- NP/NAP/  
NVP
- SNP
- CHB/G
- MXB/G
- Other  
valves
- SWD/  
MWD
- DustColl
- CVE/  
CVSE
- CCH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

● With DIN terminal box  
DIN terminal box with small lamp

PDV2-50A-2E  
2G  
2H

● Open frame lead wire

PDV2-50A-3A  
4A



Voltage	A	B	C
AC	20	62	50.5(50)
DC	21	63.5	52(51.5)

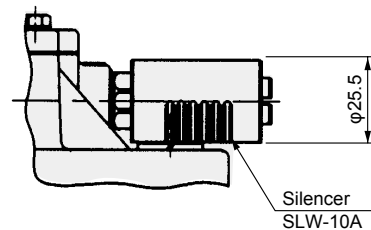
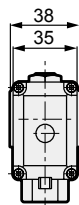
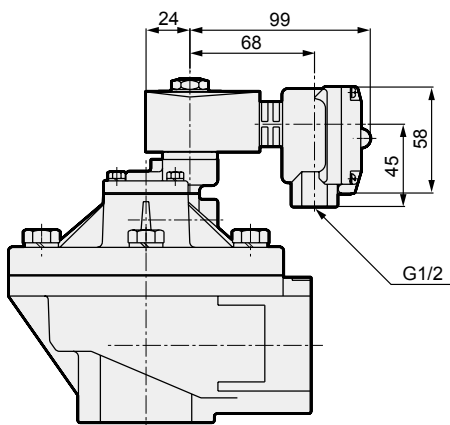
\* Dimensions shown in ( ) are for 2E.

● Open frame with square terminal box  
Open frame with square terminal box with lamp

PDV2-50A-3M  
3N

● Silencer (screw)

PD2/PDV2-\*S



---

# MEMO

---

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 $\diamond$ B/ NAB
LAD/ NAD
Water- Rela
NP/NAP/ NVP
SNP
CHB/G
MXB/G
Other valves
SWD/ MWD
<b>DustColl</b>
CVE/ CVSE
CCH / CPE/D
LifeSci
Gas- Combus
Auto- Water
SpecFld
Custom
Ending



## Safety precautions

# Fluid Control Components: Warnings and Cautions

Be sure to read this section before use.

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  
SAB/  
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  
SpecFld  
Custom  
Ending

## Precautions for each model series and for individual products

### Dust collector control (PD/PDV/PJVB)

#### Design/selection

#### ⚠ WARNING

##### 1 Ambient environment

- (1) If the gases treated by the dust collector include corrosive gases, make sure that the corrosive gases are not led toward the valve. In addition, pipe the valve so that there is no condensation at the OUT port section.
- (2) When using outdoors or where the product could come in contact with water drops, use the PDVE4 Series or PD2 or PD3 Series. (Silencer cannot be used outdoors.) PDV2 and PDV3 cannot be used in such places. Provide a cover or install a panel.
- (3) Do not use the urethane rubber in dust collectors for waste incineration.

**2** Take measures to prevent physical harm or property damage in the event of failure of this product.

**3** Refer to the specifications for the scope of each PD Series product warranty and for details on compensation.

#### ⚠ CAUTION

##### 1 Min. working pressure

The min. working differential pressure required for the PD2, PDV2, PD3, PDV3 and PDVE4 types is 0.1 MPa. If the piping cross-sectional area on the fluid inlet is reduced, the operation may become unstable due to a differential pressure fault during valve operation. The piping on the fluid inlet must have a size that matches the valve port size, and must have no restricted sections.

##### 2 Air supply rate

Maintain the header tank air supply rate at two to three times the rate used by the dust collector.

##### 3 Supply air

Do not lubricate the air supplied to the valve with a lubricator.

##### 4 Header tank capacity (PD2/PDV2/PD3/PDV3)

If the header tank is small, the tank pressure may decrease during valve operation, causing vibrations. The recommended capacity is what is shown in the table or higher.

Min. header tank capacity (recommended) 20A to 50A

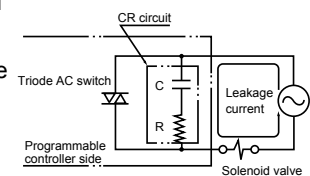
Power ON time	100 ms		200 ms		
Tank pressure	0.3 to 0.5 MPa	0.5 to 0.7 MPa	0.3 to 0.5 MPa	0.5 to 0.7 MPa	
Tank capacity	20A	20 ℓ	30 ℓ	40 ℓ	60 ℓ
	25A	30 ℓ	40 ℓ	60 ℓ	80 ℓ
	40A	50 ℓ	80 ℓ	100 ℓ	160 ℓ
	40A	50 ℓ	80 ℓ	100 ℓ	160 ℓ
	50A	170 ℓ	200 ℓ	340 ℓ	400 ℓ

Min. header tank capacity (recommended) 65A to 80A, 80M

Power ON time	100 ms		200 ms		
Tank pressure	0.2 to 0.5 MPa	0.5 to 0.8 MPa	0.2 to 0.5 MPa	0.5 to 0.8 MPa	
Tank capacity	65A	300 ℓ	480 ℓ	600 ℓ	960 ℓ
	80A	500 ℓ	800 ℓ	1000 ℓ	1600 ℓ

##### 5 Leakage current from other fluid control components (PDV3/PDV2)

When operating the solenoid valve with a programmable controller, etc., check that the output leakage current from the programmable controller is within the following specifications.



Voltage	100 VAC	200 VAC	220 VAC	24 VDC	12 VDC
Model No. PDV3/PDV2	6 mA or less	3 mA or less	2.7 mA or less	1 mA or less	2 mA or less

## Mounting, piping and wiring

#### ⚠ CAUTION

##### 1 Wiring

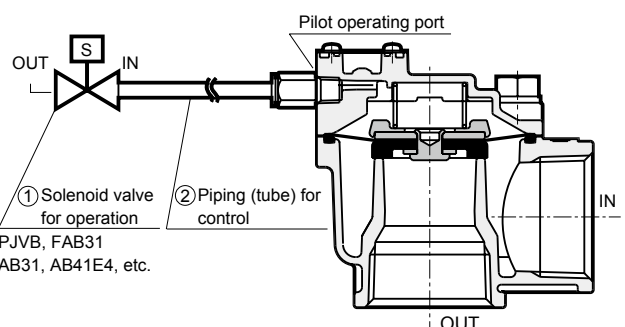
- (1) The solenoid valve has no polarity.
- (2) When using an explosion-proof solenoid valve, follow the Recommended Practices for Explosion-protected Electrical Installations in General Industries when wiring.

##### 2 Piping the valve for control

Connect the IN port of the solenoid valve for control (① in the figure below) to the pilot operating port of the pilot operated air operated valve (PD2 or PD3), and leave the OUT port of the solenoid valve for control open to the atmosphere (install a silencer if needed). Do not supply air from an external source to a pilot operating port.

The response of the pilot operated air operated valve (PD2 or PD3) changes based on the effective cross-sectional area of the solenoid valve for control and the inner diameter and length of tubing (② in the figure below) connecting the pilot operating port.

The effective cross-sectional area of the solenoid valve for control should be 5.8 to 15 mm<sup>2</sup> (equivalent to an orifice diameter of φ3 to 5). Tubing should have an inner diameter of 4 mm or 6 mm and be 1 m long or less.



## When using the product

### ⚠ CAUTION

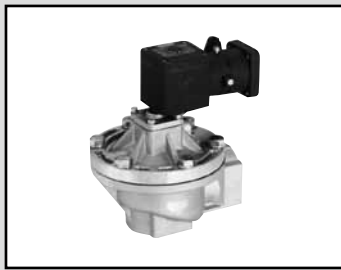
- 1 If the pilot air discharge noise could cause noise disturbances, install a silencer on the exhaust port. If installed on a pilot exhaust port, the silencer may be clogged and malfunction over time. Replace the silencer periodically.  
Guideline for replacement: Every six months or 100,000 operation cycles.
- 2 Set the power ON time according to the dust collector's dust collection efficiency.

## Maintenance

### ⚠ CAUTION

- 1 Periodically drain the drainage if accumulated in the air filter.

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
SpecFld
Custom
Ending



Explosion-proof 2-port solenoid valve for dust collector control  
(explosion proof large port size dust collector valve)

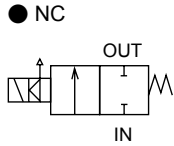
# PDVE4 Series

- Pressure and explosion proof construction: d2G4 (flame-proof grade d2/ignitability G4)
- NC
- Port size: Rc3/4, Rc1, IN: 1 1/2-OUT: φ48, Rc1 1/2
- Certification No.: T64349



- 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
- SAB/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
- SpecFld
- Custom
- Ending

## JIS symbol



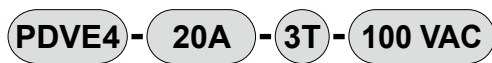
## Common specifications

Descriptions	PDVE4	
Working fluid	Air (no corrosive gas)	
Min. working pressure differential MPa	0.1 (≈15 psi, 1 bar)	
Max. working pressure differential MPa	0.7 (≈100 psi, 7 bar)	
Max. working pressure MPa	0.7 (≈100 psi, 7 bar)	
Proof pressure (water pressure) MPa	2.0 (≈290 psi, 20 bar)	
Fluid temperature °C	-10 (14°F) to 60 (140°F) (no freezing)	
Ambient temperature °C	-10 (14°F) to 50 (122°F)	
Atmosphere	Corrosive gas/explosive gas (flame-proof grade 1 to 2/ignitability G1 to G4)	
Valve structure	Pilot operated poppet structure (NC)	
Mounting orientation	Unrestricted	
Electrical specifications		
Rated voltage	100 VAC(50/60 Hz)/110 VAC(60 Hz), 200 VAC(50/60 Hz)/220 VAC(60 Hz)	
Voltage fluctuation range	-10 to +5% of rated voltage	
Apparent power (VA)	Holding	18(50 Hz), 15(60 Hz)
	Starting	29(50 Hz), 24(60 Hz)
Power consumption W	8(50 Hz), 7(60 Hz)	
Thermal class	Class 130 (B)	

## Individual specifications

Descriptions	Port size	Orifice size (mm)	Cv	Weight (kg)
Model No.				
PDVE4-20A	Rc3/4	23	11	1.21
PDVE4-25A	Rc1	28	18	1.36
PDVE4-40A	IN:Rc1 1/2 - OUT: O.D. φ48 Length 52	37	45	1.78
PDVE4-40A-RC	Rc1 1/2	37	45	1.67
PDVE4-50A	Rc2	53	62	2.76

## How to order



Model No.

Coil code

**A** Port size and diaphragm material

\*1

\*2

\*3

**B** Rated voltage

[Example of model No.]

**PDVE4-25A-3T-AC100V**

Model PDVE4

**A** Port size and diaphragm material

: Rc1, diaphragm - urethane rubber

**B** Rated voltage : 100 VAC(50/60 Hz)/110 VAC(60 Hz)

Code	Content	Diaphragm material	
		Urethane rubber	Nitrile rubber
<b>A Port size and diaphragm material</b>			
<b>20A</b>	Rc3/4	●	
<b>25A</b>	Rc1	●	
<b>40A</b>	IN:Rc1 1/2 OUT: O.D. φ48, length 52		●
<b>40A-RC</b>	Rc1 1/2		●
<b>50A</b>	Rc2		●
<b>B Rated voltage</b>			
<b>AC100V</b>	100 VAC(50/60 Hz)/110 VAC(60 Hz)	For voltages other than above, contact CKD.	
<b>AC200V</b>	200 VAC(50/60 Hz)/220 VAC(60 Hz)		

\*1 : For Item **A** (Port size) 20A/25A, diaphragm material is urethane rubber. (Nitrile rubber diaphragm can be custom ordered.)

\*2 : For Item **A** (Port size) 40A/40A-RC/50A, diaphragm material is nitrile rubber. (Urethane rubber diaphragm is not available.)

\*3 : For Item **A** (Port size) 40A/40A-RC, main valving element material is nylon resin.

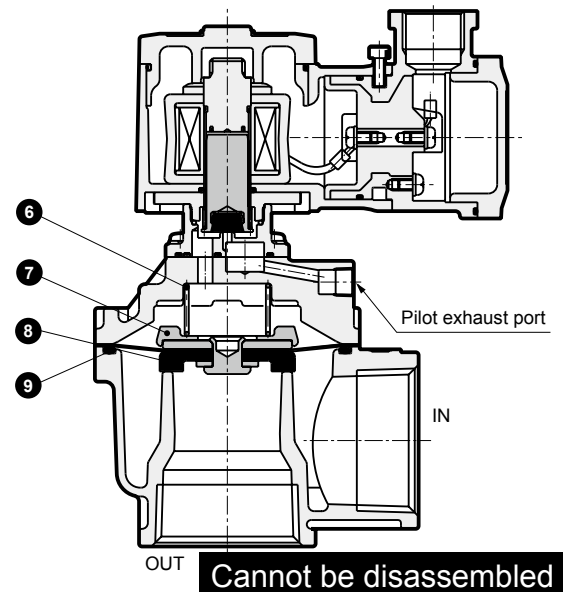
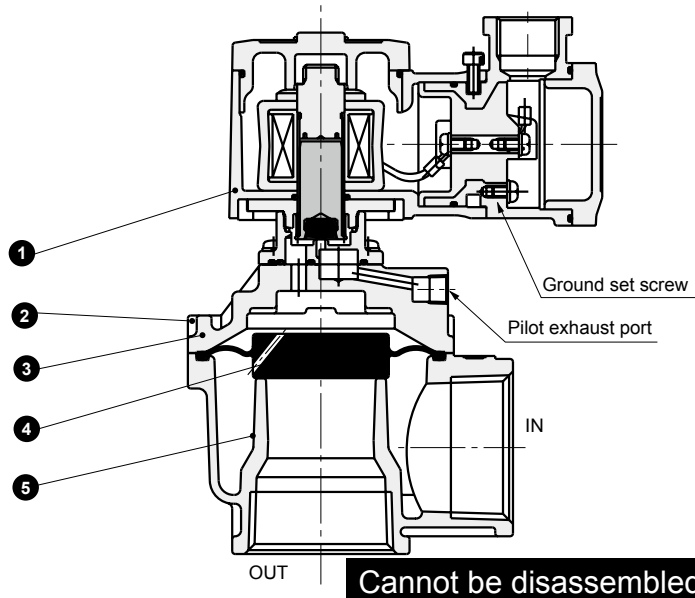
\*4 : Contact CKD when using as a dust collector for ash treatment or combustion gas at a waste incinerator.

## Internal structure and parts list

● 20A/25A

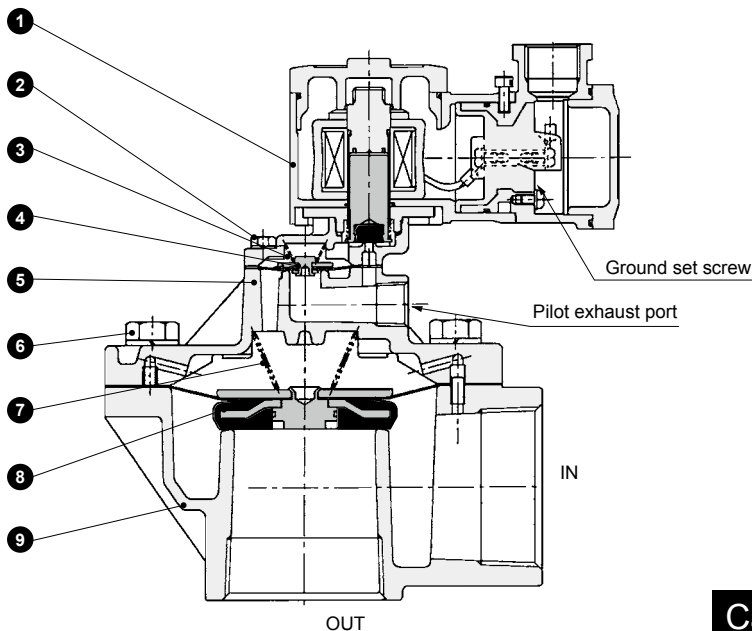
● 40A-RC/40A

\* The shape of 40A body is different from the figure below.



No.	Part name	Material	No.	Part name	Material
1	Explosion-proof solenoid valve		6	Spring	SUS304 Stainless steel
2	Hex upset bolt	SUS304 Stainless steel	7	Spacer	PA Nylon resin
3	Cover	AC4C Aluminum casting	8	Diaphragm assembly	SUS304, PA Stainless steel, nylon resin NBR Nitrile rubber
4	Diaphragm	U Urethane rubber	9	O-ring	NBR Nitrile rubber
5	Body	ADC12 Aluminum die-casting			

● 50A



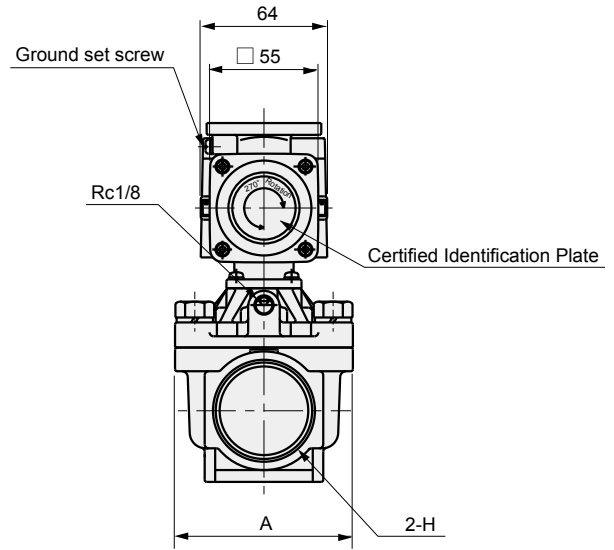
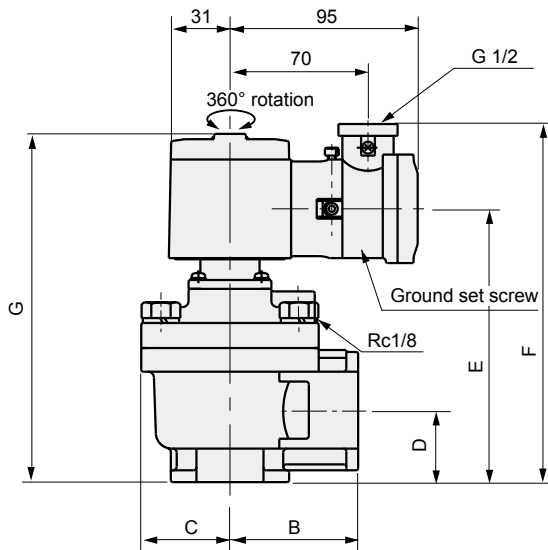
No.	Part name	Material	No.	Part name	Material
1	Explosion-proof solenoid valve		6	Hexagon head bolt	SUS304 Stainless steel
2	Hex upset bolt	SUS304 Stainless steel	7	Mainspring	SUS304 Stainless steel
3	Pilot spring	SUS304 Stainless steel	8	Main diaphragm assembly	SUS304, 316L, NBR Stainless steel, nitrile rubber
4	Pilot diaphragm assembly	SUS304, NBR, PTFE S.S., NBR, TFE resin	9	Body	ADC12 Aluminum die-casting
5	Body	ADC12 Aluminum die-casting			

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
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- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- SAB/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
- SpecFld
- Custom
- Ending

# PDVE4 Series

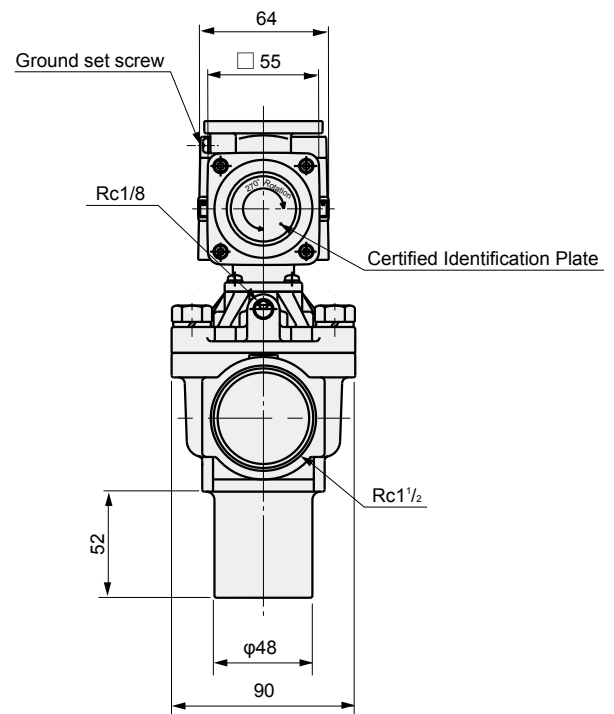
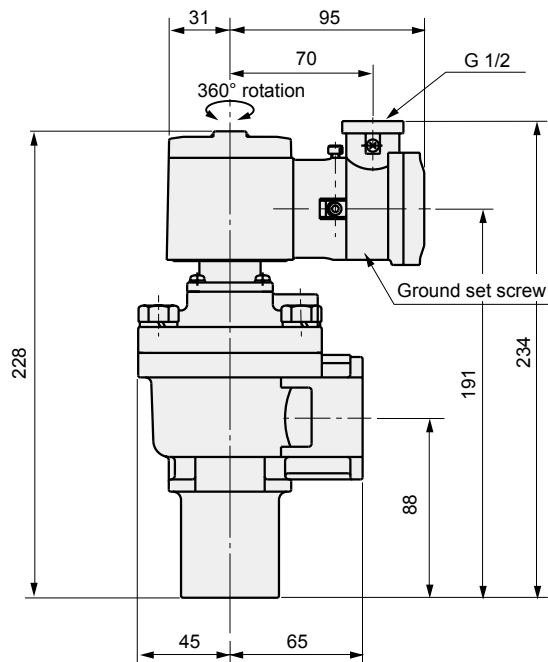
## Dimensions

### ● 20A/25A/40A-RC



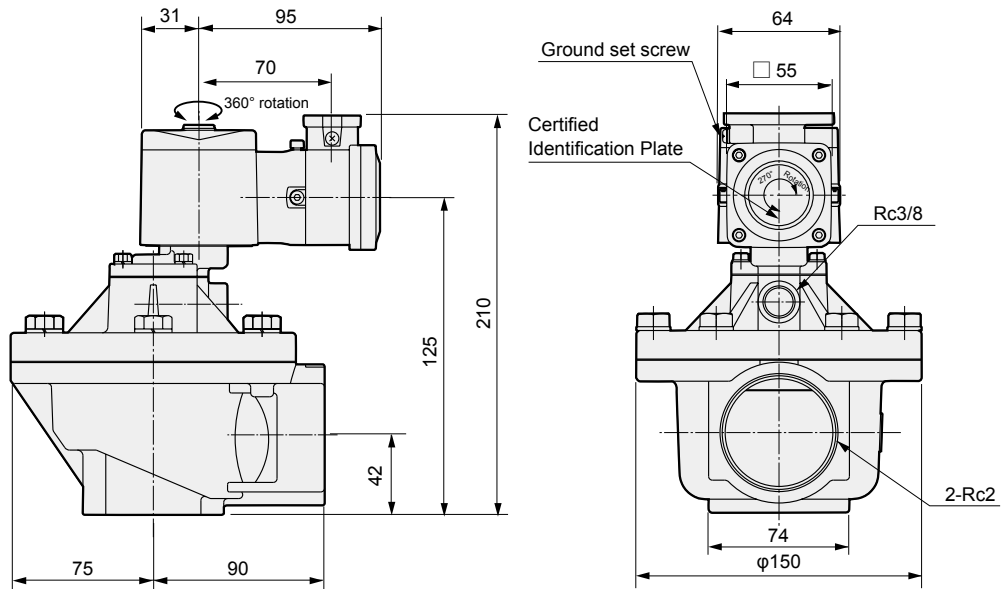
Model No.	A	B	C	D	E	F	G	H
PDVE4-20A-3T	60	40	31.5	31	113	156	150	Rc3/4
PDVE4-25A-3T	71	45	37.5	39	126	169	163	Rc1
PDVE4-40A-RC-3T	90	65	45	36	139	182	176	Rc1 1/2

### ● 40A



## Dimensions

● 50A



EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/ AD
APK/ ADK
DryAir
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XPLNprf
HVB/ HVL
S◇B/ NAB
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