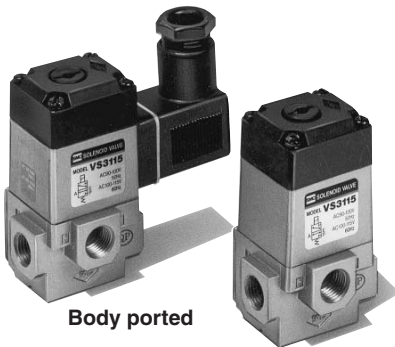


# 3 Port Direct Operated Solenoid Valve Metal Seal, Body Ported/Base Mounted **VS3115/3110**

**Multiple pressure supply is possible with balanced spool sleeve.**

Any given port can accept high or low pressure supply without affecting the system life or operation.

**No-lubrication and dry-air operation possible.**

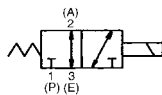


Body ported



Base mounted

JIS Symbol



## Standard Specifications

Fluid		Air/Inert gas		
Operating pressure range		0 to 1.0 MPa		
Proof pressure		1.5 MPa		
Ambient and fluid temperature		-20 to 60°C (No freezing)		
Response time <sup>(1)</sup>		10 ms or less (AC), 45 ms or less (DC)		
Max. operating frequency <sup>(2)</sup>		1,500 c.p.m. (AC), 180 c.p.m. (DC)		
Manual override		Non-locking		
Lubrication		Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)		
Enclosure		Dustproof [Degrees of protection 0] <sup>(4)</sup>		
Shock/Vibration resistance (m/s <sup>2</sup> )		150/50 <sup>(5)</sup>		
Electrical entry		Grommet, DIN terminal		
Coil rated voltage	Standard	100, 200 VAC, 50/60 Hz; 24 VDC		
	Option	220, 110, 48, and 24 VAC (50/60 Hz) 100, 48, and 12 VDC		
Allowable voltage fluctuation		-15 to -10% of rated voltage		
Coil insulation type		Class B or equivalent (130°C) <sup>(6)</sup>		
Apparent power (VA) (Power consumption (W))	AC	Inrush	50 Hz	51
			60 Hz	45
	Holding	50 Hz	17 (5.3)	
		60 Hz	11 (2.9)	
Power consumption (W)	DC	5.5		
Accessory (Option)		Bracket (AXT338-11)/For body ported type		
		Indicator light		
		Manual override		

Note 1) Based on JIS B 8375-1981. (at 0.5 MPa, without surge voltage suppressor)

Note 2) Minimum operating frequency is once in 30 days. (Based on JIS B 8375.)

Note 3) "Note 1)" and "Note 2)" are with controlled clean air.

Note 4) Based on JIS C 0920.

Note 5) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

## Flow Characteristics/Weight

Body type	Valve model	Port size Rc	Flow characteristics						Weight (kg)	
			P → A			A → E			AC	DC
			C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv		
Body ported	VS3115-01□□	1/8	3.3	0.36	0.86	2.5	0.39	0.66	0.34	0.46
	VS3115-02□□	1/4	3.8	0.19	0.86	3.6	0.34	0.88	0.34	0.46
Base mounted	VS3110-02□□	1/4	4.0	0.12	0.93	3.2	0.31	0.76	0.40	0.52
	VS3110-03□□	3/8	4.0	0.15	0.94	3.6	0.18	0.82	0.40	0.52
For manifold use	VS3114-00□□		Without sub-plate						0.32	0.44

## ⚠ Caution

**For Safety Instructions and Solenoid Valve Precautions, refer to pages 4-18-2 to 4-18-6.**

## How to Calculate the Flow Rate

For obtaining the flow rate, refer to page 4-1-6.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN

# Series VS3115/3110

## How to Order

**VS311 5 01 5 D L**

**Piping**

5	Body ported
0	Base mounted
4	Manifold

**Port size**

01	Rc 1/8
02	Rc 1/4
03	Rc 3/8
00	Without sub-plate

**Electrical entry**

G	Grommet
D	DIN terminal

\* DC:  
DL (With indicator light)

**Coil rated voltage**

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
5	24 VDC
9	Other

**Mounting**

Nil	Without bracket
B	With bracket

\* Bracket is available only on body ported style.

**Accessory (Option)**

L	With indicator light
P	With manual override

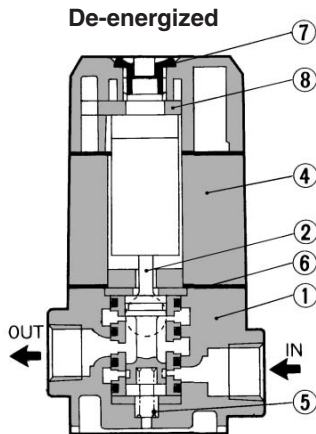
**Thread type**

Nil	Rc
N*	NPT
T*	NPTF
E*	G

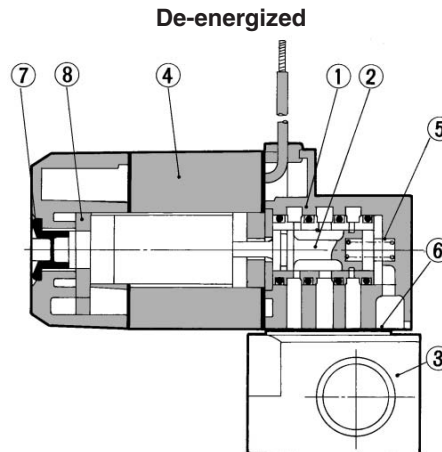
\* Option

## Construction

### Body ported



### Base mounted



Sub-plate Assembly Part No.: VS3110-S-<sup>02</sup>/<sub>03</sub>



\* Mounting bolts and gaskets are not attached.

Part No. for Mounting Bolt and Gasket

BG-VS3010

## Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	Platinum silver
②	Spool/Sleeve	Stainless steel	
③	Sub-plate	Aluminum die-casted	Platinum silver

## Replacement Parts

No.	Description	Material	Part no.			
			VS3115-□G	VS3115-□D	VS3110-□G	VS3110-□D
④	Solenoid capsule assembly	AC	SCA006-□	SCAD001-□	SCA006-□	SCAD001-□
		DC	SCA001-□	SCAD001-□	SCA001-□	SCAD001-□
⑤	Spring	Piano wire	AXT338-6			
		AC	AZ832-16			
⑥	Gasket	NBR	AXT333-14		AXT338-15	
		DC				
⑦	Plug for cap	Resin	AXT333-16			
⑧	Stopper	Resin	AXT333-7-11			
		AC	AXT333-32-8			
		DC	AXT333-32-8			

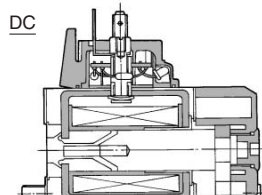
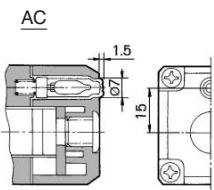


□: Enter the operating voltage.

## Accessory (Option)

### Indicator light

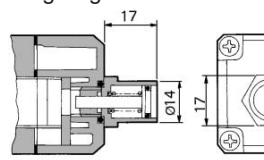
When solenoid is energized, indicator light illuminates, thus the electrical state of the solenoid can be seen from the outside.



Note) There is polarity of (1) +, (2) -.

### Manual override

Remove the rubber plug on the top of the solenoid cap to mount the manual override. Push the override with a screwdriver to the required stroke and the valve will shift. Turn to the right or left at 90 degrees to lock it. Be sure to unlock the override before energizing the valve electrically.



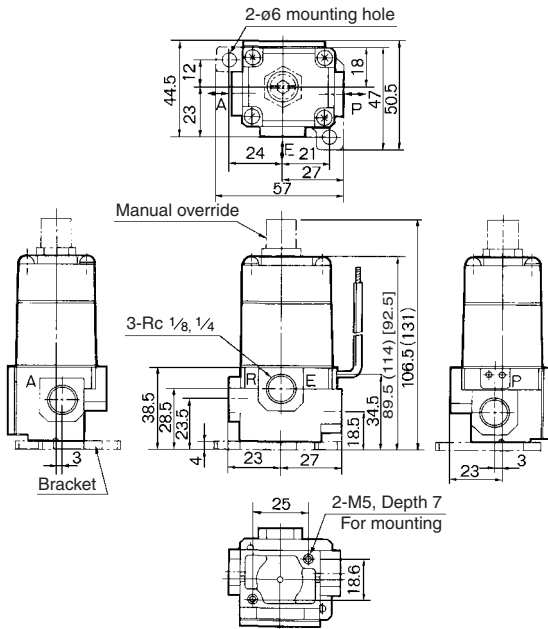
Description	Part no.	
	AC	DC
Manual override (With lock)	PB0111-3 (PB0111)	PB0111-1
Manual override (Non-locking)	PB0101	PB0101-1



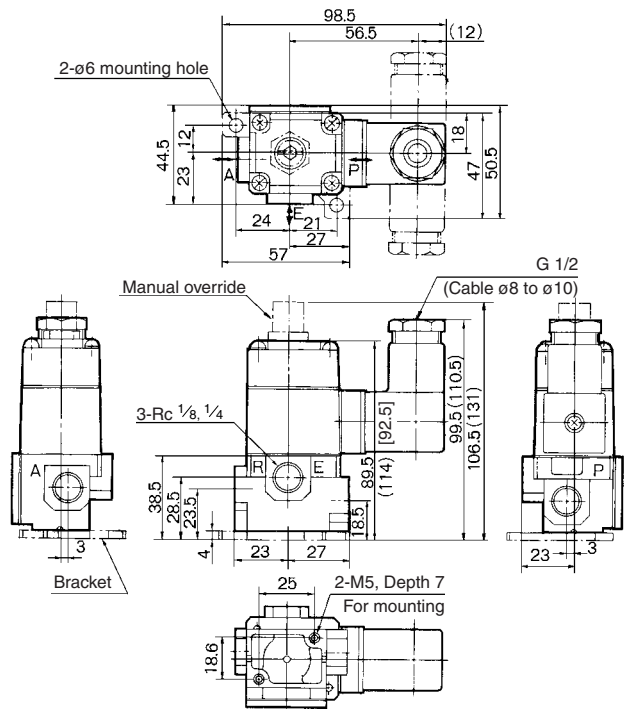
( ): With indicator light


## Dimensions

### Body ported VS3115-□□G

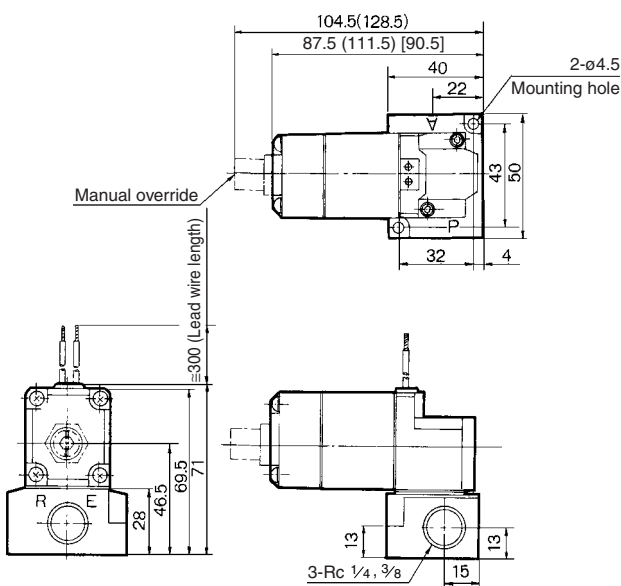


### VS3115-□□D

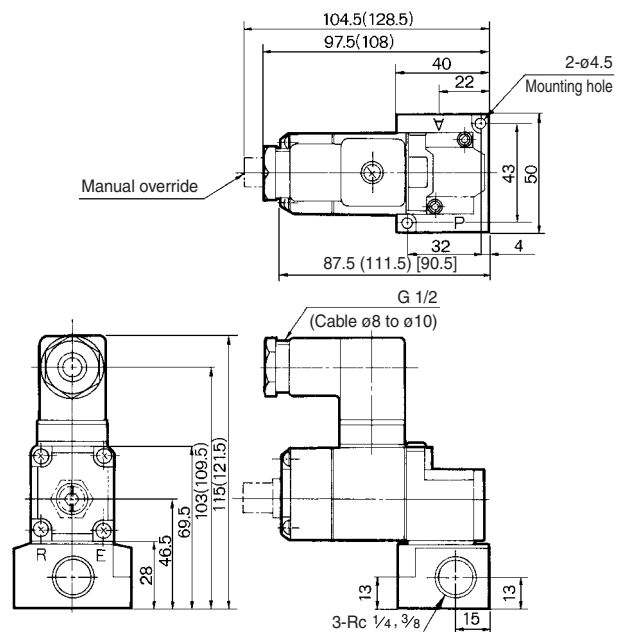



 ( ): DC  
 [ ]: AC, with indicator light

### Base mounted VS3110-□□G



### VS3110-□□D



 ( ): DC  
 [ ]: AC, with indicator light

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

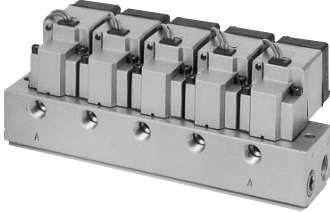
VZ

VS

VFN

# Series VS3115/3110

# Manifold Specifications



## Specifications

Manifold type				B mount			
Max. number of stations				10 stations			
Exhaust type	Port location/Port size			Port direction			Applicable valve model
	P	A	E	P	A	E	
Common	Base	Base	Base	Side	Side	Side	VS3114-00□□
	3/8	1/4	3/8	Side	Bottom	Side	
Accessory		Blanking plate (With gaskets and screw)				AXT338-17A	

## How to order manifold

**VVS31** **0** **05** **1** **□**

**0**: Port location/Port size  
**05**: Valve stations  
**1**: EXH port type  
**□**: Thread type

	P	A	E
0	Side	Side	Side
1	Side	Bottom	Side

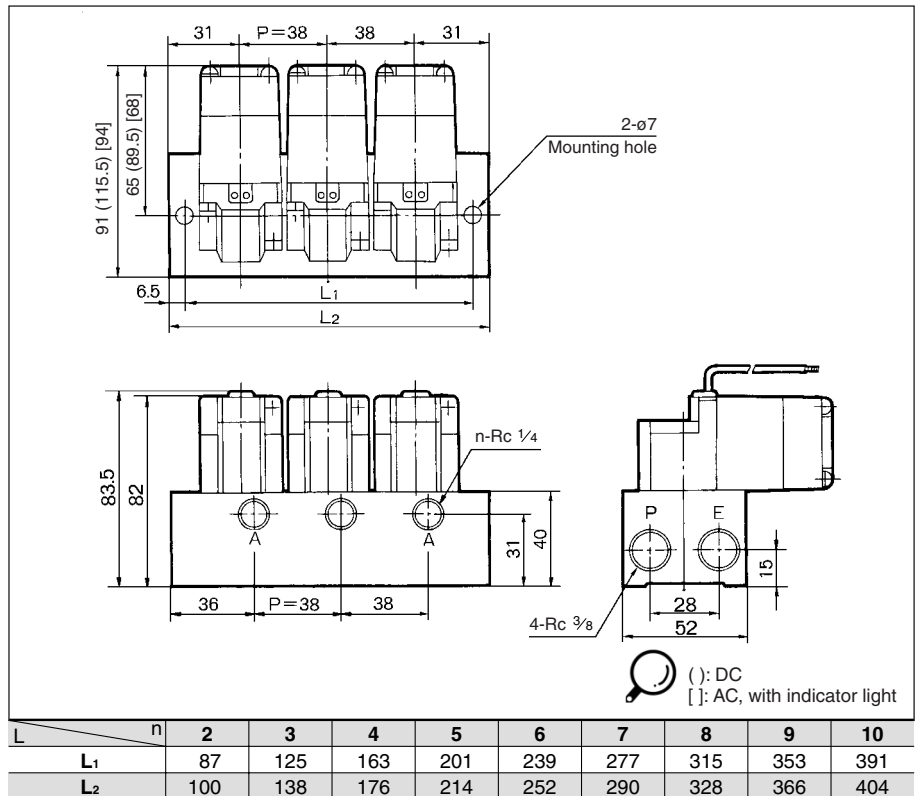
Valve stations	
05	5 stations
10	10 stations

EXH port type	
1	Common EXH

Thread type	
Nil	Rc
N*	NPT
T*	NPTF
F*	G

\* Option

## Dimensions



L<sub>1</sub> = 38n + 11, L<sub>2</sub> = 38n + 24 n: Station

Formula for manifold weight M = 0.16n + 0.1 (kg)

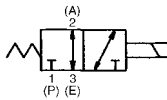
# 3 Port Direct Operated Solenoid Valve Metal Seal, Body Ported VS3135/3145



Terminal type



JIS Symbol



## Specifications

Fluid	Air/Inert gas	
Proof pressure	1.5 MPa	
Operating pressure range	0 to 1.0 MPa	
Ambient and fluid temperature (°C) <sup>(1)</sup>	-20 to 60	
Lubrication <sup>(2)</sup>	Not required	
Manual override	Option (Non-locking type available)	
Electrical entry	Grommet, Conduit terminal, Dripproof conduit terminal	
Coil rated voltage	AC	100, 200 V 50/60 Hz
	DC	24 V
Allowable voltage fluctuation	-15 to -10% of rated voltage	
Coil insulation type	Class B or equivalent (130°C) <sup>(3)</sup>	
Shock/Vibration resistance (m/s <sup>2</sup> )	150/50 <sup>(4)</sup>	



Note 1) If it is low temperature, dry air should be used. (No freezing)

Note 2) Use turbine oil Class 1 (ISO VG32), if lubricated.

Note 3) Based on JIS C 4003.

Note 4) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

## Model

Valve model		VS3135						VS3145					
Flow characteristics		P → A			A → E			P → A			A → E		
		C	b	Cv	C	b	Cv	C	b	Cv	C	b	Cv
		[dm <sup>3</sup> /s·bar]			[dm <sup>3</sup> /s·bar]			[dm <sup>3</sup> /s·bar]			[dm <sup>3</sup> /s·bar]		
	1/4	6.1	0.3	1.5	6.1	0.4	1.6	—	—	—	—	—	—
	3/8	7.2	0.2	1.8	7.3	0.2	1.8	—	—	—	—	—	—
	1/2	9.0	0.2	2.3	9.0	0.3	2.4	18	0.27	4.8	16	0.34	4.1
	3/4	—	—	—	—	—	—	20	0.21	5.1	15	0.46	4.5
Response time <sup>(1)</sup> (ms)	AC	30 or less						30 or less					
	DC	60 or less						80 or less					
Max. operating <sup>(2)</sup> frequency (c.p.m.)	AC	300 or less						180 or less					
	DC	180 or less						180 or less					
Weight (kg)	AC	0.8						1.6					
	DC	1.4						2.4					
Apparent power (VA)	AC	Inrush	50 Hz	100			300						
			60 Hz	90			360						
		Holding	50 Hz	20			50						
			60 Hz	14			60						
Power consumption (W)	DC	13.2						24					



Note 1) Based on JIS B 8375-1981. (at 0.5 MPa, without surge voltage suppressor)

Note 2) Min. operating frequency is once in 30 days. (Based on JIS B 8375.)

Note 3) "Note 1)" and "Note 2)" are with controlled clean air.

## How to Order

VS31 3 5-02 1

### Body size

3	3/8 Standard
4	1/2 Standard

### Port size

02	Rc 1/4
03	Rc 3/8
04	Rc 1/2
06	Rc 3/4

### Coil rated

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3*	110 VAC, 50/60 Hz
4*	220 VAC, 50/60 Hz
5	24 VDC
9*	Other

\* Option

### Electrical entry

Nil	Grommet
T	Conduit terminal
WTB	Dripproof conduit terminal
TZ	Conduit terminal w/ surge voltage suppressor
TL	Conduit terminal w/ indicator light

### Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

\* Option

### Option

Nil	None
P	Manual override

## Caution

For Safety Instructions and Solenoid Valve Precautions, refer to pages 4-18-2 to 4-18-6.

## How to Calculate the Flow Rate

For obtaining the flow rate, refer to page 4-1-6.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

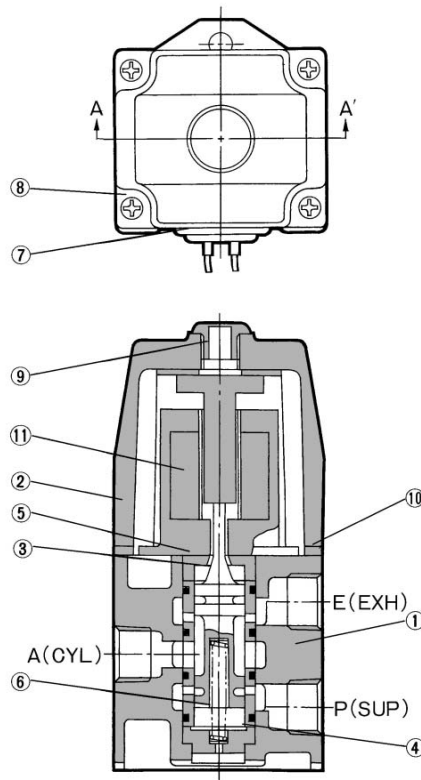
VZ

VS

VFN

# Series VS3135/3145

## Construction



**A-A' cross section**

### Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	Platinum silver
②	Solenoid cover	Aluminum die-casted	Platinum silver
③	Spool/Sleeve	Stainless steel	

### ⑪ Solenoid Coil Assembly Part No.

Electrical entry	Voltage	Part no.	
		VS3135	VS3145
Grommet	100 VAC	A01-01	A12-01
	200 VAC	A01-02	A12-02
	24 VDC	A07-52	A08-52
Conduit terminal	100 VAC	A01-01-63	A12-01-63
	200 VAC	A01-02-63	A12-02-63
	24 VDC	A07-52-63	A08-52-63

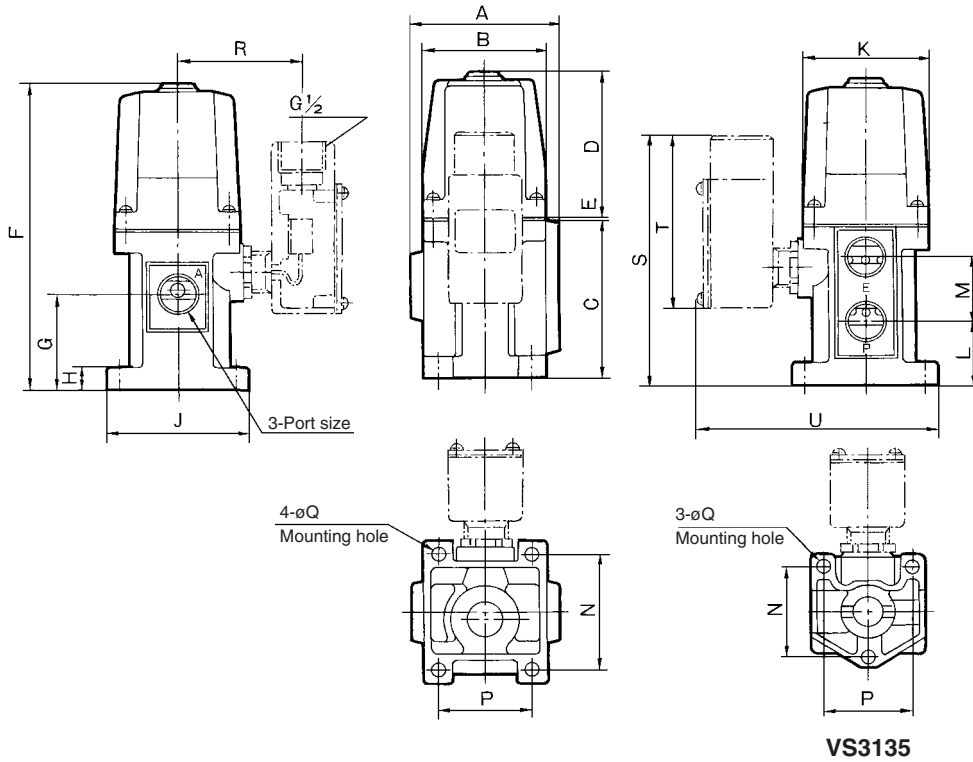
### Replacement Parts

No.	Description	Material	Part no.	
			VS3135	VS3145
④	Cap	Resin	XT019-6	AXT103-4
⑤	Bushing	Resin	XT013-13-2	XT021-12
⑥	Spring	Steel wire	XT010-15	XT103-5
⑦	Rubber plug for wire	NBR	XT010-20	XT010-20
⑧	Round head combination screw	Steel wire	XT010-21	XT010-21
⑨	Plug for cover	NBR	XT041-1	XT041-1
⑩	Gasket	NBR	XT013-31-2	NXT030-8

# Series VS3135/3145

## Dimensions

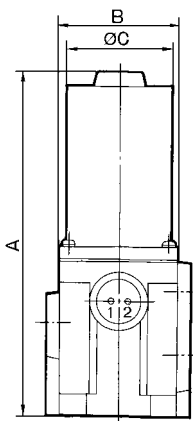
### VS3135/3145



Model	Port size Rc	A	B	C	D	E	F	G	H	J	K	L	M	N	P	øQ	Terminal dimensions			
																	R	S	T	U
VS3135-02 VS3135-03 VS3135-04	1/4, 3/8, 1/2	64	64	65	70	1	136	35	9	64	54	19	32	50	50	7	60	120	96	118
VS3145-04 VS3145-06	1/2, 3/4	82	68	88	92	1	181	53	12	81	70	35	36	66	52	9	66	140	96	133

- V100
- SY
- SYJ
- VK
- VZ
- VT
- VP
- VG
- VP
- S070
- VQ
- VKF
- VQZ
- VZ
- VS**
- VFN

## DC



Model	Port size Rc	A	B	øC
VS3135-02 VS3135-03 VS3135-04	1/4, 3/8, 1/2	163	64	50.8
VS3145-04 VS3145-06	1/2, 3/4	196	68	60.5