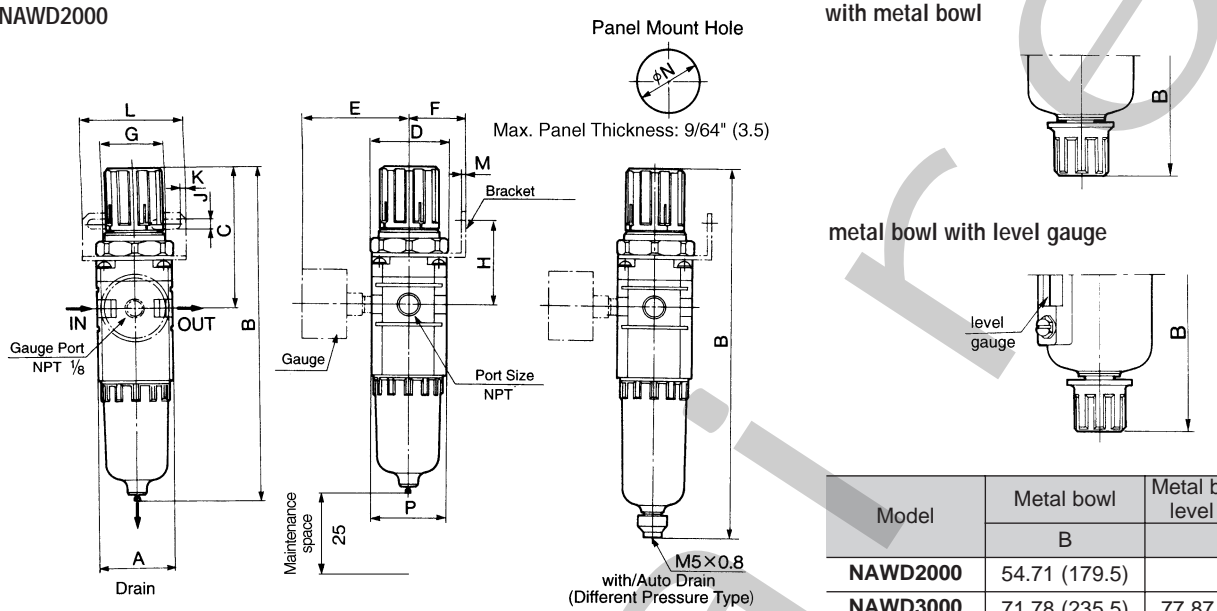
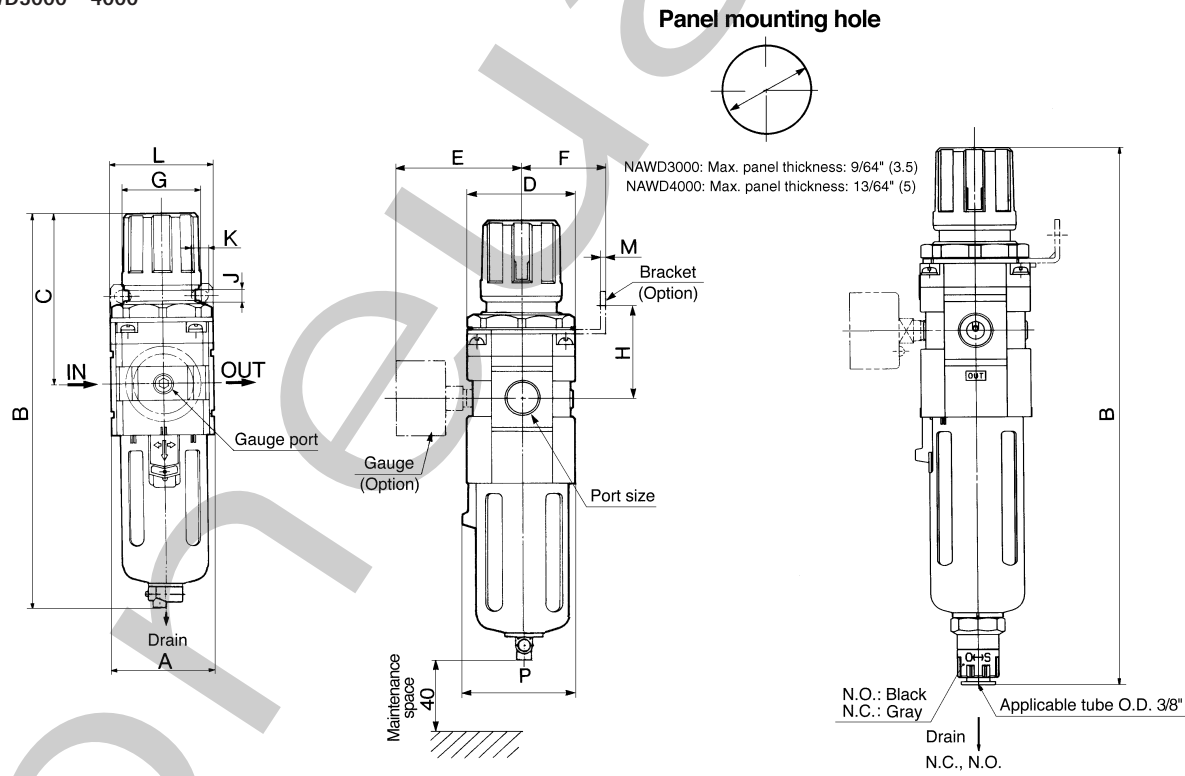


NAWD2000



Model	Metal bowl	Metal bowl with level gauge
	B	B
NAWD2000	54.71 (179.5)	—
NAWD3000	71.78 (235.5)	77.87 (255.5)
NAWD4000	87.47 (287)	93.57 (307)

NAWD3000 • 4000



Model	Port Size NPT	A	B	C	D	E	With Bracket							N	P	With Auto Drain	
							F	G	H	J	K	L	M			Float	Differential Pressure
																B	B
NAWD2000	1/8 • 1/4	1.57 (40)	7.07 (179.5)	3.07 (78)	1.69 (43)	2.28 (58)	1.18 (30)	1.34 (34)	1.73 (44)	.21 (5.4)	.61 (15.4)	2.17 (55)	.09 (2.3)	1.32 (33.5)	1.57 (40)	—	7.93 (201.5)
NAWD3000	1/4 • 3/8	2.09 (53)	8.76 (222.5)	3.64 (92.5)	2.09 (53)	2.44 (62)	1.61 (41)	1.57 (40)	1.81 (46)	.26 (6.5)	.31 (8.0)	2.09 (53)	.09 (2.3)	1.67 (42.5)	2.20 (56)	10.37 (263.5)	—
NAWD4000	1/4 • 3/8 • 1/2	2.76 (70)	10.79 (274)	4.41 (112)	2.76 (70)	2.76 (70)	1.97 (50)	1.97 (50)	2.13 (54)	.33 (8.5)	.41 (10.5)	2.76 (70)	.09 (2.3)	2.07 (52.5)	2.87 (73)	12.40 (315)	—

# Attachments & Accessories

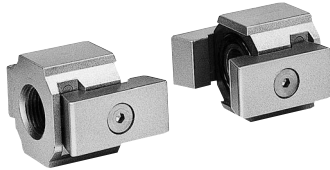
## Attachments & Accessories .....84-104

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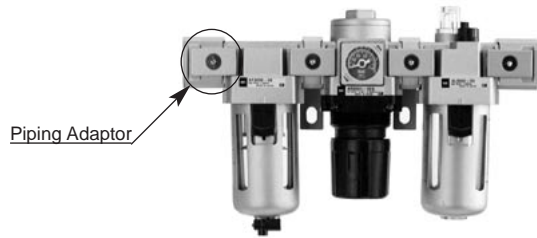
## Piping Adaptor

M5x0.8, 1/8•1/4•3/8•1/2•3/4•1

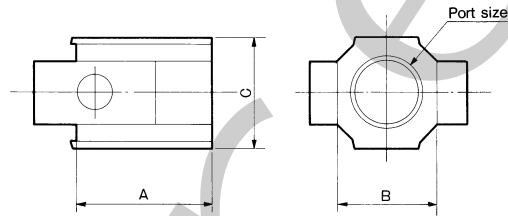
Allows for ease of installation and maintenance.



E30-02



Piping Adaptor



Model	Port size	A	B	C	Applicable model
E10-M5	M5x0.8	.63 (16)	.55 (14)	.69 (17.5)	<b>NAC1000•NAW1000</b> <b>NAF1000•NAR1000•NAL1000</b>
E20-N01	1/8	.91 (23)	.87 (22)	.87 (22)	<b>NAC2000</b>
E20-N02	1/4				<b>NAF2000•NAR2000•NAW2000</b> <b>NAL2000•NAFM2000•NAFD2000</b>
E20-N03	3/8	1.02 (26)	1.14 (29)	1.35 (34.2)	<b>NAC2500•NAC3000</b>
E30-N02	1/4				<b>NAF3000•NAR3000•NAW3000</b> <b>NAL3000•NAFM3000•NAFD3000</b>
E30-N03	3/8	1.57 (40)	1.14 (29)	1.35 (34.2)	
E30-N04	1/2				
E40-N02	1/4	1.30 (33)	1.38 (35)	1.66 (42.2)	<b>NAC4000</b>
E40-N03	3/8				<b>NAF4000•NAR4000•NAW4000</b>
E40-N04	1/2				
E40-N06	3/4	1.97 (50)	1.38 (35)	1.66 (42.2)	<b>NAL4000•NAFM4000•NAFD4000</b>
E50-N06	3/4	1.42 (36)	1.73 (44)	1.82 (46.2)	<b>NAC4000-N06•NAC4040-N06</b> <b>NAF400-N06</b>
E60-N06	3/4	1.57 (40)	2.13 (54)	2.17 (55.2)	<b>NAC5000•NAC5500•NAC6000</b> <b>NAC5020•NAC5520•NAC6020</b>
E60-N10	1				<b>NAF5000•NAR5000•NAL5000</b> <b>NAF6000•NAR6000•NAL6000</b>

Inch (mm)

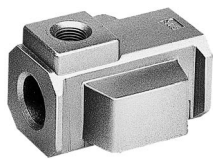
\*When piping adaptor with bracket is required, please order as follows.

Example: L-type bracket: E30L-N02

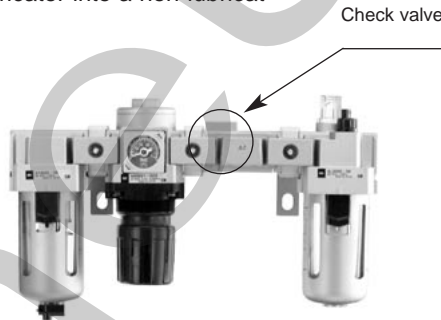
T-type bracket: E30T-N02

## Check Valve

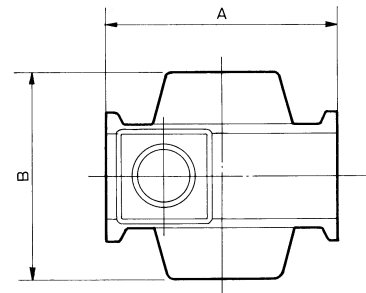
The check valve spacer is designed to prevent back flow of lubricated air from a lubricator into a non-lubricated line.



NAKM3000



Check valve



### How To Order

NAKM (30) 00-N (02)

Check Valve

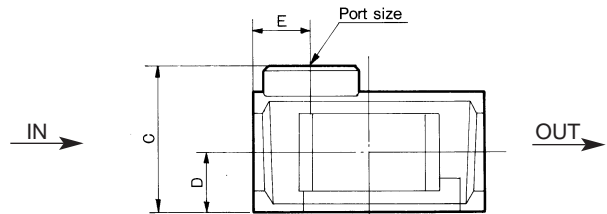
Body size

20 — 1/8  
30 — 3/8  
40 — 1/2

Port thread  
Nil — Rc(PT)  
F — G(PF)  
N — NPT

Port size

01 — 1/8  
02 — 1/4  
03 — 3/8



Model	Port size	A	B	C	D	E	Applicable model
NAKM2000	1/8•1/4	1.57 (40)	1.57 (40)	1.10 (28)	.43 (11)	.43 (11)	<b>NAC2000•NAC2010</b>
NAKM3000	1/8•1/4	2.09 (53)	1.89 (48)	1.34 (34)	.55 (14)	.51 (13)	<b>NAC2500•NAC2510</b> <b>NAC3000•NAC3010</b>
NAKM4000	1/4•3/8	2.76 (70)	2.13 (54)	1.65 (42)	.71 (18)	.59 (15)	<b>NAC4000•NAC4010</b>

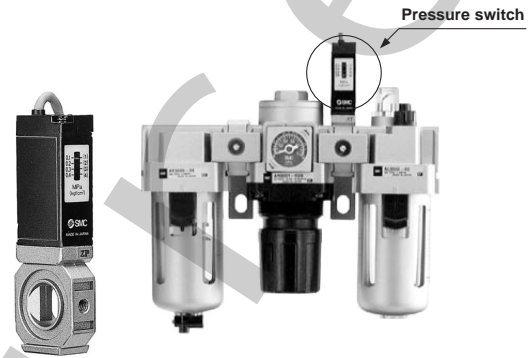
Pressure Switch

Specifications

Fluid	Air
Proof pressure	145 psig (1.0 MPa)
Max. operating pressure	100 psig (0.7 MPa)
Setting range (off)	15~60 psig (0.1 ~ 0.4 MPa)
Differential pressure	Less than 12 psig (0.08 MPa)
Ambient and fluid temperature	40~140° F (5° ~ 60° C)

Characteristics

Type of actuation	1a (N.O.)
Switch capacity	AC2VA • DC2W
Operating voltage (AC,DC)	12V, 24V, 48V, 100V
Max. operating current	AC, DC12V~24V: 50mA AC, DC48V: 40mA AC, DC100V: 20mA
Response time	1.2ms



Caution on assembling

The pressure switch can be mounted on both IN and OUT sides on NAF, NAR, NAL, NAFM and NAFL but cannot be mounted in this way on NVHS, NAW, or when the handle of NAR faces upwards.

How To Order

NIS1000M - 4 YT

Pressure switch

Body size

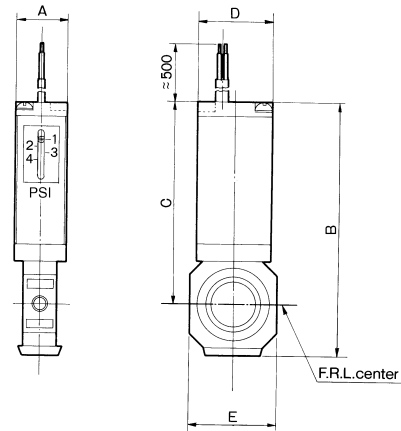
2	NAC2000
3	NAC2500, NAC3000
4	NAC4000-02 to 04
5	NAC4000-N06
6	NAC5000, NAC6000

Option

X201	Length of lead wire:3m
X202	Set pressure range 15~85 PSI (0.1 to 0.6Mpa)

Attachment

—	Without attachment
Y	With attachment
YL	With attachment and L type bracket
YT	With attachment and T type bracket



Attachments for IS1000

Part No. applying to pressure switch	Y type standard	YL type with L type bracket	YT type with T type bracket
NIS1000M-2	Y20M	Y20LM	Y20TM
NIS1000M-3	Y30M	Y30LM	Y30TM
NIS1000M-4	Y40M	Y40LM	Y40TM
NIS1000M-5	Y50M	Y50LM	Y50TM
NIS1000M-6	Y60M	Y60LM	Y60TM

Model	A	B	C	D	E	F	Applicable model
NIS1000M-2Y	.59 (15)	2.89 (73.5)	2.46 (62.6)	.91 (23)	1.10 (28)	.39 (10)	NAC2000• NAC2020• NAC2030
NIS1000M-3Y	.59 (15)	3.23 (82)	2.56 (64.9)	.91 (23)	1.14 (29)	.43 (11)	NAC2500• NAC2520• NAC2530 NAC3000• NAC3020• NAC3030
NIS1000M-4Y	.59 (15)	3.49 (88.7)	2.66 (67.6)	.91 (23)	1.38 (35)	.55 (14)	NAC4000• NAC4020• NAC4030
NIS1000M-5Y	.59 (15)	3.58 (91)	2.68 (68)	.91 (23)	1.73 (44)	.55 (14)	NAC4000-N06• NAC4020-N06 NAC4030-N06
NIS1000M-6Y	.59 (15)	3.94 (100)	2.85 (72.5)	.91 (23)	2.13 (54)	.59 (15)	NAC5000• NAC5500• NAC6000 NAC5020• NAC5520• NAC6020

## Pressure Switch with Piping Adaptor



### Specifications

Fluid	Air
Proof pressure	145 psig (1.0 MPa)
Max. operating pressure	100 psig (0.7 MPa)
Setting range (off)	15~60 psig (0.1 ~ 0.4 MPa)
Differential pressure	Less than 12 psig (0.08 MPa)
Ambient and fluid temperature	40~140° F (5° ~ 60° C)

### Characteristics

Type of actuation	1a (N.O.)
Switch capacity	AC2VA • DC2W
Operating voltage (AC,DC)	12V, 24V, 48V, 100V AC, DC12V~24V: 50mA AC, DC48V: 40mA AC, DC100V: 20mA
Max. operating current	
Response time	1.2ms

Model	Port size	A	B	C	D	E	Applicable model
NIS1000E-2N01Y	1/8						NAC2000• NAC2010 • NAC2020 NAC2030• NAC2040 NAW2000
NIS1000E-2N02Y	1/4	1.10 (28)	2.87 (73)	2.44 (62)	.73 (18.5)	1.10 (28)	
NIS1000E-2N03Y	3/8						
NIS1000E-3N02Y	1/4	1.02 (26)	3.15 (80)	2.48 (63)	.65 (16.5)	1.10 (28)	NAC2500• NAC2520 • NAC2530 NAC3000• NAC3010 • NAC3020• NAC3030• NAC3040 NAW3000
NIS1000E-3N03Y	3/8						
NIS1000E-3N04Y	1/2	1.02 (40)	3.15 (80)	2.48 (63)	.65 (17.5)	1.10 (28)	
NIS1000E-4N02Y	1/4					1.14 (29)	NAC4000• NAC4010 • NAC4020 NAC4030• NAC4040 NAW4000
NIS1000E-4N03Y	3/8	1.30 (33)	3.43 (87)	2.60 (66)	.65 (17.5)	1.38 (35)	
NIS1000E-4N04Y	1/2					1.73 (44)	
NIS1000E-4N06Y	3/4	1.97 (50)	3.43 (87)	2.60 (66)	.65 (17.5)	2.13 (54)	

### How To Order

NIS1000E - 3 - 03 YL -

Pressure switch with piping adaptor

Body size

2	NAC2000
3	NAC2500, NAC3000
4	NAC4000-02 ~ 04

Thread

—	Rc(PT)
N	NPT
F	G(PF)

Option

X201	Length of lead wire:3m
X202	Set pressure range 15-85 PSI (0.1 to 0.6Mpa)
X250	Reverse mounting (Left side mounting)

Attachment

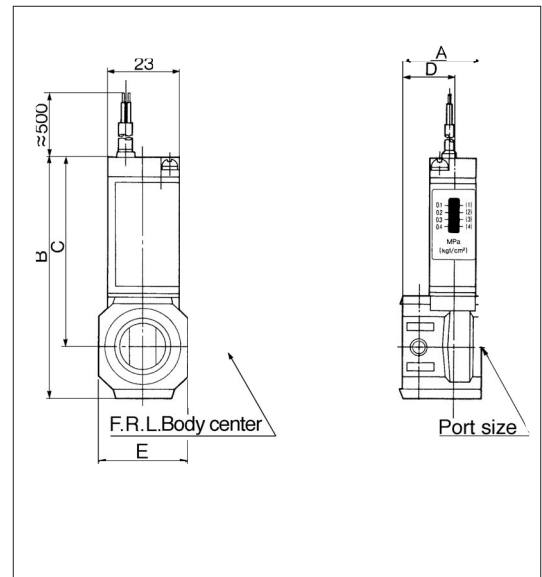
—	Without attachment
Y	With attachment
YL	With attachment & L type bracket
YT	With attachment & T type bracket

Piping adaptor port size

01	1/8
02	1/4
03	3/8
04	1/2
06	3/4

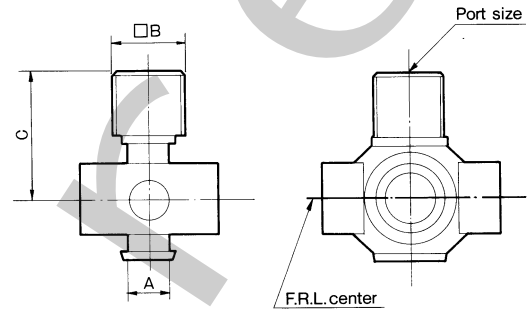
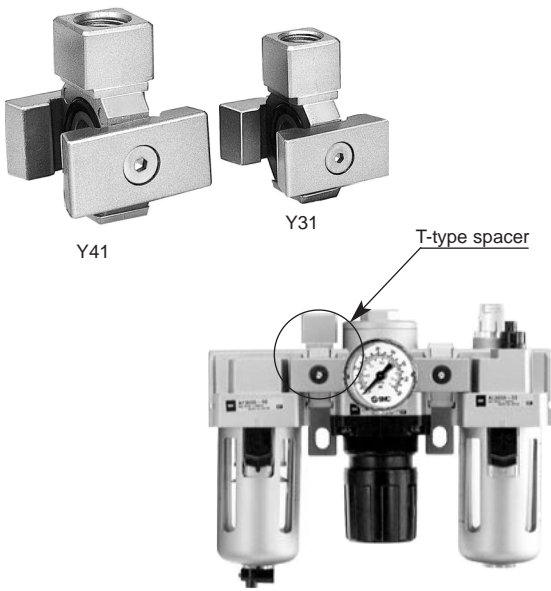
### Attachments for IS1000

Parts No. applying pressure switch	Y type standard	YL type with L type bracket	YT type with T type bracket
NIS1000E-N01 ~ N03	Y20E	Y20LE	Y20TE
NIS1000E-N02 ~ N04	Y30E	Y30LE	Y30TE
NIS1000E-N02 ~ N06	Y40E	Y40LE	Y40TE



T-Type Spacer

M5x0.8, 1/8-1/4-3/8-1/2

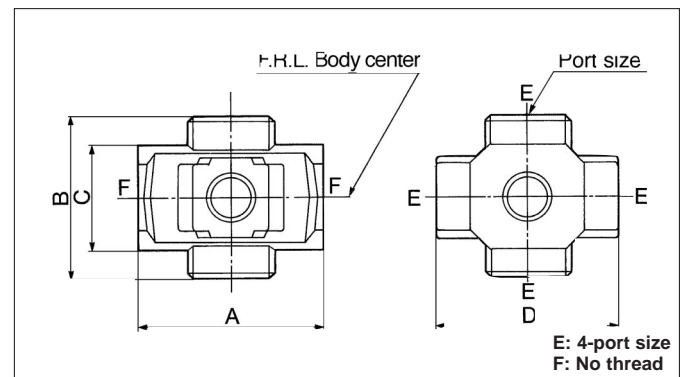
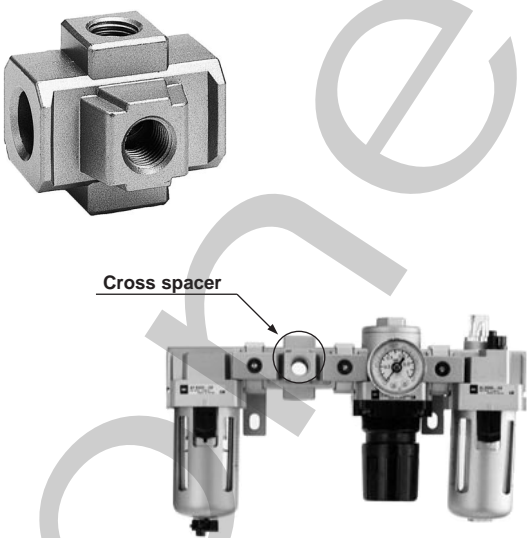


Model	Port size	A	B	C	Applicable model
Y11-M5	M5x0.8	.31 (8)	.31 (8)	.47 (12)	NAC1000•NAC1020
Y21-N01	1/8	.39 (10)	.75 (19)	1.14 (29)	NAC2000•NAC2020•NAC2030
Y21-N02	1/4				
Y31-N01	1/8	.43 (11)	.75 (19)	1.30 (33)	NAC2500•NAC2520•NAC2530 NAC3000•NAC3020•NAC3030
Y31-N02	1/4				
Y41-N02	1/4	.55 (14)	.94 (24)	1.54 (39)	NAC4000•NAC4020•NAC4030
Y41-N03	3/8				
Y51-N02	1/4	.55 (14)	.94 (24)	1.61 (41)	NAC4000-N06•NAC4020-N06 NAC4030-N06
Y51-N03	3/8				
Y61-N03	3/8	.59 (15)	1.18 (30)	1.99 (50.5)	NAC5000•NAC5020•NAC5500 NAC5520•NAC6000•NAC6020
Y61-N04	1/2				

\*When T-type spacer with bracket is required, please order as follows.  
 Example: L-type bracket:YOIL-N00  
 T-type bracket:YOIT-N00

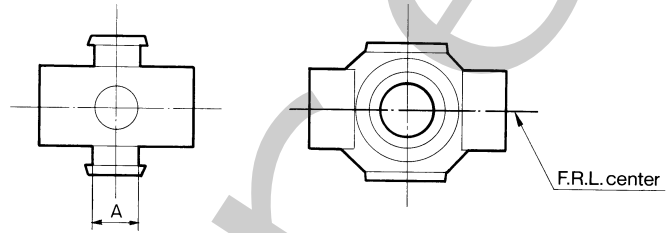
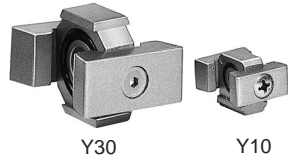
Cross Spacer

M5x0.8, 1/8-1/4-3/8-1/2



Model	Port size	A	B	C	D	Applicable model
Y14-M5	M5 x 0.8	.91 (23)	.63 (16)	.55 (14)	.98 (25)	NAC1000•NAC1010•NAC1020
Y24-N01	1/8	1.57 (40)	1.57 (40)	.87 (22)	1.57 (40)	NAC2000•NAC2010•NAC2020 NAC2030•NAC2040
Y24-N02	1/4					
Y34-N01	1/8	1.93 (49)	1.69 (43)	1.10 (28)	1.89 (48)	NAC2500•NAC2520•NAC2530 NAC3000•NAC3010•NAC3020 NAC3030•NAC3040
Y34-N02	1/4					
Y44-N02	1/4	2.36 (60)	1.89 (48)	1.42 (36)	2.13 (54)	NAC4000•NAC4010•NAC4020 NAC4030•NAC4040
Y44-N03	3/8					
Y54-N03	3/8	2.83 (72)	2.44 (62)	1.57 (40)	2.44 (62)	NAC4000-N06•NAC4010-N06 NAC4020-N06•NAC4030-N06 NAC4040-N06
Y54-N04	1/2					

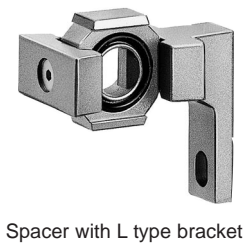
Spacer



Inch (mm)

Model	A	Applicable model
Y10	.31 (8)	NAC1000 ~ NAC1020
Y20	.39 (10)	NAC2000 ~ NAC2040
Y30	.43 (11)	NAC2500 ~ NAC2540 NAC3000 ~ NAC3040
Y40	.55 (14)	NAC4000 ~ NAC4040
Y50	.55 (14)	NAC4000-N06 ~ NAC4040-N06
Y60	.59 (15)	NAC5000, NAC5500, NAC6000 NAC5020, NAC5520, NAC6020

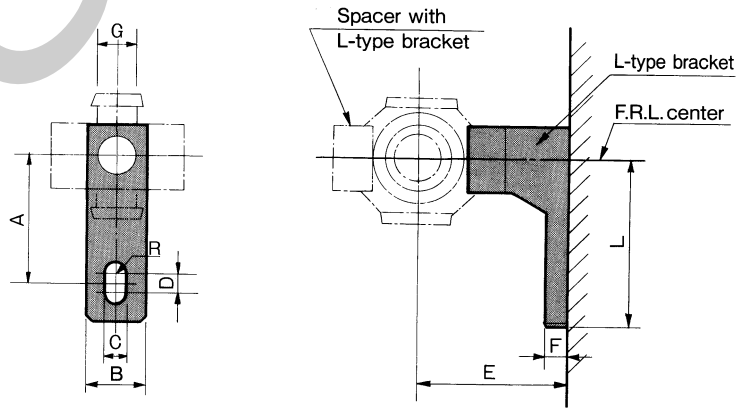
Spacer With L-type Bracket



Spacer with L type bracket



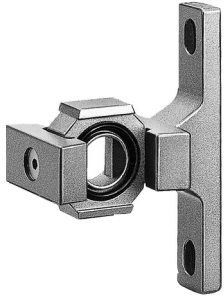
L type bracket



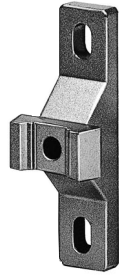
Inch (mm)

L-type Bracket	Spacer with L-type Bracket	A	B	C	D	E	F	G	R	L	Applicable model
B110L	Y10L	.79 (20)	.47 (12)	.18 (4.5)	.12 (3)	.98 (25)	.20 (5)	.31 (8)	.09 (2.25)	1.06 (27)	NAC1000~NAC1020
B210L	Y20L	.94 (24)	.59 (15)	.22 (5.5)	.12 (3)	1.18 (30)	.20 (5)	.39 (10)	.11 (2.75)	1.30 (33)	NAC2000~NAC2040
B310L	Y30L	1.38 (35)	.63 (16)	.28 (7)	.16 (4)	1.61 (41)	.28 (7)	.43 (11)	.14 (3.50)	1.77 (45)	NAC2500~NAC2540 NAC3000~NAC3040
B410L	Y40L	1.57 (40)	.87 (22)	.35 (9)	.16 (4)	1.97 (50)	.28 (7)	.55 (14)	1.18 (4.5)	1.97 (50)	NAC4000~NAC4040
B510L	Y50L	1.57 (40)	.87 (22)	.35 (9)	.16 (4)	1.97 (50)	.28 (7)	.55 (14)	1.18 (4.5)	1.97 (50)	NAC4000-N06~NAC4040-N06
B610L	Y60L	1.97 (50)	.94 (24)	.47 (12)	.16 (4)	2.76 (70)	.39 (10)	.59 (15)	.24 (6)	2.46 (62.5)	NAC5000•NAC5500•NAC6000 NAC5020•NAC5520•NAC6020

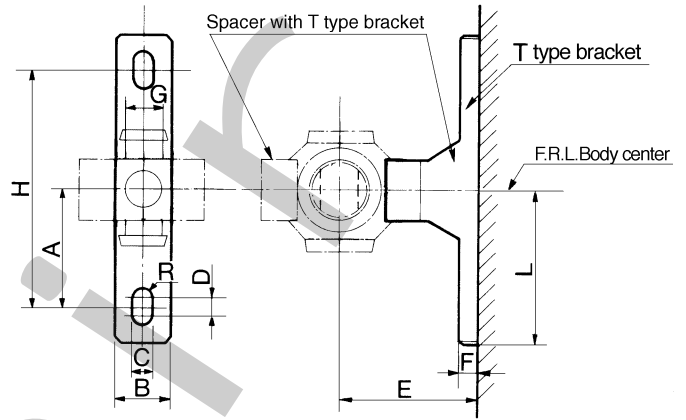
Spacer with T-type Bracket



Spacer with T-type Bracket



T-type Bracket



Inch (mm)

T-type Bracket	Spacer with T-type Bracket	A	B	C	D	E	F	G	H	R	L	Applicable model
B110T	Y10T	.79 (20)	.47 (12)	.18 (4.5)	.12 (3)	.98 (25)	.20 (5)	.31 (8)	1.57 (40)	.09 (2.25)	1.06 (27)	NAC1000-NAC1020
B210T	Y20T	.94 (24)	.59 (15)	.22 (5.5)	.12 (3)	1.18 (30)	.20 (5)	.39 (10)	1.89 (48)	.11 (2.75)	1.30 (33)	NAC2000-NAC2040
B310T	Y30T	1.38 (35)	.63 (16)	.28 (7)	.16 (4)	1.61 (41)	.28 (7)	.43 (11)	2.76 (70)	.14 (3.50)	1.77 (45)	NAC2500-NAC2540 NAC3000-NAC3040
B410T	Y40T	1.57 (40)	.87 (22)	.35 (9)	.16 (4)	1.97 (50)	.28 (7)	.55 (14)	3.15 (80)	1.18 (4.5)	1.97 (50)	NAC4000-NAC4040
B510T	Y50T	1.57 (40)	.87 (22)	.35 (9)	.16 (4)	1.97 (50)	.28 (7)	.55 (14)	3.15 (80)	1.18 (4.5)	1.97 (50)	NAC4000-N06-NAC4040-N06
B610T	Y60T	1.97 (50)	.94 (24)	.47 (12)	.16 (4)	2.76 (70)	.39 (10)	.59 (15)	3.94 (100)	.24 (6)	2.46 (62.5)	NAC5000-NAC5500-NAC6000 NAC5020-NAC5520-NAC6020

POWER



NVHS5500

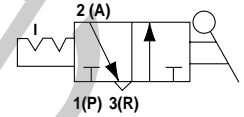
NVHS4500

**3 Port Valve with Lock-Out Capability**

OSHA rule 29 CFR1910.147 requires energy sources for certain equipment be turned off or disconnected and that the device either be locked or labeled with a warning tag. This would require certain pneumatically operated equipment to have a pneumatic energy isolating device (air valve).

Series NVHS Valves provide a means to prevent accidental start-ups while personnel are cleaning or servicing equipment. When in the exhaust position, the valve may be padlock secured. A window displays when the valve is in supply or exhaust position.

ANSI Symbol



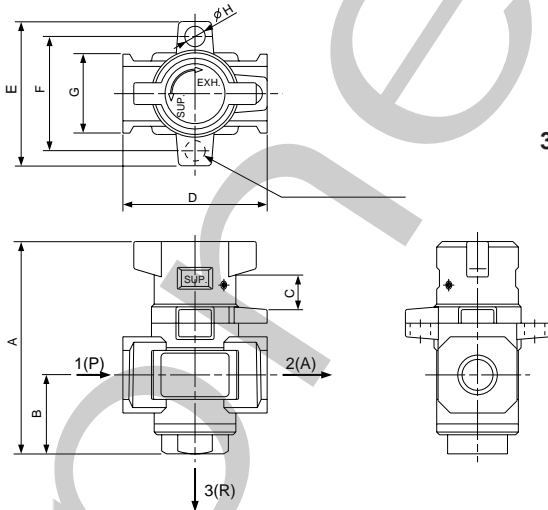
**Specifications**

Media	Air									
Proof Pressure (MPa)	220 psig (1.5)									
Operating Pressure (MPa)	15~150 psig (0.1~1.0)									
Ambient Fluid Temperature	23° ~140° F (-5° ~60° C)									
Model	NVHS2500		NVHS3500		NVHS4500			NVHS5500		
Port Size	1 (P), 2 (A)	1/8	1/4	1/4	3/8	1/4	3/8	1/2	3/4	1
	3 (R)	1/8		1/4		3/8			1/2	
Effective Orifice mm <sup>2</sup> (Cv)	1 (P) → 2 (A)	10 (0.56)	14 (0.78)	16 (0.89)	31 (1.72)	22 (1.22)	38 (2.11)	57 (3.17)	110 (6.11)	130 (7.22)
	2 (A) → 3 (R)	11 (0.61)	16 (0.89)	14 (0.78)	29 (1.61)	15 (0.83)	29 (1.61)	51 (2.83)	33 (1.83)	40 (2.22)
Weight lbs. (kgf)	.42 (0.19)		.55 (0.25)		.79 (0.36)			1.83 (0.83)		

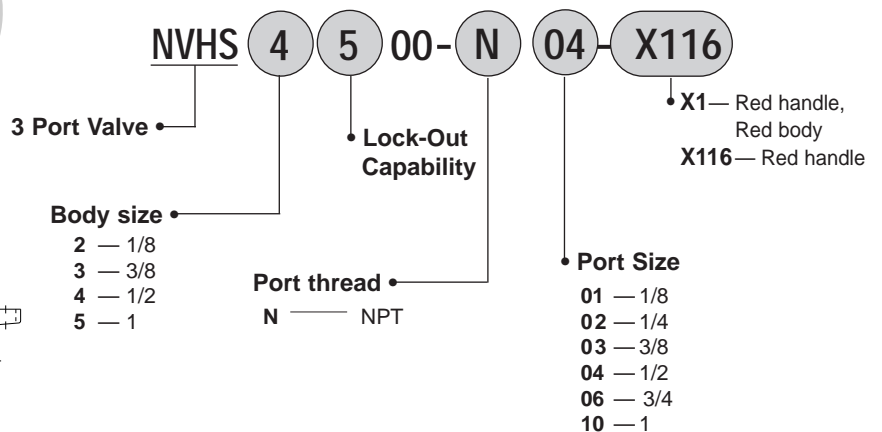
**Accessories - Exhaust Silencer**

Model	Port Size	Use With	Noise Reduction	Cv
NAN110-N01	1/8" NPT	NVHS2500	21 dB or more	1.9
NAN200-N02	1/4" NPT	NVHS3500	30 dB or more	1.9
NAN300-N03	3/8" NPT	NVHS4500	30 dB or more	3.3
NAN400-N04	1/2" NPT	NVHS5500		5.0
NVHS-OG-80	Lockout (6 locks) 1" Hasp; 7/16" Diameter Holes			

**Dimensions**



**How To Order**



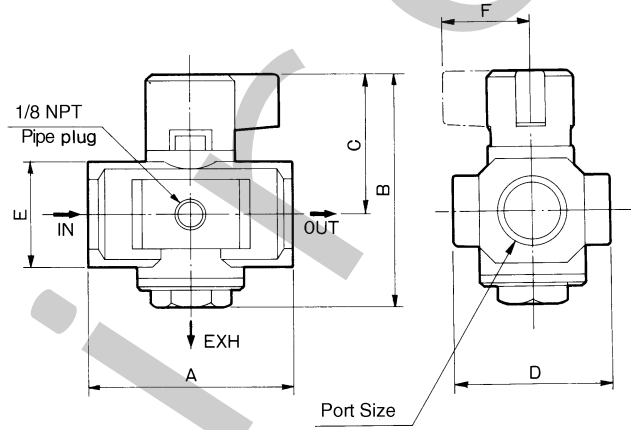
Model	A	B	C	D	E	F	G	H
NVHS2500	2.36 (60)	.79 (20)	.50 (12.8)	1.57 (40)	1.73 (44)	1.30 (33)	1.10 (28)	.30 (7.5)
NVHS3500	3.07 (78)	1.14 (29)	.50 (12.8)	2.09 (53)	2.09 (53)	1.65 (42)	1.14 (29)	.30 (7.5)
NVHS4500	3.35 (85)	1.26 (32)	.50 (12.8)	2.76 (70)	2.52 (64)	1.93 (49)	1.42 (36)	.39 (10)
NVHS5500	5.35 (136)	2.20 (56)	1.26 (32)	3.54 (90)	3.15 (80)	2.56 (65)	2.13 (54)	.39 (10)

## 3-Port Relieving Shut-off Valve

This shut-off valve relieves the downstream pressure for servicing. This unit does not have padlock capabilities.



Residual Pressure Release  
3-port Valve



### How To Order

**NVHS** (30) 00-N (02)

- 3-Port relieving shut-off valve
- Body size
  - 20 — 1/8
  - 30 — 3/8
  - 40 — 1/2
- Port size
  - 01 — 1/8
  - 02 — 1/4
  - 03 — 3/8
  - 04 — 1/2
- Port thread
  - Nil — Rc(PT)
  - F — G(PF)
  - N — NPT

Model	IN-OUT Port size	EXH. Port size	A	B	C	D	E	F
<b>NVHS2500</b>	1/8 • 1/4	1/8	1.57 (40)	2.20 (56)	1.42 (36)	1.10 (28)	.87 (22)	.98 (25)
<b>NVHS3000</b>	1/4 • 3/8	1/4	2.09 (53)	2.91 (74)	1.77 (45)	1.89 (48)	1.10 (28)	1.18 (30)
<b>NVHS4000*</b>	1/4 • 3/8 • 1/2	3/8	2.76 (70)	3.15 (80)	1.89 (48)	2.13 (54)	1.42 (36)	1.18 (30)

\* Not applicable to NAC4000-N06

## Bracket

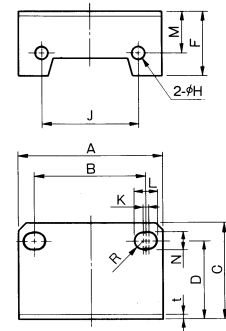
For NAF•NAL•NAFM•NAFD•NAR



B340



B240



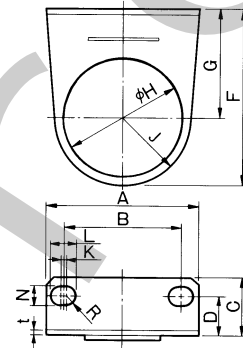
Model	A	B	C	D	F	H	J	K	L	M	N	R	t	Mounting screw (Head cap screw)	Applicable model
<b>B240A</b>	1.57 (40)	1.06 (27)	1.30 (33)	1.06 (27)	.71 (18)	.18 (4.5)	1.02 (26)	.12 (3)	.33 (8.4)	.55 (14)	.21 (5.4)	.11 (2.7)	.09 (2.3)	M4x8 (Phillips pan head screw)	NAF2000•NAL2000 NAFM2000•NAFD2000
<b>B340A</b>	2.09 (53)	1.57 (40)	1.54 (39)	1.26 (32)	.89 (22.5)	.18 (4.5)	1.38 (35)	.06 (1.5)	.31 (8)	.75 (19)	.26 (6.5)	.13 (3.25)	.09 (2.3)	M4x8 (Socket head cap screw)	NAF3000•NAL3000 NAFM3000•NAFD3000
<b>B440A</b>	2.76 (70)	2.13 (54)	1.85 (47)	1.50 (38)	1.24 (31.5)	.22 (5.5)	1.85 (47)	.08 (2)	.41 (10.5)	.79 (20)	.33 (8.5)	.17 (4.25)	.09 (2.3)	M5x10 (Socket head cap screw)	NAF4000•NAL4000 NAFM4000•NAFD4000
<b>B540A</b>	2.76 (70)	2.13 (54)	1.85 (47)	1.50 (38)	1.08 (27.5)	.22 (5.5)	1.85 (47)	.08 (2)	.41 (10.5)	.79 (20)	.33 (8.5)	.17 (4.25)	.09 (2.3)	M5x10 (Socket head cap screw)	NAF4000-N06•NAL4000-N06 NAFM4000-N06•NAFD4000-N06
<b>B640A</b>	3.54 (90)	2.60 (66)	2.52 (64)	2.05 (52)	1.69 (43)	.26 (6.5)	2.56 (65)	.08 (2)	.51 (13)	1.18 (30)	.43 (11)	.22 (5.5)	.13 (3.2)	M6x10 (Socket head cap screw)	NAF5000•NAR5000•NAL5000 NAF6000•NAR6000•NAL6000

**Bracket**

For NAR • NAW

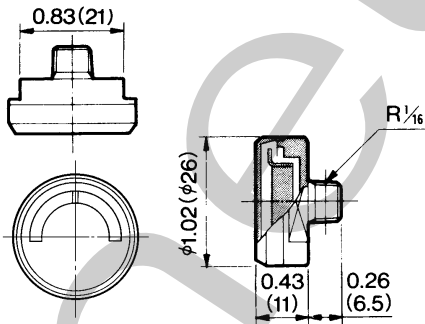


B220



Model	Inch (mm)													Applicable model
	A	B	C	D	F	G	H	J	K	L	N	R	t	
<b>B120</b>	1.57 (40)	1.10 (28)	.67 (17)	.43 (11)	1.47 (37.3)	.98 (25)	.81 (20.5)	.48 (12.3)	.08 (2)	.26 (6.5)	.18 (4.5)	.09 (2.25)	.08 (2)	<b>NAR1000•NAW1000</b>
<b>B220</b>	2.17 (55)	1.34 (34)	.98 (25)	.75 (19)	1.97 (50)	1.18 (30)	1.32 (33.5)	.79 (20)	.04 (1)	.61 (15.4)	.21 (5.4)	.11 (2.7)	.09 (2.3)	<b>NAR2000•NAR2500•NAW2000 NAWM2000•NAWD2000</b>
<b>B320</b>	2.09 (53)	1.57 (40)	.83 (21)	.53 (13.5)	2.60 (66)	1.61 (41)	1.67 (42.5)	.98 (25)	.06 (1.5)	.31 (8)	.26 (6.5)	.13 (4.25)	.09 (2.3)	<b>NAR3000•NAW3000•NAWM3000 NAWD2000•NARP3000</b>
<b>B420</b>	2.76 (70)	2.13 (54)	1.06 (27)	.71 (18)	3.15 (80)	1.97 (50)	2.07 (52.5)	1.18 (30)	.08 (2)	.41 (10.5)	.33 (8.5)	.17 (4.25)	.09 (2.3)	<b>NAR4000•NAW4000 NAR4000-N06•NAW4000-N06 NAWM4000•NAWD4000</b>

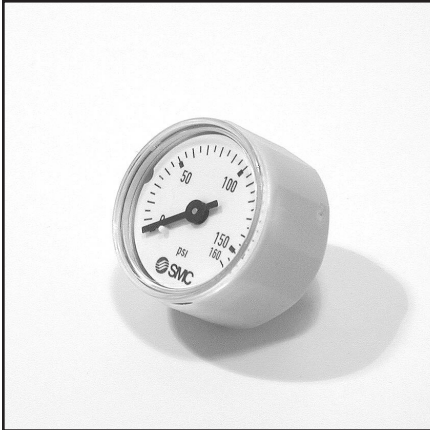
**Pressure Gauge**



G27-P10-R1

Model	Port Size	Suffix	Pressure Range (PSI)	Applicable Model
<b>G27-P10-R1</b>	Rc(PT)1/16	G	0-150	NAR1000•NAW1000

## Standard Pressure Gauges



**K27A-P1.0-N01M**



**K40-MP1.0-N01MS**



**K50-MP1.0-N02MS**

\*Standard pressure gauges are stocked and readily available.

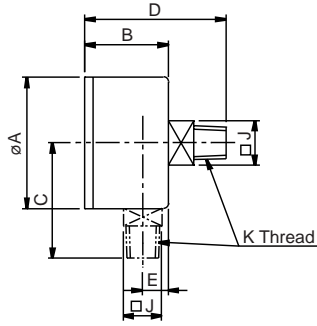
SIZE	27mm (1")		40mm (1 1/2")		50mm (2")	
THREAD LOCATION	CBM		CBM		CBM	
THREAD SIZE	1/8 NPT	1/8 PT	1/8 NPT	1/8 PT	1/4 NPT	1/4 PT
		WITH M5X0.8 FEMALE				
MATERIAL (CASE/SOCKET)	Urban White POLYAMID/POLYAMID		Urban White ABS/POLYAMID		Urban White ABS/POLYAMID	
UNITS	psi		Mpa & psi		Mpa & psi	
SCALE	PART NUMBER					
0~30 psi	K27A-P0.2-N01M	K27A-P0.2-01M	K40A-P0.2-N01M	K40A-P0.2-01M	K50A-P0.2-N02M	K50A-P0.2-02M
0~60 psi	K27A-P0.4-N01M	K27A-P0.4-01M	K40A-P0.4-N01M	K40A-P0.4-01M	K50A-P0.4-N02M	K50A-P0.4-02M
0~160 psi	K27A-P1.0-N01M	K27A-P1.0-01M	K40A-P1.0-N01M	K40A-P1.0-01M	K50A-P1.0-N02M	K50A-P1.0-02M

### \*Important delivery information:

The part numbers listed on this page are standard stocked gauges. The delivery time on these standard gauges is approximately 1 week. Many other options can be made to order (see How to Order on proceeding page), but delivery time will be up to 14 weeks for the initial order. Subsequent orders for made to order gauges will be up to 10 weeks delivery depending on gauge options. If short delivery time is desired, P/A recommends choosing a part number from the list above instead of the proceeding page.

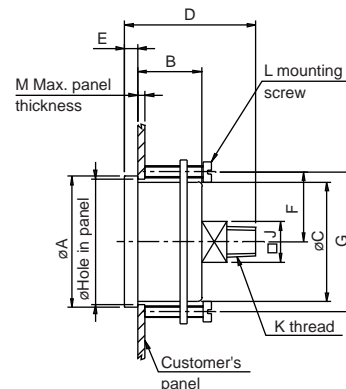
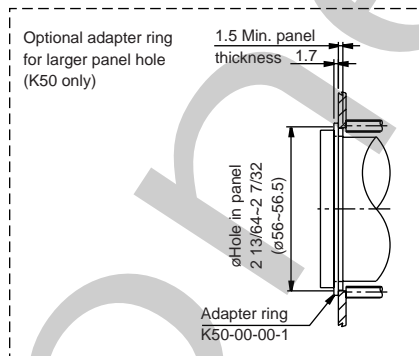


### Pressure/Vacuum Gauge Dimensions



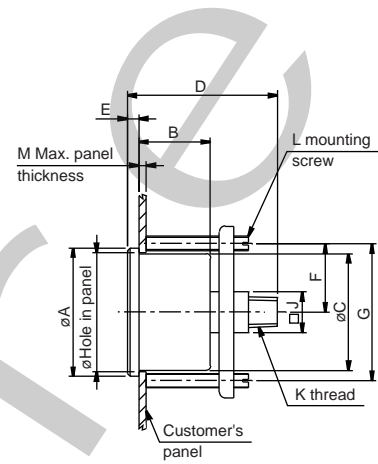
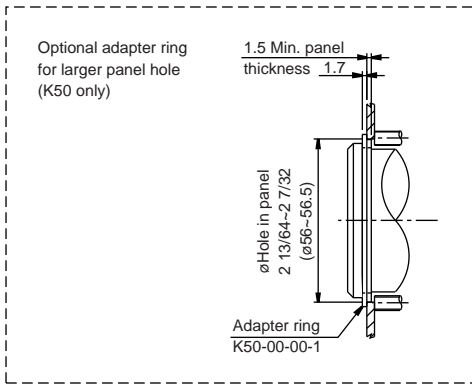
K(Z) <sup>(A)</sup>27 <sup>(A)</sup>40 <sup>(N)</sup>50 <sup>(P)</sup>50 <sup>(S)</sup>50 \*—(N)<sub>02</sub><sup>01</sup>

Series	A	B	C 1/8 THD	C 1/4THD	D 1/8 THD	D 1/4 THD	E	F	G	H	J	K	L	M	N
1" K27A	1.10 (28)	.65 (16.5)	—	—	1.06 (27)	—	—	—	—	—	—	1/8 PT or NPT	—	—	—
1" K27 <sup>N<sub>S</sub></sup> A	1.10 (28)	.67 (17)	—	—	1.06 (27)	—	—	—	—	—	—	1/8 PT or NPT	—	—	—
1 1/2" K(Z)40(A)	1.61 (41)	1.02 (26)	—	—	1.73 (44)	1.85 (47)	—	—	—	—	.55 (14)	1/8 or 1/4 PT or NPT	—	—	—
2" K(Z)50(A)	1.93 (49)	1.04 (26.5)	—	—	1.75 (44.5)	1.87 (47.5)	—	—	—	—	.55 (14)	1/8 or 1/4 PT or NPT	—	—	—
1 1/2" K(Z)40 <sup>N<sub>S</sub> P<sub>S</sub></sup>	1.57 (40)	1.04 (26.5)	—	—	1.63 (41.5)	1.75 (44.5)	—	—	—	—	.55 (14)	1/8 or 1/4 PT or NPT	—	—	—
2" K(Z)50 <sup>N<sub>S</sub> P<sub>S</sub></sup>	1.93 (49)	1.06 (27)	—	—	1.79 (45.5)	1.91 (48.5)	—	—	—	—	.55 (14)	1/8 or 1/4 PT or NPT	—	—	—
1 1/2" K(Z) <sup>A</sup> 40 <sup>B</sup> <sup>C</sup> 40(A)	1.57 (40)	.91 (23)	1.42 (36)	—	—	—	.31 (8)	—	—	—	.47 (12)	1/8 PT or NPT	—	—	—
2" K(Z) <sup>A</sup> 50 <sup>B</sup> <sup>C</sup> 50 (A)	1.93 (49)	1.06 (27)	1.65 (42)	1.77 (45)	—	—	.39 (10)	—	—	—	.55 (14)	1/8 or 1/4 PT or NPT	—	—	—
1 1/2" K(Z) <sup>A</sup> 40 <sup>B</sup> <sup>C</sup> 40 <sup>N<sub>S</sub> P<sub>S</sub></sup>	1.54 (39)	.91 (23)	1.42 (36)	—	—	—	.31 (8)	—	—	—	.47 (12)	1/8 PT or NPT	—	—	—
2" K(Z) <sup>A</sup> 50 <sup>B</sup> <sup>C</sup> 50 <sup>N<sub>S</sub> P<sub>S</sub></sup>	1.93 (49)	1.06 (27)	1.63 (41.5)	1.75 (44.5)	—	—	.39 (10)	—	—	—	.55 (14)	1/8 or 1/4 PT or NPT	—	—	—



K(Z) <sup>40</sup>50 \*—(N)<sub>02</sub><sup>01</sup>—C

Series	A	B	C	D 1/8 NPT	D 1/4 NPT	E	F	G	J	K	L	M	øHole	
													Min.	Max.
1 1/2" K(Z)40	1.77 (45)	.87 (22)	1.57 (40)	1.77 (45)	1.89 (48)	.18 (4.5)	.94 (24)	1.89 (48)	.55 (14)	1/8 or 1/4 PT or NPT	M4X0.7X20 Slotted Cheese Head	9/16 (14)	1 19/32 (40.5)	1 21/32 (42)
2" K(Z)50	2.13 (54)	.87 (22)	1.95 (49.5)	1.77 (45)	1.89 (48)	.18 (4.5)	1.12 (28.5)	2.24 (57)	.55 (14)	1/8 or 1/4 PT or NPT	M4X0.7X20 Slotted Cheese Head	37/64 (14.5)	1 31/32 (50)	2 1/32 (51.5)



K(Z) <sup>40</sup>/<sub>50</sub> <sup>N</sup>/<sub>S</sub> —\*—(N) <sup>01</sup>/<sub>02</sub> —C

Series	A	B	C	D		E	F	G	J	K	L	M	øHole	
				1/8 NPT	1/4 NPT								Min.	Max.
<b>1 1/2"</b> <b>K(Z)40</b>	1.73 (44)	.96 (24.5)	1.57 (40)	2.03 (51.5)	2.15 (54.5)	.16 (4)	.93 (23.5)	1.85 (47)	.55 (14)	1/8 or 1/4 PT or NPT	M5X0.8X35L Slotted Set	1.08 (27.5)	1 19/32 (40.5)	1 5/8 (41)
<b>2"</b> <b>K(Z)50</b>	2.13 (54)	.96 (24.5)	1.93 (49)	2.07 (52.5)	2.19 (55.5)	2 (5)	1.11 (28.25)	2.22 (56.5)	.55 (14)	1/8 or 1/4 PT or NPT	M5X0.8X35 Slotted Set	1.0 (25.5)	1 15/16 (49.5)	1 31/32 (50)

POWER AIRE

Soft Start Up Valve  
NAV2000, 3000, 4000, 5000

### How to Order

**NAV 2000-F 02 1 G C**

**Applicable area**

Nil	Japan, Asia, Australia
E	Europe
N	America

**Soft start-up valve**

**Body size**

20	1/4
30	3/8
40	1/2
50	3/4, 1

**Thread type**

Nil	Rc
F	G
N	NPT

**Port size**

02	1/4 (AV2000 only)
03	3/8 (AV3000 only)
04	1/2 (AV4000 only)
06	3/4 (AV5000 only)
10	1 (AV5000 only)

**Option**

Nil	None
G	With pressure gauge

**Manual override**

Nil	Non-locking push type (flush type)
B	Locking type (tool required)
C	Locking type (lever type)

**Indicator light/Surge voltage suppressor**

Nil	None
S	With surge voltage suppressor (grommet type only)
Z	With indicator light/surge voltage suppressor (not possible with grommet type)

**Rated coil voltage**

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)
3	110 to 120VAC (50/60Hz)
4	220VAC (50/60Hz)
5	24VDC
6	12VDC
9	Other

**Electrical entry**

G	Grommet
D	Type D DIN terminal
Y	Type Y DIN terminal

### How to Order Pilot Valve Assemblies

**SF4 1 G 80**

**Rated coil voltage**

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)
3	110 to 120VAC (50/60Hz)
4	220VAC (50/60Hz)
5	24VDC
6	12VDC
9	Other

**For soft start-up valve**

**Manual override**

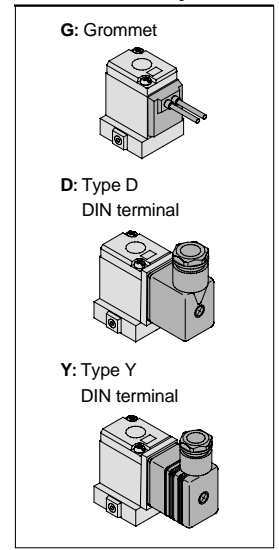
Nil	Non-locking push type (flush type)
B	Locking type (tool required)
C	Locking type (lever type)

**Indicator light Surge voltage suppressor**

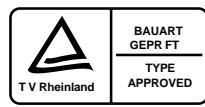
Nil	None
S	With surge voltage suppressor (grommet type only)
Z	With indicator light/surge voltage suppressor (not possible with grommet type)

**Electrical entry**

G	Grommet
D	Type D DIN terminal
Y	Type Y DIN terminal



Note) The grommet type can have a surge voltage suppressor (direct coupling type lead wire), but without indicator light.



**T V approved product**  
(Conforms to standards necessary to satisfy EC directives.)

Series AV has received approval from T V Rheinland, an EC Notified Body (EC authorization number 0197), for conformity to DIN VDE0580: 1994 Standards.

Consult P/A for details when ordering TUV approved products because of restrictions regarding product model, voltage specification, and electrical entry, etc.

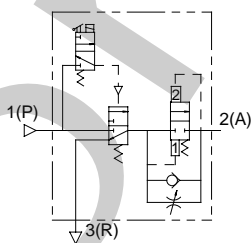


Type D DIN terminal



Type Y DIN terminal

Symbol



Accessories/Pressure gauge

Description	Pressure gauge
Part no.	G36-10-01
Pressure range	1MPa

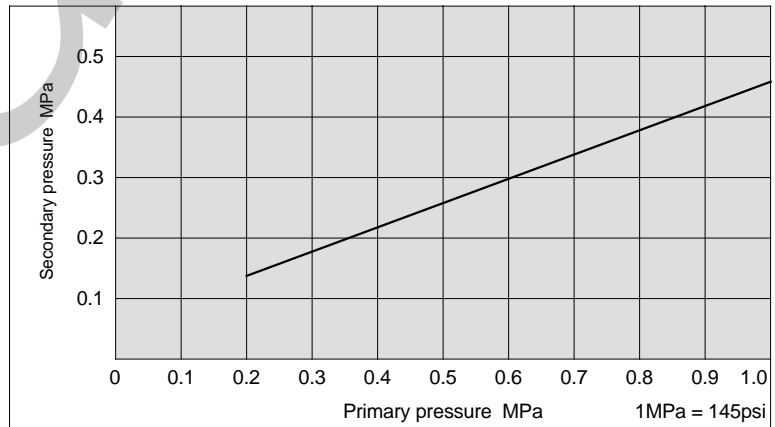
Specifications

Model		AV2000	AV3000	AV4000	AV5000		
Port size		1/4	3/8	1/2	3/4	1	
Proof pressure		1.5MPa (217psi)					
Operating pressure range		0.2 to 1MPa (29 to 145psi)					
Pressure gauge port size		1/8					
Ambient and fluid temperature		0 to 60°C (32° to 140°F) <small>Note 1)</small>					
Effective area mm <sup>2</sup> (cv)	1(P)→2(A)	20 (1.1)	37 (2)	61 (3.4)	113 (6.3)	122 (6.8)	
	2(A)→3(R)	24 (1.3)	49 (2.7)	76 (4.2)	132 (7.3)	141 (7.8)	
Weight kg (lbs)		0.27 (.60)	0.48 (1.05)	0.74 (1.63)	1.60 (3.53)	1.54 (3.39)	
Electrical specifications	Rated coil voltage	100, 200, 110 to 120, 220VAC (50/60Hz), 12, 24VDC					
	Allowable voltage fluctuation	-15% to +10% of rated voltage					
	Coil insulation type	Equivalent to B type (130;C)					
	Apparent power (current consumption) AC	Inrush	5.6VA (50Hz), 5.0VA (60Hz)				
		Energized	3.4VA (2.1W)/50Hz, 2.3VA (1.5W)/60Hz				
	Current consumption DC	1.8W					
Electrical entry	Grommet, Type D DIN terminal, Type Y DIN terminal						
Optional specification	Indicator light/Surge voltage suppressor <small>Note 2)</small>						
Pilot valve manual override	Non-locking push type (flush type), Locking type (tool required), Locking type (lever type)						

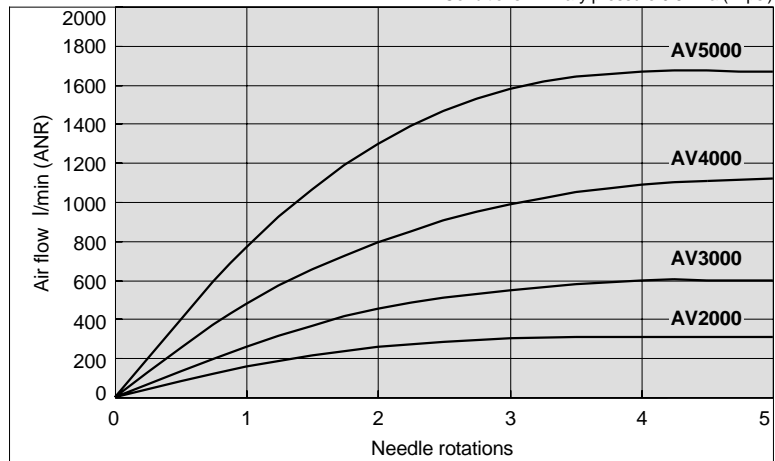
Note 1) Use dry air when operating at a low temperature.

Note 2) The grommet type can have a surge voltage suppressor (direct coupling type lead wire), but without indicator light.

Piston B switching pressure (Open→Closed)

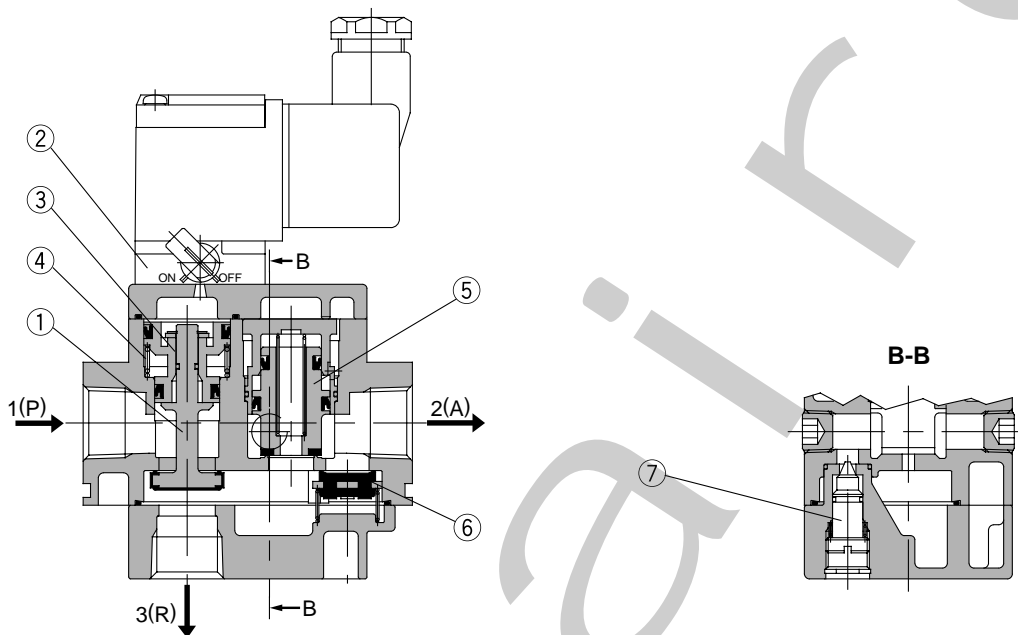


Needle valve flow characteristics Conditions: Primary pressure 0.5MPa (72psi)



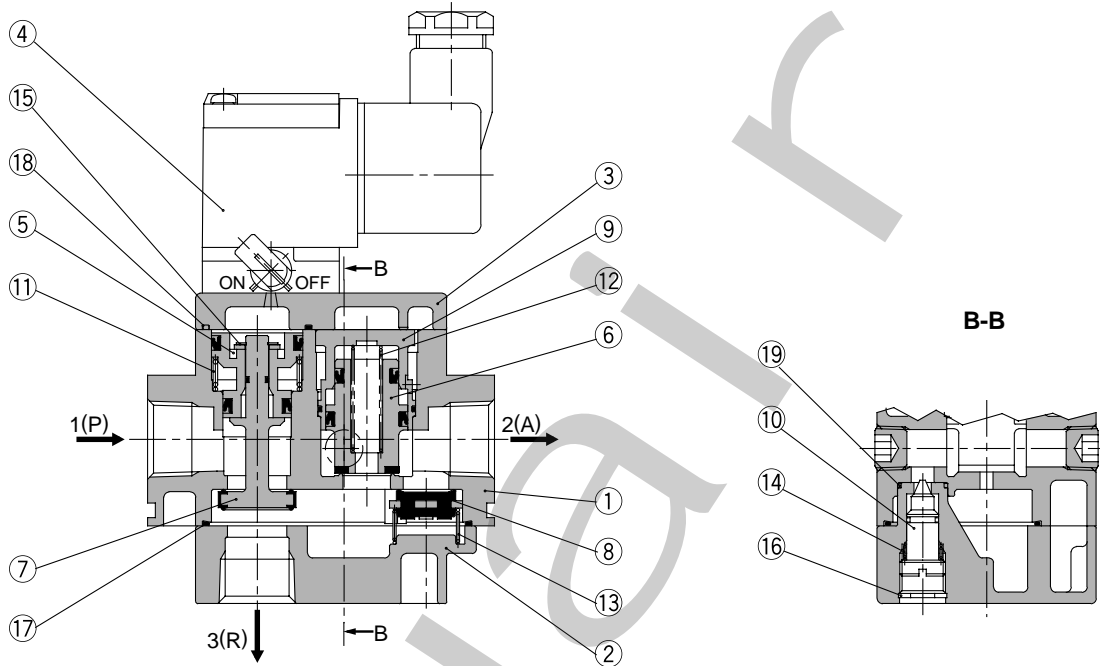
Soft Start Up Valve  
NAV2000, 3000, 4000, 5000

### Working Principle



Working condition	Pilot valve	Pressure conditions	Working description	Pressure time chart (meter-out control) example	Cylinder drive circuit (meter-out control) example
Low speed supply	ON	$1/2 PP > PA$	When pilot valve ② is turned ON by energization or manual override, the pilot air pushes piston A ③ and main valve ① downward and opens main valve ① while R port closes simultaneously. The air from P port moves to needle valve ⑦, where its flow is adjusted, and flows to A port. The meter-in control of needle valve ⑦ slowly moves the cylinder from ① to ②.	<p>Initial operation return stroke</p>	
High speed supply		$1/2 PP \leq PA$	When $1/2 PP \leq PA$ after the cylinder reaches ②, piston B ⑤ fully opens and PA increases rapidly as shown from ③ to ④ and becomes the same pressure as PP.		
Normal operation		$1/2 PP = \text{approx. } PA$	Since piston B ⑤ holds the fully open condition, during normal operation the cylinder's speed will be controlled by the usual meter-out control.		
Quick exhaust	OFF	—	When pilot valve ② is turned OFF, spring ④ pushes piston A ③ and main valve ① upward and opens R port while shutting off the air supply from P port. The pressure difference generated at this time opens check valve ⑥ and the residual pressure on the A port side is quickly exhausted from R port.		

**Construction**



**Parts list**

No.	Description	Material
1	Body	ADC
2	Cap	ADC
3	Cover	ADC

**Replacement parts**

No.	Description	Material	Part no.			
			AV2000	AV3000	AV4000	AV5000
4	Pilot valve assembly	—	SF4-□-80*			
5	Piston A assembly	POM, NBR	P424204A	P424304A	P424404A	P424504A
6	Piston B assembly	Brass, NBR (HNBR)	P424205A	P424305A	P424405A	P424505A
7	Main valve assembly	Brass, NBR (HNBR)	P424206A	P424306A	P424406A	P424506A
8	Check valve	Brass, NBR (HNBR)	P424207	P424307	P424407	P424507
9	Piston guide assembly	POM, NBR	P424208A	P424308A	P424408A	P424508A
10	Needle assembly	Brass, NBR	P424209A	P424309A	P424409A	P424509A
11	Valve spring	Steel wire	P424211	P424311	P424411	P424511
12	Piston spring	Stainless steel	P424212	P424312	P424412	P424512
13	Check spring	Stainless steel	P424213	P424313	P424413	P424513
14	Needle spring	Steel wire	P424214	P424314	P424414	—
15	C type snap ring for shaft	Tool steel	G-5	STW-5	STW-8	STW-10
16	C type snap ring for hole	Tool steel	0-9	0-10	RTW-12	RTW-15
17	Seal	NBR	P424210	P424310	P424410	P424510
18	Seal	NBR	P424218	P424315	P424415	P424514
19	O-ring	NBR	10 x 8 x 1	11 x 9 x 1	12.5 x 9.5 x 1.5	16.5 x 12.5 x 2

\* Refer to page 1 for pilot valve assembly part number designations.

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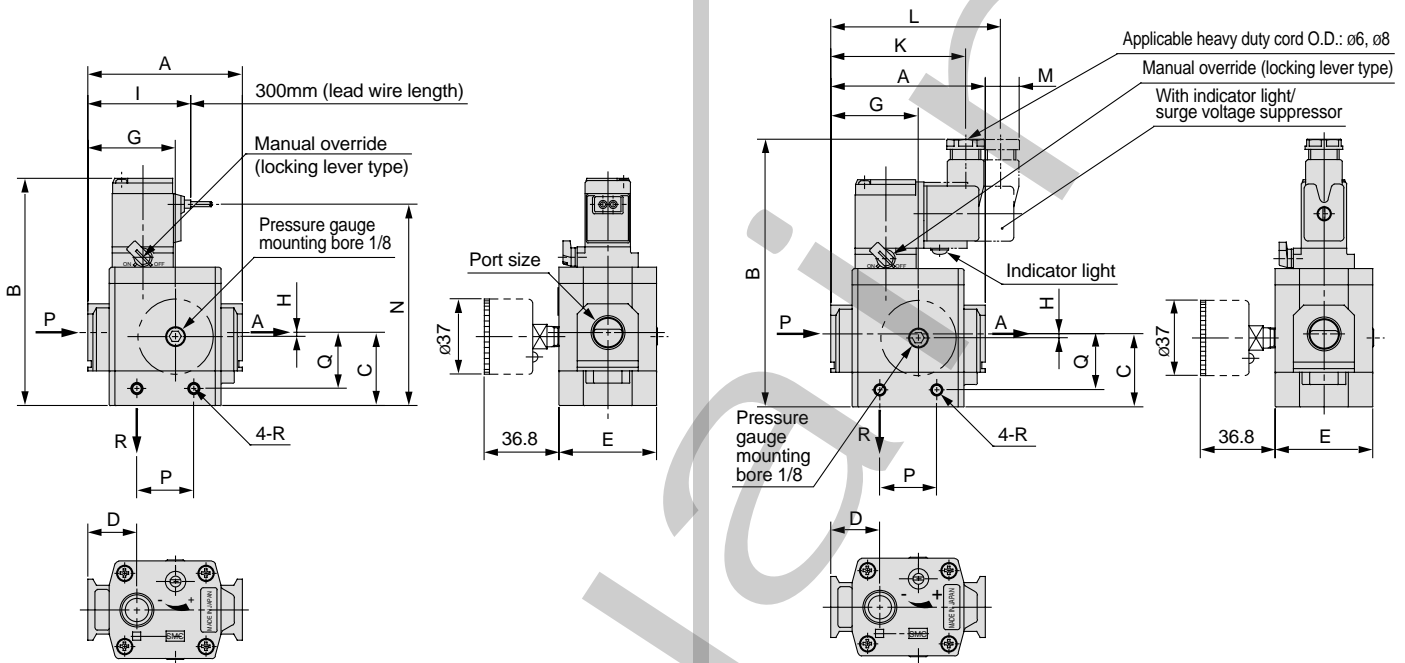
### Dimensions (mm)

1in = 25.4mm

Grommet: AV□00-□-□G, GS

DIN terminal: AV□00-□-□D, DZ

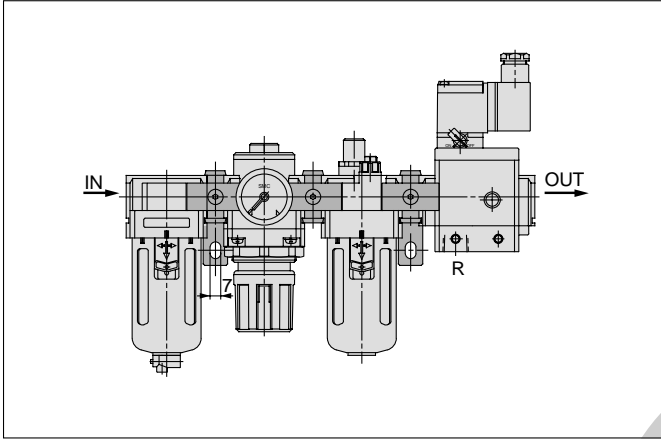
DIN terminal for European use: AV□00-□-□Y, YZ



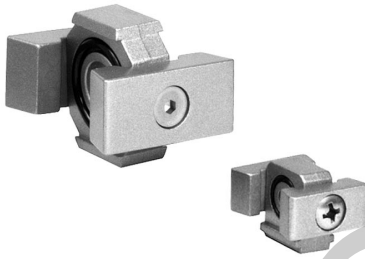
Model	Port size	A	B	C	D	E	G	H	I	K	L	M	N	P	Q	R
AV2000-□02-□G□	1/4	66	105	31	22	40	38	0	47.5	—	—	—	93	29	23.5	M4 x 0.7 Depth 4.5
AV2000-□02-□GS□																
AV2000-□02-□D□	1/4	66	125	31	22	40	38	0	—	65.5	—	6	—	29	23.5	M4 x 0.7 Depth 4.5
AV2000-□02-□DZ□										—	82.5	23				
AV2000-□02-□Y□	1/4	66	125	31	22	40	38	0	—	67.5	—	10.5	—	29	23.5	M4 x 0.7 Depth 4.5
AV2000-□02-□YZ□										—	84.5	27.5				
AV3000-□03-□G□	3/8	76	112	36	24	48	43	2	50.5	—	—	—	100	28	27.5	M5 x 0.8 Depth 5
AV3000-□03-□GS□																
AV3000-□03-□D□	3/8	76	132	36	24	48	43	2	—	68.5	—	—	—	28	27.5	M5 x 0.8 Depth 5
AV3000-□03-□DZ□										—	85.5	16				
AV3000-□03-□Y□	3/8	76	132	36	24	48	43	2	—	70.5	—	3.5	—	28	27.5	M5 x 0.8 Depth 5
AV3000-□03-□YZ□										—	87.5	20.5				
AV4000-□04-□G□	1/2	98	127	47	32	52	57	3	62.5	—	—	—	115	42	37	M6 x 1 Depth 6
AV4000-□04-□GS□																
AV4000-□04-□D□	1/2	98	147	47	32	52	57	3	—	80.5	—	—	—	42	37	M6 x 1 Depth 6
AV4000-□04-□DZ□										—	97.5	6				
AV4000-□04-□Y□	1/2	98	147	47	32	52	57	3	—	82.5	—	—	—	42	37	M6 x 1 Depth 6
AV4000-□04-□YZ□										—	99.5	10.5				
AV5000-□06-□G□	3/4, 1	128	155	59	39	74	77	0	74	—	—	—	143	50	46	M6 x 1 Depth 7.5
AV5000-□06-□GS□																
AV5000-□06-□D□	3/4, 1	128	175	59	39	74	77	0	—	90	—	—	—	50	46	M6 x 1 Depth 7.5
AV5000-□06-□DZ□										—	107	—				
AV5000-□06-□Y□	3/4, 1	128	175	59	39	74	77	0	—	94	—	—	—	50	46	M6 x 1 Depth 7.5
AV5000-□06-□YZ□										—	111	—				

### Modular F.R.L. Combination Spacer

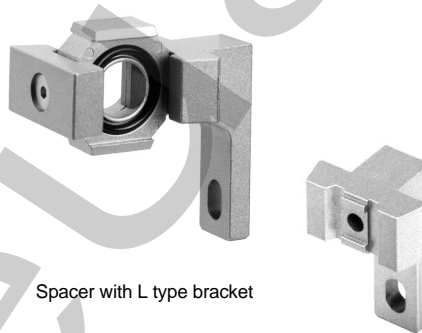
Select one of the spacers below when connecting to an F.R.L. combination unit (AC2000 to AC6000).  
(Spacers must be ordered separately.)



#### Spacer



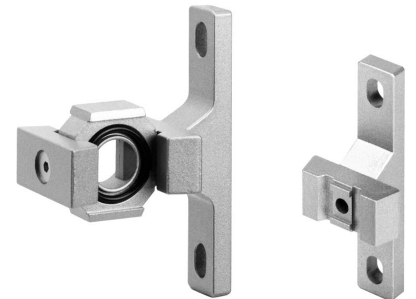
#### L type bracket Spacer with L type bracket



Spacer with L type bracket

L type bracket

#### T type bracket Spacer with T type bracket



Spacer with T type bracket

T type bracket

Model	Applicable model
Y20	AV2000
Y30	AV3000
Y40	AV4000
Y60	AV5000

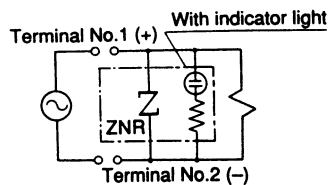
L type bracket	Spacer with L type bracket	Applicable model
B210L	Y20L	AV2000
B310L	Y30L	AV3000
B410L	Y40L	AV4000
B610L	Y60L	AV5000

T type bracket	Spacer with T type bracket	Applicable model
B210T	Y20T	AV2000
B310T	Y30T	AV3000
B410T	Y40T	AV4000
B610T	Y60T	AV5000

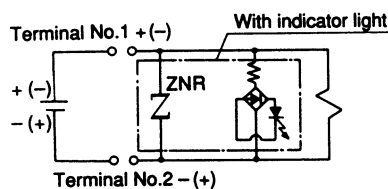
Soft Start Up Valve  
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### Indicator Light & Surge Voltage Suppressor

#### AC and 100V DC



#### 24V DC or less

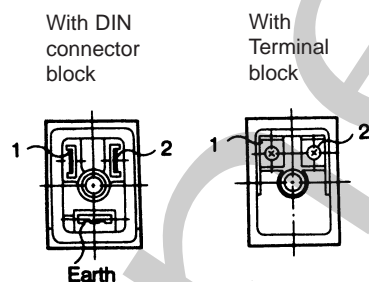


Note: No polarity (+/-) exists.

### Electrical Entry

Connect the DIN connector and the terminal (with indicator light and surge voltage suppressor) having the following internal connection with the power supply.

Applicable crimp-style terminal: 1.25-3, 1.25-3S, 1.25Y-3N, 1.25Y-3S; The model with a DIN connector is not of a crimp-style terminal construction.



Note: No polarity (+/-) exists.

### Precautions

1. For combination with the modular type FRL (NAC2000, 3000, 4000), select either T-type spacer (Y21, Y31, Y41), spacer (Y20, Y30, Y40), spacer with T-type bracket (Y20T, Y30T, Y40T), or spacer with L-type bracket (Y20L, Y30L, Y40L).
2. This valve cannot prevent shooting when a closed-center solenoid valve, or equipment driving with a load factor of 50% or more, is used.
3. When a regulator is to be mounted on the secondary side, use a regulator for releasing residual pressure (NAR2550, 3050, 4050). Standard regulators (NAR2000, 3000, 4000) cannot release residual pressure.
4. Mount a lubricator, as necessary, on the primary side (P port side) of the valve. When the lubricator is mounted on the secondary side (A port side), oil flows backward and exits from R port.
5. Check that the secondary-side pressure has risen to equal the primary-side pressure (P port side) before driving the solenoid valve mounted on the secondary-side (A port side) of the valve.
6. The residual pressure release function of this valve is provided for emergency operation. Refrain from using the valve like an ordinary three-way valve.

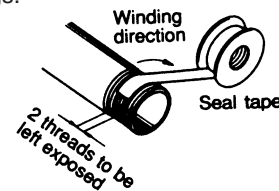
#### Needle Valve Adjustment Method

Use a screwdriver to adjust the needle valve. Clockwise rotation decreases air flow rate, and counterclockwise rotation increases air flow rate. (Refer to the flow rate characteristics of the needle valve on preceding pages.

### Handling Instructions

#### Piping and Mounting

1. Connect a pipe with a diameter equal to or larger than the nominal port size.
2. Thoroughly flush the primary side (P port side) and secondary side (A port side) before piping to completely remove dust, scale, cutting chips produced by piping work, and seal tape.
3. Be careful that thread chips or sealing material do not enter the piping when screwing in pipes and fittings.



4. In case of trouble, design the piping so that the valve can be easily mounted/dismounted. Provide a space for a needle valve, operation of the manual lever on the pilot valve, and lead wire connection.

#### Environmental Conditions

1. Prevent dust from naturally entering R port by mounting a silencer or mounting an elbow fitting with its opening facing down.
2. Contact an P/A Representative when the valve is to be used in a place subject to corrosive gas, chemical solutions, chemical containing steam or sea water, as well as in a place where temperatures exceed 140°F (60°C) or an outdoor area.

#### Lubrication

The valve can be used without lubrication. When lubrication is desired, use a lubricator to spray lube oil. Use turbine oil, Grade 1 (ISO VG32).