

# NP/NAP/NVP

## Large flow rate 3 port valve

For air and low vacuum

### Overview

Large flow rate 3 port valve incorporating a high seal poppet structure.

Internal pilot type NP Series suitable for driving cylinders up to  $\phi 400$ . External pilot type NAP/NVP Series for use with both positive pressure and negative pressure (vacuum). Two series have been prepared to match all applications.

### Features

Two series for all applications

- Internal pilot type NP series  
NC (normally closed) type,  
NO (normally open) type
- External pilot type NAP, NVP series  
(Universal type)

Compact, light weight design

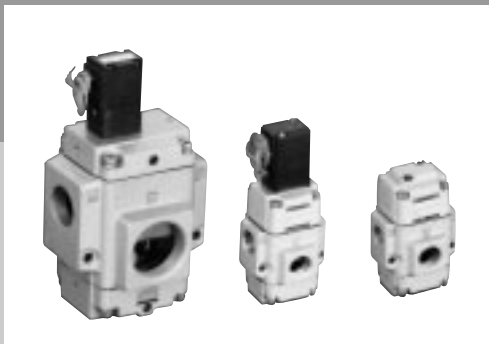
Large flow rate  
(Effective sectional area to  
630mm<sup>2</sup>)

Pre-lubricated


Free installation attitude

Positive or negative  
pressure possible with the  
external pilot type

Poppet structure



## CONTENTS

⚠ Safety precautions		498
● 3 port solenoid valve for air	NP13/NP14	500
● 3 port valve for air and low vacuum	NAP11	506
● 3 port solenoid valve for air and low vacuum	NVP11	510
 Electronic Catalog file list		515

⚠ Always read the precautions on Introduction and Page 498 before starting use.

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/AD

APK/  
ADK

For  
dry air  
Explosion  
proof

HVB/  
HVL

SAB/  
SVB

NP/NAP/  
NVP

CHB/G

MXB/G

Other G.P.  
systems

PD/FAD/  
PJ

CVE/  
CVSE

CPE/  
CPD

Medical  
analysis

Custom  
order

Large flow rate 3 port valve



# Safety precautions

Always read this section before starting use.

## Large flow rate 3 port valve NP/NAP/NVP

### Design & Selection

#### **WARNING**

##### 1 Working environment

- (1) The NP, NVP series cannot be used in an environment containing flammable gases. Change the model to the NAP series when using in a flammable gas environment, and provide the separate explosion proof solenoid valve on the pilot air circuit.
- (2) If there are high levels of dust in the area, provide protection by installing a silencer or an elbow joint facing downward onto the exhaust port so that dust does not enter.

#### **CAUTION**

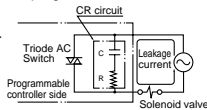
##### 1 Extreme dry air

The inside of the valve is initially lubricated with grease. This valve may not be appropriate if an extreme dry air quality is required to the end of the circuit.

##### 2 Leakage current from other fluid control components

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

Failure to observe this could lead to malfunctions.



Port size	Voltage		
	100 VAC	200 VAC	24 VDC
10 to 25A	3 (6) mA or less	1.5 (3) mA or less	1.8 (3) mA or less
32 to 50A	6 mA or less	3 mA or less	1mA or less

Note that the values given in parentheses are for when a surge suppressor is installed.

##### 3 External pilot air

- (1) Drain countermeasures - The compressed air contains high levels of drain (water, oxidized oil, tar, foreign matter) which can cause the reliability of pneumatic components to drop remarkably. These could cause the pneumatic component's reliability to drop remarkably. As a measures against drain, dehumidify with an after cooler dryer, remove foreign substances with a filter, and remove tar with a tar removal filter, and improve the air quality (clean air).
- (2) Pre-lubricated - This Series can be used with a pre-lubricated specifications, so the lubricator is not required. However, once lubrication has been started, continuously lubricate so that the lubricator is not spent. When lubricating, use turbine oil Class 1 ISO VG32 (#90) or the equivalent.
- (3) Filter - Install a filter with a 5  $\mu$ m or less filter element.

##### 4 Min. working pressure diff.

The pressure must be more than 0.2MPa to operate the NP series. If the piping section area at the fluid supply port is decreased, the operation may become unstable due to the drop in pressure when the valve operates.

### Installation, Piping, Wiring

#### **CAUTION**

##### 1 Piping

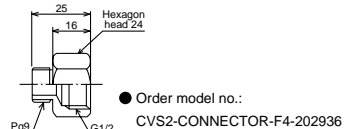
- (1) Refer to the following table for the pilot air piping tightening torque. (Only for NVP, NAP)

Piping nominal diameter	Recommended piping tightening torque (N·m)
Rc1/8	7 to 9

- (2) Do not pipe using the solenoid valve section. There is a risk of damage. (Only for NP, NVP)

##### 2 Wiring (for NP, NVP)

- (1) Refer to the connection method given on page 47 in the introduction when wiring to the DIN terminal box or T-type terminal box.
- (2) When changing the nominal thread size from Pg9 to G1/2 for the DIN terminal box's junction box outlets, use the optional connector shown below.



- (3) The coil direction can be changed by 180°.

To reverse the electrical connection direction, rotate only the coil. The valve will not function if the pilot solenoid valve's body is moved.

### When Using

#### **CAUTION**

- 1 Vacuum - The NVP and NAP series can be used for either negative pressures (vacuum) or positive pressures. As a balance poppet valve structure is incorporated, a pressurized or vacuum connection can be made from any port.
- 2 Transfer circuit - When using the vacuum absorbing pad (suction pad) for the transfer circuit, install a filter between the suction pad and valve so that foreign matter does not enter the valve. Failure to provide such measures could lead to leaks.
- 3 Leaving under elevated pressure - If the valve is left in the elevated pressure state for more than three days, the starting response could be delayed.
- 4 Response time - The response times given in the catalog are the time when energized in the pre-lubricated state at a 0.5MPa pressure.

## Maintenance

### CAUTION

#### 1 Pilot solenoid valve (for NP, NVP)

##### Port size 10A to 25A

The CVS2 pilot solenoid valve (actuator assembly kit):

CSV2-B-0 \*1 - (Rated voltage is mounted.)

If the pilot solenoid valve has been disassembled refer to page 704 for the assembly procedures.

##### Port size 32A to 50A

The just fit valve: GFAG41-1-0-1 \*1 N- \*2 is mounted.

The tightening torque for the coil assembly screw is 1.1 to 1.8Nm when disassembling or assembling.

After disassembly, assembly the manual operation section (green) onto the port A side of the main body.

Note: Indicate the coil housing symbol for \*1,  
and the rated voltage symbol for \*2.

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/AD

APK/  
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For  
dry air

Explosion  
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HVB/  
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SAB/  
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**NP/NAP/  
NVP**

CHB/G

MXB/G

Other G.P.  
systems

PD/FAD/  
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CVE/  
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CPE/  
CPD

Medical  
analysis

Custom  
order

Large flow rate 3 port valve



Internal pilot operated 3 port valve with solenoid valve

# NP13/NP14 Series

- NC (normally closed) type, NO (normally open) type
- Port size: Rc3/8 to Rc2

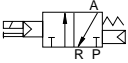


Refer to Ending 17 for more details.

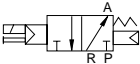


## JIS symbol

- NC (normally closed) type



- NO (normally open) type



## Common specifications

Descriptions	NP13	NP14
Actuation	NC (normally closed) type	NO (normally open) type
Fluid pressure supply port	Port P	Port R
Working fluid	Compressed air	
Withstanding pressure MPa	1.2	
Working pressure range MPa	0.2 to 0.8	
Fluid temperature °C	5 to 60	
Ambient temperature °C	-5 to 60 for 10A to 25A of NP13/NP14, while -5 to 40 for 32A to 50A	
Heat proof class	B	
Lubrication	Pre-lubricated (if lubrication is required, use turbine oil class 1 ISO VG32.)	
Valve seat leakage	1 or less (at pneumatic pressure 0.2 to 0.8MPa)	
Valve structure cm <sup>3</sup> /min	Internal pilot operated poppet valve structure	
Mounting attitude	Free	

## Individual specifications

Descriptions Model no.	Port size		Orifice (mm)	Response time (ms)	Rated voltage	Apparent power (VA)				Power consumption (W)		Weight (kg)
	Port P, A	Port R				At holding 50Hz 60Hz	At starting 50Hz 60Hz	AC 50/60Hz	DC			
<b>NC (normally closed) type (port P pressurized)</b>												
<b>NP13-10A</b>	Rc3/8	Rc1/2	14.8 or equivalent	30 or less (*1)	100, 200 VAC (50/60 Hz)	3.9	3.1	9.2	7.2	2.0/1.7	4	0.7
<b>NP13-15A</b>	Rc1/2		25.4 or equivalent	60 or less (*1)								0.7
<b>NP13-20A</b>	Rc3/4	Rc1	25.4 or equivalent	60 or less (*1)	110, 220 VAC (60 Hz)	15	11	40	35	7.5/6.0	8	1.5
<b>NP13-25A</b>	Rc1											1.5
<b>NP13-32A</b>	Rc1 1/4	Rc2	41.4 or equivalent	120 or less (*1)	24 VDC	15	11	40	35	7.5/6.0	8	4.5
<b>NP13-40A</b>	Rc1 1/2											4.5
<b>NP13-50A</b>	Rc2											4.4
<b>NO (normally open) type (Port R pressurized)</b>												
<b>NP14-10A</b>	Rc3/8	Rc1/2	14.8 or equivalent	30 or less (*1)	100, 200 VAC (50/60 Hz)	3.9	3.1	9.2	7.2	2.0/1.7	4	0.7
<b>NP14-15A</b>	Rc1/2		25.4 or equivalent	60 or less (*1)								0.7
<b>NP14-20A</b>	Rc3/4	Rc1	25.4 or equivalent	60 or less (*1)	110, 220 VAC (60 Hz)	15	11	40	35	7.5/6.0	8	1.5
<b>NP14-25A</b>	Rc1											1.5
<b>NP14-32A</b>	Rc1 1/4	Rc2	41.4 or equivalent	120 or less (*1)	24 VDC	15	11	40	35	7.5/6.0	8	4.5
<b>NP14-40A</b>	Rc1 1/2											4.5
<b>NP14-50A</b>	Rc2											4.4

\*1: Response time shows the value where 0.5MPa supply pressure, pre-lubricated and turned ON.

The value changes depending on the quality of the pressure and supplied oil.

\*2: Allowable voltage range should be within ±10% of rated voltage.

## Flow characteristics

Model no.	P → A				A → R			
	C[dm <sup>3</sup> /(s·bar)]	b	Cv flow factor	S (mm <sup>2</sup> )	C[dm <sup>3</sup> /(s·bar)]	b	Cv flow factor	S (mm <sup>2</sup> )
<b>NC (normally closed) type (port P pressurized)</b>								
NP13-10A	15	0.31	3.4	-	16	0.28	3.4	-
NP13-15A	18	0.29	3.6	-	17	0.26	3.6	-
NP13-20A	35	0.27	8.4	-	41	0.21	8.6	-
NP13-25A	-	-	8.6	200	-	-	9.0	210
NP13-32A	-	-	25.8	600	-	-	26.2	610
NP13-40A	-	-	27.0	630	-	-	26.6	620
NP13-50A	-	-	28.2	660	-	-	27.0	630
Model no.	R → A				A → P			
	C[dm <sup>3</sup> /(s·bar)]	b	Cv flow factor	S (mm <sup>2</sup> )	C[dm <sup>3</sup> /(s·bar)]	b	Cv flow factor	S (mm <sup>2</sup> )
<b>NO (normally open) type (Port R pressurized)</b>								
NP14-10A	15	0.31	3.4	-	15	0.33	3.4	-
NP14-15A	17	0.30	3.6	-	18	0.31	3.6	-
NP14-20A	41	0.21	8.4	-	35	0.27	8.6	-
NP14-25A	-	-	8.6	210	-	-	9.0	200
NP14-32A	-	-	25.8	610	-	-	26.2	600
NP14-40A	-	-	27.0	620	-	-	26.6	630
NP14-50A	-	-	28.2	630	-	-	27.0	660

\*1: Effective sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/AD

APK/ADK

For dry air

Explosion proof

HVB/HVL

SAB/SVB

NP/NAP/NVP

CHB/G

MXB/G

Other G.P. systems

PD/FAD/PJ

CVE/CVSE

CPE/CPD

Medical analysis

Custom order

Custom order

Custom order

Custom order

Custom order

Custom order

Custom order

Custom order

Custom order

Custom order

Custom order

Custom order

Large flow rate 3 port valve

# NP13/NP14 Series

How to order

NP1 3 - 15A - 1 2G S - 1

Model no.

**A** Actuation

**B** Port size

**C** Body, sealant combination

**D** Coil housing

\*1

**E** Other options

\*2

**F** Rated voltage

Symbol	Descriptions	
<b>A Actuation</b>		
3	NC (normally closed) type	
4	NO (normally open) type	
<b>B Port size</b>		
10A	Rc3/8	
15A	Rc1/2	
20A	Rc3/4	
25A	Rc1	
32A	Rc1 1/4	
40A	Rc1 1/2	
50A	Rc2	
<b>C Body, sealant combination</b>		
	Body	Material
1	Aluminum	Nitrile rubber
<b>D Coil housing</b>		
2C	Standard	Grommet coil
2G	Option	DIN terminal box (Pg screw)
2H		DIN terminal box + light (Pg screw)
3T		T terminal box (G1/2)
3R		T type terminal box + light (G1/2)
<b>E Other options</b>		
Blank	No options	
S	Surge suppressor	
<b>F Rated voltage</b>		
1	Standard	100 VAC (50/60Hz), 110 VAC (60Hz)
2		200 VAC (50/60 Hz), 220 VAC (60 Hz)
3		24 VDC
AC110V	Custom order	110 VAC (50/60 Hz)
AC220V		220 VAC (50/60 Hz)

<Example of model number>

**NP13-15A-12GS-1**

Series: NP

- A** Actuation : NC (normally closed) type
- B** Port size : Rc1/2
- C** Body, sealant combination : Body - aluminum, sealant - nitrile rubber
- D** Coil housing : DIN terminal box
- E** Other options : surge suppressor
- F** Voltage : 100 VAC (50/60Hz), 110 VAC (60Hz)

## ⚠ Note on model no. selection

\*1: Pg screw of a DIN terminal box is Pg9 when port size 10A to 25A, while Pg11 when 32A to 50A.

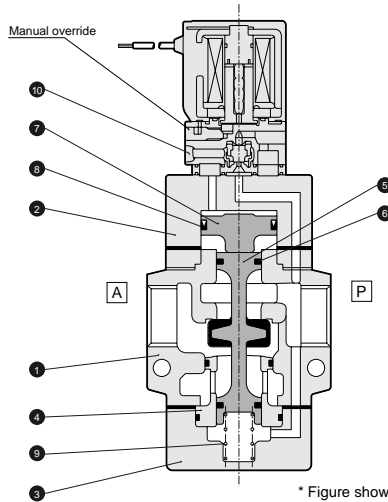
\*2: When using the grommet coil specifications, the surge suppressor is enclosed with the port size 10A to 25, and is incorporated for the port size 32A to 50A.

When using the coil with terminal box, the surge suppressor is mounted in the terminal box.

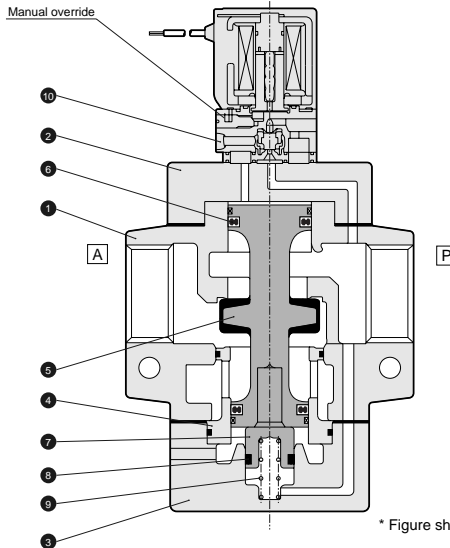
\*3: Manual override (non-locking) is equipped as standard.

## Internal structure and main parts materials

NP<sup>13</sup><sub>14</sub>-10A/15A



NP<sup>13</sup><sub>14</sub>-20A to 50A



HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

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AP/AD

APK/  
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For  
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Explosion  
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HVB/  
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Other G.P.  
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PD/FAD/  
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CVE/  
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Large flow rate 3 port valve

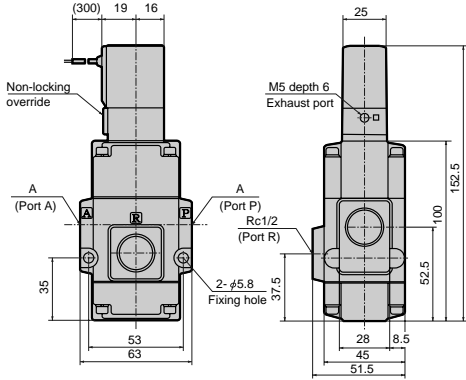
No.	Parts name	Material
1	Body	AC4C Aluminum die casting
2	Stuffing	AC4C Aluminum die casting
3	Cap	AC4C Aluminum die casting
4	Valve seat	C3604 Brass
5	Valve stem	NBR, A2017 Nitrile rubber, aluminum

No.	Parts name	Material
6	Packing	NBR Nitrile rubber
7	Piston	POM Acetar resin
8	MY packing seal	NBR Nitrile rubber
9	Spring	SUS304 Stainless steel
10	Pilot solenoid valve	-

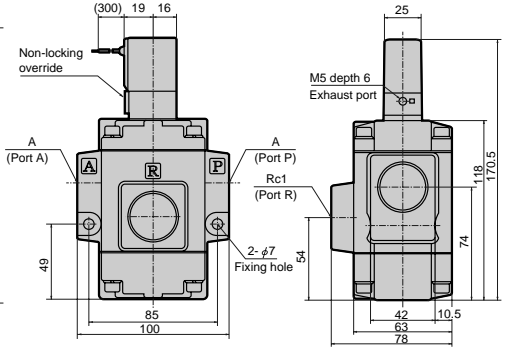
# NP13/NP14 Series

Dimensions  (Page 515)

● Grommet coil  
NP<sub>13</sub><sup>13</sup>-10A/15A-12C



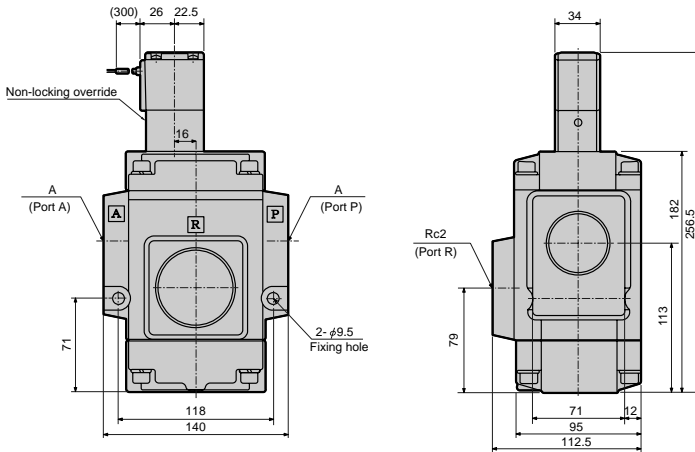
● Grommet coil  
NP<sub>14</sub><sup>13</sup>-20A/25A-12C



Model no.	A
NP1*-10A-1**	Rc3/8
NP1*-15A-1**	Rc1/2

Model no.	A
NP1*-20A-1**	Rc3/4
NP1*-25A-1**	Rc1

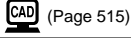
● Grommet coil  
NP<sub>14</sub><sup>13</sup>-32A/40A/50A-12C



Model no.	A
NP1*-32A-1**	Rc1 1/4
NP1*-40A-1**	Rc1 1/2
NP1*-50A-1**	Rc2



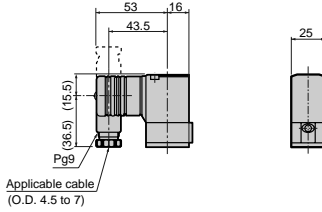
## Optional dimensions



(Page 515)

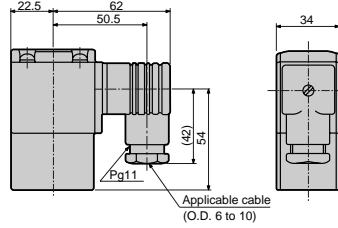
### ● DIN terminal box (Pg9)

NP<sup>13</sup><sub>14</sub>-10A/15A/20A/25A-1 2G  
2H



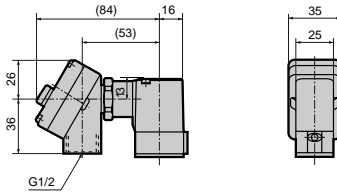
### ● DIN terminal box (Pg11)

NP<sup>13</sup><sub>14</sub>-32A/40A/50A-1 2G  
2H



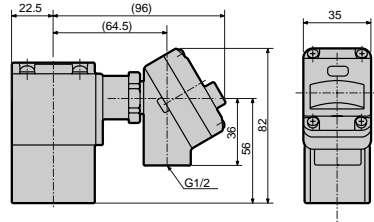
### ● T terminal box (G1/2)

NP<sup>13</sup><sub>14</sub>-10A/15A/20A/25A-1 3T  
3R



### ● T terminal box (G1/2)

NP<sup>13</sup><sub>14</sub>-32A/40A/50A-1 3T  
3R



HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

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AP/AD

APK/  
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For  
dry air

Explosion  
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HVB/  
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SAB/  
SVB

**NP/NAP/  
NVP**

CHB/G

MXB/G

Other G.P.  
systems

PD/FAD/  
PJ

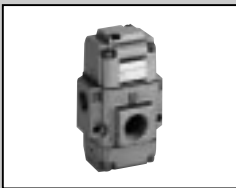
CVE/  
CVSE

CPE/  
CPD

Medical  
analysis

Custom  
order

Large flow rate 3 port valve



Air operated 3 port valve

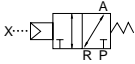
# NAP11 Series

- Universal type
- Port size: Rc3/8 to Rc2



## JIS symbol

- Universal type



## Common specifications

Descriptions	NAP11
Actuation	Universal type
Working fluid	Compressed air, low vacuum
Withstanding pressure MPa	1.2
Working pressure range MPa	0 to 0.8 (1.3 x 10 <sup>2</sup> to 8 x 10 <sup>5</sup> Pa (abs) when using with vacuum)
Fluid temperature °C	5 to 60
Ambient temperature °C	-5 to 60
Lubrication	Pre-lubricated (if lubrication is required, use turbine oil class 1 ISO VG32.)
Valve seat leakage cm <sup>3</sup> /min	1 or less (at pneumatic pressure 0.02 to 0.8MPa)
Valve structure	External pilot operated poppet valve structure
Mounting attitude	Free
Pilot air pressure MPa	0.35 to 0.7
Pilot port size (port X)	Rc1/8

## Individual specifications

Descriptions Model no.	Port size		Orifice (mm)	Response time (ms)	Weight (kg)
	Port P, A	Port R			
<b>NAP11-10A</b>	Rc3/8	Rc1/2	14.8 or equivalent	30 or less (*1)	0.6
<b>NAP11-15A</b>	Rc1/2				0.6
<b>NAP11-20A</b>	Rc3/4	Rc1	25.4 or equivalent	60 or less (*1)	1.4
<b>NAP11-25A</b>	Rc1				1.4
<b>NAP11-32A</b>	Rc1 1/4	Rc2	41.4 or equivalent	120 or less (*1)	4.2
<b>NAP11-40A</b>	Rc1 1/2				4.2
<b>NAP11-50A</b>	Rc2				4.1

\*1: Response time shows the value where 0.5MPa supply pressure, pre-lubricated and turned ON.  
The value changes depending on the quality of the pressure and supplied oil.

## Flow characteristics

Model no.	P → A				A → R			
	C <sub>d</sub> (dm <sup>3</sup> /(s·bar))	b	C <sub>v</sub> flow factor	S (mm <sup>2</sup> )	C <sub>d</sub> (dm <sup>3</sup> /(s·bar))	b	C <sub>v</sub> flow factor	S (mm <sup>2</sup> )
<b>NAP11-10A</b>	15	0.31	3.4	-	16	0.28	3.4	-
<b>NAP11-15A</b>	18	0.29	3.6	-	17	0.26	3.6	-
<b>NAP11-20A</b>	35	0.27	8.4	-	41	0.21	8.6	-
<b>NAP11-25A</b>	-	-	8.6	200	-	-	9.0	210
<b>NAP11-32A</b>	-	-	25.8	600	-	-	26.2	610
<b>NAP11-40A</b>	-	-	27.0	630	-	-	26.6	620
<b>NAP11-50A</b>	-	-	28.2	660	-	-	27.0	630

## How to order

**NAP11-15A-1**

Model no.

Ⓐ Actuation

Ⓑ Port size

Ⓒ Body, sealant combination

Symbol	Descriptions	
<b>Ⓐ Actuation</b>		
1	Universal type	
<b>Ⓑ Port size</b>		
10A	Rc3/8	
15A	Rc1/2	
20A	Rc3/4	
25A	Rc1	
32A	Rc1 1/4	
40A	Rc1 1/2	
50A	Rc2	
<b>Ⓒ Body, sealant combination</b>		
	Body	Material
1	Aluminum	Nitrile rubber

<Example of model number>

**NAP11-15A-1**

Series: NAP

- Ⓐ Actuation : Universal type
- Ⓑ Port size : Rc1/2
- Ⓒ Body, sealant combination : Body - aluminum, sealant - nitrile rubber

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/AD

APK/ADK

For dry air

Explosion proof

HVB/HVL

SAB/SVB

NP/NAP/NVP

CHB/G

MXB/G

Other G.P. systems

PD/FAD/PJ

CVE/CVSE

CPE/CPD

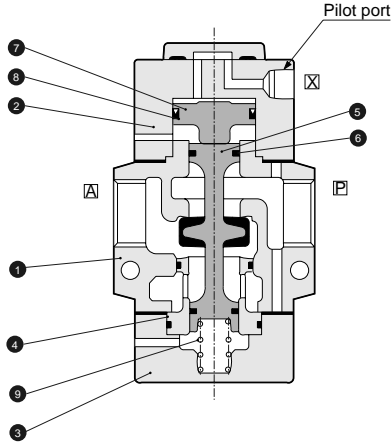
Medical analysis

Custom order

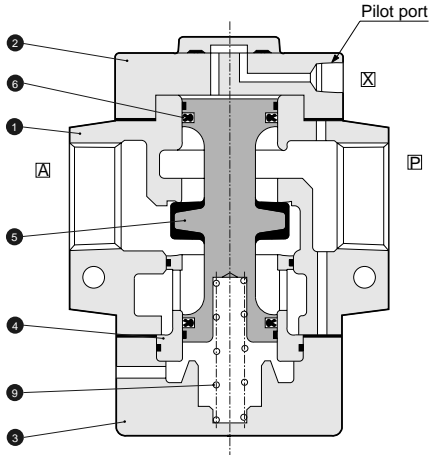
Large flow rate 3 port valve

## Internal structure and main parts materials

● NAP11-10A/15A



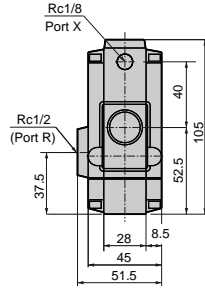
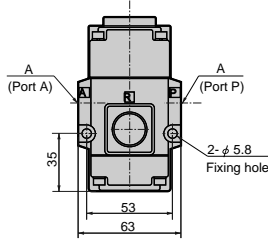
● NAP11-20A/25A/32A/40A/50A



No.	Parts name	Material	No.	Parts name	Material
1	Body	AC4C	6	Packing	NBR
2	Stuffing	AC4C	7	Piston	POM
3	Cap	AC4C	8	MY packing seal	NBR
4	Valve seat	C3604	9	Spring	SWP
5	Valve stem	NBR, A2017			
		Aluminum casting			Nitrile rubber
		Aluminum casting			Acetar resin
		Aluminum casting			Nitrile rubber
		Brass			Piano wire
		Nitrile rubber, aluminum			

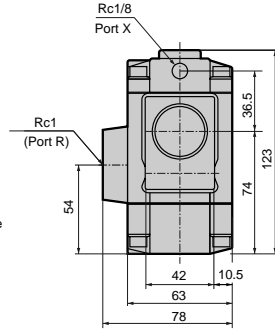
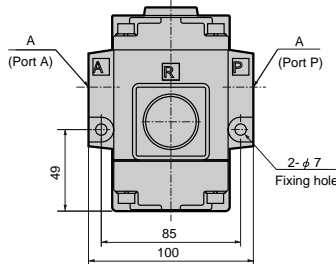
Dimensions  (Page 515)

● NAP11-10A/15A-1



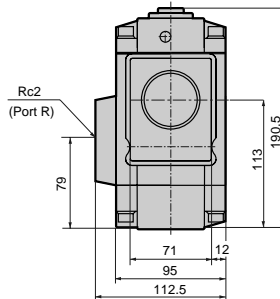
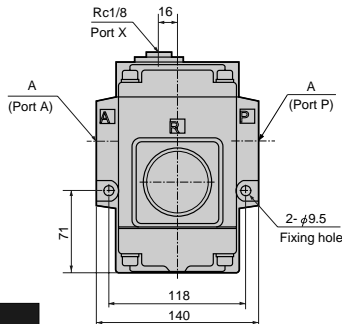
Model no.	A
<b>NAP11-10A-1</b>	Rc3/8
<b>NAP11-15A-1</b>	Rc1/2

● NAP11-20A/25A-1



Model no.	A
<b>NAP11-20A-1</b>	Rc3/4
<b>NAP11-25A-1</b>	Rc1

● NAP11-32A/40A/50A-1



Model no.	A
<b>NAP11-32A-1</b>	Rc1 1/4
<b>NAP11-40A-1</b>	Rc1 1/2
<b>NAP11-50A-1</b>	Rc2

- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- For dry air
- Explosion proof
- HVB/HVL
- SAB/SVB
- NP/NAP/NVP**
- CHB/G
- MXB/G
- Other G.P. systems
- PD/FAD/PJ
- CVE/CVSE
- CPE/CPD
- Medical analysis
- Custom order

Large flow rate 3 port valve

Air operated 3 port valve with solenoid valve



# NVP11 Series

- Universal type
- Port size: Rc3/8 to Rc2

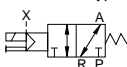


Refer to Ending 17 for more details.



## JIS symbol

- Universal type



## Common specifications

Descriptions	NVP11
Actuation	Universal type
Working fluid	Compressed air, low vacuum
Withstanding pressure MPa	1.2
Working pressure range MPa	0 to 0.8 (1.3 x 10 <sup>2</sup> to 8 x 10 <sup>5</sup> Pa (abs) when using with vacuum)
Fluid temperature °C	5 to 60
Ambient temperature °C	-5 to 60 for 10A to 25A, while -5 to 40 for 32A to 50A.
Heat proof class	B
Lubrication	Pre-lubricated (if lubrication is required, use turbine oil class 1 ISO VG32.)
Valve seat leakage cm <sup>3</sup> /min	1 or less (at pneumatic pressure 0.02 to 0.8MPa)
Valve structure	External pilot operated poppet valve structure
Mounting attitude	Free
Pilot air pressure MPa	0.35 to 0.7
Pilot port size (port X)	Rc1/8

## Individual specifications

Descriptions Model no.	Port size		Orifice (mm)	Response time (ms)	Rated voltage	Apparent power (VA)				Power consumption (W)		Weight (kg)
	Port P, A	Port R				At holding		At starting		AC 50/60Hz	DC	
						50Hz	60Hz	50Hz	60Hz			
<b>NVP11-10A</b>	Rc3/8	Rc1/2	14.8 or equivalent	30 or less (*1)	100, 200 VAC (50/60 Hz)	3.9	3.1	9.2	7.2	2.0/1.7	4	0.7
<b>NVP11-15A</b>	Rc1/2											0.7
<b>NVP11-20A</b>	Rc3/4	Rc1	25.4 or equivalent	60 or less (*1)	110, 220 VAC (60Hz)	15	11	40	35	7.5/6.0	8	1.5
<b>NVP11-25A</b>	Rc1											1.5
<b>NVP11-32A</b>	Rc1 1/4	Rc2	41.4 or equivalent	120 or less (*1)	24 VDC	15	11	40	35	7.5/6.0	8	4.5
<b>NVP11-40A</b>	Rc1 1/2											4.5
<b>NVP11-50A</b>	Rc2											4.4

\*1: Response time shows the value where 0.5MPa supply pressure, pre-lubricated and turned ON.

The value changes depending on the quality of the pressure and supplied oil.

\*2: Allowable voltage range should be within ±10% of rated voltage.

## Flow characteristics

Model no.	P → A				A → R			
	C[dm <sup>3</sup> /(s·bar)]	b	Cv flow factor	S (mm <sup>2</sup> )	C[dm <sup>3</sup> /(s·bar)]	b	Cv flow factor	S (mm <sup>2</sup> )
<b>NAP11-10A</b>	15	0.31	3.4	-	16	0.28	3.4	-
<b>NAP11-15A</b>	18	0.29	3.6	-	17	0.26	3.6	-
<b>NAP11-20A</b>	35	0.27	8.4	-	41	0.21	8.6	-
<b>NAP11-25A</b>	-	-	8.6	200	-	-	9.0	210
<b>NAP11-32A</b>	-	-	25.8	600	-	-	26.2	610
<b>NAP11-40A</b>	-	-	27.0	630	-	-	26.6	620
<b>NAP11-50A</b>	-	-	28.2	660	-	-	27.0	630

\*1: Effective sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

## How to order



Model no.

**A** Actuation

**B** Port size

**C** Body, sealant combination

**D** Coil housing

\*1

**E** Other options

\*2

**F** Rated voltage

Symbol	Descriptions	
<b>A Actuation</b>		
1	Universal type	
<b>B Port size</b>		
10A	Rc3/8	
15A	Rc1/2	
20A	Rc3/4	
25A	Rc1	
32A	Rc1 1/4	
40A	Rc1 1/2	
50A	Rc2	
<b>C Body, sealant combination</b>		
	Body	Sealant
1	Aluminum	Nitrile rubber
<b>D Coil housing</b>		
2C	Standard	Grommet coil
2G	Option	DIN terminal box (Pg screw)
2H		DIN terminal box + light (Pg screw)
3T		T terminal box (G1/2)
3R		T terminal box + light (G1/2)
<b>E Other options</b>		
Blank	No options	
S	Surge suppressor	
<b>F Rated voltage</b>		
1	Standard order	100 VAC 50/60Hz, 110 VAC 60Hz
2		200 VAC 50/60Hz, 220 VAC 60Hz
3		24 VDC
110 VAC	Custom order	110 VAC 50/60Hz
220 VAC		220 VAC 50/60Hz

## <Example of model number>

**NVP11-15A-12GS-1**

Series: NVP

- A** Actuation : Universal type
- B** Port size : Rc1/2
- C** Body, sealant combination : Body - aluminum, sealant - nitrile rubber
- D** Coil housing : DIN terminal box
- E** Other options : surge suppressor
- F** Voltage : 100 VAC 50/ 60Hz, 110 VAC 60Hz

## ⚠ Note on model no. selection

\*1: Pg screw of a DIN terminal box is Pg9 when port size 10A to 25A, while Pg11 when 32A to 50A.

\*2: When using the grommet coil specifications, the surge suppressor is enclosed with the port size 10A to 25, and is incorporated for the port size 32A to 50A.

When using the coil with terminal box, the surge suppressor is mounted in the terminal box.

\*3: Manual override (non-locking) is equipped as standard.

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/AD

APK/ADK

For dry air

Explosion proof

HVB/HVL

SAB/SVB

NPN/ANP/NVP

CHB/G

MXB/G

Other G.P. systems

PD/FAD/PJ

CVE/CVSE

CPE/CPD

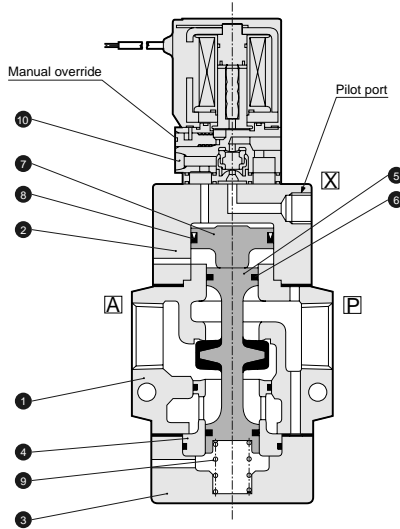
Medical analysis

Custom order

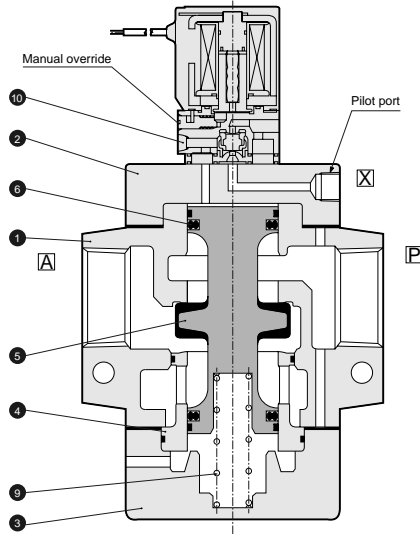
Large flow rate 3 port valve

## Internal structure and main parts materials

● NVP11-10A/15A



● NVP11-20A/25A/32A/40A/50A

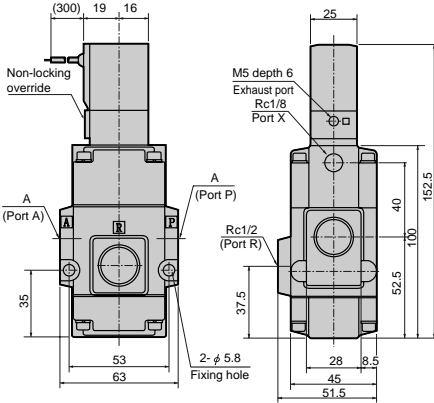


No.	Parts name	Material	No.	Parts name	Material
1	Body	AC4C Aluminum casting	6	Packing	NBR Nitrile rubber
2	Stuffing	AC4C Aluminum casting	7	Piston	POM Acetar resin
3	Cap	AC4C Aluminum casting	8	MY packing seal	NBR Nitrile rubber
4	Valve seat	C3604 Brass	9	Spring	SWP Piano wire
5	Valve stem	NBR, A2017 Nitrile rubber, aluminum	10	Pilot solenoid valve	-

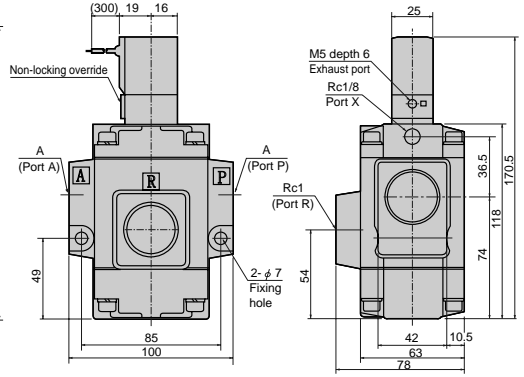


## Dimensions (Page 515)

● Grommet coil  
NVP11-10A/15A-12C



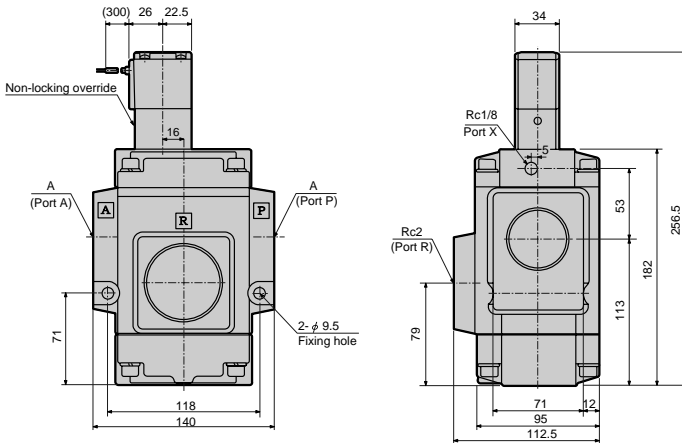
● Grommet coil  
NVP11-20A/25A-12C



Model no.	A
NVP11-10A-1**	Rc3/8
NVP11-15A-1**	Rc1/2

Model no.	A
NVP11-20A-1**	Rc3/4
NVP11-25A-1**	Rc1

● Grommet coil  
NVP11-32A/40A/50A



Model no.	A
NVP11-32A-1**	Rc1 1/4
NVP11-40A-1**	Rc1 1/2
NVP11-50A-1**	Rc2

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/AD

APK/ADK

For dry air

Explosion proof

HVB/HVL

SAB/SVB

NP/NAP/NVP

CHB/G

MXB/G

Other G.P. systems

PD/FAD/PJ

CVE/CVSE

CPE/CPD

Medical analysis

Custom order

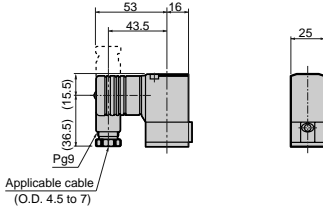
Large flow rate 3 port valve

Optional dimensions

● DIN terminal box (Pg9)

NVP11-10A/15A/20A/25A-1 

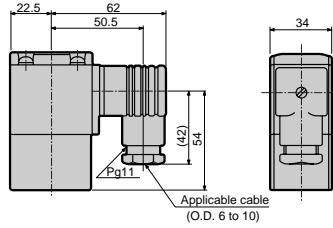
2G
2H



● DIN terminal box (Pg11)

NVP11-32A/40A/50A-1 

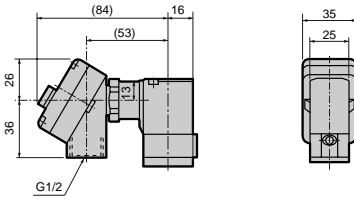
2G
2H



● T terminal box (G1/2)

NVP11-10A/15A/20A/25A-1 

3T
3R



● T terminal box (G1/2)

NVP11-32A/40A/50A-1 

3T
3R

