

NP / NAP / NVP

Pilot operated solenoid valve / External pilot operated air drive poppet valve

Pilot operated 3-port valve



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High flow 3-way valve with sealing force poppet structure

NP Series, internal pilot suitable for cylinder driving up to $\varnothing 400$. NAP / NVP Series, external pilot compatible with both positive pressure and negative pressure (vacuum). Two types are available to suit your application.



Large flow rate with compact and lightweight body

Effective cross-sectional area: up to 630 mm²

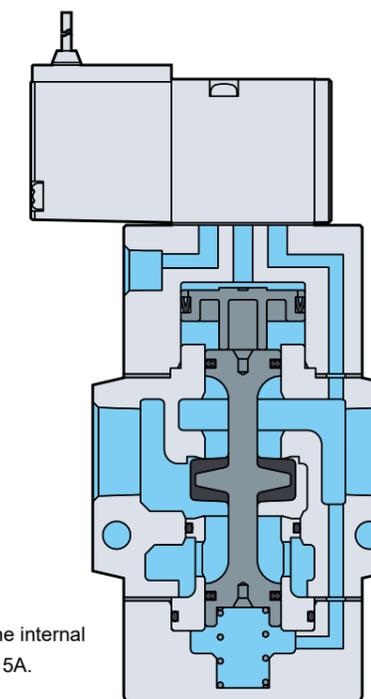
Two types available

- Internal pilot NP Series
NC (open when energized),
NO (closed when energized)
- External pilot NAP, NVP Series
Universal

Easy to use and select

- Able to operate with no lubrication
- Unrestricted mounting orientation
- External pilot is Positive / Negative pressures can be used
- Poppet Structure

Global standards compatible



*Diagram shows the internal structure of 10A-15A.

Solution examples

Presses in ceramic production facilities



Control of large diameter air cylinder for opening/closing dampers



Controlling the driving air that lifts heavy loads



Suction transport



Pilot operated 3-port valve

3GA/B
3GD/E
3KA1
NP / NAP / NVP

Ending

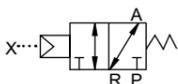
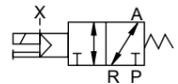
Pilot operated 3-port valve

3GA/B
3GD/E
3KA1
NP / NAP / NVP

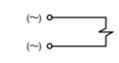
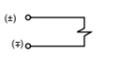
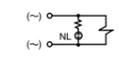
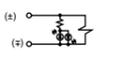
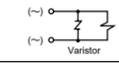
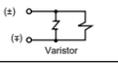
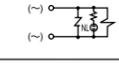
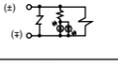
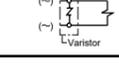
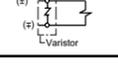
Ending



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

Series external appearance	Model No.	Circuit diagram code	Working pressure (MPa)	Flow Characteristics			Voltage (V)	Port size of port A/P							Coil housing			Description Page	
				C [dm ³ /(s·bar)] (*1)	b	S (mm ²)		Female thread							Grommet coil	With DIN terminal box (PgThread)	With T-type terminal box (G1/2)		T-type terminal box with lamp (G1/2)
								Rc 3/8	Rc 1/2	Rc 3/4	Rc 1	Rc 1-1/4	Rc 1-1/2	Rc 2					
(NC / NO) Internal pilot solenoid valve 	NP13R NP14R	NC	0.2 to 0.8	P→A			100 AC 200 AC 24 DC	●	●	●	●	●	●	●	●	●	●	224	
		NO		R→A				●	●	●	●	●	●	●	●	●	●		
(Universal) External pilot Air poppet valves	NAP11		0 to 0.8 (1.3×10^2 to 8×10^5 Pa (abs) when using vacuum)	P→A			100 AC 200 AC 24 DC	●	●	●	●	●	●	●				234	
(Universal) External pilot Solenoid valve	NVP11R			P→A				Option 110 AC 220 AC	●	●	●	●	●	●	●	●	●	●	238

Electrical connection circuit diagram

Option	Wiring circuit		Coil housing
	AC	DC	
-			Grommet coil (2C) DIN terminal box (2G) T-type terminal box (3T)
With indicator lamp			DIN terminal box (2H) T type terminal box (3R)
With surge suppressor			DIN terminal box (2GS) T-type terminal box (3TS)
With surge suppressor and indicator lamp			DIN terminal box (2HS) T-type terminal box (3RS)
With surge suppressor			Grommet coil (2CS)

Pilot operated 3-port valve
3GA/B
3GD/E
3KA1
NP / NAP / NVP

Pilot operated 3-port valve
3GA/B
3GD/E
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Ending

Ending



Internal pilot solenoid valve

NP13R / NP14R Series

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

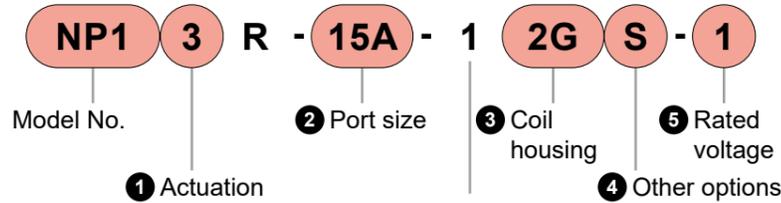


Refer to the CKD website for applicable detailed model Nos.

NP13R / NP14R Series

Specifications

How to Order



Note: Manual override (non-locking) is provided as standard.

Body / Seal
Material combination:
Aluminum / Nitrile rubber

1 Actuation

Code	Description
3	NC (open when energized)
4	NO (closed when energized)

2 Port size

Code	Description
10A	Rc3/8
15A	Rc1/2
20A	Rc3/4
25A	Rc1
32A	Rc1-1/4
40A	Rc1-1/2
50A	Rc2

3 Coil housing

Code	Description		
2C	Standard	Grommet coil	
2G	Option	DIN terminal box (Pg9 thread)	
		DIN terminal box with lamp (Pg9 thread)	
		With T-type terminal box (G1/2)	
3R		T-type terminal box with lamp (G1/2)	

5 Rated voltage

Code	Description	
1	Standard	100 VAC (50/60 Hz), 110 VAC (60 Hz)
2		200 VAC (50/60 Hz), 220 VAC (60 Hz)
3		24 VDC
AC110V	Option	110 VAC (50/60Hz)
AC220V		220 VAC (50/60 Hz)

4 Other options

Code	Description
Blank	No option
S	With surge suppressor *1

*1: The surge suppressor is included with the product when the grommet coil is selected. When selecting a coil with terminal box, the surge suppressor is mounted in the terminal box.

Specifications for rechargeable batteries

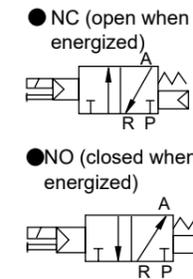
(Catalog No. CC-1226A)

- Design compatible with rechargeable battery manufacturing process

NP1 * R - - P4 *

*Contact CKD for details.

Circuit diagram code



Common specifications

Item	NP13R	NP14R
Actuation	NC (open when energized)	NO (closed when energized)
Fluid pressure supply port	Port P	Port R
Working fluid	Compressed air	
Proof pressure	MPa	1.2
Working pressure	MPa	0.2 to 0.8
Fluid temperature	°C	5 to 60
Ambient temperature	°C	-5 to 60
Thermal class	Class 130 (B)	
Lubrication	No lubrication (use turbine oil Class 1 ISO VG32 for lubrication)	
Valve seat leakage	cm ³ /min	1 or less (at pneumatic pressure 0.2 to 0.8 MPa)
Valve structure	Internal pilot balance poppet structure	
Mounting orientation	Unrestricted	

Individual specifications

Item	Port size		Orifice size (mm)	Response time (ms)	Weight (kg)
	Model No.	P, A ports			
NP ^{13R} _{14R} -10A	Rc3/8	Rc1/2	14.8 or equiv.	30 or less (*1)	0.7
NP ^{13R} _{14R} -15A	Rc1/2				
NP ^{13R} _{14R} -20A	Rc3/4	Rc1	25.4 or equiv.	60 or less (*1)	1.5
NP ^{13R} _{14R} -25A	Rc1				
NP ^{13R} _{14R} -32A	Rc1-1/4	Rc2	41.4 or equiv.	120 or less (*1)	4.5
NP ^{13R} _{14R} -40A	Rc1-1/2				
NP ^{13R} _{14R} -50A	Rc2				

*1: The response times are values with supply pressure of 0.5 MPa, without lubrication, and with the power ON. They depend on the pressure and the lubricant quality.

Electrical Specifications

Item	Unit	NP13R NP14R				
		24 DC	100 VAC (50Hz/60Hz) 110 VAC (60 Hz) *1	200 VAC (50Hz/60Hz) 220 VAC (60 Hz) *1	110 VAC (50Hz/60Hz)	220 VAC (50Hz/60Hz)
Rated voltage	V					
Voltage fluctuation range		±10%				
Power consumption	W	1.8	-	-	-	-
Apparent power (when starting)	VA	-	6.8/5.4	6.8/5.4	6.8/5.4	6.8/5.5
Apparent power (when holding)	VA	-	4.1/3.2	4.2/3.2	4.1/3.2	4.2/3.3

*1: Rated voltage 100 VAC 50/60Hz can be used at 110 VAC 60Hz, while 200 VAC 50/60Hz can be used at 220 VAC 60Hz.

Flow Characteristics

Model No.	P → A				A → R			
	C [dm ³ /(s·bar)]	b	S (mm ²)	Q [L/min(ANR)]	C [dm ³ /(s·bar)]	b	S (mm ²)	Q [L/min(ANR)]
NC (port P pressurization)								
NP13R-10A	15	0.31	-	3,838	16	0.28	-	4,018
NP13R-15A	18	0.29	-	4,548	17	0.26	-	4,217
NP13R-20A	35	0.27	-	8,735	41	0.21	-	9,877
NP13R-25A	-	-	200	11,758	-	-	210	12,345
NP13R-32A	-	-	600	35,273	-	-	610	35,861
NP13R-40A	-	-	630	37,036	-	-	620	36,448
NP13R-50A	-	-	660	38,800	-	-	630	37,036
NO (port R pressurization)								
NP14R-10A	15	0.31	-	3,838	15	0.33	-	3,889
NP14R-15A	17	0.30	-	4,323	18	0.31	-	4,606
NP14R-20A	41	0.21	-	9,877	35	0.27	-	8,735
NP14R-25A	-	-	210	12,345	-	-	200	11,758
NP14R-32A	-	-	610	35,861	-	-	600	35,273
NP14R-40A	-	-	620	36,448	-	-	630	37,036
NP14R-50A	-	-	630	37,036	-	-	660	38,800

Note: Formula to calculate sonic conductance C from effective sectional area S is S=5.0×C.

Pilot operated 3-port valve

3GA/B

3GD/E

3KA1

NP /
NAP
NVP

Pilot operated 3-port valve

3GA/B

3GD/E

3KA1

NP /
NAP
NVP

Ending

Ending

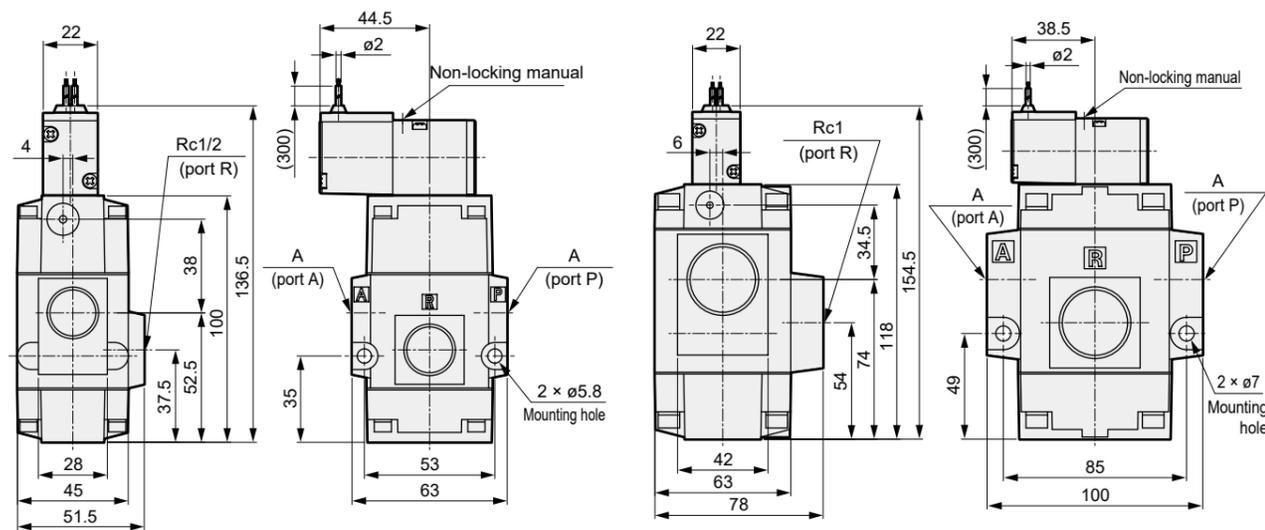
Dimensions diagram: NP13R Series

NP13R-10A / 15A-12C

● Grommet coil

NP13R-20A / 25A-12C

● Grommet coil



Model No.	A
NP13R-10A-1**	Rc3/8
NP13R-15A-1**	Rc1/2

Model No.	A
NP13R-20A-1**	Rc3/4
NP13R-25A-1**	Rc1

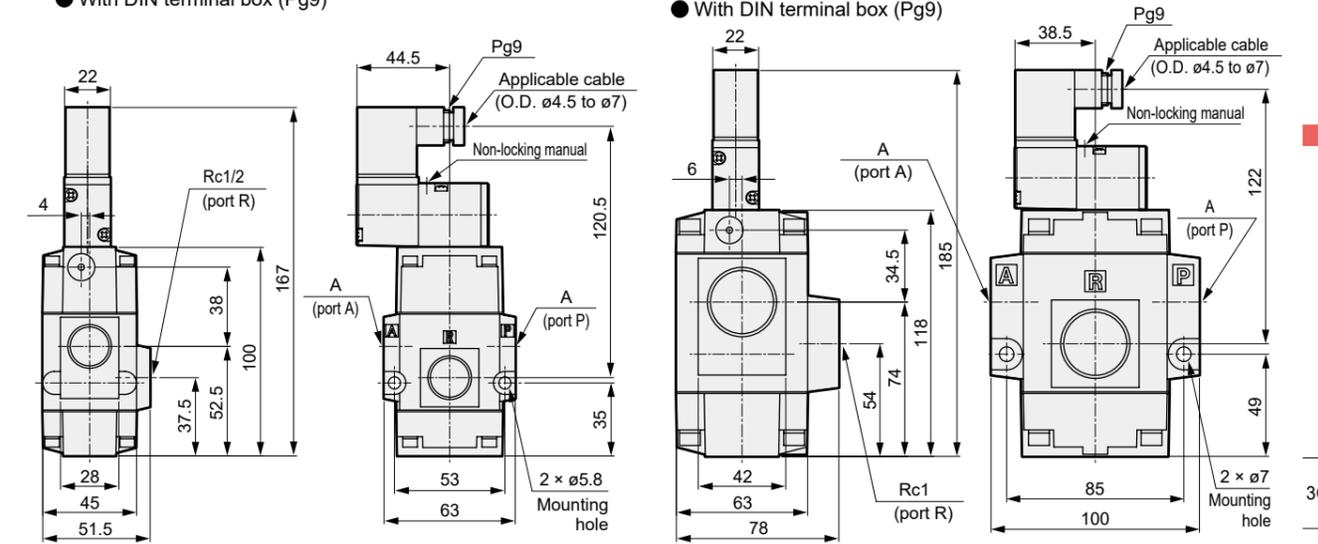
Dimensions diagram with option: NP13R Series

NP13R-10A / 15A-1 ^{2G}/_{2H}

● With DIN terminal box (Pg9)

NP13R-20A / 25A-1 ^{2G}/_{2H}

● With DIN terminal box (Pg9)



Model No.	A
NP13R-10A-1**	Rc3/8
NP13R-15A-1**	Rc1/2

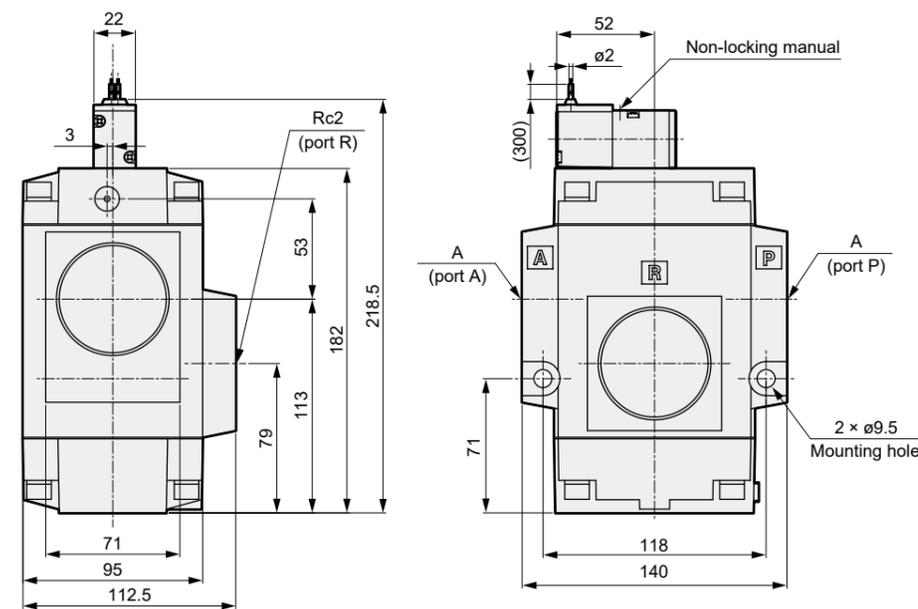
Model No.	A
NP13R-20A-1**	Rc3/4
NP13R-25A-1**	Rc1

NP13R-32A / 40A / 50A-12C

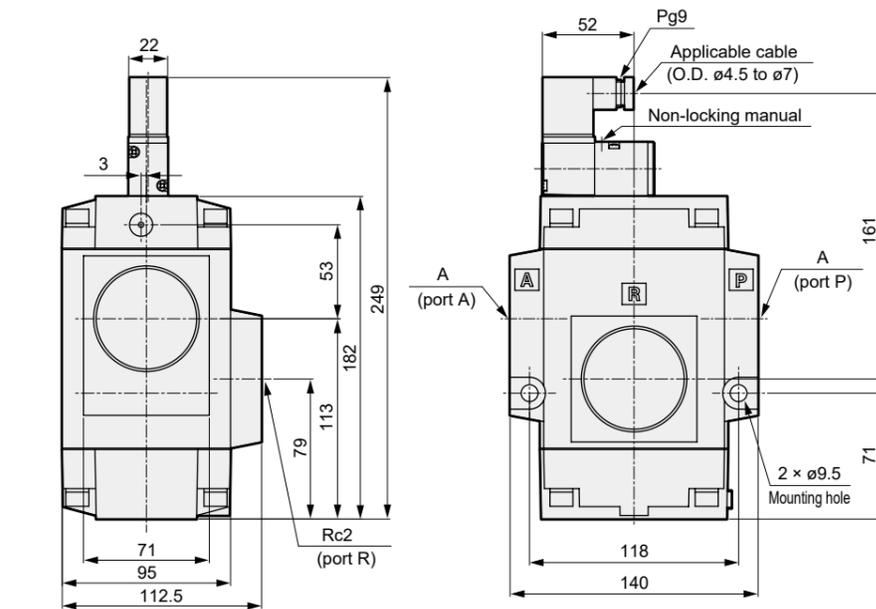
● Grommet coil

NP13R-32A / 40A / 50A-1 ^{2G}/_{2H}

● With DIN terminal box (Pg9)



Model No.	A
NP13R-32A-1**	Rc1 1/4
NP13R-40A-1**	Rc1 1/2
NP13R-50A-1**	Rc2



Model No.	A
NP13R-32A-1**	Rc1 1/4
NP13R-40A-1**	Rc1 1/2
NP13R-50A-1**	Rc2

Pilot operated 3-port valve

3GA/B

3GD/E

3KA1

NP /
NAP
NVP

Pilot operated 3-port valve

3GA/B

3GD/E

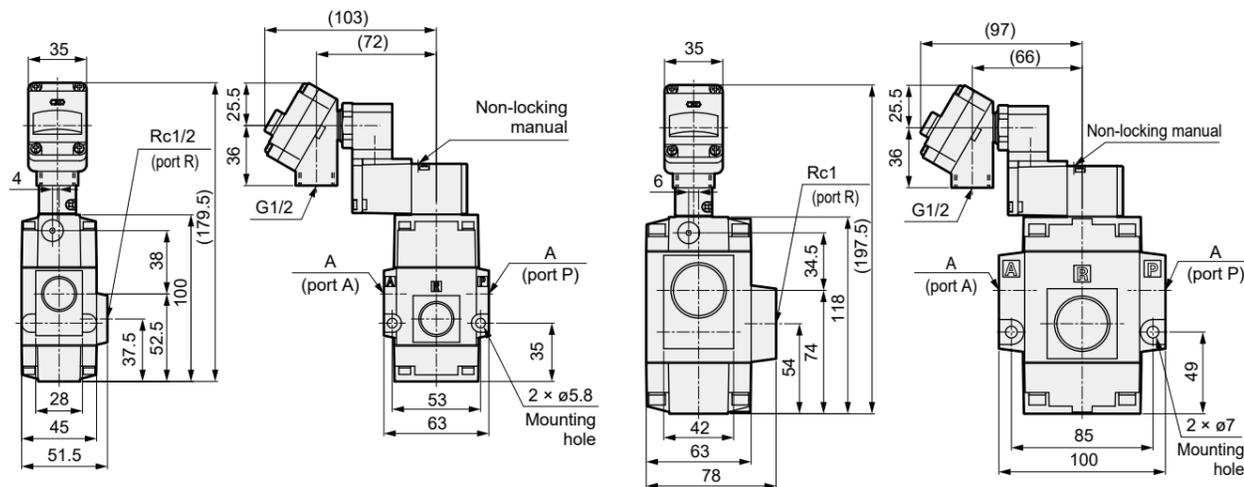
3KA1

NP /
NAP
NVP

Dimensions diagram with option: NP13R Series

NP13R-10A / 15A-1 3T
3R
● With T-type terminal box (G1/2)

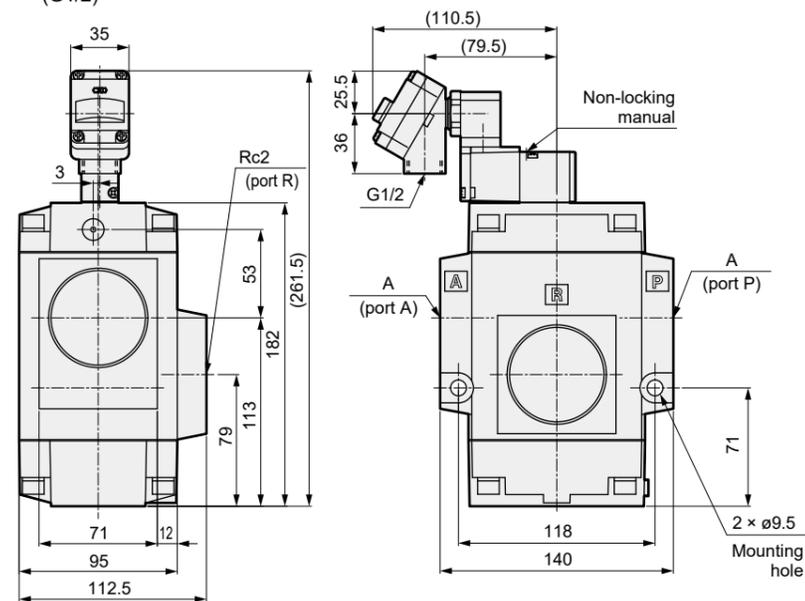
NP13R-20A / 25A-1 3T
3R
● With T-type terminal box (G1/2)



Model No.	A
NP13R-10A-1**	Rc3/8
NP13R-15A-1**	Rc1/2

Model No.	A
NP13R-20A-1**	Rc3/4
NP13R-25A-1**	Rc1

NP13R-32A / 40A / 50A-1 3T
3R
● With T-type terminal box (G1/2)

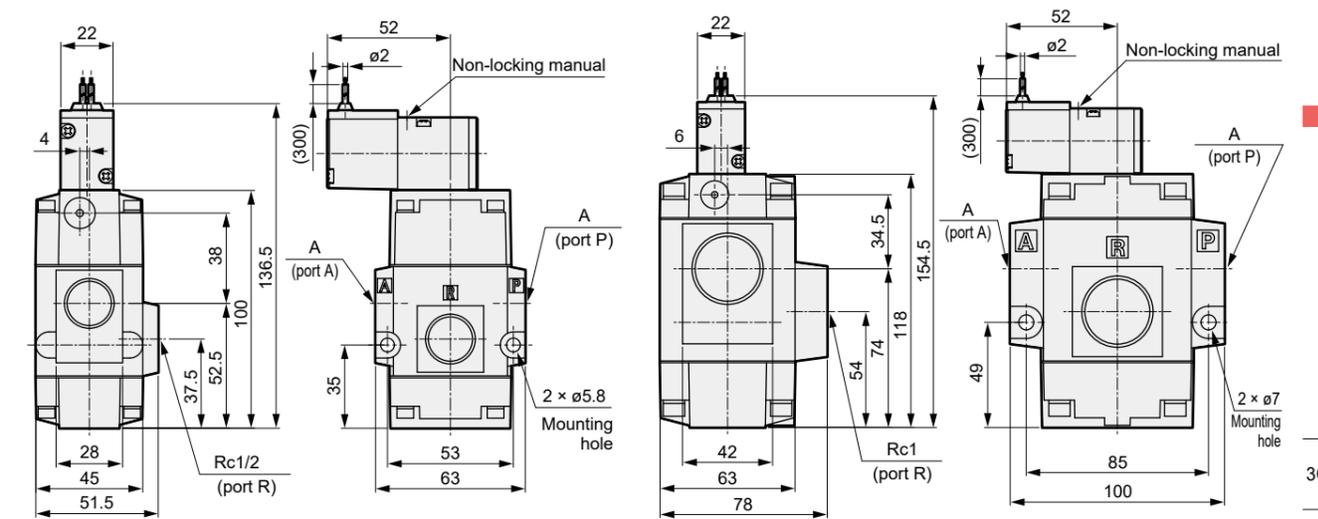


Model No.	A
NP13R-32A-1**	Rc1 1/4
NP13R-40A-1**	Rc1 1/2
NP13R-50A-1**	Rc2

Dimensions diagram: NP14R Series

NP14R-10A / 15A-12C
● Grommet coil

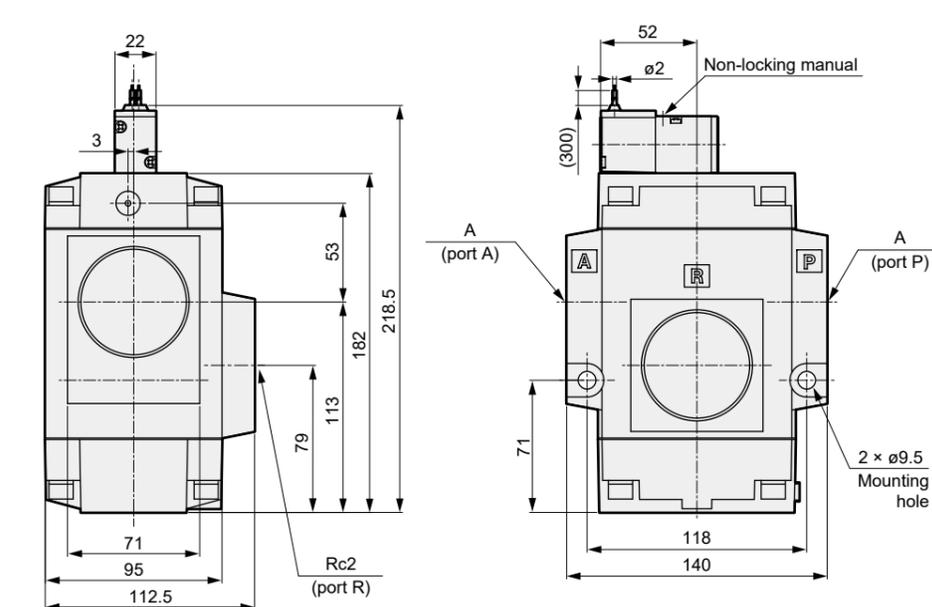
NP14R-20A / 25A-12C
● Grommet coil



Model No.	A
NP14R-10A-1**	Rc3/8
NP14R-15A-1**	Rc1/2

Model No.	A
NP14R-20A-1**	Rc3/4
NP14R-25A-1**	Rc1

NP14R-32A / 40A / 50A-12C
● Grommet coil



Model No.	A
NP14R-32A-1**	Rc1 1/4
NP14R-40A-1**	Rc1 1/2
NP14R-50A-1**	Rc2

Pilot operated 3-port valve

3GA/B

3GD/E

3KA1

NP / NAP / NVP

Pilot operated 3-port valve

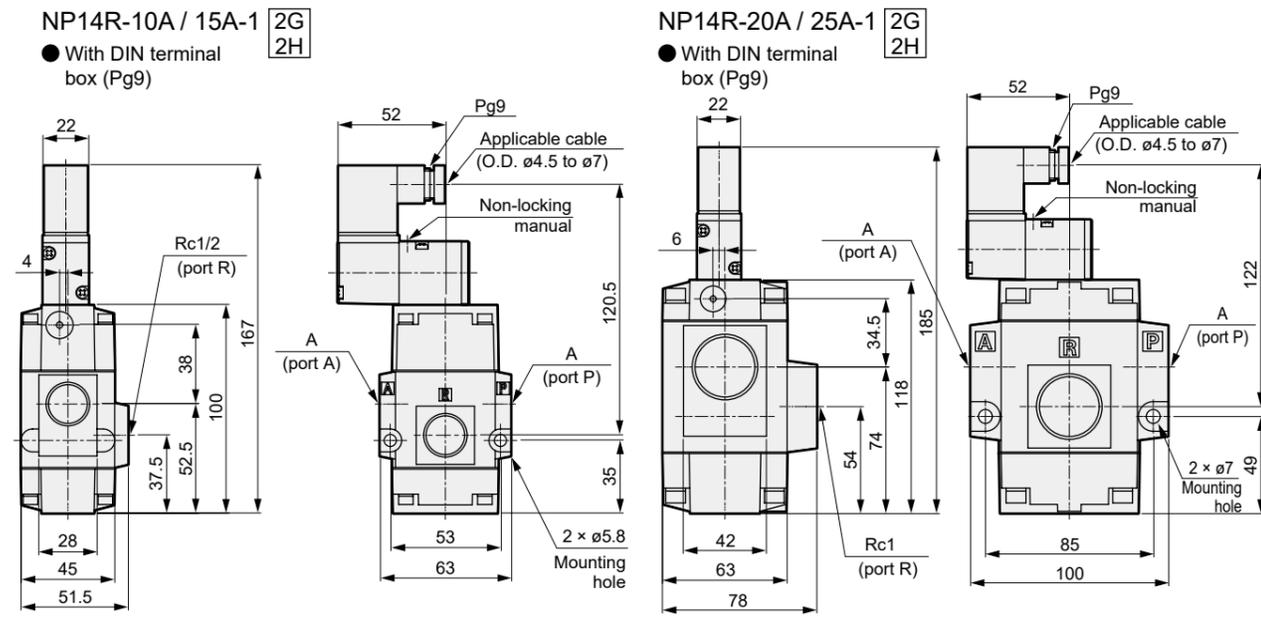
3GA/B

3GD/E

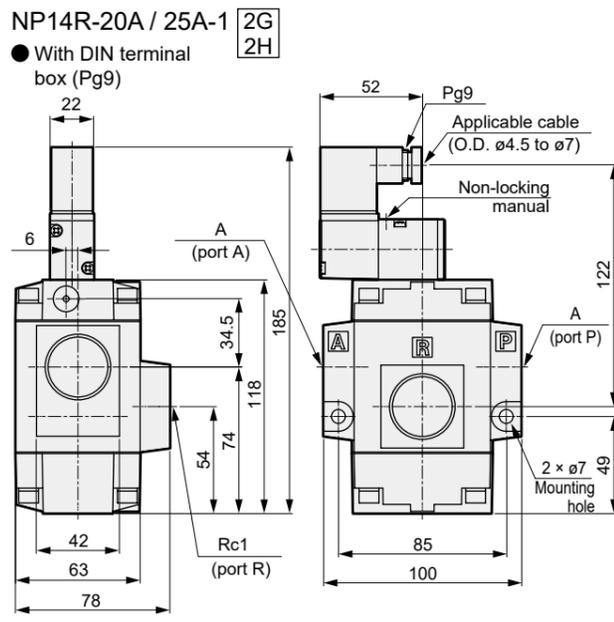
3KA1

NP / NAP / NVP

Dimensions diagram with option: NP14R Series

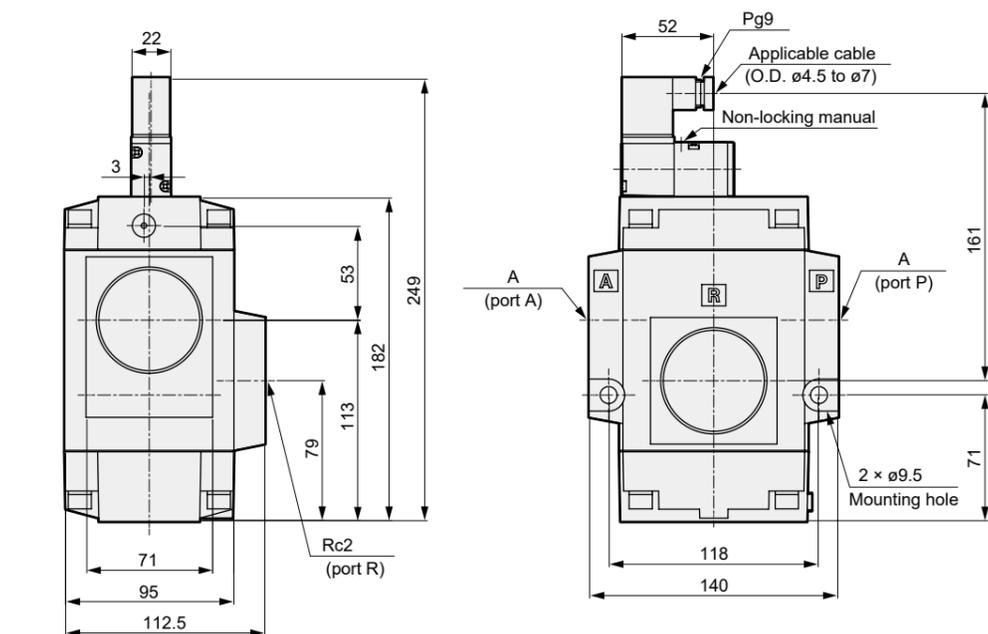


Model No.	A
NP14R-10A-1**	Rc3/8
NP14R-15A-1**	Rc1/2



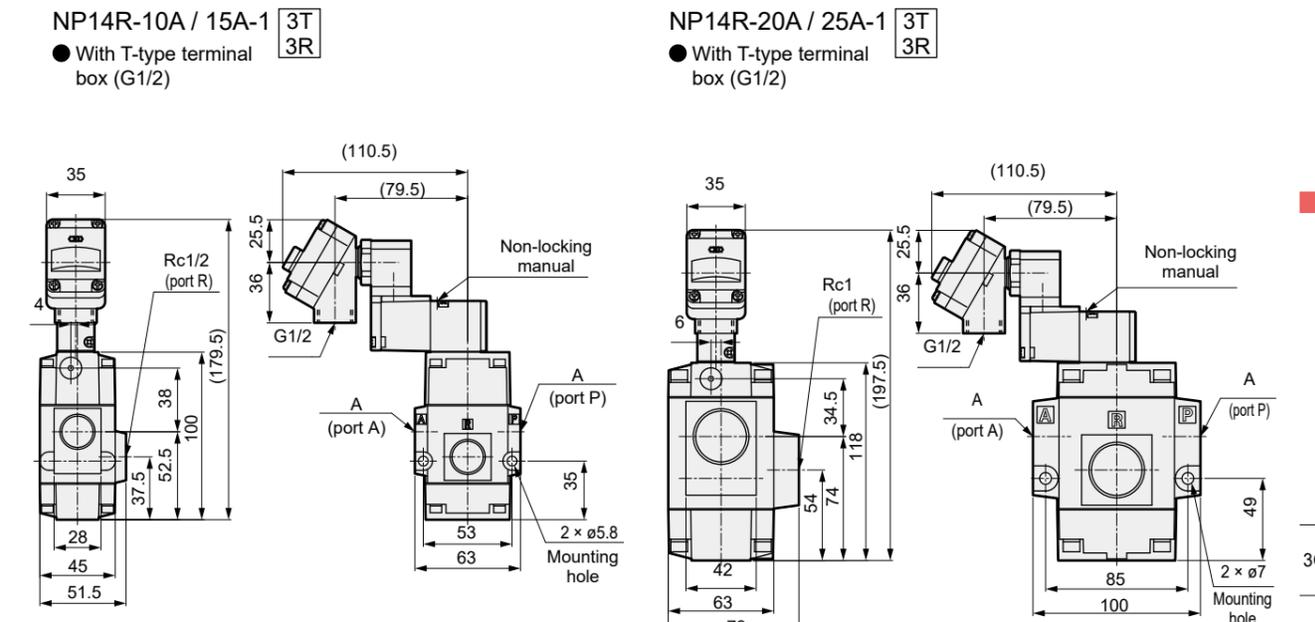
Model No.	A
NP14R-20A-1**	Rc3/4
NP14R-25A-1**	Rc1

NP14R-32A / 40A / 50A-1 2G 2H
 ● With DIN terminal box (Pg9)



Model No.	A
NP14R-32A-1**	Rc1 1/4
NP14R-40A-1**	Rc1 1/2
NP14R-50A-1**	Rc2

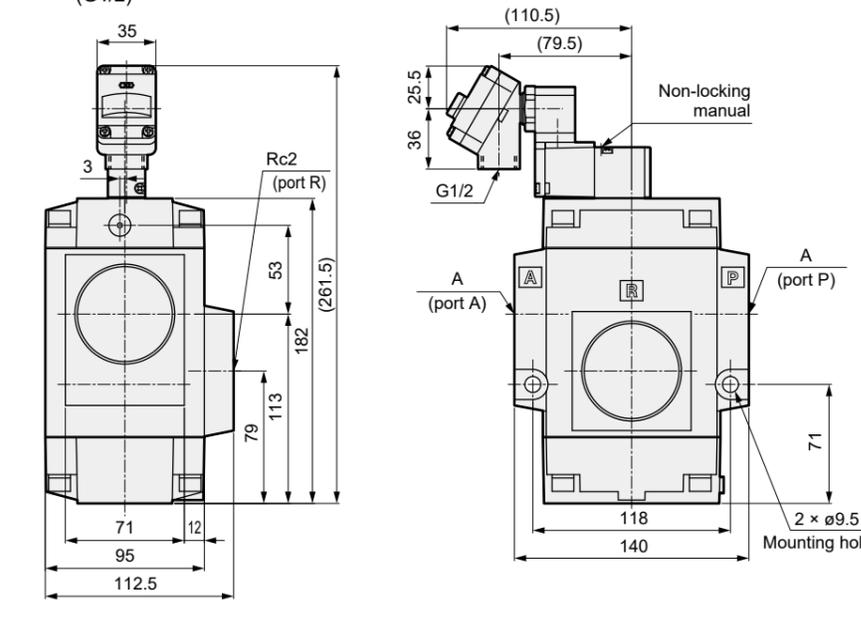
Dimensions diagram with option: NP14R Series



Model No.	A
NP14R-10A-1**	Rc3/8
NP14R-15A-1**	Rc1/2

Model No.	A
NP14R-20A-1**	Rc3/4
NP14R-25A-1**	Rc1

NP14R-32A / 40A / 50A-1 3T 3R
 ● With T-type terminal box (G1/2)



Model No.	A
NP14R-32A-1**	Rc1 1/4
NP14R-40A-1**	Rc1 1/2
NP14R-50A-1**	Rc2

Pilot operated 3-port valve

3GA/B

3GD/E

3KA1

NP /
NAP
NVP

Pilot operated 3-port valve

3GA/B

3GD/E

3KA1

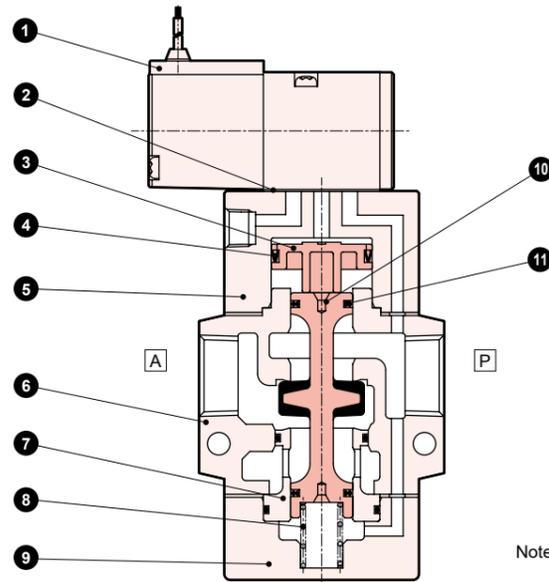
NP /
NAP
NVP

NP13R / NP14R Series

Internal Structure / Material

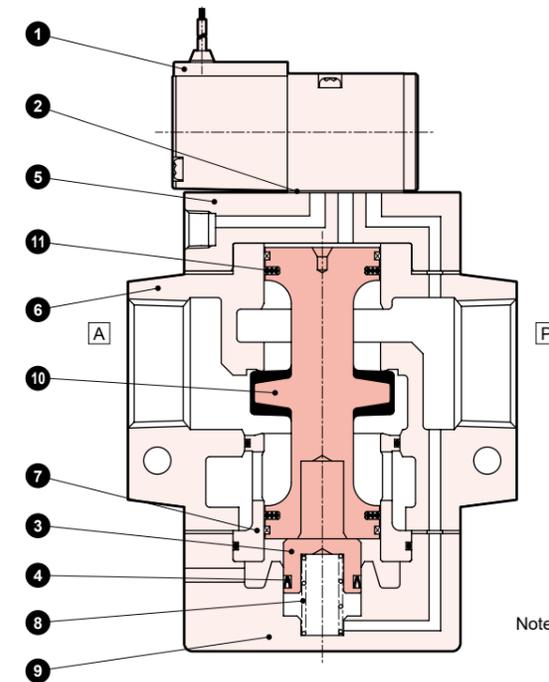
MEMO

● NP¹³₁₄ R-10A / 15A



Note: The figure shows NP13R.

● NP¹³₁₄ R-20A to 50A



Note: The figure shows NP13R.

Part No.	Part name	Material	Part No.	Part name	Material
1	Pilot solenoid valve	-	7	Valve seat	C3604 Brass
2	Gasket	NBR Nitrile Rubber	8	Spring	SUS304 Stainless steel
3	Piston	POM Acetal resin	9	Cap	AC4C Aluminum casting
4	MY packing	NBR Nitrile Rubber	10	Valve stem	NBR, A2017 Nitrile Rubber, Aluminum
5	Stuffing	AC4C Aluminum casting	11	Packing	NBR Nitrile Rubber
6	Body	AC4C Aluminum casting			

For maintenance parts, refer to the CKD Components Product site.
[\(https://www.ckd.co.jp/kiki/jp/en/\)](https://www.ckd.co.jp/kiki/jp/en/) → "Model No." → Maintenance parts for details.

Ending

Ending

Pilot operated 3-port valve
3GA/B
3GD/E
3KA1
NP / NAP / NVP

Pilot operated 3-port valve
3GA/B
3GD/E
3KA1
NP / NAP / NVP



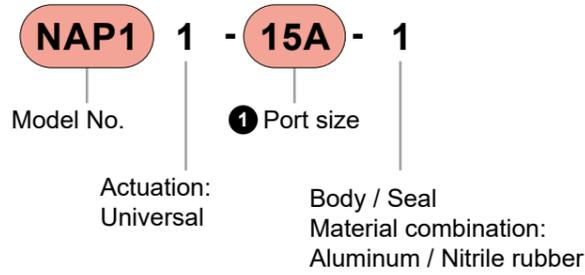
External pilot operated air drive poppet valve

NAP11 Series

- Universal
- Port size: Rc3/8 to Rc2



How to Order



1 Port size

Code	Description
10A	Rc3/8
15A	Rc1/2
20A	Rc3/4
25A	Rc1
32A	Rc1-1/4
40A	Rc1-1/2
50A	Rc2

Specifications for rechargeable batteries

(Catalog No.CC-1226A)

- Design compatible with rechargeable battery manufacturing process

NAP11 - - P4*

*Contact CKD for details.

Specifications for food manufacturing processes

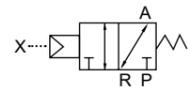
(Catalog No.CC-1271A)

- Food-grade lubricants that can be used in food manufacturing processes, and resin/rubber materials that are compatible with the Food Sanitation Act are used

NAP11 - - FP*

Circuit diagram code

- Universal



Common specifications

Item	NAP11	
Actuation	Universal	
Working fluid	Compressed air, low vacuum	
Proof pressure	MPa	1.2
Working pressure	MPa	0 to 0.8 (1.3 x 10 ² to 8 x 10 ⁵ Pa (abs) when used in vacuum)
Fluid temperature	°C	5 to 60
Ambient temperature	°C	-5 to 60
Lubrication	No lubrication (use turbine oil Class 1 ISO VG32 for lubrication)	
Valve seat leakage	cm ³ /min	1 or less (at pneumatic pressure 0.02 to 0.8 MPa)
Valve structure	External pilot balance poppet structure	
Mounting orientation	Unrestricted	
Pilot fluid	Air	
Pilot pressure	MPa	0.35 to 0.7
Pilot port size (port X)	Rc1/8	

Individual specifications

Item	Port size		Orifice size (mm)	Response time (ms)	Weight (kg)
	P, A Port	Port R			
NAP11-10A	Rc3/8	Rc1/2	14.8 or equiv.	30 or less (*1)	0.6
NAP11-15A	Rc1/2				
NAP11-20A	Rc3/4	Rc1	25.4 or equiv.	60 or less (*1)	1.4
NAP11-25A	Rc1				
NAP11-32A	Rc1 1/4	Rc2	41.4 or equiv.	120 or less (*1)	4.2
NAP11-40A	Rc1 1/2				
NAP11-50A	Rc2				

*1: The response times are values with supply pressure of 0.5 MPa, without lubrication, and with the power ON. They depend on the pressure and the lubricant quality.

Flow Characteristics

Model No.	P→A				A→R			
	C[dm ³ /(s·bar)]	b	S(mm ²)	Q [L/min(ANR)]	C[dm ³ /(s·bar)]	b	S(mm ²)	Q [L/min(ANR)]
NAP11-10A	15	0.31	-	3,838	16	0.28	-	4,018
NAP11-15A	18	0.29	-	4,548	17	0.26	-	4,217
NAP11-20A	35	0.27	-	8,735	41	0.21	-	9,877
NAP11-25A	-	-	200	11,758	-	-	210	12,345
NAP11-32A	-	-	600	35,273	-	-	610	35,861
NAP11-40A	-	-	630	37,036	-	-	620	36,448
NAP11-50A	-	-	660	38,800	-	-	630	37,036

*1: Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 × C.

Pilot operated 3-port valve

3GA/B

3GD/E

3KA1

NP /
NAP
NVP

Pilot operated 3-port valve

3GA/B

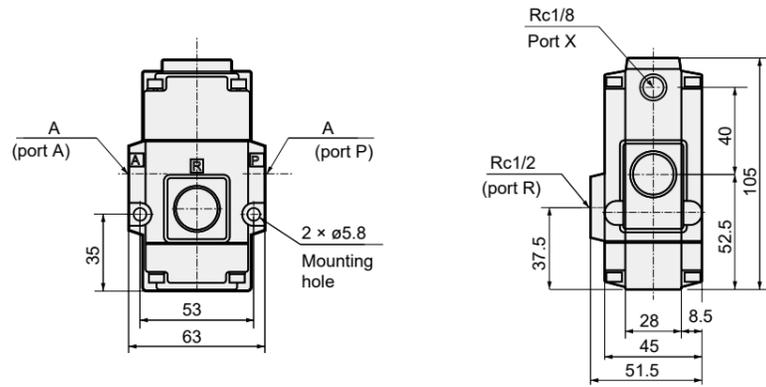
3GD/E

3KA1

NP /
NAP
NVP

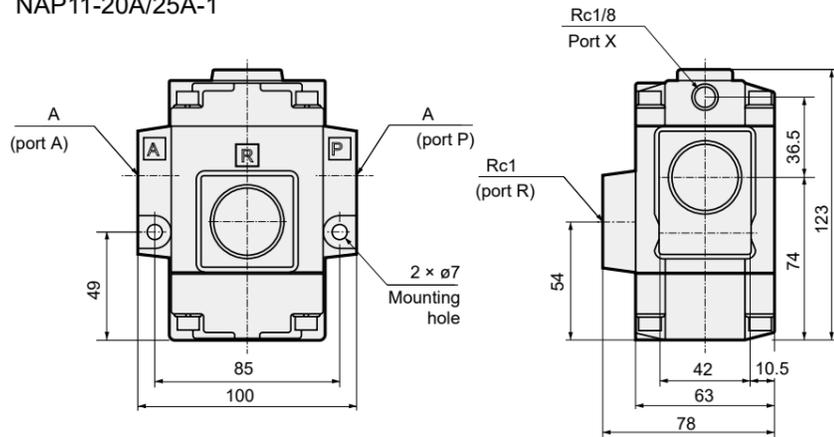
Dimensions

NAP11-10A / 15A-1



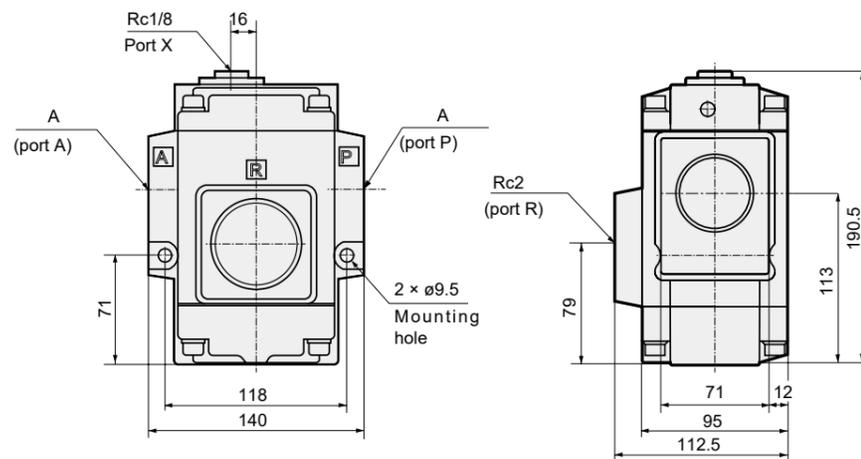
Model No.	A
NAP11-10A-1	Rc3/8
NAP11-15A-1	Rc1/2

NAP11-20A/25A-1



Model No.	A
NAP11-20A-1	Rc3/4
NAP11-25A-1	Rc1

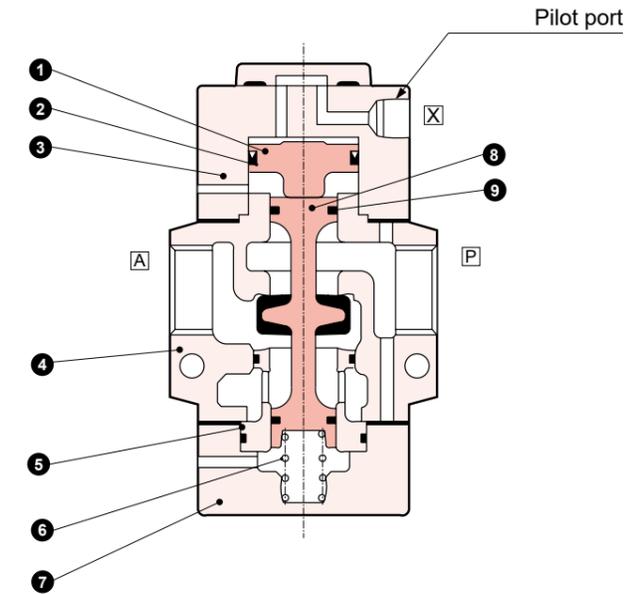
NAP11-32A/40A/50A-1



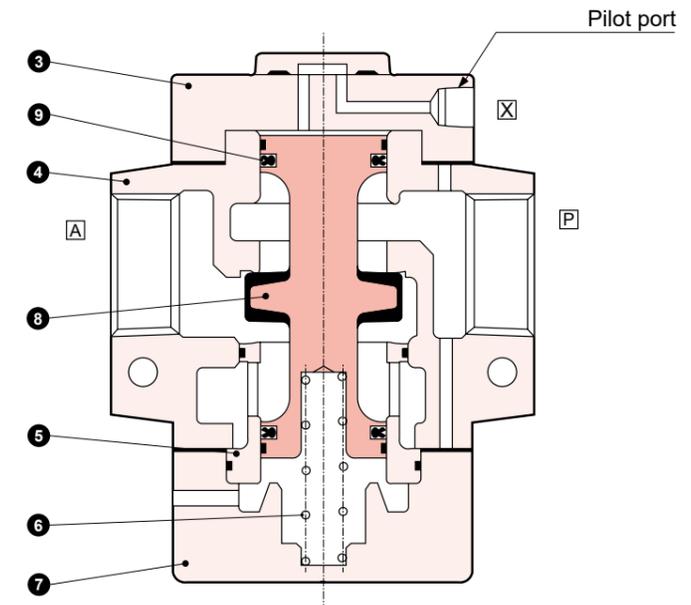
Model No.	A
NAP11-32A-1	Rc1 1/4
NAP11-40A-1	Rc1 1/2
NAP11-50A-1	Rc2

Internal Structure / Material

● NAP11-10A / 15A



● NAP11-20A / 25A / 32A / 40A / 50A



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

For maintenance parts, refer to the CKD Components Product site.
[\(https://www.ckd.co.jp/kiki/jp/en/\)](https://www.ckd.co.jp/kiki/jp/en/) → "Model No." → Maintenance parts for details.



External pilot solenoid valve

NVP11R Series

- Universal
- Port size: Rc3/8 to Rc2

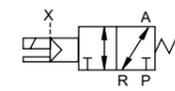


Refer to the CKD website for applicable detailed model Nos.

NVP11R Series Specifications

Circuit diagram code

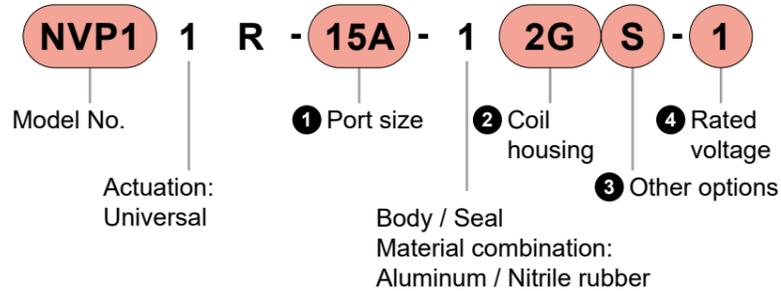
- Universal



Common specifications

Item	NVP11R
Actuation	Universal
Working fluid	Compressed air, low vacuum
Proof pressure MPa	1.2
Working pressure MPa	0 to 0.8 (1.3 x 10 ² to 8 x 10 ⁵ Pa (abs) when used in vacuum)
Fluid temperature °C	5 to 60
Ambient temperature °C	-5 to 60
Thermal class	Class 130 (B)
Lubrication	No lubrication (use turbine oil Class 1 ISO VG32 for lubrication)
Valve seat leakage cm ³ /min	1 or less (at pneumatic pressure 0.02 to 0.8 MPa)
Valve structure	External pilot balance poppet structure
Mounting orientation	Unrestricted
Pilot fluid	Air
Pilot pressure MPa	0.35 to 0.7
Pilot port size (port X)	Rc1/8

How to Order



Note: Manual override (non-locking) is provided as standard.

1 Port size

Code	Description
10A	Rc3/8
15A	Rc1/2
20A	Rc3/4
25A	Rc1
32A	Rc1-1/4
40A	Rc1-1/2
50A	Rc2

2 Coil housing

Code	Description
2C	Standard Grommet coil
2G	DIN terminal box (Pg9 thread)
2H	DIN terminal box with lamp (Pg9 thread)
3T	Option With T-type terminal box (G1/2)
3R	T-type terminal box with lamp (G1/2)

3 Other options

Code	Description
Blank	No option
S	With surge suppressor *1

*1: The surge suppressor is included with the product when the grommet coil is selected. When selecting a coil with terminal box, the surge suppressor is mounted in the terminal box.

4 Rated voltage

Code	Description
1	100 VAC (50/60 Hz), 110 VAC (60 Hz)
2	Standard 200 VAC (50/60 Hz), 220 VAC (60 Hz)
3	24 VDC
AC110V	Option 110 VAC (50/60Hz)
AC220V	220 VAC (50/60 Hz)

Specifications for rechargeable batteries

(Catalog No.CC-1226A)

- Design compatible with rechargeable battery manufacturing processes

NVP11R - - P4*

*Contact CKD for details.

Individual specifications

Item Model No.	Port size		Orifice size (mm)	Response time (ms)	Weight (kg)
	P, A ports	Port R			
NVP11R-10A	Rc3/8	Rc1/2	14.8 or equiv.	30 or less (*1)	0.7
NVP11R-15A	Rc1/2				
NVP11R-20A	Rc3/4	Rc1	25.4 or equiv.	60 or less (*1)	1.5
NVP11R-25A	Rc1				
NVP11R-32A	Rc1 1/4	Rc2	41.4 or equiv.	120 or less (*1)	4.5
NVP11R-40A	Rc1 1/2				
NVP11R-50A	Rc2				

*1: The response times are values with supply pressure of 0.5 MPa, without lubrication, and with the power ON. They depend on the pressure and the lubricant quality.

Electrical Specifications

Item	NVP11R					
Rated voltage V	24 VDC	100 VAC (50Hz/60Hz) 110 VAC (60 Hz) *1	200 VAC (50Hz/60Hz) 220 VAC (60 Hz) *1	110 VAC (50Hz/60Hz)	220 VAC (50Hz/60Hz)	
Voltage fluctuation range	±10%					
Power consumption W	1.8	-	-	-	-	-
Apparent power (when starting) VA	-	6.8/5.4	6.8/5.4	6.8/5.4	6.8/5.5	6.8/5.5
Apparent power (when holding) VA	-	4.1/3.2	4.2/3.2	4.1/3.2	4.2/3.3	4.2/3.3

*1: Rated voltage 100 VAC 50/60Hz can be used at 110 VAC 60Hz, while 200 VAC 50/60Hz can be used at 220 VAC 60Hz.

Flow Characteristics

Model No.	P→A				A→R			
	C [dm ³ /(s·bar)]	b	S (mm ²)	Q [L/min(ANR)]	C [dm ³ /(s·bar)]	b	S (mm ²)	Q [L/min(ANR)]
NVP11R-10A	15	0.31	-	3,838	16	0.28	-	4,018
NVP11R-15A	18	0.29	-	4,548	17	0.26	-	4,217
NVP11R-20A	35	0.27	-	8,735	41	0.21	-	9,877
NVP11R-25A	-	-	200	11,758	-	-	210	12,345
NVP11R-32A	-	-	600	35,273	-	-	610	35,861
NVP11R-40A	-	-	630	37,036	-	-	620	36,448
NVP11R-50A	-	-	660	38,800	-	-	630	37,036

*1: Effective cross-sectional area S and sonic conductance C are converted as S = 5.0 × C.

Pilot operated 3-port valve

Pilot operated 3-port valve

3GA/B

3GA/B

3GD/E

3GD/E

3KA1

3KA1

NP /
NAP
NVP

NP /
NAP
NVP

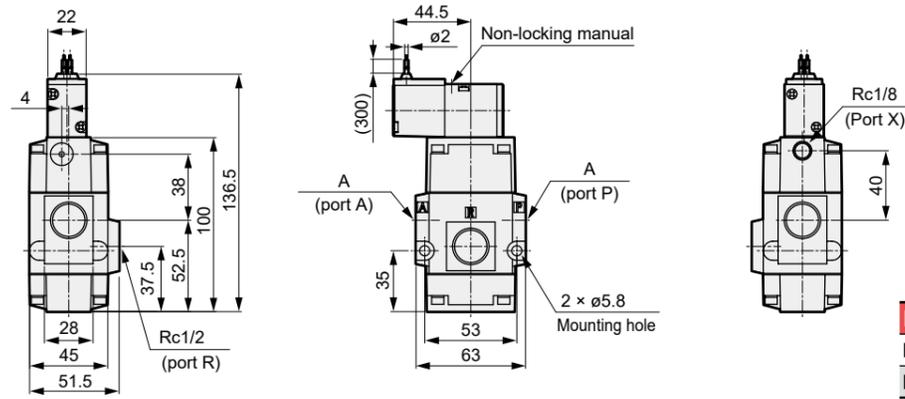
Ending

Ending

Dimensions

NVP11R-10A, 15A-12C

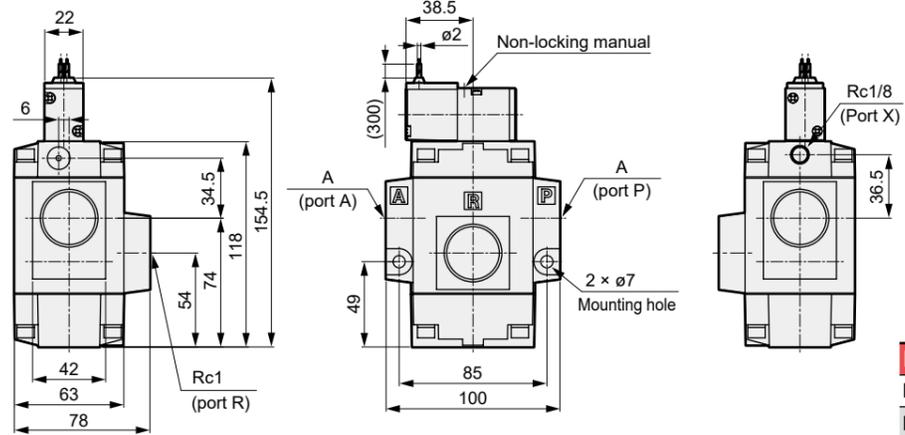
- Grommet coil



Model No.	A
NVP11R-10A-1**	Rc3/8
NVP11R-15A-1**	Rc1/2

NVP11R-20A, 25A-12C

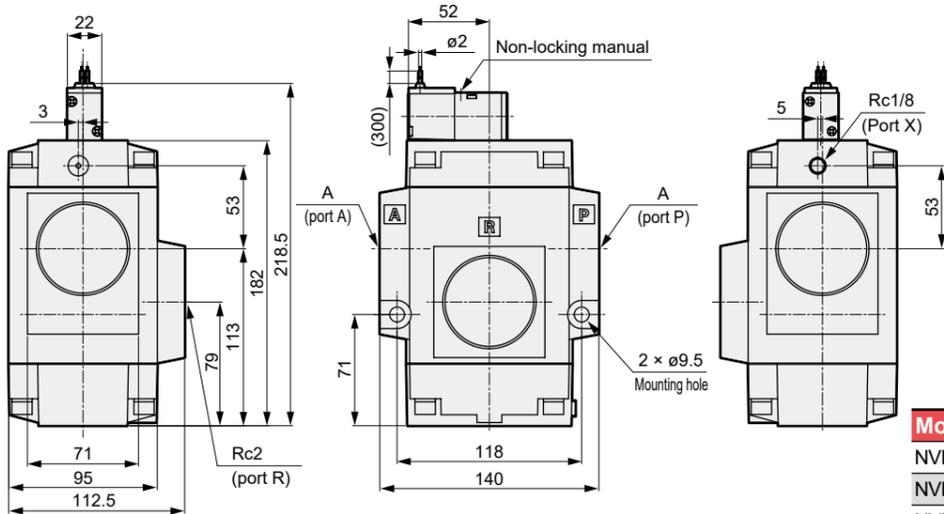
- Grommet coil



Model No.	A
NVP11R-20A-1**	Rc3/4
NVP11R-25A-1**	Rc1

NVP11R-32A / 40A / 50A

- Grommet coil

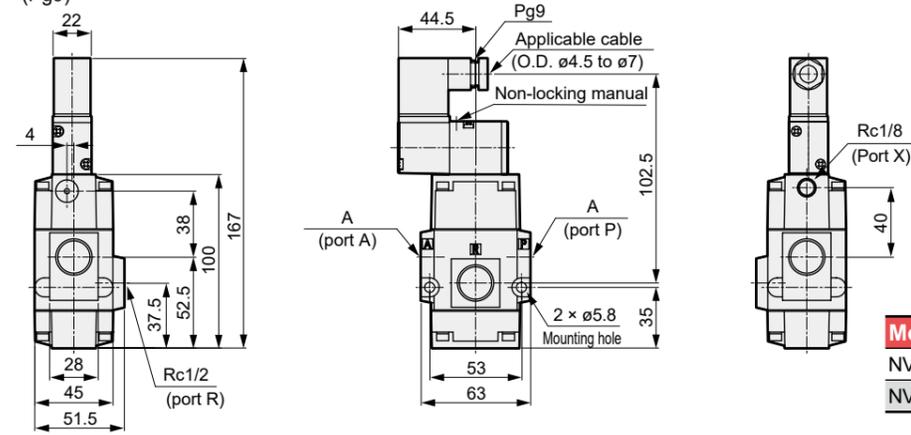


Model No.	A
NVP11R-32A-1**	Rc1 1/4
NVP11R-40A-1**	Rc1 1/2
NVP11R-50A-1**	Rc2

Optional dimensions

NVP11R-10A / 15A-1

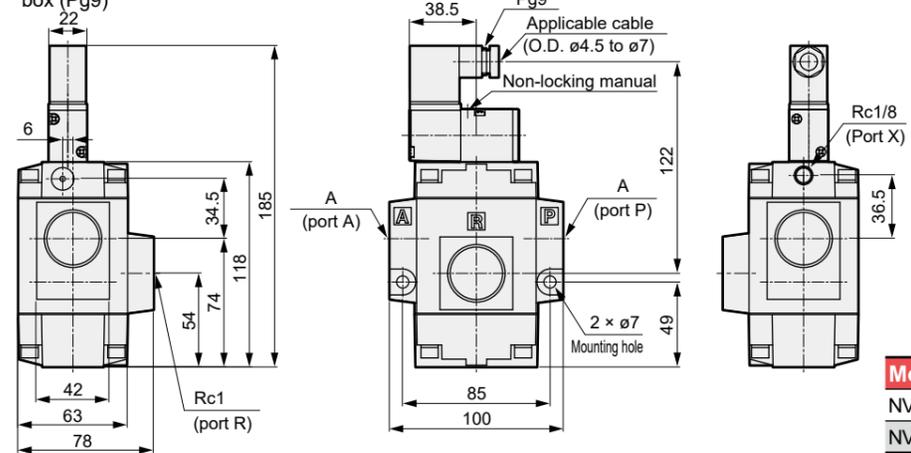
- With DIN terminal box (Pg9)



Model No.	A
NVP11R-10A-1**	Rc3/8
NVP11R-15A-1**	Rc1/2

NVP11R-20A / 25A-1

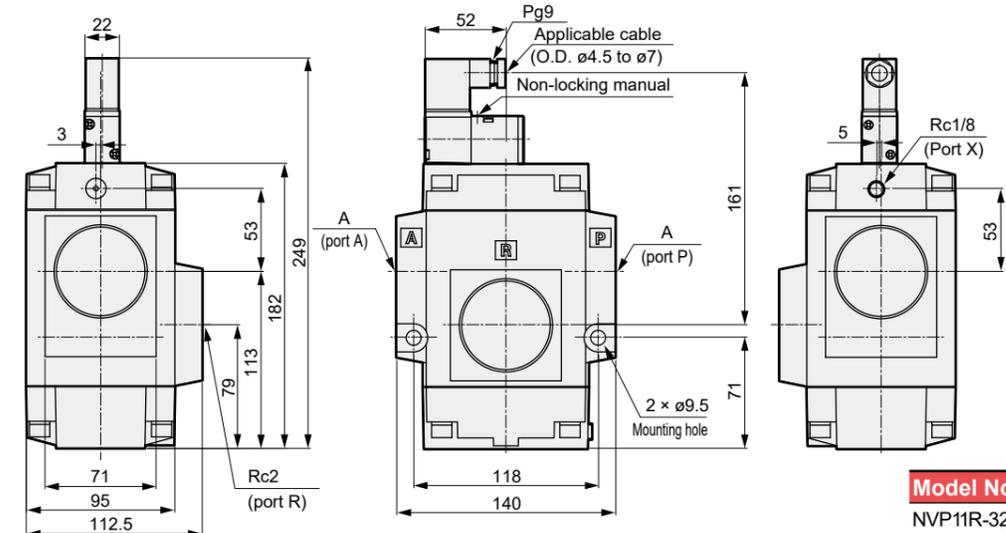
- With DIN terminal box (Pg9)



Model No.	A
NVP11R-20A-1**	Rc3/4
NVP11R-25A-1**	Rc1

NVP11R-32A / 40A / 50A-1

- With DIN terminal box (Pg9)



Model No.	A
NVP11R-32A-1**	Rc1 1/4
NVP11R-40A-1**	Rc1 1/2
NVP11R-50A-1**	Rc2

Pilot operated 3-port valve

3GA/B

3GD/E

3KA1

NP /
NAP
NVP

Ending

Pilot operated 3-port valve

3GA/B

3GD/E

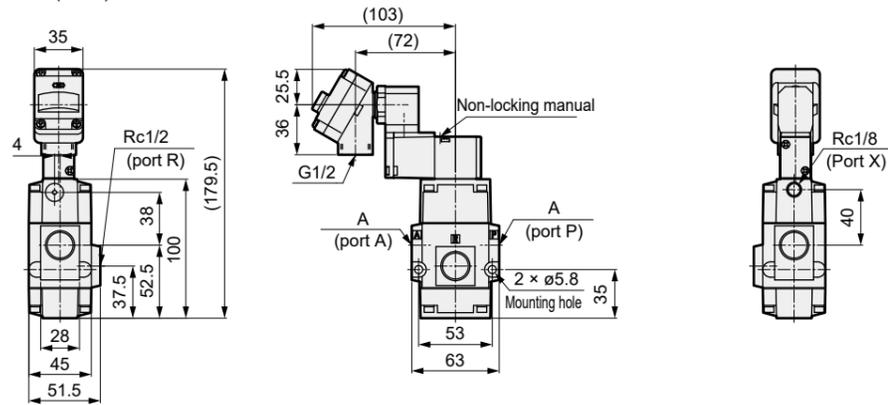
3KA1

NP /
NAP
NVP

Ending

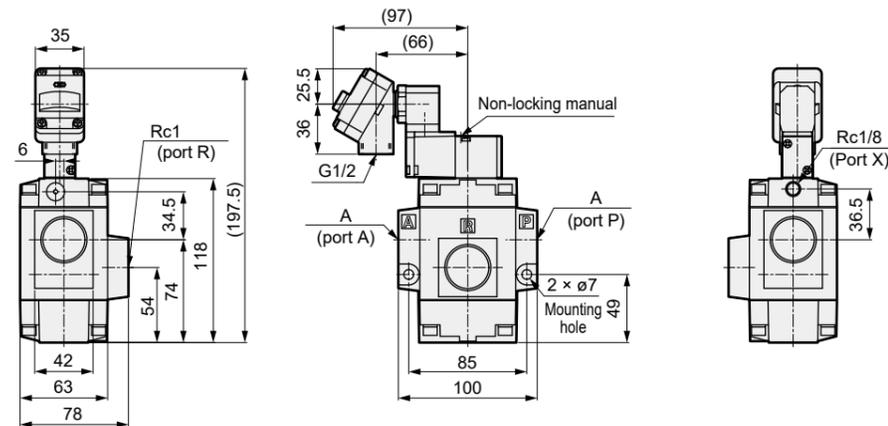
Optional dimensions

NVP11R-10A / 15A-1 3T
3R
 ● With T-type terminal box (G1/2)



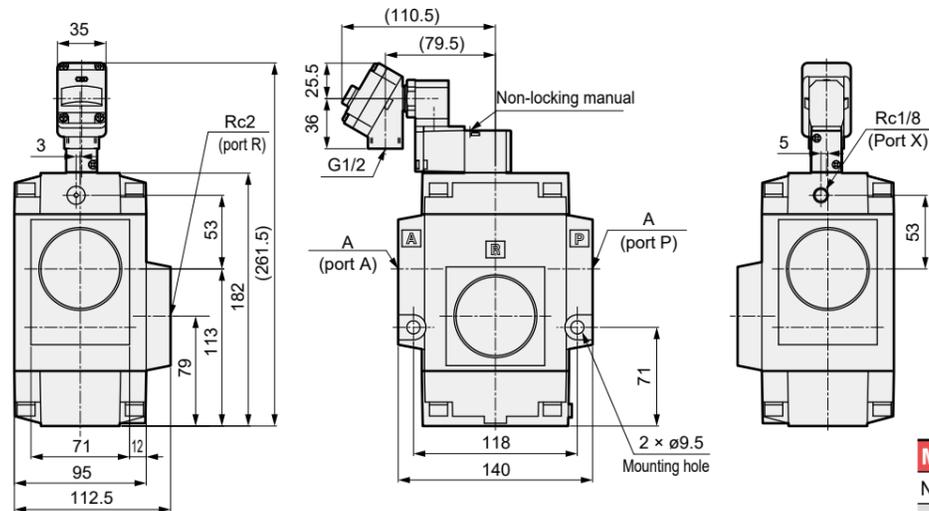
Model No.	A
NVP11R-10A-1**	Rc3/8
NVP11R-15A-1**	Rc1/2

NVP11R-20A / 25A-1 3T
3R
 ● With T-type terminal box (G1/2)



Model No.	A
NVP11R-20A-1**	Rc3/4
NVP11R-25A-1**	Rc1

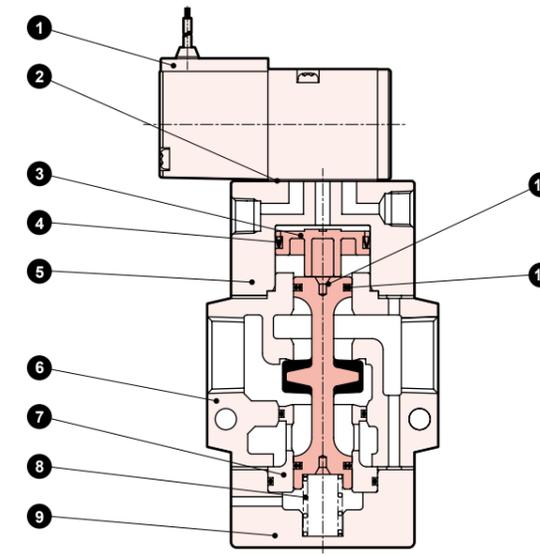
NVP11R-32A / 40A / 50A-1 3T
3R
 ● With T-type terminal box (G1/2)



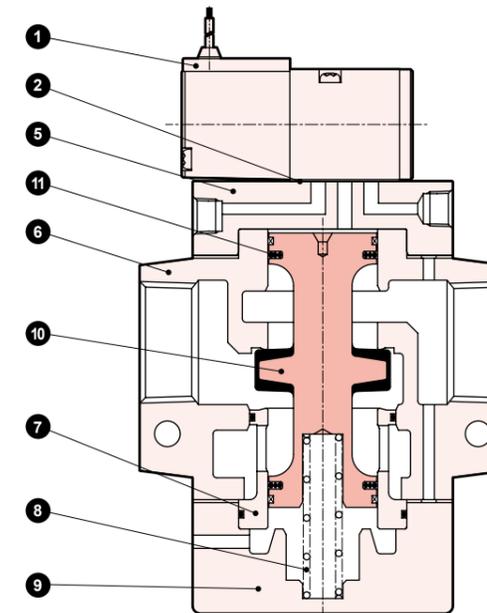
Model No.	A
NVP11R-32A-1**	Rc1 1/4
NVP11R-40A-1**	Rc1 1/2
NVP11R-50A-1**	Rc2

Internal Structure / Material

● NVP11R-10A / 15A



● NVP11R-20A / 25A / 32A / 40A / 50A



Part No.	Part name	Material	Part No.	Part name	Material
1	Pilot solenoid valve	-	7	Valve seat	C3604 :Brass
2	Gasket	NBR :Nitrile Rubber	8	Spring	SWP :Piano wire
3	Piston	POM :Acetal resin	9	Cap	AC4C :Aluminum casting
4	MY packing	NBR :Nitrile Rubber	10	Valve stem	NBR, A2017 :Nitrile Rubber, Aluminum
5	Stuffing	AC4C :Aluminum casting	11	Packing	NBR :Nitrile Rubber
6	Body	AC4C :Aluminum casting			

For maintenance parts, refer to the CKD Components Product site.
 (<https://www.ckd.co.jp/kiki/jp/en/>) → "Model No." → Maintenance parts for details.

Pilot operated 3-port valve

3GA/B

3GD/E

3KA1

NP /
NAP
NVP

Pilot operated 3-port valve

3GA/B

3GD/E

3KA1

NP /
NAP
NVP

Ending

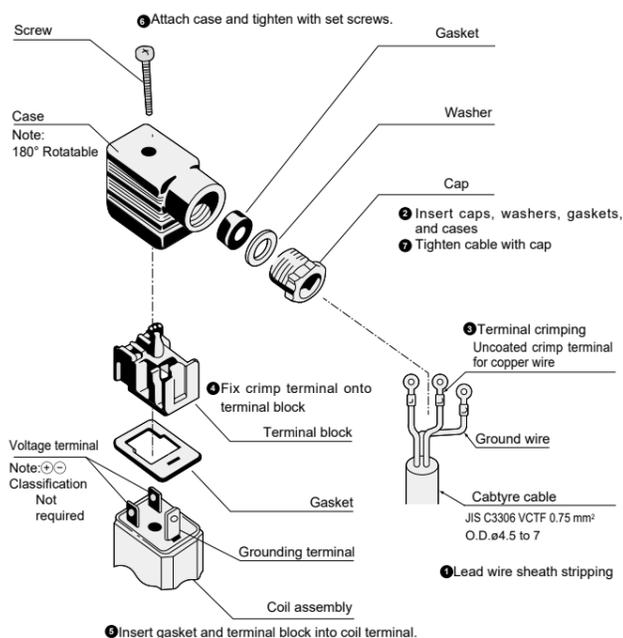
Ending

How to connect terminal box

Refer to the figure below for the connection method to a DIN terminal box or T-type terminal box.

DIN terminal box (Pg9), DIN terminal box with lamp (Pg9)

- Use the following cabtyre cable.
 - Cable O.D.: $\phi 4.5$ to $\phi 7$
 - Nominal section area: 0.75 mm^2
- Put the crimp terminal for copper wire on the cabtyre cable's lead wire and crimp the terminal. The terminal box thread size is M3.
- thread size is M3.
 - Tighten the screws with the following tightening torque.
 - Set screw tightening torque... 0.5 Nm
 - Terminal screw tightening torque... 0.5 Nm

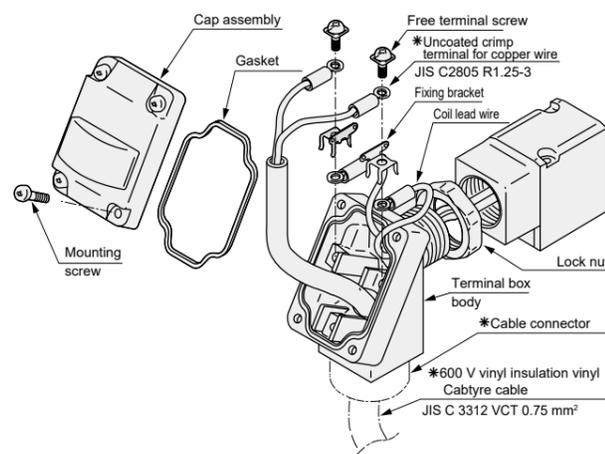


Wire with steps ① to ④.

*The orientation of the cord can be changed by removing the terminal block from the case, rotating it by 180° , and then replacing the block into the case.

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

- Use the following cabtyre cable.
 - Nominal section area: 0.75 mm^2
- Put the crimp terminal for copper wire on the cabtyre cable's lead wire and crimp the terminal. The terminal box thread size is M3.
- Tighten the screws with the following tightening torque.
 - Mounting screw tightening torque... 0.5 Nm
 - Terminal screw tightening torque... 0.5 Nm



*Parts marked with an asterisk are not included with CKD products.

*Changing the direction of the T-type terminal boxes

If you wish to change the orientation of the T-type terminal box as shipped, please follow the procedure below.

- Clamp the two side widths (25 widths) of the T-type terminal box with a tool (monkey wrench, spanner, etc.) and turn counterclockwise to loosen.
- Loosen the lock nut.
- Rotate the T-type terminal box in the tightening direction (clockwise) until it is about 15° before the desired position.
- Tighten the lock nut to the coil side by hand until it is lightly tightened.
- Clip the two side widths of the T-type terminal box with a tool and rotate to the desired position (about 15°) to tighten.

Note: When changing the orientation by further tightening the terminal box from the shipping position, do so within $1/2$ turn.



Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 29 for general valve precautions.

Product-specific cautions: Pilot operated 3-port valve NP / NAP / NVP Series

Design / Selection

WARNING

Ambient environment

- NP / NVP Series cannot be used in an explosive gas atmosphere. When using in an explosive gas atmosphere, change to the NAP Series, and provide a separate explosion-proof solenoid valve on the pilot air circuit.
- If there are high levels of dust in the area, install a silencer or fitting on the exhaust port so that dust does not enter.

This product cannot be used as an emergency shut-off valve.

It is not designed to function as a safety valve, such as an emergency shut-off valve. When using in such a system, always take separate measures that will ensure safety.

Fluid temperature

Be sure to use the coolant check valve within the specified fluid temperature range.

Ambient environment

- Do not use this product in a corrosive gas atmosphere or an atmosphere that could affect the component materials.
- Do not use this product near a heat generating source or in a location where it may be exposed to radiant heat.
- Use this product within the operating ambient temperature.
- When you use the products in a cold climate, take necessary measures to prevent freezing.
- Take appropriate safeguards according to the degree of protection listed in the catalog specifications. Consult with CKD when using outdoors.
- Take appropriate measures when using this product in places where oil or welding spatter, etc., could come in contact with it.

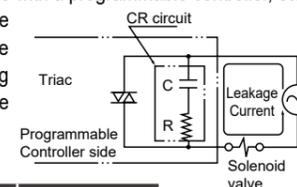
CAUTION

Ultra-dry Air

The inside of the valve is pre-lubricated with grease. This valve may not be appropriate if ultra dry air quality is required at the end of the circuit.

Leakage current from other fluid control components

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. Failure to observe this could lead to malfunctions.



100 VAC	200 VAC	24 VDC
3.0 mA or less	1.5 mA or less	1.8 mA or less

Notes for external pilot air

- Draining: Compressed air contains a large amount of drainage (water, oil oxides, tar, foreign matter). This is a factor that significantly reduces the reliability of the pneumatic components. For drainage measures, improve air quality by dehumidifying with an after cooler or dryer, removing foreign matter with a filter, and removing tar with a tar removal filter, etc.
- Pre-lubrication: This series is pre-lubricated, so no lubricator is required. However, once lubrication has been started, it must be continued so that the lubricant does not run out. Use turbine oil Class 1 ISO VG32 (#90) or equivalent for lubrication.
- Filter: Install a filter with a $5 \mu\text{m}$ or less filter element.
- If pilot air is supplied, the valve may operate even if the pressure is less than the working pressure range.

Min. working pressure

The pressure must be 0.2 MPa and over to operate the NP Series. If the piping cross-section area on the fluid inlet is reduced, the operation may become unstable due to a pressure drop during valve operation.

Securing maintenance space

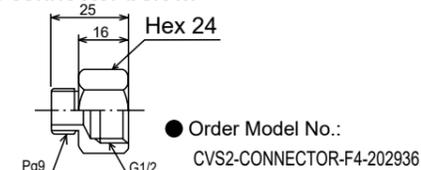
Secure sufficient space for maintenance and inspection.

Vibration

Install this product in a place not subject to vibration.

Refer to the technical data (on page 244) for connection methods to a DIN terminal box or T-type terminal box.

The thread size for the junction box outlets of the DIN terminal box can be changed from Pg9 to G1/2 using the optional connector below.



Recommended fittings for NP, NVP Series exhaust port

When mounting a fitting to the exhaust port (Rc1/8), use "GWS/-6-S single straight (round)".

*For some parts of the NP and NVP Series, piping connection using a wrench may not be easy, and fittings are tightened with an Allen wrench. Use "SLW-6A or SLW-6S" when mounting the silencer.

For cautions for mounting, installation, adjustment, use and maintenance, refer to the CKD components Product Site (<https://www.ckd.co.jp/kiki/jp/en/>) → "Model No. → [Instruction manual] for details.