

UHP Valves, Fittings & System Integrate

**KITZ SCT**

NRD Series

High Pressure Diaphragm Valve



**KITZ**  
GROUP

UHP Gas Series

## Lineup

The "NRD" series offers slim and compact high-pressure valves from small flow to high flow types.



RD Series



NRD Series

Cv	RD Series		NRD Series	
	Size	Model	Size	Model
0.04	1/8"	RD2	-	-
0.1	1/4"	RD4	1/4"	NRCD4 NRD4
0.25	1/2"	RD8		NRHD4
0.75	-	-	1/2"	NRMD8
1.0	-	-		NRHD8

## Features

### Slim and compact design

By adopting a new type high-output actuator and an internal thread body structure, a simple and compact design has been pursued.

### Lineup of high flow types

#### 1/4" high flow type "NRHD4"

Cv 0.25 has been realized with a slim actuator and an outside diameter of  $\phi 39.7\text{mm}$ .

#### 1/2" high flow type "NRHD8"

A high flow type with Cv 1.0 has joined the lineup.

For manual valves, reduction in handle operation torque has been realized through the adoption of a lever mechanism.

### Adoption of springless diaphragm structure

A springless diaphragm structure has been adopted for all product series to reduce particles.

## Option

### Ministry approved high-pressure gas products

The NRD series high pressure diaphragm valves are also compatible with ministry approved high-pressure gas. (N-valves, N-II fittings, M-pipes, and Z-complex devices)

When placing an order, a detailed statement of high pressure gas ministry approved items is required. Contact our sales staff for details.

### Adaptable for special specifications and block valves

These are adaptable for special flow passages, face-to-face dimensions for fittings other than standard products, multiblock valves, etc.

Contact our sales staff for details.



## Technical information

### Specifications

Series		NRD Series High pressure diaphragm valves				
		NRCD4	NRD4	NRHD4	NRMD8	NRHD8
Maximum Operating Pressure (Positive Pressure / Back Pressure)		3000psig ( 20.6MPa(G) )				
Cv *1		0.1	0.1	0.25	0.75	1.0
Wetted Area Volume (CVC Male Connection) *3		0.057in <sup>3</sup> (0.95cm <sup>3</sup> )	0.067in <sup>3</sup> (1.10cm <sup>3</sup> )	0.079in <sup>3</sup> (1.31cm <sup>3</sup> )	0.554in <sup>3</sup> (9.09cm <sup>3</sup> )	0.469in <sup>3</sup> (7.70cm <sup>3</sup> )
Fluid Temperature	PCTFE	-10 ~ 42°C				
	PI	-10 ~ 150°C *4			-10 ~ 42°C	-10 ~ 150°C *4
	PVDF *2	-10 ~ 42°C				
Atmospheric Temperature	PCTFE	-10 ~ 40°C				
	PI	-10 ~ 60°C			-10 ~ 40°C	-10 ~ 60°C
	PVDF *2	-10 ~ 42°C				
Leak Rates	Across the Seat He Leak Test Rate	$\leq 1 \times 10^{-9}$ sccs ( $\leq 1 \times 10^{-10}$ Pa · m <sup>3</sup> /s )				
	Inboard Leak Test Rate	$\leq 1 \times 10^{-9}$ sccs ( $\leq 1 \times 10^{-10}$ Pa · m <sup>3</sup> /s )				
Operation Pressure (Pneumatic Valve Only)		58~87 psig ( 0.4~0.6MPa(G) )			79.77~102 psig ( 0.55~0.7MPa(G) )	73~102 psig ( 0.5 ~ 0.7MPa(G) )
Cycle Life (N2 Charged, Own Test)	Manual Valve	30,000 cycle				5,000 cycle
	90° Manual Valve	20,000 cycle				
	Pneumatic Valve	100,000 cycle			60,000 cycle	40,000 cycle

\*1 The minimum Cv value measured based on SEMASPEC-90120394B-STD (room temperature) is described.

\*2 For the PVDF seat, only the NRD and NRCD series of pneumatic and manual valves can be selected. Other series are not compatible.

\*3 For the NRMD8 series, the internal volume of a CVC female connection is applied.

\*4 Where sleeve joints of 3/8" or more and pipe fittings are used, the upper limit of the fluid temperature range is 96°C.

#### Precautions

- ① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guaranteed.
- ② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.

### Product Grade

Grade	STD	EP	SEP
Body Material	SUS316L		SUS316LE (Double melt material)
Surface Roughness	$\leq R_z 126 \mu\text{in}(3.2 \mu\text{m})$ $\leq R_a 20 \mu\text{in}(0.5 \mu\text{m})$		$\leq R_z 28 \mu\text{in}(0.7 \mu\text{m})$ $\leq R_a 5 \mu\text{in}(0.13 \mu\text{m})$
Polish	Mechanical Polished		Electro Polished
Cleaning	Degreasing + Precision cleaning		
Packaging	Single Package		Double Package

### Wetted Area Material

Body	SUS316L、SUS316LE (Double melt material)
Seat	PCTFE、PI、 PVDF (Only NRD or NRCD)
Diaphragm	Cobalt alloy

**NRCD / NRD (20.6MPa ~Cv 0.1)**

**1/4 inch Standard / Compact Type**



**Pneumatic Valve**

NRCD4C Series (Compact Type) \_\_\_\_\_ 5  
NRD4C Series (Standard Type)



**270° Manual Valve**

NRCD4M Series (Compact Type) \_\_\_\_\_ 7  
NRD4M Series (Standard Type)



**90° Manual Valve**

NRCD4Q Series (Compact Type) \_\_\_\_\_ 9  
NRD4Q Series (Standard Type)

**NRHD / NRMD (20.6MPa Cv 0.25~Cv 1.0)**

**Cv 0.25 1/4 inch High Flow Type**



**Pneumatic Valve**

NRHD4C Series \_\_\_\_\_ 5



**270° Manual Valve**

NRHD4M Series \_\_\_\_\_ 7

**Cv 0.75 1/2 inch Medium Flow Type**



**Pneumatic Valve**

NRMD8C Series \_\_\_\_\_ 10

**Cv 1.0 1/2 inch High Flow Type**



**Pneumatic Valve**

NRHD8C Series \_\_\_\_\_ 11



**Manual Valve**

NRHD8M Series \_\_\_\_\_ 12

# NRCD / NRD / NRHD Pneumatic Valve



**NRCD4C Series (Cv0.1 Compact Type)**

**NRD4C Series (Cv0.1 Standard Type)**

**NRHD4C Series (Cv0.25 High Flow Type)**

The "RD" series has been redesigned with a slim and compact design.

## Straight Type

### Product Code Table

Model + Size	Operation	Valve Shape	Pressure	Connection	Fitting size	Seat Material	Grade + Body Material
<b>NRCD4</b>	<b>C</b>	<b>S</b>	<b>I</b>	<b>V</b>	<b>8</b>	<b>C</b>	<b>EP-316L</b>
NRCD4: 1/4" Cv0.1 Compact Body NRD4: 1/4" Cv0.1 Standard Body NRHD4: 1/4" Cv0.25 High Flow Type	C: N.C.	S: Straight A: Angle L: L-Shape	I: 3000psig (20.6MPa(G))	V: CVC male VF: CVC female W: Butt weld S: Compression	Not shown: 1/4" (Standard) 6: 3/8" 8: 1/2"	C: PCTFE P: PI D: PVDF *	STD-316L: Mechanical Polished+SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE: Electro Polished +SUS316LE

\*PVDF seat is available for NRCD4 and NRD4

### Dimension

Unit: inch(mm)

Model	Type	Connection	L	L1	H	H1	A	B	C	P	M	M1
	NRCD4CSI-V□	1/4" CVC Male	2.05 (52)	-	4.33 (110)	0.43 (11)	1.38 (35)	0.87 (22)	0.83 (21)	Rc1/8	0.67 (17)	2-M5 Depth 0.20(5.0)
	NRD4CSI-V□	1/4" CVC Male	2.24 (57)	-	4.45 (113)	0.43 (11)	1.38 (35)	1.09 (27.6)	1.02 (26)		1.00 (25.4)	
	NRHD4CSI-V□	1/4" CVC Male	2.24 (57)	-	5.35 (136)	0.43 (11)	1.56 (39.7)	1.09 (27.6)	1.02 (26)		1.00 (25.4)	
	NRHD4CSI-V8□	1/2" CVC Male	3.03 (77)	-	5.87 (149)	0.63 (16)	1.56 (39.7)	1.57 (40)	1.42 (36)		1.10 (28)	
	NRCD4CSI-VF□	1/4" CVC Female	2.60 (66)	-	4.33 (110)	0.43 (11)	1.38 (35)	0.87 (22)	0.83 (21)		0.67 (17)	
	NRD4CSI-VF□	1/4" CVC Female	2.78 (70.6)	-	4.45 (113)	0.43 (11)	1.38 (35)	1.09 (27.6)	1.02 (26)		1.00 (25.4)	
	NRHD4CSI-VF□	1/4" CVC Female	2.78 (70.6)	-	5.35 (136)	0.43 (11)	1.56 (39.7)	1.09 (27.6)	1.02 (26)		1.00 (25.4)	
	NRHD4CSI-VF8□	1/2" CVC Female	3.27 (83)	-	5.87 (149)	0.63 (16)	1.56 (39.7)	1.57 (40)	1.42 (36)		1.10 (28)	
	NRCD4CSI-W□	1/4" Butt Weld	1.97 (50)	-	4.33 (110)	0.43 (11)	1.38 (35)	0.87 (22)	0.83 (21)		0.67 (17)	
	NRD4CSI-W□	1/4" Butt Weld	2.13 (54)	-	4.45 (113)	0.43 (11)	1.38 (35)	1.09 (27.6)	1.02 (26)		1.00 (25.4)	
	NRHD4CSI-W□	1/4" Butt Weld	2.13 (54)	-	5.35 (136)	0.43 (11)	1.56 (39.7)	1.09 (27.6)	1.02 (26)		1.00 (25.4)	
	NRHD4CSI-W6□	3/8" Butt Weld	2.72 (69)	-	5.87 (149)	0.63 (16)	1.56 (39.7)	1.57 (40)	1.42 (36)		1.10 (28)	
	NRCD4CSI-S□	1/4" Compression Fitting	1.67 (42.4)	0.31 (7.9)	4.33 (110)	0.43 (11)	1.38 (35)	0.87 (22)	0.83 (21)	0.67 (17)		
	NRD4CSI-S□	1/4" Compression Fitting	1.89 (48)	0.31 (7.9)	4.45 (113)	0.43 (11)	1.38 (35)	1.09 (27.6)	1.02 (26)	1.00 (25.4)		
	NRHD4CSI-S□	1/4" Compression Fitting	1.89 (48)	0.31 (7.9)	5.35 (136)	0.43 (11)	1.56 (39.7)	1.09 (27.6)	1.02 (26)	1.00 (25.4)		
	NRHD4CSI-S6□	3/8" Compression Fitting	2.52 (64)	0.37 (9.5)	5.87 (149)	0.63 (16)	1.56 (39.7)	1.57 (40)	1.42 (36)	1.10 (28)		
	NRHD4CSI-S8□	1/2" Compression Fitting	2.52 (64)	0.50 (12.7)	5.87 (149)	0.63 (16)	1.56 (39.7)	1.57 (40)	1.42 (36)	1.10 (28)		

\* L1 dimension for compression fitting is the dimension of how far tube inserted from end of body.

# Branch Type

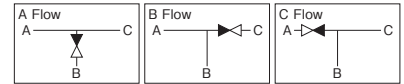
## Product Code Table

Model + Size	Operation	Valve Shape	Pressure	Connection	Fitting size	Flow	Grade + Body Material
<b>NRCD4</b>	<b>C</b>	<b>B</b>	<b>I</b>	<b>V</b>	<b>C</b>	<b>A</b>	<b>EP-316L</b>
NRCD4: 1/4" Cv0.1 Compact Body NRD4: 1/4" Cv0.1 Standard Body NRHD4: 1/4" Cv0.25 High Flow Type	C: NC.	B: Branch	I: 3000psig (20.6MPa(G))	V: CVC male VF: CVC female W: Butt weld *1	C: PCTFE P: PI D: PVDF *2	A: A flow B: B flow C: C flow	STD-316L: Mechanical Polished+SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE: Electro Polished +SUS316LE

\*1 In cases where there are different types of fittings, please note them in the order of Port A, B, and C of the internal flow in the diagram to the right.  
Example) In the case where A port = CVC 1/2" male, B port = CVC 1/4" male, C port = CVC 1/2" female, the model will be "NRHD4CBI-V8VVVF8C-A-EP-316L".

\*2 PVDF seat is available for NRCD4 and NRD4

### Flow direction (standard)



## Dimension Unit: inch(mm)

Model	Type	Connection	L	H	H1	A	B	C	F	P	M	M1
	NRCD4CBI-V□	1/4" CVC Male	2.05 (52)	4.33 (110)	0.43 (11)	1.38 (35)	0.87 (22)	0.85 (21.5)	1.00 (25.5)	Rc1/8	0.67 (17)	2-M5 Depth 0.20(5.0)
	NRD4CBI-V□	1/4" CVC Male	2.24 (57)	4.45 (113)	0.43 (11)	1.38 (35)	1.09 (27.6)	1.04 (26.3)	1.10 (28)		1.00 (25.4)	
	NRHD4CBI-V□	1/4" CVC Male	2.24 (57)	5.35 (136)	0.43 (11)	1.56 (39.7)	1.09 (27.6)	1.04 (26.3)	1.10 (28)		1.00 (25.4)	
	NRHD4CBI-V8□	1/2" CVC Male	3.03 (77)	5.87 (149)	0.63 (16)	1.56 (39.7)	1.57 (40)	1.42 (36)	1.52 (38.5)		1.10 (28)	
	NRCD4CBI-VF□	1/4" CVC Female	2.60 (66)	4.33 (110)	0.43 (11)	1.38 (35)	0.87 (22)	0.85 (21.5)	1.28 (32.5)		0.67 (17)	
	NRD4CBI-VF□	1/4" CVC Female	2.78 (70.6)	4.45 (113)	0.43 (11)	1.38 (35)	1.09 (27.6)	1.04 (26.3)	1.37 (34.8)		1.00 (25.4)	
	NRHD4CBI-VF□	1/4" CVC Female	2.78 (70.6)	5.35 (136)	0.43 (11)	1.56 (39.7)	1.09 (27.6)	1.04 (26.3)	1.37 (34.8)		1.00 (25.4)	
	NRHD4CBI-VF8□	1/2" CVC Female	3.27 (83)	5.87 (149)	0.63 (16)	1.56 (39.7)	1.57 (40)	1.42 (36)	1.63 (41.5)		1.10 (28)	
	NRCD4CBI-W□	1/4" Butt Weld	1.97 (50)	4.33 (110)	0.43 (11)	1.38 (35)	0.87 (22)	0.85 (21.5)	0.96 (24.5)		0.67 (17)	
	NRD4CBI-W□	1/4" Butt Weld	2.13 (54)	4.45 (113)	0.43 (11)	1.38 (35)	1.09 (27.6)	1.04 (26.3)	1.04 (26.5)		1.00 (25.4)	
	NRHD4CBI-W□	1/4" Butt Weld	2.13 (54)	5.35 (136)	0.43 (11)	1.56 (39.7)	1.09 (27.6)	1.04 (26.3)	1.04 (26.5)		1.00 (25.4)	
	NRHD4CBI-W6□	3/8" Butt Weld	2.72 (69)	5.87 (149)	0.63 (16)	1.56 (39.7)	1.57 (40)	1.42 (36)	1.36 (34.5)		1.10 (28)	
	NRHD4CBI-W8□	1/2" Butt Weld	2.72 (69)	5.87 (149)	0.63 (16)	1.56 (39.7)	1.57 (40)	1.42 (36)	1.36 (34.5)	1.10 (28)		

# NRCD / NRD / NRHD Manual Valve



**NRCD4M Series (Cv0.1 Compact Type)**

**NRD4M Series (Cv0.1 Standard Type)**

**NRHD4M Series (Cv0.25 High Flow Type)**

A compact and simple appearance. Operation torque has been reduced even further than conventional products.

## Straight Type

### Product Code Table

Model + Size	Operation	Valve Shape	Pressure	Connection	Fitting size	Seat Material	Handle Color Optional	Grade + Body Material
NRCD4	M	S	I	V	8	C		EP-316L
NRCD4: 1/4" Cv0.1 Compact Body NRD4: 1/4" Cv0.1 Standard Body NRHD4: 1/4" Cv0.25 High Flow Type	M: 270° Manual Valve	S: Straight A: Angle L: L-Shape	I: 3000psig (20.6MPa(G))	V: CVC male VF: CVC female W: Butt weld S: Compression	Not shown: 1/4" (Standard) 6: 3/8" 8: 1/2"	C: PCTFE P: PI D: PVDF *	Not shown: Blue (standard) RD: Red GR: Green SL: Silver BK: Black YE: Yellow BR: Brown WH: White	STD-316L: Mechanical Polished+SUS316L EP-316L: Electro Polished + SUS316L SEP-316LE: Electro Polished +SUS316LE

\*PVDF seat is available for NRCD4 and NRD4

### Dimension

Unit: inch(mm)

Model	Type	Connection	L	L1	H	H1	A	B	C	M	M1
	NRCD4MSI-V□	1/4" CVC Male	2.05 (52)	-	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.83 (21)	0.67 (17)	2-M5 Depth 0.20(5.0)
	NRD4MSI-V□	1/4" CVC Male	2.24 (57)	-	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRHD4MSI-V□	1/4" CVC Male	2.24 (57)	-	3.39 (86)	0.43 (11)	2.44 (62)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRHD4MSI-V8□	1/2" CVC Male	3.03 (77)	-	3.86 (98)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.10 (28)	
	NRCD4MSI-VF□	1/4" CVC Female	2.60 (66)	-	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.83 (21)	0.67 (17)	
	NRD4MSI-VF□	1/4" CVC Female	2.78 (70.6)	-	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRHD4MSI-VF□	1/4" CVC Female	2.78 (70.6)	-	3.39 (86)	0.43 (11)	2.44 (62)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRHD4MSI-VF8□	1/2" CVC Female	3.27 (83)	-	3.86 (98)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.10 (28)	
	NRCD4MSI-W□	1/4" Butt Weld	1.97 (50)	-	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.83 (21)	0.67 (17)	
	NRD4MSI-W□	1/4" Butt Weld	2.13 (54)	-	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRHD4MSI-W□	1/4" Butt Weld	2.13 (54)	-	3.39 (86)	0.43 (11)	2.44 (62)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRHD4MSI-W6□	3/8" Butt Weld	2.72 (69)	-	3.86 (98)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.10 (28)	
	NRHD4MSI-W8□	1/2" Butt Weld	2.72 (69)	-	3.86 (98)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.10 (28)	
	NRCD4MSI-S□	1/4" Compression Fitting	1.67 (42.4)	0.31 (7.9)	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.83 (21)	0.67 (17)	
	NRD4MSI-S□	1/4" Compression Fitting	1.89 (48)	0.31 (7.9)	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRHD4MSI-S□	1/4" Compression Fitting	1.89 (48)	0.31 (7.9)	3.39 (86)	0.43 (11)	2.44 (62)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRHD4MSI-S6□	3/8" Compression Fitting	2.52 (64)	0.37 (9.5)	3.86 (98)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.10 (28)	
NRHD4MSI-S8□	1/2" Compression Fitting	2.52 (64)	0.50 (12.7)	3.86 (98)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.10 (28)		

\* L1 dimension for compression fitting is the dimension of how far tube inserted from end of body.

# Branch Type

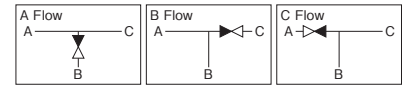
## Product Code Table

Model + Size	Operation	Valve Shape	Pressure	Connection	Seat Material	Flow	Handle Color Optional	Grade + Body Material
NRCD4	M	B	I	V	C	A		EP-316L
NRCD4: 1/4" Cv0.1 Compact Body NRD4: 1/4" Cv0.1 Standard Body NRHD4: 1/4" Cv0.25 High Flow Type	M: 270° Manual Valve	B: Branch	I: 3000psig (20.6MPa(G))	V: CVC male VF: CVC female W: Butt weld *1	C: PCTFE P: PI D: PVDF *2	A: A flow B: B flow C: C flow	Not shown: Blue (standard) RD: Red YE: Yellow GR: Green BR: Brown SL: Silver WH: White BK: Black	STD-316L: Mechanical Polished+SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE: Electro Polished +SUS316LE

\*1 In cases where there are different types of fittings, please note them in the order of Port A, B, and C of the internal flow in the diagram to the right.  
Example: In the case where A port = CVC 1/2" male, B port = CVC 1/4" male, C port = CVC 1/2" female, the model will be "NRHD4CBI-V8VVF8C-A-EP-316L".

\*2 PVDF seat is available for NRCD4 and NRD4

### Flow direction (standard)



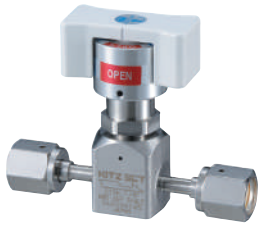
## Dimension

Unit: inch(mm)

Model	Type	Connection	L	H	H1	A	B	C	F	M	M1
	NRCD4MBI-V□	1/4" CVC Male	2.05 (52)	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.85 (21.5)	1.00 (25.5)	0.67 (17)	2-M5 Depth 0.20(5.0)
	NRD4MBI-V□	1/4" CVC Male	2.24 (57)	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.04 (26.3)	1.10 (28)	1.00 (25.4)	
	NRHD4MBI-V□	1/4" CVC Male	2.24 (57)	3.39 (86)	0.43 (11)	2.44 (62)	1.09 (27.6)	1.04 (26.3)	1.10 (28)	1.00 (25.4)	
	NRHD4MBI-V8□	1/2" CVC Male	3.03 (77)	3.86 (98)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.52 (38.5)	1.10 (28)	
	NRCD4MBI-VF□	1/4" CVC Female	2.60 (66)	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.85 (21.5)	1.28 (32.5)	0.67 (17)	
	NRD4MBI-VF□	1/4" CVC Female	2.78 (70.6)	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.04 (26.3)	1.37 (34.8)	1.00 (25.4)	
	NRHD4MBI-VF□	1/4" CVC Female	2.78 (70.6)	3.39 (86)	0.43 (11)	2.44 (62)	1.09 (27.6)	1.04 (26.3)	1.37 (34.8)	1.00 (25.4)	
	NRHD4MBI-VF8□	1/2" CVC Female	3.27 (83)	3.86 (98)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.63 (41.5)	1.10 (28)	
	NRCD4MBI-W□	1/4" Butt Weld	1.97 (50)	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.85 (21.5)	0.96 (24.5)	0.67 (17)	
	NRD4MBI-W□	1/4" Butt Weld	2.13 (54)	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.04 (26.3)	1.04 (26.5)	1.00 (25.4)	
	NRHD4MBI-W□	1/4" Butt Weld	2.13 (54)	3.39 (86)	0.43 (11)	2.44 (62)	1.09 (27.6)	1.04 (26.3)	1.04 (26.5)	1.00 (25.4)	
	NRHD4MBI-W6□	3/8" Butt Weld	2.72 (69)	3.86 (98)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.36 (34.5)	1.10 (28)	
	NRHD4MBI-W8□	1/2" Butt Weld	2.72 (69)	3.86 (98)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.36 (34.5)	1.10 (28)	



# NRCD / NRD 90° Manual Valve



## NRCD4Q Series (Cv0.1 Compact Type)

## NRD4Q Series (Cv0.1 Standard Type)

For the "NRD" series of 90° manual valves, a butterfly handle has been adopted. Next-generation high pressure valves have been developed for safety measures, including smooth and reliable opening/closing operations and a newly designed OPEN/CLOSE display function.

## Straight Type

### Product Code Table

Model + Size	Operation	Valve Shape	Pressure	Connection	Seat Material	Handle Color Optional	Grade + Body Material
NRCD4	Q	S	I	V	C		EP-316L
NRCD4: 1/4" Cv0.1 Compact Body NRD4: 1/4" Cv0.1 Standard Body	Q: 90° Manual Valve	S: Straight A: Angle L: L-Shape	I: 3000psig (20.6MPa(G))	V: CVC male VF: CVC female W: Butt weld S: Compression	C: PTFE P: PI	Not shown: Blue (standard) RD: Red YE: Yellow GR: Green BR: Brown SL: Silver WH: White BK: Black	STD-316L: Mechanical Polished+SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE: Electro Polished +SUS316LE

## Dimension

Unit: inch(mm)

Model	Type	Connection	L	L1	H	H1	A	B	C	M	M1
	NRCD4QSI-V□	1/4" CVC Male	2.05 (52)	-	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.83 (21)	0.67 (17)	2-M5 Depth 0.20(5.0)
	NRD4QSI-V□	1/4" CVC Male	2.24 (57)	-	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRCD4QSI-VF□	1/4" CVC Female	2.60 (66)	-	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.83 (21)	0.67 (17)	
	NRD4QSI-VF□	1/4" CVC Female	2.78 (70.6)	-	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRCD4QSI-W□	1/4" Butt Weld	1.97 (50)	-	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.83 (21)	0.67 (17)	
	NRD4QSI-W□	1/4" Butt Weld	2.13 (54)	-	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	
	NRCD4QSI-S□	1/4" Compression Fitting	1.67 (42.4)	0.31 (7.9)	2.95 (75)	0.43 (11)	2.05 (52)	0.87 (22)	0.83 (21)	0.67 (17)	
	NRD4QSI-S□	1/4" Compression Fitting	1.89 (48)	0.31 (7.9)	3.03 (77)	0.43 (11)	2.05 (52)	1.09 (27.6)	1.02 (26)	1.00 (25.4)	

\* L1 dimension for compression fitting is the dimension of how far tube inserted from end of body.

# NRMD Pneumatic Valve



## NRMD8C Series (Cv0.75 Medium Flow Type)

The actuator has been slimmed for BSGS (Bulk Specialty Gas System), GS and other high-pressure gas devices.

By adopting a newly developed high-output actuator and a springless diaphragm structure, safety, increased high durability and particle-free features have been realized.

## Straight Type

### Product Code Table

Model + Size	Operation	Valve Shape	Pressure	Connection	Seat Material	Grade + Body Material
NRMD8	C	S	I	V	C	EP-316L
NRMD8: 1/2" Cv0.75 Medium Flow Type	C: N.C.	S: Straight A: Angle L: L-Shape	I: 3000psig (20.6MPa(G))	V: CVC male VF: CVC female W: Butt weld S: Compression	C: PCTFE P: PI	STD-316L: Mechanical Polished+SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE: Electro Polished +SUS316LE

## Dimension

Unit: inch(mm)

Model	Type	Connection	L	L1	H	H1	A	B	C	P	M	M1
	NRMD8CSI-V□	1/2" CVC Male *1	5.06 (128.4)	-								
	NRMD8CSI-VF□	1/2" CVC Female	3.72 (94.4)	-	5.35 (136)	0.63 (16)	2.36 (60)	1.50 (38)	1.42 (36)	Rc1/8	1.10 (28)	2-M5 Depth 0.20(5.0)
	NRMD8CSI-W□	1/2" Butt Weld	2.72 (69)	-								
	NRMD8CSI-S□	1/2" Compression Fitting	4.49 (114)	*2 0.90 (22.9)								

\*1 The shape of the fitting is the male nut type only.

\*2 L1 dimension for compression fitting is the dimension of how far tube inserted from end of body.

# NRHD Pneumatic Valve



## NRHD8C Series (Cv1.0 High Flow Type)

By adopting a newly developed high-output actuator and a springless diaphragm structure, safety, increased high durability and particle-free features have been realized. This is optimal for high flow supply systems at flat panel display factories and semiconductor factories for large-diameter wafers.

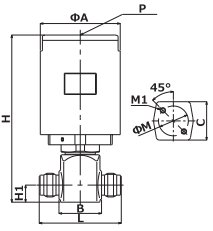
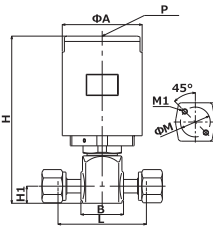
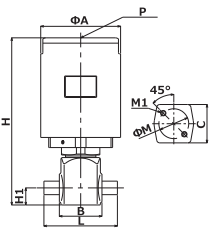
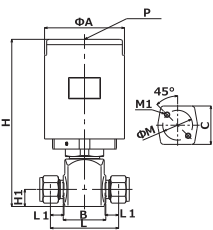
### Straight Type

#### Product Code Table

<b>Model + Size</b> NRHD8	<b>Operation</b> C	<b>Valve Shape</b> S	<b>Pressure</b> I	<b>Connection</b> V	<b>Seat Material</b> C	<b>Grade + Body Material</b> EP-316L
NRHD8: 1/2" Cv1.0 High Flow Type	C: N.C.	S: Straight A: Angle L: L-Shape	I: 3000psig ( 20.6MPa(G) )	V: CVC male VF: CVC female W: Butt weld S: Compression	C: PCTFE P: PI	STD-316L: Mechanical Polished+SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE: Electro Polished +SUS316LE

### Dimension

Unit: inch(mm)

Model	Type	Connection	L	L1	H	H1	A	B	C	P	M	M1
	NRHD8CSI-V□	1/2" CVC Male	3.03 (77)	-								
	NRHD8CSI-VF□	1/2" CVC Female	3.27 (83)	-	6.18 (157)	0.63 (16)	2.95 (75)	1.57 (40)	1.42 (36)	Rc1/8	1.10 (28)	2-M5 Depth 0.20(5.0)
	NRHD8CSI-W□	1/2" Butt Weld	2.72 (69)	-								
	NRHD8CSI-S□	1/2" Compression Fitting	2.52 (64)	0.50 (12.7)								

\* L1 dimension for compression fitting is the dimension of how far tube inserted from end of body.

# NRHD manual Valve



## NRHD8M Series (Cv1.0 High Flow Type)

By adopting a newly developed lever mechanism and a springless diaphragm structure, we have realized low-torque, safety, increased high durability and particle-free features. This is optimal for high flow supply systems at flat panel display factories and semiconductor factories for large-diameter wafers.

### Straight Type

#### Product Code Table

Model + Size	Operation	Valve Shape	Pressure	Connection	Seat Material	Handle Color Optional	Grade + Body Material
NRHD8	M	S	I	V	C		EP-316L
NRHD8: 1/2" Cv1.0 High Flow Type	M: 270° Manual Valve	S: Straight A: Angle L: L-Shape	I: 3000psig (20.6MPa(G))	V: CVC male VF: CVC female W: Butt weld S: Compression	C: PCTFE P: PI	Not shown: Blue (standard) RD: Red YE: Yellow GR: Green BR: Brown SL: Silver WH: White BK: Black	STD-316L: Mechanical Polished+SUS316L EP-316L : Electro Polished+SUS316L SEP-316LE: Electro Polished+SUS316LE

#### Dimension

Unit: inch(mm)

Model	Type	Connection	L	L1	H	H1	A	B	C	M	M1
	NRHD8MSI-V□	1/2" CVC Male	3.03 (77)	-							
	NRHD8MSI-VF□	1/2" CVC Female	3.27 (83)	-	4.69 (119)	0.63 (16)	2.44 (62)	1.57 (40)	1.42 (36)	1.10 (28)	2-M5 Depth 0.20(5.0)
	NRHD8MSI-W□	1/2" Butt Weld	2.72 (69)	-							
	NRHD8MSI-S□	1/2" Compression Fitting	2.52 (64)	0.50 (12.7)							

\* L1 dimension for compression fitting is the dimension of how far tube inserted from end of body.







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