

# FINE series PURE **MEGA** series



FPR-UDDF-71-6.35-NL

FPR-SD-71-6.35

*Safety & Clean Technology*

**Fujikin Incorporated**



MEGA-ONE LA

MEGA-ONE LS

MEGA-ONE LM

MEGA-ONE HQ

MEGA-ONE HM

MEGA-MINI LA

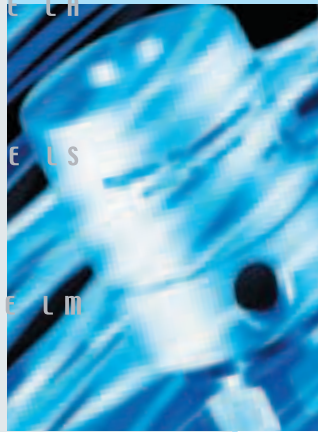
MEGA-MINI HA

MEGA-M LV

MEGA-M LM

MEGA-ONE LC

Fujikin's Class 1 cleanrooms feature cutting-edge technology throughout, and must exceed the most rigorous standards for cleanliness. Products manufactured in this environment are therefore guaranteed to meet the most stringent requirements and to be of the highest quality worldwide.



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# MEGA — ONE LA

## Low-Pressure Pneumatically-Actuated Valves

The MEGA-ONE LA is a pneumatically-actuated diaphragm valve for ultra-pure, flammable, or toxic fluid lines for all types of semiconductor equipment and facilities.

The direct diaphragm construction makes the MEGA-ONE LA an industry standard valve with superior sealing performance, remarkable durability, and compactness, while being particle-free and dead-space free.

Colored caps differentiate between normally open (blue) and normally closed (red) valves, thereby simplifying recognition.

The actuator features a unique rotation mechanism, allowing for actuation pressure to be supplied from any desired direction for both normally open and normally closed valves.

Extremely-durable nickel-cobalt alloy diaphragm

Excellent gas displacement characteristics, (1.48cc total volume for male UJR version).

All wetted surfaces undergo an EP treatment as standard. UP treatment is optional.

Standard seat material is PCTFE. Polyimide/PFA seat material is also available.

N.O. N.C.

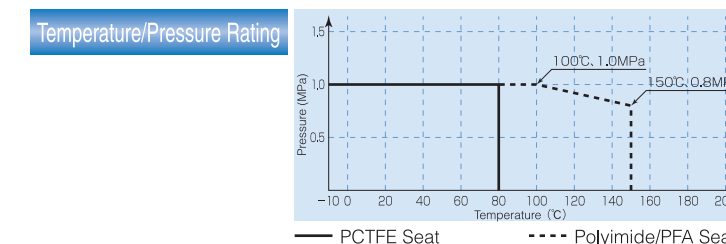
Q.P. 0.34~0.49MPa

## SPECIFICATIONS

Specification	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv	Actuation Pressure	Connection
	6.35 (1/4")	1MPa	-10~80 °C	0.25	0.34~0.49 MPa	UJR, UPG, F900, Tube Stub
	9.52 (3/8")	145 psi	14~176 °F	0.6	48~70 psi	

● All valves are helium leak tested. Vacuum method/results: External leakage: <math> < 5 \times 10^{-12} \text{ Pa} \cdot \text{m}^3/\text{sec}</math>. Seat leakage: <math> < 5 \times 10^{-12} \text{ Pa} \cdot \text{m}^3/\text{sec}</math>  
 ● Demonstrated superior durability - over 4 million cycles (actual test results).

Materials	Part	Material
	Body	SUS316L
	Diaphragm	Nickel-cobalt alloy
	Seat Packing	PCTFE
	Actuator	A5056



## PART NUMBER DESIGNATION

Please use the part number designations below when placing an order.

FPR-UDDF [ ] - 7 1 [ ] - 6.35 [ ] - NL - [ ] - [ ]

A	B	C	D	E	F	G	H	I	J
F P : Normally open F P R : Normally closed	Stainless steel direct diaphragm valve	T B : Added only for 3-port valves C L : 2-way, corner left valve	7 : UJR / UPG end-connection, 9 : F900 end-connection 5 : Tube stub end-connection	1 : 1MPa maximum operating pressure	R S 2 : With proximity sensor* L S : With limit switch*	End-Connection Size 6.35 : 1/4" OD 9.52 : 3/8" OD 12.7 : 1/2" OD (UJR connections have a 9.52 port diameter)	Blank : Male UJR on both ends - 2 : Female UJR on both ends - 3 : UJR male inlet / Female UJR outlet U G : UPG end-connection B W : Butt weld	P I : Polyimide seat* P A : PFA seat*	UP : UP treatment* P S : Cr <sub>2</sub> O <sub>3</sub> treatment* F D : Fluorine passivation*

\* Optional or made to order.

Actual shipped products may have additional designations (such as #A, #B) in the part number. These indicate production history and do not indicate a change in function or dimensions.





DIMENSIONS

Figure 1

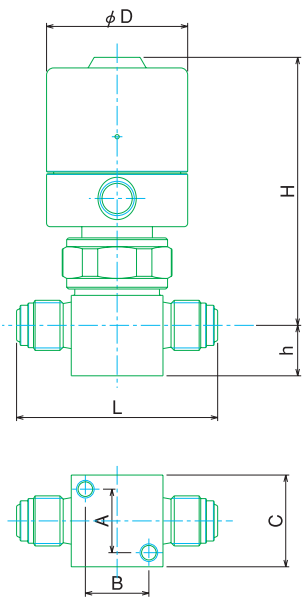


Figure 2

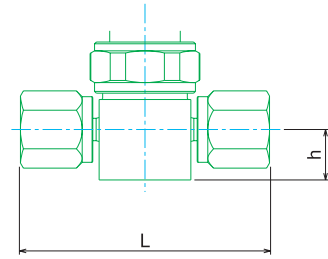


Figure 3

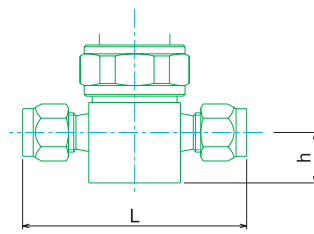


Figure 4

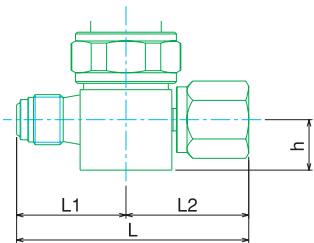


Figure 5

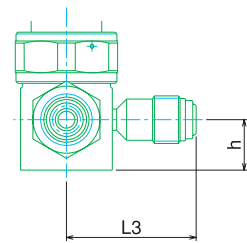
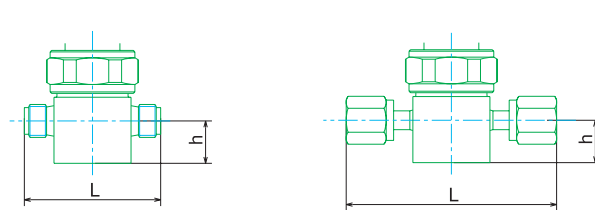


Figure 6



(Unit : mm)

Part Number	Figure	L	L1	L2	L3	h	H	D	A	B	C
FP(R)-UDDF-71-6.35-NL	1	57				14.3	75	40	18	18	26
FP(R)-UDDF-71-6.35-2-NL	2	70.6				14.3	75	40	18	18	26
FP(R)-UDDF-71-9.52-NL	1	76.2				11.1	87.5(82)	50	20.2	20.2	35
FP(R)-UDDF-71-9.52-2-NL	2	83				12.7	87.5(82)	50	20.2	20.2	35
FP(R)-UDDFTB-71-6.35-NL	4	65.7	31	34.7	38.1	14.3	76	40	18	18	26
FP(R)-UDDFTB-71-9.52-NL	4	79.2	37.7	41.5	43.1	12.7	87.5(82)	50	20.2	20.2	35
FP(R)-UDDFTB-71-9.52x6.35-NL	4	69.9	31.8	38.1	38.1	12.7	80.5	40	18	18	26
FP(R)-UDDF-91-6.35-NL	3	63.5				14.3	75	40	18	18	26
FP(R)-UDDF-91-9.52-NL	3	80				12.7	87.5(82)	50	20.2	20.2	35
FP(R)-UDDF-91-12.7-NL	3	85				12.7	87.5(82)	50	20.2	20.2	35
FP(R)-UDDF-71-6.35UG	5	46				14.3	75	40	18	18	26
FP(R)-UDDF-71-6.35UG-2	6	71				14.3	75	40	18	18	26
FP(R)-UDDF-71-9.52UG	5	57				11.1	87.5(82)	50	20.2	20.2	35
FP(R)-UDDF-71-9.52UG-2	6	86				12.7	87.5(82)	50	20.2	20.2	35

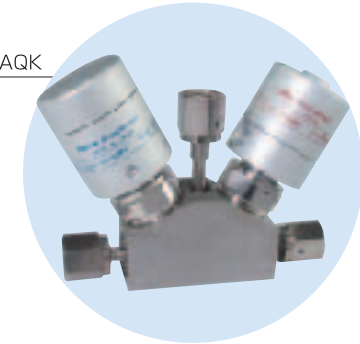
( ) Brackets indicate dimensions for normally closed valves. See Figure 1 for dimension keys not shown in other Figures.

OPTIONS

Block Valve

FBDV-6.35-2B3-316LP-AQK

Block valve design allows for:  
 • Compact tubing arrangement  
 • Dead-space free configuration  
 In addition to our standard 2-actuator, 3-port block, we also offer custom block valves according to customer's specifications.



Proximity Sensor

FPR-UDDF-71RS2-9.52

An electrical signal confirms open or closed position of valve. The non-contact proximity sensor offers unsurpassed safety.



Limit Switch

FPR-UDDF-71LS-6.35-NL

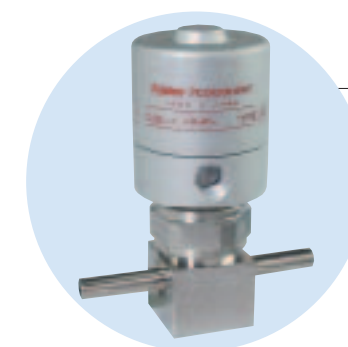
An electrical signal confirms open or closed position of valve.



Other

FPR-UDDF-51-6.35BW-NL-KAG

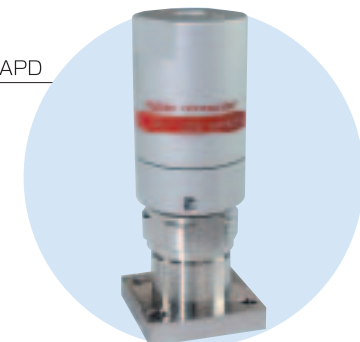
Tube stub length may be ordered according to customer specifications.



IGS Valves

FPR-UDDFA-21-6.35UGF-APD

MEGA series valves are also available in 1.125" and 1.5" W-Seal for surface-mount Integrated Gas Systems.



Photos are samples of each product type.

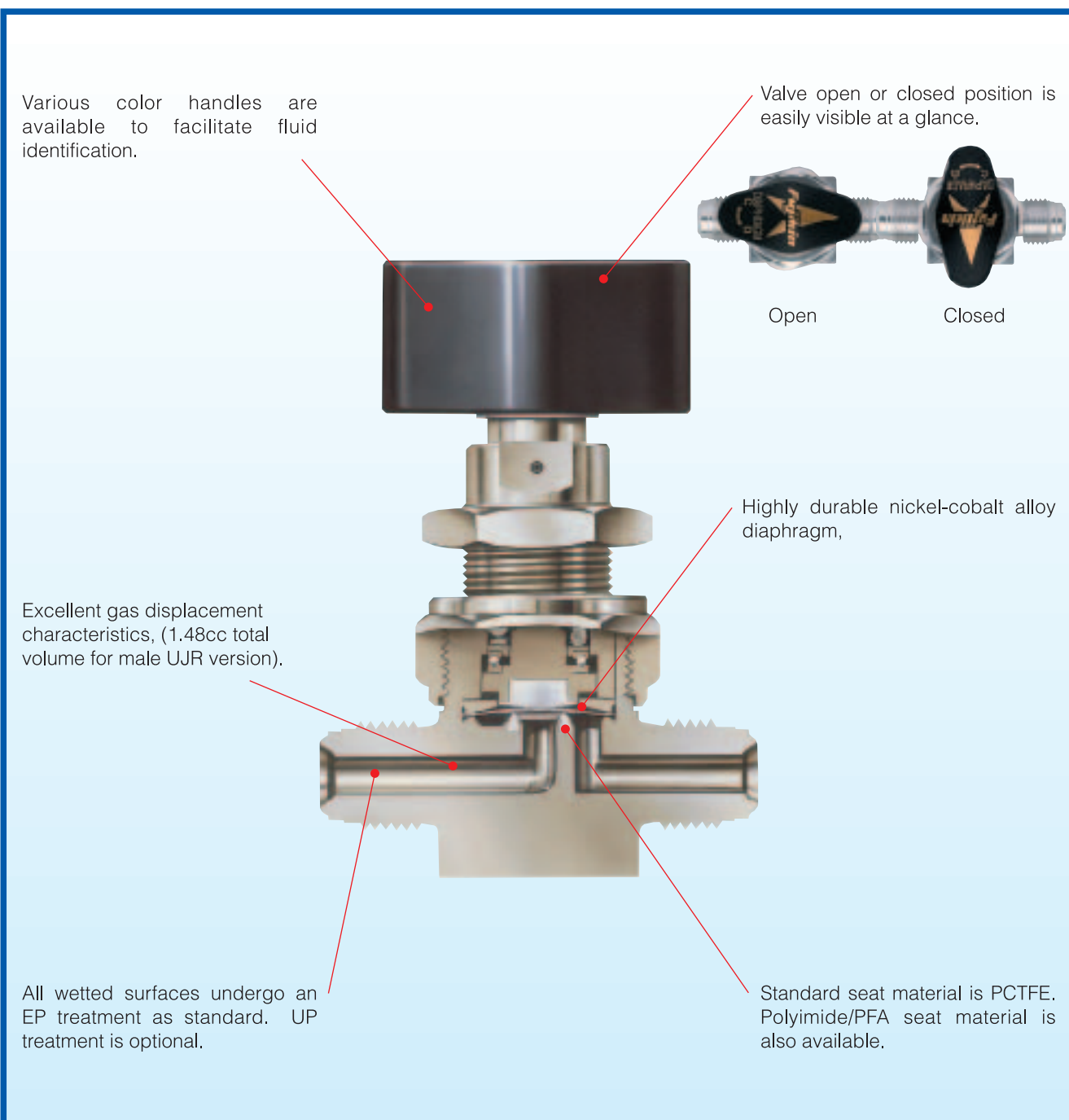


# MEGA — ONE LS

## Low Pressure Switch Type Manual Valves

The MEGA-ONE LS is a quarter turn diaphragm valve for ultra-pure, flammable, or toxic fluid lines in various types of semiconductor manufacturing equipment and facilities.

Unique features include an internal spring that assures uniform sealing performance and a direct diaphragm construction that makes the MEGA-ONE LS an industry standard valve with superior sealing performance, remarkable durability, compactness, and particle and dead-space free performance.

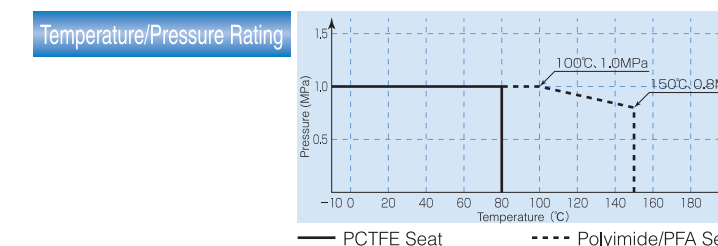


## SPECIFICATIONS

Specification	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv	Connection
	6.35 (1/4")	1MPa	-10~80 °C	0.25	UJR, UPG, F900, Tube Stub
	9.52 (3/8")	145 psi	14~176 °F	0.6	

● All valves are helium leak tested. Vacuum method results: External Leakage <math>< 5 \times 10^{-12}</math> Pa·m<sup>3</sup>/sec. Seat Leakage: <math>< 5 \times 10^{-12}</math> Pa·m<sup>3</sup>/sec  
 ● Demonstrated superior durability - over 20,000 cycles (actual test results).

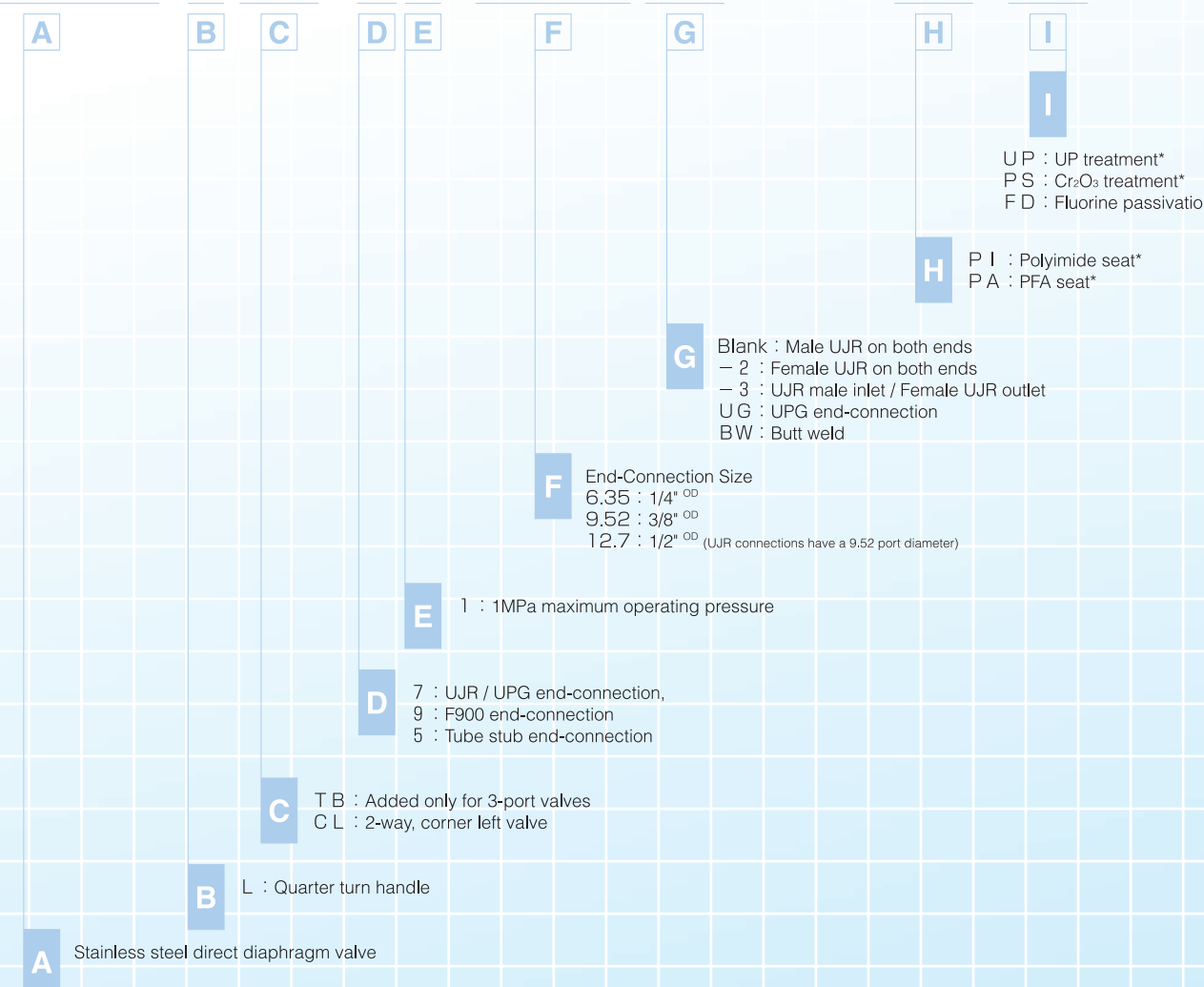
Materials	Part	Material
	Body	SUS316L
	Diaphragm	Nickel-cobalt alloy
	Seat Packing	PCTFE
	Handle	Nylon 6



## PART NUMBER DESIGNATION

Please use the part number designations below when placing an order.

FUDDF L [ ] - 71 - 6.35 [ ] - NL - [ ] - [ ]

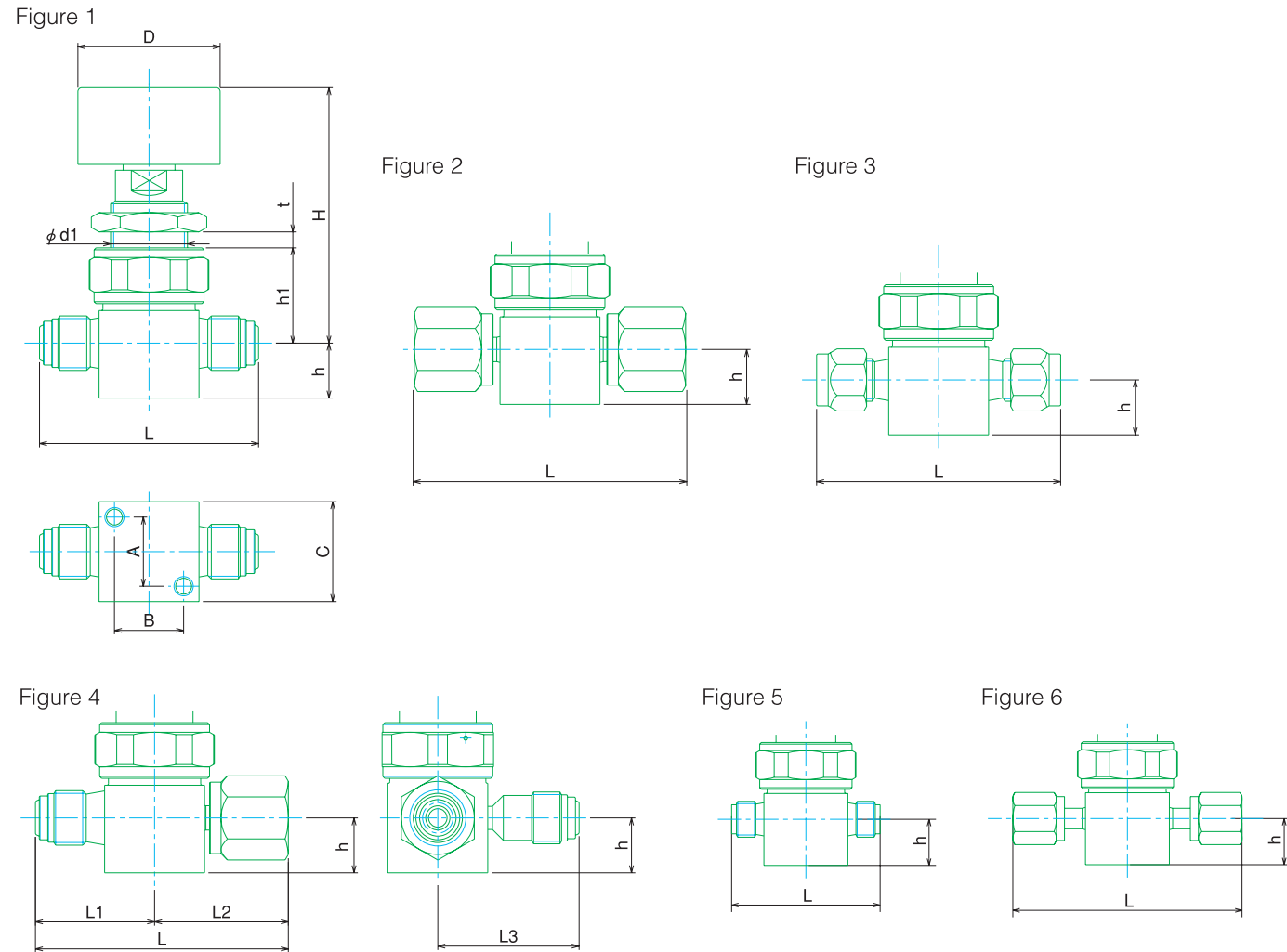


\* Optional or made to order.

Actual shipped products may have additional designations (such as #A, #B) in the part number. These indicate production history and do not indicate a change in function or dimensions.



DIMENSIONS



(Unit : mm)

Part Number	Figure	L	L1	L2	L3	h	H	h1	d1	t	D	A	B	C
FUDDFL-71-6.35-NL	1	57				14.3	67.5	23.5	20.5	7	37	18	18	26
FUDDFL-71-6.35-2-NL	2	70.6				14.3	67.5	23.5	20.5	7	37	18	18	26
FUDDFL-71-9.52-NL	1	76.2				11.1	88.8	31.5	24.5	10	50	20.2	20.2	35
FUDDFL-71-9.52-2-NL	2	83				12.7	88.8	31.5	24.5	10	50	20.2	20.2	35
FUDDFLTB-71-6.35-NL	4	65.7	31	34.7	38.1	14.3	68.5	24.5	20.5	7	37	18	18	26
FUDDFLTB-71-9.52-NL	4	79.2	37.7	41.5	43.1	12.7	88.8	31.5	24.5	10	50	20.2	20.2	35
FUDDFLTB-71-9.52×6.35-NL	4	69.9	31.8	38.1	38.1	12.7	72	28	20.5	7	37	18	18	26
FUDDFL-91-6.35-NL	3	63.5				14.3	67.5	23.5	20.5	7	37	18	18	26
FUDDFL-91-9.52-NL	3	80				12.7	88.8	31.5	24.5	10	50	20.2	20.2	35
FUDDFL-91-12.7-NL	3	85				12.7	88.8	31.5	24.5	10	50	20.2	20.2	35
FUDDFL-71-6.35UG	5	46				14.3	67.5	23.5	20.5	7	37	18	18	26
FUDDFL-71-6.35UG-2	6	71				14.3	67.5	23.5	20.5	7	37	18	18	26
FUDDFL-71-9.52UG	5	57				11.1	87.8	31.5	24.5	10	50	20.2	20.2	35
FUDDFL-71-9.52UG-2	6	86				12.7	87.8	31.5	24.5	10	50	20.2	20.2	35

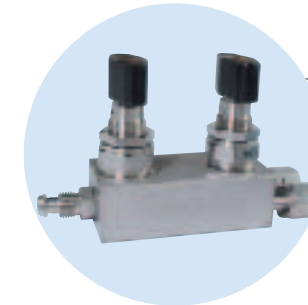
※ See Figure 1 for dimension keys not shown in other Figures.

OPTIONS

Handle Colors

GT-HL-FDDFL-※

A letter in place of "※" indicates handle color:  
Blue=B、Green=G、Yellow=Y、Red=R



FBDL-6.35-OB3-2P-EJH

Block Valve

Block valve design allows for:

- Compact tubing arrangement
- Dead-space free configuration

In addition to our standard 2-actuator, 3-port block, we also offer custom block valves according to customer's specifications.

Lock Out / Tag Out Device

HL-C-FUDDFL-71L-6.35

May be optionally added to valves as a safety precaution.



GT-IP-FUDDFL

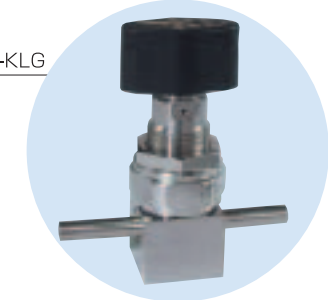
Open / Closed Faceplate

An indicating faceplate can be installed as an option to facilitate in the recognition of open or closed valve position.

Other

FUDDFL-51-6.35BW-KLG

Tube stub length may be ordered according to customer specifications.



FUDDFL-21-6.35UGF-APD

IGS Valves

MEGA series valves are also available in 1.125" and 1.5" W-Seal for surface-mount Integrated Gas Systems.

Photos are samples of each product type.

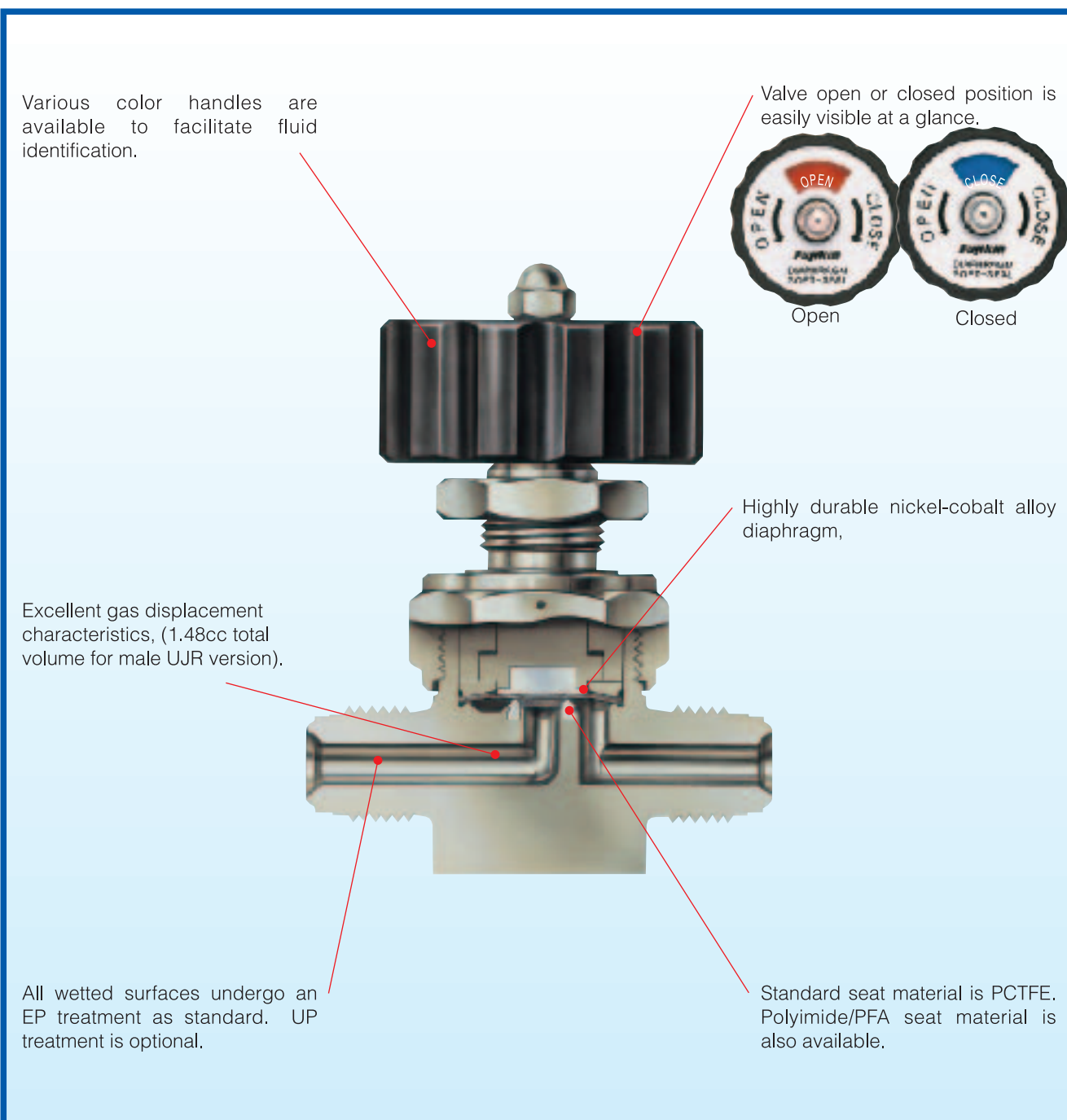


# MEGA — ONE LM

## Low-Pressure Manual Valve

The MEGA-ONE LM offers manual operation for ultra-pure, flammable, or toxic fluid lines in various types of semiconductor manufacturing equipment and facilities.

Direct diaphragm construction makes the MEGA-ONE LM an industry standard valve with superior sealing performance, remarkable durability, compactness, and particle and dead-space free performance.

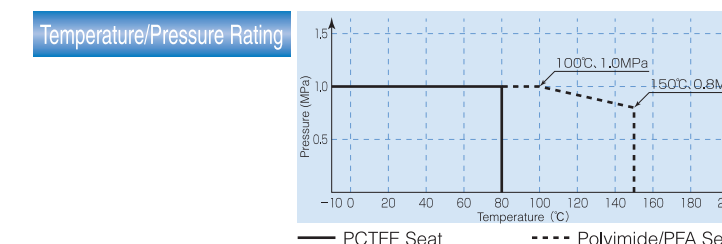


### SPECIFICATIONS

Specification	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv	Connection
	6.35 (1/4")	1MPa	-10~80 °C	0.3	UJR, UPG, F900, Tube Stub
	9.52 (3/8")	145 psi	14~176 °F	0.65	

● All valves are helium leak tested. Vacuum method results: External Leakage <math>< 5 \times 10^{-12}</math> Pa·m<sup>3</sup>/sec. Seat Leakage: <math>< 5 \times 10^{-12}</math> Pa·m<sup>3</sup>/sec  
 ● Demonstrated superior durability - over 20,000 cycles (actual test results).

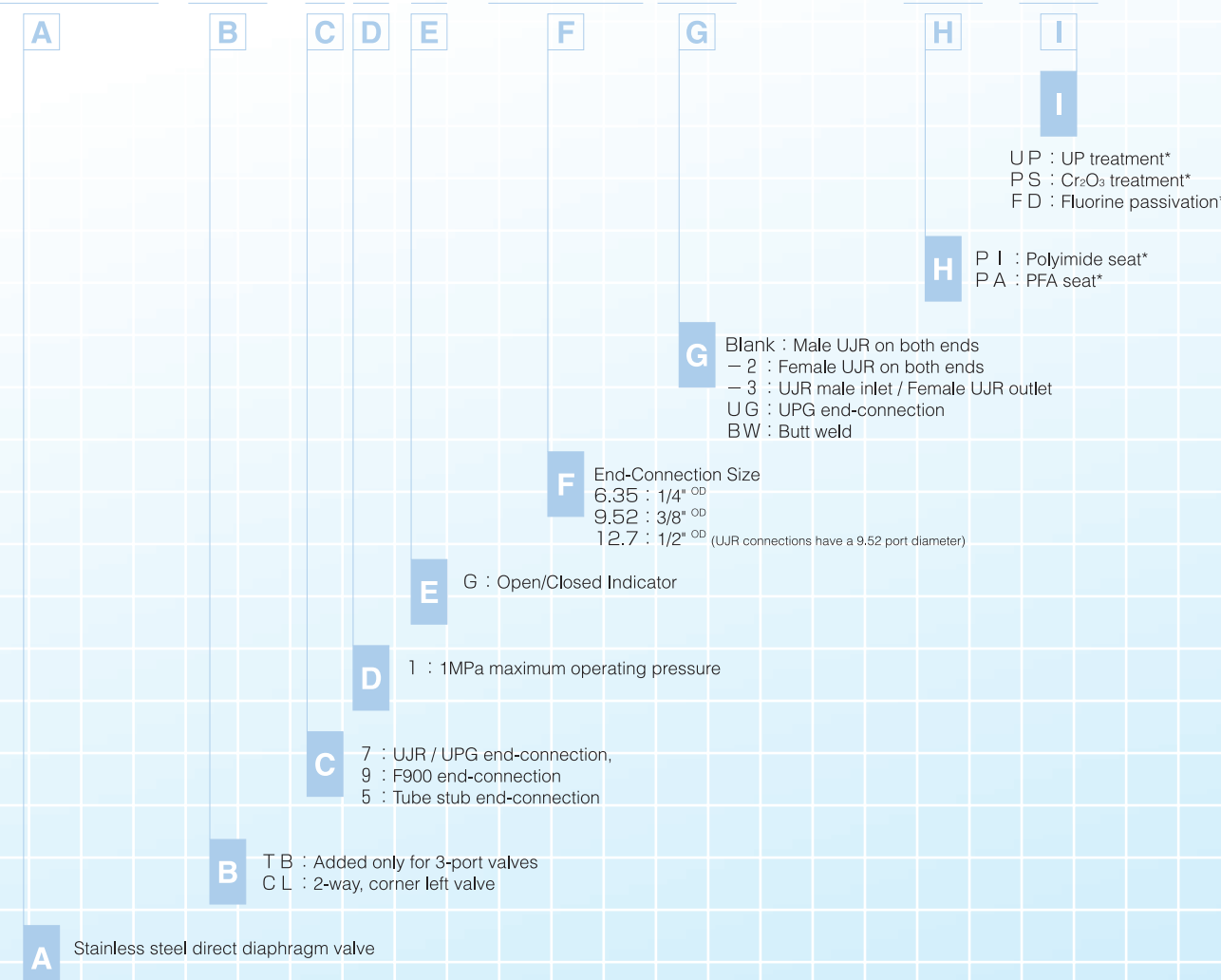
Materials	Part	Material
	Body	SUS316L
	Diaphragm	Nickel-cobalt alloy
	Seat Packing	PCTFE
	Handle	A5056B



### PART NUMBER DESIGNATION

Please use the part number designations below when placing an order.

FUDDF [ ] - 7 1 G - 6.35 [ ] - NL - [ ] [ ]



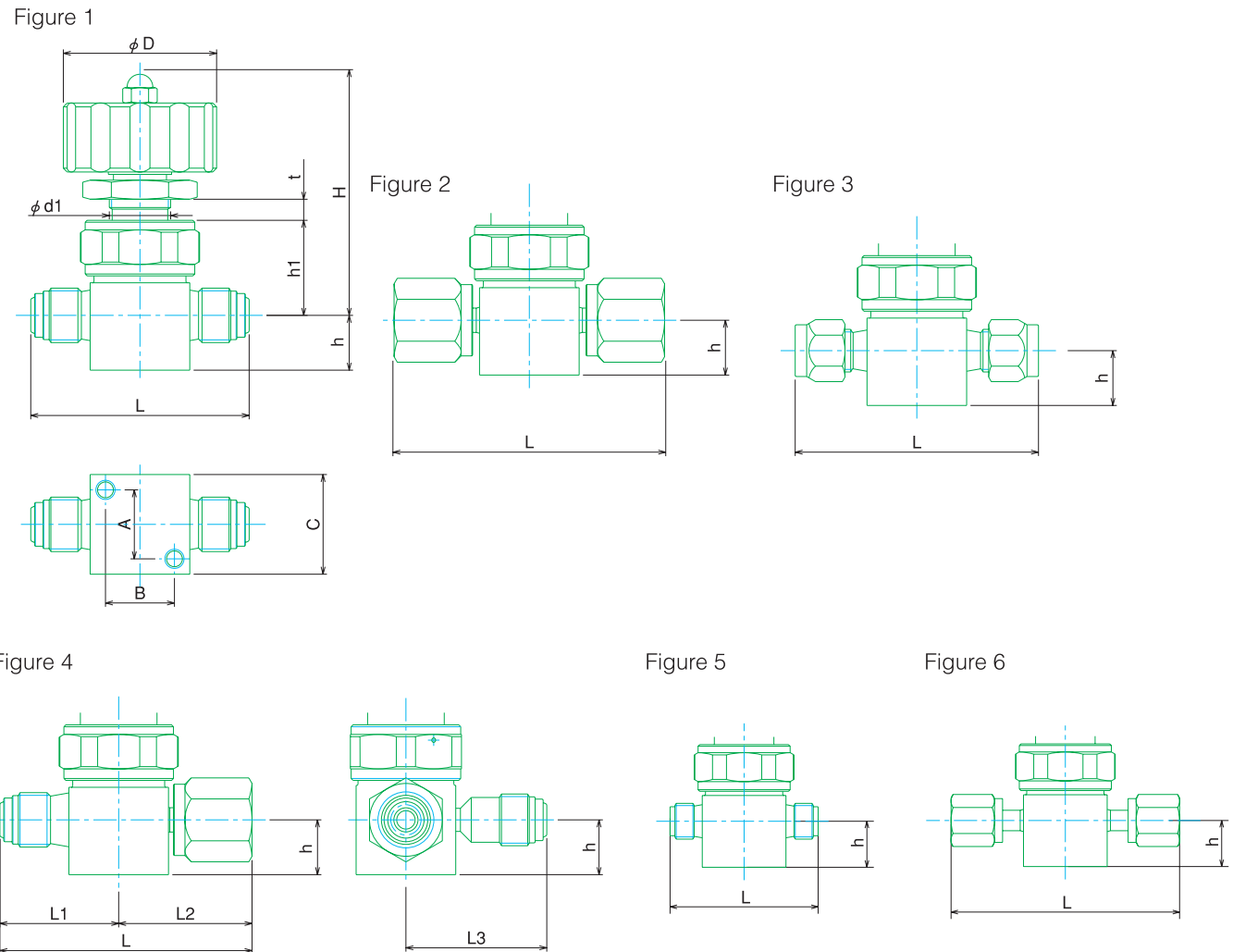
\* Optional or made to order.

Actual shipped products may have additional designations (such as #A, #B) in the part number. These indicate production history and do not indicate a change in function or dimensions.





**DIMENSIONS**



(Unit : mm)

Part Number	Figure	L	L1	L2	L3	h	H	h1	d1	t	D	A	B	C
FUDDF-71G-6.35-NL	1	57				14.3	62	23.8	16.5	5.5	40	18	18	26
FUDDF-71G-6.35-2-NL	2	70.6				14.3	62	24.8	16.5	5.5	40	18	18	26
FUDDF-71G-9.52-NL	1	76.2				11.1	71.4	31.5	20.5	5.5	40	20.2	20.2	35
FUDDF-71G-9.52-2-NL	2	83				12.7	71.4	31.5	20.5	5.5	40	20.2	20.2	35
FUDDFTB-71G-6.35-NL	4	65.7	31	34.7	38.1	14.3	63	24.8	16.5	5.5	40	18	18	26
FUDDFTB-71G-9.52-NL	4	79.2	37.7	41.5	43.1	12.7	71.4	31.5	20.5	5.5	40	20.2	20.2	35
FUDDFTB-71G-9.52x6.35-NL	4	69.9	31.8	38.1	38.1	12.7	66.5	24.8	16.5	5.5	40	18	18	26
FUDDF-91G-6.35-NL	3	63.5				14.3	62	23.8	16.5	5.5	40	18	18	26
FUDDF-91G-9.52-NL	3	80				12.7	71.4	31.5	20.5	5.5	40	20.2	20.2	35
FUDDF-91G-12.7-NL	3	85				12.7	71.4	31.5	20.5	5.5	40	20.2	20.2	35
FUDDF-71G-6.35UG	5	46				14.3	62	23.8	16.5	5.5	40	18	18	26
FUDDF-71G-6.35UG-2	6	71				14.3	62	23.8	16.5	5.5	40	18	18	26
FUDDF-71G-9.52UG	5	57				11.1	71.4	31.5	20.5	5.5	40	20.2	20.2	35
FUDDF-71G-9.52UG-2	6	86				12.7	71.4	31.5	20.5	5.5	40	20.2	20.2	35

※ See Figure 1 for dimension keys not shown in other Figures.

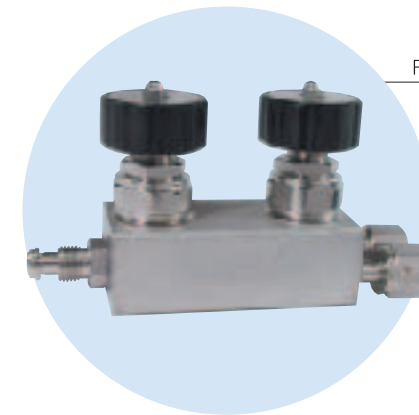
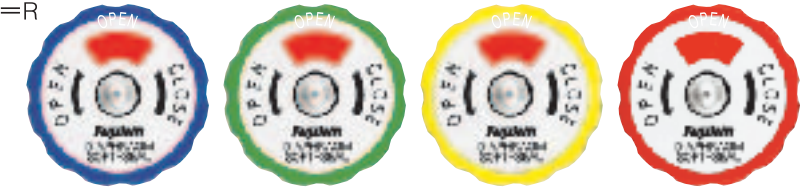
**OPTIONS**

**Handle Colors**

GT-HL-FUDDF-※

A letter in place of "※" indicates handle color:

Blue=B, Green=G, Yellow=Y, Red=R



FBDL-6.35-0B3-2P-CJL

**Block Valve**

Block valve design allows for:

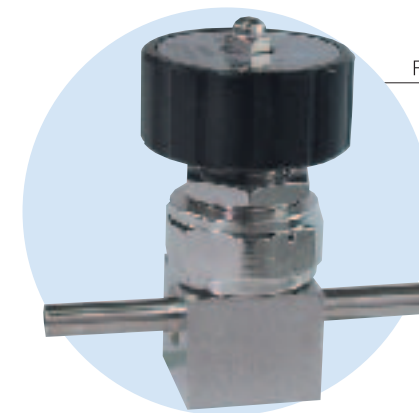
- Compact tubing arrangement
- Dead-space free configuration

In addition to our standard 2-actuator, 3-port block, we also offer custom block valves according to customer's specifications.

**3-Port Distribution Valve**

FUDDFTB-51G-12.7x9.52JR-NL-FHZ

Used for facility bulk gas lines, and can support all line sizes.



FUDDF-51G-6.35BW-KAG

**Other**

Tube stub length may be ordered according to customer specifications.

Photos are samples of each product type.



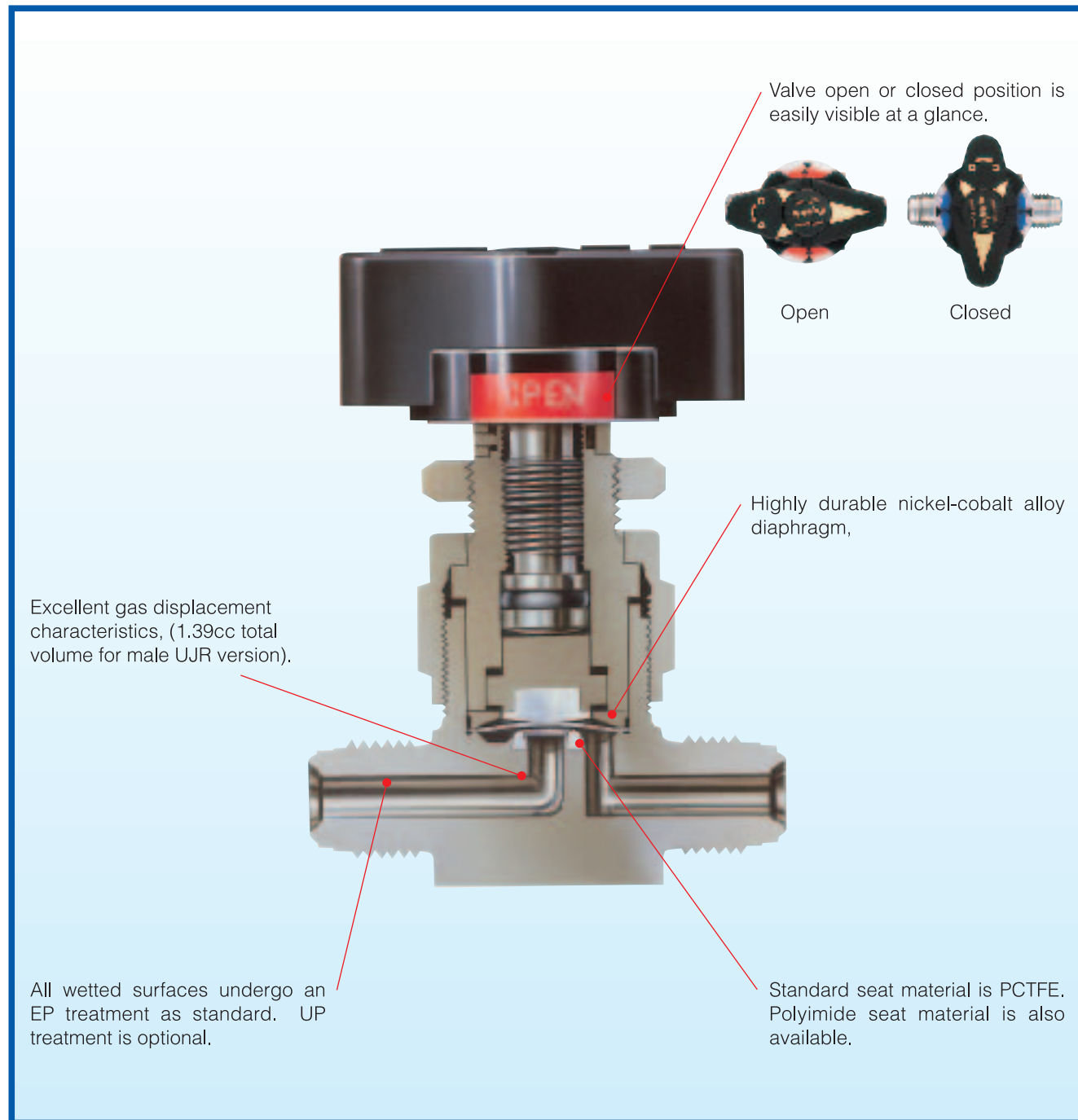


# MEGA — ONE HQ

## High-Pressure Manual Valve

The MEGA-ONE HQ is a quarter-turn, open/closed valve for ultra-pure, flammable, or toxic fluid lines in various types of semiconductor manufacturing equipment and facilities.

Direct diaphragm construction makes the MEGA-ONE HQ an industry standard valve with superior sealing performance, remarkable durability, compactness, and particle and dead-space free performance.

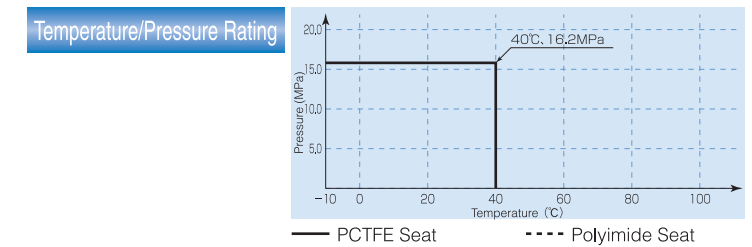


### SPECIFICATIONS

Specification	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv	Connection
	6.35 (1/4")	16.2 MPa	-10~40 °C	0.1	UJR, UPG, F900, Tube Stub
	9.52 (3/8")	2,350 psi	14~104 °F		

● All valves are helium leak tested. Vacuum method results: External Leakage <math>< 5 \times 10^{-12}</math> Pa·m<sup>3</sup>/sec. Seat Leakage: <math>< 5 \times 10^{-12}</math> Pa·m<sup>3</sup>/sec  
 ● Demonstrated superior durability - over 20,000 cycles (actual test results).

Materials	Part	Material
	Body	SUS316L
	Diaphragm	Nickel-cobalt alloy
	Seat Packing	PCTFE
	Handle	Nylon 66



### PART NUMBER DESIGNATION

Please use the part number designations below when placing an order.

**FUDDF L [ ] - 7 1 6 G - 6.35 [ ] - [ ] - [ ]**

A	B	C	D	E	F	G	H	I	J
Stainless steel direct diaphragm valve	L : Quarter-turn open/closed type handle	T B : Added only for 3-port valves* C L : 2-way, corner left valve	7 : UJR / UPG end-connection, 9 : F900 end-connection* 5 : Tube stub end-connection*	1 6 : 16.2MPa maximum operating pressure	G : Open/Closed Indicator	End-Connection Size 6.35 : 1/4" <sup>OD</sup> 9.52 : 3/8" <sup>OD</sup> 12.7 : 1/2" <sup>OD</sup> (UJR connections have a 9.52 port diameter)	Blank : Male UJR on both ends - 2 : Female UJR on both ends - 3 : UJR male inlet / Female UJR outlet U G : UPG end-connection B W : Butt weld*	P I : Polyimide seat*	U P : UP treatment* P S : Cr <sub>2</sub> O <sub>3</sub> treatment* F D : Fluorine passivation*

\* Optional or made to order.

Actual shipped products may have additional designations (such as #A, #B) in the part number. These indicate production history and do not indicate a change in function or dimensions.



DIMENSIONS

Figure 1

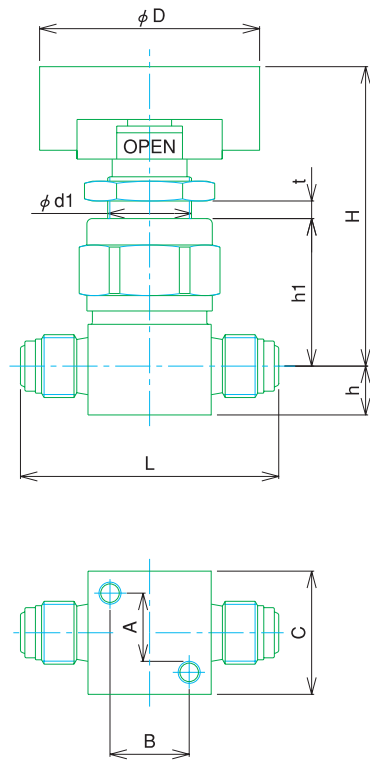


Figure 2

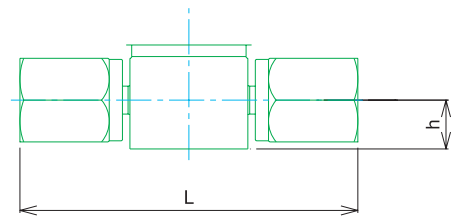


Figure 3

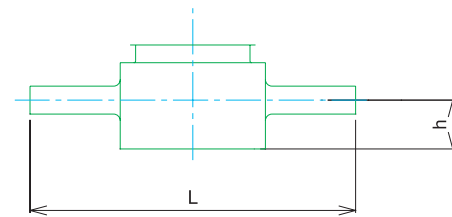


Figure 4

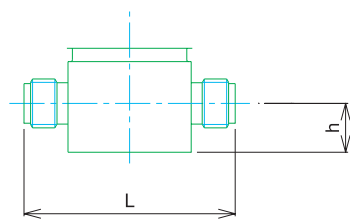
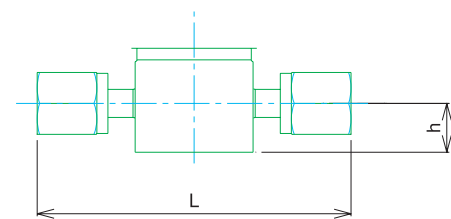


Figure 5



(Unit : mm)

Part Number	Figure	L	H	h	h1	t	A	B	C	D	d1
FUDDFL-716G-6.35	1	58.7	67	11.1	32.5	4	18	18	28	50	19.2
FUDDFL-716G-6.35-2	2	76.2	67	11.1	32.5	4	18	18	28	50	19.2
FUDDFL-716G-9.52	1	76.2	70.5	11.1	36	4	18	18	28	50	19.2
FUDDFL-516G-6.35BW	3	74	67	11.1	32.5	4	18	18	28	50	19.2
FUDDFL-716G-6.35UG	4	48	75.2	11.1	32.5	4	18	18	28	50	19.2
FUDDFL-716G-6.35UG-2	5	71	67	11.1	32.5	4	18	18	28	50	19.2
FUDDFL-716G-9.52UG	4	50	75.2	11.1	32.5	4	18	18	28	50	19.2

※ See Figure 1 for dimension keys not shown in other Figures.

OPTIONS

High-Pressure Gas Certification

Safety is assured for special high-pressure and toxic gas lines. This valve is tested and approved by a Japanese Government Agency for various high-pressure applications. The valve couplings may also be certified and approved in the same manner. Specific customer specifications may also be accommodated.



FUDDFL-516G-6.35BW-DUE

Other

Tube stub length may be ordered according to customer specifications.

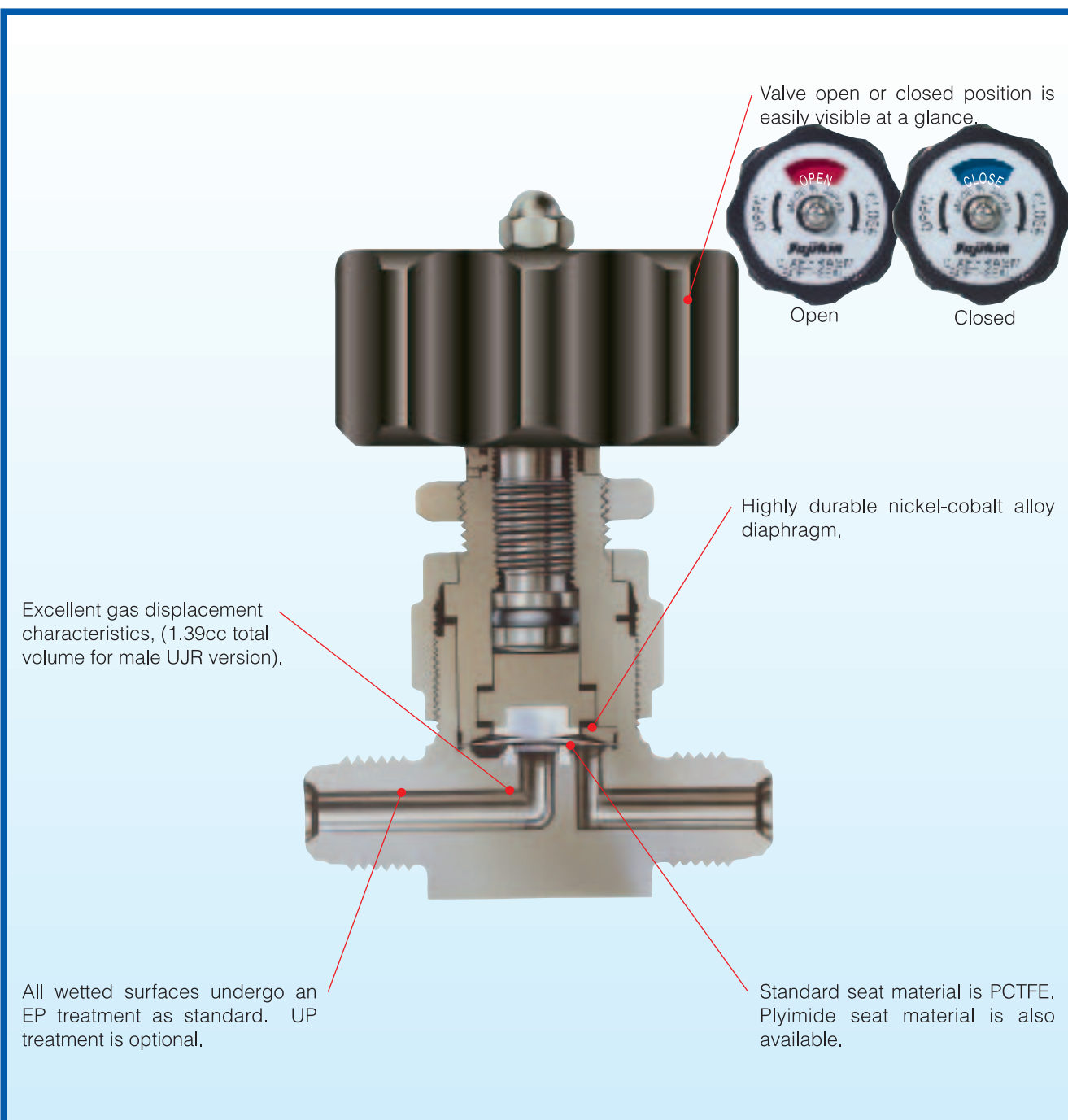


# MEGA — ONE HM

## High-Pressure Round Handle Manual Valve

The MEGA-ONE HM is a manual operation diaphragm valve for ultra-pure, flammable, or toxic fluid lines in various types of semiconductor manufacturing equipment and facilities.

Direct diaphragm construction makes the MEGA-ONE HM an industry standard valve with superior sealing performance, remarkable durability, compactness, and particle and dead-space free performance.

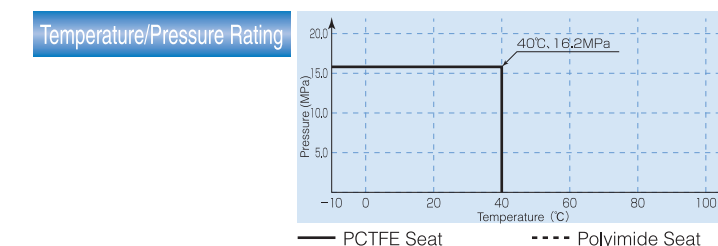


### SPECIFICATIONS

Specification	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv	Connection
	6.35 (1/4")	16.2 MPa	-10~40 °C	0.1	UJR, UPG, F900, Tube Stub
	9.52 (3/8")	2,350 psi	14~104 °F		

● All valves are helium leak tested. Vacuum method results: External Leakage <math>< 5 \times 10^{-12}</math> Pa·m<sup>3</sup>/sec. Seat Leakage: <math>< 5 \times 10^{-12}</math> Pa·m<sup>3</sup>/sec  
 ● Demonstrated superior durability - over 20,000 cycles (actual test results).

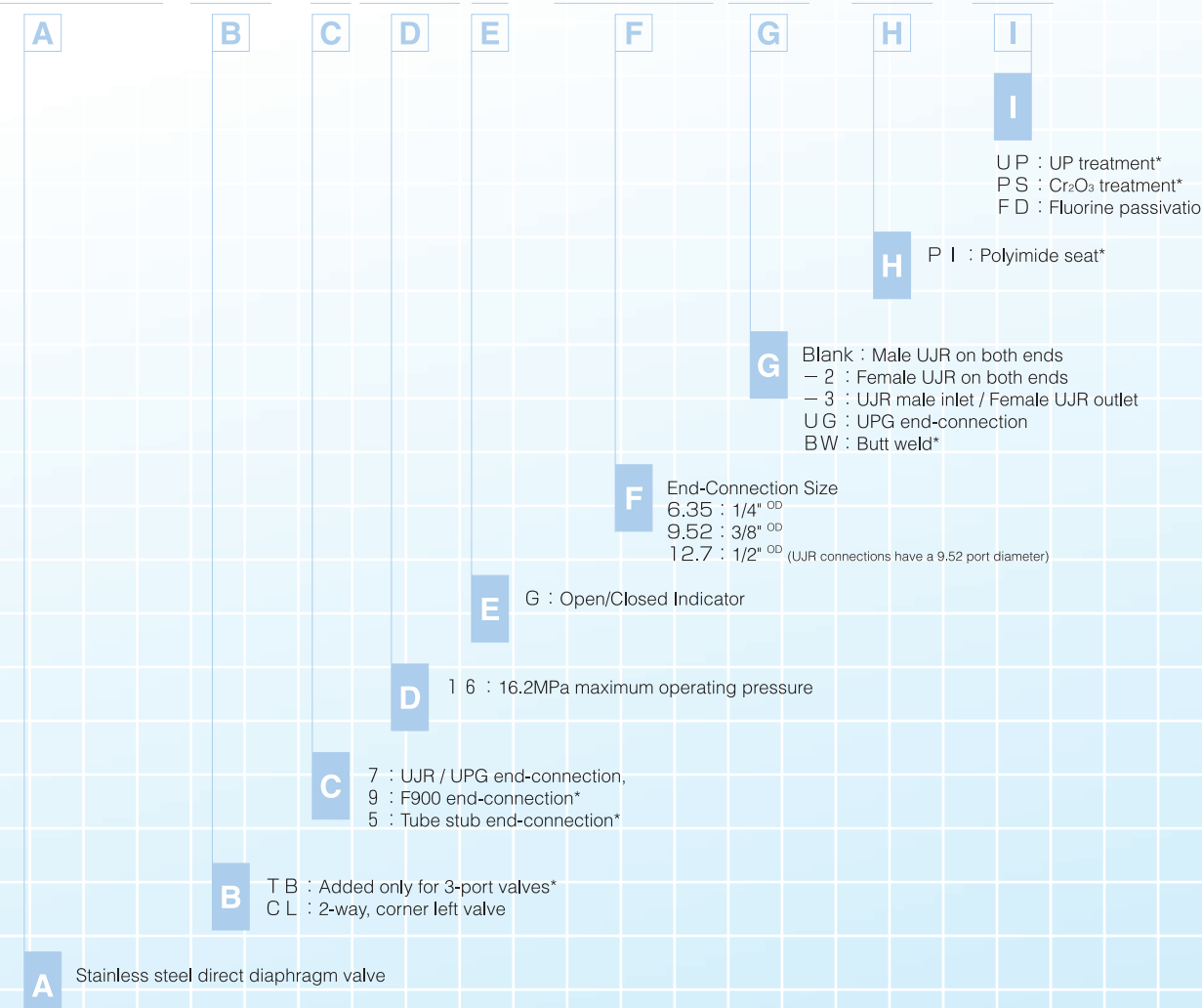
Materials	Part	Material
	Body	SUS316L
	Diaphragm	Nickel-cobalt alloy
	Seat Packing	PCTFE
	Handle	A5056B



### PART NUMBER DESIGNATION

Please use the part number designations below when placing an order.

**FUDDF** [ ] - 716G - 6.35 [ ] - [ ] - [ ]



\* Optional or made to order.

Actual shipped products may have additional designations (such as #A, #B) in the part number. These indicate production history and do not indicate a change in function or dimensions.





DIMENSIONS

Figure 1

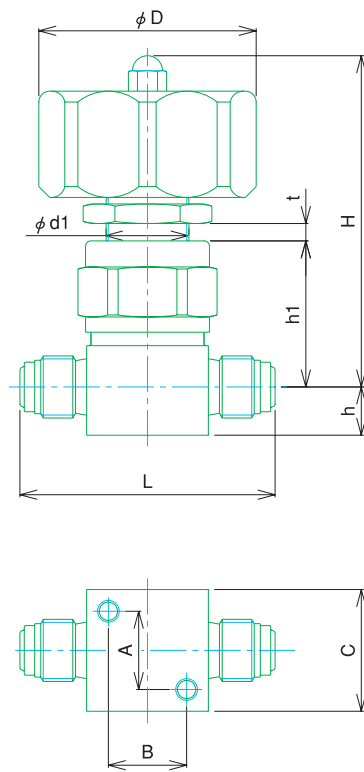


Figure 2

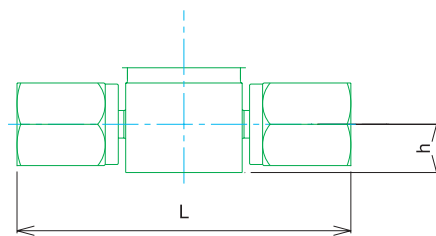


Figure 3

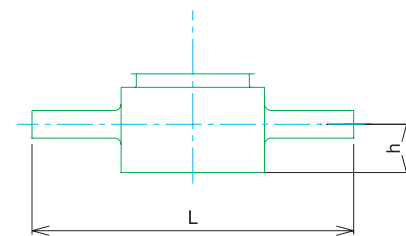


Figure 4

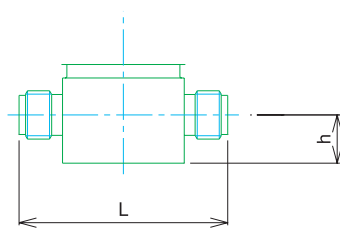
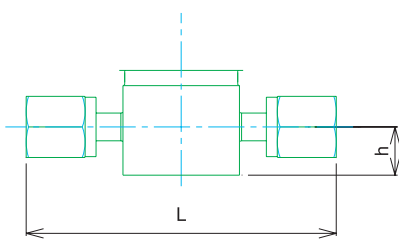


Figure 5



(Unit : mm)

Part Number	Figure	L	H	h	h1	t	A	B	C	D	d1
FUDDF-716G-6.35	1	58.7	75.2	11.1	32.5	4	18	18	28	50	19.2
FUDDF-716G-6.35-2	2	76.2	75.2	11.1	32.5	4	18	18	28	50	19.2
FUDDF-716G-9.52	1	76.2	78.7	11.1	36	4	18	18	28	50	19.2
FUDDF-516G-6.35BW	3	76.2	75.2	11.1	32.5	4	18	18	28	50	19.2
FUDDF-716G-6.35UG	4	48	75.2	11.1	32.5	4	18	18	28	50	19.2
FUDDF-716G-6.35UG-2	5	71	75.2	11.1	32.5	4	18	18	28	50	19.2
FUDDF-716G-9.52UG	4	50	75.2	11.1	32.5	4	18	18	28	50	19.2

※ See Figure 1 for dimension keys not shown in other Figures.

OPTIONS

High-Pressure Gas Certification

Safety is assured for special high-pressure and toxic gas lines. This valve is tested and approved by a Japanese Government Agency for various high-pressure applications. The valve couplings may also be certified and approved in the same manner. Specific customer specifications may also be accommodated.



FUDDF-516G-6.35BW

Other

Tube stub length may be ordered according to customer specifications.



# MEGA-MINI LA

## Compact Low-Pressure Pneumatically-Actuated Valve

The MEGA-MINI LA offers pneumatic operation for ultra-pure, flammable, or toxic fluid lines in various types of semiconductor manufacturing equipment and facilities.

Direct diaphragm construction makes the MEGA-MINI LA an industry standard valve with superior sealing performance, remarkable durability, compactness, and particle and dead-space free performance.

Colored caps differentiate between normally open (blue) and normally closed (red) valves, thereby simplifying recognition.

Small  $\phi 35\text{mm}$  actuator offers space savings without sacrificing performance.

The actuator features a unique rotation mechanism, allowing for actuation pressure to be supplied from any desired direction for both normally open and normally closed valves.

Highly durable nickel-cobalt alloy diaphragm,

Excellent gas displacement characteristics, (0.84cc total volume for male UJR version).

All wetted surfaces undergo an EP treatment as standard. UP treatment is optional.

Standard seat material is PCTFE. Polyimide/PFA seat material is also available.

**Fujikin Incorporated** MADE IN JAPAN  
O.P. 0.39~0.59MPa TYPE N.C.

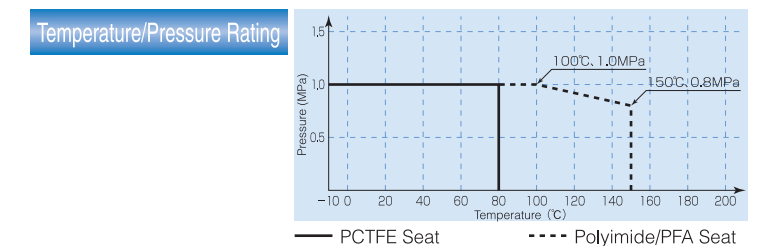
N.O. N.C.

## SPECIFICATIONS

Specification	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv	Actuation Pressure	Connection
	6.35 (1/4")	1MPa 145 psi	-10~80 °C 14~176 °F	0.1	0.39~0.59 MPa 56~86 psi	UJR, UPG, F900, Tube Stub

● All valves are helium leak tested. Vacuum method/results: External leakage:  $< 5 \times 10^{-12}$  Pa·m<sup>3</sup>/sec. Seat leakage:  $< 5 \times 10^{-12}$  Pa·m<sup>3</sup>/sec  
● Demonstrated superior durability - over 4 million cycles (actual test results).

Materials	Part	Material
	Body	SUS316L
	Diaphragm	Nickel-cobalt alloy
	Seat Packing	PCTFE
	Actuator	A5056



## PART NUMBER DESIGNATION

Please use the part number designations below when placing an order.

FPR-SD [ ]-71 [ ]-6.35 [ ]-[ ]-[ ]

A	B	C	D	E	F	G	H	I	J
F P : Normally open F P R : Normally closed	Stainless steel compact direct diaphragm valve	T B : Added only for 3-port valves C L : 2-way, corner left valve	7 : UJR / UPG end-connection, 5 : Tube stub end-connection*	1 : 1MPa maximum operating pressure	R S 2 : With proximity sensor* L S : With limit switch*	End-Connection Size 6.35 : 1/4" <sup>OD</sup>	Blank : Male UJR on both ends - 2 : Female UJR on both ends - 3 : UJR male inlet / Female UJR outlet U G : UPG end-connection B W : Butt weld*	P I : Polyimide seat* P A : PFA seat*	P S : Cr <sub>2</sub> O <sub>3</sub> treatment* F D : Fluorine passivation*

\* Optional or made to order.

Actual shipped products may have additional designations (such as #A, #B) in the part number. These indicate production history and do not indicate a change in function or dimensions.



DIMENSIONS

Figure 1

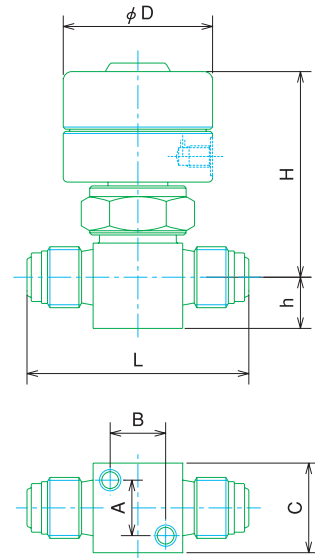


Figure 2

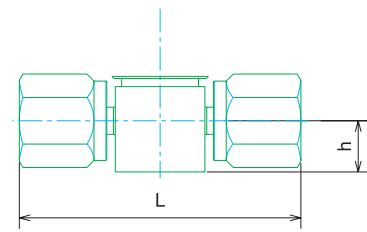


Figure 3

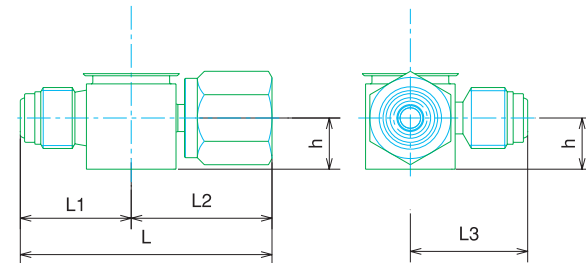


Figure 4

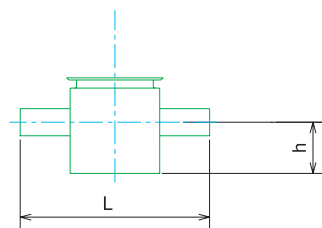


Figure 5

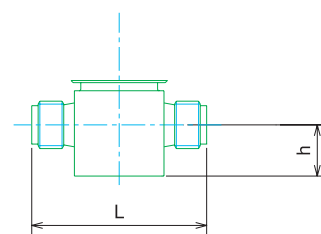
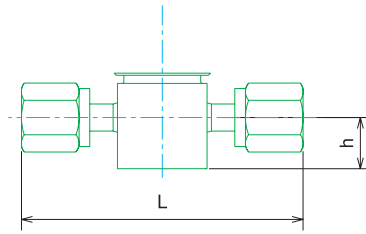


Figure 6



(Unit : mm)

Part Number	Figure	D	L	H	h	A	B	C	L1	L2	L3
FP(R)-SD-71-6.35	1	35	52	50.5	12	13	13	21			
FP(R)-SD-71-6.35-2	2	35	66	50.5	12	13	13	21			
FP(R)-SDTB-71-6.35	3	35	59	50.5	12	13	13	21	26	33	27.5
FP(R)-SD-51-6.35BW-FFL	4	35	44.4	50.5	12	13	13	21			
FP(R)-SD-71-6.35UG	5	35	41	50.5	12	13	13	21			
FP(R)-SD-71-6.35UG-2	6	35	66	50.5	12	13	13	21			

※ See Figure 1 for dimension keys not shown in other Figures.

OPTIONS

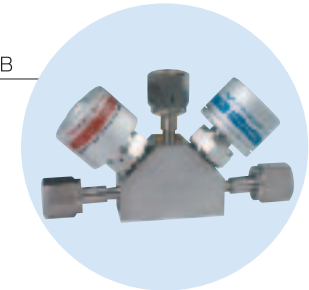
Block Valve

FBSDV-6.35-2B3-BGB

Block valve design allows for:

- Compact tubing arrangement
- Dead-space free configuration

In addition to our standard 2-actuator, 3-port block, we also offer custom block valves according to customer's specifications.



Dual-Flow Valve

FPR-SD-71SS2-6.35

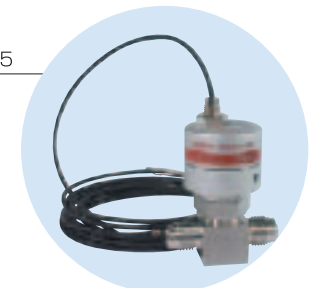
Allows for switching between maximum flow and a user-selectable reduced flow with one valve.



Proximity Sensor

FPR-SD-71RS2-6.35

An electrical signal confirms open or closed position of valve. The non-contact proximity sensor offers unsurpassed safety.



Limit Switch

FPR-SD-71LS-6.35

An electrical signal confirms open or closed position of valve.



Other

A variety of configurations are possible.



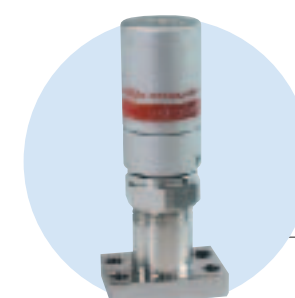
FPR-SD-51-6.35-FFL



FPR-SDCR-71-6.35-ANU



FPR-SDXR-71-6.35-2



FPR-SDA-21-6.35UGF-APD

IGS Valves

MEGA series valves are also available in 1.125" and 1.5" W-Seal for surface-mount Integrated Gas Systems.

Photos are samples of each product type.





# MEGA-MINI HA

## Compact High-Pressure Pneumatically Actuated Valve

The MEGA-MINI HA offers pneumatic operation for high-pressure ultra-pure, flammable, or toxic fluid lines in various types of semiconductor manufacturing equipment and facilities.

Direct diaphragm construction makes the MEGA-MINI HA an industry standard valve with superior sealing performance, remarkable durability, compactness, and particle and dead-space free performance.

Colored caps differentiate between normally open (blue) and normally closed (red) valves, thereby simplifying recognition.

Unique actuator design results in a highly-compact pneumatic valve for high-pressure applications.

Highly durable nickel-cobalt alloy diaphragm,

Excellent gas displacement characteristics, (0.92cc total volume for male UJR version).

All wetted surfaces undergo a UP treatment as standard.

Standard seat material is PCTFE. Polyimide seat material is also available.

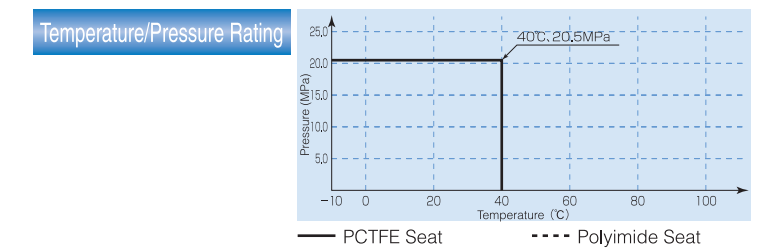
N.C. N.O.

## SPECIFICATIONS

Specification	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv	Actuation Pressure	Connection
	6.35 (1/4")	20.5 MPa 2,973 psi	-10~40 °C 14~104 °F	0.05	0.39~0.59 MPa 56~86 psi	UJR, UPG, F900, Tube Stub

- All valves are helium leak tested. Vacuum method/results: External leakage: <math> < 5 \times 10^{-12} \text{ Pa} \cdot \text{m}^3/\text{sec}</math>. Seat leakage: <math> < 5 \times 10^{-12} \text{ Pa} \cdot \text{m}^3/\text{sec}</math>
- Demonstrated superior durability - over 400,000 cycles (actual test results).

Materials	Part	Material
	Body	SUS316L
	Diaphragm	Nickel-cobalt alloy
	Seat Packing	PCTFE
	Actuator	A5056



## PART NUMBER DESIGNATION

Please use the part number designations below when placing an order.

FPR-SD[ ]-7 21-6.35[ ]-316LP-[ ]-[ ]

A F P : Normally open  
F P R : Normally closed

B Stainless steel compact direct diaphragm valve

C T B : Added only for 3-port valves  
C L : 2-way, corner left valve

D 7 : UJR / UPG end-connection,  
5 : Tube stub end-connection

E 2 1 : 20.5 MPa maximum operating pressure

F End-Connection Size  
6.35 : 1/4" <sup>OD</sup>

G Blank : Male UJR on both ends  
- 2 : Female UJR on both ends  
U G : UPG end-connection  
B W : Butt weld

H P I : Polyimide seat\*

I P S : Cr<sub>2</sub>O<sub>3</sub> treatment\*  
F D : Fluorine passivation\*

\* Optional or made to order.

Actual shipped products may have additional designations (such as #A, #B) in the part number. These indicate production history and do not indicate a change in function or dimensions.



DIMENSIONS

Figure 1

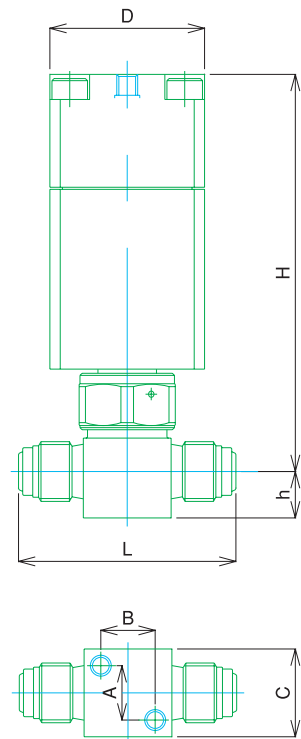


Figure 2

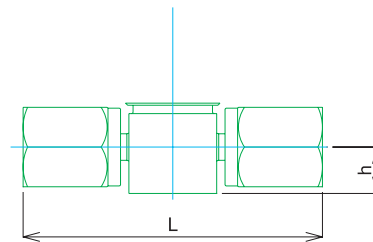


Figure 3

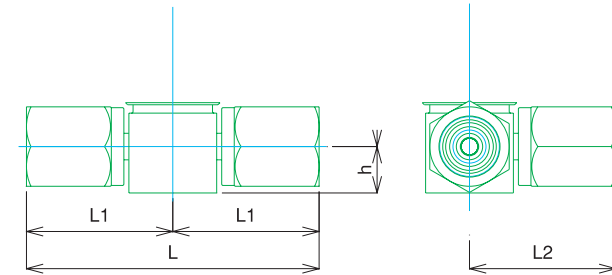


Figure 4

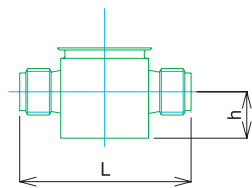


Figure 5

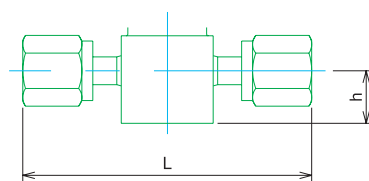
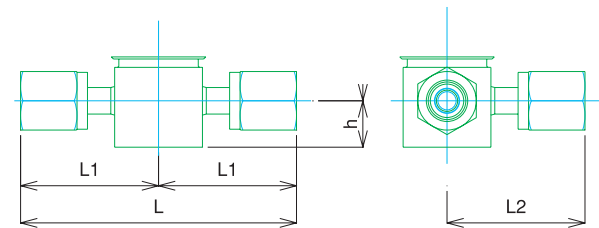


Figure 6



(Unit : mm)

Part Number	Figure	L	H	h	A	B	C	D	L1	L2
FPR-SD-721-6.35-316LP	1	52	95	11.1	13	13	21	37		
FPR-SD-721-6.35-2-316LP	2	71.6	95	11.1	13	13	21	37		
FP-SDTB-721-6.35-2-316LP	3	71.6	95	11.1	13	13	21	37	35.8	35.8
FPR-SD-721-6.35UG	4	41	95	11.1	13	13	21	37		
FPR-SD-721-6.35UG-2	5	66	95	11.1	13	13	21	37		
FPR-SDTB-721-6.35UG-2	6	66	95	11.1	13	13	21	37	33	33

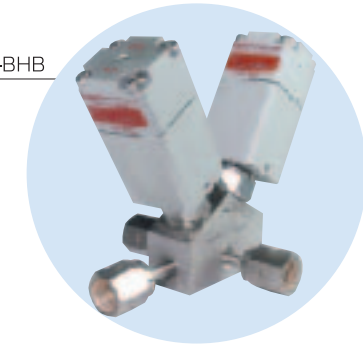
※ See Figure 1 for dimension keys not shown in other Figures.

OPTIONS

Block Valve

FBSDV-721-6.35-2B3-316LP-BHB

Block valve design allows for:  
 • Compact tubing arrangement  
 • Dead-space free configuration  
 In addition to our standard 2-actuator, 3-port block, we also offer custom block valves according to customer's specifications.



High-Pressure Gas Certification

Safety is assured for special high-pressure and toxic gas lines. This valve is tested and approved by a Japanese Government Agency for various high-pressure applications. The valve couplings may also be certified and approved in the same manner. Specific customer specifications may also be accommodated.



Limit Switch

FPR-SD-721LS-6.35-316LP

An electrical signal confirms open or closed position of valve.



FPR-SD-521-6.35BW-316LP-FFL

A variety of configurations are possible.

Other



Photos are samples of each product type.



# MEGA—M LV

## All-Metal Direct Diaphragm Flow Control Valve

The MEGA-M LV is a highly-accurate flow control valve for ultra-pure, flammable, or toxic fluid lines in various types of semiconductor manufacturing equipment and facilities.

All-metal direct diaphragm construction is free of plastic materials and offers superior sealing performance, remarkable durability, compactness, and particle and dead-space free performance. A short-stroke coupled with a unique micrometer control has made the MEGA-M LV an industry standard valve by which all others are compared for precise manual control.

**Cv Curve**  
FUDDFM-71M-6.35

**Cv Curve**  
FUDDFM-71M-6.35-S

Excellent gas displacement characteristics, (1.38 cc total volume for male UJR version).

All wetted surfaces undergo a UP treatment as standard.

Micrometer handle utilizes a unique design to enable precise control.

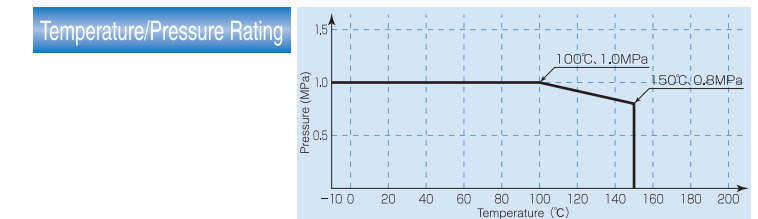
The use of a metal seat allows for all wetted surfaces to be metallic.

## SPECIFICATIONS

Specification	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv	Orifice Diameter	Connection
	6.35 (1/4")	1MPa 145 psi	-10~150 °C 14~302 °F	0.2 0.03	4.5 1.0	UJR, UPG, F900, Tube Stub

- All valves are helium leak tested. Vacuum method/results: External leakage:  $< 5 \times 10^{-12}$  Pa·m<sup>3</sup>/sec. Seat leakage:  $< 1/100$  of rated Cv
- Demonstrated superior durability - over 1,000 cycles (actual test results).

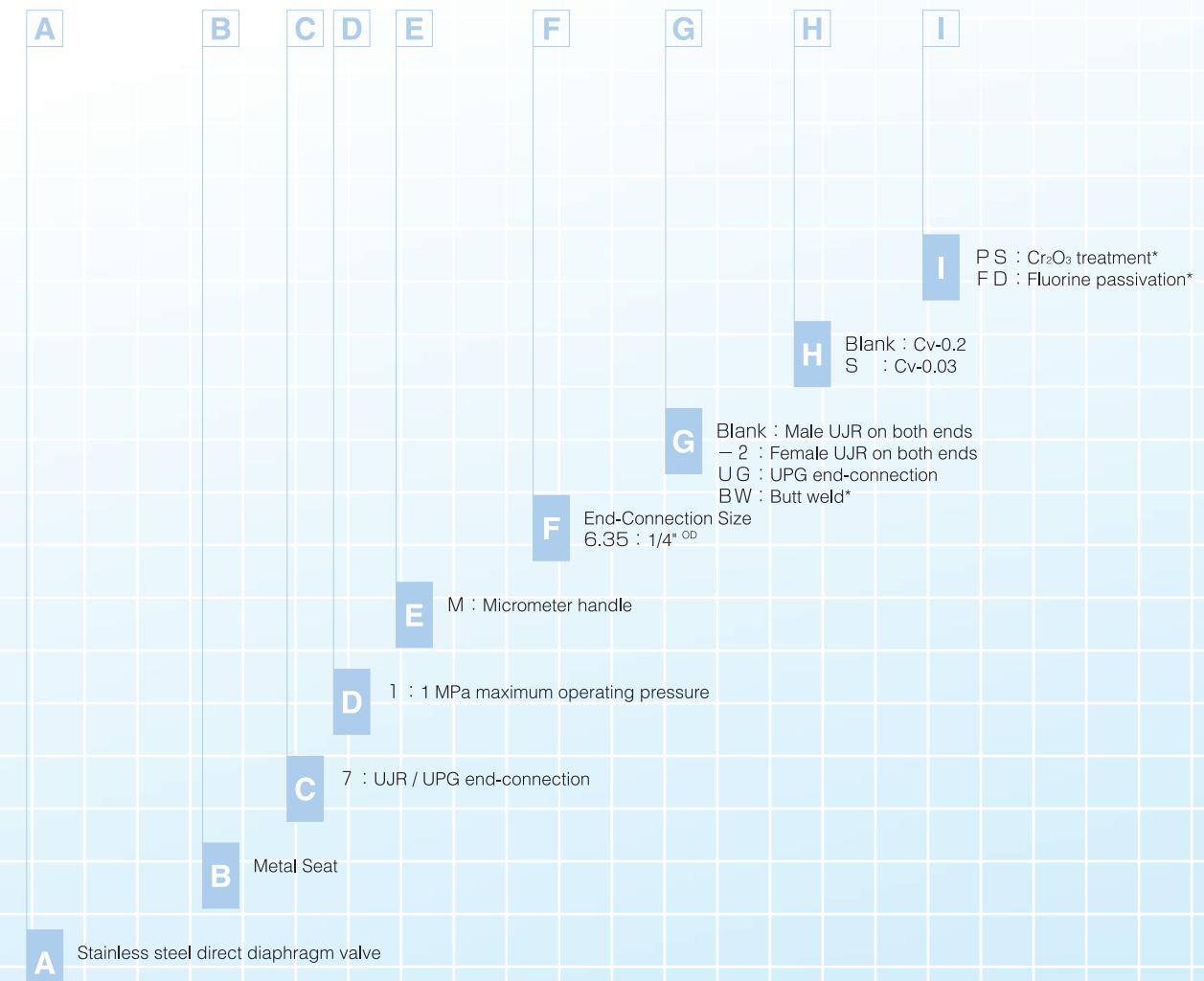
Materials	Part	Material
	Body	SUS316L
	Diaphragm	Nickel-cobalt alloy
	Handle	A5056B



## PART NUMBER DESIGNATION

Please use the part number designations below when placing an order.

FUDDF M-71M-6.35 [ ]-[ ]-[ ]



\* Optional or made to order.

Actual shipped products may have additional designations (such as #A, #B) in the part number. These indicate production history and do not indicate a change in function or dimensions.





DIMENSIONS

Figure 1

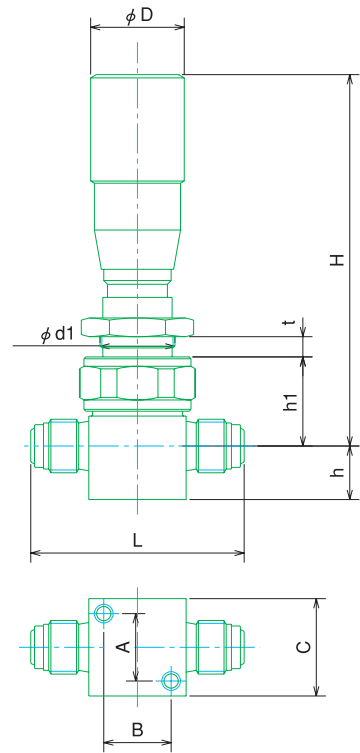


Figure 2

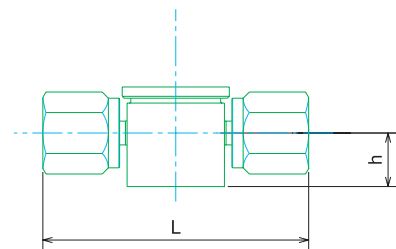


Figure 3

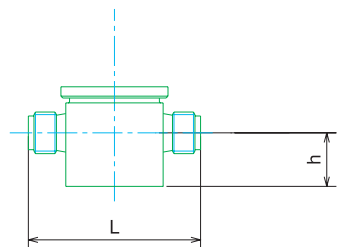
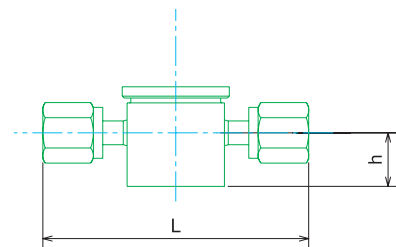


Figure 4



(Unit : mm)

Part Number	Figure	D	L	H	h	t	h1	d1	A	B	C
FUDDFM-71M-6.35	1	25	57	105	14.3	5.5	23.8	16.5	18	18	26
FUDDFM-71M-6.35-2	2	25	70.6	105	14.3	5.5	23.8	16.5	18	18	26
FUDDFM-71M-6.35UG	3	25	46	105	14.3	5.5	23.8	16.5	18	18	26
FUDDFM-71M-6.35UG-2	4	25	71	105	14.3	5.5	23.8	16.5	18	18	26

\* See Figure 1 for dimension keys not shown in other Figures.

OPTIONS

Fixed Position Cap

FUDDFM-71MC-6.35

Prevents inadvertent change of setting.



IGS Valves

FUSDM-21M-6.35-UGF-APD

MEGA series valves are also available in 1.125" and 1.5" W-Seal for surface-mount Integrated Gas Systems.



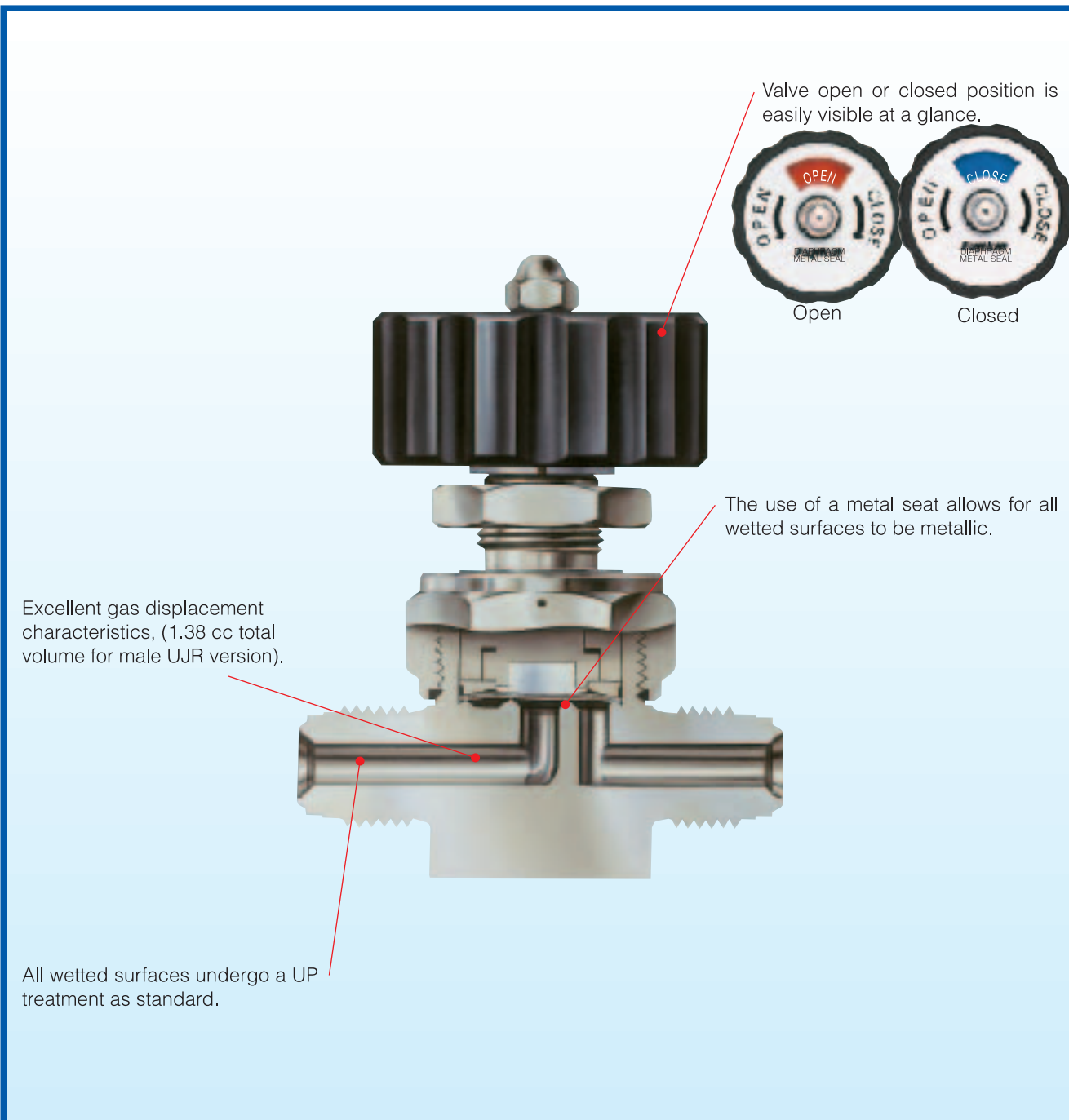


# MEGA—M LM

## All-Metal Direct Diaphragm Valve

The MEGA-M LM is a stop valve for ultra-pure, flammable, or toxic fluid lines in various types of semiconductor manufacturing equipment and facilities.

All-metal direct diaphragm construction is free of plastic materials and offers superior sealing performance, remarkable durability, compactness, and particle and dead-space free performance.

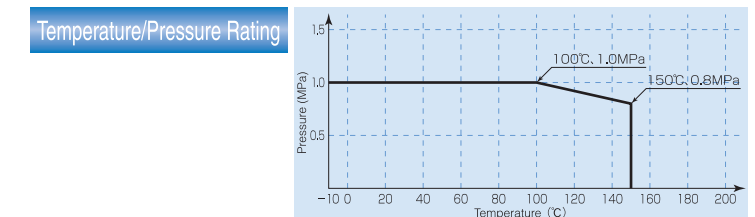


### SPECIFICATIONS

Specification	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv	Connection
	6.35 (1/4")	1MPa	-10~150 °C	0.3	UJR, UPG Tube Stub
	9.52 (3/8")	145 psi	14~302 °F	0.65	

- All valves are helium leak tested. Vacuum method/results: External leakage:  $< 5 \times 10^{-12}$  Pa·m<sup>3</sup>/sec. Seat leakage:  $< 1/100$  of rated Cv
- Demonstrated superior durability - over 20,000 cycles (actual test results).

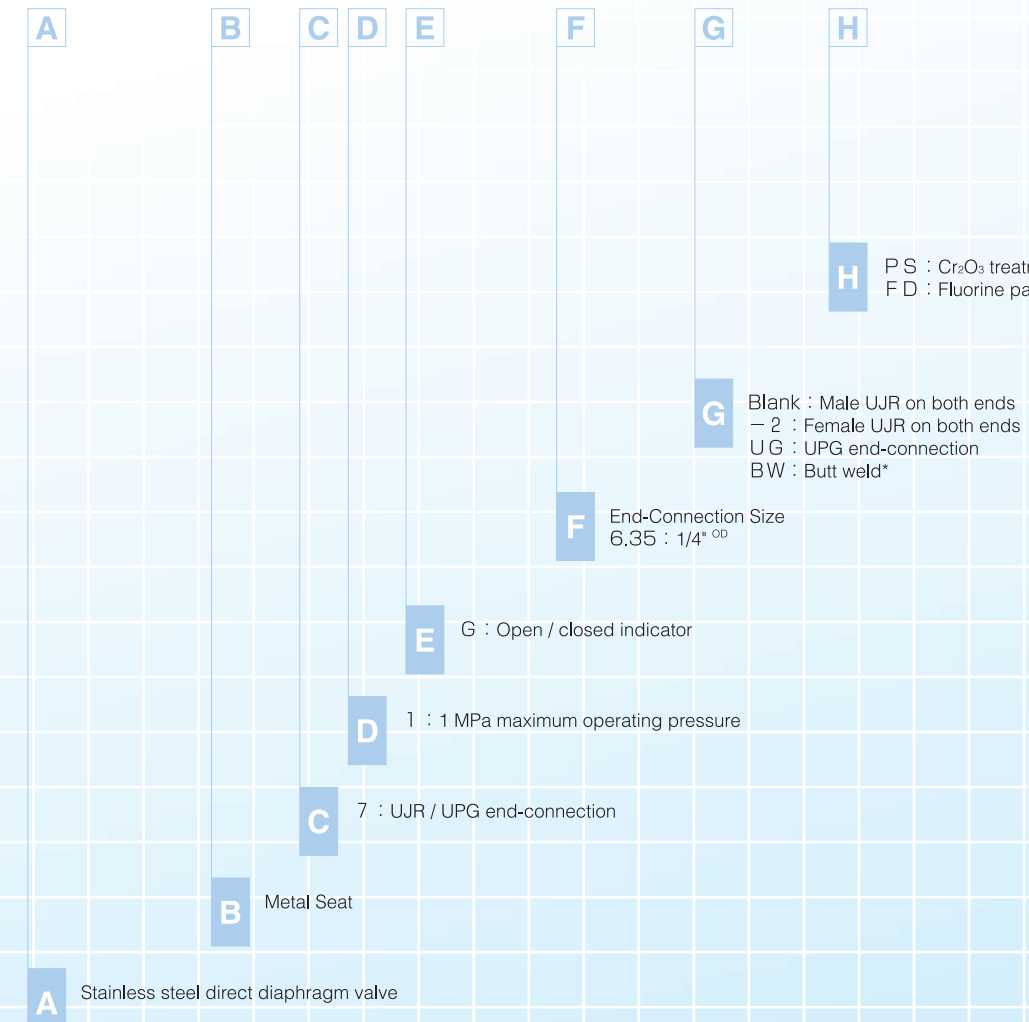
Materials	Part	Material
	Body	SUS316L
	Diaphragm	Nickel-cobalt alloy
	Handle	A5056



### PART NUMBER DESIGNATION

Please use the part number designations below when placing an order.

**FUDDF M-7 1 G-6.35** [ ] - [ ]



\* Optional or made to order.

Actual shipped products may have additional designations (such as #A, #B) in the part number. These indicate production history and do not indicate a change in function or dimensions.



DIMENSIONS

Figure 1

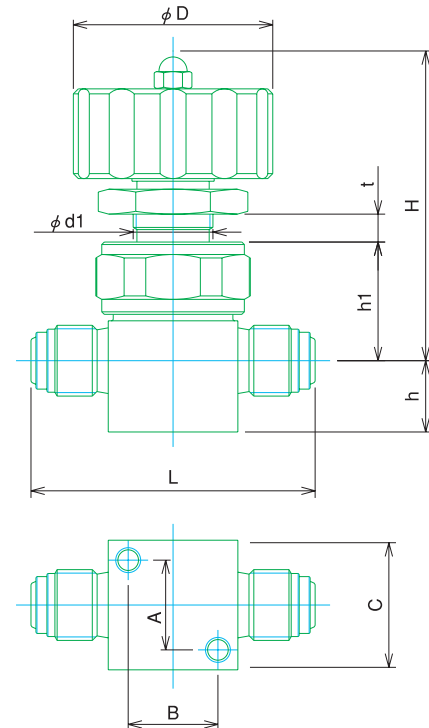


Figure 2

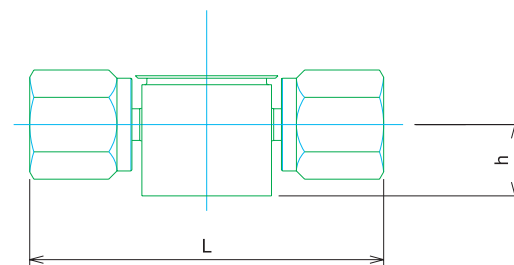


Figure 3

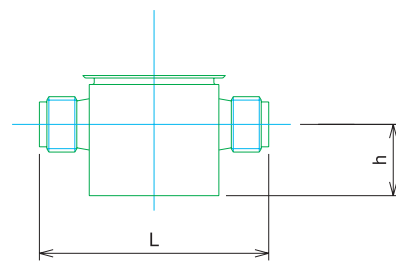
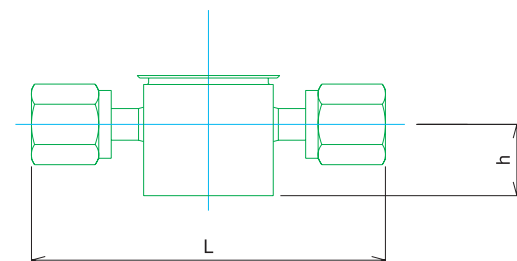


Figure 4



(Unit : mm)

Part Number	Figure	D	L	H	h	t	h1	d1	A	B	C
FUDDFM-71G-6.35	1	40	57	62	14.3	5.5	23.8	16.5	18	18	26
FUDDFM-71G-6.35-2	2	40	70.6	62	14.3	5.5	23.8	16.5	18	18	26
FUDDFM-71G-6.35UG	3	40	46	62	14.3	5.5	23.8	16.5	18	18	26
FUDDFM-71G-6.35UG-2	4	40	71	62	14.3	5.5	23.8	16.5	18	18	26

※ See Figure 1 for dimension keys not shown in other Figures.

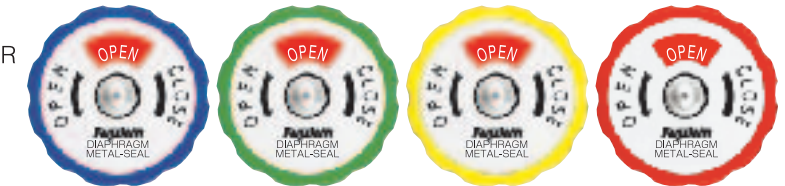
OPTIONS

Handle Colors

GT-HL-FUDDFM-※

A letter in place of "※" indicates handle color:

Blue=B, Green=G, Yellow=Y, Red=R

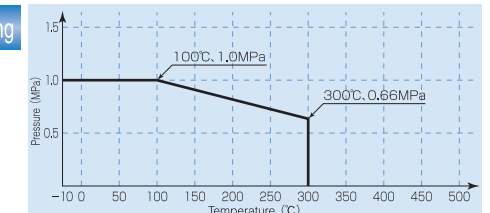


FWBR-71-6.35

High-Temperature

An all-metal actuator allows for use in services up to 300 °C.

Temperature/Pressure Rating







# MEGA — ONE LC

## Diaphragm Check Valve

The MEGA-ONE LC is a diaphragm check valve for ultra-pure, flammable, or toxic fluid lines in various types of semiconductor manufacturing equipment and facilities.

By utilizing a diaphragm construction, the effective surface area is larger, and therefore operates effectively even at low flows and/or low differential pressures. Additionally, shut-off at extremely low pressures is also assured.

The elimination of internal springs and sliding components results in particle-free operation.

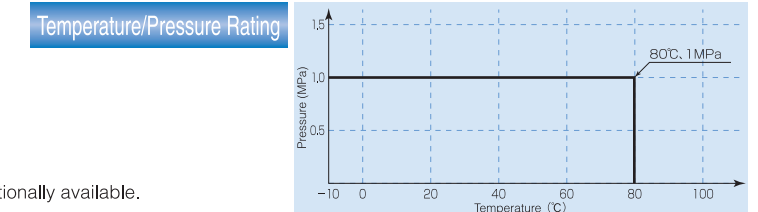
## SPECIFICATIONS

SPECIFICATION	Nominal Diameter	Maximum Operating Pressure	Fluid Temperature Range	Maximum Cv	Cracking Pressure	Back Pressure	Connection
	6.35 (1/4")	1MPa 145 psi	-10~80 °C 14~176 °F	0.2 (0.0294 MPa maximum pressure loss)	2.26KPa 0.33 psi	0.01MPa 1.45 psi	UJR, UPG

- All valves are helium leak tested. Vacuum method/results: External leakage:  $< 5 \times 10^{-12}$  Pa·m<sup>3</sup>/sec. Seat leakage:  $< 1/100$  of rated Cv
- Demonstrated superior durability - over 100,000 cycles (actual test results).

Materials	Part	Material
	Body	SUS316L
	Diaphragm	SUS316L
	Seat Packing	FPM*

\*Chloroprene, silicon, ethylene-propylene and Kalrez® optionally available.



## PART NUMBER DESIGNATION

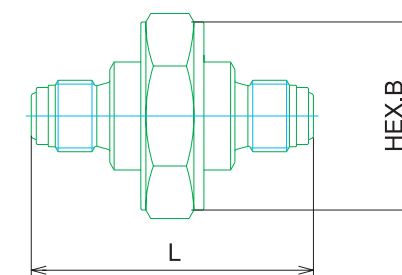
Please use the part number designations below when placing an order.

**FUCDF-71-6.35 [ ]-[ ]**

\* Optional or made to order.

Actual shipped products may have additional designations (such as #A, #B) in the part number. These indicate production history and do not indicate a change in function or dimensions.

## DIMENSIONS



Part Number	B	L
FUCDF-71-6.35	38	56.4

(Unit : mm)

Kalrez® is a registered trademark of DuPont Dow Elastomers

## OPTIONS

### IGS Diaphragm Check Valve

Fujikin Integrated Gas system check valves are included in the MEGA series.



FUCDF-21-6.35UGF-AKH



## SUPPLEMENTARY INFORMATION

### ● Inner Surface Treatment

#### 1. Products with ULTRA EXTREME PURE (UP) Special Internal Treatment

By utilizing a special polishing technology to first remove work-affected and work-hardened layers from the metal surfaces, UP treated products attain an exceedingly pure metal surface having an extremely uniform passivated film. The surface roughness is kept below 0.7 mm Ry, with an average roughness being 0.1mm or less. Additionally, final cleaning is performed in a Class 1 cleanroom to completely remove particles and impurities, and to assure a thoroughly clean product.

The UP treatment is compatible with Hastelloy® and other corrosion resistant materials. The UP treatment is standard on the MEGA-MINI and MEGA-M series products, and is optionally available on MEGA-ONE series products.

#### 2. Products with Cr2O3 Treatment (CRPS)

100% Cr2O3 treated products have a Cr2O3 film - passivation layer - formed on the stainless steel surface through a special base layer treatment and heat treatment. This offers:

1. Superior corrosion resistance as compared to halogen-based gases.
2. Less outgassing of moisture, etc.; with the excellent dry-down characteristics of the material, equipment start-up time can be shortened.
3. Non-catalytic behavior is observed with hydrogen compound gases - such as SiH4 and B2H6 - which decompose at low temperatures through surface catalytic effect. This enables stable delivery to the point of use.

#### 3. Products with BK Treatment (CRPX)

A BK treatment involves heat-treating the mirror-finish stainless steel surface under an inert gas environment. Components that undergo a BK treatment are imparted with a high Cr concentration layer on the upper-most surface. Products that undergo a BK treatment are more corrosion resistant, evidence less outgassing, and have excellent dry-down characteristics.

#### 4. Products with Fluorine Passivation (FP)

FP products are given a chemically stable fluorine passivation layer by causing a reaction between the stainless steel surface and F2 gas when heat treatment is applied. Recent advancements in micro-fabrication technology and the increased use of excimer laser steppers has required an increase in F2 use as well. Since F2 gas is extremely reactive - and will react with stainless steel surfaces - it will get consumed and therefore affect the F2 concentration. This, in turn, affects the oscillation frequency of the excimer laser.

### ● SEAT MATERIALS

#### 1. PCTFE (polytetrafluoroethylene)

Standard seat material on MEGA-ONE series and MEGA-MINI series products.

#### 2. PI (polyimide), PA (PFA)

A recommended option for non-standard temperatures and fluids.

### ● BODY AND DIAPHRAGM MATERIALS

Hastelloy®

For services that require exceptional corrosion resistance, Hastelloy C-22® bodies and diaphragms may be specified as an optional material.

### ● PROXIMITY SENSORS AND LIMIT SWITCHES

When open or closed position verification is required on pneumatically actuated valves, proximity sensors or limit switches that output an electrical signal to an external unit are optionally available. Valves with a limit switch may be substituted for proximity sensor valves.

### ● HANDLE COLORS

Handles may be specified in a wide variety of optional colors.

Hastelloy® is a registered trademark of Haynes International.

## MEGA SERIES COMPARISON TABLE

		MEGA-ONE					MEGA-MINI	MEGA-M	MEGA-ONE		
		LA	LS	LM	HQ	HM	LA	HA	LV	LM	LC
PRESSURE TYPE	High-Pressure				●	●		●			
	High-Pressure (Japan Certification)				▲	▲		▲			
NOMINAL DIAMETER	6.35 (1/4")	●	●	●	●	●	●	●	●	●	●
	9.52 (3/8")	●	●	●	●	●	●			●	
	12.7 (1/2")	▲※1	▲※1	▲※1							
CONNECTION	UJR	●	●	●	●	●	●	●	●	●	●
	UPG	●	●	●	●	●	●	●	●	●	●
	F900	●	●	●	▲	▲					
	Tube Stub	▲	▲	▲	▲	▲	▲	▲	▲	▲	
INNER SURFACE TREATMENT	EP	●	●	●	●	●					
	UP	▲	▲	▲	▲	▲	●	●	●	●	●
	CRPX	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	CRPS	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	FD	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
BODY MATERIAL	SUS316L	●	●	●	●	●	●		▲	▲	●
	SUS316L (Double-Melt)	▲	▲	▲	▲	▲	▲	●	●	●	
	Hastelloy®	▲	▲	▲	▲	▲	▲	▲	▲	▲	
DIAPHRAGM MATERIAL	Nickel-Cobalt Alloy	●	●	●	●	●	●	●	●	●	●
	Hastelloy®	▲	▲	▲	▲	▲	▲	▲			
SEAT MATERIAL	PCTFE	●	●	●	●	●	●	●			
	PI	▲	▲	▲	▲	▲	▲	▲			※2
	PA	▲	▲	▲			▲				
OTHER	Proximity Sensor	▲					▲				
	Limit Switch	▲					▲	▲			
	Handle Color		▲	▲						▲	

● : Standard Option

▲ : Optional

※1 : Installed only when F900 is selected as the end-connection.

※2 : FPM (fluoro rubber) is standard seat material; chloroprene rubber, silicon rubber, ethylene-propylene rubber and Kalrez® may be optionally specified.



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**Fujikin Main Products**

Stainless Steel Forgings, Stainless Steel Castings, Brass Forgings, Steel Forgings, Alkes®, Corrosion Resistant Aluminum Forgings, Gun metal, Hastelloy Products, Zirconium Products, Tantalum Products, Titanium Products, Fujibloy Products, Plastic Products, Fine Ceramic Products, Other Special Metals, New Metal and Material Products.

**—Valves—**

- Various Types of Super Valves
- Various Types of Needle Valves (domestic patents × 6)
- Block valve for every extra-high pressure
- QS valve® (international patent × 7 countries)
- Compact valves
- Various miniature valves
- Diaphragm type "MINI" control valves
- Soler old valves (domestic patent × 3)
- Various Ball valves
- Various joints (domestic patent)

**—Precision Machinery and tools—**

- Atomic valve unit, joints etc. (domestic patent)
- Valve unit, joints etc. for the development of the universe (domestic patent)
- Valves unit, joints etc. for the development of the ocean (domestic patent)
- Valves unit, joints etc. for the development of the electronic machinery and tools (domestic patent)
- Valves unit, joints etc. for the development of the related machinery and tools to medical treatment.

**—Unit · Apparatuses—**

(example)

- Fuji-Tepler®, seal tape automatic winder (domestic patent)
- Provider power unit (domestic patent)
- Air Trap FAT®, PA-30B (international patent)
- Every Dry® (international patent)
- Sealless® finished product (domestic patent) (Sampling rack)
- Device for the collection of water in the can (Sampling rack)
- Chemical vapour doping system
- Anodic oxidation coating system
- Tester for valves, joints
- Medical treatment appliances
- High pressure gas apparatus
- Air computer (patented)
- Airtronics® (Hydraulic electronics controlling system)
- Contronics® (Hydraulic automatic control system)

**—Special Products—**

- Designing and manufacturing of Special Valves, Cocks, Joints, etc.

**—Overseas Tie-up Products—**

- UNTECH Hand Shrink Guns
- technical tie-up products with West Germany
- SAMUMAT automatic shrink wrapping machine (technical tie-up products with West Germany)
- Positioner (technical tie-up products with U.S.A)
- Hydraulic technic oil pressure apparatus (technical tie-up products with West Germany)
- LEGRIX LF3000-one touch fitting (sales tie-up products with France)
- Glass fiber ball valves (sales tie-up products with the U.S.A)

**—Products and Services—**

- General piping components
- General service