

금속 테이퍼관 부유식 유량계 (Metal Taper Tube Flow Meters)

MLA Series

MLA-Series 모델 선택 (Model Selection Guide)

ML - Series				
MODEL	CODE		DESCRIPTION	
MLA	→		METAL TAPER TUBE LOCAL FLOW METER	
MLB	→		METAL TAPER TUBE LOCAL FLOW METER	
Flow Direction	2	→	Bottom to Top side	
	4	→	Bottom side to Top side	
	5	→	Side to Side	
Material	A	→	SS 41	
	B	→	SUS 304	
	C	→	SUS 316	
	D	→	SUS 316L	
	P	→	PVC	
	X	→	Special [주1]	
Option	R1	→	1-Point Alarm (Reed)	
	R2	→	2-Point Alarm (Reed)	
	F1	→	1-Point (Fiber)	
	F2	→	2-Point (Fiber)	
	CF	→	Cooling Fin	
	DR	→	Damper	

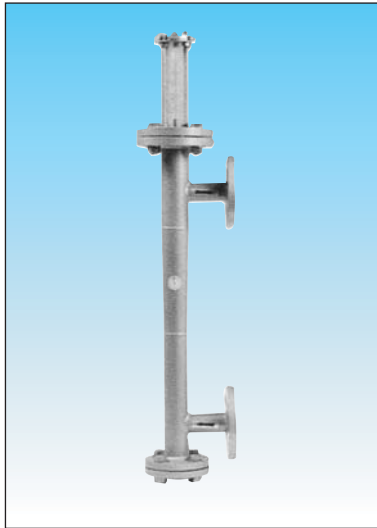
[주1] 별도협의

금속 테이퍼관 부유식 유량계 (Metal Taper Tube Flow Meters)

MLA Series



MLA-2



MLA-4



MLA-5

◆ 개요

이 유량계는 몸체가 금속이므로 고온 고압에도 잘 견디며 불투명 유체들을 측정하기에 적합합니다. 금속관 내부에 있는 플로트 축이 직접 유량을 지시하기도 하며 자기 결합방식에 의하여 지침으로 유량을 지시하기도 합니다. 이 유량계는 유리관 부유식 유량계와 같은 구조로 설계 되었습니다.

◆ Description

These flowmeters' bodies are all metal, so they are resistant to high pressure and temperature and are suitable to measure opaque liquids. They measure flow rate by the float inside the metal taper tube or with flow indicator by means of magnetic coupling. These flow meters are designed in the same structure as glass tube flow meters.

◆ 구조

직접 방식 : 직접방식의 유량은 금속테이퍼 관속의 플로트의 축에 의하여 직접 지시한다.

자기결합방식 : 이 유량계는 자기결합방식에 하여 유량을 지시한다

◆ Composition

Direct method : Flow rate is indicated directly by float inside metal taper tube.

Magnetic coupling : Flow rate is indicated by means of magnetic coupling.

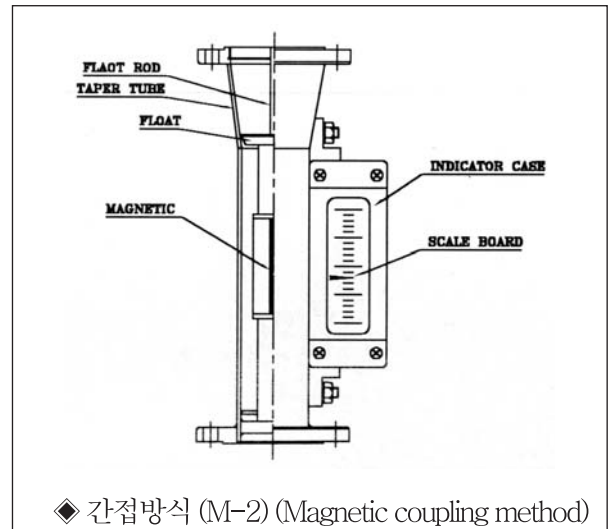
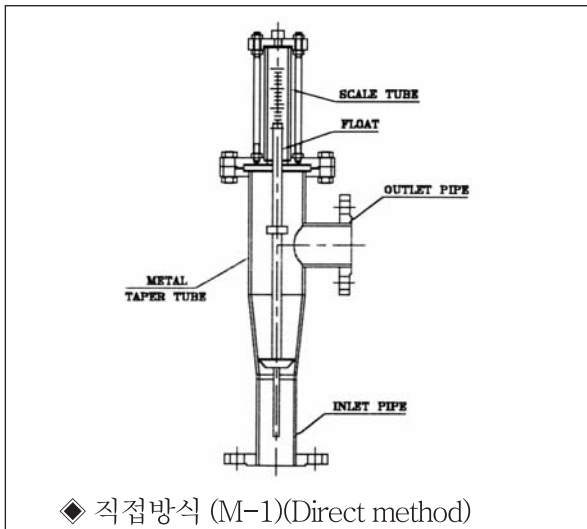
◆ 특징

- 정도 : $\pm 2.0\%$ of F/S
- 최고사용압력 : $10\text{kgf/cm}^2\text{G}$
- 최고 사용 온도 : 100°C

◆ Features

1. Accuracy : $\pm 2.0\%$ F.S
2. Pressure limit : Max. $10\text{kgf/cm}^2\text{G}$
3. Temperature : Max. 120°C

금속 테이퍼관 부유식 유량계 (Metal Taper Tube Flow Meters)



◆ 유량범위 / MLA-2 (Flow rate)

SIZE	FLOW RATE				PRESSURE LIMIT ≡ (kgf/cm ² G)	
	H ₂ O (m ³ /H)			GAS (N m ³ /H)		
	Standard	SUS304	PVC	SUS304	SUS	PVC
15A	0.1-1	0.05-0.5 0.2-2.0	0.05-0.5 0.15-1.5	0.6-6 3-30	10	3
20A	0.2-2	0.08-0.8 0.35-3.5	0.1-1 0.25-2.5	1.6-16 5-50	10	3
25A	0.4-4	0.1-1 0.6-6	0.1-1 0.4-4	2-20 9-90	10	3
32A	0.6-6	0.1-1 1-10	0.1-1 0.8-8	2-20 15-150	7	3
40A	0.8-8	0.2-2 1.5-15	0.2-2 1.2-12	4-40 20-200	7	3
50A	1.5-15	0.5-5 2.5-25	0.5-5 1.5-15	6-60 40-400	7	3
65A	2.5-25	0.8-8 4-40	1.2-12 3-30	10-100 60-600	7	3
80A	4-40	1.2-12 5-50	1.5-15 4-40	12-120 80-800	7	2
100A	6-60	2.5-25 9-90	3-30 7-70	25-250 120-1200	7	2
125A	10-100	4-40 15-150	5-50 12-120	40-400 200-2000	5	2
150A	14-140	6-60 20-200	8-80 15-150	60-600 300-3000	5	2
200A	20-000	10-100 28-280	12-120 20-200	100-1000 400-4000	3	2

◆ 유량범위 / MLA-5 (Flow rate)

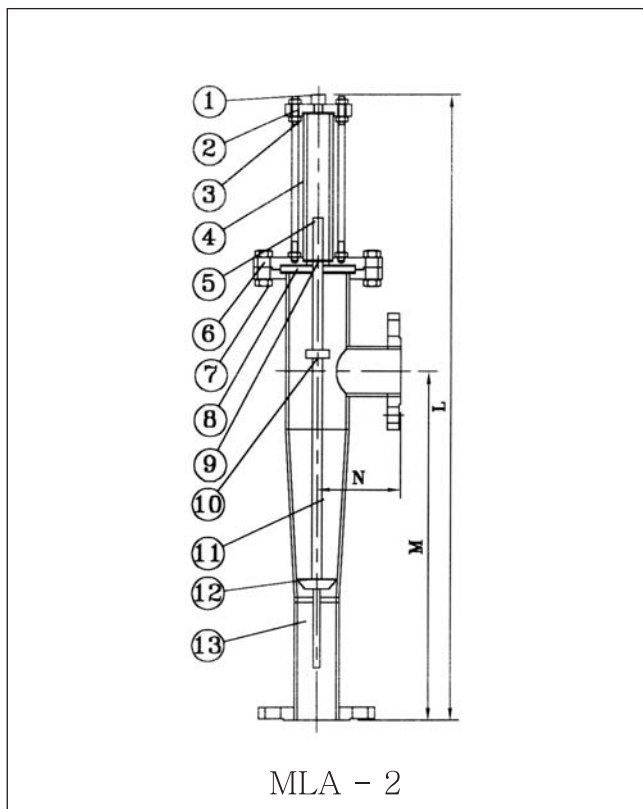
SIZE	FLOW RATE					PRESSURE LIMIT ≡ (kgf/cm ² G)	
	H ₂ O (m ³ /H)		GAS (N m ³ /H)	Pressure Loss			
	SUS304	PVC	SUS304	H ₂ O	GAS	SUS	PVC
15A	0.03-0.3 0.2-2	0.05-0.5 0.15-1.5	0.6-6 3-30	800	500	10	3
20A	0.08-0.8 0.35-3.5	0.1-1 0.25-2.5	1.6-16 5-50	800	500	10	3
25A	0.1-1 0.6-6	0.1-1 0.4-4	2-20 9-90	800	500	10	3
32A	0.1-1 1-10	0.1-1 0.8-8	2-20 15-150	800	500	7	3
40A	0.2-2 1.5-15	0.2-2 1.2-12	4-40 20-200	800	500	7	3
50A	0.5-5 2.5-25	0.5-5 1.5-15	6-60 40-400	800	500	7	3
65A	0.8-8 4-40	1.2-12 3-30	10-100 60-600	900	550	7	3
80A	1.2-12 5-50	1.5-15 4-40	12-120 80-800	900	550	7	2
100A	2.5-25 8-80	3-30 6-60	25-250 150-1500	1000	600	7	2
125A	4-40 12-120	5-50 10-00	40-400 200-2000	1200	750	5	2
150A	6-60 15-150		60-600 300-3000	1200	750	5	2
200A	10-100 25-25		100-1000 400-4000	1500	900	3	2

금속 테이퍼관 부유식 유량계 (Metal Taper Tube Flow Meters)

MLA - 2 구조 및 재질 규격 (Structure and Material Size MLA-2 Series)



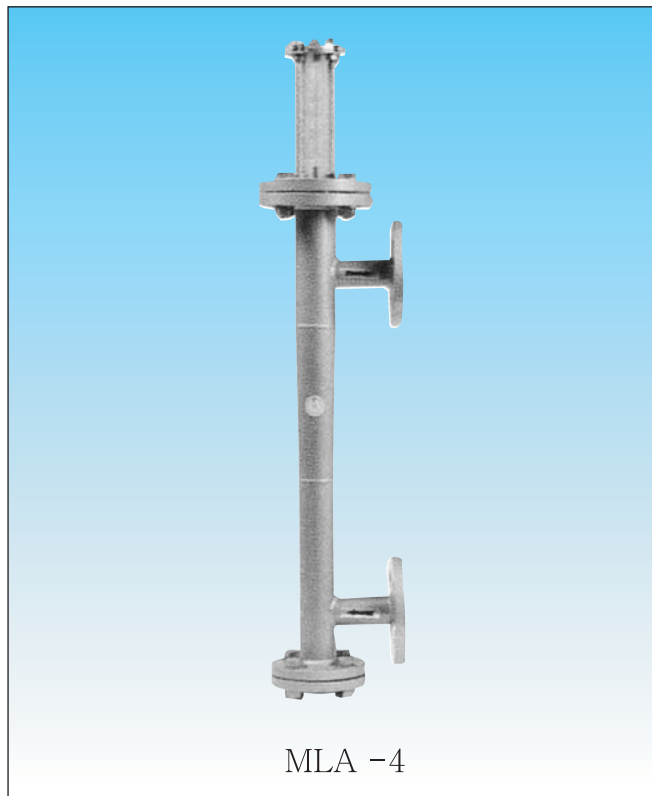
PART NO.	TITLE	MATERIAL	
1	Air Vent	SUS304, SUS316	T / L
2	Top Flange	MATERIAL SELECTION	
3	Nut, Washer	SUS304	
4	Support Bar	SUS304	
5	Scale Tube	Acryl, Glass	
6	Middle Flange	MATERIAL SELECTION	
7	Nut, Washer	SUS304	
8	Guide Plate	SUS304, SUS316, PVC	T / L
9	Packing	N.B.R, Viton, Teflon	
10	Stopper	SUS304, SUS316, PVC	T / L
11	Float Rod	SUS304, SUS316, PVC	T / L
12	Float	SUS304, SUS316, PVC	T / L
13	Body	MATERIAL SELECTION	



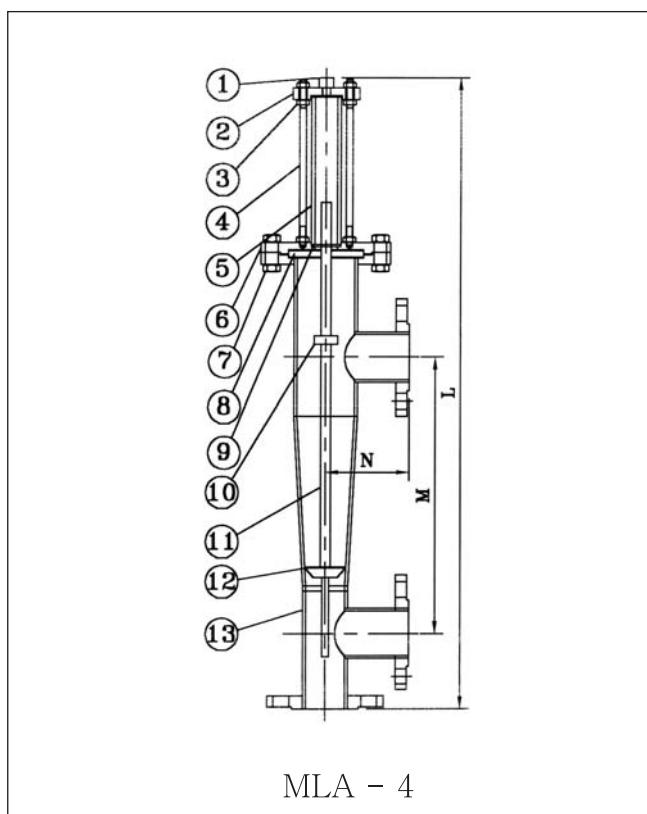
SIZE		LENGTH (mm)		
A	B	≒L	N	M
15A	1/2B	720	80	390
20A	3/4B	720	80	390
25A	1B	730	100	390
32A	1-1/4B	780	100	410
40A	1-1/2B	780	100	410
50A	2B	870	120	470
65A	2-1/2B	900	150	490
80A	3B	980	150	540
100A	4B	1090	180	590
125A	5B	1160	220	640
150A	6B	1230	240	690
200A	8B	1400	280	790

금속 테이퍼관 부유식 유량계 (Metal Taper Tube Flow Meters)

MLA - 4 구조 및 재질 규격 (Structure and Material Size MLA-4 Series)



PART NO.	TITLE	MATERIAL	
1	Air Vent	SUS304, SUS316	T / L
2	Top Flange	MATERIAL SELECTION	
3	Nut, Washer	SUS304	
4	Support Bar	SUS304	
5	Scale Tube	Acryl, Glass	
6	Middle Flange	MATERIAL SELECTION	
7	Nut, Washer	SUS304	
8	Guide Plate	SUS304, SUS316, PVC	T / L
9	Packing	N.B.R, Viton, Teflon	
10	Stopper	SUS304, SUS316, PVC	T / L
11	Float Rod	SUS304, SUS316, PVC	T / L
12	Float	SUS304, SUS316, PVC	T / L
13	Body	MATERIAL SELECTION	



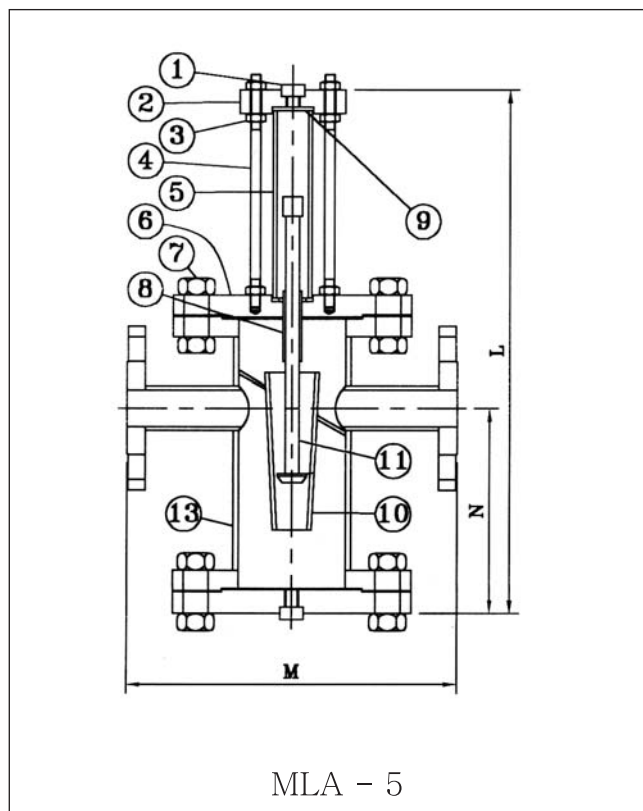
SIZE		LENGTH (mm)		
A	B	≒L	N	M
15A	1/2B	720	80	390
20A	3/4B	720	80	390
25A	1B	730	100	390
32A	1-1/4B	780	100	410
40A	1-1/2B	780	100	410
50A	2B	870	120	470
65A	2-1/2B	900	150	490
80A	3B	980	150	540
100A	4B	1090	180	590
125A	5B	1160	220	640
150A	6B	1230	240	690
200A	8B	1400	280	790

금속 테이퍼관 부유식 유량계 (Metal Taper Tube Flow Meters)

MLA - 5 구조 및 재질 규격 (Structure and Material Size MLA-5 Series)



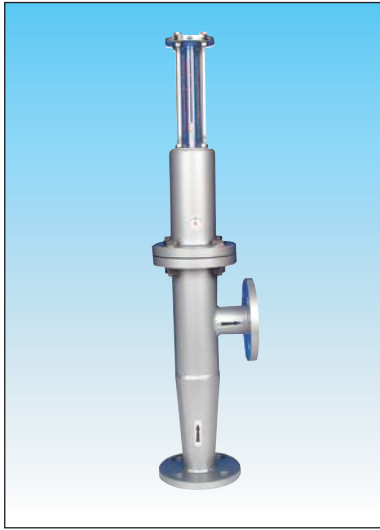
PART NO.	TITLE	MATERIAL	
1	Air Vent	SUS304, SUS316	T / L
2	Top Flange	MATERIAL SELECTION	
3	Nut, Washer	SUS304	
4	Support Bar	SUS304	
5	Scale Tube	Acryl, Glass	
6	Middle Flange	MATERIAL SELECTION	
7	Nut, Washer	SUS304	
8	Guide Plate	SUS304, SUS316	T / L
9	Packing	N.B.R, Viton, Teflon	
10	Stopper	SUS304, SUS316	T / L
11	Float Rod	SUS304, SUS316	T / L
12	Float	SUS304, SUS316	T / L
13	Body	MATERIAL SELECTION	



SIZE		LENGTH (mm)		
A	B	$\approx L$	N	M
15A	1/2B	440	150	180
20A	3/4B	440	180	180
25A	1B	460	200	190
32A	1-1/4B	510	250	200
40A	1-1/2B	510	250	200
50A	2B	570	280	240
65A	2-1/2B	610	350	240
80A	3B	700	400	260
100A	4B	700	500	300
125A	5B	790	550	320
150A	6B	870	600	340
200A	8B	870	700	340

금속 테이퍼관 부유식 유량계 (Metal Taper Tube Flow Meters)

MLB Series



MLB - 2



MLB - 4



MLB - 5

◆ 개요

이 유량계는 MLA와 같은 구조에서 에어 챔버가 추가 부착되어서 계기부에 유체가 유입되지 않으며 방열관이 부착된 유량계는 높은 온도에서도 사용될 수 있습니다.

◆ Description

These flow meters have same structure as MLA types with additional air chamber attached.

◆ 유량범위 / Flow Rates Table



MLB - 2

FLOW RATE SIZE	STANDARD (m ³ /h)	MAXIMUM H ₂ O (m ³ /h)		STANDARD Air (N m ³ /h)
15A	0.1-1	0.05-0.5	0.05-0.5	0.6-6
		0.2-2	0.15-1.5	3-30
20A	0.2-2	0.08-0.8	0.1-1	1.6-16
		0.35-3.5	0.25-2.5	5-50
25A	0.4-4	0.1-1	0.1-1	2-20
		0.6-6	0.4-4	9-90
32A	0.6-6	0.1-1	0.1-1	2-20
		1-10	0.8-8	15-150
40A	0.8-8	0.2-2	0.2-2	4-40
		1.5-15	1.2-12	20-200
50A	1.5-15	0.5-5	0.5-15	6-60
		2.5-25	1.5-15	40-400
65A	2.5-25	0.8-8	1.2-12	10-100
		4-40	3-30	60-600
80A	4-40	1.2-12	1.5-15	12-120
		5-50	4-40	80-800
100A	6-60	2.5-25	3-30	25-250
		9-90	7-70	120-1200
125A	10-100	4-40	5-50	40-400
		15-150	12-120	200-2000
150A	1.4-14	6-60	8-80	60-600
		20-200	15-150	300-3000
200A	20-200	10-100	12-120	100-1000
		28-280	20-200	400-4000

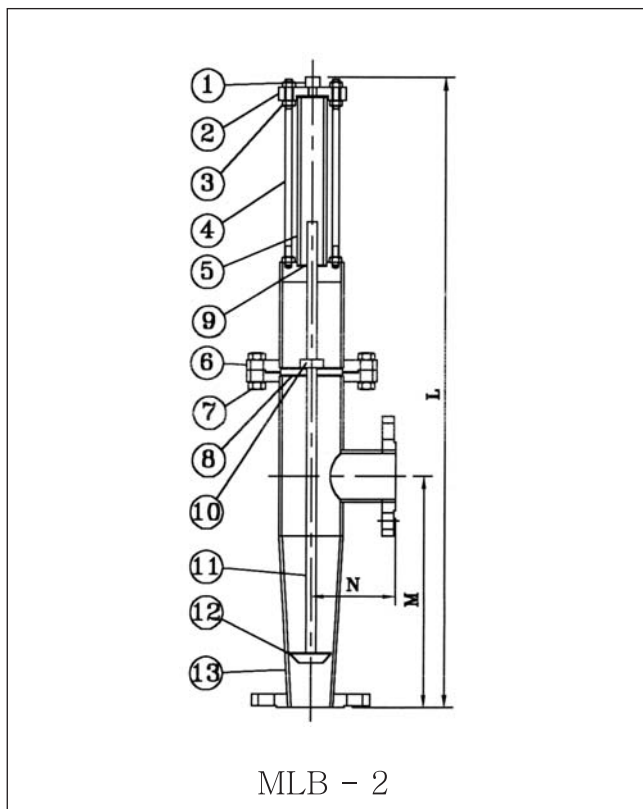
※ 참조 : 기체의 압력과 온도는 1 atm, 20℃일때 입니다.
 압력 P kgf/cm²G 일경우는 본표의 수치에 $\sqrt{P-1}$ 를 곱해 주십시오.
 (Note : The pressure and the temperature of the gas are 1 atm and 20℃. If pressure P is kgf/cm²G, multiply $\sqrt{P-1}$ by the above rate. Please inquire for the rate not indicated)

금속 테이퍼관 부유식 유량계 (Metal Taper Tube Flow Meters)

MLB - 2 구조 및 재질 규격 (Structure and Material Size MLB-2 Series)



PART NO.	TITLE	MATERIAL	
1	Air Vent	SUS304, SUS316	T / L
2	Top Flange	MATERIAL SELECTION	
3	Nut, Washer	SUS304	
4	Support Bar	SUS304	
5	Scale Tube	Acryl, Glass	
6	Middle Flange	MATERIAL SELECTION	
7	Nut, Washer	SUS304	
8	Guide Plate	SUS304, SUS316, PVC	T / L
9	Packing	N.B.R, Viton, Teflon	
10	Stopper	SUS304, SUS316, PVC	T / L
11	Float Rod	SUS304, SUS316, PVC	T / L
12	Float	SUS304, SUS316, PVC	T / L
13	Body	MATERIAL SELECTION	



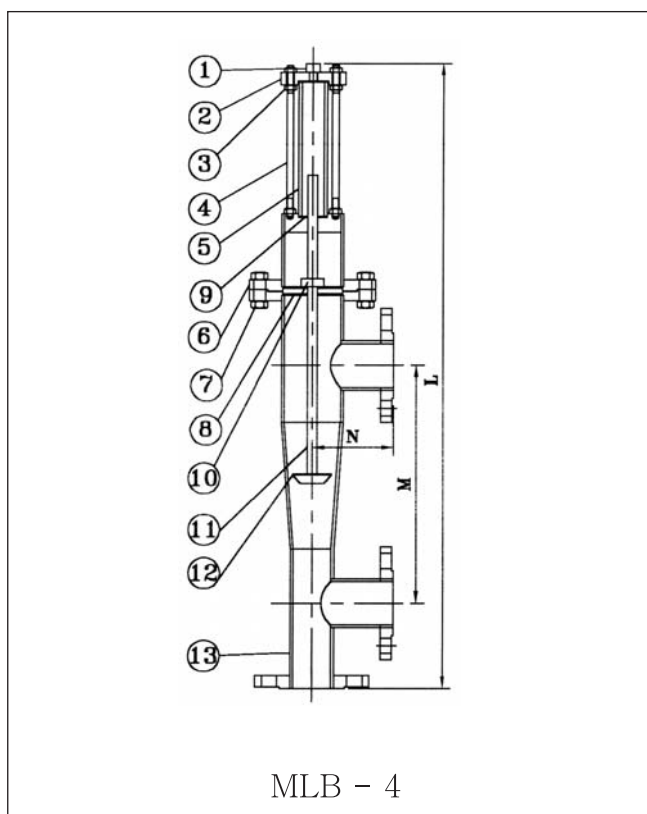
SIZE		LENGTH (mm)		
A	B	≒L	N	M
15A	1/2B	695	80	230
20A	3/4B	720	80	230
25A	1B	745	100	250
32A	1-1/4B	750	100	250
40A	1-1/2B	750	100	270
50A	2B	845	120	310
65A	2-1/2B	870	150	310
80A	3B	925	150	330
100A	4B	1115	180	390
125A	5B	1200	220	430
150A	6B	1345	240	470
200A	8B	1465	280	590

금속 테이퍼관 부유식 유량계 (Metal Taper Tube Flow Meters)

MLA - 4 구조 및 재질 규격 (Structure and Material Size MLB-4 Series)



PART NO.	TITLE	MATERIAL	
1	Air Vent	SUS304, SUS316	T / L
2	Top Flange	MATERIAL SELECTION	
3	Nut, Washer	SUS304	
4	Support Bar	SUS304	
5	Scale Tube	Acryl, Glass	
6	Middle Flange	MATERIAL SELECTION	
7	Nut, Washer	SUS304	
8	Guide Plate	SUS304, SUS316, PVC	T / L
9	Packing	N.B.R, Viton, Teflon	
10	Stopper	SUS304, SUS316, PVC	T / L
11	Float Rod	SUS304, SUS316, PVC	T / L
12	Float	SUS304, SUS316, PVC	T / L
13	Body	MATERIAL SELECTION	



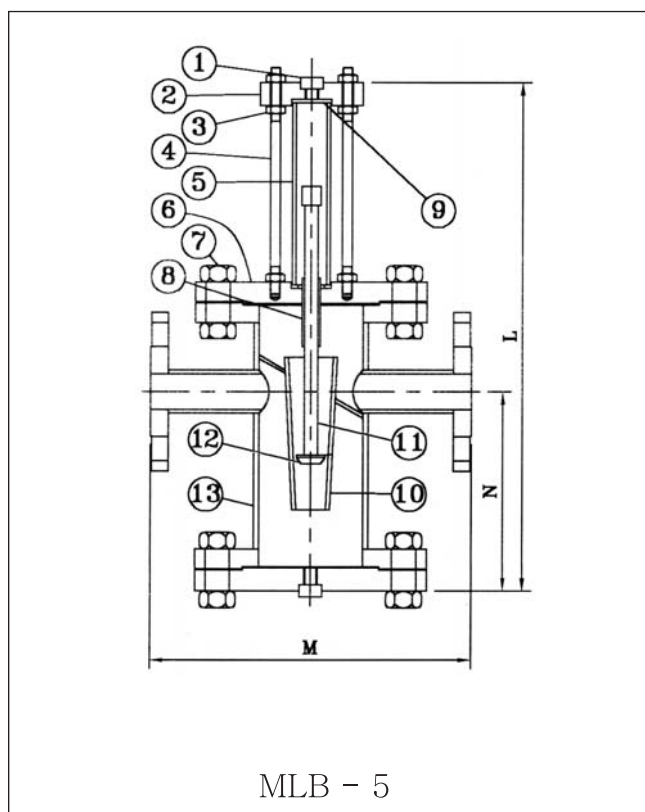
SIZE		LENGTH (mm)		
A	B	≒L	N	M
15A	1/2B	775	80	260
20A	3/4B	805	80	265
25A	1B	845	100	290
32A	1-1/4B	860	100	295
40A	1-1/2B	865	100	315
50A	2B	975	120	365
65A	2-1/2B	1020	150	370
80A	3B	1085	150	400
100A	4B	1300	180	470
125A	5B	1415	220	520
150A	6B	1590	240	575
200A	8B	1760	280	720

금속 테이퍼관 부유식 유량계 (Metal Taper Tube Flow Meters)

MLB - 5 구조 및 재질 규격 (Structure and Material Size MLB-5 Series)



PART NO.	TITLE	MATERIAL	
1	Air Vent	SUS304, SUS316	T / L
2	Top Flange	MATERIAL SELECTION	
3	Nut, Washer	SUS304	
4	Support Bar	SUS304	
5	Scale Tube	Acryl, Glass	
6	Middle Flange	MATERIAL SELECTION	
7	Nut, Washer	SUS304	
8	Guide Plate	SUS304, SUS316, PVC	T / L
9	Packing	N.B.R, Viton, Teflon	
10	Stopper	SUS304, SUS316, PVC	T / L
11	Float Rod	SUS304, SUS316, PVC	T / L
12	Float	SUS304, SUS316, PVC	T / L
13	Body	MATERIAL SELECTION	



SIZE		LENGTH (mm)		
A	B	≒L	N	M
15A	1/2B	600	150	180
20A	3/4B	600	180	180
25A	1B	620	200	190
32A	1-1/4B	690	250	200
40A	1-1/2B	690	250	200
50A	2B	750	280	240
65A	2-1/2B	770	350	240
80A	3B	810	400	260
100A	4B	900	500	300
125A	5B	1010	550	320
150A	6B	1110	600	340
200A	8B	1110	700	340