



MU type – Without efficiency valve

Features and Strengths

Best gripping for flat and stable surfaces

Examples of use

Metal sheets, Carton boxes, Glass, Veneer sheets



Recommended Lifting Force (Max.)

Model	Volume (cm ³)	Lifting Force (Kg) - Perpendicular		
		- 20 kPa	- 60 kPa	- 90 kPa
B1.5/40-MU45	9.93	0.66	1.34	1.79
B1.5/40-MU55	12.19	1.34	2.81	3.37
B1.5/60-MU65	26.90	2.24	4.37	5.50
B1.5/60-MU75	31.98	3.93	8.18	10.32
B1.5/60-MU80	33.66			
B2.5/40-MU45	17.33	1	3.9	5.5
B2.5/40-MU55	19.58	2.1	5.4	6.8
B2.5/60-MU65	47.70	2.8	7.6	11.4
B2.5/60-MU75	52.78	4.6	9.3	13
B2.5/60-MU80	54.46			
B4.0/40-MU45	23.13	0.66	1.34	1.79
B4.0/40-MU55	25.38	1.34	2.81	3.37
B5.0/40-MU45	29.93	0.66	1.34	1.79
B5.0/40-MU55	32.18	1.34	2.81	3.37
B5.0/60-MU65	88.70	2.24	4.37	5.50
B5.0/60-MU75	93.78	3.93	8.18	10.32
B5.0/60-MU80	95.46			
B6.0/40-MU45	37.23	0.66	1.34	1.79
B6.0/40-MU55	39.48	1.34	2.81	3.37
B6.0/60-MU65	110.50	2.24	4.37	5.50
B6.0/60-MU75	115.58	3.93	8.18	10.32
B6.0/60-MU80	117.26			



I Material Specifications

Material	Hardness Shore (°)	Color	Temperature (°C)
NBR (Nitrile)	60	Blue	-20~110
S3 - Silicone	30	Translucent White	-70~200
S5 - Silicone	50	Red	-70~200
W3 - White Silicone	30	Translucent White	-70~200
W5 - White Silicone	50	Translucent White	-70~200
W3(FDA) - White Silicone(FDA)	30	Translucent White	-70~200
W5(FDA) - White Silicone(FDA)	50	Translucent White	-70~200
U6 - Urethane	60	Dark Grey	0~100

* The temperature data is only for suction lip. Please contact us if it is used in over 60°C

** For additional materials, please contact us

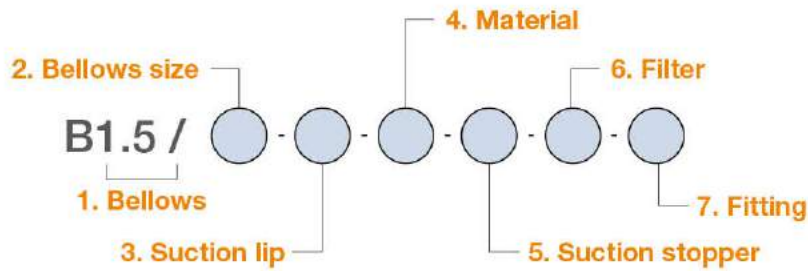
I Material Resistance

Description	NBR (Nitrile)	Silicone	White Silicone	Urethane	Polyurethane
Wear Resistance	Excellent	Good	Good	Excellent	Excellent
Oil	Excellent	Poor	Poor	Excellent	Excellent
Weather / Ozone	Fair	Excellent	Excellent	Excellent	Excellent
Alcohol	Good	Good	Good	Fair	Fair
Acid	Fair	Poor	Poor	Poor	Fair

SUCTION CUPS / Magic suction cup



Build an Ordering No.



1. Bellows	Description	Symbol
	Top bellows 1.5 folds	B1.5
	Top bellows 2.5 folds	B2.5
	Top bellows 1.5 folds + Middle bellows 2.5 folds	B4.0
	Top bellows 1.5 folds + Middle bellows 3.5 folds	B5.0
	Top bellows 2.5 folds + Middle bellows 3.5 folds	B6.0
2. Bellows size	Description	Symbol
	40mm bellows diameter: For MU45 & MU55	40
	60mm bellows diameter: For MU65 & MU75 & MU80	60
3. Suction lip	Description	Symbol
	MU type lip, 45mm diameter	MU45
	MU type lip, 55mm diameter	MU55
	MU type lip, 65mm diameter	MU65
	MU type lip, 75mm diameter	MU75
	MU type lip, 80mm diameter	MU80
4. Material	Description	Symbol
	NBR (Nitrile), 60° hardness	N6
	Silicone, 30° hardness	S3
	Silicone, 50° hardness	S5
	White Silicone, 30° hardness	W3
	White Silicone, 50° hardness	W5
	White Silicone, 30° hardness (FDA)	W3(FDA)
	White Silicone, 50° hardness (FDA)	W5(FDA)
	Urethane, 60° hardness	U6
5. Suction stopper	Description	Symbol
	G type	G
6. Filter	Description	Symbol
	No filter	Blank
	Mesh disk filter (200mesh)	F2
7. Fitting	Description	Symbol
	Fitting, G1/8 female	18F
	Fitting, G1/4 female	14F
	Fitting, G1/8 male	18M
	Fitting, G1/4 male	14M
	Fitting, G3/8 male	38M
	Fitting, G3/8 female: Only for 60mm bellow diameter	38F

Spare Parts – Top Bellows

Part No.	Description
TB1.5/40	Top bellows 1.5 folds for MU45 & MU55 without efficiency valve
TB1.5/60	Top bellows 1.5 folds for MU65 & MU75 & MU80 without efficiency valve
TB2.5/40	Top bellows 2.5 folds for MU45 & MU55 without efficiency valve
TB2.5/60	Top bellows 2.5 folds for MU65 & MU75 & MU80 without efficiency valve



I Spare Parts – Middle Bellows

Part No.	Description	Part No.	Description
MB2.5/40	Middle bellows 2.5 folds for MU45 & MU55	MB3.5/40	Middle bellows 3.5 folds for MU45 & MU55
		MB3.5/60	Middle bellows 3.5 folds for MU65 & MU75 & MU80

I Spare Parts – Suction Stoppers

Part No.	Description
MS40-G	Stopper G type for MU45 & MU55
MS60-G	Stopper G type for MU65 & MU75 & MU80

I Spare Parts – Filters

Part No.	Description
VTFE40	Mesh disk filter (200mesh) for 40mm bellows diameter
VTFE60	Mesh disk filter (200mesh) for 60mm bellows diameter

I Spare Parts – Suction Lips

Part No.	Description	Part No.	Description
MU45-N6	MU type - 45mm diameter, NBR, 60° hardness	MU45-W5	MU type - 45mm diameter, White Silicone, 50° hardness
MU55-N6	MU type - 55mm diameter, NBR, 60° hardness	MU55-W5	MU type - 55mm diameter, White Silicone, 50° hardness
MU65-N6	MU type - 65mm diameter, NBR, 60° hardness	MU65-W5	MU type - 65mm diameter, White Silicone, 50° hardness
MU75-N6	MU type - 75mm diameter, NBR, 60° hardness	MU75-W5	MU type - 75mm diameter, White Silicone, 50° hardness
MU80-N6	MU type - 80mm diameter, NBR, 60° hardness	MU80-W5	MU type - 80mm diameter, White Silicone, 50° hardness
MU45-S3	MU type - 45mm diameter, Silicone, 30° hardness	MU45-W3(FDA)	MU type - 45mm diameter, White Silicone, 30° hardness (FDA)
MU55-S3	MU type - 55mm diameter, Silicone, 30° hardness	MU55-W3(FDA)	MU type - 55mm diameter, White Silicone, 30° hardness (FDA)
MU65-S3	MU type - 65mm diameter, Silicone, 30° hardness	MU65-W3(FDA)	MU type - 65mm diameter, White Silicone, 30° hardness (FDA)
MU75-S3	MU type - 75mm diameter, Silicone, 30° hardness	MU75-W3(FDA)	MU type - 75mm diameter, White Silicone, 30° hardness (FDA)
MU80-S3	MU type - 80mm diameter, Silicone, 30° hardness	MU80-W3(FDA)	MU type - 80mm diameter, White Silicone, 30° hardness (FDA)
MU45-S5	MU type - 45mm diameter, Silicone, 50° hardness	MU45-W5(FDA)	MU type - 45mm diameter, White Silicone, 50° hardness (FDA)
MU55-S5	MU type - 55mm diameter, Silicone, 50° hardness	MU55-W5(FDA)	MU type - 55mm diameter, White Silicone, 50° hardness (FDA)
MU65-S5	MU type - 65mm diameter, Silicone, 50° hardness	MU65-W5(FDA)	MU type - 65mm diameter, White Silicone, 50° hardness (FDA)
MU75-S5	MU type - 75mm diameter, Silicone, 50° hardness	MU75-W5(FDA)	MU type - 75mm diameter, White Silicone, 50° hardness (FDA)
MU80-S5	MU type - 80mm diameter, Silicone, 50° hardness	MU80-W5(FDA)	MU type - 80mm diameter, White Silicone, 50° hardness (FDA)
MU45-W3	MU type - 45mm diameter, White Silicone, 30° hardness	MU45-U6	MU type - 45mm diameter, Urethane, 60° hardness
MU55-W3	MU type - 55mm diameter, White Silicone, 30° hardness	MU55-U6	MU type - 55mm diameter, Urethane, 60° hardness
MU65-W3	MU type - 65mm diameter, White Silicone, 30° hardness	MU65-U6	MU type - 65mm diameter, Urethane, 60° hardness
MU75-W3	MU type - 75mm diameter, White Silicone, 30° hardness	MU75-U6	MU type - 75mm diameter, Urethane, 60° hardness
MU80-W3	MU type - 80mm diameter, White Silicone, 30° hardness	MU80-U6	MU type - 80mm diameter, Urethane, 60° hardness

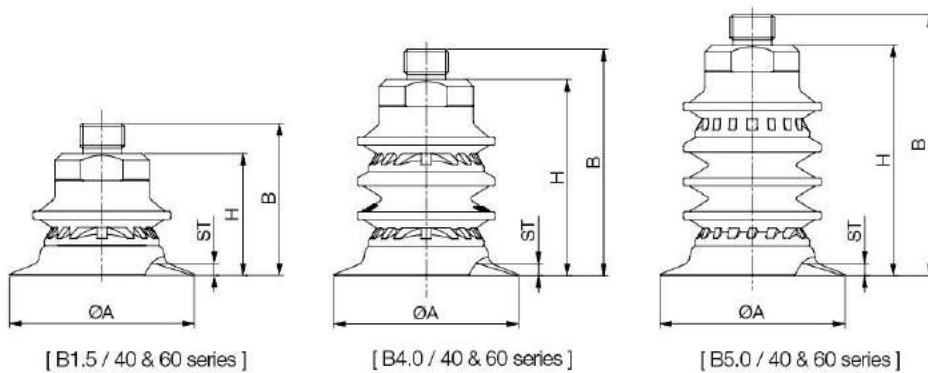
I Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description
350 003 1102	18F	G1/8 female for 40mm bellows diameter
350 003 1502	14F	G1/4 female for 40mm bellows diameter
350 003 1202	18M	G1/8 male for 40mm bellows diameter
350 003 1302	14M	G1/4 male for 40mm bellows diameter
350 003 1402	38M	G3/8 male for 40mm bellows diameter
350 003 1107	18F	G1/8 female for 60mm bellows diameter
350 003 1307	14M	G1/4 male for 60mm bellows diameter
350 003 1407	38M	G3/8 male for 60mm bellows diameter
350 003 1707	38F	G3/8 female for 60mm bellows diameter

SUCTION CUPS / Magic suction cup



Dimensional Data



Fitting
18F
18M
14F
14M
38F
38M

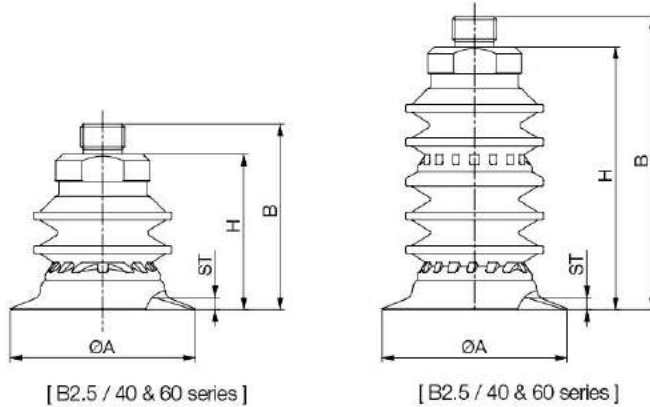
[Unit : mm]

Model	Ø A	G	ST	H*	B *
B1.5/40-MU45	45	Female thread : 1/8", 1/4", 3/8" Male thread : 1/8", 1/4", 3/8	3.1	35.9	44.9
B1.5/40-MU55	55		3.5	36.3	45.3
B1.5/60-MU65	65		3.7	47.1	56.1
B1.5/60-MU75	75		4.7	48.1	57.1
B1.5/60-MU80	80		5	49	58
B4.0/40-MU45	45		3.1	58.3	67.3
B4.0/40-MU55	55		3.5	58.7	67.7
B5.0/40-MU45	45		3.1	68.2	77.2
B5.0/40-MU55	55		3.5	68.6	77.6
B5.0/60-MU65	65		3.7	93.7	102.7
B5.0/60-MU75	75		4.7	94.7	103.7
B5.0/60-MU80	80		5	95.6	104.6

* Dimension "H" and "B" is measured with 14M fitting option



Dimensional Data



Fitting
18F
18M
14F
14M
38F
38M

[Unit : mm]

Model	Ø A	G	ST	H*	B*
B2.5/40-MU45	45	Female thread : 1/8", 1/4", 3/8" Male thread : 1/8", 1/4", 3/8	3.1	45.9	54.9
B2.5/40-MU55	55		3.5	46.3	55.3
B2.5/60-MU65	65		3.7	61.6	70.6
B2.5/60-MU75	75		4.7	62.6	71.6
B2.5/60-MU80	80		5	63.5	72.5
B6.0/40-MU45	45		3.1	78.2	87.2
B6.0/40-MU55	55		3.5	78.6	87.6
B6.0/60-MU65	65		3.7	108.1	117.1
B6.0/60-MU75	75		4.7	109.1	118.1
B6.0/60-MU80	80		5	110	119

* Dimension "H" and "B" is measured with 14M fitting option



MU type – With efficiency valve (EB type)

Features and Strengths

Best gripping for flat and stable surfaces

Examples of use

Metal sheets, Carton boxes, Glass, Veneer sheets



Recommended Lifting Force (Max.)

Model	Volume (cm ³)	Lifting Force (Kg) - Perpendicular		
		- 20 kPa	- 60 kPa	- 90 kPa
EB1.5/40-MU45	12.93	0.66	1.34	1.79
EB1.5/40-MU55	15.19	1.34	2.81	3.37
EB4.0/40-MU45	26.13	0.66	1.34	1.79
EB4.0/40-MU55	28.39	1.34	2.81	3.37
EB5.0/40-MU45	32.93	0.66	1.34	1.79
EB5.0/40-MU55	35.19	1.34	2.81	3.37



I Material Specifications

Material	Hardness Shore (°)	Color	Temperature (°C)
NBR (Nitrile)	60	Blue	-20~110
S3 - Silicone	30	Translucent White	-70~200
S5 - Silicone	50	Red	-70~200
W3 - White Silicone	30	Translucent White	-70~200
W5 - White Silicone	50	Translucent White	-70~200
W3(FDA) - White Silicone(FDA)	30	Translucent White	-70~200
W5(FDA) - White Silicone(FDA)	50	Translucent White	-70~200
U6 - Urethane	60	Dark Grey	0~100

* The temperature data is only for suction lip. Please contact us if it is used in over 60°C

** For additional materials, please contact us

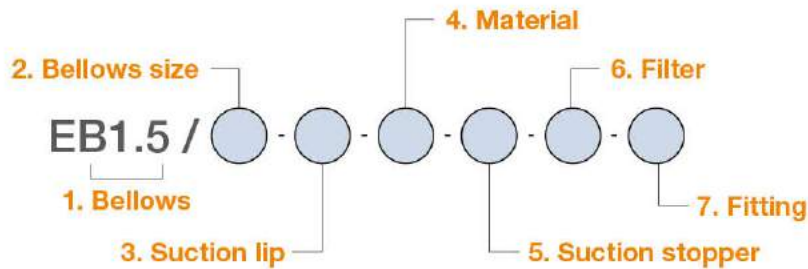
I Material Resistance



Description	NBR (Nitrile)	Silicone	White Silicone	Urethane
Wear Resistance	Excellent	Good	Good	Excellent
Oil	Excellent	Poor	Poor	Excellent
Weather / Ozone	Fair	Excellent	Excellent	Excellent
Alcohol	Good	Good	Good	Fair
Acid	Fair	Poor	Poor	Poor

SUCTION CUPS / Magic suction cup



Build an Ordering No.



1. Bellows	Description	Symbol
	Top bellows 1.5 folds with efficiency valve	EB1.5
	Top bellows 1.5 folds with efficiency valve + Middle bellows 2.5 folds	EB4.0
	Top bellows 1.5 folds with efficiency valve + Middle bellows 3.5 folds	EB5.0
2. Bellows size	Description	Symbol
	40mm bellows diameter: For MU45 & MU55	40
3. Suction lip	Description	Symbol
	MU type lip, 45mm diameter	MU45
	MU type lip, 55mm diameter	MU55
4. Material	Description	Symbol
	NBR (Nitrile), 60° hardness	N6
	Silicone, 30° hardness	S3
	Silicone, 50° hardness	S5
	White Silicone, 30° hardness	W3
	White Silicone, 50° hardness	W5
	White Silicone, 30° hardness (FDA)	W3(FDA)
	White Silicone, 50° hardness (FDA)	W5(FDA)
	Urethane, 60° hardness	U6
5. Suction stopper	Description	Symbol
	G type	G
6. Filter	Description	Symbol
	No filter	Blank
	Mesh disk filter (200mesh)	F2
7. Fitting	Description	Symbol
	Fitting, G1/8 female	18F
	Fitting, G1/4 female	14F
	Fitting, G1/8 male	18M
	Fitting, G1/4 male	14M
	Fitting, G3/8 male	38M

Spare Parts – Top Bellows

Part No.	Description
EB1.5/40	Top bellows 1.5 folds for MU45 & MU55 with efficiency valve



Spare Parts – Middle Bellows

Part No.	Description	Part No.	Description
MB2.5/40	Middle bellows 2.5 folds for MU45 & MU55	MB3.5/40	Middle bellows 3.5 folds for MU45 & MU55

Spare Parts – Suction Stoppers

Part No.	Description
MS40-G	Stopper G type for MU45 & MU55

Spare Parts – Filters

Part No.	Description
VTFE40	Mesh disk filter (200mesh) for 40mm bellows diameter

Spare Parts – Suction Lips

Part No.	Description	Part No.	Description
MU45-N6	MU type - 45mm diameter, NBR, 60° hardness	MU45-W5	MU type - 45mm diameter, White Silicone, 50° hardness
MU55-N6	MU type - 55mm diameter, NBR, 60° hardness	MU55-W5	MU type - 55mm diameter, White Silicone, 50° hardness
MU45-S3	MU type - 45mm diameter, Silicone, 30° hardness	MU45-W3(FDA)	MU type - 45mm diameter, White Silicone, 30° hardness (FDA)
MU55-S3	MU type - 55mm diameter, Silicone, 30° hardness	MU55-W3(FDA)	MU type - 55mm diameter, White Silicone, 30° hardness (FDA)
MU45-S5	MU type - 45mm diameter, Silicone, 50° hardness	MU45-W5(FDA)	MU type - 45mm diameter, White Silicone, 50° hardness (FDA)
MU55-S5	MU type - 55mm diameter, Silicone, 50° hardness	MU55-W5(FDA)	MU type - 55mm diameter, White Silicone, 50° hardness (FDA)
MU45-W3	MU type - 45mm diameter, White Silicone, 30° hardness	MU45-U6	MU type - 45mm diameter, Urethane, 60° hardness
MU55-W3	MU type - 55mm diameter, White Silicone, 30° hardness	MU55-U6	MU type - 55mm diameter, Urethane, 60° hardness

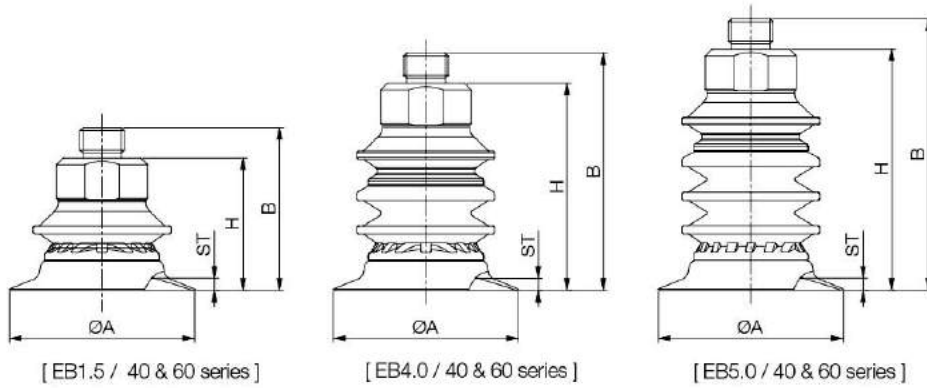
Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description
350 006 1102	18F	EB type, G1/8 female for 40mm bellows diameter
350 006 1502	14F	EB type, G1/4 female for 40mm bellows diameter
350 006 1202	18M	EB type, G1/8 male for 40mm bellows diameter
350 006 1302	14M	EB type, G1/4 male for 40mm bellows diameter
350 006 1402	38M	EB type, G3/8 male for 40mm bellows diameter

SUCTION CUPS / Magic suction cup



Dimensional Data



Fitting
18F
18M
14F
14M
38M

[Unit : mm]

Model	Ø A	G	ST	H *	B *
EB1.5/40-MF45	45	Female thread : 1/8", 1/4"	1.8	35.9	44.9
EB1.5/40-MF55	55		1.8	36.3	45.3
EB4.0/40-MF45	45	Male thread : 1/8", 1/4", 3/8"	1.8	58.3	67.3
EB4.0/40-MF55	55		1.8	58.7	67.7
EB5.0/40-MF45	45		1.8	68.2	77.2
EB5.0/40-MF55	55		1.8	68.6	77.6

* Dimension "H" and "B" is measured with 14M fitting option

