

SUCTION CUPS / Single Bellows

VB5

Features and Strengths

Suitable for smaller objects
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB5 | 0.05 | 0.03 | 0.08 | 0.10 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|-------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |

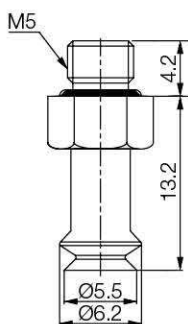
※ For additional material, see page 32~33

Material Resistance

| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent |

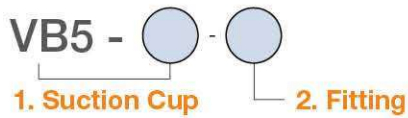
Dimension

[Unit : mm]



[With M5M fitting]

Build an Ordering No.

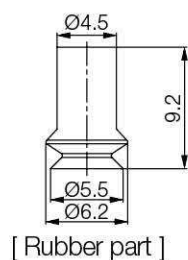


| 1. Suction cup | Description | Symbol |
|----------------|--|-------------|
| | Single-bellow suction cup, 5mm diameter, Nitrile (NBR) | VB5-N |
| | Single-bellow suction cup, 5mm diameter, Silicone | VB5-S |
| | Single-bellow suction cup, 5mm diameter, White silicone | VB5-WS |
| | Single-bellow suction cup, 5mm diameter, White silicone (FDA) | VB5-WS(FDA) |
| | Single-bellow suction cup, 5mm diameter, High temperature silicone | VB5-HS |
| | Single-bellow suction cup, 5mm diameter, Conductive silicone | VB5-CS |
| | Single-bellow suction cup, 5mm diameter, Urethane | VB5-U |
| | Single-bellow suction cup, 5mm diameter, Mark free | VB5-A |

| 2. Fitting | Description | Symbol |
|------------|------------------|--------|
| | No fitting | Blank |
| | Fitting, M5 male | M5M |

Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|-------------|--|------------|-------------------|
| VB5-N | Single-bellow suction cup, 5mm diameter, Nitrile (NBR) | 0.16 | Black |
| VB5-S | Single-bellow suction cup, 5mm diameter, Silicone | 0.15 | Red |
| VB5-WS | Single-bellow suction cup, 5mm diameter, White silicone | 0.15 | Translucent White |
| VB5-WS(FDA) | Single-bellow suction cup, 5mm diameter, White silicone(FDA) | 0.15 | Translucent White |
| VB5-HS | Single-bellow suction cup, 5mm diameter, High temperature silicone | 0.15 | Blue |
| VB5-CS | Single-bellow suction cup, 5mm diameter, Conductive silicone | 0.15 | Smoky Black |
| VB5-U | Single-bellow suction cup, 5mm diameter, Urethane | 0.17 | Dark Green |
| VB5-A | Single-bellow suction cup, 5mm diameter, Mark free | 0.16 | Black |



[Unit : mm]

Spare Parts – Fitting

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|-------------|------------|
| 350 000 3101 | M5M | M5 male | 1.84 |

SUCTION CUPS / Single Bellows

VB6X

Features and Strengths

Suitable for smaller objects
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB6X | 0.09 | 0.05 | 0.11 | 0.14 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|-------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |

※ For additional material, see page 32~33

Material Resistance

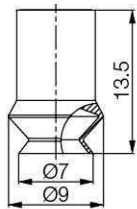
| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent |

Build an Ordering No.

VB6X -

1. Suction Cup

| 1. Suction cup | Description | Weight (g) | Symbol |
|----------------|--|------------|--------------|
| | Single-bellow suction cup, 6mm diameter, Nitrile (NBR) | 0.39 | VB6X-N |
| | Single-bellow suction cup, 6mm diameter, Silicone | 0.38 | VB6X-S |
| | Single-bellow suction cup, 6mm diameter, White silicone | 0.36 | VB6X-WS |
| | Single-bellow suction cup, 6mm diameter, White silicone (FDA) | 0.36 | VB6X-WS(FDA) |
| | Single-bellow suction cup, 6mm diameter, High temperature silicone | 0.36 | VB6X-HS |
| | Single-bellow suction cup, 6mm diameter, Conductive silicone | 0.39 | VB6X-CS |
| | Single-bellow suction cup, 6mm diameter, Urethane | 0.39 | VB6X-U |
| | Single-bellow suction cup, 6mm diameter, Mark free | 0.47 | VB6X-A |



[Rubber part]

[Unit : mm]

SUCTION CUPS / Single Bellows

VB8

Features and Strengths

Suitable for smaller objects
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB8 | 0.15 | 0.08 | 0.16 | 0.25 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|-------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |

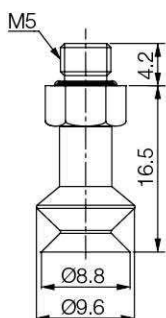
※ For additional material, see page 32~33

Material Resistance

| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent |

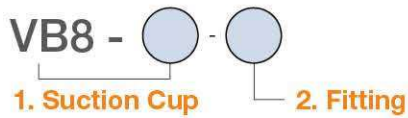
Dimension

[Unit : mm]



[With M5M fitting]

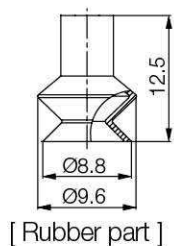
Build an Ordering No.



| 1. Suction cup | Description | Symbol |
|----------------|--|-------------|
| | Single-bellow suction cup, 8mm diameter, Nitrile (NBR) | VB8-N |
| | Single-bellow suction cup, 8mm diameter, Silicone | VB8-S |
| | Single-bellow suction cup, 8mm diameter, White silicone | VB8-WS |
| | Single-bellow suction cup, 8mm diameter, White silicone (FDA) | VB8-WS(FDA) |
| | Single-bellow suction cup, 8mm diameter, High temperature silicone | VB8-HS |
| | Single-bellow suction cup, 8mm diameter, Conductive silicone | VB8-CS |
| | Single-bellow suction cup, 8mm diameter, Urethane | VB8-U |
| | Single-bellow suction cup, 8mm diameter, Mark free | VB8-A |
| 2. Fitting | Description | Symbol |
| | Fitting, M5 male | M5M |

Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|-------------|--|------------|-------------------|
| VB8-N | Single-bellow suction cup, 8mm diameter, Nitrile (NBR) | 0.37 | Black |
| VB8-S | Single-bellow suction cup, 8mm diameter, Silicone | 0.34 | Red |
| VB8-WS | Single-bellow suction cup, 8mm diameter, White silicone | 0.33 | Translucent White |
| VB8-WS(FDA) | Single-bellow suction cup, 8mm diameter, White silicone (FDA) | 0.33 | Translucent White |
| VB8-HS | Single-bellow suction cup, 8mm diameter, High temperature silicone | 0.33 | Blue |
| VB8-CS | Single-bellow suction cup, 8mm diameter, Conductive silicone | 0.28 | Smoky Black |
| VB8-U | Single-bellow suction cup, 8mm diameter, Urethane | 0.36 | Dark Green |
| VB8-A | Single-bellow suction cup, 8mm diameter, Mark free | 0.55 | Black |



[Unit : mm]

Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|-------------|------------|
| 350 000 3101 | M5M | M5 male | 1.84 |

SUCTION CUPS / Single Bellows

VB10

Features and Strengths

Suitable for smaller objects
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB10 | 0.48 | 0.15 | 0.34 | 0.50 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|-------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |

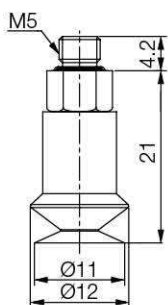
※ For additional material, see page 32~33

Material Resistance

| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent |

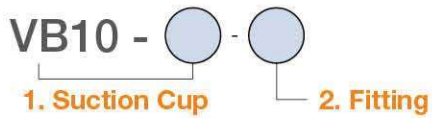
Dimension

[Unit : mm]



[With M5M fitting]

Build an Ordering No.

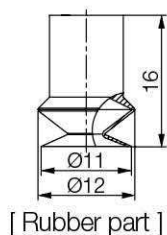


| 1. Suction cup | Description | Symbol |
|----------------|---|--------------|
| | Single-bellow suction cup, 10mm diameter, Nitrile (NBR) | VB10-N |
| | Single-bellow suction cup, 10mm diameter, Silicone | VB10-S |
| | Single-bellow suction cup, 10mm diameter, White silicone | VB10-WS |
| | Single-bellow suction cup, 10mm diameter, White silicone (FDA) | VB10-WS(FDA) |
| | Single-bellow suction cup, 10mm diameter, High temperature silicone | VB10-HS |
| | Single-bellow suction cup, 10mm diameter, Conductive silicone | VB10-CS |
| | Single-bellow suction cup, 10mm diameter, Urethane | VB10-U |
| | Single-bellow suction cup, 10mm diameter, Mark free | VB10-A |

| 2. Fitting | Description | Symbol |
|------------|------------------------------------|--------|
| | Fitting, M5 male | M5M |
| | Efficiency valve, Fitting, M5 male | M5M-EV |

Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|--------------|---|------------|-------------------|
| VB10-N | Single-bellow suction cup, 10mm diameter, Nitrile (NBR) | 0.92 | Black |
| VB10-S | Single-bellow suction cup, 10mm diameter, Silicone | 0.79 | Red |
| VB10-WS | Single-bellow suction cup, 10mm diameter, White silicone | 0.77 | Translucent White |
| VB10-WS(FDA) | Single-bellow suction cup, 10mm diameter, White silicone (FDA) | 0.77 | Translucent White |
| VB10-HS | Single-bellow suction cup, 10mm diameter, High temperature silicone | 0.81 | Blue |
| VB10-CS | Single-bellow suction cup, 10mm diameter, Conductive silicone | 0.88 | Smoky Black |
| VB10-U | Single-bellow suction cup, 10mm diameter, Urethane | 0.83 | Dark Green |
| VB10-A | Single-bellow suction cup, 10mm diameter, Mark free | 0.88 | Black |



[Unit : mm]

Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|---------------------------|------------|
| 350 000 3102 | M5M | M5 male | 2.52 |
| 350 010 3102 | M5M-EV | Efficiency valve, M5 male | 2.63 |

SUCTION CUPS / Single Bellows

VB12

Features and Strengths

Suitable for smaller objects
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB12 | 0.59 | 0.20 | 0.41 | 0.62 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|-------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |

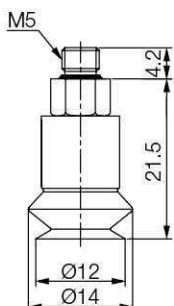
※ For additional material, see page 32~33

Material Resistance

| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent |

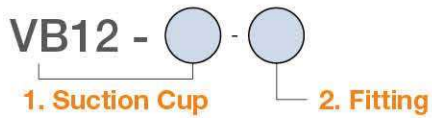
Dimension

[Unit : mm]



[With M5M fitting]

I Build an Ordering No.



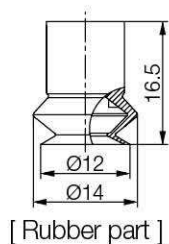
| 1. Suction cup | Description | Symbol |
|----------------|---|--------------|
| | Single-bellow suction cup, 12mm diameter, Nitrile (NBR) | VB12-N |
| | Single-bellow suction cup, 12mm diameter, Silicone | VB12-S |
| | Single-bellow suction cup, 12mm diameter, White silicone | VB12-WS |
| | Single-bellow suction cup, 12mm diameter, White silicone (FDA) | VB12-WS(FDA) |
| | Single-bellow suction cup, 12mm diameter, High temperature silicone | VB12-HS |
| | Single-bellow suction cup, 12mm diameter, Conductive silicone | VB12-CS |
| | Single-bellow suction cup, 12mm diameter, Urethane | VB12-U |
| | Single-bellow suction cup, 12mm diameter, Mark free | VB12-A |

| 2. Fitting | Description | Symbol |
|------------|------------------------------------|--------|
| | Fitting, M5 male | M5M |
| | Efficiency valve, Fitting, M5 male | M5M-EV |

I Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|--------------|---|------------|-------------------|
| VB12-N | Single-bellow suction cup, 12mm diameter, Nitrile (NBR) | 1.31 | Black |
| VB12-S | Single-bellow suction cup, 12mm diameter, Silicone | 1.13 | Red |
| VB12-WS | Single-bellow suction cup, 12mm diameter, White silicone | 1.12 | Translucent White |
| VB12-WS(FDA) | Single-bellow suction cup, 12mm diameter, White silicone (FDA) | 1.12 | Translucent White |
| VB12-HS | Single-bellow suction cup, 12mm diameter, High temperature silicone | 1.13 | Blue |
| VB12-CS | Single-bellow suction cup, 12mm diameter, Conductive silicone | 1.13 | Smoky Black |
| VB12-U | Single-bellow suction cup, 12mm diameter, Urethane | 1.17 | Dark Green |
| VB12-A | Single-bellow suction cup, 12mm diameter, Mark free | 1.47 | Black |

[Unit : mm]



I Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|---------------------------|------------|
| 350 000 3102 | M5M | M5 male | 2.52 |
| 350 010 3102 | M5M-EV | Efficiency valve, M5 male | 2.63 |

SUCTION CUPS / Single Bellows

VB15

Features and Strengths

Suitable for smaller objects
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB15 | 1.10 | 0.29 | 0.60 | 0.90 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|--------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |
| Polyurethane | 60 | Translucent Orange | 0~60 |

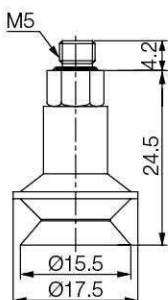
※ For additional material, see page 32~33

Material Resistance

| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent |

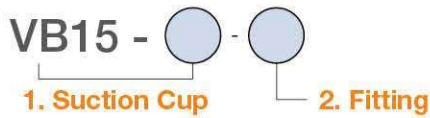
Dimension

[Unit : mm]



[With M5M fitting]

I Build an Ordering No.

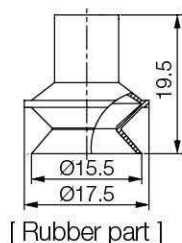


| 1. Suction cup | Description | Symbol |
|----------------|---|--------------|
| | Single-bellow suction cup, 15mm diameter, Nitrile (NBR) | VB15-N |
| | Single-bellow suction cup, 15mm diameter, Silicone | VB15-S |
| | Single-bellow suction cup, 15mm diameter, White silicone | VB15-WS |
| | Single-bellow suction cup, 15mm diameter, White silicone (FDA) | VB15-WS(FDA) |
| | Single-bellow suction cup, 15mm diameter, High temperature silicone | VB15-HS |
| | Single-bellow suction cup, 15mm diameter, Conductive silicone | VB15-CS |
| | Single-bellow suction cup, 15mm diameter, Urethane | VB15-U |
| | Single-bellow suction cup, 15mm diameter, Mark free | VB15-A |
| | Single-bellow suction cup, 15mm diameter, Polyurethane | VB15-PU |

| 2. Fitting | Description | Symbol |
|------------|------------------------------------|--------|
| | Fitting, M5 male | M5M |
| | Efficiency valve, Fitting, M5 male | M5M-EV |

I Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|--------------|---|------------|--------------------|
| VB15-N | Single-bellow suction cup, 15mm diameter, Nitrile (NBR) | 1.42 | Black |
| VB15-S | Single-bellow suction cup, 15mm diameter, Silicone | 1.23 | Red |
| VB15-WS | Single-bellow suction cup, 15mm diameter, White silicone | 1.27 | Translucent White |
| VB15-WS(FDA) | Single-bellow suction cup, 15mm diameter, White silicone (FDA) | 1.27 | Translucent White |
| VB15-HS | Single-bellow suction cup, 15mm diameter, High temperature silicone | 1.29 | Blue |
| VB15-CS | Single-bellow suction cup, 15mm diameter, Conductive silicone | 1.39 | Smoky Black |
| VB15-U | Single-bellow suction cup, 15mm diameter, Urethane | 1.36 | Dark Green |
| VB15-A | Single-bellow suction cup, 15mm diameter, Mark free | 1.65 | Black |
| VB15-PU | Single-bellow suction cup, 15mm diameter, Polyurethane | 1.24 | Translucent Orange |



[Unit : mm]

I Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|---------------------------|------------|
| 350 000 3102 | M5M | M5 male | 2.52 |
| 350 010 3102 | M5M-EV | Efficiency valve, M5 male | 2.63 |

SUCTION CUPS / Single Bellows

VB17

Features and Strengths

Suitable for smaller objects
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB17 | 1.50 | 0.40 | 0.80 | 1.00 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|-------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |

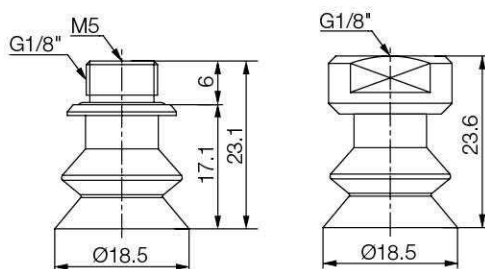
※ For additional material, see page 32~33

Material Resistance

| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent |

Dimension

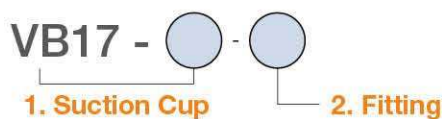
[Unit : mm]



[With M518MF fitting]

[With 18F fitting]

Build an Ordering No.



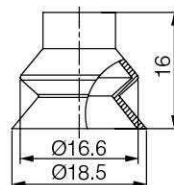
| 1. Suction cup | Description | Symbol |
|----------------|---|--------------|
| | Single-bellow suction cup, 17mm diameter, Nitrile (NBR) | VB17-N |
| | Single-bellow suction cup, 17mm diameter, Silicone | VB17-S |
| | Single-bellow suction cup, 17mm diameter, White silicone | VB17-WS |
| | Single-bellow suction cup, 17mm diameter, White silicone (FDA) | VB17-WS(FDA) |
| | Single-bellow suction cup, 17mm diameter, High temperature silicone | VB17-HS |
| | Single-bellow suction cup, 17mm diameter, Conductive silicone | VB17-CS |
| | Single-bellow suction cup, 17mm diameter, Urethane | VB17-U |
| | Single-bellow suction cup, 17mm diameter, Mark free | VB17-A |
| 2. Fitting | Description | Symbol |
| | Fitting, G1/8 male - M5 female | M518MF |
| | Fitting, G1/8 male - M5 female, Mesh filter | M-M518MF |
| | Efficiency valve, Fitting, G1/8 male - M5 female | M518MF-EV |
| | Fitting, G1/8 male - M5 female, Old profile | M518MFO |
| | Fitting, G1/8 male - M5 female, Old profile, Mesh filter | M-M518MFO |
| | Efficiency valve, Fitting, G1/8Male - M5 female, Old profile | M518MFO-EV |
| | Fitting, G1/8 male - M5 female, For silicone material | M518MFB* |
| | Fitting, G1/8 female | 18F |
| | Fitting, G1/8 female, Mesh filter | M-18F |
| | Efficiency valve, Fitting, G1/8 female | 18F-EV |

* M518MFB is available only for Silicone material.

Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|--------------|---|------------|-------------------|
| VB17-N | Single-bellow suction cup, 17mm diameter, Nitrile (NBR) | 1.01 | Black |
| VB17-S | Single-bellow suction cup, 17mm diameter, Silicone | 0.91 | Red |
| VB17-WS | Single-bellow suction cup, 17mm diameter, White silicone | 0.94 | Translucent White |
| VB17-WS(FDA) | Single-bellow suction cup, 17mm diameter, White silicone (FDA) | 0.94 | Translucent White |
| VB17-HS | Single-bellow suction cup, 17mm diameter, High temperature silicone | 0.97 | Blue |
| VB17-CS | Single-bellow suction cup, 17mm diameter, Conductive silicone | 0.99 | Smoky Black |
| VB17-U | Single-bellow suction cup, 17mm diameter, Urethane | 0.96 | Dark Green |
| VB17-A | Single-bellow suction cup, 17mm diameter, Mark free | 1.31 | Black |

[Unit : mm]



[Rubber part]

Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|--|------------|
| 350 000 3209 | M518MF | G1/8 male-M5 female | 1.82 |
| 350 000 5209 | M518MF-F | G1/8 male-M5 female, Mesh filter | 1.92 |
| 350 010 4209 | M518MF-EV | Efficiency valve, G1/8 male-M5 female | 1.94 |
| 350 000 1209 | M518MFO | G1/8 male-M5 female, Old profile | 2.88 |
| 350 000 1109 | M518MFO-F | G1/8 male-M5 female, Old profile, Mesh filter | 2.94 |
| 350 010 1209 | M518MFO-EV | Efficiency valve, G1/8 male-M5 female, Old profile | 2.87 |
| 350 000 3239 | M518MFB | G1/8 male-M5 female, For silicone material | 3.56 |
| 350 000 3310 | 18F | G1/8 female | 3.20 |
| 350 000 4310 | 18F-F | G1/8 female, Mesh filter | 3.26 |
| 350 010 3310 | 18F-EV | Efficiency valve, G1/8 female | 3.31 |

SUCTION CUPS / Single Bellows

VB20

Features and Strengths

Suitable for curved surfaces products
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB20 | 2.70 | 0.60 | 1.00 | 1.42 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|--------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |
| Polyurethane | 60 | Translucent Orange | 0~60 |

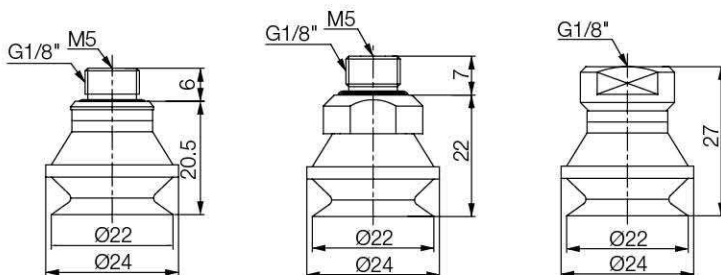
※ For additional material, see page 32~33

Material Resistance

| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free | Polyurethane |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|--------------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good | Excellent |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good | Fair |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent | Fair |

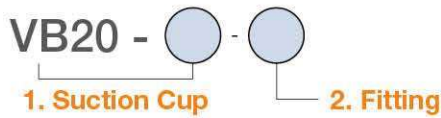
Dimension

[Unit : mm]



[With M518MF fitting] [With M518MFB fitting] [With 18F fitting]

Build an Ordering No.



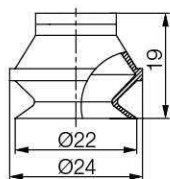
| 1. Suction cup | Description | Symbol |
|----------------|---|--------------|
| | Single-bellow suction cup, 20mm diameter, Nitrile (NBR) | VB20-N |
| | Single-bellow suction cup, 20mm diameter, Silicone | VB20-S |
| | Single-bellow suction cup, 20mm diameter, White silicone | VB20-WS |
| | Single-bellow suction cup, 20mm diameter, White silicone (FDA) | VB20-WS(FDA) |
| | Single-bellow suction cup, 20mm diameter, High temperature silicone | VB20-HS |
| | Single-bellow suction cup, 20mm diameter, Conductive silicone | VB20-CS |
| | Single-bellow suction cup, 20mm diameter, Urethane | VB20-U |
| | Single-bellow suction cup, 20mm diameter, Mark free | VB20-A |
| | Single-bellow suction cup, 20mm diameter, Polyurethane | VB20-PU |

| 2. Fitting | Description | Symbol |
|------------|--|------------|
| | Fitting, G1/8 male - M5 female | M518MF |
| | Fitting, G1/8 male - M5 female, Mesh filter | M-M518MF |
| | Efficiency valve, Fitting, G1/8 male - M5 female | M518MF-EV |
| | Fitting, G1/8 male - M5 female, Old profile | M518MFO |
| | Fitting, G1/8 male - M5 female, Old profile, Mesh filter | M-M518MFO |
| | Efficiency valve, Fitting, G1/8Male - M5 female, Old profile | M518MFO-EV |
| | Fitting, G1/8 male - M5 female, For silicone material | M518MFB* |
| | Fitting, G1/8 female | 18F |
| | Fitting, G1/8 female, Mesh filter | M-18F |
| | Efficiency valve, Fitting, G1/8 female | 18F-EV |

* M518MFB is available only for Silicone material.

Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|--------------|---|------------|--------------------|
| VB20-N | Single-bellow suction cup, 20mm diameter, Nitrile (NBR) | 3.11 | Black |
| VB20-S | Single-bellow suction cup, 20mm diameter, Silicone | 2.68 | Red |
| VB20-WS | Single-bellow suction cup, 20mm diameter, White silicone | 2.58 | Translucent White |
| VB20-WS(FDA) | Single-bellow suction cup, 20mm diameter, White silicone (FDA) | 2.58 | Translucent White |
| VB20-HS | Single-bellow suction cup, 20mm diameter, High temperature silicone | 3.16 | Blue |
| VB20-CS | Single-bellow suction cup, 20mm diameter, Conductive silicone | 3.01 | Smoky Black |
| VB20-U | Single-bellow suction cup, 20mm diameter, Urethane | 2.91 | Dark Green |
| VB20-A | Single-bellow suction cup, 20mm diameter, Mark free | 3.43 | Black |
| VB20-PU | Single-bellow suction cup, 20mm diameter, Polyurethane | 2.41 | Translucent Orange |



[Rubber part]

[Unit : mm]

Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|--|------------|
| 350 000 3209 | M518MF | G1/8 male-M5 female | 1.82 |
| 350 000 5209 | M518MF-F | G1/8 male-M5 female, Mesh filter | 1.92 |
| 350 010 4209 | M518MF-EV | Efficiency valve, G1/8 male-M5 female | 1.94 |
| 350 000 1209 | M518MFO | G1/8 male-M5 female, Old profile | 2.88 |
| 350 000 1109 | M518MFO-F | G1/8 male-M5 female, Old profile, Mesh filter | 2.94 |
| 350 010 1209 | M518MFO-EV | Efficiency valve, G1/8 male-M5 female, Old profile | 2.87 |
| 350 000 3239 | M518MFB | G1/8 male-M5 female, For silicone material | 3.56 |
| 350 000 3310 | 18F | G1/8 female | 3.20 |
| 350 000 4310 | 18F-F | G1/8 female, Mesh filter | 3.26 |
| 350 010 3310 | 18F-EV | Efficiency valve, G1/8 female | 3.31 |

SUCTION CUPS / Single Bellows

VB30

Features and Strengths

Suitable for curved surfaces products
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB30 | 10.00 | 1.22 | 2.24 | 2.42 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|--------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |
| Polyurethane | 60 | Translucent Orange | 0~60 |

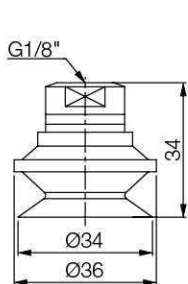
※ For additional material, see page 32~33

Material Resistance

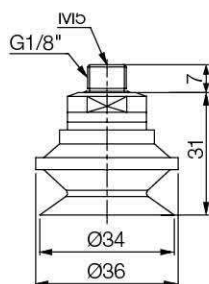
| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free | Polyurethane |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|--------------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good | Excellent |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good | Fair |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent | Fair |

Dimension

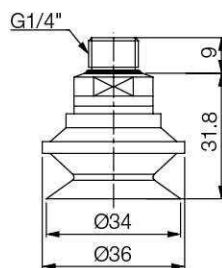
[Unit : mm]



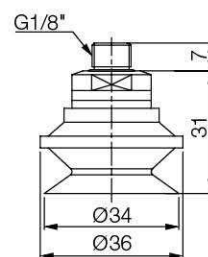
[With 18F fitting]



[With M518MF fitting]

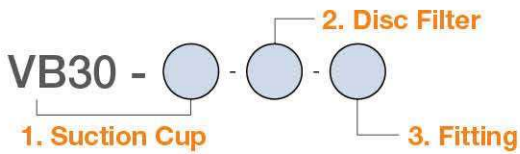


[With 14M fitting]



[With 18M fitting]

I Build an Ordering No.



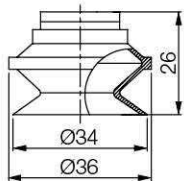
| 1. Suction cup | Description | Symbol |
|----------------|---|--------------|
| | Single-bellow suction cup, 30mm diameter, Nitrile (NBR) | VB30-N |
| | Single-bellow suction cup, 30mm diameter, Silicone | VB30-S |
| | Single-bellow suction cup, 30mm diameter, White silicone | VB30-WS |
| | Single-bellow suction cup, 30mm diameter, White silicone (FDA) | VB30-WS(FDA) |
| | Single-bellow suction cup, 30mm diameter, High temperature silicone | VB30-HS |
| | Single-bellow suction cup, 30mm diameter, Conductive silicone | VB30-CS |
| | Single-bellow suction cup, 30mm diameter, Urethane | VB30-U |
| | Single-bellow suction cup, 30mm diameter, Mark free | VB30-A |
| | Single-bellow suction cup, 30mm diameter, Polyurethane | VB30-PU |
| 2. Disc Filter | Description | Symbol |
| | No disc filter | Blank |
| | Disc filter, Polyethylene | F |
| 3. Fitting | Description | Symbol |
| | Fitting, G1/8 female | 18F |
| | Fitting, G1/8 female, Mesh filter | M-18F |
| | Efficiency valve, Fitting, G1/8 female | 18F-EV |
| | Fitting, G1/8 female, For silicone material | 18FB* |
| | Fitting, G1/8 female, Old profile | 18FO |
| | Fitting, G1/8 female, Old profile, Mesh filter | M-18FO |
| | Fitting, G1/8 male | 18M |
| | Fitting, G1/8 male, Mesh filter | M-18M |
| | Efficiency valve, Fitting, G1/8 male | 18M-EV |
| | Fitting, G1/4 male | 14M |
| | Fitting, G1/4 male, Mesh filter | M-14M |
| | Efficiency valve, Fitting, G1/4 male | 14M-EV |

* 18FB is available only for Silicone material.

I Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|--------------|---|------------|--------------------|
| VB30-N | Single-bellow suction cup, 30mm diameter, Nitrile (NBR) | 7.2 | Black |
| VB30-S | Single-bellow suction cup, 30mm diameter, Silicone | 6.59 | Red |
| VB30-WS | Single-bellow suction cup, 30mm diameter, White silicone | 6.59 | Translucent White |
| VB30-WS(FDA) | Single-bellow suction cup, 30mm diameter, White silicone (FDA) | 6.59 | Translucent White |
| VB30-HS | Single-bellow suction cup, 30mm diameter, High temperature silicone | 6.59 | Blue |
| VB30-CS | Single-bellow suction cup, 30mm diameter, Conductive silicone | 6.65 | Smoky Black |
| VB30-U | Single-bellow suction cup, 30mm diameter, Urethane | 7.2 | Dark Green |
| VB30-A | Single-bellow suction cup, 30mm diameter, Mark free | 9.17 | Black |
| VB30-PU | Single-bellow suction cup, 30mm diameter, Polyurethane | 7.49 | Translucent Orange |

[Unit : mm]



[Rubber part]

I Spare Parts – Disc Filter

| Part No. | Description | Weight (g) |
|----------|---------------------------|------------|
| VTFE-B30 | Disc filter, Polyethylene | 0.50 |

I Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|---------------------------------------|------------|
| 350 000 3311 | 18F | G1/8 female | 5.68 |
| 350 000 4311 | 18F-F | G1/8 female, Mesh filter | 5.73 |
| 350 010 3311 | 18F-EV | Efficiency valve, G1/8 female | 5.63 |
| 350 000 3331 | 18FB | G1/8 female, For silicone material | 9.78 |
| 350 000 2311 | 18FO | G1/8 female, Old profile | 8.24 |
| 350 000 4811 | 18FO-F | G1/8 female, Old profile, Mesh filter | 8.41 |
| 350 000 2304 | 18M | G1/8 male | 4.93 |
| 350 000 4304 | 18M-F | G1/8 male, Mesh filter | 5.04 |
| 350 010 2304 | 18M-EV | Efficiency valve, G1/8 male | 5.08 |
| 350 000 3404 | 14M | G1/4 male | 5.88 |
| 350 000 3804 | 14M-F | G1/4 male, Mesh filter | 5.92 |
| 350 010 3404 | 14M-EV | Efficiency valve, G1/4 male | 6.03 |

SUCTION CUPS / Single Bellows

VB40

Features and Strengths

Suitable for curved surfaces products
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB40 | 15.00 | 2.24 | 3.97 | 5.00 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|--------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |
| Polyurethane | 60 | Translucent Orange | 0~60 |

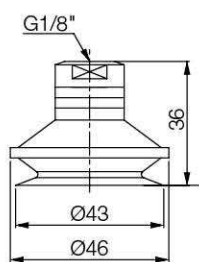
※ For additional material, see page 32~33

Material Resistance

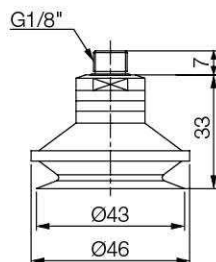
| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free | Polyurethane |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|--------------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good | Excellent |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good | Fair |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent | Fair |

Dimension

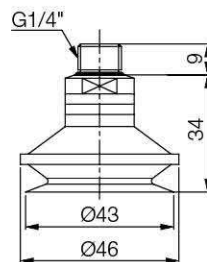
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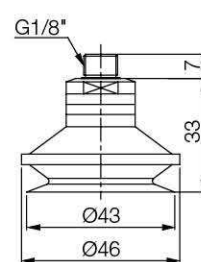
[With 18F fitting]



[With 18M fitting]

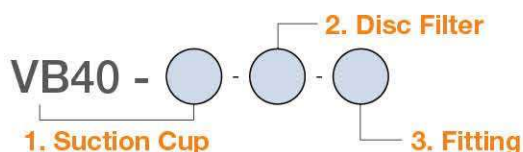


[With 14M fitting]



[With 18M fitting]

I Build an Ordering No.



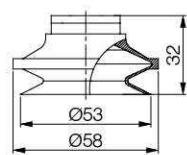
| 1. Suction cup | Description | Symbol |
|----------------|---|--------------|
| | Single-bellow suction cup, 40mm diameter, Nitrile (NBR) | VB40-N |
| | Single-bellow suction cup, 40mm diameter, Silicone | VB40-S |
| | Single-bellow suction cup, 40mm diameter, White silicone | VB40-WS |
| | Single-bellow suction cup, 40mm diameter, White silicone (FDA) | VB40-WS(FDA) |
| | Single-bellow suction cup, 40mm diameter, High temperature silicone | VB40-HS |
| | Single-bellow suction cup, 40mm diameter, Conductive silicone | VB40-CS |
| | Single-bellow suction cup, 40mm diameter, Urethane | VB40-U |
| | Single-bellow suction cup, 40mm diameter, Mark free | VB40-A |
| | Single-bellow suction cup, 40mm diameter, Polyurethane | VB40-PU |
| 2. Disc Filter | Description | Symbol |
| | No disc filter | Blank |
| | Disc filter, Polyethylene | F |
| 3. Fitting | Description | Symbol |
| | Fitting, G1/8 female | 18F |
| | Fitting, G1/8 female, Mesh filter | M-18F |
| | Efficiency valve, Fitting, G1/8 female | 18F-EV |
| | Fitting, G1/8 female, For silicone material | 18FB* |
| | Fitting, G1/8 female, Old profile | 18FO |
| | Fitting, G1/8 female, Old profile, Mesh filter | M-18FO |
| | Fitting, G1/8 male | 18M |
| | Fitting, G1/8 male, Mesh filter | M-18M |
| | Efficiency valve, Fitting, G1/8 male | 18M-EV |
| | Fitting, G1/4 male | 14M |
| | Fitting, G1/4 male, Mesh filter | M-14M |
| | Efficiency valve, Fitting, G1/4 male | 14M-EV |

* 18FB is available only for Silicone material.

I Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|--------------|---|------------|--------------------|
| VB40-N | Single-bellow suction cup, 40mm diameter, Nitrile (NBR) | 12.92 | Black |
| VB40-S | Single-bellow suction cup, 40mm diameter, Silicone | 12.13 | Red |
| VB40-WS | Single-bellow suction cup, 40mm diameter, White silicone | 12.13 | Translucent White |
| VB40-WS(FDA) | Single-bellow suction cup, 40mm diameter, White silicone (FDA) | 12.13 | Translucent White |
| VB40-HS | Single-bellow suction cup, 40mm diameter, High temperature silicone | 12.13 | Blue |
| VB40-CS | Single-bellow suction cup, 40mm diameter, Conductive silicone | 12.18 | Smoky Black |
| VB40-U | Single-bellow suction cup, 40mm diameter, Urethane | 12.92 | Dark Green |
| VB40-A | Single-bellow suction cup, 40mm diameter, Mark free | 16.38 | Black |
| VB40-PU | Single-bellow suction cup, 40mm diameter, Polyurethane | 11.12 | Translucent Orange |

[Unit : mm]



[Rubber part]

I Spare Parts – Disc Filter

| Part No. | Description | Weight (g) |
|----------|---------------------------|------------|
| VTFE-B40 | Disc filter, Polyethylene | 0.72 |

I Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|---------------------------------------|------------|
| 350 000 3311 | 18F | G1/8 female | 5.68 |
| 350 000 4311 | 18F-F | G1/8 female, Mesh filter | 5.73 |
| 350 010 3311 | 18F-EV | Efficiency valve, G1/8 female | 5.63 |
| 350 000 3331 | 18FB | G1/8 female, For silicone material | 9.78 |
| 350 000 2311 | 18FO | G1/8 female, Old profile | 8.24 |
| 350 000 4811 | 18FO-F | G1/8 female, Old profile, Mesh filter | 8.41 |
| 350 000 2304 | 18M | G1/8 male | 4.93 |
| 350 000 4304 | 18M-F | G1/8 male, Mesh filter | 5.04 |
| 350 010 2304 | 18M-EV | Efficiency valve, G1/8 male | 5.08 |
| 350 000 3404 | 14M | G1/4 male | 5.88 |
| 350 000 3804 | 14M-F | G1/4 male, Mesh filter | 5.92 |
| 350 010 3404 | 14M-EV | Efficiency valve, G1/4 male | 6.03 |

SUCTION CUPS / Single Bellows

VB50

Features and Strengths

Suitable for curved surfaces products
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB50 | 32.00 | 3.36 | 6.63 | 8.36 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|--------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |
| Polyurethane | 60 | Translucent Orange | 0~60 |

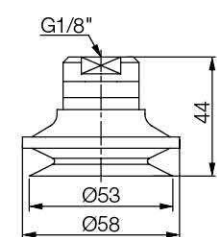
※ For additional material, see page 32~33

Material Resistance

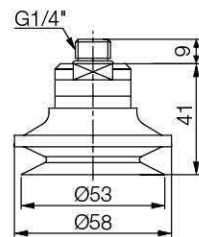
| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free | Polyurethane |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|--------------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good | Excellent |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good | Fair |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent | Fair |

Dimension

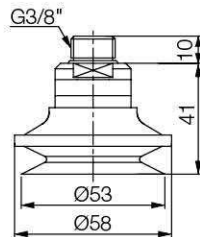
[Unit : mm]



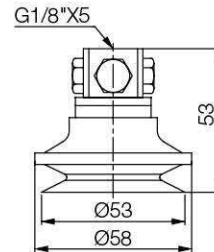
[With 18F fitting]



[With 14M fitting]

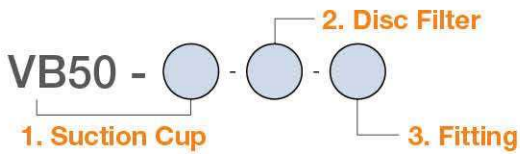


[With 38M fitting]



[With 18x5F fitting]

Build an Ordering No.

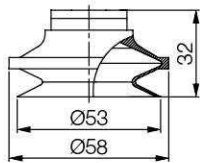


| 1. Suction cup | Description | Symbol |
|----------------|---|--------------|
| | Single-bellow suction cup, 50mm diameter, Nitrile (NBR) | VB50-N |
| | Single-bellow suction cup, 50mm diameter, Silicone | VB50-S |
| | Single-bellow suction cup, 50mm diameter, White silicone | VB50-WS |
| | Single-bellow suction cup, 50mm diameter, White silicone (FDA) | VB50-WS(FDA) |
| | Single-bellow suction cup, 50mm diameter, High temperature silicone | VB50-HS |
| | Single-bellow suction cup, 50mm diameter, Conductive silicone | VB50-CS |
| | Single-bellow suction cup, 50mm diameter, Urethane | VB50-U |
| | Single-bellow suction cup, 50mm diameter, Mark free | VB50-A |
| | Single-bellow suction cup, 50mm diameter, Polyurethane | VB50-PU |
| 2. Disc Filter | Description | Symbol |
| | No disc filter | Blank |
| | Disc filter, Polyethylene | F |
| 3. Fitting | Description | Symbol |
| | Fitting, G1/8 female | 18F |
| | Fitting, G1/8 female, Mesh filter | M-18F |
| | Efficiency valve, Fitting, G1/8 female | 18F-EV |
| | Fitting, G1/8 female, Old profile | 18FO |
| | Fitting, G1/8 female, Old profile, Mesh filter | M-18FO |
| | Efficiency valve, Fitting, G1/8 female, Old profile | 18FO-EV |
| | Fitting, G1/4 male | 14M |
| | Fitting, G1/4 male, Mesh filter | M-14M |
| | Efficiency valve, Fitting, G1/4 male | 14M-EV |
| | Fitting, G3/8 male | 38M |
| | Fitting, G3/8 male, Mesh filter | M-38M |
| | Efficiency valve, Fitting, G3/8 male | 38M-EV |

Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|--------------|---|------------|--------------------|
| VB50-N | Single-bellow suction cup, 50mm diameter, Nitrile (NBR) | 21.76 | Black |
| VB50-S | Single-bellow suction cup, 50mm diameter, Silicone | 20.31 | Red |
| VB50-WS | Single-bellow suction cup, 50mm diameter, White silicone | 20.31 | Translucent White |
| VB50-WS(FDA) | Single-bellow suction cup, 50mm diameter, White silicone (FDA) | 20.31 | Translucent White |
| VB50-HS | Single-bellow suction cup, 50mm diameter, High temperature silicone | 20.31 | Blue |
| VB50-CS | Single-bellow suction cup, 50mm diameter, Conductive silicone | 20.38 | Smoky Black |
| VB50-U | Single-bellow suction cup, 50mm diameter, Urethane | 21.76 | Dark Green |
| VB50-A | Single-bellow suction cup, 50mm diameter, Mark free | 26.08 | Black |
| VB50-PU | Single-bellow suction cup, 50mm diameter, Polyurethane | 22.36 | Translucent Orange |

[Unit : mm]



[Rubber part]

Spare Parts – Disc Filter

| Part No. | Description | Weight (g) |
|----------|---------------------------|------------|
| VTFE-B50 | Disc filter, Polyethylene | 1.38 |

Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|--|------------|
| 350 000 3312 | 18F | G1/8 female | 14.47 |
| 350 000 4312 | 18F-F | G1/8 female, Mesh filter | 14.58 |
| 350 010 3312 | 18F-EV | Efficiency valve, G1/8 female | 15.81 |
| 350 000 1312 | 18FO | G1/8 female, Old profile | 10.12 |
| 350 000 4919 | 18FO-F | G1/8 female, Old profile, Mesh filter | 10.2 |
| 350 010 1312 | 18FO-EV | Efficiency valve, G1/8 female, Old profile | 10.22 |
| 350 000 3405 | 14M | G1/4 male | 14.18 |
| 350 000 3805 | 14M-F | G1/4 male, Mesh filter | 14.42 |
| 350 010 3405 | 14M-EV | Efficiency valve, G1/4 male | 14.38 |
| 350 000 3505 | 38M | G3/8 male | 18.14 |
| 350 000 3905 | 38M-F | G3/8 male, Mesh filter | 17.75 |
| 350 010 3505 | 38M-EV | Efficiency valve, G3/8 male | 17.53 |

SUCTION CUPS / Single Bellows

VB75



Features and Strengths

Suitable for curved surfaces products
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets

Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB75 | 110.00 | 7.65 | 17.04 | 23.06 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|--------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |
| Polyurethane | 60 | Translucent Orange | 0~60 |

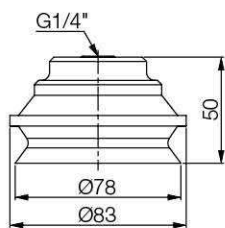
※ For additional material, see page 32~33

Material Resistance

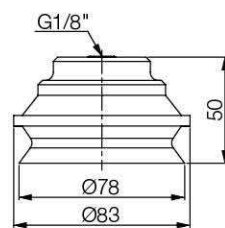
| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free | Polyurethane |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|--------------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good | Excellent |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good | Fair |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent | Fair |

Dimension

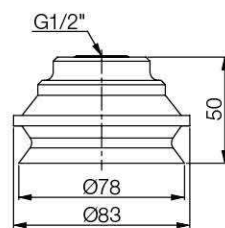
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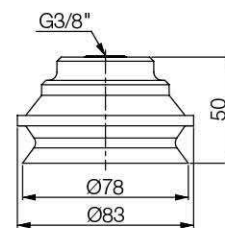
[With 14F fitting]



[With 18F fitting]

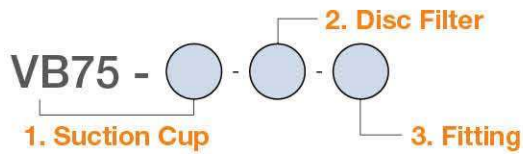


[With 12F fitting]



[With 38F fitting]

I Build an Ordering No.



| 1. Suction cup | Description | Symbol |
|----------------|---|--------------|
| | Single-bellow suction cup, 75mm diameter, Nitrile (NBR) | VB75-N |
| | Single-bellow suction cup, 75mm diameter, Silicone | VB75-S |
| | Single-bellow suction cup, 75mm diameter, White silicone | VB75-WS |
| | Single-bellow suction cup, 75mm diameter, White silicone (FDA) | VB75-WS(FDA) |
| | Single-bellow suction cup, 75mm diameter, High temperature silicone | VB75-HS |
| | Single-bellow suction cup, 75mm diameter, Conductive silicone | VB75-CS |
| | Single-bellow suction cup, 75mm diameter, Urethane | VB75-U |
| | Single-bellow suction cup, 75mm diameter, Mark free | VB75-A |
| | Single-bellow suction cup, 75mm diameter, Polyurethane | VB75-PU |

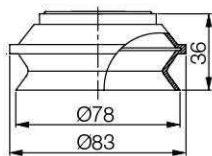
| 2. Disc Filter | Description | Symbol |
|----------------|---------------------------|--------|
| | No disc filter | Blank |
| | Disc filter, Polyethylene | F |

| 3. Fitting | Description | Symbol |
|------------|-----------------------------------|--------|
| | Fitting, G1/8 female | 18F |
| | Fitting, G1/8 female, Mesh filter | M-18F |
| | Fitting, G1/4 female | 14F |
| | Fitting, G1/4 female, Mesh filter | M-14F |
| | Fitting, G3/8 female | 38F |
| | Fitting, G3/8 female, Mesh filter | M-38F |
| | Fitting, G1/2 female | 12F |
| | Fitting, G1/2 female, Mesh filter | M-12F |

I Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|--------------|---|------------|--------------------|
| VB75-N | Single-bellow suction cup, 75mm diameter, Nitrile (NBR) | 66.17 | Black |
| VB75-S | Single-bellow suction cup, 75mm diameter, Silicone | 63.28 | Red |
| VB75-WS | Single-bellow suction cup, 75mm diameter, White silicone | 63.28 | Translucent White |
| VB75-WS(FDA) | Single-bellow suction cup, 75mm diameter, White silicone (FDA) | 63.28 | Translucent White |
| VB75-HS | Single-bellow suction cup, 75mm diameter, High temperature silicone | 63.28 | Blue |
| VB75-CS | Single-bellow suction cup, 75mm diameter, Conductive silicone | 63.37 | Smoky Black |
| VB75-U | Single-bellow suction cup, 75mm diameter, Urethane | 66.17 | Dark Green |
| VB75-A | Single-bellow suction cup, 75mm diameter, Mark free | 75.44 | Black |
| VB75-PU | Single-bellow suction cup, 75mm diameter, Polyurethane | 68.89 | Translucent Orange |

[Unit : mm]



[Rubber part]

I Spare Parts – Disc Filter

| Part No. | Description | Weight (g) |
|----------|---------------------------|------------|
| VTFE-B75 | Disc filter, Polyethylene | 4.25 |

I Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|--------------------------|------------|
| 350 000 3323 | 18F | G1/8 female | 59.36 |
| 350 000 4323 | 18F-F | G1/8 female, Mesh filter | 59.76 |
| 350 000 3423 | 14F | G1/4 female | 56.92 |
| 350 000 3823 | 14F-F | G1/4 female, Mesh filter | 57.32 |
| 350 000 3523 | 38F | G3/8 female | 55.08 |
| 350 000 3923 | 38F-F | G3/8 female, Mesh filter | 55.48 |
| 350 000 3623 | 12F | G1/2 female | 51.50 |
| 350 000 4023 | 12F-F | G1/2 female, Mesh filter | 51.90 |

SUCTION CUPS / Single Bellows

VB75B



Features and Strengths

Suitable for curved surfaces products
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB75B | 110.00 | 7.65 | 17.04 | 23.06 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|-------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |

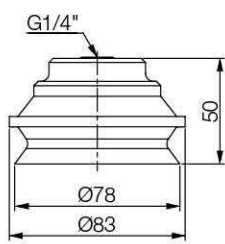
※ For additional material, see page 32~33

Material Resistance

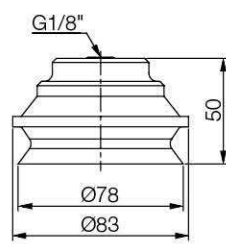
| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free | Polyurethane |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|--------------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good | Excellent |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good | Fair |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent | Fair |

Dimension

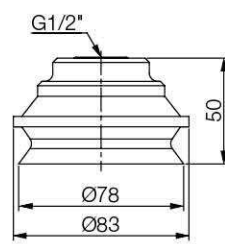
[Unit : mm]



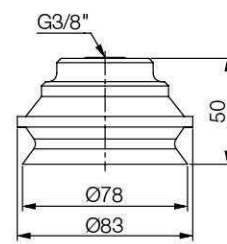
[With 14F fitting]



[With 18F fitting]

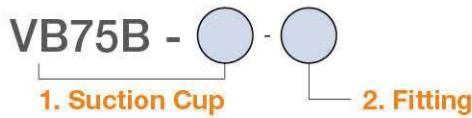


[With 12F fitting]



[With 38F fitting]

I Build an Ordering No.



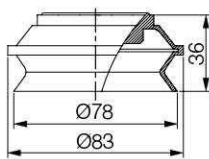
| 1. Suction cup | Description | Symbol |
|----------------|---|---------------|
| | Single-bellow suction cup, 75mm diameter, Nitrile (NBR) | VB75B-N |
| | Single-bellow suction cup, 75mm diameter, Silicone | VB75B-S |
| | Single-bellow suction cup, 75mm diameter, White silicone | VB75B-WS |
| | Single-bellow suction cup, 75mm diameter, White silicone (FDA) | VB75B-WS(FDA) |
| | Single-bellow suction cup, 75mm diameter, High temperature silicone | VB75B-HS |
| | Single-bellow suction cup, 75mm diameter, Conductive silicone | VB75B-CS |
| | Single-bellow suction cup, 75mm diameter, Urethane | VB75B-U |
| | Single-bellow suction cup, 75mm diameter, Mark free | VB75B-A |

| 2. Fitting | Description | Symbol |
|------------|-----------------------------------|--------|
| | Fitting, G1/8 female | 18F |
| | Fitting, G1/8 female, Mesh filter | M-18F |
| | Fitting, G1/4 female | 14F |
| | Fitting, G1/4 female, Mesh filter | M-14F |
| | Fitting, G3/8 female | 38F |
| | Fitting, G3/8 female, Mesh filter | M-38F |
| | Fitting, G1/2 female | 12F |
| | Fitting, G1/2 female, Mesh filter | M-12F |

I Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|---------------|---|------------|-------------------|
| VB75B-N | Single-bellow suction cup, 75mm diameter, Nitrile (NBR) | 73.03 | Black |
| VB75B-S | Single-bellow suction cup, 75mm diameter, Silicone | 66.56 | Red |
| VB75B-WS | Single-bellow suction cup, 75mm diameter, White silicone | 66.46 | Translucent White |
| VB75B-WS(FDA) | Single-bellow suction cup, 75mm diameter, White silicone (FDA) | 66.46 | Translucent White |
| VB75B-HS | Single-bellow suction cup, 75mm diameter, High temperature silicone | 66.49 | Blue |
| VB75B-CS | Single-bellow suction cup, 75mm diameter, Conductive silicone | 66.58 | Smoky Black |
| VB75B-U | Single-bellow suction cup, 75mm diameter, Urethane | 77.26 | Dark Green |
| VB75B-A | Single-bellow suction cup, 75mm diameter, Mark free | 80.81 | Black |

[Unit : mm]



[Rubber part]

I Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|--------------------------|------------|
| 350 000 3323 | 18F | G1/8 female | 59.36 |
| 350 000 4323 | 18F-F | G1/8 female, Mesh filter | 59.76 |
| 350 000 3423 | 14F | G1/4 female | 56.92 |
| 350 000 3823 | 14F-F | G1/4 female, Mesh filter | 57.32 |
| 350 000 3523 | 38F | G3/8 female | 55.08 |
| 350 000 3923 | 38F-F | G3/8 female, Mesh filter | 55.48 |
| 350 000 3623 | 12F | G1/2 female | 51.50 |
| 350 000 4023 | 12F-F | G1/2 female, Mesh filter | 51.90 |

SUCTION CUPS / Single Bellows

VB110

Features and Strengths

Suitable for smaller objects
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB110 | 310.00 | 13.97 | 35.00 | 47.04 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|-------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |

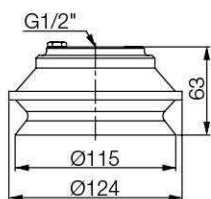
※ For additional material, see page 32~33

Material Resistance

| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent |

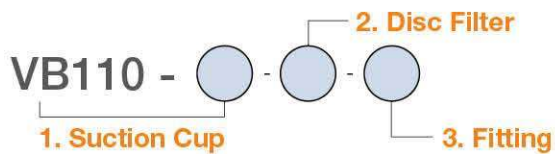
Dimension

[Unit : mm]



[With 12F fitting]

I Build an Ordering No.



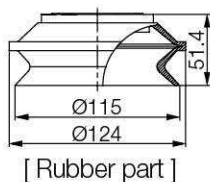
| 1. Suction cup | Description | Symbol |
|----------------|--|---------------|
| | Single-bellow suction cup, 110mm diameter, Nitrile (NBR) | VB110-N |
| | Single-bellow suction cup, 110mm diameter, Silicone | VB110-S |
| | Single-bellow suction cup, 110mm diameter, White silicone | VB110-WS |
| | Single-bellow suction cup, 110mm diameter, White silicone (FDA) | VB110-WS(FDA) |
| | Single-bellow suction cup, 110mm diameter, High temperature silicone | VB110-HS |
| | Single-bellow suction cup, 110mm diameter, Conductive silicone | VB110-CS |
| | Single-bellow suction cup, 110mm diameter, Urethane | VB110-U |
| | Single-bellow suction cup, 110mm diameter, Mark free | VB110-A |

| 2. Disc Filter | Description | Symbol |
|----------------|---------------------------|--------|
| | No disc filter | Blank |
| | Disc filter, Polyethylene | F |

| 3. Fitting | Description | Symbol |
|------------|-----------------------------------|--------|
| | Fitting, G1/2 female | 12F |
| | Fitting, G1/2 female, Mesh filter | M-12F |

I Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|---------------|--|------------|-------------------|
| VB110-N | Single-bellow suction cup, 110mm diameter, Nitrile (NBR) | 186.15 | Black |
| VB110-S | Single-bellow suction cup, 110mm diameter, Silicone | 120.5 | Red |
| VB110-WS | Single-bellow suction cup, 110mm diameter, White silicone | 121.12 | Translucent White |
| VB110-WS(FDA) | Single-bellow suction cup, 110mm diameter, White silicone (FDA) | 121.12 | Translucent White |
| VB110-HS | Single-bellow suction cup, 110mm diameter, High temperature silicone | 121.33 | Blue |
| VB110-CS | Single-bellow suction cup, 110mm diameter, Conductive silicone | 121.28 | Smoky Black |
| VB110-U | Single-bellow suction cup, 110mm diameter, Urethane | 186.13 | Dark Green |
| VB110-A | Single-bellow suction cup, 110mm diameter, Mark free | 134.17 | Black |



[Unit : mm]

I Spare Parts – Disc Filter

| Part No. | Description | Weight (g) |
|-----------|---------------------------|------------|
| VTFE-B110 | Disc filter, Polyethylene | 10.15 |

I Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|--------------------------|------------|
| 350 000 3614 | 12F | G1/2 female | 103.70 |
| 350 000 4014 | 12F-F | G1/2 female, Mesh filter | 104.50 |

SUCTION CUPS / Single Bellows

VB110B

Features and Strengths

Suitable for smaller objects
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|--------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB110B | 310.00 | 13.97 | 35.00 | 47.04 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|-------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |

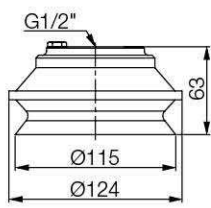
※ For additional material, see page 32~33

Material Resistance

| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent |

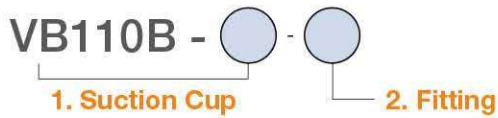
Dimension

[Unit : mm]



[With 12F fitting]

I Build an Ordering No.

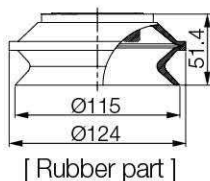


| 1. Suction cup | Description | Symbol |
|----------------|--|----------------|
| | Single-bellow suction cup, 110mm diameter, Nitrile (NBR) | VB110B-N |
| | Single-bellow suction cup, 110mm diameter, Silicone | VB110B-S |
| | Single-bellow suction cup, 110mm diameter, White silicone | VB110B-WS |
| | Single-bellow suction cup, 110mm diameter, White silicone (FDA) | VB110B-WS(FDA) |
| | Single-bellow suction cup, 110mm diameter, High temperature silicone | VB110B-HS |
| | Single-bellow suction cup, 110mm diameter, Conductive silicone | VB110B-CS |
| | Single-bellow suction cup, 110mm diameter, Urethane | VB110B-U |
| | Single-bellow suction cup, 110mm diameter, Mark free | VB110B-A |

| 2. Fitting | Description | Symbol |
|------------|-----------------------------------|--------|
| | Fitting, G1/2 female | 12F |
| | Fitting, G1/2 female, Mesh filter | M-12F |

I Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|----------------|--|------------|-------------------|
| VB110B-N | Single-bellow suction cup, 110mm diameter, Nitrile (NBR) | 180.68 | Black |
| VB110B-S | Single-bellow suction cup, 110mm diameter, Silicone | 172.66 | Red |
| VB110B-WS | Single-bellow suction cup, 110mm diameter, White silicone | 174.87 | Translucent White |
| VB110B-WS(FDA) | Single-bellow suction cup, 110mm diameter, White silicone (FDA) | 174.87 | Translucent White |
| VB110B-HS | Single-bellow suction cup, 110mm diameter, High temperature silicone | 117.76 | Blue |
| VB110B-CS | Single-bellow suction cup, 110mm diameter, Conductive silicone | 117.71 | Smoky Black |
| VB110B-U | Single-bellow suction cup, 110mm diameter, Urethane | 180.66 | Dark Green |
| VB110B-A | Single-bellow suction cup, 110mm diameter, Mark free | 130.22 | Black |



[Unit : mm]

I Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|--------------------------|------------|
| 350 000 3614 | 12F | G1/2 female | 103.70 |
| 350 000 4014 | 12F-F | G1/2 female, Mesh filter | 104.50 |

SUCTION CUPS / Single Bellows

VB150

Features and Strengths

Suitable for smaller objects
Compensating for a difference in level
Various materials for a wide range of applications

Examples of use

Cardboards, Veneer Sheets, Packaging Materials,
Plastic Sheets, Thin Film Sheets



Recommended Lifting Force (Max.)

| Model | Volume (cm ³) | Lifting Force (Kg) - Perpendicular | | |
|-------|---------------------------|------------------------------------|----------|----------|
| | | - 20 kPa | - 60 kPa | - 90 kPa |
| VB150 | 650.00 | 30.00 | 70.00 | 90.10 |

※ The lifting force above does not include safety factor

Material Specifications

| Material | Hardness Shore (°) | Color | Temperature (°C) |
|----------------------|--------------------|-------------------|------------------|
| NBR | 60 | Black | -20~110 |
| Silicone | 55 | Red | -70~200 |
| White Silicone | 55 | Translucent White | -70~200 |
| White Silicone (FDA) | 55 | Translucent White | -70~200 |
| High temp. Silicone | 50 | Blue | -70~280 |
| Conductive Silicone | 70 | Smoky Black | -45~90 |
| Urethane | 60 | Dark Green | 0~100 |
| Mark Free | 75 | Black | -10~100 |

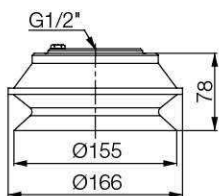
※ For additional material, see page 32~33

Material Resistance

| Description | NBR | Silicone | White Silicone | High temp. Silicone | Conductive Silicone | Urethane | Mark Free |
|-----------------|-----------|-----------|----------------|---------------------|---------------------|-----------|-----------|
| Wear Resistance | Excellent | Good | Good | Good | Good | Excellent | Good |
| Oil | Excellent | Poor | Poor | Poor | Poor | Excellent | Excellent |
| Weather / Ozone | Fair | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent |
| Alcohol | Good | Good | Good | Good | Good | Fair | Good |
| Acid | Fair | Poor | Poor | Poor | Poor | Poor | Excellent |

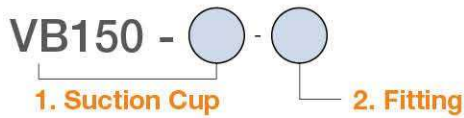
Dimension

[Unit : mm]



[With 12F fitting]

Build an Ordering No.

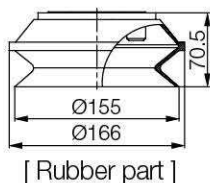


| 1. Suction cup | Description | Symbol |
|----------------|--|---------------|
| | Single-bellow suction cup, 150mm diameter, Nitrile (NBR) | VB150-N |
| | Single-bellow suction cup, 150mm diameter, Silicone | VB150-S |
| | Single-bellow suction cup, 150mm diameter, White silicone | VB150-WS |
| | Single-bellow suction cup, 150mm diameter, White silicone (FDA) | VB150-WS(FDA) |
| | Single-bellow suction cup, 150mm diameter, High temperature silicone | VB150-HS |
| | Single-bellow suction cup, 150mm diameter, Conductive silicone | VB150-CS |
| | Single-bellow suction cup, 150mm diameter, Urethane | VB150-U |
| | Single-bellow suction cup, 150mm diameter, Mark free | VB150-A |

| 2. Fitting | Description | Symbol |
|------------|-----------------------------------|--------|
| | Fitting, G1/2 female | 12F |
| | Fitting, G1/2 female, Mesh filter | M-12F |

Spare Parts – Rubber Parts

| Part No. | Description | Weight (g) | Color |
|---------------|--|------------|-------------------|
| VB150-N | Single-bellow suction cup, 150mm diameter, Nitrile (NBR) | 460.00 | Black |
| VB150-S | Single-bellow suction cup, 150mm diameter, Silicone | 420.00 | Red |
| VB150-WS | Single-bellow suction cup, 150mm diameter, White silicone | 422.00 | Translucent White |
| VB150-WS(FDA) | Single-bellow suction cup, 150mm diameter, White silicone (FDA) | 422.00 | Translucent White |
| VB150-HS | Single-bellow suction cup, 150mm diameter, High temperature silicone | 443.00 | Blue |
| VB150-CS | Single-bellow suction cup, 150mm diameter, Conductive silicone | 440.00 | Smoky Black |
| VB150-U | Single-bellow suction cup, 150mm diameter, Urethane | 459.95 | Dark Green |
| VB150-A | Single-bellow suction cup, 150mm diameter, Mark free | 483 | Black |



[Unit : mm]

Spare Parts – Fittings

| Part No. (Code No.) | Fitting size | Description | Weight (g) |
|---------------------|--------------|--------------------------|------------|
| 350 000 3615 | 12F | G1/2 female | 198.93 |
| 350 000 4015 | 12F-F | G1/2 female, Mesh filter | 199.73 |