

# SUCTION CUPS / Oval Universal

## VOU4x10

### Features and Strengths

Great performance for handling long objects with flat and curved surfaces



### Examples of use

Semiconductor Chips, PCB boards, Electronic component  
Solar cell, Small glass cases, Pipes



### Recommended Lifting Force (Max.)

Model	Volume (cm <sup>3</sup> )	Min. Curvature Radius R(mm)	Lifting Force (Kg) - Perpendicular		
			- 20 kPa	- 60 kPa	- 90 kPa
VOU4x10	0.064	3.50	0.19	0.30	0.35

※ The lifting force above does not include safety factor

### Material Specifications

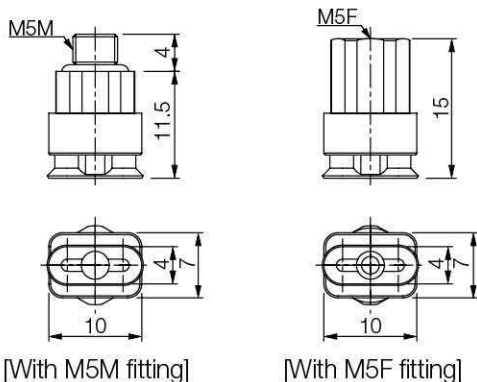
Material	Hardness Shore (°)	Color	Temperature (°C)
NBR	60	Black	-20~110
Silicone	55	Red	-70~200
White Silicone	55	Translucent White	-70~200
White Silicone (FDA)	55	Translucent White	-70~200
High temp. Silicone	50	Blue	-70~280
Conductive Silicone	70	Smoky Black	-45~90
Urethane	60	Dark Green	0~100

### Material Resistance

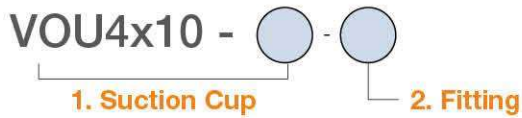
Description	NBR	Silicone	White Silicone	High temp. Silicone	Conductive Silicone	Urethane
Wear Resistance	Excellent	Good	Good	Good	Good	Excellent
Oil	Excellent	Poor	Poor	Poor	Poor	Excellent
Weather / Ozone	Fair	Excellent	Excellent	Excellent	Excellent	Excellent
Alcohol	Good	Good	Good	Good	Good	Fair
Acid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

### Dimension

[ Unit : mm ]



## Build an Ordering No.



1. Suction cup	Description	Symbol
	Oval-Universal suction cup, 4x10mm diameter, Nitrile (NBR)	VOU4x10-N
	Oval-Universal suction cup, 4x10mm diameter, Silicone	VOU4x10-S
	Oval-Universal suction cup, 4x10mm diameter, White silicone	VOU4x10-WS
	Oval-Universal suction cup, 4x10mm diameter, White silicone (FDA)	VOU4x10-WS (FDA)
	Oval-Universal suction cup, 4x10mm diameter, High temperature silicone	VOU4x10-HS
	Oval-Universal suction cup, 4x10mm diameter, Conductive silicone	VOU4x10-CS
	Oval-Universal suction cup, 4x10mm diameter, Urethane	VOU4x10-U

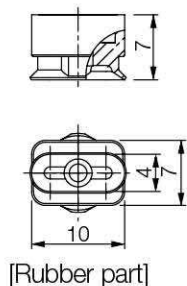
2. Fitting	Description	Symbol
	Fitting, M5 female	M5F
	Fitting, M5 male	M5M

## Spare Parts – Rubber Parts

Part No.	Description	Weight (g)	Color
VOU4x10-N	Oval-Universal suction cup, 4x10mm diameter, Nitrile (NBR)	0.30	Black
VOU4x10-S	Oval-Universal suction cup, 4x10mm diameter, Silicone	0.28	Red
VOU4x10-WS	Oval-Universal suction cup, 4x10mm diameter, White silicone	0.28	Translucent White
VOU4x10-WS (FDA)	Oval-Universal suction cup, 4x10mm diameter, White silicone (FDA)	0.28	Translucent White
VOU4x10-HS	Oval-Universal suction cup, 4x10mm diameter, High temperature silicone	0.31	Blue
VOU4x10-CS	Oval-Universal suction cup, 4x10mm diameter, Conductive silicone	0.29	Smoky Black
VOU4x10-U	Oval-Universal suction cup, 4x10mm diameter, Urethane	0.31	Dark Green

## Dimension

[ Unit : mm ]



## Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description	Weight (g)
350 002 1111	M5F	M5 female	2.82
350 002 1011	M5M	M5 male	1.78

# SUCTION CUPS / Oval Universal

## VOU4x20

### Features and Strengths

Great performance for handling long objects with flat and curved surfaces

### Examples of use

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Solar cell, Small glass cases, Pipes



### Recommended Lifting Force (Max.)

Model	Volume (cm <sup>3</sup> )	Min. Curvature Radius R(mm)	Lifting Force (Kg) - Perpendicular		
			- 20 kPa	- 60 kPa	- 90 kPa
VOU4x20	0.094	3.50	0.24	0.48	0.60

※ The lifting force above does not include safety factor

### Material Specifications

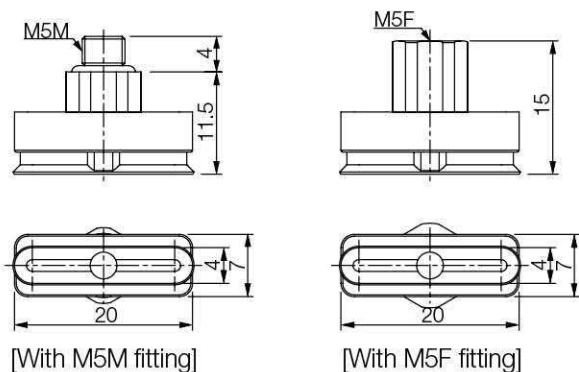
Material	Hardness Shore (°)	Color	Temperature (°C)
NBR	60	Black	-20~110
Silicone	55	Red	-70~200
White Silicone	55	Translucent White	-70~200
White Silicone (FDA)	55	Translucent White	-70~200
High temp. Silicone	50	Blue	-70~280
Conductive Silicone	70	Smoky Black	-45~90
Urethane	60	Dark Green	0~100

### Material Resistance

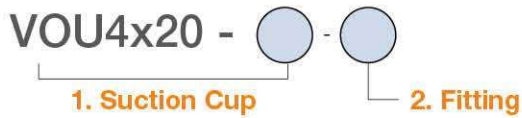
Description	NBR	Silicone	White Silicone	High temp. Silicone	Conductive Silicone	Urethane
Wear Resistance	Excellent	Good	Good	Good	Good	Excellent
Oil	Excellent	Poor	Poor	Poor	Poor	Excellent
Weather / Ozone	Fair	Excellent	Excellent	Excellent	Excellent	Excellent
Alcohol	Good	Good	Good	Good	Good	Fair
Acid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

### Dimension

[ Unit : mm ]



## I Build an Ordering No.



1. Suction cup	Description	Symbol
	Oval-Universal suction cup, 4x20mm diameter, Nitrile (NBR)	VOU4x20-N
	Oval-Universal suction cup, 4x20mm diameter, Silicone	VOU4x20-S
	Oval-Universal suction cup, 4x20mm diameter, White silicone	VOU4x20-WS
	Oval-Universal suction cup, 4x20mm diameter, White silicone (FDA)	VOU4x20-WS (FDA)
	Oval-Universal suction cup, 4x20mm diameter, High temperature silicone	VOU4x20-HS
	Oval-Universal suction cup, 4x20mm diameter, Conductive silicone	VOU4x20-CS
	Oval-Universal suction cup, 4x20mm diameter, Urethane	VOU4x20-U

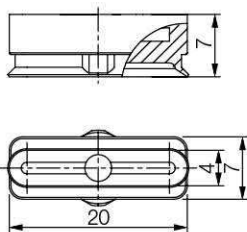
2. Fitting	Description	Symbol
	Fitting, M5 female	M5F
	Fitting, M5 male	M5M

## I Spare Parts – Rubber Parts

Part No.	Description	Weight (g)	Color
VOU4x20-N	Oval-Universal suction cup, 4x20mm diameter, Nitrile (NBR)	0.72	Black
VOU4x20-S	Oval-Universal suction cup, 4x20mm diameter, Silicone	0.61	Red
VOU4x20-WS	Oval-Universal suction cup, 4x20mm diameter, White silicone	0.60	Translucent White
VOU4x20-WS (FDA)	Oval-Universal suction cup, 4x20mm diameter, White silicone (FDA)	0.60	Translucent White
VOU4x20-HS	Oval-Universal suction cup, 4x20mm diameter, High temperature silicone	0.74	Blue
VOU4x20-CS	Oval-Universal suction cup, 4x20mm diameter, Conductive silicone	0.7	Smoky Black
VOU4x20-U	Oval-Universal suction cup, 4x20mm diameter, Urethane	0.74	Dark Green

## I Dimension

[ Unit : mm ]



[Rubber part]

## I Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description	Weight (g)
350 002 1112	M5F	M5 female	2.82
350 002 1012	M5M	M5 male	1.78

# SUCTION CUPS / Oval Universal

## VOU6x10

### Features and Strengths

Great performance for handling long objects with flat and curved surfaces

### Examples of use

Semiconductor Chips, PCB boards, Electronic component  
Solar cell, Small glass cases, Pipes



### Recommended Lifting Force (Max.)

Model	Volume (cm <sup>3</sup> )	Min. Curvature Radius R(mm)	Lifting Force (Kg) - Perpendicular		
			- 20 kPa	- 60 kPa	- 90 kPa
VOU6x10	0.081	4.50	0.21	0.39	0.49

※ The lifting force above does not include safety factor

### Material Specifications

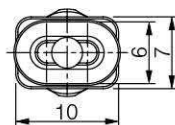
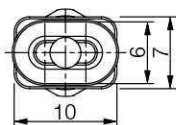
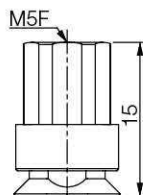
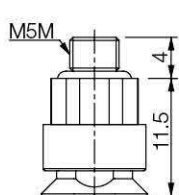
Material	Hardness Shore (°)	Color	Temperature (°C)
NBR	60	Black	-20~110
Silicone	55	Red	-70~200
White Silicone	55	Translucent White	-70~200
White Silicone (FDA)	55	Translucent White	-70~200
High temp. Silicone	50	Blue	-70~280
Conductive Silicone	70	Smoky Black	-45~90
Urethane	60	Dark Green	0~100

### Material Resistance

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

### Dimension

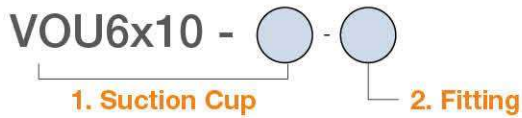
[ Unit : mm ]



[With M5M fitting]

[With M5F fitting]

## Build an Ordering No.



1. Suction cup	Description	Symbol
	Oval-Universal suction cup, 6x10mm diameter, Nitrile (NBR)	VOU6x10-N
	Oval-Universal suction cup, 6x10mm diameter, Silicone	VOU6x10-S
	Oval-Universal suction cup, 6x10mm diameter, White silicone	VOU6x10-WS
	Oval-Universal suction cup, 6x10mm diameter, White silicone (FDA)	VOU6x10-WS (FDA)
	Oval-Universal suction cup, 6x10mm diameter, High temperature silicone	VOU6x10-HS
	Oval-Universal suction cup, 6x10mm diameter, Conductive silicone	VOU6x10-CS
	Oval-Universal suction cup, 6x10mm diameter, Urethane	VOU6x10-U

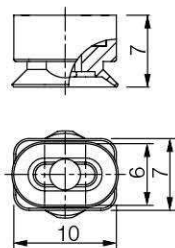
2. Fitting	Description	Symbol
	Fitting, M5 female	M5F
	Fitting, M5 male	M5M

## Spare Parts – Rubber Parts

Part No.	Description	Weight (g)	Color
VOU6x10-N	Oval-Universal suction cup, 6x10mm diameter, Nitrile (NBR)	0.30	Black
VOU6x10-S	Oval-Universal suction cup, 6x10mm diameter, Silicone	0.28	Red
VOU6x10-WS	Oval-Universal suction cup, 6x10mm diameter, White silicone	0.28	Translucent White
VOU6x10-WS (FDA)	Oval-Universal suction cup, 6x10mm diameter, White silicone (FDA)	0.28	Translucent White
VOU6x10-HS	Oval-Universal suction cup, 6x10mm diameter, High temperature silicone	0.31	Blue
VOU6x10-CS	Oval-Universal suction cup, 6x10mm diameter, Conductive silicone	0.29	Smoky Black
VOU6x10-U	Oval-Universal suction cup, 6x10mm diameter, Urethane	0.31	Dark Green

## Dimension

[Unit : mm]



[Rubber part]

## Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description	Weight (g)
350 002 1111	M5F	M5 female	2.82
350 002 1011	M5M	M5 male	1.78

# SUCTION CUPS / Oval Universal

## VOU6x20

### Features and Strengths

Great performance for handling long objects with flat and curved surfaces

### Examples of use

Semiconductor Chips, PCB boards, Electronic component  
Solar cell, Small glass cases, Pipes



### Recommended Lifting Force (Max.)

Model	Volume (cm <sup>3</sup> )	Min. Curvature Radius R(mm)	Lifting Force (Kg) - Perpendicular		
			- 20 kPa	- 60 kPa	- 90 kPa
VOU6x20	0.137	4.50	0.31	0.64	0.80

※ The lifting force above does not include safety factor

### Material Specifications

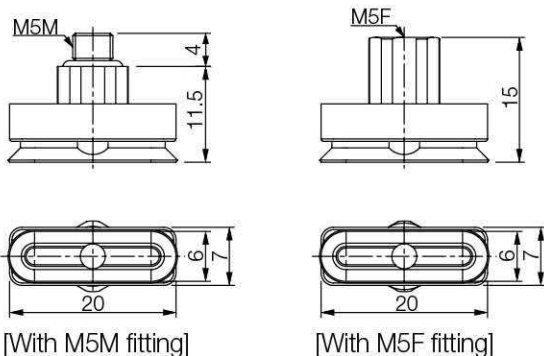
Material	Hardness Shore (°)	Color	Temperature (°C)
NBR	60	Black	-20~110
Silicone	55	Red	-70~200
White Silicone	55	Translucent White	-70~200
White Silicone (FDA)	55	Translucent White	-70~200
High temp. Silicone	50	Blue	-70~280
Conductive Silicone	70	Smoky Black	-45~90
Urethane	60	Dark Green	0~100

### Material Resistance

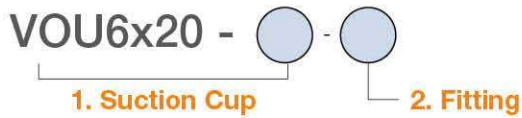
Description	NBR	Silicone	White Silicone	High temp. Silicone	Conductive Silicone	Urethane
Wear Resistance	Excellent	Good	Good	Good	Good	Excellent
Oil	Excellent	Poor	Poor	Poor	Poor	Excellent
Weather / Ozone	Fair	Excellent	Excellent	Excellent	Excellent	Excellent
Alcohol	Good	Good	Good	Good	Good	Fair
Acid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

### Dimension

[ Unit : mm ]



## Build an Ordering No.



1. Suction cup	Description	Symbol
	Oval-Universal suction cup, 6x20mm diameter, Nitrile (NBR)	VOU6x20-N
	Oval-Universal suction cup, 6x20mm diameter, Silicone	VOU6x20-S
	Oval-Universal suction cup, 6x20mm diameter, White silicone	VOU6x20-WS
	Oval-Universal suction cup, 6x20mm diameter, White silicone (FDA)	VOU6x20-WS (FDA)
	Oval-Universal suction cup, 6x20mm diameter, High temperature silicone	VOU6x20-HS
	Oval-Universal suction cup, 6x20mm diameter, Conductive silicone	VOU6x20-CS
	Oval-Universal suction cup, 6x20mm diameter, Urethane	VOU6x20-U

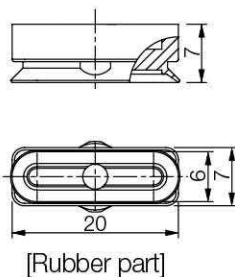
2. Fitting	Description	Symbol
	Fitting, M5 female	M5F
	Fitting, M5 male	M5M

## Spare Parts – Rubber Parts

Part No.	Description	Weight (g)	Color
VOU6x20-N	Oval-Universal suction cup, 6x20mm diameter, Nitrile (NBR)	0.64	Black
VOU6x20-S	Oval-Universal suction cup, 6x20mm diameter, Silicone	0.61	Red
VOU6x20-WS	Oval-Universal suction cup, 6x20mm diameter, White silicone	0.61	Translucent White
VOU6x20-WS (FDA)	Oval-Universal suction cup, 6x20mm diameter, White silicone (FDA)	0.61	Translucent White
VOU6x20-HS	Oval-Universal suction cup, 6x20mm diameter, High temperature silicone	0.66	Blue
VOU6x20-CS	Oval-Universal suction cup, 6x20mm diameter, Conductive silicone	0.63	Smoky Black
VOU6x20-U	Oval-Universal suction cup, 6x20mm diameter, Urethane	0.66	Dark Green

## Dimension

[Unit : mm]



## Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description	Weight (g)
350 002 1112	M5F	M5 female	2.82
350 002 1012	M5M	M5 male	1.78

# SUCTION CUPS / Oval Universal

## VOU8x20

### Features and Strengths

Great performance for handling long objects with flat and curved surfaces

### Examples of use

Semiconductor Chips, PCB boards, Electronic component  
Solar cell, Small glass cases, Pipes



### Recommended Lifting Force (Max.)

Model	Volume (cm <sup>3</sup> )	Min. Curvature Radius R(mm)	Lifting Force (Kg) - Perpendicular		
			- 20 kPa	- 60 kPa	- 90 kPa
VOU8x20	0.170	6.50	0.38	0.83	1.21

※ The lifting force above does not include safety factor

### Material Specifications

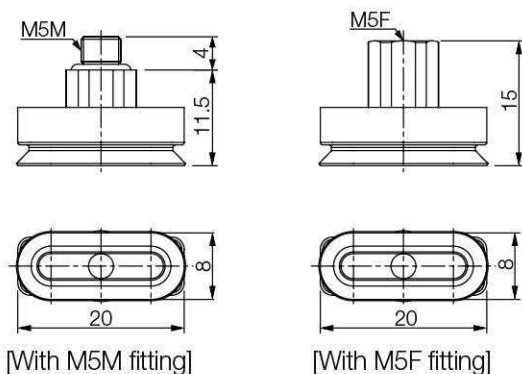
Material	Hardness Shore (°)	Color	Temperature (°C)
NBR	60	Black	-20~110
Silicone	55	Red	-70~200
White Silicone	55	Translucent White	-70~200
White Silicone (FDA)	55	Translucent White	-70~200
High temp. Silicone	50	Blue	-70~280
Conductive Silicone	70	Smoky Black	-45~90
Urethane	60	Dark Green	0~100

### Material Resistance

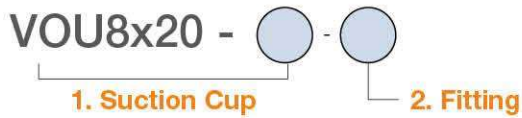
Description	NBR	Silicone	White Silicone	High temp. Silicone	Conductive Silicone	Urethane
Wear Resistance	Excellent	Good	Good	Good	Good	Excellent
Oil	Excellent	Poor	Poor	Poor	Poor	Excellent
Weather / Ozone	Fair	Excellent	Excellent	Excellent	Excellent	Excellent
Alcohol	Good	Good	Good	Good	Good	Fair
Acid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

### Dimension

[ Unit : mm ]



## I Build an Ordering No.



1. Suction cup	Description	Symbol
	Oval-Universal suction cup, 8x20mm diameter, Nitrile (NBR)	VOU8x20-N
	Oval-Universal suction cup, 8x20mm diameter, Silicone	VOU8x20-S
	Oval-Universal suction cup, 8x20mm diameter, White silicone	VOU8x20-WS
	Oval-Universal suction cup, 8x20mm diameter, White silicone (FDA)	VOU8x20-WS (FDA)
	Oval-Universal suction cup, 8x20mm diameter, High temperature silicone	VOU8x20-HS
	Oval-Universal suction cup, 8x20mm diameter, Conductive silicone	VOU8x20-CS
	Oval-Universal suction cup, 8x20mm diameter, Urethane	VOU8x20-U

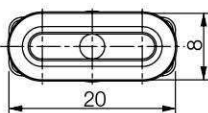
2. Fitting	Description	Symbol
	Fitting, M5 female	M5F
	Fitting, M5 male	M5M

## I Spare Parts – Rubber Parts

Part No.	Description	Weight (g)	Color
VOU8x20-N	Oval-Universal suction cup, 8x20mm diameter, Nitrile (NBR)	0.71	Black
VOU8x20-S	Oval-Universal suction cup, 8x20mm diameter, Silicone	0.67	Red
VOU8x20-WS	Oval-Universal suction cup, 8x20mm diameter, White silicone	0.68	Translucent White
VOU8x20-WS (FDA)	Oval-Universal suction cup, 8x20mm diameter, White silicone (FDA)	0.68	Translucent White
VOU8x20-HS	Oval-Universal suction cup, 8x20mm diameter, High temperature silicone	0.70	Blue
VOU8x20-CS	Oval-Universal suction cup, 8x20mm diameter, Conductive silicone	0.70	Smoky Black
VOU8x20-U	Oval-Universal suction cup, 8x20mm diameter, Urethane	0.73	Dark Green

## I Dimension

[ Unit : mm ]



[Rubber part]

## I Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description	Weight (g)
350 002 1112	M5F	M5 female	2.82
350 002 1012	M5M	M5 male	1.78

# SUCTION CUPS / Oval Universal

## VOU8x30

### Features and Strengths

Great performance for handling long objects with flat and curved surfaces

### Examples of use

Semiconductor Chips, PCB boards, Electronic component  
Solar cell, Small glass cases, Pipes



### Recommended Lifting Force (Max.)

Model	Volume (cm <sup>3</sup> )	Min. Curvature Radius R(mm)	Lifting Force (Kg) - Perpendicular		
			- 20 kPa	- 60 kPa	- 90 kPa
VOU8x30	0.250	6.50	0.52	1.21	1.66

※ The lifting force above does not include safety factor

### Material Specifications

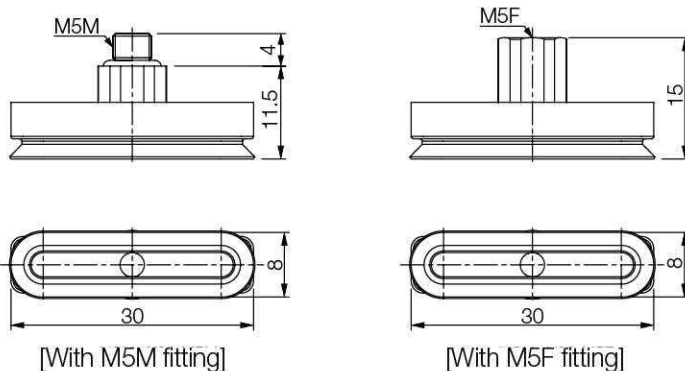
Material	Hardness Shore (°)	Color	Temperature (°C)
NBR	60	Black	-20~110
Silicone	55	Red	-70~200
White Silicone	55	Translucent White	-70~200
White Silicone (FDA)	55	Translucent White	-70~200
High temp. Silicone	50	Blue	-70~280
Conductive Silicone	70	Smoky Black	-45~90
Urethane	60	Dark Green	0~100

### Material Resistance

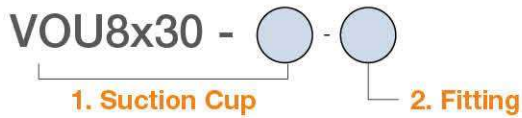
Description	NBR	Silicone	White Silicone	High temp. Silicone	Conductive Silicone	Urethane
Wear Resistance	Excellent	Good	Good	Good	Good	Excellent
Oil	Excellent	Poor	Poor	Poor	Poor	Excellent
Weather / Ozone	Fair	Excellent	Excellent	Excellent	Excellent	Excellent
Alcohol	Good	Good	Good	Good	Good	Fair
Acid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

### Dimension

[ Unit : mm ]



## I Build an Ordering No.



1. Suction cup	Description	Symbol
	Oval-Universal suction cup, 8x30mm diameter, Nitrile (NBR)	VOU8x30-N
	Oval-Universal suction cup, 8x30mm diameter, Silicone	VOU8x30-S
	Oval-Universal suction cup, 8x30mm diameter, White silicone	VOU8x30-WS
	Oval-Universal suction cup, 8x30mm diameter, White silicone (FDA)	VOU8x30-WS (FDA)
	Oval-Universal suction cup, 8x30mm diameter, High temperature silicone	VOU8x30-HS
	Oval-Universal suction cup, 8x30mm diameter, Conductive silicone	VOU8x30-CS
	Oval-Universal suction cup, 8x30mm diameter, Urethane	VOU8x30-U

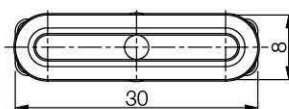
2. Fitting	Description	Symbol
	Fitting, M5 female	M5F
	Fitting, M5 male	M5M

## I Spare Parts – Rubber Parts

Part No.	Description	Weight (g)	Color
VOU8x30-N	Oval-Universal suction cup, 8x30mm diameter, Nitrile (NBR)	1.20	Black
VOU8x30-S	Oval-Universal suction cup, 8x30mm diameter, Silicone	1.12	Red
VOU8x30-WS	Oval-Universal suction cup, 8x30mm diameter, White silicone	1.14	Translucent White
VOU8x30-WS (FDA)	Oval-Universal suction cup, 8x30mm diameter, White silicone (FDA)	1.14	Translucent White
VOU8x30-HS	Oval-Universal suction cup, 8x30mm diameter, High temperature silicone	1.15	Blue
VOU8x30-CS	Oval-Universal suction cup, 8x30mm diameter, Conductive silicone	1.18	Smoky Black
VOU8x30-U	Oval-Universal suction cup, 8x30mm diameter, Urethane	1.24	Dark Green

## I Dimension

[ Unit : mm ]



[Rubber part]

## I Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description	Weight (g)
350 002 1112	M5F	M5 female	2.82
350 002 1012	M5M	M5 male	1.78

# SUCTION CUPS / Oval Universal

## VOU10x30

### Features and Strengths

Great performance for handling long objects with flat and curved surfaces

### Examples of use

Semiconductor Chips, PCB boards, Electronic component  
Solar cell, Small glass cases, Pipes



### Recommended Lifting Force (Max.)

Model	Volume (cm <sup>3</sup> )	Min. Curvature Radius R(mm)	Lifting Force (Kg) - Perpendicular		
			- 20 kPa	- 60 kPa	- 90 kPa
VOU10x30	0.394	8.00	0.62	1.42	2.05

※ The lifting force above does not include safety factor

### Material Specifications

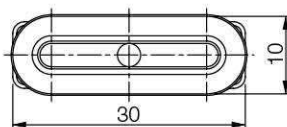
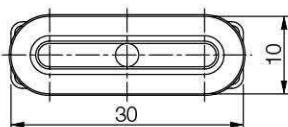
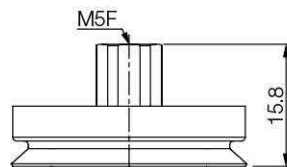
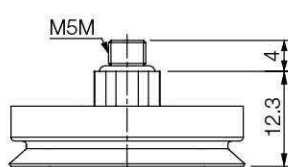
Material	Hardness Shore (°)	Color	Temperature (°C)
NBR	60	Black	-20~110
Silicone	55	Red	-70~200
White Silicone	55	Translucent White	-70~200
White Silicone (FDA)	55	Translucent White	-70~200
High temp. Silicone	50	Blue	-70~280
Conductive Silicone	70	Smoky Black	-45~90
Urethane	60	Dark Green	0~100

### Material Resistance

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

### Dimension

[ Unit : mm ]



[With M5M fitting]

[With M5F fitting]

## I Build an Ordering No.



1. Suction cup	Description	Symbol
	Oval-Universal suction cup, 10x30mm diameter, Nitrile (NBR)	VOU10x30-N
	Oval-Universal suction cup, 10x30mm diameter, Silicone	VOU10x30-S
	Oval-Universal suction cup, 10x30mm diameter, White silicone	VOU10x30-WS
	Oval-Universal suction cup, 10x30mm diameter, White silicone (FDA)	VOU10x30-WS (FDA)
	Oval-Universal suction cup, 10x30mm diameter, High temperature silicone	VOU10x30-HS
	Oval-Universal suction cup, 10x30mm diameter, Conductive silicone	VOU10x30-CS
	Oval-Universal suction cup, 10x30mm diameter, Urethane	VOU10x30-U

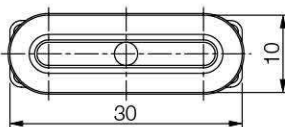
2. Fitting	Description	Symbol
	Fitting, M5 female	M5F
	Fitting, M5 male	M5M

## I Spare Parts – Rubber Parts

Part No.	Description	Weight (g)	Color
VOU10x30-N	Oval-Universal suction cup, 10x30mm diameter, Nitrile (NBR)	1.79	Black
VOU10x30-S	Oval-Universal suction cup, 10x30mm diameter, Silicone	1.55	Red
VOU10x30-WS	Oval-Universal suction cup, 10x30mm diameter, White silicone	1.56	Translucent White
VOU10x30-WS (FDA)	Oval-Universal suction cup, 10x30mm diameter, White silicone (FDA)	1.56	Translucent White
VOU10x30-HS	Oval-Universal suction cup, 10x30mm diameter, High temperature silicone	1.85	Blue
VOU10x30-CS	Oval-Universal suction cup, 10x30mm diameter, Conductive silicone	1.77	Smoky Black
VOU10x30-U	Oval-Universal suction cup, 10x30mm diameter, Urethane	1.85	Dark Green

## I Dimension

[ Unit : mm ]



[Rubber part]

## I Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description	Weight (g)
350 002 1112	M5F	M5 female	2.82
350 002 1012	M5M	M5 male	1.78

# SUCTION CUPS / Oval Universal

## VOU15x45

### Features and Strengths

Great performance for handling long objects with flat and curved surfaces

### Examples of use

Semiconductor Chips, PCB boards, Electronic component  
Solar cell, Small glass cases, Pipes



### Recommended Lifting Force (Max.)

Model	Volume (cm <sup>3</sup> )	Min. Curvature Radius R(mm)	Lifting Force (Kg) - Perpendicular		
			- 20 kPa	- 60 kPa	- 90 kPa
VOU15x45	1.584	11.00	1.06	2.88	4.22

※ The lifting force above does not include safety factor

### Material Specifications

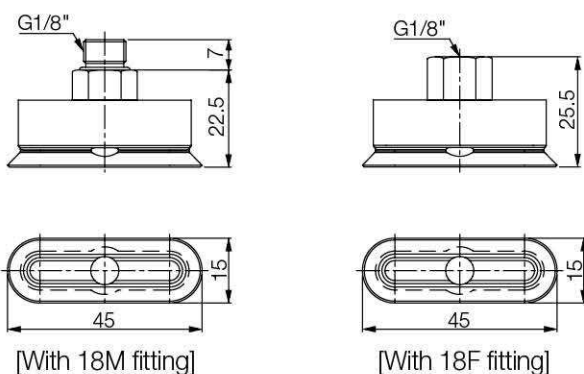
Material	Hardness Shore (°)	Color	Temperature (°C)
NBR	60	Black	-20~110
Silicone	55	Red	-70~200
White Silicone	55	Translucent White	-70~200
White Silicone (FDA)	55	Translucent White	-70~200
High temp. Silicone	50	Blue	-70~280
Conductive Silicone	70	Smoky Black	-45~90
Urethane	60	Dark Green	0~100

### Material Resistance

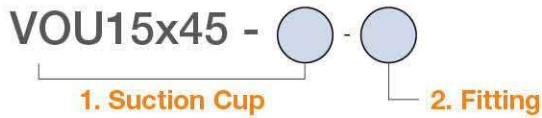
Description	NBR	Silicone	White Silicone	High temp. Silicone	Conductive Silicone	Urethane
Wear Resistance	Excellent	Good	Good	Good	Good	Excellent
Oil	Excellent	Poor	Poor	Poor	Poor	Excellent
Weather / Ozone	Fair	Excellent	Excellent	Excellent	Excellent	Excellent
Alcohol	Good	Good	Good	Good	Good	Fair
Acid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

### Dimension

[ Unit : mm ]



## I Build an Ordering No.



1. Suction cup	Description	Symbol
	Oval-Universal suction cup, 15x45mm diameter, Nitrile (NBR)	VOU15x45-N
	Oval-Universal suction cup, 15x45mm diameter, Silicone	VOU15x45-S
	Oval-Universal suction cup, 15x45mm diameter, White silicone	VOU15x45-WS
	Oval-Universal suction cup, 15x45mm diameter, White silicone (FDA)	VOU15x45-WS (FDA)
	Oval-Universal suction cup, 15x45mm diameter, High temperature silicone	VOU15x45-HS
	Oval-Universal suction cup, 15x45mm diameter, Conductive silicone	VOU15x45-CS
	Oval-Universal suction cup, 15x45mm diameter, Urethane	VOU15x45-U

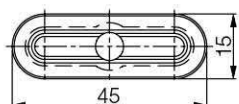
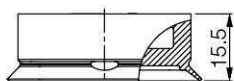
2. Fitting	Description	Symbol
	Fitting, G1/8 female	18F
	Fitting, G1/8 female, Mesh filter	M-18F
	Fitting, G1/8 male	18M
	Fitting, G1/8 male, Mesh filter	M-18M

## I Spare Parts – Rubber Parts

Part No.	Description	Weight (g)	Color
VOU15x45-N	Oval-Universal suction cup, 15x45mm diameter, Nitrile (NBR)	5.82	Black
VOU15x45-S	Oval-Universal suction cup, 15x45mm diameter, Silicone	5.13	Red
VOU15x45-WS	Oval-Universal suction cup, 15x45mm diameter, White silicone	5.11	Translucent White
VOU15x45-WS (FDA)	Oval-Universal suction cup, 15x45mm diameter, White silicone (FDA)	5.11	Translucent White
VOU15x45-HS	Oval-Universal suction cup, 15x45mm diameter, High temperature silicone	5.26	Blue
VOU15x45-CS	Oval-Universal suction cup, 15x45mm diameter, Conductive silicone	5.76	Smoky Black
VOU15x45-U	Oval-Universal suction cup, 15x45mm diameter, Urethane	6.02	Dark Green

## I Dimension

[ Unit : mm ]



[Rubber part]

## I Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description	Weight (g)
350 002 3121	18F	G1/8 female	10.32
350 002 3122	18F-F	G1/8 female, Mesh filter	10.46
350 002 3021	18M	G1/8 male	13.74
350 002 3022	18M-F	G1/8 male, Mesh filter	13.84

# SUCTION CUPS / Oval Universal

## VOU20x60

### Features and Strengths

Great performance for handling long objects with flat and curved surfaces

### Examples of use

Semiconductor Chips, PCB boards, Electronic component  
Solar cell, Small glass cases, Pipes



### Recommended Lifting Force (Max.)

Model	Volume (cm <sup>3</sup> )	Min. Curvature Radius R(mm)	Lifting Force (Kg) - Perpendicular		
			- 20 kPa	- 60 kPa	- 90 kPa
VOU20x60	3.532	17.00	1.93	5.10	7.65

※ The lifting force above does not include safety factor

### Material Specifications

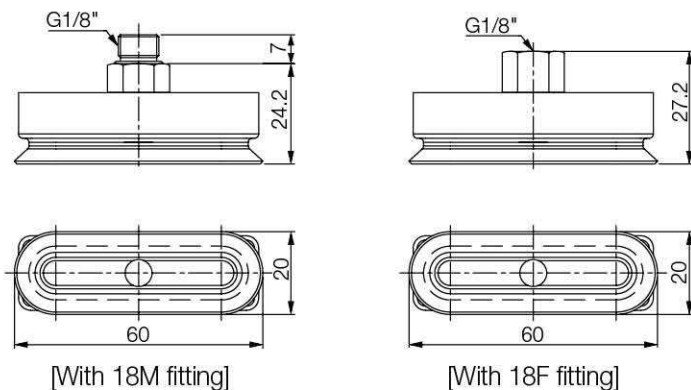
Material	Hardness Shore (°)	Color	Temperature (°C)
NBR	60	Black	-20~110
Silicone	55	Red	-70~200
White Silicone	55	Translucent White	-70~200
White Silicone (FDA)	55	Translucent White	-70~200
High temp. Silicone	50	Blue	-70~280
Conductive Silicone	70	Smoky Black	-45~90
Urethane	60	Dark Green	0~100

### Material Resistance

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

### Dimension

[ Unit : mm ]



## I Build an Ordering No.



1. Suction cup	Description	Symbol
	Oval-Universal suction cup, 20x60mm diameter, Nitrile (NBR)	VOU20x60-N
	Oval-Universal suction cup, 20x60mm diameter, Silicone	VOU20x60-S
	Oval-Universal suction cup, 20x60mm diameter, White silicone	VOU20x60-WS
	Oval-Universal suction cup, 20x60mm diameter, White silicone (FDA)	VOU20x60-WS (FDA)
	Oval-Universal suction cup, 20x60mm diameter, High temperature silicone	VOU20x60-HS
	Oval-Universal suction cup, 20x60mm diameter, Conductive silicone	VOU20x60-CS
	Oval-Universal suction cup, 20x60mm diameter, Urethane	VOU20x60-U

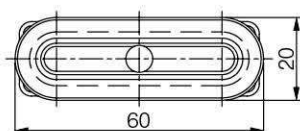
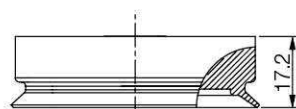
2. Fitting	Description	Symbol
	Fitting, G1/8 female	18F
	Fitting, G1/8 female, Mesh filter	M-18F
	Fitting, G1/8 male	18M
	Fitting, G1/8 male, Mesh filter	M-18M

## I Spare Parts – Rubber Parts

Part No.	Description	Weight (g)	Color
VOU20x60-N	Oval-Universal suction cup, 20x60mm diameter, Nitrile (NBR)	14.78	Black
VOU20x60-S	Oval-Universal suction cup, 20x60mm diameter, Silicone	13.22	Red
VOU20x60-WS	Oval-Universal suction cup, 20x60mm diameter, White silicone	13.04	Translucent White
VOU20x60-WS (FDA)	Oval-Universal suction cup, 20x60mm diameter, White silicone (FDA)	13.04	Translucent White
VOU20x60-HS	Oval-Universal suction cup, 20x60mm diameter, High temperature silicone	15.28	Blue
VOU20x60-CS	Oval-Universal suction cup, 20x60mm diameter, Conductive silicone	14.63	Smoky Black
VOU20x60-U	Oval-Universal suction cup, 20x60mm diameter, Urethane	15.31	Dark Green

## I Dimension

[ Unit : mm ]



[Rubber part]

## I Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description	Weight (g)
350 002 3121	18F	G1/8 female	10.32
350 002 3122	18F-F	G1/8 female, Mesh filter	10.46
350 002 3021	18M	G1/8 male	13.74
350 002 3022	18M-F	G1/8 male, Mesh filter	13.84