TU-K SERIES

VACUUM PUMP

TU-K Series

SUCTION CUP TU-K TYPE



Features

- Suitable for safely handling PCBs, LCD panels, Solar cells, and other electronics components.

Applications [Suitable for Handling

- Solar cell
- PCB
- Electronic components

Order No.

TU3.5 – K – S – M5

① ② ③

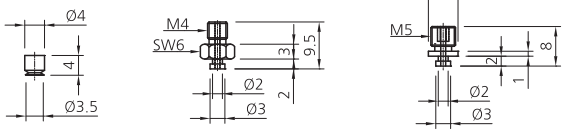
Size Ø [VACUUM PAD]	Material	Thread Size
TU3.5–K : Ø 3.5	N : NBR	X : [NONE]
TU6–K : Ø 6	S : SILICON	FM4–K–1 : M4 Male [TU3.5]
TU8–K : Ø 8	WS : WHITE SILICON	FM5–K–1 : M5 Male [TU3.5]
TU10–K : Ø10	CS : CONDUCTIVE SILICON	FM4–K–2 : M4 Male [TU6~TU10]
TU15–K : Ø15	U : URETHANE	FM5–K–2 : M5 Male [TU6~TU10]
	B,V : Fluorine	
	MF : Mark Free	
	BS : BLACK SILICON	

VACUUM PUMP

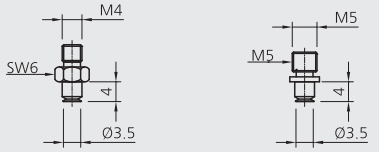
TU-K Series

☐ Individual Items
■ Assembly

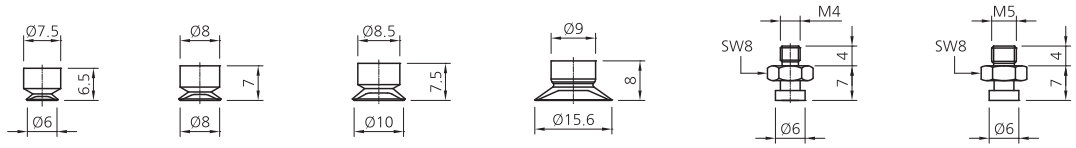
TU3.5–K–( ) FM4–K–1 FM5–K–1



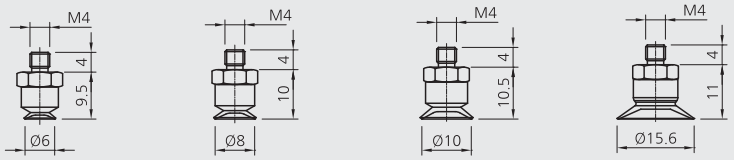
TU3.5–K–( )–FM4 TU3.5–K–( )–FM5



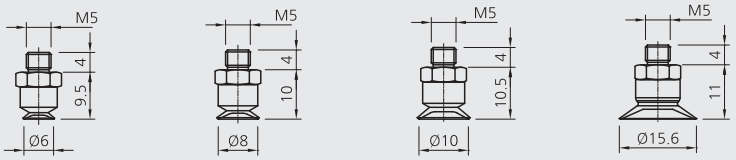
TU6–K–( )–X TU8–K–( )–X TU10–K–( )–X TU15–K–( )–X FM4–K–2 FM5–K–2



TU6–K–( )–FM4 TU8–K–( )–FM4 TU10–K–( )–FM4 TU15–K–( )–FM4



TU6–K–( )–FM5 TU8–K–( )–FM5 TU10–K–( )–FM5 TU15–K–( )–FM5



TBZ SERIES

VACUUM PUMP

TBZ Series



Product features

- Suitable for the safe handling of electronic circuit components, including PCB boards, LCDs, and solar cells.

Suitable for Handling

- Solar cell
- PCB
- Electronic components

Order No.

TBZ ① — ② — ③

Size Ø [VACUUM PAD]	Material	Thread Size
4 : Ø4.3	N : NBR	X : [NONE]
6 : Ø6.5	S : SILICON	FM4-K-1 : M4 Male [TBZ4]
8 : Ø8.5	WS : WHITE SILICON	FM5-K-1 : M5 Male [TBZ4]
10 : Ø11	CS : CONDUCTIVE SILICON	FM4-TBA-2 : M4 Male [TBZ6, TBZ8]
15 : Ø15.4	U : URETHANE	FM5-TBA-2 : M5 Male [TBZ6, TBZ8]
20 : Ø20.4	B,V : Fluorine	FM4-TBZ-1 : M4 Male [TBZ10, TBZ15]
30 : Ø30.4	HS : HIGH TEMP SILICON	FM4-TBZ-2 : M4 Male [TBZ20]
40 : Ø40	MF : Mark Free	FM4-TBZ-3 : M4 Male [TBZ30, TBZ40]
	BS : BLACK SILICON	FM5-TBZ-1 : M5 Male [TBZ10, TBZ15]
		FM5-TBZ-2 : M5 Male [TBZ20]
		FM5-TBZ-3 : M5 Male [TBZ30, TBZ40]

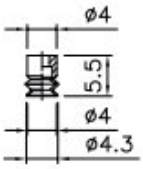
* Specifications are subject to change without prior notice for quality improvement.

VACUUM PUMP

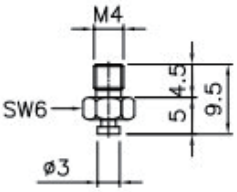
Individual Items
Assembly

TBZ Series

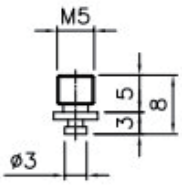
TBZ4



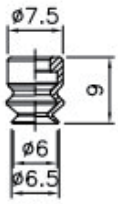
FM4-K-1



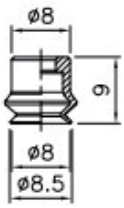
FM5-K-1



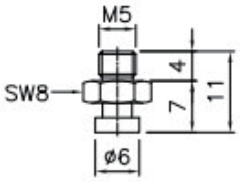
TBZ6



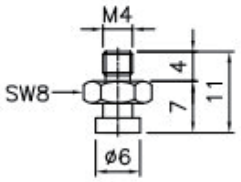
TBZ8



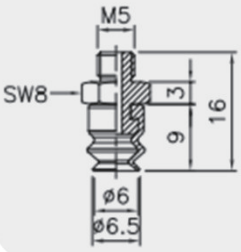
FM4-TBA-2



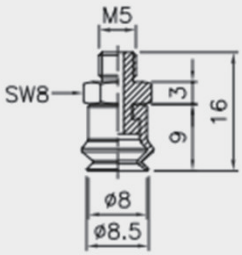
FM5-TBA-2



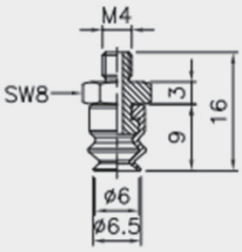
TBZ6-( )-FM5



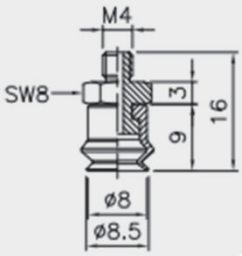
TBZ8-( )-FM5



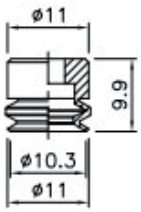
TBZ6-( )-FM4



TBZ8-( )-FM4



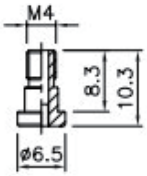
TBZ10



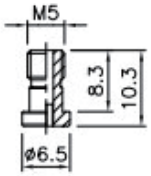
TBZ15



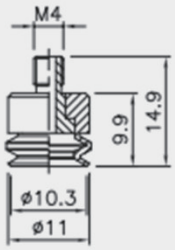
FM4-TBZ-1



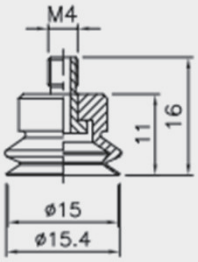
FM5-TBZ-1



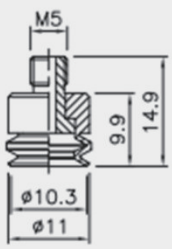
TBZ10-( )-FM4



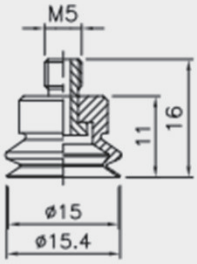
TBZ15-( )-FM4



TBZ10-( )-FM5



TBZ15-( )-FM5

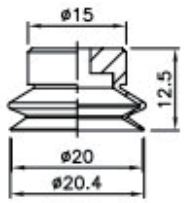


VACUUM PUMP

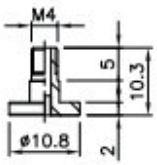
TBZ Series

Individual Items
Assembly

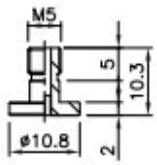
TBZ20



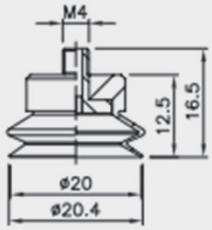
FM4-TBZ-2



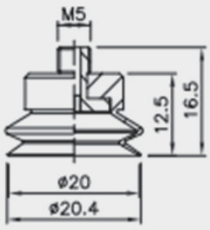
FM5-TBZ-2



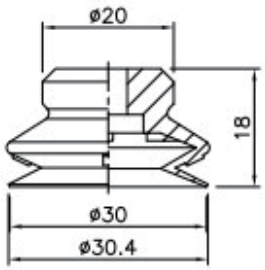
TBZ20-( )-M4



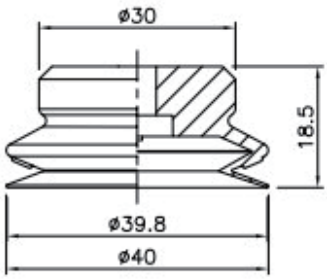
TBZ20-( )-M5



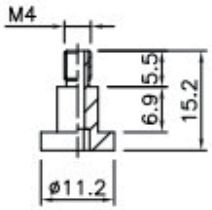
TBZ30



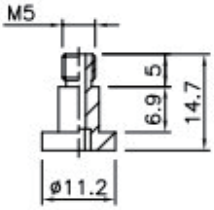
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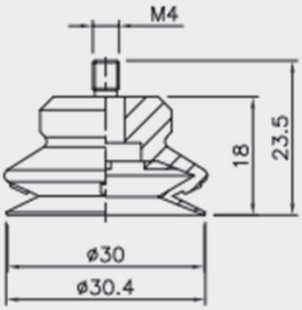
FM4-TBZ-3



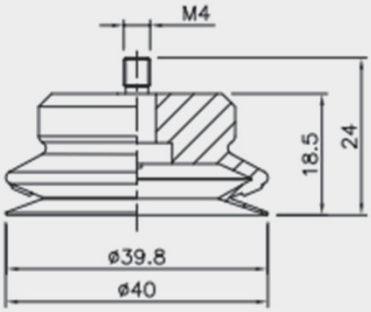
FM5-TBZ-3



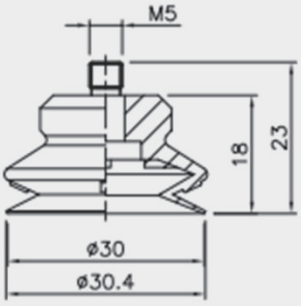
TBZ30-( )-M4



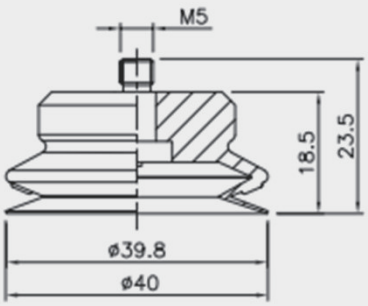
TBZ40-( )-M4



TBZ30-( )-M5



TBZ40-( )-M5



TBA SERIES

VACUUM PUMP



TBA Series

Product Features

Electronic circuit components such as
PCB substrates, LCDs,
and Solar cells can be safely transferred.

Vertical Lifting Force (kg)

Perpendicular Lifting Force / MODEL	-30kPa	-60kPa	-90kPa
TBA3	0.01	0.04	0.7
TBA4	0.03	0.08	0.1
TBA6	0.08	0.16	0.25
TBA8	0.15	0.34	0.5
TBA10	0.15	0.34	0.5
TBA10M	0.15	0.34	0.5
TBA13M	0.3	0.8	1.1
TBA16M	0.35	0.85	1.12

Suitable for Handling

Solar cell
Printed Circuit Board
Electronic components

Selection Guide

TBA – 4 – N – FM4

① Vacuum Pad ② Pad Size ③ Material ④ Fitting

① Vacuum Pad

TBA	TBA Series

② Pad Size

Symbol	3	4	6	8	10	10M	13M	16M
Size	Ø3	Ø4.5	Ø7	Ø9	Ø11	Ø12	Ø15	Ø18

③ Material

Symbol	N	S	WS	CS	U	BV	MF	BS
Material	NBR	Silicone	White Silicone	Conductive Silicone	Urethane	Fluorine	Mark Free	Black Silicone

④ Fitting

Symbol	FM4	FM5	FM4	FM5	FM4	FM5	FM4	FM5
Fitting Model	FM4-K-1	FM5-K-1	FM4-TBA-1	FM5-TBA-1	FM4-K-2	FM5-K-2	FM4-TBAM	FM5-TBAM
Thread Size	M4 Male	M5 Male	M4 Male	M5 Male	M4 Male	M5 Male	M4 Male	M5 Male
Applicable Pad	TBA3		TBA4~TBA8		TBA10		TBA10M~TBA16M	

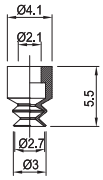
Specifications may changed without notice for quality.

VACUUM PUMP

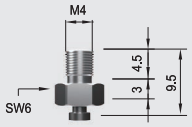
TBA Series

TBA3~TBA8

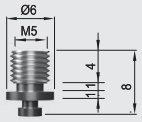
TBA3



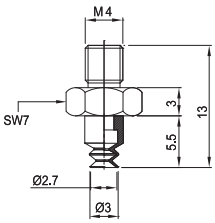
FM4-K-1



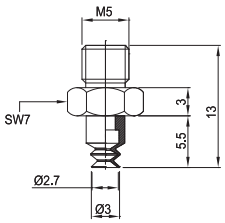
FM5-K-1



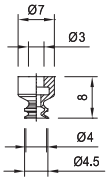
TBA3-( )-FM4



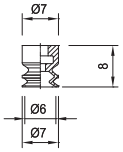
TBA3-( )-FM5



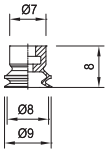
TBA4



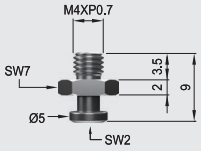
TBA6



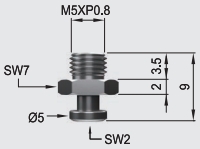
TBA8



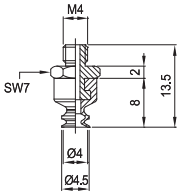
FM4-TBA-1



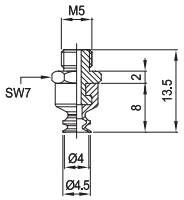
FM5-TBA-1



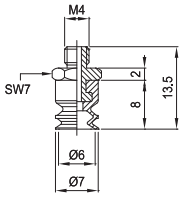
TBA4-( )-FM4



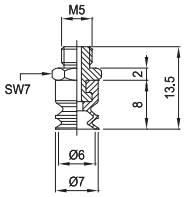
TBA4-( )-FM5



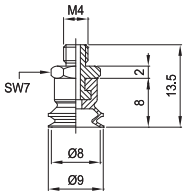
TBA6-( )-FM4



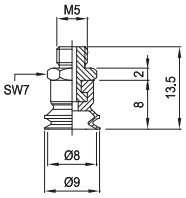
TBA6-( )-FM5



TBA8-( )-FM4



TBA8-( )-FM5



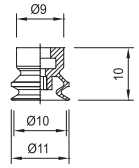
Specifications may changed without notice for quality.

VACUUM PUMP

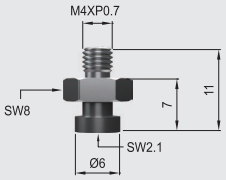
TBA Series

TBA10~TBA16M

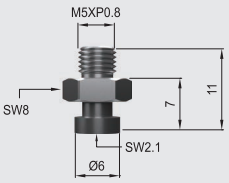
TBA10



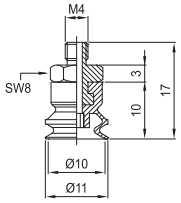
FM4-K-2



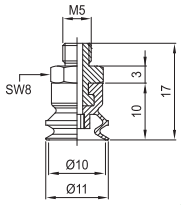
FM5-K-2



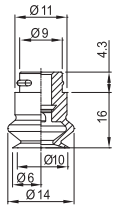
TBA10-( )-FM4



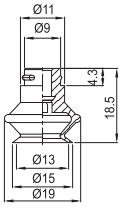
TBA10-( )-FM5



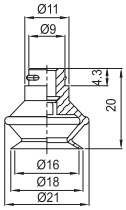
TBA10M



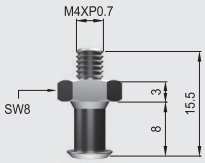
TBA13M



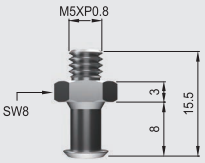
TBA16M



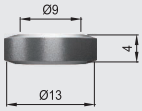
FM4-TBAM



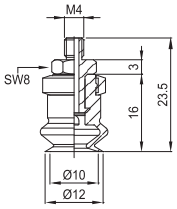
FM5-TBAM



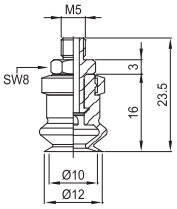
MC ACCESSORY



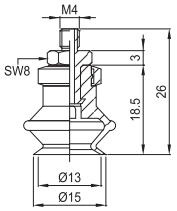
TBA10M-( )-FM4



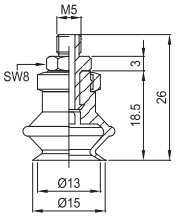
TBA10M-( )-FM5



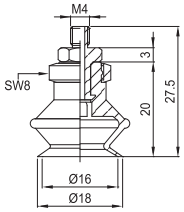
TBA13M-( )-FM4



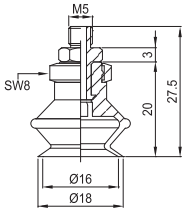
TBA13M-( )-FM5



TBA16M-( )-FM4



TBA16M-( )-FM5



Specifications may changed without notice for quality.

TP2 SERIES

VACUUM PUMP

TP2 Series



Vertical Lifting Force (kg)

Perpendicular Lifting Force / MODEL	–20 Kpa	–60 Kpa	–90 Kpa
TP2–8	0.04	0.27	0.48
TP2–10	0.05	0.34	0.60
TP2–13	0.22	0.65	0.89
TP2–15	0.25	0.75	1.02
TP2–20	0.51	1.22	1.53
TP2–25	0.81	1.88	1.4
TP2–30	1.12	1.45	2.94

Product features

- Applicable afor adsorption of thin films, sheets, etc.
- Suppresses deformation of the contact surface during adsorption

Suitable for Handling

- Film
- Glass
- Solar cell

Order No.

TP2 – 15 – CS – FM5

① ② ③

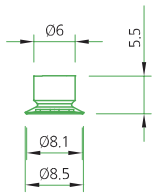
Size Ø [VACUUM PAD]	Material	Thread Size
8 : Ø 8.5	N : NBR	X : [NONE]
10 : Ø 11	S : SILICON	FM4–TP2–1 : [TP2–8]
13 : Ø 13.5	WS : WHITE SILICON	FM4–TP2–2 : [TP2–10~TP2–15]
15 : Ø 16	CS : CONDUCTIVE SILICON	FM4–TP2–3 : [TP2–20]
20 : Ø 21	U : URETHANE	FM4–TP2–4 : [TP2–25~TP2–30]
25 : Ø 26	B,V : Fluorine	FM5–TP2–1 : [TP2–8]
30 : Ø 31	MF : Mark Free	FM5–TP2–2 : [TP2–10~TP2–15]
	BS : BLACK SILICON	FM5–TP2–3 : [TP2–20]
		FM5–TP2–4 : [TP2–25~TP2–30]

VACUUM PUMP

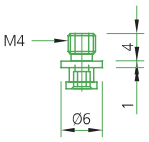
TP2 Series

Individual Items
Assembly

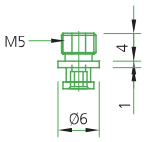
TP2–8–( )–X



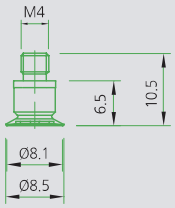
FM4–TP2–1



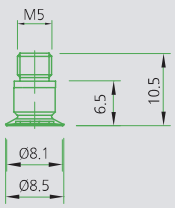
FM5–TP2–1



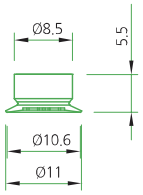
TP2–8–( )–M4



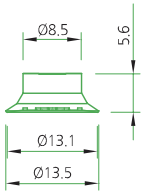
TP2–8–( )–M5



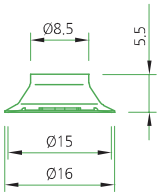
TP2–10–( )–X



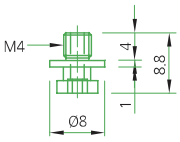
TP2–13–( )–X



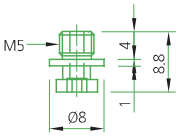
TP2–15–( )–X



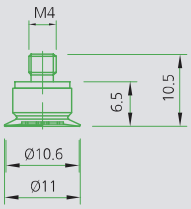
FM4–TP2–2



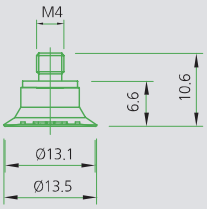
FM5–TP2–2



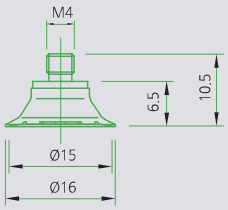
TP2–10–( )–M4



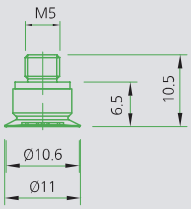
TP2–13–( )–M4



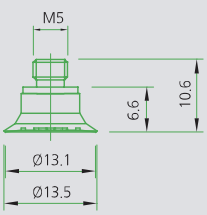
TP2–15–( )–M4



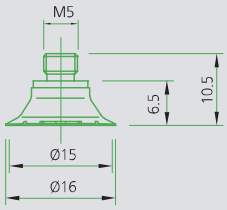
TP2–10–( )–M5



TP2–13–( )–M5



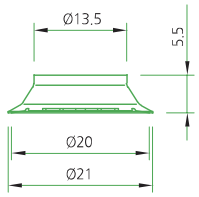
TP2–15–( )–M5



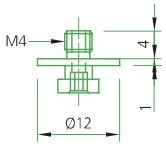
VACUUM PUMP

TP2 Series

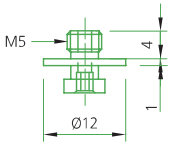
TP2–20–( )–X



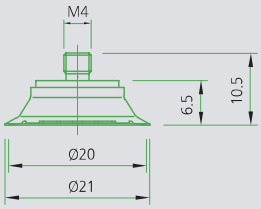
FM4–TP2–3



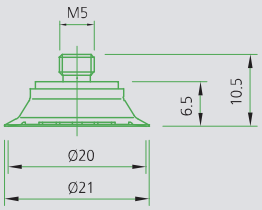
FM5–TP2–3



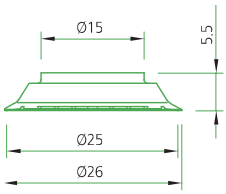
TP2–20–( )–M4



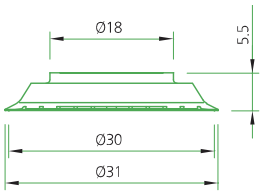
TP2–20–( )–M5



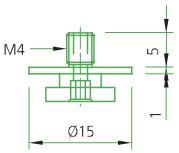
TP2–25–( )–X



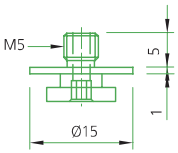
TP2–30–( )–X



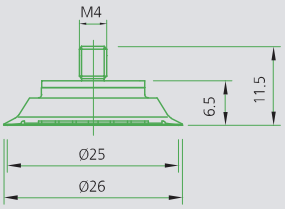
FM4–TP2–4



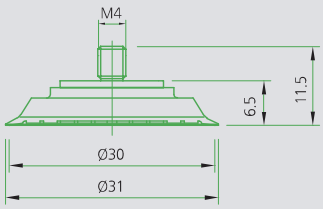
FM5–TP2–4



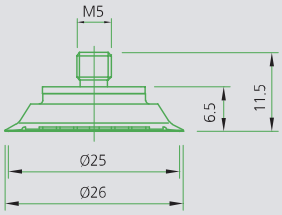
TP2–25–( )–M4



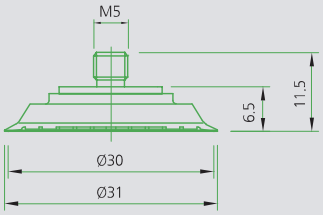
TP2–30–( )–M4



TP2–25–( )–M5



TP2–30–( )–M5



TU SERIES

VACUUM PUMP

TU Series

UNIVERSAL SUCTION CUP



- Suitable for flat or slightly curved surfaces.
- Can also be used for concave objects.

Product features

- Suitable for transporting products with flat or gently curved surfaces
- Can be used for slightly curved or concave workpieces

Applications

- Metal Sheet
- Plastic
- Box Packing

Vertical Load Capacity(KG)

Perpendicular Lifting Force / MODEL	–20 Kpa	–60 Kpa	–90 Kpa
TU2	0.003	0.01	0.015
TU3.5	0.009	0.04	0.06
TU4	0.02	0.09	0.13
TU6	0.05	0.17	0.25
TU8	0.1	0.29	0.39
TU10	0.15	0.44	0.7
TU8A	0.1	0.29	0.39
TU10A	0.15	0.44	0.7
TU15A	0.35	0.85	1.12

Order No.

TU – 6 – S – M5

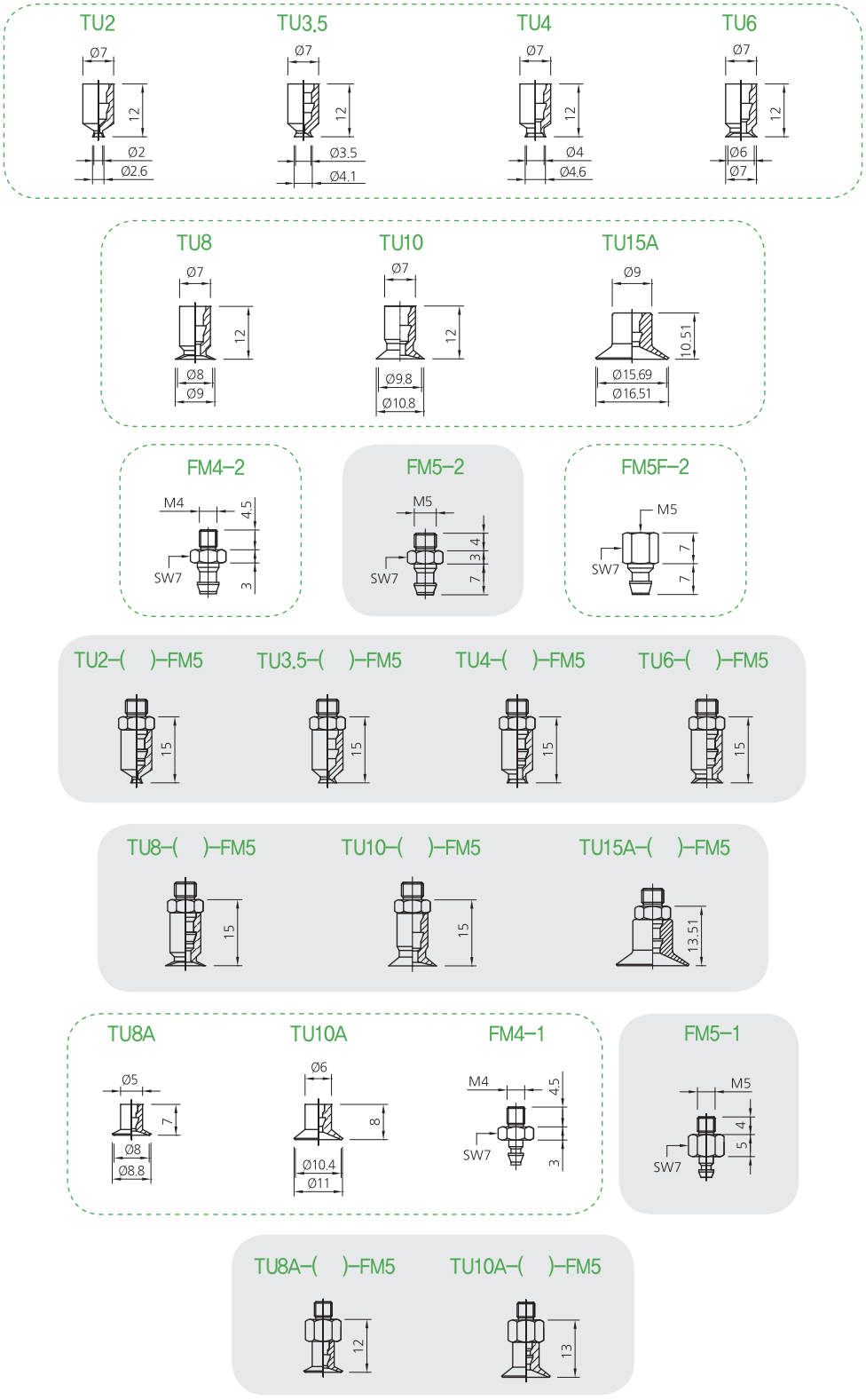
① ② ③

Size Ø [VACUUM PAD]	Material	Thread Size
2 : Ø 2	N : NBR	X : [NONE]
3.5 : Ø 3.5	S : SILICON	FM4–1 : M4 Male [TU8A, TU10A]
4 : Ø 4	WS : WHITE SILICON	FM4–2 : M4 Male [TU2~TU10, TU15A]
6 : Ø 6	CS : CONDUCTIVE SILICON	FM5–1 : M5 Male [TU8A, TU10A]
8 : Ø 8	U : URETHANE	FM5–2 : M5 Male [TU2~TU10, TU15A]
10 : Ø 10	B,V : Fluorine	FM5F–2 : M5 Female [TU2~TU10, TU15A]
8A : Ø 8	MF : Mark Free	
10A : Ø 10	BS : BLACK SILICON	
15A : Ø 15		

VACUUM PUMP

TU Series

☐ Individual Items
■ Assembly



TU SERIES

VACUUM PUMP

TU Series

UNIVERSAL SUCTION CUP



- Suitable for flat or slightly curved surfaces.
- Can also be used for concave objects.

Product features

- Suitable for transporting products with flat or gently curved surfaces
- Can be used for slightly curved or concave workpieces

Applications

- Metal Sheet
- Plastic
- Box Packing

Vertical Load Capacity(KG)

Perpendicular Lifting Force / MODEL	-20 Kpa	-60 Kpa	-90 Kpa
TU20	0.61	1.22	1.63
TU25	0.91	1.89	2.5
TU30	1.22	2.55	3.06
TU40	2.04	3.97	5
TU50	3.57	7.44	9.38

Order No.

TU – 30 – S – 18M

① ② ③

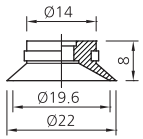
Size Ø [VACUUM PAD]	Material	Thread Size
20 : Ø 20	N : NBR	X : [NONE]
25 : Ø 25	S : SILICON	FM5-3 : M5 Male [TU20-TU30]
30 : Ø 30	WS : WHITE SILICON	F18M-1 : PF 1/8 Male [TU20-TU30]
40 : Ø 40	CS : CONDUCTIVE SILICON	F18F-1 : PF 1/8 Female [TU20-TU30]
50 : Ø 50	U : URETHANE	F18M-2 : PF 1/8 Male [TU40]
	B,V : Fluorine	F18F-2 : PF 1/8 Female [TU40]
	MF : Mark Free	F14M-1 : PF1/4 Male [TU40]
	BS : BLACK SILICON	F18M-3 : PF 1/8 Male [TU50]
		F18F-3 : PF 1/8 Female [TU50]
		F14M-2 : PF1/4 Male [TU50]

VACUUM PUMP

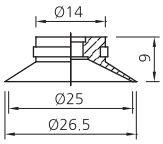
TU Series

☐ Individual Items
■ Assembly

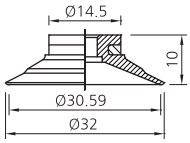
TU20



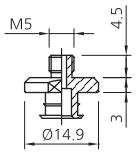
TU25



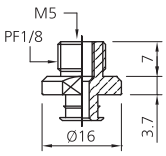
TU30



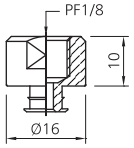
FM5–3



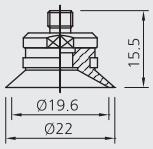
F18M–1



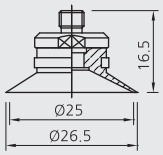
F18F–1



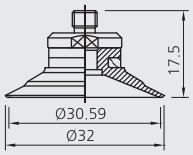
TU20–( )–FM5



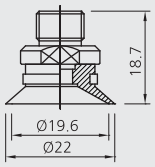
TU25–( )–FM5



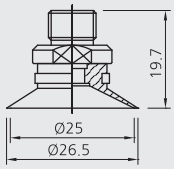
TU30–( )–FM5



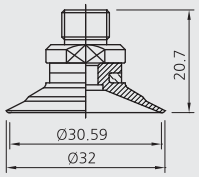
TU20–( )–F18M



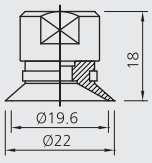
TU25–( )–F18M



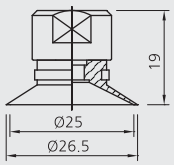
TU30–( )–F18M



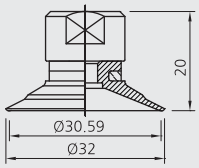
TU20–( )–F18F



TU25–( )–F18F



TU30–( )–F18F



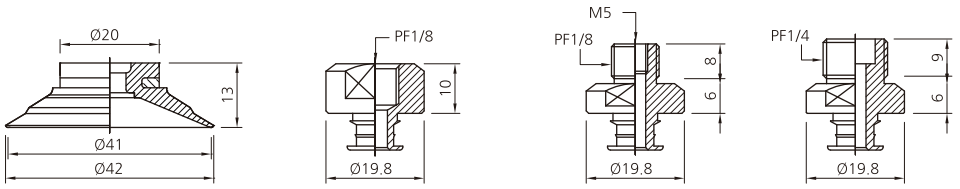
VACUUM PUMP

Individual Items
Assembly

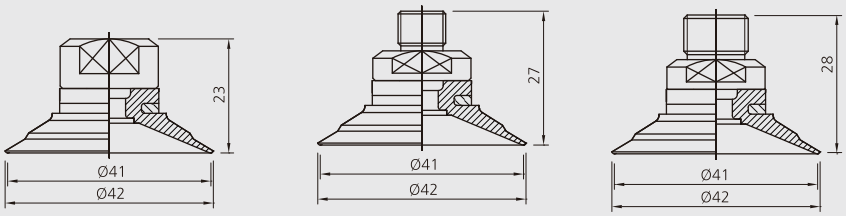
TU Series

TU40

TU40 F18F–2 F18M–2 F14M–1

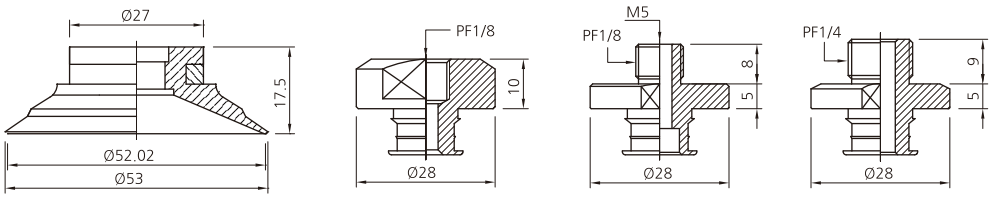


TU40–( )–F18F TU40–( )–F18M TU40–( )–F14M

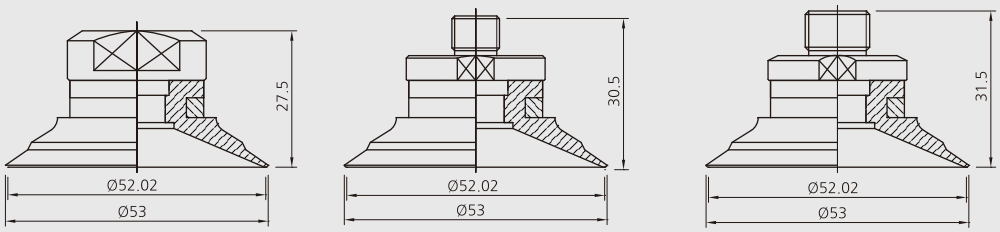


TU50

TU50 F18F–3 F18M–3 F14M–2



TU50–( )–F18F TU50–( )–F18M TU50–( )–F14M



TANHAY

TUJ SERIES

VACUUM PUMP



TUJ Series

Features I Product Features

A suitable pad for environments that require multiple small pads, such as round bars.

Excellent for narrow, long work such as substrates and semiconductors.

Applications I Suitable for Handing

Substrate, Semiconductor
Small glass container
Steel plate
Electronic components, Circuit organs

Vertical Load Capacity (Kg)

Perpendicular Lifting Force / MODEL	-30 kPa	-60 kPa	-90 kPa
TUJ0.8X2	0.003	0.01	0.015
TUJ2X4	0.031	0.082	0.1
TUJ2X8	0.06	0.16	0.2
TUJ2X8D	0.06	0.16	0.2
TUJ3X8	0.072	0.19	0.24
TUJ3X14.5	0.12	0.23	0.3
TUJ4X13	0.104	0.277	0.347

Order No.

TUJ – 0.8X2 – N – FM4

① Vacuum pad ② Pad size ③ Material ④ Fitting

① Vacuum Pad

TUJ	TUJ Series

② Pad Size

Symbol	0.8X2	2X4	2X8	2X8D	3X8	3X14.5	4X13
Size	Ø0.8X2.8	Ø2.6X4.6	Ø1.9X7.9	Ø1.9X8.3	Ø2.8X8	Ø3X14.5	Ø4X13

③ Material

Symbol	N	S	WS	CS	U	BV	MF	BS
Material	NBR	Silicone	White Silicone	Conductive Silicone	Urethane	Fluorine	Mark Free	Black Silicone

④ Fittings

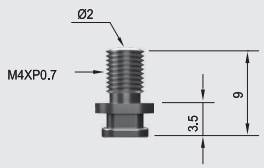
Symbol	FM4	FM5	FM4F	FM5F	FM4F	FM5F
Fitting Model	FM4-TUJ0.8X2	FM5-TUJ0.8X2	FM4F-1-TUJ	FM5F-1-TUJ	FM4F-2-TUJ	FM5F-2-
Thread Size	M4 Male	M5 Male	M4 Female	M5 Female	M4 Female	M5 Female
Applicable Pad	TUJ0.8X2		TUJ2X8		TUJ3X8~ 4X13	

VACUUM PUMP

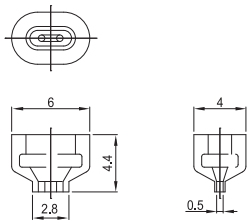
TUJ Series

TUJ0.8X2

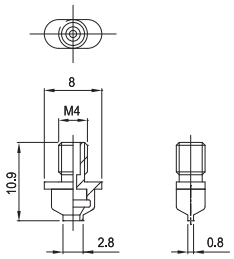
FM4-TUJ0.8X2



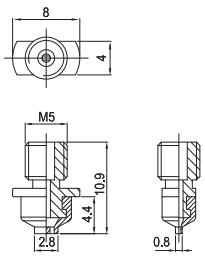
TUJ0.8X2



TUJ0.8X2-( )-FM4

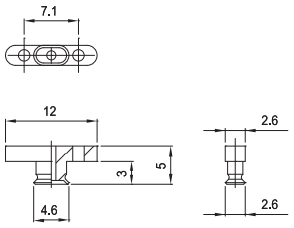


TUJ0.8X2-( )-FM5



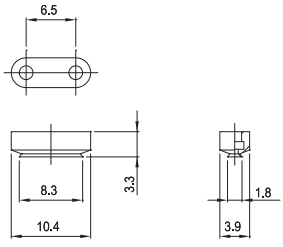
TUJ2X4

TUJ2X4



TUJ2X8D

TUJ2X8D

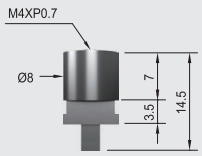


VACUUM PUMP

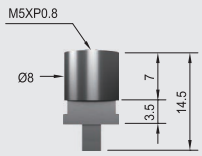
TUJ Series

TUJ2X8

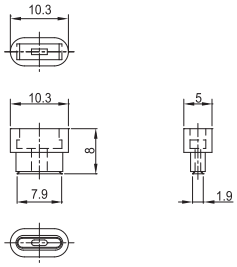
FM4F-1-TUJ



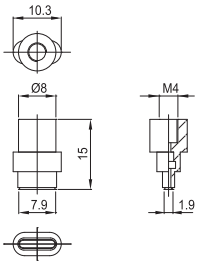
FM5F-1-TUJ



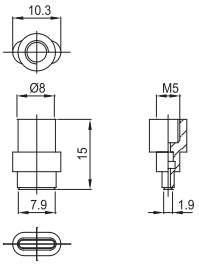
TUJ2X8



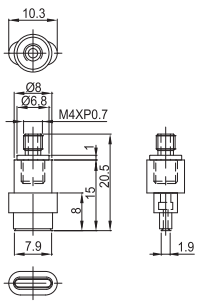
TUJ 2X8-( )-FM4F



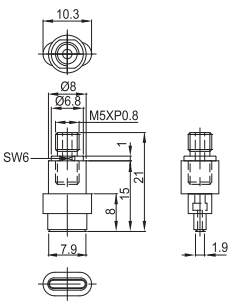
TUJ 2X8-( )-FM5F



TUJ2X8-( )-FM4



TUJ2X8-( )-FM5

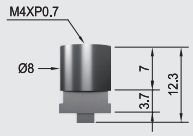


VACUUM PUMP

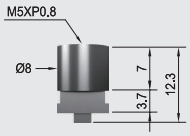
TUJ Series

TUJ3X8~TUJ4X13

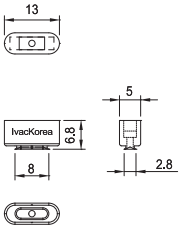
FM4F-2-TUJ



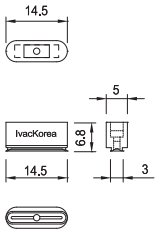
FM5F-2-TUJ



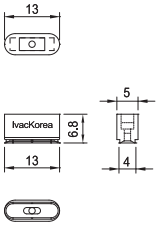
TUJ3X8



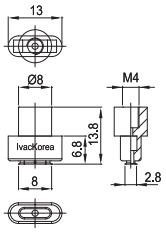
TUJ3X14.5



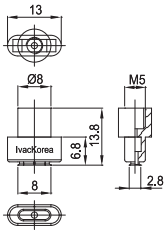
TUJ4X13



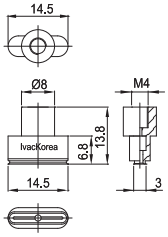
TUJ3X8-( )-FM4F



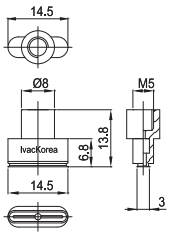
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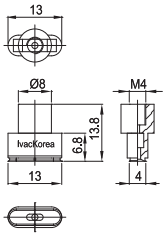
TUJ3X14.5-( )-FM4F



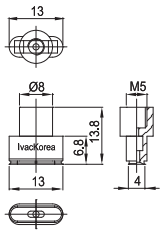
TUJ3X14.5-( )-FM5F



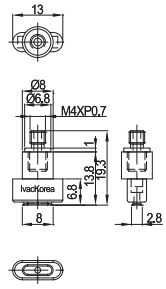
TUJ4X13-( )-FM4F



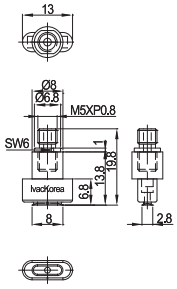
TUJ4X13-( )-FM5F



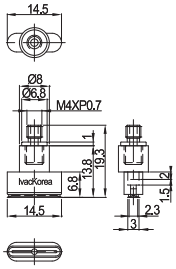
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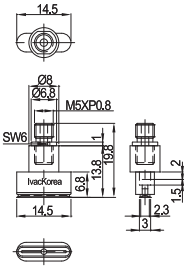
TUJ3X8-N-FM5



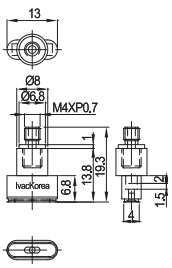
TUJ3X14.5-N-FM4



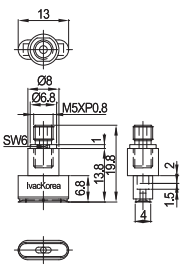
TUJ3X14.5-N-FM5



TUJ4X13-N-FM4

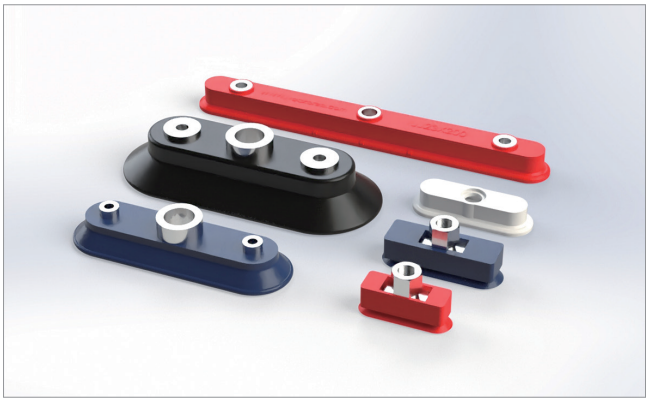


TUJ4X13-N-FM5



TUJ SERIES

VACUUM PUMP



TUJ Series

Features I Product Features

A suitable pad for environments that require multiple small pads, such as round bars.

Excellent for narrow, long work such as substrates and semiconductors.

Applications I Suitable for Handing

Substrate, Semiconductor
Small glass container
Steel plate
Electronic components, Circuit organs

Vertical Load Capacity (Kg)

Perpendicular Lifting Force / MODEL	-30 kPa	-60 kPa	-90 kPa
TUJ8X20	0.38	0.83	1.21
TUJ8X30	0.52	1.21	1.66
TUJ15X45	1.06	2.88	4.22
TUJ20X60	1.93	5.10	7.65
TUJ22X62	2.4	5.75	8.3
TUJ23X200	4.35	8.7	13.05
TUJ35X110	5.0	13.4	17.4
TUJ60X140	13.4	38.0	53.0

Order No.

TUJ	8X20	–	N	–	FM5
① Vacuum pad	② Pad size		③ Material		④ Fitting

① Vacuum Pad

TUJ	IUJ Series

② Pad Size

Symbol	8X20	8X30	15X45	20X60	22X62	23X200	35X110	60X140
Size	Ø8X20	Ø8X30	Ø15X45	Ø20X60	Ø22X62	Ø22X62	Ø37X114	Ø61X140

③ Material

Symbol	N	S	WS	CS	U	BV	MF	BS
Material	NBR	Silicone	White Silicone	Conductive Silicone	Urethane	Fluorine	Mark Free	Black Silicone

④ Fittings

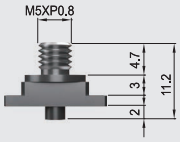
Symbol	FM5	FM5F	F18F	F18F	F38F	F38F
Fitting Model	FM5-3-TUJ	FM5F-3-TUJ	F18F-1-TUJ	F18F-2-TUJ	F38F-TUJ-1	F38F-TUJ-2
Thread Size	M5 Male	M5 Female	PF1/8 Female	PF1/8 Female	PF3/8 Female	PF3/8 Female
Applicable Pad	TUJ8X20~TUJ8X30		TUJ15X45~TUJ20X60	TUJ22X62,TUJ23X200	TUJ35X110	TUJ60X140

VACUUM PUMP

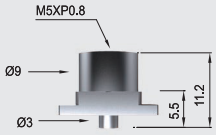
TUJ Series

TUJ8X20~TUJ8X30

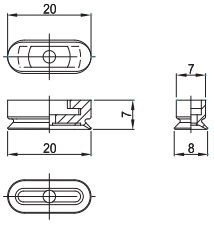
FM5-3-TUJ



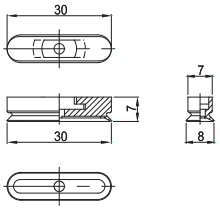
FM5F-3-TUJ



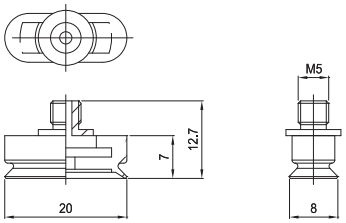
TUJ8X20



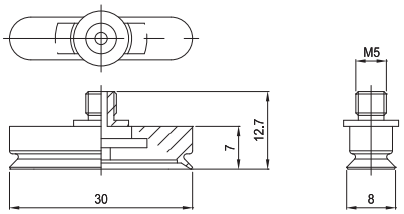
TUJ8X30



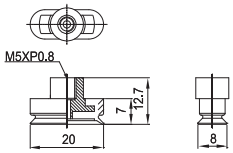
TUJ8X20-( )-FM5



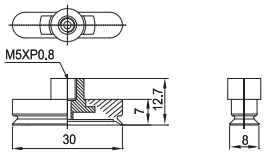
TUJ8X30-( )-FM5



TUJ8X20-( )-FM5F

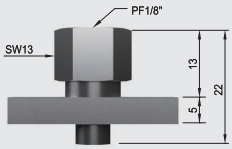


TUJ8X30-( )-FM5F

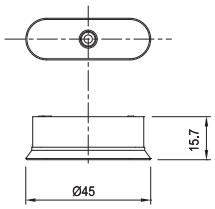


TUJ15X45~TUJ20X60

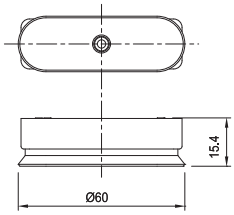
F18F-1-TUJ



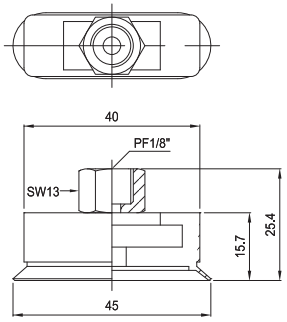
TUJ15X45-



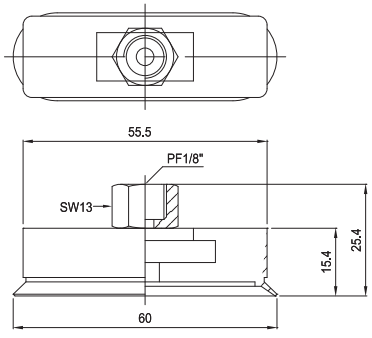
TUJ20X60



TUJ15X45-( )-F18F



TUJ20X60-( )-F18F

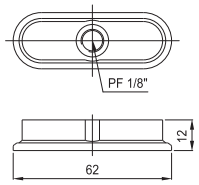


VACUUM PUMP

TUJ Series

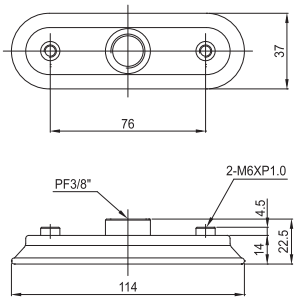
TUJ22X62

TUJ22X62-( )-F18F



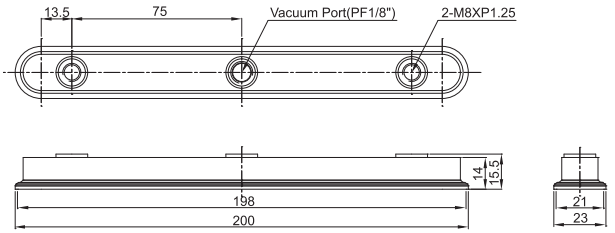
TUJ35X110

TUJ35X110-( )-F38F



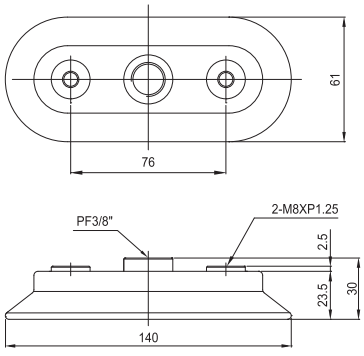
TUJ23X200

TUJ23X200-( )-F18F



TUJ60X140

TUJ60X140-( )-F38F



Vacuum Pad
진공 패드



TB Series

제품 특징 | Product Features

- 얇은 제품의 이송에 적합.
- 약간의 높낮이가 다른 제품의 이송 및 라운드 진 물체 이송.
- 레벨 조절에 적합.

- Suitable for transport of thin products.
- Transfer of products with slightly different heights and transfer of rounded objects.
- Suitable for levelling.

수직 이송력(Kg)

Perpendicular Lifting Force / MODEL	-30 kPa	-60 kPa	-90 kPa
TB3.5	0.01	0.06	0.08
TB4	0.02	0.07	0.11
TB5	0.03	0.08	0.1
TB6	0.05	0.12	0.18
TB8	0.08	0.16	0.25
TB10	0.15	0.34	0.5
TB13	0.22	0.54	0.89
TB15	0.29	0.6	0.9

적용 | Suitable for Handling

- 합판 [Veneer Sheets]
- 얇은 필름 [Thin film sheets]
- 종이박스 [Paper Box]
- 철판 [Steel Plate]

선정방법

TB – 3.5 – N – FM5

① 진공 패드 Vacuum pad
② 패드 사이즈 Pad size
③ 재질 Material
④ 피팅 종류 Fitting

① 진공 패드 Vacuum pad

TB	TB Series

② 패드 사이즈 Pad size

기호	3.5	4	5	6	8	10	13	15
사이즈 Size	Ø3.5	Ø4.2	Ø5.6	Ø6.6	Ø8.4	Ø11	Ø13	Ø15.5

③ 재질 Material

기호	N	S	WS	CS	U	BV	HS	MF	BS
재질 Material	NBR	Silicone	White Silicone	Conductive Silicone	Urethane	Fluorine	High Temp Silicone	Mark Free	Black Silicone

④ 피팅 종류 Fitting

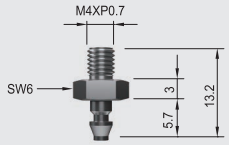
기호	FM4	FM5	FM4	FM5	FM5F
형번 Fitting Model	FM4-1	FM5-1	FM4-2	FM5-2	FM5F-2
나사 사이즈 Thread Size	M4 Male	M5 Male	M4 Male	M5 Male	M5 Female
적용 가능 패드 Applicable Pad	TB3.5~TB5		TB6~TB15		

Specifications may changed without notice for quality.

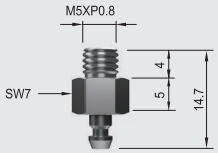
TB Series

TB3.5~TB5

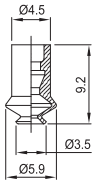
FM4-1



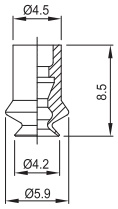
FM5-1



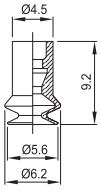
TB3.5



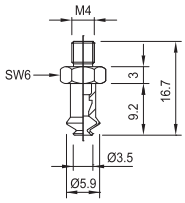
TB4



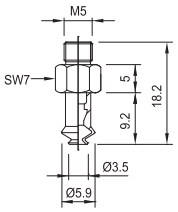
TB5



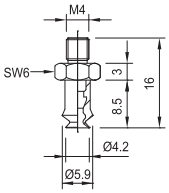
TB3.5-( )-FM4



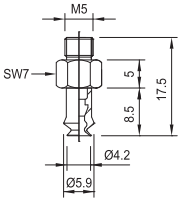
TB3.5-( )-FM5



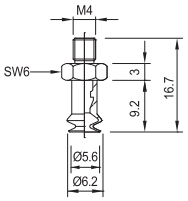
TB4-( )-FM4



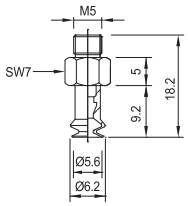
TB4-( )-FM5



TB5-( )-FM4



TB5-( )-FM5

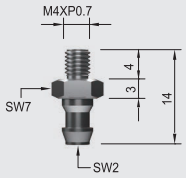


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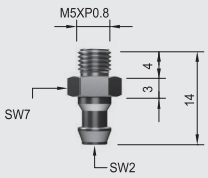
Vacuum Pad
진공 패드

TB6~TB15

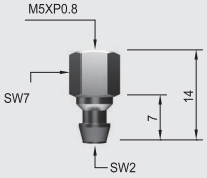
FM4-2



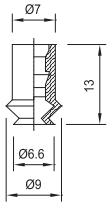
FM5-2



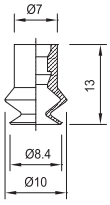
FM5F-2



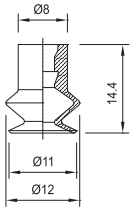
TB6



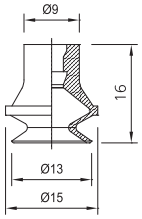
TB8



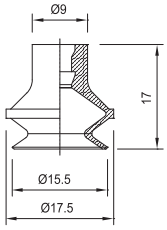
TB10



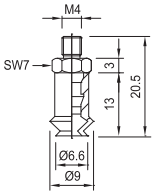
TB13



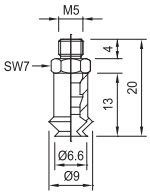
TB15



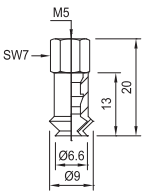
TB6-( )-FM4



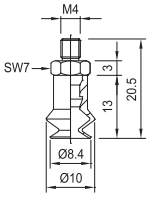
TB6-( )-FM5



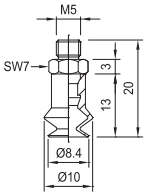
TB6-( )-FM5F



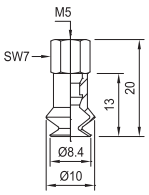
TB8-( )-FM4



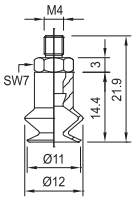
TB8-( )-FM5



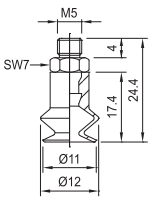
TB8-( )-FM5F



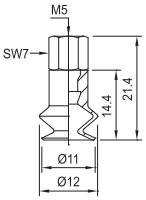
TB10-( )-FM4



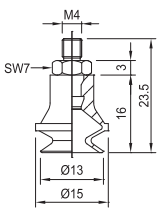
TB10-( )-FM5



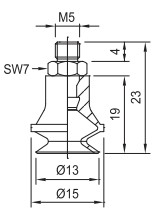
TB10-( )-FM5F



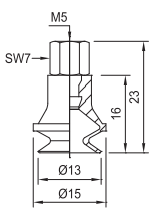
TB13-( )-FM4



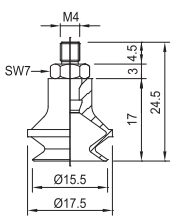
TB13-( )-FM5



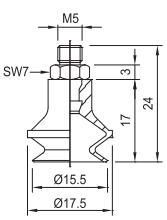
TB13-( )-FM5F



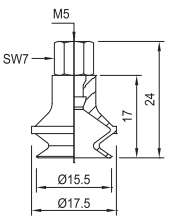
TB15-( )-FM4



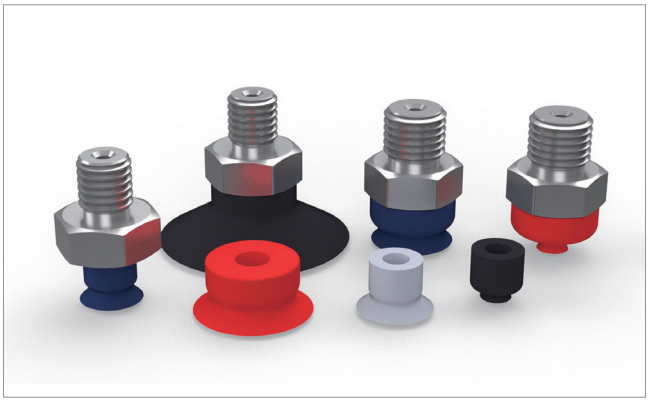
TB15-( )-FM5



TB15-( )-FM5F



Vacuum Pad
진공 패드



TUA Series

제품 특징 | Product Features

| PCB 기판, LCD, 태양광 셀 등에 전자회로 부품 등을 안전하게 이송가능.

| Electronic circuit components such as PCB substrates, LCDs, and solar cells can be safely transferred

수직 이송력(Kg)

Perpendicular Lifting Force / MODEL	-30 kPa	-60 kPa	-90 kPa
TUA2	0.013	0.015	0.02
TUA4	0.05	0.17	0.25
TUA6	0.05	0.17	0.25
TUA8	0.1	0.29	0.39
TUA10	0.15	0.44	0.7
TUA15	0.35	0.85	1.12
TUA2M	0.013	0.015	0.02
TUA4M	0.05	0.17	0.25
TUA5M	0.05	0.17	0.25

적용 | Suitable for Handling

| 태양 전지 [Solar cell]
| PCB [Printed circuit board]
| 전자 부품 [Electronic components]

선정방법

TUA – 6 – N – FM4

① 진공 패드 Vacuum pad
② 패드 사이즈 Pad size
③ 재질 Material
④ 피팅 종류 Fitting

① 진공 패드 Vacuum pad

TUA	TUA Series

② 패드 사이즈 Pad size

기호	2	4	6	8	10	15	2M	4M	5M
사이즈 Size	Ø2.6	Ø4.8	Ø6.7	Ø9	Ø10.5	Ø15.7	Ø2.4	Ø4.8	Ø5.8

③ 재질 Material

기호	N	S	WS	CS	U	BV	MF	BS
재질 Material	NBR	Silicone	White Silicone	Conductive Silicone	Urethane	Fluorine	Mark Free	Black Silicone

④ 피팅 종류 Fitting

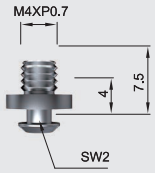
기호	FM4	FM5	FM4	FM5
형번 Fitting Model	FM4-MCR	FM5-MCR	FM4-IUAM-1	FM5-IUAM-1
나사 사이즈 Thread Size	M4 Male	M5 Male	M4 Male	M5 Male
적용 가능 패드 Applicable Pad	TUA2~TUA15		TUA2M~TUA5M	

품질향상을 위해 예고없이 사양이 변경될 수 있음

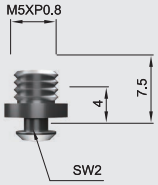
Vacuum Pad
진공 패드

TUA2~TUA5

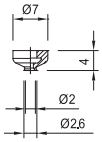
FM4-MCR



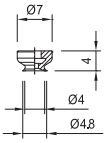
FM5-MCR



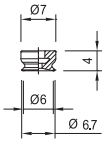
TUA2



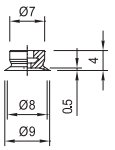
TUA4



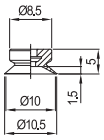
TUA6



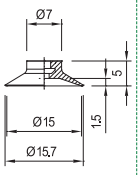
TUA8



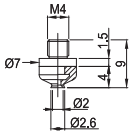
TUA10



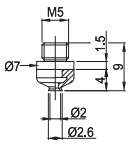
TUA15



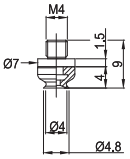
TUA2-( )-FM4



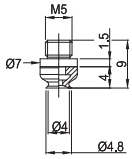
TUA2-( )-FM5



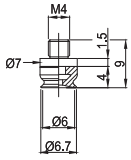
TUA4-( )-FM4



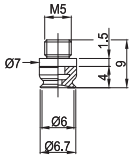
TUA4-( )-FM5



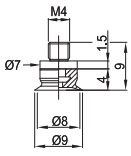
TUA6-( )-FM4



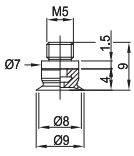
TUA6-( )-FM5



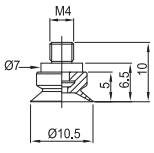
TUA8-( )-FM4



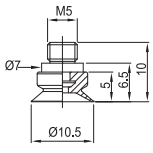
TUA8-( )-FM5



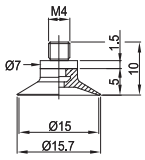
TUA10-( )-FM4



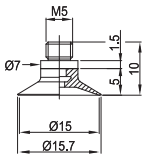
TUA10-( )-FM5



TUA15-( )-FM4



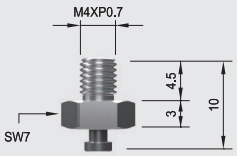
TUA15-( )-FM5



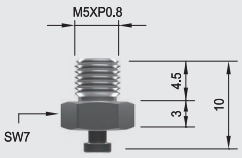
TUA Series

TUA2M~TUA5M

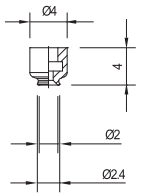
FM4-TUAM-1



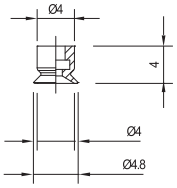
FM5-TUAM-1



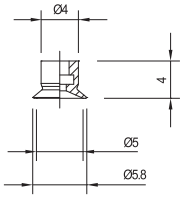
TUA2M



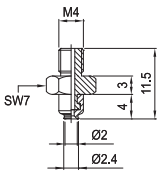
TUA4M



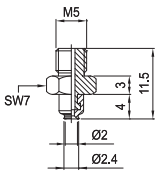
TUA5M



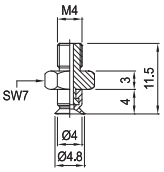
TUA2M-( )-FM4



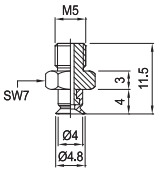
TUA2M-( )-FM5



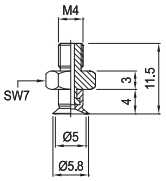
TUA4M-( )-FM4



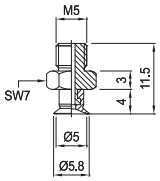
TUA4M-( )-FM5



TUA5M-( )-FM4

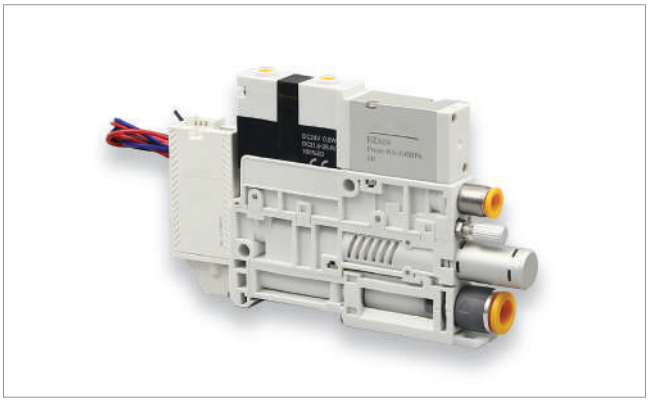


TUA5M-( )-FM5



품질향상을 위해 예고없이 사양이 변경될 수 있음

Vacuum Ejector
소형이젝터



TA Series - Single Type

- 최대 진공도 Max vacuum level : -85kPa
- 최대 흡입유량 Max flow rate : 45~62 NL/min
- 공급압력 Feed pressure : 0.35~0.4 MPa
- 소음도 Noise level : 74~78 dBA
- 사용온도 Working temperature : -20~70 ℃

제품 특징 | Product features

- 저전력 솔레노이드 밸브 내장으로 안정성이 높고, 긴 사용 수명.
- 내장된 통합 진공, 공기 차단, 소음 감소, 에너지 절약, 자기 유지 및 기타 기능.
- 빠른 교체를 위한 진공 필터 내장으로 설치 및 제거 속도 향상.
- 소음 배기구와 환기 배기구를 자유롭게 선택 가능.
- 통합 측면 구멍 설치, 35mm 클램프 레일 설치, L자형브라켓(옵션) 등 3가지 설치 모드.

Order No.

TA ① - ② - ③ - ④ - ⑤ - ⑥

ex) TA10-M4-S-06-D-B

ex) TA, 노즐직경: 10 (Ø1.0), 공급/파기밸브: M4, 진공센서사양: S (Type NPN), 진공포트: 06 (Ø6), 배기유형: D (Vent (Ø8), 장착브라켓: B(L-type mounting bracket)이 필요한 경우, TA10-M4-S-06-D-B를 주문하시면 됩니다.

① 노즐 직경 [NOZZLE DIAMETER]

10 : Ø1.0	※ 10:Ø1.0 타입 선정 시 영업사원 문의 필요.
15 : Ø1.5	

② 공급 / 파기 밸브 [SUPPLY] / [VACUUM RELEASE CONTROL VALVE]

M4 : NC	NC
H : Self-Holding type	NC

※ H(자기 유지형) 밸브 선택 시, 별도의 에너지 절감 센서는 선택할필요가 없습니다. 해당 밸브 자체적으로 20ms 이상 통전이 되면 진공이 차단되는 기능을 갖추고 있습니다.

③ 진공센서사양 [VACUUM SENSOR SPECIFICATION]

X	: Without
S	: Type NPN
PS	: Type PNP
SE	: NPN + Energy Conservation
PSE	: PNP + Energy Conservation

④ 진공 포트 [VACUUM PORT]

06 : Ø6
08 : Ø8

⑤ 배기 유형 [EXHAUST TYPE]

X : Silencer (default)	
D : Vent (Ø6)	※ D: Vent(Ø6)타입 선정 시 영업사원 문의 필요.

⑥ 장착 브라켓 [MOUNTING BRACKET]

X : Without (default)
B : L – type mounting bracket

※ 밸브 리드선은 NPN과 PNP 모두 동일 사양.
※ NPN과 PNP는 내재된 칩으로 변환 가능.

TA Series
Single Type

밸브 사양 Valve Specifications

리셋 타입 Reset Type	air return, air return +spring return	작업 전압 Working Voltage	DC24V		
루브리케이션 Lubrication	No required	전압 범위 Voltage Range	± 10%		
교정 압력 Proof Pressure (MPa)	1.2	전력 소비량 Power Consumption	Standard: 0.8W, energy-saving: 0.35W		
작업 온도 Working Temperature (℃)	-20~70 (No freezing)	단열재 등급 Insulation Class	F Class		
보호 등급 Protective Class	IP40 Dust Proof	밸브 리드선 Valve lead wire	빨간색 = Ⓥ(공급)	파란색 = Ⓡ(파기)	검은색 = Ⓟ(전원)

성능 Performance Parameters

모델 Model	압력 Supply Pressure(MPa)	최대 진공 Max Vacuum(kPa)	최대 흡입유량 (Nℓ/min) Max vacuum flow	소비 유량 Consumption Flow Rate (Nℓ/min)	공기 공급 Air Supply Port(mm)	진공포트 Vacuum Port(mm)	소음 Noise (dBA)
TA10	0.35	85	45	38	Ø6	Ø6/Ø8	74
TA15	0.5	91	67	90	Ø6	Ø6/Ø8	84

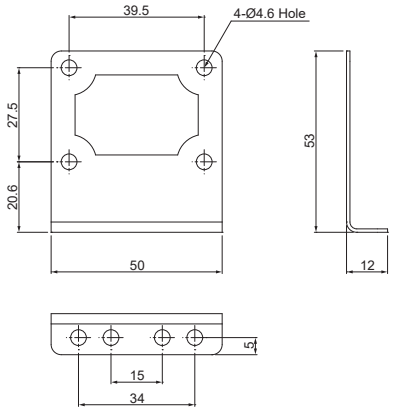
진공 흐름 속도 Vacuum Flow Rate Of Different Vacuum Flow

모델 Model	압력 Supply Pressure(MPa)	공기 소비 Air Consumption (Nℓ/min)	0	-10	-20	-30	-40	-50	-60	-70	-80	최대 진공 Max Vacuum (kPa)
TA10	0.35	38	45	32	19	13	11	6.8	5.1	3.2	1.2	-85
TA15	0.5	90	65	55	37	28	23	18	14	10	6	-91

※ 상기 에어 소모량 및 흡입유량은 당사의 측정기준 입니다.

치수정보 | Dimension information

L-type Mounting Bracket



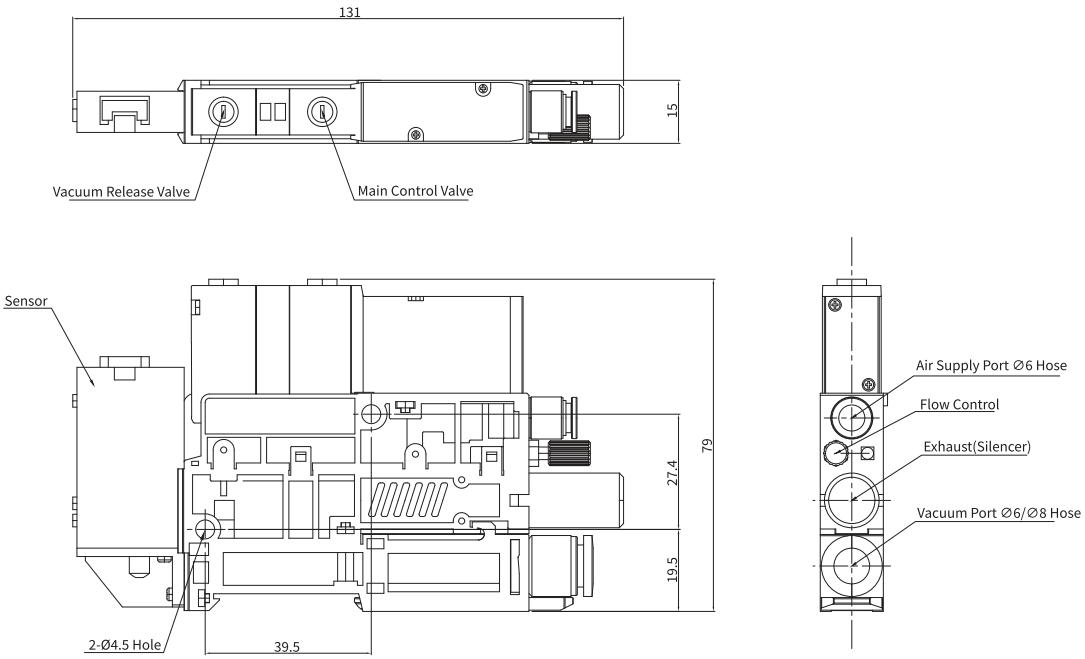
품질향상을 위해 예고없이 사양이 변경될 수 있음.

Vacuum Ejector
소형이젝터

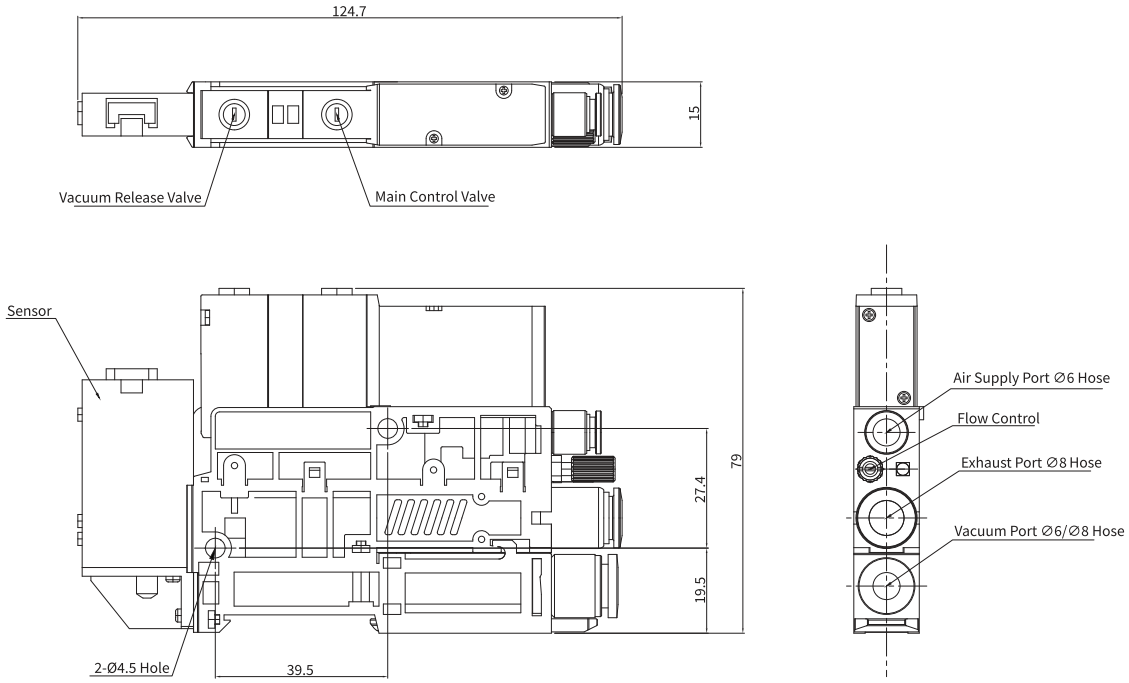
TA Series
Single Type

치수정보 | Dimension information

TA15-M4-(S/PS/PE/PSE)

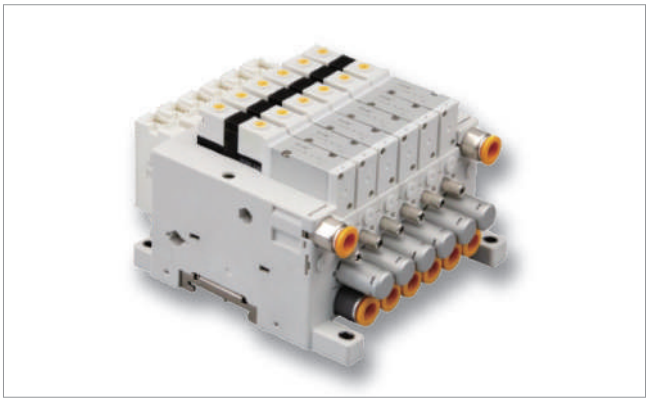


TA15-M4-(S/PS/PE/PSE)-D



Specifications may changed without notice for quality.

Vacuum Ejector
소형이젝터



TA Series - Multi-Stack Type

- 최대 진공도 Max vacuum level : -85kPa
- 최대 흡입유량 Max flow rate : 45~62 NL/min
- 공급압력 Feed pressure : 0.35~0.4 MPa
- 소음도 Noise level : 74~78 dBA
- 사용온도 Working temperature : -20~70 ℃

제품 특징 | Product features

- 멀티 스택 조립 구조로 중앙 집중식 에어 공급 장치 채택 가능.
- 진공 내장, 진공 정지, 소음기, 에너지 절감, 자기 유지 기능을 통합한 형태.
- 빠른 분해 및 조립이 가능한 교체식 진공 필터 내장.
- 무음 배기 및 환기 배기 가능. (옵션 선택 사항.)
- 35mm DIN 레일 설치 및 나사 구멍 설치로 다양한 조합의 니즈 충족 가능.

Order No.

TA ① - ② - ③ - ④ - ⑤ - ⑥

ex) TA10-M4-S-06-D-F4

ex) TA, 노즐직경: 10 (Ø1.0), 공급/파기밸브: M4, 진공센서사양: S (Type NPN), 진공포트: 06 (Ø6), 배기유형: D (Vent (Ø8), 진공연조: FA(4Stack)이 필요한 경우, TA10-M4-S-06-D-F4를 주문하시면 됩니다.

① 노즐 직경 [NOZZLE DIAMETER]

10 : Ø1.0	※ 10: Ø1.0 타입 선정 시 영업사원 문의 필요.
15 : Ø1.5	

② 공급 / 파기 밸브 [SUPPLY] / [VACUUM RELEASE CONTROL VALVE]

M4 : NC	NC
H : Self-Holding type	NC

※ H(자기 유지형) 밸브 선택 시, 별도의 에너지 절감 센서는 선택할필요가 없습니다. 해당 밸브 자체적으로 20ms 이상 통전이 되면 진공이 차단되는 기능을 갖추고 있습니다.

③ 진공센서사양 [VACUUM SENSOR SPECIFICATION]

X	: Without
S	: Type NPN
PS	: Type PNP
SE	: NPN + Energy Conservation
PSE	: PNP + Energy Conservation
W	: External Vacuum Detection

④ 진공 포트 [VACUUM PORT]

06 : Ø6
08 : Ø8

⑤ 배기 유형 [EXHAUST TYPE]

X : Silencer (default)	
D : Vent (Ø6)	※ D: Vent(Ø6)타입 선정 시 영업사원 문의 필요.

※ 밸브 리드선은 NPN과 PNP 모두 동일 사양.
※ NPN과 PNP는 내재된 칩으로 변환 가능.

⑥ 진공연조 [NUMBER OF INDIVIDUAL VACUUM STACK]

F2 : 2 Stack
F4 : 4 Stack
F6 : 6 Stack
F8 : 8 Stack
F10 : 10 Stack
F12 : 12 Stack

※ 홀수 번호 연조 선택 가능
ex) F3 – 3 Stack, F7– 7 Stack

품질향상을 위해 예고없이 사양이 변경될 수 있음.

TANHAY

Vacuum Ejector
소형이젝터

TA Series
Multi-Stack Type

밸브 사양 Valve Specifications

리셋 타입 Reset Type	air return, air return +spring return	작업 전압 Working Voltage	DC24V		
루브리케이션 Lubrication	No required	전압 범위 Voltage Range	± 10%		
교정 압력 Proof Pressure (MPa)	1.2	전력 소비량 Power Consumption	Standard: 0.8W, energy-saving: 0.35W		
작업 온도 Working Temperature (℃)	-20~70 (No freezing)	단열재 등급 Insulation Class	F Class		
보호 등급 Protective Class	IP40 Dust Proof	밸브 리드선 Valve lead wire	빨간색 = Ⓥ(공급)	파란색 = Ⓡ(파기)	검은색 = Ⓟ(전원)

성능 Performance Parameters

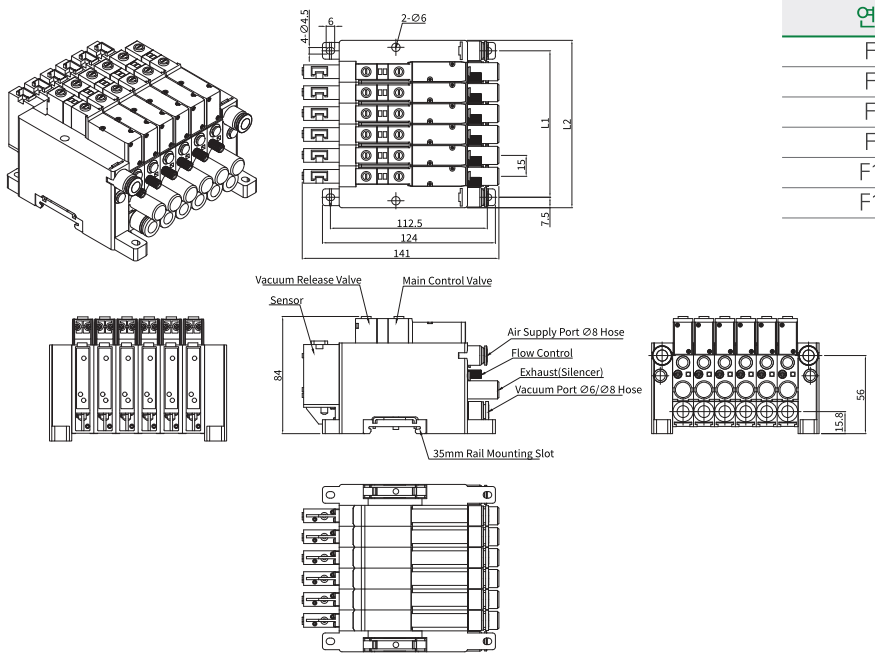
모델 Model	압력 Supply Pressure(MPa)	최대 진공 Max Vacuum(kPa)	최대 흡입유량 (Nℓ/min) Max vacuum flow	공기 소비 Air Consumption (Nℓ/min)	공기 공급 Air Supply Port(mm)	진공포트 Vacuum Port(mm)	소음 Noise (dBA)
TA10	0.35	85	45	40	Ø8	Ø6/Ø8	74
TA15	0.5	91	67	90	Ø8	Ø6/Ø8	84

진공 흐름 속도 Vacuum Flow Rate Of Different Vacuum Flow

모델 Model	정격공기공급압력 Rated Air Supply Pressure(MPa)	공기 소비 Air Consumption (Nℓ/min)	0	10	20	30	40	50	60	70	80	최대 진공 Max Vacuum (kPa)
TA10	0.35	40	45	32	19	13	11	6.8	5.1	3.2	1.2	- 88
TA15	0.5	90	65	55	37	28	23	18	14	10	6	- 91

※ 상기 에어 소모량 및 흡입유량은 당사의 측정기준 입니다.

치수정보 | Dimension information



연조	L1	L2
F2	45	60
F4	75	90
F6	105	120
F8	135	150
F10	165	180
F12	195	210

Specifications may changed without notice for quality.