Basic Pad *ZP* Series

p. 26

Pad diameter	ø2, ø4, ø6, ø8, ø10, ø13, ø16, ø20, ø25, ø32, ø40, ø50
Pad form	Flat type, Flat type with ribs, Bellows type, Thin flat type, Thin flat type with ribs, Deep type
Mounting	Male thread, Female thread
Vacuum inlet direction	Vertical, Lateral
Vacuum inlet	Male thread, Female thread, One-touch fitting, Barb fitting
Buffer	Without, With [Buffer stroke [mm]: 6, 10, 15, 20, 25, 30, 40, 50]
Ball joint	Without, With (Flat type only)

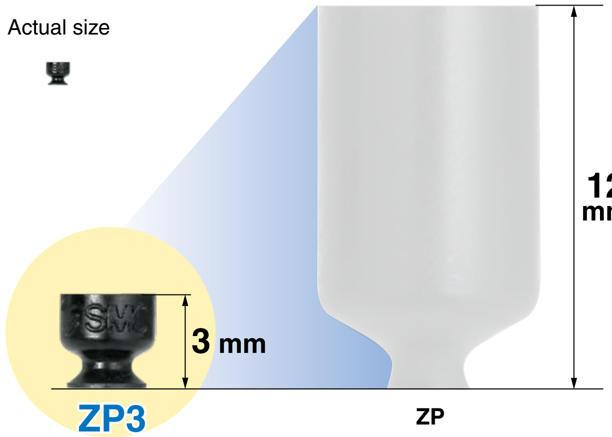
12 sizes, 6 types of pad forms
The mounting bracket can be selected according to the application.

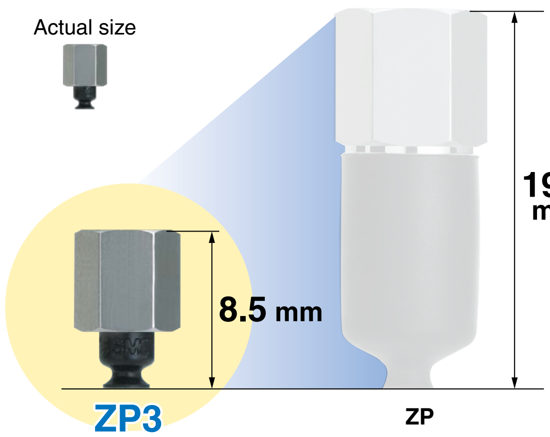
Compact Type *ZP3* Series

p. 132

Pad diameter	ø1.5, ø2, ø3.5, ø4, ø6, ø8, ø10, ø13, ø16
Pad form	Flat type, Flat type with groove, Bellows type, Bellows type with ribs
Mounting	Male thread, Female thread
Vacuum inlet direction	Vertical, Lateral
Vacuum inlet	Male thread, Female thread, One-touch fitting, Barb fitting
Buffer	Without, With [Buffer stroke [mm]: 3, 6, 10, 15, 20]

Overall length shortened **For the flat type** (Pad diameter: ø2)



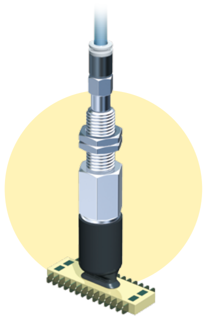


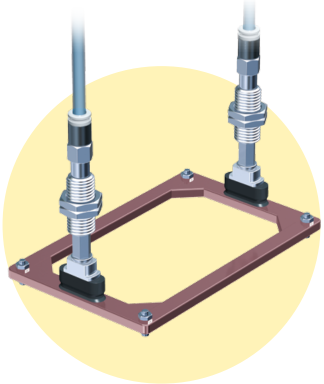
Oval Pad *ZP/ZP2 Series*

p. 166

Pad size	2 x 4, 3.5 x 7, 4 x 10, 4 x 20, 4 x 30, 5 x 10, 5 x 20, 5 x 30, 6 x 10, 6 x 20, 6 x 30, 8 x 20, 8 x 30
Pad form	Oval flat type
Mounting	Male thread, Female thread
Vacuum inlet direction	Vertical, Lateral
Vacuum inlet	Male thread, Female thread, One-touch fitting, Barb fitting
Buffer	Without, With [Buffer stroke [mm] ZP: 6, 10, 15, 20 ZP2: 10, 20, 30, 40, 50]

For rectangular, vertically long, and horizontally long workpieces





ZP Series

ZP2 Series

High Rigidity Pad *ZP3E Series*

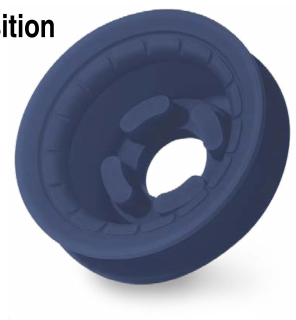
p. 200

Pad diameter	ø32, ø40, ø50, ø63, ø80, ø100, ø125
Pad form	Flat type with groove, Bellows type with ribs and groove
Mounting	Male thread, Female thread
Vacuum inlet direction	Vertical, Lateral
Vacuum inlet	Male thread, Female thread
Buffer	Without, With [Buffer stroke [mm]: 10, 30, 50]
Ball joint	Without, With

Stable suction position, Improved ease of removal

Stable suction position

Groove and rib formed to adsorb with entire surface



Improved ease of removal

With groove

The dents and bumps on the adsorption surface prevent workpieces from sticking to the pad.
This facilitates easy removal.

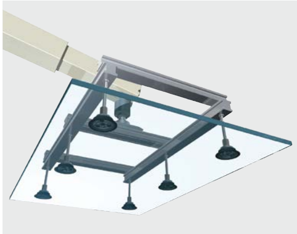
Shot-blasted

Micro-dents and bumps are formed on the adsorption surface. Workpieces can be removed easily.

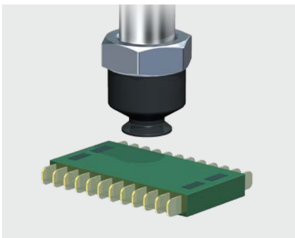
Pads for Special Applications *ZP2/ZP3P Series*

p. 248

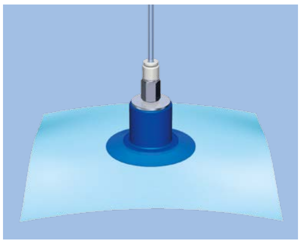
Mark-free Pad
For use where adsorption marks must not be left on workpieces



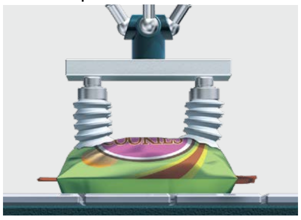
Static Neutralization
Discharge static electricity gently. Prevent damage to electronic parts.



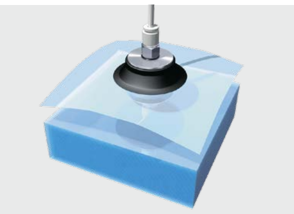

For Film Adsorption
Good for film packaging applications




Multistage
For use where there is no space for a buffer (spring type)
For workpieces with inclined adsorption surfaces

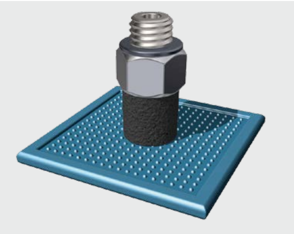



Flat Pad
For the adsorption of flexible sheets or film
Reduced deformation of flat surfaces during adsorption

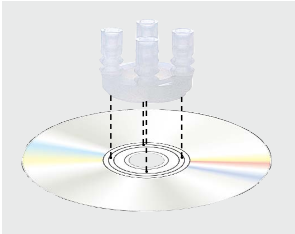



Nozzle Pad
For the adsorption of small components such as IC chips

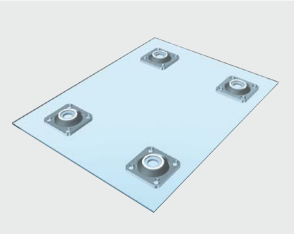

Sponge Pad
For the adsorption of workpieces with bumps




Vacuum Pad for Disk Adsorption
For the adsorption of circular components like CDs and DVDs




Vacuum Pad for Panel Holding
For the adsorption and holding of the stage of panels, glass circuit boards, etc.




Pad with Ball Spline Buffer
The ball spline guide is used for buffers.


Made to Order *ZP/ZP2* *Series*

p. 298

Compact Pad

Pad diameter: ø3, ø4, ø5, ø6, ø7, ø8
Pad form: Flat type, Flat type with ribs, Thin flat type, Bellows type

Compact, Space saving

Blast-type pad
Workpieces can be removed easily.

Short-type Pad

Pad diameter: ø2, ø3, ø3.5, ø4, ø5, ø6, ø8, ø10, ø15
Pad form: Flat type

Space saving in the height direction

Blast-type pad
Workpieces can be removed easily.

Thin Flat Pad

Pad diameter: ø5, ø6, ø11, ø14, ø18, ø20

For the adsorption of soft workpieces such as thin sheets or vinyl
Wrinkling or deformation during adsorption is reduced.

Bellows Pad

Pad diameter: ø2, ø4, ø5, ø6, ø8, ø10, ø15, ø20

For use where there is no space for a buffer (spring type)
For the adsorption of workpieces with inclined surfaces

High Rigidity Pad

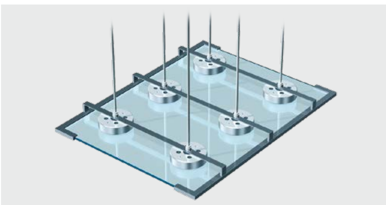
Pad diameter: ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø150, ø250, ø300, ø340, 30 x 50
Pad form: Flat type with ribs, Thin flat type with ribs, Bellows type, Oval type

Ball joint

p. 344

Non-contact Gripper

Assists in non-contact workpiece transfer

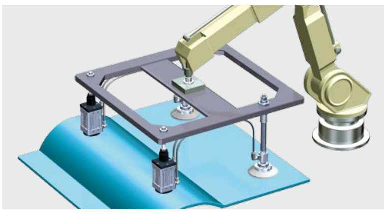


Vacuum Saving Valve

Can restrict the reduction of vacuum pressure even when there is no workpiece

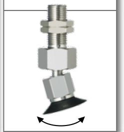
Magnet Gripper

Steel plates can be transferred without vacuum.



Pad Form/Pad Diameter Variations List

Vacuum Pad ZP Series Variations ▸ p. 27

Pad form			Symbol	ø1.5	ø2	ø3.5	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50	Page: Dimensions/Models	Page: Construction	Page: Mounting bracket assembly
Flat		—	U		●		●	●	●	●	●	●	●	●	●	●	●	From p. 32	From p. 115	From p. 121
Flat		With ribs	C							●	●	●	●	●	●	●	●	From p. 51	From p. 117	From p. 121
Flat		Ball joint	F							●	●	●	●	●	●	●	●	From p. 62	From p. 119	From p. 127
Bellows		—	B					●	●	●	●	●	●	●	●	●	●	From p. 68	From p. 115	From p. 121
Thin flat		—	UT							●	●	●						From p. 87	From p. 115	From p. 121
Thin flat		With ribs	CT							●	●	●						From p. 96	From p. 115	From p. 121
Deep		—	D							●		●		●		●		From p. 105	From p. 117	From p. 121

Vacuum Pad/Compact Type ZP3 Series Variations ▸ p. 134

Pad form			Symbol	ø1.5	ø2	ø3.5	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50	Page: Dimensions/Models	Page: Construction	Page: Mounting bracket assembly
Flat		—	U	●	●	●												From p. 137	From p. 160	From p. 162
Flat		With groove	UM				●	●	●	●	●	●						From p. 143	From p. 160	From p. 162
Bellows		—	B				●	●	●									From p. 149	From p. 160	From p. 162
Bellows		With ribs	B							●	●	●						From p. 155	From p. 160	From p. 162

Oval Pad ZP/ZP2 Series Variations ▸ p. 167

Pad form		Series	Symbol	2 x 4	3.5 x 7	4 x 10	4 x 20	4 x 30	5 x 10	5 x 20	5 x 30	6 x 10	6 x 20	6 x 30	8 x 20	8 x 30	Page: Dimensions/Models	Page: Construction	Page: Mounting bracket assembly
Oval		ZP	U	●	●	●											From p. 171	From p. 185	From p. 189
Oval		ZP2	W		●	●	●	●	●	●	●	●	●	●	●	●	From p. 180	From p. 187	From p. 195

Pad size (Breadth x Length) [mm]

High Rigidity Pad ZP3E Series Variations ▸ p. 203

Pad form			Symbol	ø32	ø40	ø50	ø63	ø80	ø100	ø125	Page: Dimensions/Models	Page: Construction	Page: Mounting bracket assembly
Flat		With groove	UM	●	●	●	●	●	●	●	From p. 209	From p. 233	From p. 237
Flat		Ball joint, With groove	F, UM	●	●	●	●	●	●	●	From p. 215	From p. 235	From p. 241
Bellows		With ribs and groove	BM	●	●	●	●	●	●	●	From p. 221	From p. 233	From p. 237
Bellows		Ball joint, With ribs and groove	F, BM	●	●	●	●	●	●	●	From p. 227	From p. 235	From p. 241

Pad diameter [mm] (ZP, ZP3, ZP3E tables)

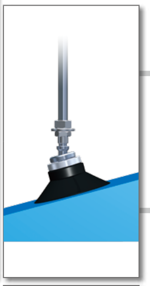
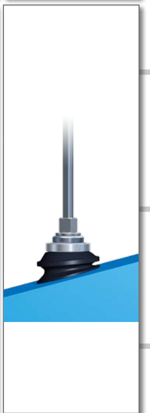
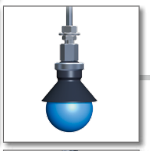
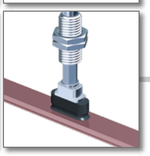
Pads for Special Applications

Variations ▸ p. 249

Pad form				Series	Symbol	Pad diameter [mm]	Page (How to order)
Mark-free pad	Flat		—	ZP2	U, CL	ø4 ø6 ø8 ø10 ø16 ø25 ø32 ø40 ø50	p. 253
Mark-free pad	Flat		With ribs	ZP2	H, CL/ NT/FT	ø40 ø50 ø63 ø80 ø100 ø125	p. 254
Mark-free pad	Flat		With groove	ZP3E	UM, CL	ø32 ø40 ø50 ø63 ø80 ø100 ø125	p. 208
Mark-free pad	Flat		With groove, Ball joint type	ZP3E	F, UM, CL	ø32 ø40 ø50 ø63 ø80 ø100 ø125	p. 214
Mark-free pad	Bellows		With ribs and groove	ZP3E	BM, CL	ø32 ø40 ø50 ø63 ø80 ø100 ø125	p. 220
Mark-free pad	Bellows		With groove, Ball joint type	ZP3E	F, BM, CL	ø32 ø40 ø50 ø63 ø80 ø100 ø125	p. 226
Mark-free pad	Resin attachment		—	ZP2	K	ø6 ø8 ø10 ø13 ø16 ø20 ø25 ø32	p. 264
Static neutralization			Flat type with groove	ZP3	HS	ø4 ø6 ø8 ø10 ø13 ø16	Web Catalog
For film adsorption			2.5-stage	ZP3P	JT	ø20 ø25 ø32 ø40 ø50	Web Catalog
For film adsorption			5.5-stage	ZP3P	JT	ø20 ø25 ø32 ø40 ø50	Web Catalog
For film adsorption			With groove	ZP3P	PT	ø20 ø25 ø35 ø50	p. 267
Multistage			4.5-stage	ZP2	ZJ	ø15 ø20 ø30 ø40 ø46	p. 276
Multistage			2.5-stage 3.5-stage	ZP2	J	ø6 ø9 ø10 ø14 ø15 ø16 ø25 ø30	p. 282
Flat pad			With groove	ZP2	MT	ø10 ø15 ø20 ø25 ø30	p. 286
Nozzle type			—	ZP2	AN	ø0.8 ø1.1	p. 289
Sponge			—	ZP2	S	ø4 ø6 ø8 ø10 ø15	p. 290
For disk adsorption			—	ZP2	Z1		p. 294
For panel holding			—	ZP2	Z		p. 295
With ball spline buffer			Flat type	ZP2	U, S	ø2 ø4 ø6 ø8	p. 297

Vacuum saving valve		ZP2V	p. 346
Bernoulli gripper		ZNC	Web Catalog
Non-contact gripper		XT661	p. 362
Magnet gripper		MHM	Web Catalog
Magnet gripper		MHM-X6400	p. 373

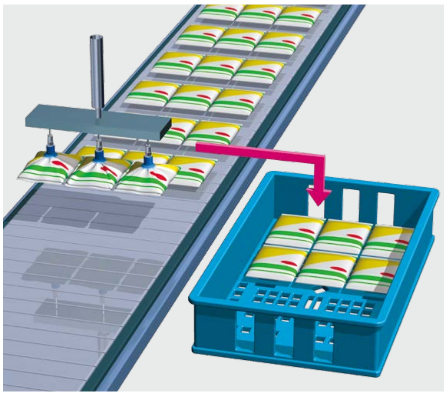
Select from pad forms

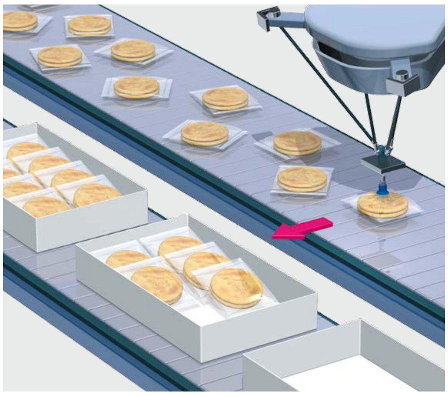
			Basic	Compact	High rigidity	Oval	
			ZP	ZP3	ZP3E	ZP	ZP2
Flat	Flat type	• For the adsorption of general workpieces • For the adsorption of workpieces with flat and non-deformed surfaces	p. 31	p. 136			
	Flat type with ribs	• For workpieces which are likely to become deformed • For the reliable release of workpieces	p. 50				
	Flat type with groove	• For workpieces which are likely to become deformed • For the reliable release of workpieces		p. 142	p. 208		
	Ball joint, Flat type	• For the adsorption of workpieces with inclined or curved surfaces 	p. 61				
	Ball joint, Flat type with groove	• For the adsorption of workpieces with inclined or curved surfaces • For workpieces which are likely to become deformed • For the reliable release of workpieces			p. 214		
Bellows	Bellows type	• For the adsorption of workpieces with inclined surfaces • For workpieces of varying heights 	p. 67	p. 148			
	Bellows type with ribs	• For the adsorption of workpieces with inclined surfaces • For workpieces of varying heights • For the reliable release of workpieces		p. 154			
	Bellows type with ribs and groove	• To be used when the adsorption surface of the workpieces is slanted • For the reliable release of workpieces			p. 220		
	Ball joint, Bellows type with ribs and groove	• For the adsorption of workpieces with inclined or curved surfaces • For the reliable release of workpieces 			p. 226		
Thin flat	Thin flat type	• For workpieces which are likely to become deformed	p. 86				
	Thin flat type with ribs	• For workpieces which are likely to become deformed • For the reliable release of workpieces	p. 95				
Deep	Deep type	• For workpieces with curved surfaces 	p. 104				
Oval	Oval flat type	• For workpieces with adsorption surface limitations • For use when a large adsorption area is required for long and narrow workpieces 				p. 170	p. 179

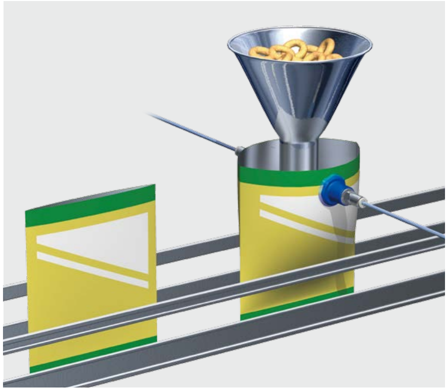
Select according to the workpiece, application, or industry

Film packaging

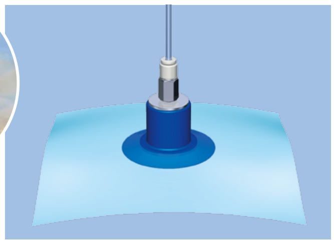
Packaging facility | Food



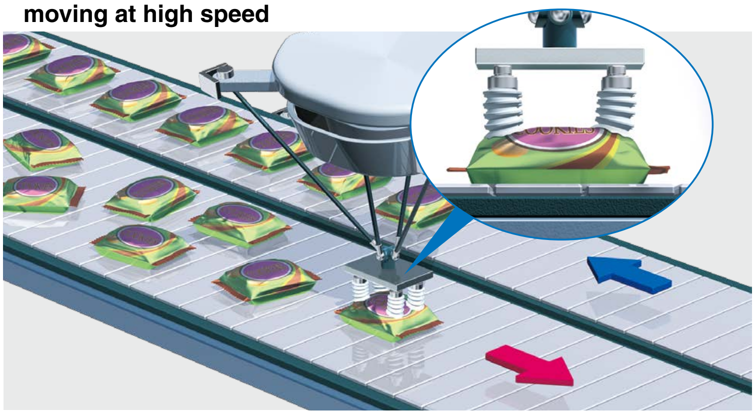




· Good for film packaging applications



· For the adsorption of workpieces randomly moving at high speed



Applicable Pads

U.S. FDA dissolution test compliant

For Film Adsorption ZP3P-PT

p. 266

4.5-Stage Bellows Pad ZP2

p. 276

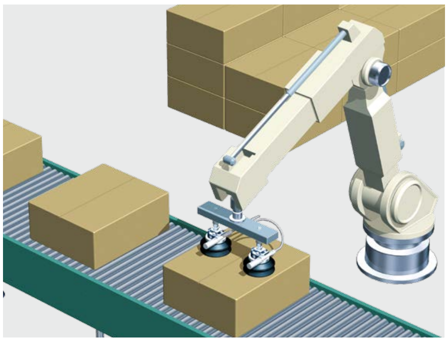
U.S. FDA dissolution test compliant

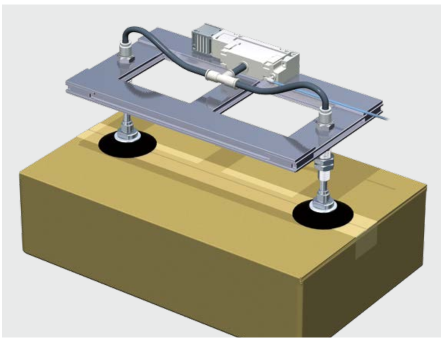
For Film Adsorption/Bellows ZP3P-JT

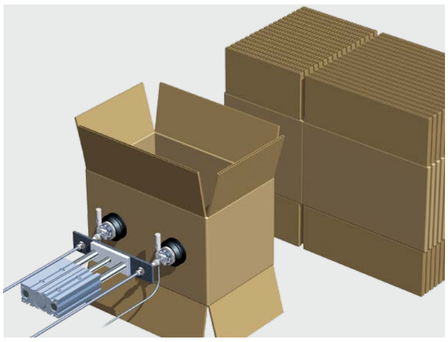
Web Catalog

Corrugated boards

Carton former | Palletizer | Food







Applicable Pads

High Rigidity Pad ZP3E

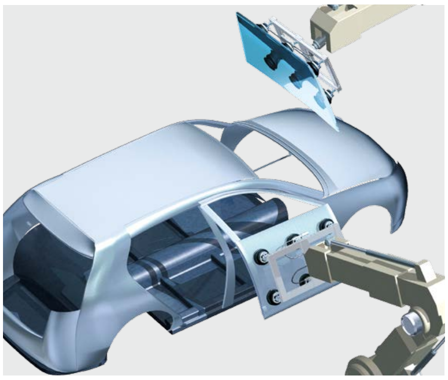
p. 200

Select according to the workpiece, application, or industry

Glass

Automobile | Electronics

・For use where adsorption marks must not be left on workpieces



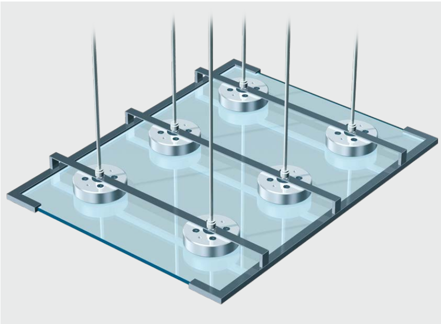
Applicable Pads

Mark-free Pad ZP3E
p. 200

Mark-free Pad ZP2
p. 251

FPD, Glass circuit boards

Automobile | Electronics



Applicable Pads

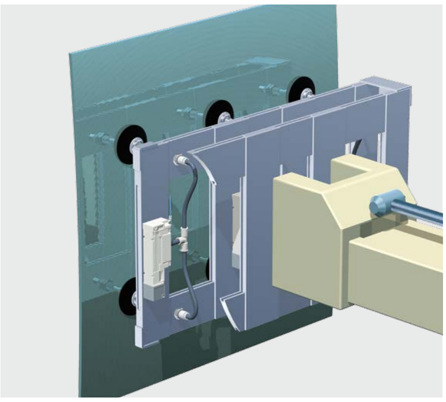
Mark-free Pad ZP3E
p. 200

Mark-free Pad ZP2
p. 251

Non-contact Gripper XT661
p. 353

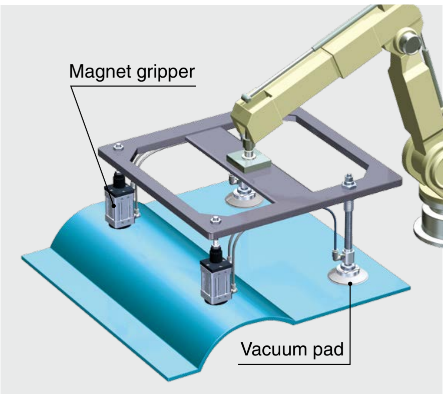
Iron plates, Metal

Automobile



Applicable Pads

High Rigidity Pad ZP3E
p. 200



Applicable Pads

Magnet Gripper
MHM Web Catalog
MHM-X6400 p. 372

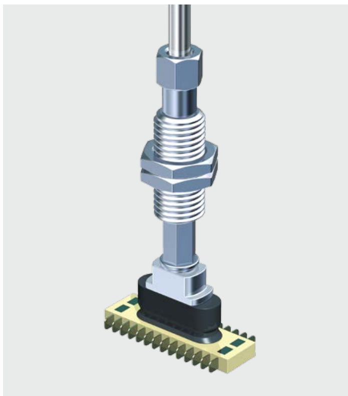
IC chips

Electronics

Applicable Pads

Nozzle Pad ZP2
p. 289

Compact Type ZP3
p. 132



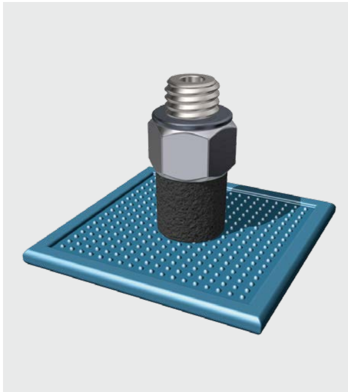
Applicable Pads

Oval Pad ZP
p. 170

Oval Pad ZP2
p. 179

Applicable Pads

Pad with Ball Spline Buffer ZP2
p. 297



Applicable Pads

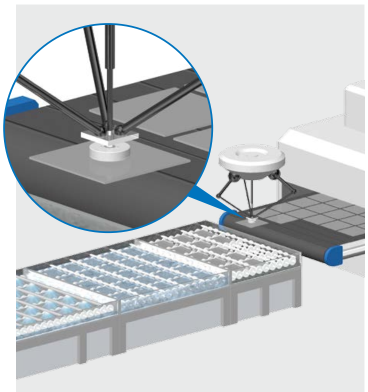
Sponge Pad ZP2
p. 290

Applicable Pads

Static Neutralization Pad ZP3-HS
Web Catalog

Solar battery cells

Electronics

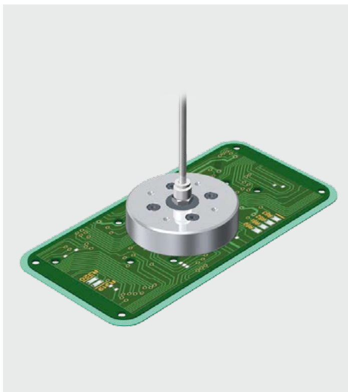


Applicable Pads

Non-contact Gripper XT661
p. 353

Circuit boards with holes

Electronics



Applicable Pads

Non-contact Gripper XT661
p. 353

Mounting Bracket Assembly Model Index

			Basic		Compact	Oval		High Rigidity		Special applications										
										Mark-free				Static Neutralization	For film adsorption		Multistage		Flat	Nozzle	Sponge
			ZP		ZP3	ZP	ZP2	ZP3E		ZP2		ZP3E		ZP3	ZP3P		ZP2		ZP2	ZP2	ZP2
	Assembly part no.		Standard	Ball joint	Standard	Standard	Standard	Standard	Ball joint	Standard	Ball joint	Standard	Ball joint	□HS□	Standard	JT	J	ZJ	MT	AN	S
ZP	ZPB1	Buffer plate	From p. 124			From p. 192				From p. 124											
ZP	ZPB(1/2/3)(J/K)-	Buffer assembly	From p. 124	From p. 124		From p. 192	From p. 196			From p. 124					p. 275						
ZP	ZPR(S/L)-	Adapter assembly	From p. 122			From p. 190	From p. 195			From p. 122							p. 284				
ZP	ZPRF(1/2/3)-	Adapter assembly/ Ball joint		From p. 128																	
ZP	ZPT(1/2/3/4)-	Adapter assembly	From p. 121			From p. 189				From p. 121							From p. 283				
ZP	ZPTF(1/2/3)-	Adapter assembly/ Ball joint		From p. 127																	
ZP	ZPY(1/2/3/4)-	Adapter assembly	From p. 123			From p. 191				From p. 123							p. 285				
ZP2	ZPA-	Adapter assembly								From p. 255											
ZP2	ZPB-	Buffer assembly								From p. 257											
ZP2	ZP2A-	Adapter					From p. 195				p. 261							p. 281	p. 288	p. 289	p. 293
ZP2	ZP2B-	Buffer assembly									From p. 262										
ZP3	ZP3A-	Adapter assembly			From p. 162									Web Catalog							
ZP3	ZP3B-	Buffer assembly			p. 164									Web Catalog							
ZP3E	ZP3EA-	Holder, Plate, Stopper, Set screw, Adapter						From p. 237	From p. 241			From p. 237	From p. 241								
ZP3E	ZP3EA-F	Ball joint assembly							p. 241				p. 241								
ZP3E	ZP3EB-	Buffer assembly						p. 240				p. 240									
ZP3E	ZP3EU-(T/Y)F	Ball joint buffer unit							p. 244				p. 244								
ZP3E	ZP3EU-F	Ball joint unit							From p. 242				From p. 242								
ZP3P	ZP3PA-	Adapter assembly													p. 275						
ZP3P	ZP3P□A-	Adapter assembly														Web Catalog					
Mounting nut	NTJ-015A		From p. 121			From p. 190	p. 195			From p. 121							From p. 283				
Mounting nut	SNJ-006C		From p. 121			From p. 190			p. 241	From p. 121							From p. 283				
Mounting nut	ZPNA-M6A				From p. 163									Web Catalog							
Mounting nut	RB08J		From p. 121	p. 127		From p. 192				From p. 121							From p. 283				
Mounting nut	ZPNA-M8A				p. 164									Web Catalog							
Mounting nut	ZPNA-M10		From p. 124	From p. 127	p. 163		From p. 196			From p. 124				Web Catalog	p. 124						
Mounting nut	ZPNA-M12								p. 241												
Mounting nut	ZPNA-M12A				p. 163									Web Catalog							
Mounting nut	ZPNA-M12C																	p. 281			
Mounting nut	ZPNA-M14		From p. 124	From p. 127				From p. 237	From p. 242	From p. 124					p. 124			p. 281			
Mounting nut	ZPSNA-M16A															Web Catalog					
Mounting nut	ZPSNA-M20															Web Catalog					
Mounting nut	KQ08-P01A															Web Catalog					
Mounting nut	KQ10-P01A															Web Catalog					
Mounting nut	RBQ16J							From p. 237	From p. 242			p. 237	p. 242								
Mounting nut	NT-05							p. 240	p. 244			p. 240	p. 244								
Mounting nut	ZPNA-M22							p. 240	p. 244			p. 240	p. 244								

SMC