

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.



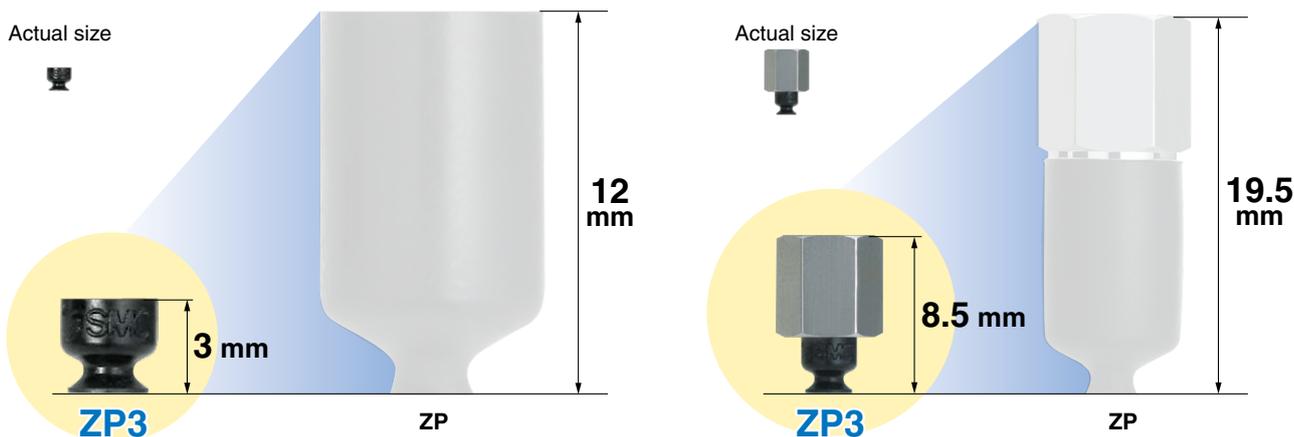
Compact Type ZP3 Series

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



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

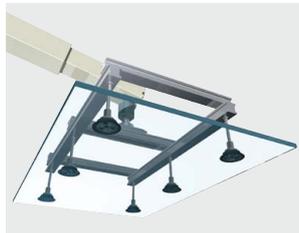
Micro-dents and bumps are formed on the adsorption surface. Workpieces can be removed easily.



Pads for Special Applications ZP2/ZP3P Series

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.



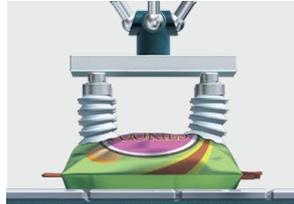
For Film Adsorption

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



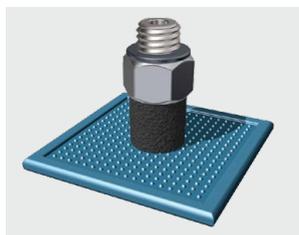
Nozzle Pad

For the adsorption of small components such as IC chips



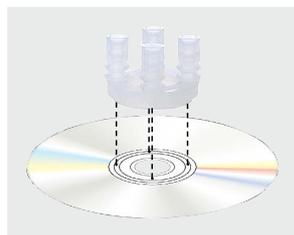
Sponge Pad

For the adsorption of workpieces with bumps



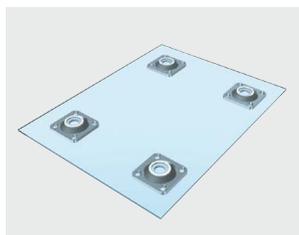
Vacuum Pad for Disk Adsorption

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.



Compact Pad

Pad diameter: $\varnothing 3, \varnothing 4, \varnothing 5, \varnothing 6, \varnothing 7, \varnothing 8$

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: $\varnothing 2, \varnothing 3, \varnothing 3.5, \varnothing 4, \varnothing 5, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 15$

Pad form: Flat type

Space saving in the height direction

Blast-type pad

Workpieces can be removed easily.



Thin Flat Pad

Pad diameter: $\varnothing 5, \varnothing 6, \varnothing 11, \varnothing 14, \varnothing 18, \varnothing 20$

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



Bellows Pad

Pad diameter: $\varnothing 2, \varnothing 4, \varnothing 5, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 15, \varnothing 20$

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: $\varnothing 32, \varnothing 40, \varnothing 50, \varnothing 63, \varnothing 80, \varnothing 100, \varnothing 125, \varnothing 150, \varnothing 250, \varnothing 300, \varnothing 340, 30 \times 50$

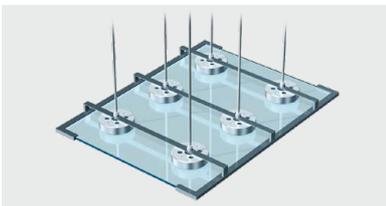
Pad form: Flat type with ribs, Thin flat type with ribs, Bellows type, Oval type



Ball joint

Non-contact Gripper

Assists in non-contact workpiece transfer



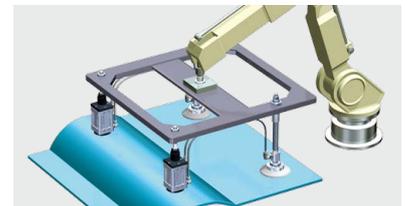
Vacuum Saving Valve

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	Pad diameter [mm]												Page					
		ø1.5	ø2	ø3.5	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50	Dimensions/Models	Construction	Mounting bracket assembly	
Flat	—	U		●		●	●	●	●	●	●	●	●	●	●	●	From p. 32	From p. 115	From p. 121
	With ribs	C							●	●	●	●	●	●	●	●	From p. 51	From p. 117	From p. 121
	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
	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	Pad diameter [mm]												Page					
		ø1.5	ø2	ø3.5	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50	Dimensions/Models	Construction	Mounting bracket assembly	
Flat	—	U	●	●	●												From p. 137	From p. 160	From p. 162
	With groove	UM				●	●	●	●	●	●						From p. 143	From p. 160	From p. 162
Bellows	—	B				●	●	●									From p. 149	From p. 160	From p. 162
	With ribs	B							●	●	●						From p. 155	From p. 160	From p. 162

Oval Pad ZP/ZP2 Series Variations ▶ p. 167

Pad form	Series	Symbol	Pad size (Breadth x Length) [mm]								Page								
			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	Dimensions/Models	Construction	Mounting bracket assembly	
Oval	ZP	U	●	●	●												From p. 171	From p. 185	From p. 189
	ZP2	W		●	●	●	●	●	●	●	●	●	●	●	●	●	From p. 180	From p. 187	From p. 195

High Rigidity Pad ZP3E Series Variations ▶ p. 203

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

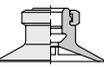
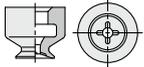
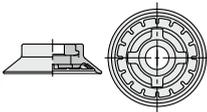
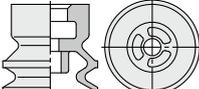
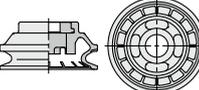
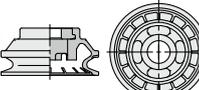
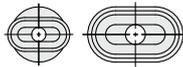
Pads for Special Applications

Variations ▶ p. 249

Page

Pad form		Series	Symbol	Pad diameter [mm]										How to order
Mark-free pad	Flat	—	ZP2	U, CL	ø4	ø6	ø8	ø10	ø16	ø25	ø32	ø40	ø50	p. 253
		With ribs	ZP2	H, CL/NT/FT	ø40	ø50	ø63	ø80	ø100	ø125	p. 254			
		With groove	ZP3E	UM, CL	ø32	ø40	ø50	ø63	ø80	ø100	ø125	p. 208		
		With groove, Ball joint type	ZP3E	F, UM, CL	ø32	ø40	ø50	ø63	ø80	ø100	ø125	p. 214		
	Bellows	With ribs and groove	ZP3E	BM, CL	ø32	ø40	ø50	ø63	ø80	ø100	ø125	p. 220		
		With groove, Ball joint type	ZP3E	F, BM, CL	ø32	ø40	ø50	ø63	ø80	ø100	ø125	p. 226		
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				
		5.5-stage	ZP3P	JT	ø20	ø25	ø32	ø40	ø50	Web Catalog				
	With groove	ZP3P	PT	ø20	ø25	ø35	ø50	p. 267						
Multistage		4.5-stage	ZP2	ZJ	ø15	ø20	ø30	ø40	ø46	p. 276				
		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										
			MHM-X6400	p. 373										

Select from pad forms

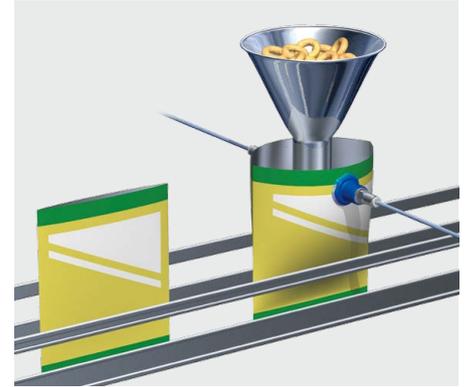
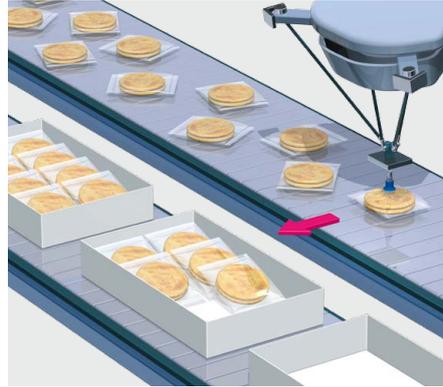
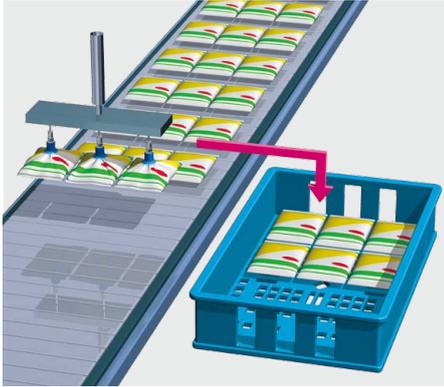
			Basic	Compact	High rigidity	Oval		
			ZP	ZP3	ZP3E	ZP	ZP2	
Flat	Flat type		<ul style="list-style-type: none">For the adsorption of general workpiecesFor the adsorption of workpieces with flat and non-deformed surfaces		p. 31	p. 136		
	Flat type with ribs		<ul style="list-style-type: none">For workpieces which are likely to become deformedFor the reliable release of workpieces		p. 50			
	Flat type with groove		<ul style="list-style-type: none">For workpieces which are likely to become deformedFor the reliable release of workpieces			p. 142	p. 208	
	Ball joint, Flat type		<ul style="list-style-type: none">For the adsorption of workpieces with inclined or curved surfaces		p. 61			
	Ball joint, Flat type with groove		<ul style="list-style-type: none">For the adsorption of workpieces with inclined or curved surfacesFor workpieces which are likely to become deformedFor the reliable release of workpieces				p. 214	
Bellows	Bellows type		<ul style="list-style-type: none">For the adsorption of workpieces with inclined surfacesFor workpieces of varying heights		p. 67	p. 148		
	Bellows type with ribs		<ul style="list-style-type: none">For the adsorption of workpieces with inclined surfacesFor workpieces of varying heightsFor the reliable release of workpieces			p. 154		
	Bellows type with ribs and groove		<ul style="list-style-type: none">To be used when the adsorption surface of the workpieces is slantedFor the reliable release of workpieces				p. 220	
	Ball joint, Bellows type with ribs and groove		<ul style="list-style-type: none">For the adsorption of workpieces with inclined or curved surfacesFor the reliable release of workpieces					p. 226
Thin flat	Thin flat type		<ul style="list-style-type: none">For workpieces which are likely to become deformed		p. 86			
	Thin flat type with ribs		<ul style="list-style-type: none">For workpieces which are likely to become deformedFor the reliable release of workpieces		p. 95			
Deep	Deep type		<ul style="list-style-type: none">For workpieces with curved surfaces		p. 104			
Oval	Oval flat type		<ul style="list-style-type: none">For workpieces with adsorption surface limitationsFor 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

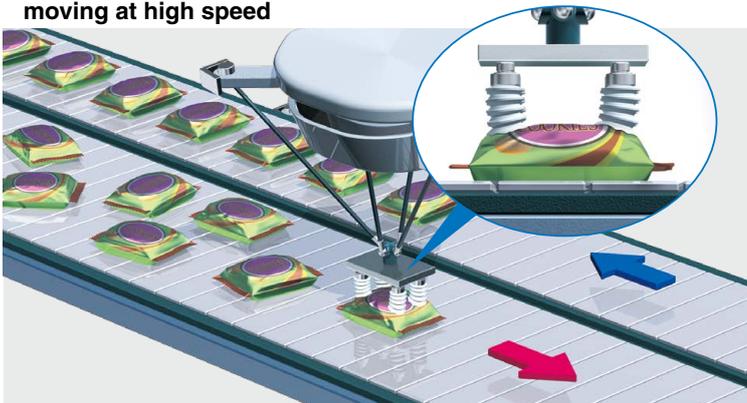
Food



· 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

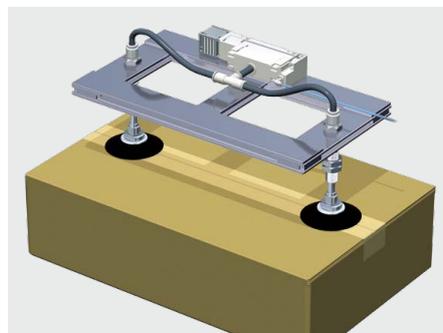


Corrugated boards

Carton former

Palletizer

Food



Applicable Pads

High Rigidity Pad ZP3E
p. 200



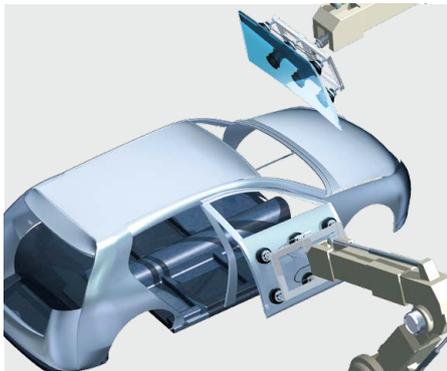
Select according to the workpiece, application, or industry

■ Glass

Automobile

Electronics

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



Applicable Pads

Mark-free Pad ZP3E
p. 200



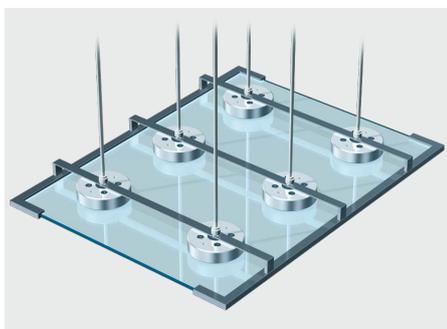
Mark-free Pad ZP2
p. 251



■ FPD, Glass circuit boards

Automobile

Electronics



Applicable Pads

Mark-free Pad ZP3E
p. 200



Mark-free Pad ZP2
p. 251

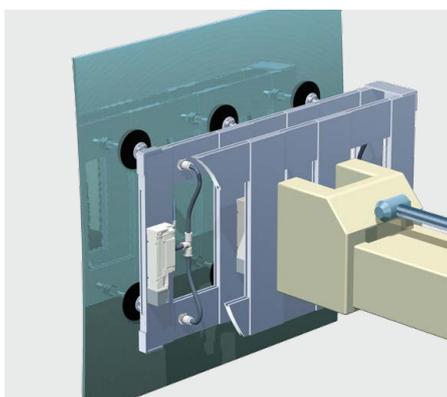


Non-contact Gripper
XT661
p. 353



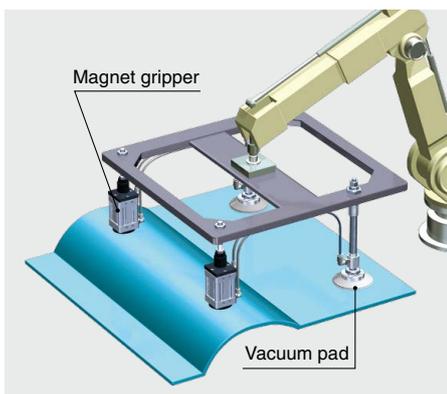
■ Iron plates, Metal

Automobile



Applicable Pads

High Rigidity Pad ZP3E
p. 200



Applicable Pads

Magnet Gripper
MHM
MHM-X6400
Web Catalog
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

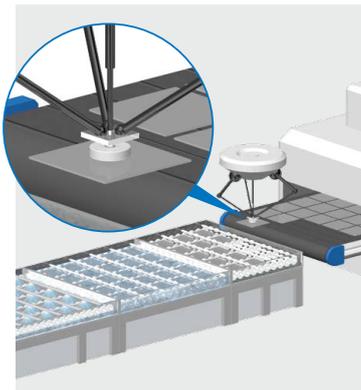


Solar battery cells

Electronics

Circuit boards with holes

Electronics



Applicable Pads

Non-contact Gripper XT661

p. 353



Applicable Pads

Non-contact Gripper XT661

p. 353



