













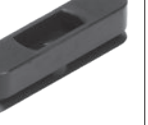




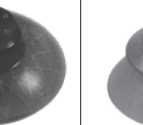

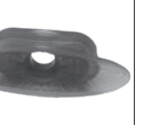












































Suction Cup Basic Performance

Series		PF	PFO	PU	PA	PQ	PN	PN-B	PJ	PB	PC	PL	PH	PW	PCD	PD	PR	PK2	PK2B	PK2L	RA		CORE	PP	SM
Type		Flat type			Thin type			Bellows type					Deep type	Oval type	Ring type	Foam type	Type for round bar	High durability			Mark-free		Cube type	React with metal detector	
								2 bellows type	2 bellows type	2 bellows type	3 bellows type	Multiple bellows type									RA treatment (Reduce the marks to the limit)				Core for cup
		Standard	With oily grooves	Swivel type	Flat type	Non-rotation flat type	Flat type	For pouch film	With thin lip	With thick lip			With great internal depth	With long and round shape	Suction surface is ring-shaped	Made of foam (sponge)	Suction surface is cylindrical shaped	Standard	Bellows type	Oval type	Standard	Bellows type	For PJ series	Super small with square shaped	
																									
Workpieces		Workpieces with smooth and even surfaces.		Workpieces whose surfaces are not horizontal.	Workpieces with smooth surfaces that easily change shape.			When there is no space for attaching spring type suction cups. When the suction surface is oblique.			For uneven or soft workpieces.	Workpieces whose suction surface are uneven.	Where gripping space is limited and when lifting force is desired.	Workpieces that are ring shaped, such as CD and DVD discs.	For gripping uneven workpieces with surfaces such as those of block tiles.	For gripping workpieces with cylindrical shape.	For cardboard, construction materials, automobile steel sheets etc.			For workpieces that are sensitive to marks.		Besides being mark free it also prevents deformation of thin workpieces and adhesion.	Used exclusively for gripping small objects such as semiconductor chips.	For detecting the cup fragments by the metal detector.	
Typical workpiece surfaces and shapes																									Refer to each suction cup series
		×	×	×	△	×	△	○					×	×	×	○	×	×	×	×	×	×	×	×	
		×	×	 Note1)	×	×	×	×	 Note2)	 Note2)	 Note2)		×	×	×	×	×	×	○	×	 Note2)	×	×		
		×	×	×	×	×	×	×	×	×	×	×	×	×	×		×	×	×	×	×	×	×	×	
		×	×	×	×	×	×	×	△	△		△		×	×	○		△	△	△	×	×	×	×	
		△		×	△	×	×	×	×	×	△	×	×	×	△	×	×	×	○	○	○	×	×	×	
Examples of other applicable workpieces					Paper, vinyl, pouch film						Food pack	Sphere			CD/DVD	Striped metal sheets	Round rods, pipes	Cardboard/construction materials/ automobile steel sheets/pressed objects			Semiconductor chips/Glass		Semiconductor chips	Food/Food packing	
Cup size		φ1, φ1.5, φ2, φ3.5, φ5, φ6, φ8, φ10, φ15, φ20, φ25, φ30, φ35, φ40, φ50, φ60, φ80, φ95, φ120, φ150, φ200 2×4, 2.2×4.2, 3.5×7	φ20, φ25, φ30, φ35, φ40	φ10, φ15, φ20, φ25, φ30, φ35, φ40, φ50, φ60, φ80, φ100, φ120, φ150, φ200	φ5, φ10, φ15, φ20, φ25, φ30, φ40, φ50	φ6, φ8, φ10	φ15, φ17, φ17.6, φ18, φ20, φ23, φ24, φ24.8, φ25, φ27, φ31, φ34, φ35, φ40, φ49	φ18, φ25, φ35	φ2, φ4, φ6, φ8, φ10, φ15, φ20, φ25, φ30, φ35, φ40, φ50, φ60, φ70, φ80	φ10, φ15, φ20, φ30, φ40, φ50, φ75, φ110, φ150	φ3, φ3.5, φ5, φ7, φ10, φ15, φ18, φ20, φ30, φ40, φ60, φ90	φ20, φ30, φ40, φ50	φ30, φ45, φ65, φ90	3.5×7, 4×10, 4×20, 4×30, 5×10, 5×20, 5×30, 6×10, 6×20, 6×30, 8×20, 8×30	φ19, φ20, φ23, φ29.5, φ34, φ38, φ46	φ4, φ6.5, φ8, φ9.5, φ12, φ15, φ20, φ30, φ40, φ50, φ60, φ70, φ80, φ100	9.5×25, 12.5×23, 15×30, 32×32	φ10, φ15, φ20, φ25, φ30, φ40, φ50, φ60, φ80, φ100, φ120, φ150	φ10, φ20, φ30, φ40, φ60, φ80, φ100, φ120, φ150	60×20, 80×30, 100×40	φ1~60		0.55×0.55, 0.5×1.3, 0.8×1.6, 1.3×2.8, 2.0×2.8	φ1.5~50	
Fitting	Compact fixed fitting	●	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	Reference each series	Reference each series	-	●	
	Fixed fitting	●	●	●	●	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	
	Compact spring fitting	●	-	-	●	-	-	-	●	●	●	-	-	-	-	-	-	-	-	-			-	●	
	Spring fitting	●	●	●	●	-	●	-	●	●	●	-	●	-	-	●	●	-	-	-			-	●	
	Non-rotation spring fitting	●	●	-	●	●	●	-	●	●	●	-	●	●	-	●	●	-	-	-			-	●	
Standard rubber material		NBR/Silicone Fluorine/Urethane Conductive NBR Conductive silicone	NBR/Silicone	NBR/Silicone Fluorine/Urethane	NBR/Silicone Fluorine/ Conductive NBR Conductive silicone	NBR/Silicone Fluorine/Urethane Conductive NBR Conductive silicone	NBR/Silicone Fluorine/Urethane Natural	NBR/Silicone Fluorine/Urethane Natural	NBR/Silicone Fluorine/ Urethane Conductive NBR Conductive silicone	NBR/Silicone Fluorine/Urethane Conductive NBR Conductive silicone	NBR/Silicone	Silicone	NBR/Silicone	NBR/Silicone Urethane	NBR/Silicone	CR/CR-E	NBR/Silicone	TPU (Thermoplastic polyurethane)	TPU (Thermoplastic polyurethane)	TPU (Thermoplastic polyurethane)	Mark free rubber Conductive mark free rubber	Mark free rubber Conductive mark free rubber		Fluorine/ Conductive fluorine	Silicone metal
Remarks				Note1) Oblique angle that can be gripped:5°					Note2) Oblique angle that can be gripped:5°	Note2) Oblique angle that can be gripped:5°	Note2) Oblique angle that can be gripped:5°		For gripping spherical diameters :P.165				Diameter of suction cups for round bar : P.165					Note2) Oblique angle that can be gripped:5°			