

Oval Concave family (OC)



Suitable for handling long oblong objects with flat or curved surfaces with thick durable lip. Some of these cups have support cleats that prevent thin objects from being disfigured.

Lifting forces

	Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level		
	20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa
OC60x140	132	373	520	186	373	510
OC35x90P	49/49*	117/132*	171/171*	53/68*	112/161*	147/206*
OCF20x80P	—	75/82*	111/90*	—	78/35*	112/48*
OCF30x90P	—	111/115*	157/159*	—	107/51*	160/74*
OCF40x110P	—	178/185*	245/246*	—	167/54*	232/78*

* PU40° / PU60°.

General specifications

	Outer diameter, mm	Height, mm	Min. curve radius, mm	Max. vertical movement, mm	Volume, cm ³
OC60x140	138x61	30	200	7.5	52
OC35x90P	94x37	14.5	—	3	20
OCF20x80P	84x24	27–30.1*	20	3	15
OCF30x90P	92.5x32.5	29.5	25	4	17
OCF40x110P	113x43	32.5–35.5*	42	5	34

* Height range includes fittings.

Available materials

	Nitrile, NBR	PU40°	PU55°/PU60°	PU60°
OC60x140	●			
OC35x90P		●		●
OCF20x80P			●	
OCF30x90P			●	
OCF40x110P			●	

Material resistance

For more material information go to page 23.

Applications

Table shows typical applications for the suction cup. For more detailed information, please visit piab.com.

	Oily metal sheet	Dry metal sheet	Mark Free
OC60x140		●	
OC35x90P			●
OCF20x80P	●		
OCF30x90P	●		
OCF40x110P	●		

Fittings

For a table of possible fittings to use go to page 80, for technical information on all fittings visit piab.com.

Ordering information

For a complete list of available cups and combinations with further information visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register to receive full access to all resources available.

OC60x140



Oval, concave suction cup

- ▶ Suitable for handling oblong objects with flat or curved surface.
- ▶ Good stability and little inherent movement.
- ▶ Thick, durable lip.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight with fitting g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
132	373	520	186	373	510	52	200	7.5	160

Material specifications

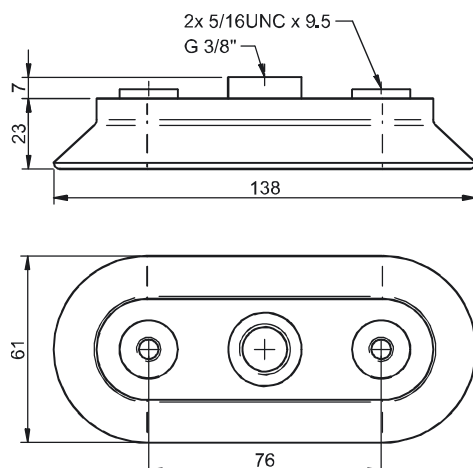
Material	Colour	Hardness °Shore A	Temperature range °C
Nitrile, NBR	Black	50	-20-100

Material resistance

Wear resistance	Oil	Weather & Ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Excellent	Excellent	Fair	Good	Good	Fair	Good	Good

Ordering information

Complete suction cups	Art. No.
Suction cup OC60x140 Nitrile, G3/8" female	3350011



OC35x90P



Oval, concave suction cup

- Suitable for oblong objects with slightly domed or flat and oily surfaces, such as those encountered in body parts in the automotive industry.
- DURAFLEX® suction cups manufactured in a specially developed material that features the elasticity of rubber and wear resistance of polyurethane. The material does not leave any marks on the objects handled.
- Fitting option, male G3/8", with a swivel function prior to the locking operation, for easy positioning of the oval cup.

Lifting forces & Technical data

Material	Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight with fitting g	Weight with adj. thread insert g
	20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa					
PU40°	49	117	171	53	112	147	20.0	—	3.0	27	40
PU60°	49	132	171	68	161	206	20.0	—	3.0	27	40

Material specifications

Material	Colour	Hardness °Shore A	Temperature range °C
Polyurethane, PU40	Red transparent	40	10–50
Polyurethane, PU60	Green transparent	60	10–50

Material resistance

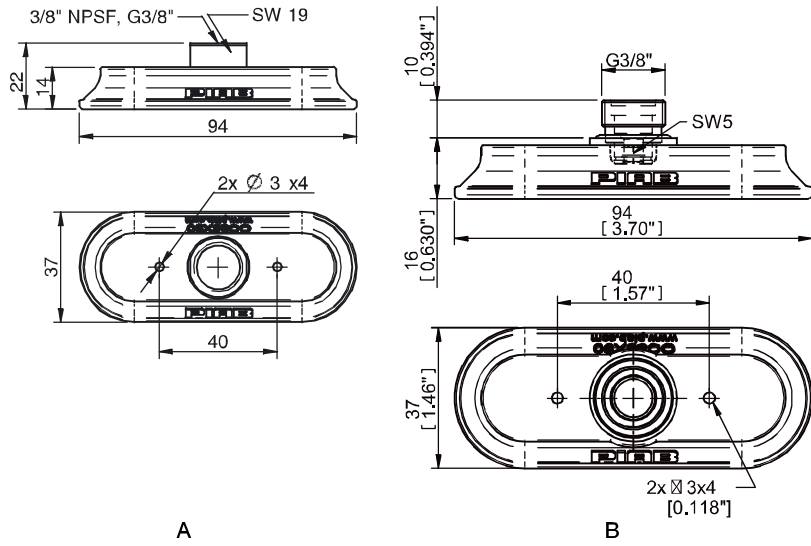
Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Ethanol	Methanol	Oxidation
Excellent	Excellent	Excellent	Fair**	Fair	Fair**	Fair	Poor	Poor

**Please contact Piab.

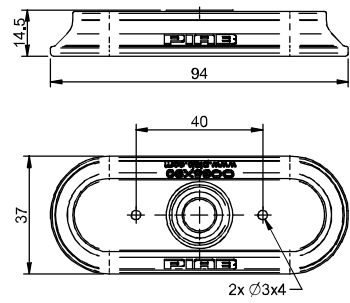
Suction cups/grippers DURAFLEX® Single and dual

Ordering information

	Complete suction cups	Art. No.
A	Suction cup OC35x90P Polyurethane 40, G3/8" female	0102374
A	Suction cup OC35x90P Polyurethane 40, 3/8" NPSF female	0102375
A	Suction cup OC35x90P Polyurethane 60, G3/8" female	0103305
A	Suction cup OC35x90P Polyurethane 60, 3/8" NPSF female	0103303
B	Suction cup OC35x90P Polyurethane 40, adjustable thread insert G3/8" male with mesh filter	0115307
B	Suction cup OC35x90P Polyurethane 60, adjustable thread insert G3/8" male with mesh filter	0115313



Rubber parts	Art. No.
Suction cup OC35x90P Polyurethane 40	0115306



OCF20x80P, OCF30x90P, OCF40x110P



- ▶ Special designed friction cups for oily surfaces, such as sheets in metal forming processes.
- ▶ Normal wear on friction cup will not affect the long term shear force performance.
- ▶ Best choice if > 0,1g/m² press oil is used on the sheet.
- ▶ Thanks to the strong grip on oily surfaces, the suction cups can withstand high shear forces, typically 2–4 times more than corresponding conventional suction cups.
- ▶ The "OCF" design is suitable for oblong objects with slightly curved or flat surfaces, such as those encountered with body parts in the automotive industry.
- ▶ Fitting option, male G3/8", with a swivel function prior to the locking operation, for easy positioning of the oval cup.
- ▶ DURAFLEX® suction cups manufactured in a specially developed material that features the elasticity of rubber and wear resistance of polyurethane. The material does not leave any marks on the objects handled.

Lifting forces & technical data

Model	Material to be handled	Lifting force vertical to the surface, N, at vacuum level		Friction/Shear forces parallel to the surface, N, at vacuum level		Volume cm ³	Min. curve radius mm	Weight g
		60 -kPa	90 -kPa	60 -kPa	90 -kPa			
OCF20x80P	Oily steel plate	82 (75*)	90 (111*)	35 (78*)	48 (112*)	15	20	24
OCF30x90P	Oily steel plate	115 (111*)	159 (157*)	51 (107*)	74 (160*)	17	25	24
OCF40x110P	Oily steel plate	185 (178*)	246 (245*)	54 (167*)	78 (232*)	34	42	55

Values valid for steel sheet with surface finish Ra 1 and 2-3g/m² of press oil.

*) Dry metal sheet

Material specifications

Material	Colour	Hardness, °Shore A	Temperature range, °C
Polyurethane, PU55	Orange	55	10–50
Polyurethane, PU60	Green transparent	60	10–50

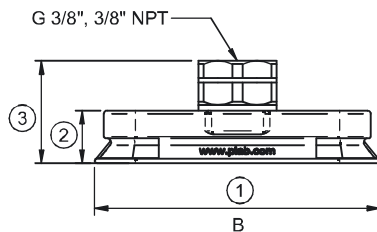
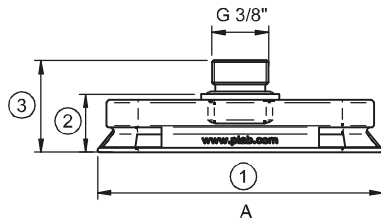
Material resistance

Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Ethanol	Methanol	Oxidation
Excellent	Excellent	Excellent	Fair**	Fair	Fair**	Fair	Poor	Poor

**Please contact Piab.

Ordering information

	Complete suction cups	Code	Art. No.
A	Suction cup OCF20x80P Polyurethane 55/60, G3/8" male	OCF20x80P.5R.G41M	0121847
B	Suction cup OCF20x80P Polyurethane 55/60, 3/8" NPT female	OCF20x80P.5R.N47W	0121859
B	Suction cup OCF20x80P Polyurethane 55/60, G3/8" female	OCF20x80P.5R.G45W	0122455
A	Suction cup OCF30x90P Polyurethane 55/60, G3/8" male	OCF30x90P.5R.G41M	0122456
B	Suction cup OCF30x90P Polyurethane 55/60, 3/8" NPT female	OCF30x90P.5R.N47W	0122459
B	Suction cup OCF30x90P Polyurethane 55/60, G3/8" female	OCF30x90P.5R.G45W	0121786
A	Suction cup OCF40x110P Polyurethane 55/60, G3/8" male	OCF40x110P.5R.G40M	0122457
B	Suction cup OCF40x110P Polyurethane 55/60, 3/8" NPT female	OCF40x110P.5R.N48W	0121865
B	Suction cup OCF40x110P Polyurethane 55/60, G3/8" female	OCF40x110P.5R.G46W	0122860



Measurements complete suction cups in mm	OCF20x80P		OCF30x90P		OCF40x110P	
	A	B	A	B	A	B
1	24x84	24x84	32.5x92.5	32.5x92.5	43x113	43x113
2	17.0	15.5	16.5	16.5	22.5	22.5
3	27.0	30.1	26.5	29.5	32.5	35.5
Max. vertical movement, mm	3	3	4	4	5	5
Max. expanding lip, mm	27x86.2	27x86.2	36x95	36x95	49x118	49x118