



# COVAL

vacuum managers



**BARTROM**

Pneumatică & Control Fluide

## C SERIES

High-Performance Suction Cups



# The COVAL C series High-Performance Suction Cups



## Main advantages

- Extreme resistance to slipping and acceleration.
- A full range of shapes and sizes to meet every requirement.
- Non-slip cleats ensure optimum positioning of oily metal sheets.
- Ideal for automated applications.
- Rigid central stopper with integrated cleats allows gripping of thin sheet metal without any deformation.
- Lightweight polyamide fittings allow for better integration on end-of-arm tooling.
- Airtight sealing lips.
- O-ring seals included on all male threaded vacuum cups.
- Visual wear indicator.
- Double tightening: 2 wrenches of 22 mm and 1 hex key of 6 mm or 8 mm.

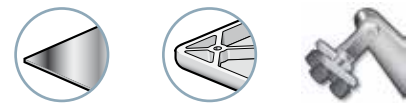
*The **C Series high-performance suction cup range** has been designed to meet automotive industry requirements.*

*The improves characteristics of the **C series range** optimizes production tools in all branches of activity.*

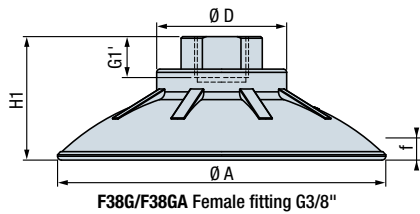
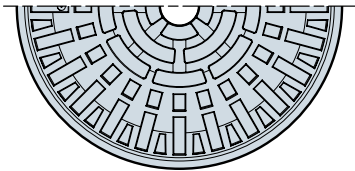
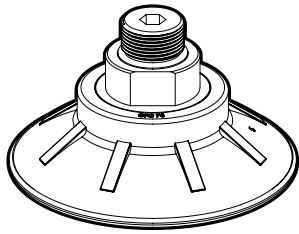
## Application fields

The COVAL C series vacuum cups have been specially designed for high speed robot applications due to their high resistance to slipping and acceleration, as well as their reduced weight.

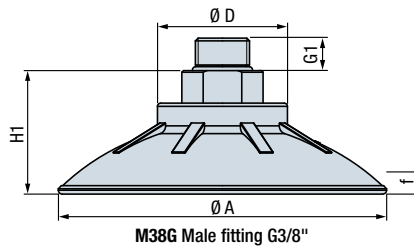
The C series vacuum cups are dedicated to handling sheet metal, glass and plastics in operations such as Stamping, BIW, Glass and Assembly.



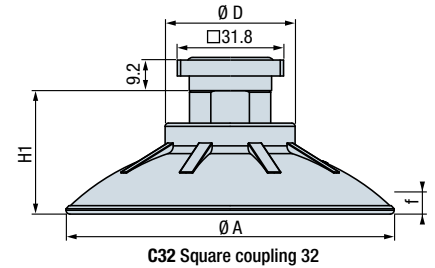
## CFC Flat Suction Cup



F38G/F38GA Female fitting G3/8"



M38G Male fitting G3/8"



C32 Square coupling 32

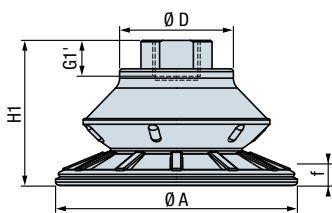
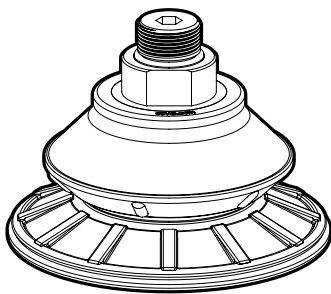
	A at rest (mm)	Ø A gripping (mm)	Volume (cm <sup>3</sup> )	Force (lbs) <sup>(1)</sup>	Force (lbs) <sup>(1)</sup>	R <sub>min</sub> (mm)	R <sub>min</sub> (mm)	Ø bore (mm)	tightening (mm)
CFC 35	37	38.5	2.46	11.2	11.2	58	50	6.3	wrench 22 + hex 6
CFC 50	51	54	8.37	22.5	22.5	66	52	6.3	wrench 22 + hex 6
CFC 75	76	80	25.03	45.0	38.2	100	58	6.3	wrench 22 + hex 6
CFC 100	101	105.7	57.61	78.7	60.7	120	90	6.3	wrench 22 + hex 6
CFC 125	127	132	119.7	123.6	107.9	160	115	6.3	wrench 22 + hex 8

	H1 (mm)	f <sup>(2)</sup> (mm)	G1 (mm)	G1' (mm)	Ø D (mm)	Weight (g)			
						F38G	F38GA	M38G	C32
CFC 35	25	3	10	12.6	37	14	25.7	18	36.2
CFC 50	30	5.5	10	12.6	38	25	34.9	29	47.2
CFC 75	33	8	10	12.6	41	40	48.9	45	62.2
CFC 100	38	10	10	12.6	41	67	75.3	72	89.2
CFC 125	44	14	10	12.6	55	119	146	124	141.2

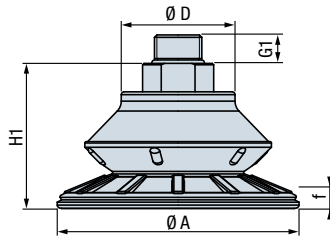
(1) Force measured at 65% vacuum on dry, smooth and flat sheet metal **without safety factor**.

(2) f: deflection of the suction cup

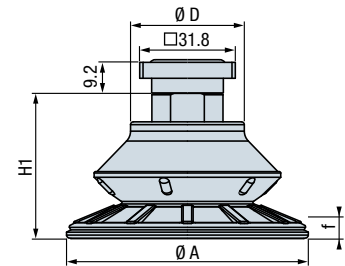
## CBC Suction Cup with 1.5 Bellows



F38G/F38GA Female fitting G3/8"



M38G Male fitting G3/8"



C32 Square coupling 32

	A at rest (mm)	Ø A gripping (mm)	Volume (cm <sup>3</sup> )	Force (lbs) <sup>(1)</sup>	Force (lbs) <sup>(1)</sup>	R <sub>min</sub> (mm)	R <sub>min</sub> (mm)	Ø bore (mm)	tightening (mm)
CBC 22	21.5	22	1.6	3.8	3.8	25	30	6.3	wrench 22 + hex 6
CBC 30 <sup>(3)</sup>	32	34	5	9.0	9.0	30	32	6.3	wrench 22 + hex 6
CBC 45	47	48.7	11.47	15.7	20.2	36	45	6.3	wrench 22 + hex 6
CBC 60	62	64.5	25.31	31.5	29.2	44	62	6.3	wrench 22 + hex 6
CBC 85	85	88	66.54	51.7	54.0	65	115	6.3	wrench 22 + hex 6
CBC 115	115	119	141.47	94.4	87.7	84	140	6.3	wrench 22 + hex 8

	H1 (mm)	f <sup>(2)</sup> (mm)	G1 (mm)	G1' (mm)	Ø D (mm)	Weight (g)			
						F38G	F38GA	M38G	C32
CBC 22	32	6	10	12.6	37	10	23	14	32.2
CBC 30 <sup>(3)</sup>	31	8	10	12.6	37	14	26.3	19	36.2
CBC 45	36	11	10	12.6	37	22	31.5	26	44.2
CBC 60	41	14	10	12.6	39	32	42	37	54.2
CBC 85	51	22	10	12.6	41	64	71.2	69	86.2
CBC 115	53	24	10	12.6	55	103	131.1	107	125.2

(1) Force measured at 65% vacuum on dry, smooth and flat sheet metal **without safety factor**.

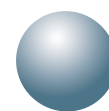
(2) f: deflection of the suction cup

(3) Specific model available with M3/8 Fitting and air-flow Ø 9,5mm: **CBC30 M38G SP624**

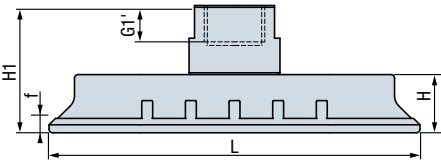
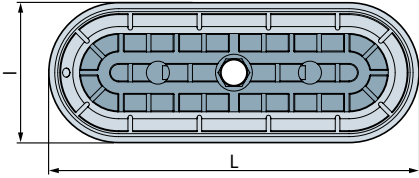
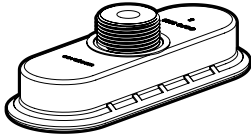


**3D**  
COVAL Data

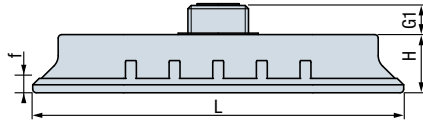
On our website [www.coval.com](http://www.coval.com), you will find 3D drawings of all our products in many formats adapted to standard CAD software.



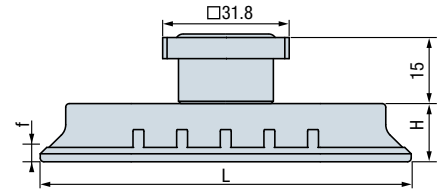
## COFC Flat Oblong Suction Cup



F38G/F38GA Female fitting G3/8"



M38G Male fitting G3/8"



C32 Square coupling 32

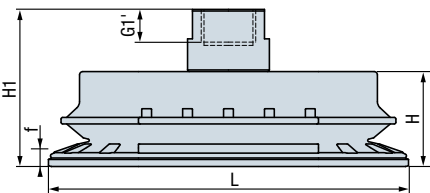
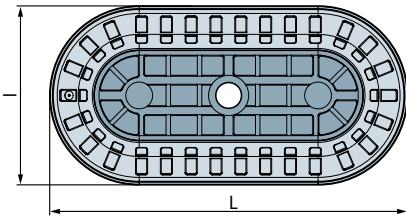
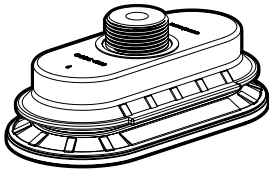
	Dim. rest (l x L mm)	Dim. gripping (l x L mm)	(cm <sup>3</sup> )	(lbs) <sup>(1)</sup>	(lbs) <sup>(1)</sup>	R <sub>min</sub> (mm)	R <sub>min</sub> (mm)	Ø bore (mm)	tightening (mm)
COFC 2565	25x65	26.8x67	3.78	15.7	15.7	25	25	6	hex 6
COFC 3080	30x80	31.5x82	6.08	24.7	20.2	40	32	6	hex 6
COFC 4080	40x80	42x82	11.03	31.5	27.0	60	40	6	hex 6
COFC 50100	50x100	52.5x102.5	22.25	51.7	54.0	70	50	6	hex 6

	H1 (mm)	H (mm)	G1 (mm)	G1' (mm)	f <sup>(2)</sup> (mm)	(g)			
						F38G	F38GA	M38G	C32
COFC 2565	31.5	12.5	8	10	3	24	35	17	35
COFC 3080	32	13	8	10	3	29	45	22	40
COFC 4080	34	15	8	10	4.5	30	45.5	23	41
COFC 50100	35	16	8	10	6	43	72.7	36	54

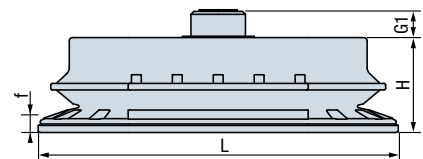
(1) Force measured at 65% vacuum on dry, smooth and flat sheet metal **without safety factor**.

(2) f: deflection of the suction cup

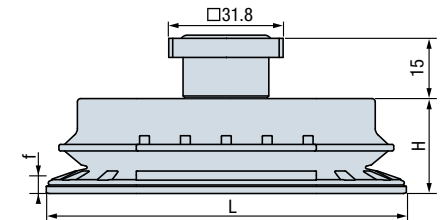
## COBC Oblong Suction Cup with 1.5 Bellows



F38G/F38GA Female fitting G3/8"



M38G Male fitting G3/8"



C32 Square coupling 32

	Dim. rest (l x L mm)	Dim. gripping (l x L mm)	(cm <sup>3</sup> )	(lbs) <sup>(1)</sup>	(lbs) <sup>(1)</sup>	R <sub>min</sub> (mm)	R <sub>min</sub> (mm)	Ø bore (mm)	tightening (mm)
COBC 3065	31x65	32.3x67	9.98	13.5	13.5	25	30	6	hex 6
COBC 4080	40x80	41.5x82	19.44	24.7	27.0	38	37	6	hex 6
COBC 55110	55x110	57x112.5	49.25	38.2	42.7	58	57	6	hex 6
COBC 70140	70x140	72x143	93.57	67.4	67.4	72	68	6	hex 6

	H1 (mm)	H (mm)	G1 (mm)	G1' (mm)	f <sup>(2)</sup> (mm)	(g)			
						F38G	F38GA	M38G	C32
COBC 3065	39	20	8	10	7	31	45.5	25	43
COBC 4080	41	22	8	10	9	37	53.1	31	49
COBC 55110	48	29	8	10	13	68	95.1	62	80
COBC 70140	49	30	8	10	16	103	121.4	97	115

(1) Force measured at 65% vacuum on dry, smooth and flat sheet metal **without safety factor**.

(2) f: deflection of the suction cup

## To order

TYPE	DIMENSIONS	FITTING
<b>CBC</b>	<b>85</b>	<b>M38G</b>

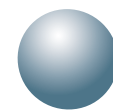
CFC
CBC
COFC
COBC

Refer to the code in the tables

M38G	G3/8" Male Fitting (Polyamide)
F38G	G3/8" Female Fitting (Polyamide)
F38GA	G3/8" Female Fitting (Aluminum)
C32	32 Square Fitting (Aluminum)

## EXAMPLE OF A STANDARD VACUUM CUP : CBC 85 M38G

(C series vacuum cup 1.5 bellows, Ø 85mm, G3/8" Male Polyamide Fitting)



# Materials

The COVAL C series vacuum cups are made of a nitrile elastomer and the fittings (M38G/ F38G) are polyamide reinforced with fiberglass. These materials guarantee the vacuum cups' long life, strong oil resistance and heat tolerance of up to 212°F (100°C). This approach helps to avoid any risk of damaging costly equipment and facilitates recycling of vacuum cups.

- Suction cups: NBR nitrile 55 shores (high resistance to oils), grey color.
- Fitting:
  - Polyamide (PA 6.6 30%FG) ensuring reduced weight (M38G/F38G Fitting).
  - Aluminum (F38GA/C32 Fitting).
- O-ring: NBR Nitrile Blue.
- Other fittings available on request.

# Range

The COVAL C Series high performance vacuum cups are available in a full range of shapes, dimensions and connections in order to meet all your needs in the most appropriate way.

## MODELS

**CFC**  
flat  
suction cup



**CBC**  
1.5 bellows  
suction cup



**COFC**  
flat oblong  
suction cup



**COBC**  
oblong suction cup  
with 1.5 bellows



## FITTINGS

**M38G**  
male fitting  
G3/8"



**F38G**  
female fitting  
G3/8"



**F38GA**  
aluminium  
female  
fitting G3/8"



**C32**  
square coupling  
32 mm



### CBC 30 M38G SP624



In order to meet the specific needs of end-of-arm tooling users in Stamping, COVAL has designed a Ø30 mm suction cup, with an extra-large Ø9.5 mm air-flow, thus removing pressure drops in the vacuum network of the gripper's power supply.

# Advanced Vacuum Solutions

COVAL, as a vacuum manager, guarantees optimum performance by offering a complete range of innovative components, integrating reliable and intelligent functions. These solutions ensure the vacuum network is airtight

and adaptable to your industrial needs.

You will find our full product range in the COVAL general catalog, on our website, or by contacting your COVAL distributor.

## VACUUM GENERATORS



Energy-efficient vacuum pumps : LEMAR+ & GVMAX series:

- Ultra-compact and lightweight.
- Integrated operation and control functions.
- Over 90% energy savings, thanks to vacuum and pressure regulation.
- Silent operation.
- Non-cloggable through-type silencer.

## EXTENSIONS, L SERIES



Our extensions are available in different diameters, lengths and models, including the 3/8 G female version for mounting the C series high performance vacuum cups.

## VACUUM SCREWED FITTINGS, RDV/RCOV SERIES



Special vacuum fittings range, complete with a blue o-ring:

- 100% airtight,
- Easily disconnect and reconnect the vacuum network without modifying existing tubing,
- Swivel fittings for better vacuum distribution.

## VACUUM FEEDERS, NV SERIES



Available in 2 versions:

- Screwed fittings 4 or 8 outputs, NVS series
- Aluminium body 4 outputs, NVA series.

