

# COVAL

vacuum managers

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## C SERIES

High-Performance Suction Cups



**ADVANCED VACUUM SOLUTIONS**

# C

## High-Performance Suction Cups

### General Information

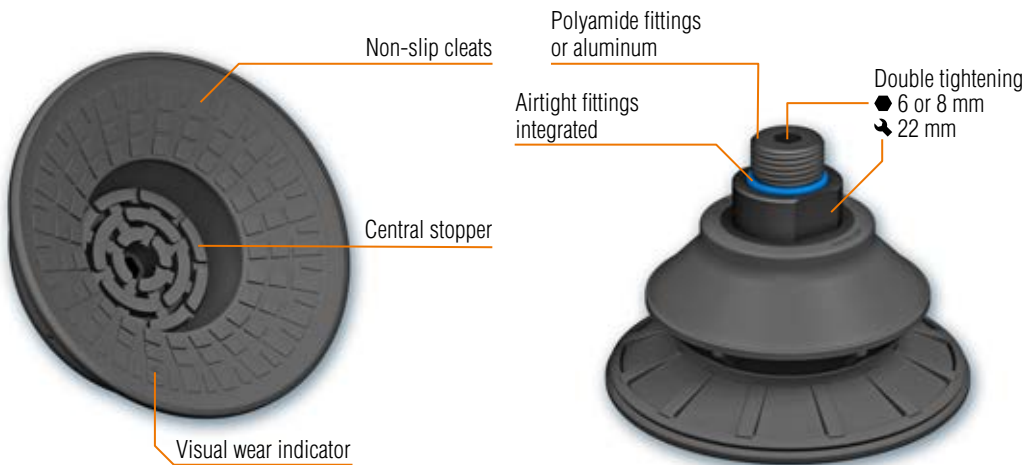
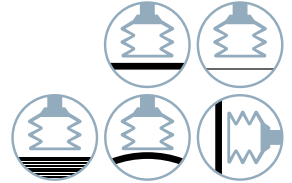
The **C Series high-performance suction cup** range has been designed to meet the requirements of the automotive sector. The improved characteristics of the **C Series** range optimizes production tools in all branches of activity.



Industry-specific applications



Types of use



### Advantages

- Extreme resistance to slipping and acceleration.
- A full range of shapes and sizes to meet every requirement.
- 2 suction cup materials available depending on the model (Nitrile or Siton®).
- 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.
- Airtight fittings using:
  - O-rings on G3/8" male cylindrical suction cups and 32 square suction cups
  - Sealing ring on all oblong 3/8" male suction cups.
- Visual wear indicator.
- Double tightening: external with 22 mm wrench or internal with 6 or 8 mm hex key.

### 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.



# C

## High-Performance Suction Cups General Information



### Range

The COVAL **C Series** high performance vacuum cups are available in a complete range of shapes, sizes, materials, and connection

types 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"  
(polyamide fitting)



#### F38G

female fitting G3/8"  
(polyamide fitting)



#### C32

square coupling 32 mm  
(polyamide fitting and 32mm  
square in aluminum)



#### M38GA

male fitting G3/8"  
(aluminum fitting)



#### F38GA

female fitting G3/8"  
(aluminum fitting)



▪ Other fittings available on request.

### Materials

#### SUCTION CUPS

##### ■ NBR nitrile 55 Shore A

- High resistance to oils and supports peak temperatures up to 100°C (212°F).
- Colors: gray for suction cups with polyamide fittings, and blue-green for suction cups with aluminum fittings.

##### ■ SITON® Siton 60 Shore A

- High resistance to oils, supports peak temperatures up to 160°C (320°F) and features excellent abrasion resistance.
- Color: green.

#### FITTINGS

##### ■ PA

- Polyamide filled with fiberglass (PA 6.6 30% FG), ensures weight savings, avoids risk of deterioration of expensive tools, and facilitates suction cup recycling. (fitting M38G/F38G).

##### ■ AL

- Aluminum (M38GA/F38GA/C32 Fitting).

##### ■ O-ring: NBR Nitrile Blue.

**C Series** high-performance suction cups made of **nitrile (NBR) with polyamide fittings** (versions M38G - F38G)



**C Series** high-performance suction cups made of **Siton® (STNV6) with polyamide fittings** (versions M38G - F38G)



**C Series** high-performance suction cups made of **nitrile (NBR) with aluminum fittings** (versions M38GA - F38GA)



# C


## High-Performance Suction Cups

### References - Suction Cups




#### CFC Flat Suction Cup



		References for nitrile (NBR) suction cups according to the type of fitting					Part No. for Siton® (STNV6) suction cups according to the type of fitting	
		M38G	F38G	M38GA	F38GA	C32	M38G	F38G
<b>CFC35</b>		CFC35M38G	CFC35F38G	CFC35M38GA	CFC35F38GA	CFC35C32	on request	on request
<b>CFC50</b>		CFC50M38G	CFC50F38G	CFC50M38GA	CFC50F38GA	CFC50C32	on request	on request
<b>CFC75</b>		CFC75M38G	CFC75F38G	CFC75M38GA	CFC75F38GA	CFC75C32	CFC75STNV6M38G	CFC75STNV6F38G
<b>CFC100</b>		CFC100M38G	CFC100F38G	CFC100M38GA	CFC100F38GA	CFC100C32	CFC100STNV6M38G	CFC100STNV6F38G
<b>CFC125</b>		CFC125M38G	CFC125F38G	CFC125M38GA	CFC125F38GA	CFC125C32	on request	on request


#### CBC Suction Cup with 1.5 Bellows



		References for nitrile (NBR) suction cups according to the type of fitting					Part No. for Siton® (STNV6) suction cups according to the type of fitting	
		M38G	F38G	M38GA	F38GA	C32	M38G	F38G
<b>CBC22</b>		CBC22M38G	CBC22F38G	CBC22M38GA	CBC22F38GA	CBC22C32	on request	on request
<b>CBC30 (1)</b>		CBC30M38G	CBC30F38G	CBC30M38GA	CBC30F38GA	CBC30C32	on request	on request
<b>CBC45</b>		CBC45M38G	CBC45F38G	CBC45M38GA	CBC45F38GA	CBC45C32	CBC45STNV6M38G	CBC45STNV6F38G
<b>CBC60</b>		CBC60M38G	CBC60F38G	CBC60M38GA	CBC60F38GA	CBC60C32	CBC60STNV6M38G	CBC60STNV6F38G
<b>CBC85</b>		CBC85M38G	CBC85F38G	CBC85M38GA	CBC85F38GA	CBC85C32	CBC85STNV6M38G	CBC85STNV6F38G
<b>CBC115</b>		CBC115M38G	CBC115F38G	CBC115M38GA	CBC115F38GA	CBC115C32	CBC115STNV6M38G	CBC115STNV6F38G
<b>CBC125</b>		CBC125M38G	CBC125F38G	on request	on request	CBC125C32	on request	on request


#### COFC Flat Oblong Suction Cup



		References for nitrile (NBR) suction cups according to the type of fitting					Part No. for Siton® (STNV6) suction cups according to the type of fitting	
		M38G	F38G	M38GA	F38GA	C32	M38G	F38G
<b>COFC2565</b>		COFC2565M38G	COFC2565F38G	COFC2565M38GA	COFC2565F38GA	COFC2565C32	on request	on request
<b>COFC3080</b>		COFC3080M38G	COFC3080F38G	COFC3080M38GA	COFC3080F38GA	COFC3080C32	on request	on request
<b>COFC4080</b>		COFC4080M38G	COFC4080F38G	COFC4080M38GA	COFC4080F38GA	COFC4080C32	on request	on request
<b>COFC50100</b>		COFC50100M38G	COFC50100F38G	COFC50100M38GA	COFC50100F38GA	COFC50100C32	on request	on request

#### COBC Oblong Suction Cup with 1.5 Bellows



		References for nitrile (NBR) suction cups according to the type of fitting					Part No. for Siton® (STNV6) suction cups according to the type of fitting	
		M38G	F38G	M38GA	F38GA	C32	M38G	F38G
<b>COBC3065</b>		COBC3065M38G	COBC3065F38G	COBC3065M38GA	COBC3065F38GA	COBC3065C32	COBC3065STNV6M38G	COBC3065STNV6F38G
<b>COBC4080</b>		COBC4080M38G	COBC4080F38G	COBC4080M38GA	COBC4080F38GA	COBC4080C32	COBC4080STNV6M38G	COBC4080STNV6F38G
<b>COBC55110</b>		COBC55110M38G	COBC55110F38G	COBC55110M38GA	COBC55110F38GA	COBC55110C32	COBC55110STNV6M38G	COBC55110STNV6F38G
<b>COBC70140</b>		COBC70140M38G	COBC70140F38G	COBC70140M38GA	COBC70140F38GA	COBC70140C32	on request	on request

#### (1) CBC 30 M38G SP624

In order to meet the specific needs of end-of-arm tooling users in Stamping, COVAL has designed a Ø 30 mm suction cup, with an extra-large Ø 9.5 mm airflow, thus removing pressure drops in the vacuum network of the gripper's power supply.

This special version can be recognized by its black O-ring.



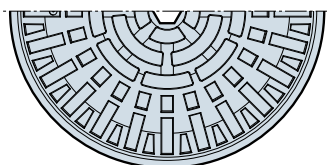
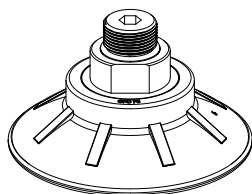
# C







## High-Performance Suction Cups



### Suction Cup Properties

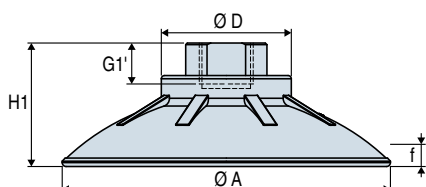


#### CFC Flat Suction Cup

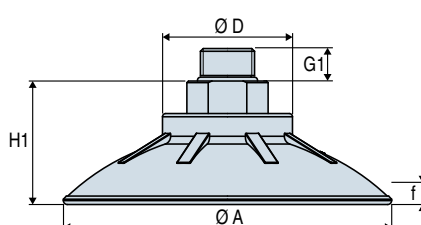


		ØA at rest	ØA gripping	 (cm <sup>3</sup> )	 (N) <sup>(1)</sup>	 (N) <sup>(1)</sup>	 R <sub>min</sub>	 R <sub>min</sub>	Ø bore	tightening
<b>CFC 35</b>		37	38.5	2.46	60	56	58	50	6.3	w 22 + hk 6
<b>CFC 50</b>		51	54	8.37	107	110	66	52	6.3	w 22 + hk 6
<b>CFC 75</b>		76	80	25.03	210	225	100	58	6.3	w 22 + hk 6
<b>CFC 100</b>		101	105.7	57.61	350	470	120	90	6.3	w 22 + hk 6
<b>CFC 125</b>		127	132	119.7	600	600	160	115	6.3	w 22 + hk 8

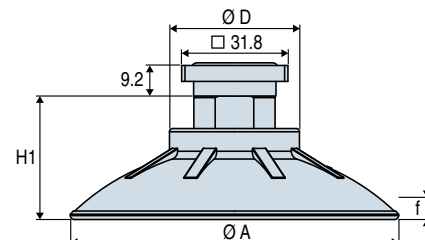
		H1	f <sup>(*)</sup>	G1	G1'	ØD	 (g)				
							F38G	F38GA	M38G	M38GA	C32
<b>CFC 35</b>		25	3	10	12.6	37	14	25.7	18	33.7	36.2
<b>CFC 50</b>		30	5	10	12.6	38	25	34.9	29	42.9	47.2
<b>CFC 75</b>		33	8	10	12.6	41	40	48.9	45	56.9	62.2
<b>CFC 100</b>		38	10	10	12.6	41	67	75.3	72	83.3	89.2
<b>CFC 125</b>		44	14	10	12.6	55	119	146	124	154	141.2



**F38G/F38GA Female fitting G3/8"**

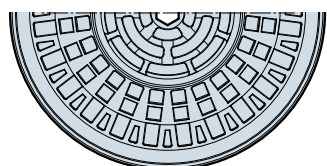
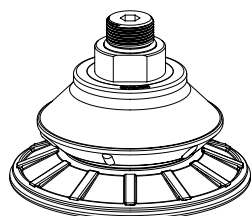









**M38G/M38GA Male fitting G3/8"**





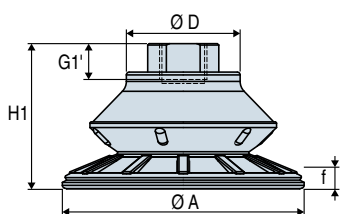
**C32 Square coupling 32**

#### CBC Suction Cup with 1.5 Bellows

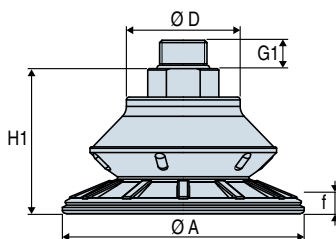


		ØA at rest	ØA gripping	 (cm <sup>3</sup> )	 (N) <sup>(1)(2)</sup>	 (N) <sup>(1)(3)</sup>	 (N) <sup>(1)</sup>	 R <sub>min</sub>	 R <sub>min</sub>	Ø bore	tightening
<b>CBC 22</b>		21.5	22	1.6	18	20	17	25	30	6.3	w 22 + hk 6
<b>CBC 30<sup>(**)</sup></b>		32	34	5	35	40	33	30	32	6.3	w 22 + hk 6
<b>CBC 45</b>		47	48.7	11.47	39	77	85	36	45	6.3	w 22 + hk 6
<b>CBC 60</b>		62	64.5	25.31	60	135	155	44	62	6.3	w 22 + hk 6
<b>CBC 85</b>		85	88	66.54	125	250	220	65	115	6.3	w 22 + hk 6
<b>CBC 115</b>		115	119	141.47	214	430	430	84	140	6.3	w 22 + hk 8
<b>CBC 125</b>		125	132	200.1	223	475	560	93	155	6.3	w 22 + hk 8

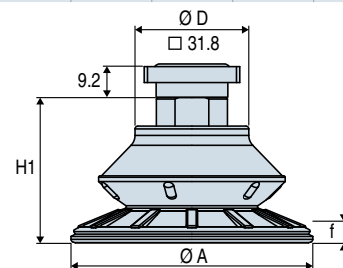
		H1	f <sup>(*)</sup>	G1	G1'	ØD	 (g)				
							F38G	F38GA	M38G	M38GA	C32
<b>CBC 22</b>		32	6	10	12.6	37	10	23	14	31	32.2
<b>CBC 30<sup>(**)</sup></b>		31	8	10	12.6	37	14	26.3	19	34.3	36.2
<b>CBC 45</b>		36	11	10	12.6	37	22	31.5	26	39.5	44.2
<b>CBC 60</b>		41	14	10	12.6	39	32	42	37	50	54.2
<b>CBC 85</b>		51	21	10	12.6	41	64	71.2	69	79.2	86.2
<b>CBC 115</b>		53	23	10	12.6	55	103	131.1	107	139.1	125.2
<b>CBC 125</b>		51	24	10	12.6	55	159	/	163	/	181.2



**F38G/F38GA Female fitting G3/8"**



**M38G/M38GA Male fitting G3/8"**



**C32 Square coupling 32**

(1) Force measured at 65% on dry, smooth, flat sheet metal, without safety factor. The values may change according to the characteristics and the surface of the part. (2) Suction force. (3) Pull-off force. (\*) f: deflection of the suction cup. (\*\*) A specific model of the CBC 30 is available with M G3/8" fitting and 9.5mm diameter bore: **CBC30 M38G SP624**. Note: All dimensions are in mm.

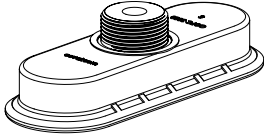
# C







## High-Performance Suction Cups

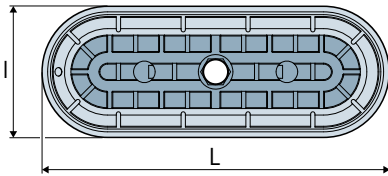
### Suction Cup Properties





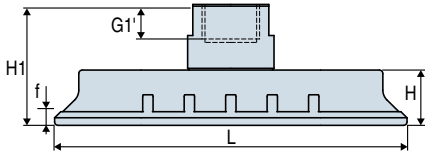
#### COFC Flat Oblong Suction Cup



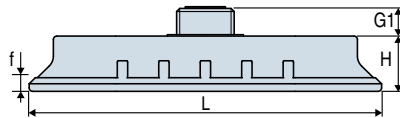
	I x L at rest	I x L gripping	 (cm <sup>3</sup> )	 (N) <sup>(1)</sup>	 (N) <sup>(1)</sup>	 R <sub>min</sub>	 R <sub>min</sub>	Ø bore	tightening
<b>COFC 2565</b>	25x65	26.8x67	3.78	82	57	25	25	6	hk 6
<b>COFC 3080</b>	30x80	31.5x82	6.08	125	91	40	32	6	hk 6
<b>COFC 4080</b>	40x80	42x82	11.03	145	133	60	40	6	hk 6
<b>COFC 50100</b>	50x100	52.5x102.5	22.25	240	218	70	50	6	hk 6



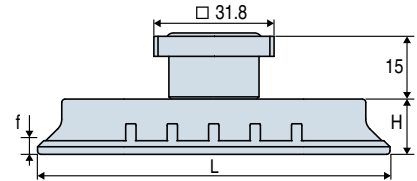
	H1	H	G1	G1'	f <sup>(*)</sup>	 (g)				
						F38G	F38GA	M38G	M38GA	C32
<b>COFC 2565</b>	31.5	12.5	8	10	3	24	37.8	17	26.3	35
<b>COFC 3080</b>	32	13	8	10	3	29	42.7	22	31.2	40
<b>COFC 4080</b>	34	15	8	10	4.5	30	45.5	23	34	41
<b>COFC 50100</b>	35	16	8	10	6	43	72.3	36	60.8	54



**F38G/F38GA** Female fitting G3/8"

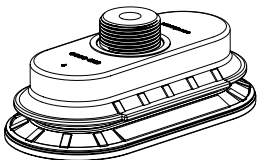









**M38G/M38GA** Male fitting G3/8"

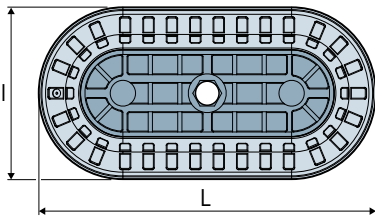




**C32** Square coupling 32

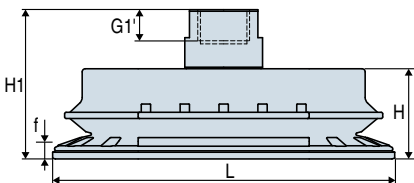
#### COBC Oblong Suction Cup with 1.5 Bellows



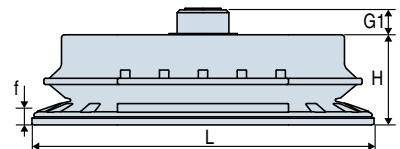
	I x L at rest	I x L gripping	 (cm <sup>3</sup> )	 (N) <sup>(1)(2)</sup>	 (N) <sup>(1)(3)</sup>	 (N) <sup>(1)</sup>	 R <sub>min</sub>	 R <sub>min</sub>	Ø bore	tightening
<b>COBC 3065</b>	31x65	32.3x67	9.98	50	75	87	25	30	6	hk 6
<b>COBC 4080</b>	40x80	41.5x82	19.44	116	130	155	38	37	6	hk 6
<b>COBC 55110</b>	55x110	57x112.5	49.25	170	210	265	58	57	6	hk 6
<b>COBC 70140</b>	70x140	72x143	93.57	270	350	410	72	68	6	hk 6



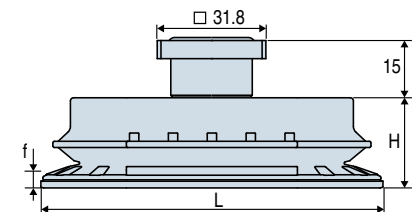
	H1	H	G1	G1'	f <sup>(*)</sup>	 (g)				
						F38G	F38GA	M38G	M38GA	C32
<b>COBC 3065</b>	39	20	8	10	7	31	45.5	25	34	43
<b>COBC 4080</b>	41	22	8	10	9.5	37	52.1	31	40.6	49
<b>COBC 55110</b>	48	29	8	10	11.5	68	94.3	62	82.8	80
<b>COBC 70140</b>	49	30	8	10	14.5	103	120.9	97	109.4	115



**F38G/F38GA** Female fitting G3/8"



**M38G/M38GA** Male fitting G3/8"



**C32** Square coupling 32

The values represent the average characteristics of our products.

(1) Force measured at 65% on dry, smooth, flat sheet metal, without safety factor. The values may change according to the characteristics and the surface of the part.

(2) Suction force. (3) Pull-off force. (\*) f = deflection of the suction cup. Note: All dimensions are in mm.



# 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



NFC )))  
IO-Link

**GVMAX HD** series Heavy Duty communicating vacuum pumps

- Integration of command and control functions, high-visibility color display.
- Over 90% energy savings thanks to the ASC (Air Saving Control) intelligent vacuum control system.
- SIO or IO-Link Communication.

## EXTENSIONS, L SERIES



Our extensions are available in different diameters, lengths and models, including the G3/8" 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.





**COVAL**  
vacuum managers

vacuum  
**components**



**A TECHNOLOGICAL PARTNER ON A GLOBAL SCALE**

Located in the southeast region of France, COVAL conceives, manufactures and globally distributes high performance, advanced vacuum automation components and systems for industrial applications in all branches.

COVAL is an ISO 9001: V2015 certified company which offers innovative solutions integrating reliable and optimized components with intelligent functionalities. The focus is to provide the most personalized and economic solution to a given application while assuring a significant improvement in the productivity and the safety for the vacuum users around the world.

COVAL has an ambition for technical excellence and innovation. As a specialist in vacuum automation, COVAL is reputed for offering reliable, personalized, cost effective and productive solutions.

The references of COVAL can be found in several industrial sectors (Packaging, Automotive Industry, Plastic, Graphic, Aeronautic...) where vacuum handling is important for high efficiency and productivity.

COVAL markets its products and services all over Europe, in the United States and South America through its subsidiaries and authorized distribution network. COVAL strives to provide customer driven solutions and gives the best possible treatment to satisfy all its clients.

*For all enquiries from Australia, Africa and Asia kindly contact COVAL head office in France.*



**COVAL S.A.S.**  
Head Office



**COVAL INC.**



**COVAL IBERICA**



**COVAL GERMANY**



**COVAL ITALIA**



**COVAL CHINA**

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