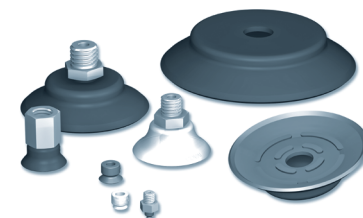


Extra-flat Suction Cups Ø 2 to 200 mm

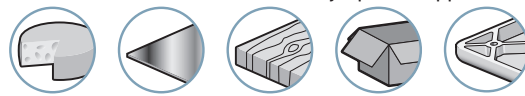
The profile of the VPG series extra-flat suction cups provides for accuracy in load gripping and speeds up throughput rates. These suction cups are used for flat surfaces only.

Materials

NBR Nitrile
SI Silicone
STN SITON®



Industry-specific applications



Types of use



Suction Cup Properties

	Ø (mm)	Volume (cm³)	Force (N) (1)	Force (N) (1)	R _{min} (mm)	NBR	SI	STN
VPG 2	2	0.00073	0.1	0.04	2	VPG2NBR	VPG2SI	-
VPG 3.5	3.5	0.0022	0.2	0.1	8	VPG3.5NBR	VPG3.5SI	-
VPG 5	5	0.005	0.5	0.2	8	VPG5NBR	VPG5SI	VPG5STN
VPG 6	6	0.008	0.7	0.4	8	VPG6NBR	VPG6SI	VPG6STN
VPG 8	8	0.03	1.2	0.6	10	VPG8NBR	VPG8SI	VPG8STN
VPG 10	10	0.07	2.0	1.0	13	VPG10NBR	VPG10SI	VPG10STN
VPG 15	15	0.2	4.7	2.4	13	VPG15NBR	VPG15SI	VPG15STN
VPG 20	20	0.5	8.8	4.4	20	VPG20NBR	VPG20SI	VPG20STN
VPG 25	25	1.1	12.1	6.1	25	VPG25NBR	VPG25SI	VPG25STN
VPG 30	30	1.4	16.4	8.2	40	VPG30NBR	VPG30SI	VPG30STN
VPG 35	35	2.9	23.8	11.9	50	VPG35NBR	VPG35SI	-
VPG 40	40	3.8	34.7	17.3	50	VPG40NBR	VPG40SI	VPG40STN
VPG 50	50	5.3	54.2	27.1	75	VPG50NBR	VPG50SI	VPG50STN
VPG 60	60	12	88.8	44.4	100	VPG60NBR	VPG60SI	VPG60STN
VPG 60S	60	12	88.8	44.4	100	VPG60SNBR	VPG60SSI	VPG60SSTN
VPG 80	80	26.9	143.0	71.5	150	VPG80NBR	VPG80SI	VPG80STN
VPG 80S	80	26.9	143.0	71.5	150	VPG80SNBR	VPG80SSI	VPG80SSTN
VPG 95	95	41	202.2	101.1	200	VPG95NBR	VPG95SI	VPG95STN
VPG 95S	95	41	202.2	101.1	200	VPG95SNBR	VPG95SSI	VPG95SSTN
VPG 120	120	141	263.6	131.8	365	VPG120NBR	VPG120SI	VPG120STN
VPG 150	150	230	426.1	213.1	380	VPG150NBR	VPG150SI	VPG150STN
VPG 200	200	384	758.3	379.2	430	VPG200NBR	VPG200SI	VPG200STN

(1) Actual force of the suction cup in use with 65% vacuum and including a safety factor of 2 for horizontal handling and a factor of 4 for vertical handling.

Choice of Fittings

	M3-M	M5-M	M5-F	M6-M	M8-M	M10-M	M10x125-F	G1/8"-F	G1/8"-M	G1/4"-F	G1/4"-M	G1/2"-F
2, 3.5	■	■	-	-	-	-	-	-	-	-	-	-
5... 10	-	■	■	-	-	-	-	■	■	-	-	-
15, 20	-	■	-	-	-	-	-	■	■	-	-	-
25... 50	-	-	-	■	□	□	-	■	■	■	■	-
60... 95	-	-	-	-	-	-	■	-	-	■	■	-
60S... 95S	-	-	-	-	-	-	-	-	-	■	-	-
120... 200	-	-	-	-	-	-	-	-	-	-	-	■

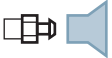
■ Standard available configurations (suction cup + fitting)
see page reference 2/10

□ Additional mounting configurations
See pages 2/13 - 2/14

Fitting: M = male F = female

Types of Assembly

COVAL suction cups can be assembled in a wide variety of configurations.

C  **Version C : Barbed fitting**

V  **Version V : Removable fitting:**
(adapter and hollow screw)

E  **Version E : Pressed fitting**

Accessories

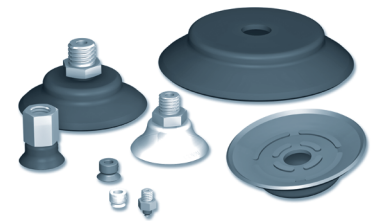
To optimize the use of your suction cups, Coval offers a comprehensive range of accessories (nozzle fittings, spring extensions, and feeder systems, etc.), see chapters 4 and 14.



Please specify the part n°. e.g. VPG25STNIF18C
Refer to page 2/10

Extra-flat Suction Cups Ø 2 to 200 mm

References "Suction Cup + Fitting"



Ø 2 - 10 mm	THREAD	C				
		M3-M	M5-M	M5-F	G1/8"-M	G1/8"-F
	VPG2NBR	VPG2NBRIMM3C	VPG2NBRIMM5C	-	-	-
	VPG2SI	VPG2SIIMM3C	VPG2SIIMM5C	-	-	-
	VPG3.5NBR	VPG3.5NBRIMM3C	VPG3.5NBRIMM5C	-	-	-
	VPG3.5SI	VPG3.5SIIMM3C	VPG3.5SIIMM5C	-	-	-
	VPG5NBR	-	VPG5NBRIMM5C	VPG5NBRIFM5C	VPG5NBRIM18C	VPG5NBRIF18C
	VPG5SI	-	VPG5SIIMM5C	VPG5SIIFM5C	VPG5SIIM18C	VPG5SIIF18C
	VPG5STN	-	VPG5STNIMM5C	VPG5STNIFM5C	VPG5STNIM18C	VPG5STNIF18C
	VPG6NBR	-	VPG6NBRIMM5C	VPG6NBRIFM5C	VPG6NBRIM18C	VPG6NBRIF18C
	VPG6SI	-	VPG6SIIMM5C	VPG6SIIFM5C	VPG6SIIM18C	VPG6SIIF18C
	VPG6STN	-	VPG6STNIMM5C	VPG6STNIFM5C	VPG6STNIM18C	VPG6STNIF18C
	VPG8NBR	-	VPG8NBRIMM5C	VPG8NBRIFM5C	VPG8NBRIM18C	VPG8NBRIF18C
	VPG8SI	-	VPG8SIIMM5C	VPG8SIIFM5C	VPG8SIIM18C	VPG8SIIF18C
	VPG8STN	-	VPG8STNIMM5C	VPG8STNIFM5C	VPG8STNIM18C	VPG8STNIF18C
	VPG10NBR	-	VPG10NBRIMM5C	VPG10NBRIFM5C	VPG10NBRIM18C	VPG10NBRIF18C
	VPG10SI	-	VPG10SIIMM5C	VPG10SIIFM5C	VPG10SIIM18C	VPG10SIIF18C
	VPG10STN	-	VPG10STNIMM5C	VPG10STNIFM5C	VPG10STNIM18C	VPG10STNIF18C

Ø 15 - 20 mm	THREAD	C		V	
		G1/8"-M	G1/8"-F	M5-M	G1/8"-M
	VPG15NBR	VPG15NBRIM18C	VPG15NBRIF18C	VPG15NBRIMM5V	VPG15NBRIM18V
	VPG15SI	VPG15SIIM18C	VPG15SIIF18C	VPG15SIIMM5V	VPG15SIIM18V
	VPG15STN	VPG15STNIM18C	VPG15STNIF18C	VPG15STNIMM5V	VPG15STNIM18V
	VPG20NBR	-	-	VPG20NBRIMM5V	VPG20NBRIM18V
	VPG20SI	-	-	VPG20SIIMM5V	VPG20SIIM18V
	VPG20STN	-	-	VPG20STNIMM5V	VPG20STNIM18V

Ø 25 - 50 mm	THREAD	E		V			
		G1/8"-M	G1/8"-F	M6-M	G1/8"-M	G1/8"-F	G1/4"-M
	VPG25NBR	VPG25NBRIM18	VPG25NBRIF18	VPG25NBRIMM6V	VPG25NBRIM18V	VPG25NBRIF18V	VPG25NBRIM14V
	VPG25SI	VPG25SIIM18	VPG25SIIF18	VPG25SIIMM6V	VPG25SIIM18V	VPG25SIIF18V	VPG25SIIM14V
	VPG25STN	VPG25STNIM18	VPG25STNIF18	VPG25STNIMM6V	VPG25STNIM18V	VPG25STNIF18V	VPG25STNIM14V
	VPG30NBR	VPG30NBRIM18	VPG30NBRIF18	VPG30NBRIMM6V	VPG30NBRIM18V	VPG30NBRIF18V	VPG30NBRIM14V
	VPG30SI	VPG30SIIM18	VPG30SIIF18	VPG30SIIMM6V	VPG30SIIM18V	VPG30SIIF18V	VPG30SIIM14V
	VPG30STN	VPG30STNIM18	VPG30STNIF18	VPG30STNIMM6V	VPG30STNIM18V	VPG30STNIF18V	VPG30STNIM14V
	VPG35NBR	VPG35NBRIM18	VPG35NBRIF18	VPG35NBRIMM6V	VPG35NBRIM18V	VPG35NBRIF18V	VPG35NBRIM14V
	VPG35SI	VPG35SIIM18	VPG35SIIF18	VPG35SIIMM6V	VPG35SIIM18V	VPG35SIIF18V	VPG35SIIM14V
	VPG40NBR	VPG40NBRIM18	VPG40NBRIF18	VPG40NBRIMM6V	VPG40NBRIM18V	VPG40NBRIF18V	VPG40NBRIM14V
	VPG40SI	VPG40SIIM18	VPG40SIIF18	VPG40SIIMM6V	VPG40SIIM18V	VPG40SIIF18V	VPG40SIIM14V
	VPG40STN	VPG40STNIM18	VPG40STNIF18	VPG40STNIMM6V	VPG40STNIM18V	VPG40STNIF18V	VPG40STNIM14V
	VPG50NBR	-	-	VPG50NBRIMM6V	VPG50NBRIM18V	VPG50NBRIF18V	VPG50NBRIM14V
	VPG50SI	-	-	VPG50SIIMM6V	VPG50SIIM18V	VPG50SIIF18V	VPG50SIIM14V
	VPG50STN	-	-	VPG50STNIMM6V	VPG50STNIM18V	VPG50STNIF18V	VPG50STNIM14V

Ø 60 - 95 mm	THREAD	V		
		M10x125-F	G1/4"-F	G1/4"-M
	VPG60NBR	VPG60NBR	-	VPG60NBRIM14V
	VPG60SNBR	-	VPG60SNBR	-
	VPG60SI	VPG60SI	-	VPG60SIIM14V
	VPG60SSI	-	VPG60SSI	-
	VPG60STN	VPG60STN	-	VPG60STNIM14V
	VPG60SSTN	-	VPG60SSTN	-
	VPG80NBR	VPG80NBR	-	VPG80NBRIM14V
	VPG80SNBR	-	VPG80SNBR	-
	VPG80SI	VPG80SI	-	VPG80SIIM14V
	VPG80SSI	-	VPG80SSI	-
	VPG80STN	VPG80STN	-	VPG80STNIM14V
	VPG80SSTN	-	VPG80SSTN	-
	VPG95NBR	VPG95NBR	-	VPG95NBRIM14V
	VPG95SNBR	-	VPG95SNBR	-
	VPG95SI	VPG95SI	-	VPG95SIIM14V
	VPG95SSI	-	VPG95SSI	-
	VPG95STN	VPG95STN	-	VPG95STNIM14V
	VPG95SSTN	-	VPG95SSTN	-

Ø 120 - 200 mm	THREAD	V	
		G1/2"-F *	G1/2"-F **
	VPG120NBR	VPG120NBRIF12V	VPG120NBRIF12V
	VPG120SI	VPG120SIIF12V	VPG120SIIF12V
	VPG120STN	VPG120STNIF12V	VPG120STNIF12V
	VPG150NBR	VPG150NBRIF12V	VPG150NBRIF12V
	VPG150SI	VPG150SIIF12V	VPG150SIIF12V
	VPG150STN	VPG150STNIF12V	VPG150STNIF12V
	VPG200NBR	VPG200NBRIF12V	VPG200NBRIF12V
	VPG200SI	VPG200SIIF12V	VPG200SIIF12V
	VPG200STN	VPG200STNIF12V	VPG200STNIF12V

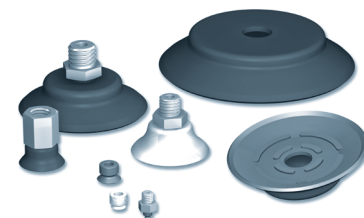
*Configured using fitting n° IFS12120

** Configured using fitting n° IF12120

Non-standard configurations are available (see page 2/13 and 2/14). For standard configurations (suction cup+fitting), the C and V versions are delivered unassembled.

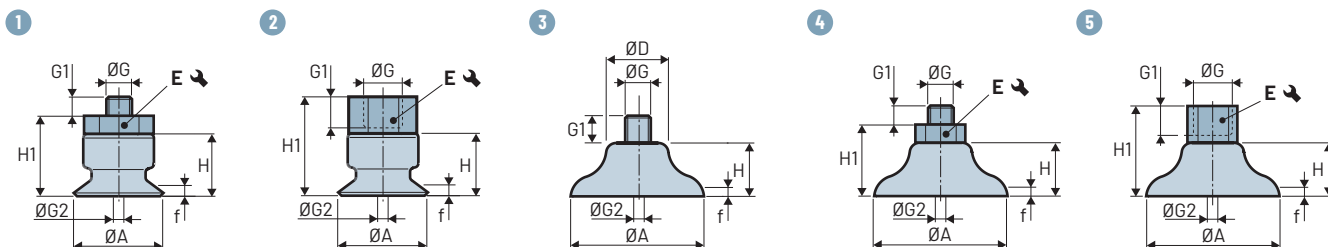
Extra-flat Suction Cups Ø 2 to 200 mm

Dimensions "Suction Cup + Fitting"



VPG 2 - 10

VPG 15 - 50



VPG 60 - 95

VPG 120 - 200

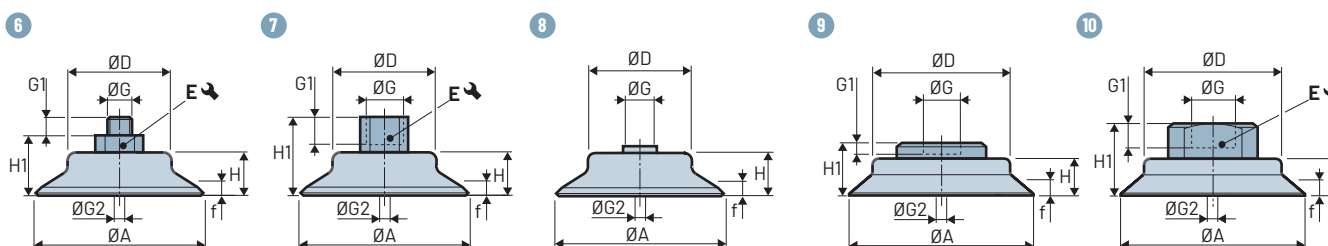
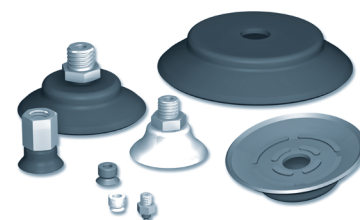


		Diagram	Ø A	Ø D	f ⁽¹⁾	H	H1	Ø G	G1	Ø G2 ⁽²⁾	E ↺	⚖ (g)
Ø 2 - 10 mm	VPG2---IMM3C	1	2	-	0.5	4	6	M3-M	3	1	5	0.21
	VPG2---IMM5C	1	2	-	0.5	4	7.5	M5-M	4.5	1	7	0.91
	VPG3.5---IMM3C	1	3.5	-	0.5	4	6	M3-M	3	1	5	0.22
	VPG3.5---IMM5C	1	3.5	-	0.5	4	7.5	M5-M	4.5	1	7	0.65
	VPG5---IMM5C	1	5	-	0.8	6.5	10	M5-M	4.5	2.2	7	0.86
	VPG5---IFM5C	2	5	-	0.8	6.5	15.5	M5-F	6	2.2	8	1.3
	VPG5---IM18C	1	5	-	0.8	6.5	11.5	G1/8"-M	8	2.2	14	4.1
	VPG5---IF18C	2	5	-	0.8	6.5	21.5	G1/8"-F	9	2.2	14	5.3
	VPG6---IMM5C	1	6	-	0.8	6.5	10	M5-M	4.5	2.2	7	0.9
	VPG6---IFM5C	2	6	-	0.8	6.5	15.5	M5-F	6	2.2	8	1.3
	VPG6---IM18C	1	6	-	0.8	6.5	11.5	G1/8"-M	8	2.2	14	4.1
	VPG6---IF18C	2	6	-	0.8	6.5	21.5	G1/8"-F	9	2.2	14	5.3
	VPG8---IMM5C	1	8	-	1.2	7	10.5	M5-M	4.5	2.2	7	0.9
	VPG8---IFM5C	2	8	-	1.2	7	16	M5-F	6	2.2	8	1.4
	VPG8---IM18C	1	8	-	1.2	7	12	G1/8"-M	8	2.2	14	4.1
	VPG8---IF18C	2	8	-	1.2	7	22	G1/8"-F	9	2.2	14	5.33
Ø 15 - 20 mm	VPG10---IMM5C	1	10	-	1.5	7.5	11	M5-M	4.5	2.2	7	1
	VPG10---IFM5C	2	10	-	1.5	7.5	16.5	M5-F	6	2.2	8	1.5
	VPG10---IM18C	1	10	-	1.5	7.5	12.5	G1/8"-M	8	2.2	14	4.2
	VPG10---IF18C	2	10	-	1.5	7.5	21.5	G1/8"-F	9	2.2	14	5.4
	VPG15---IM18C	4	15	-	1.9	8	13	G1/8"-M	8	2.2	14	4.7
	VPG15---IF18C	5	15	-	1.9	8	23	G1/8"-F	9	2.5	14	5.9
	VPG15---IMM5V	3	15	-	1.9	8	-	M5-M	5	2.5	-	2
	VPG15---IM18V	4	15	-	1.9	8	12.5	G1/8"-M	6	2.5	13	9.3
	VPG15---IF18V	5	15	-	1.9	8	21	G1/8"-F	7.5	2.5	13	12.5
	VPG20---IMM5V	3	20	-	2.3	10	-	M5-M	5	2.5	-	3.7
	VPG20---IM18V	4	20	-	2.3	10	14.5	G1/8"-M	6	2.5	13	11
	VPG20---IF18V	5	20	-	2.3	10	23	G1/8"-F	7.5	2.5	13	14.2

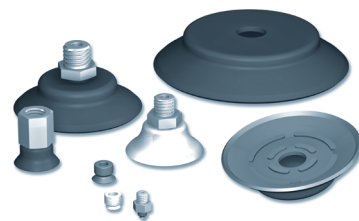
Note: All dimensions are in mm.

(1) f = Deflection of the suction cup. (2) Ø G2 = Ø internal orifice of the fitting.



2
vpg





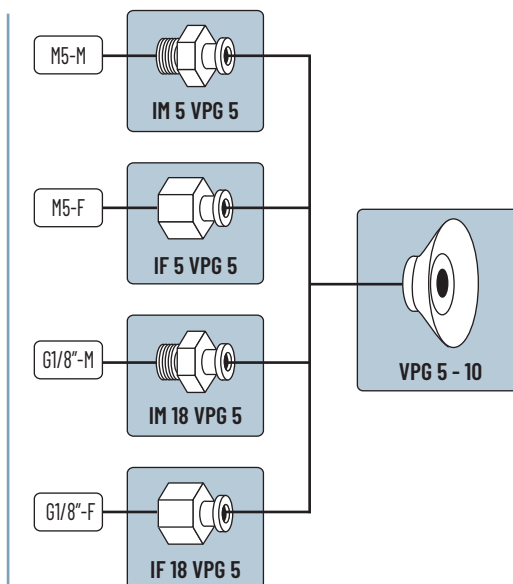
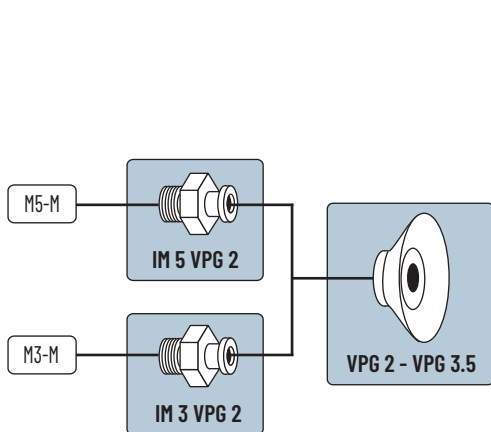
VPG 2 - 10

Barbed fittings



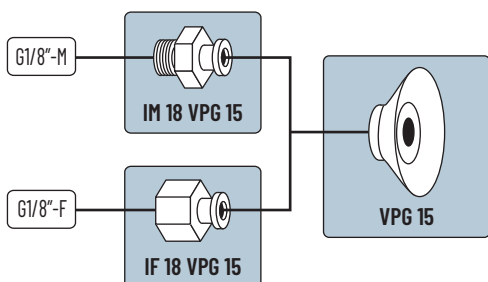
2

VPG

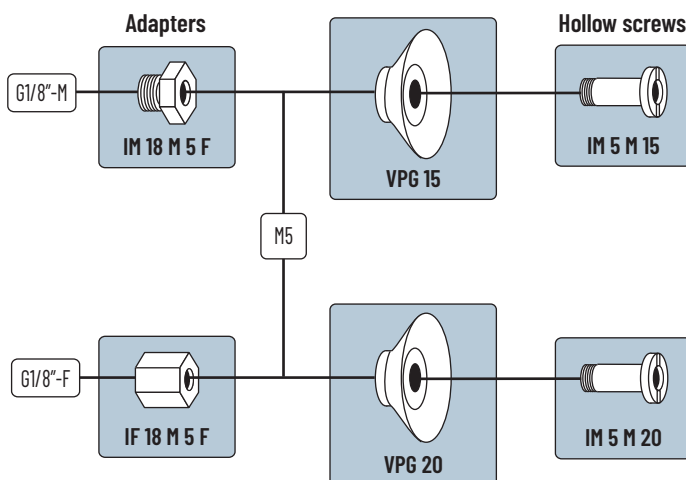


VPG 15 - 20

Barbed fittings

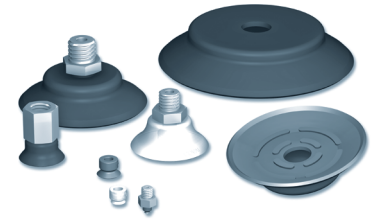


Removable fittings



Configurations (suction cup + fitting) refer to page 2/10

Fittings and suction cups dimensions: see page 2/15 and 2/16.

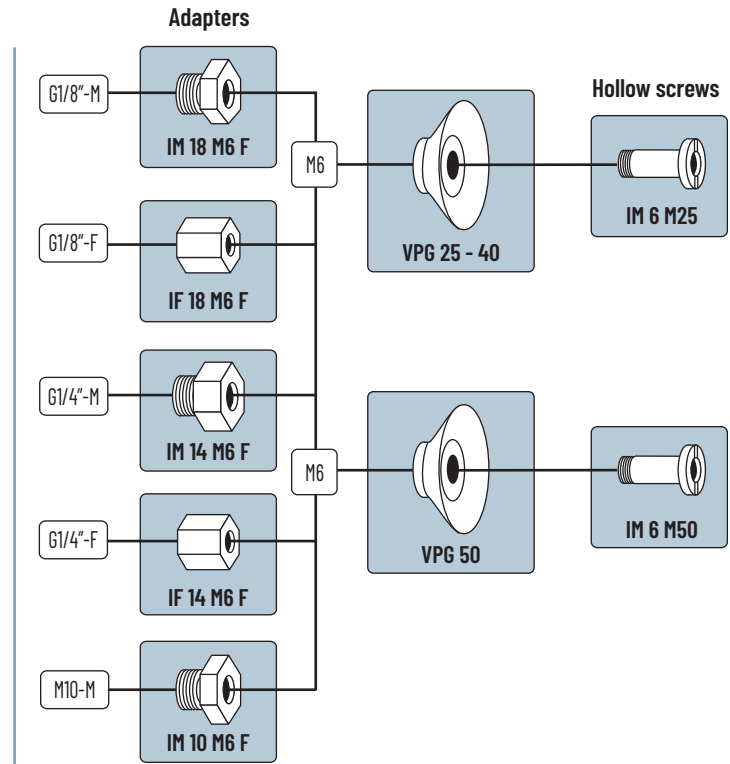
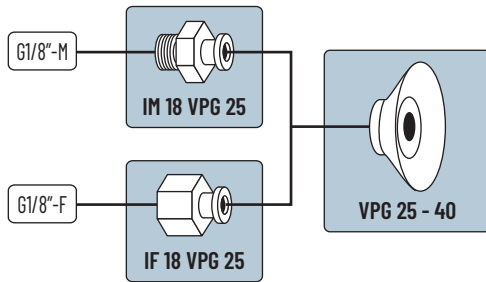


VPG 25 - 50

Pressed fittings

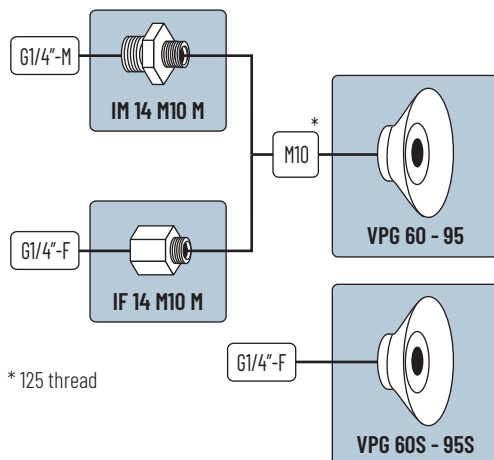


Removable fittings



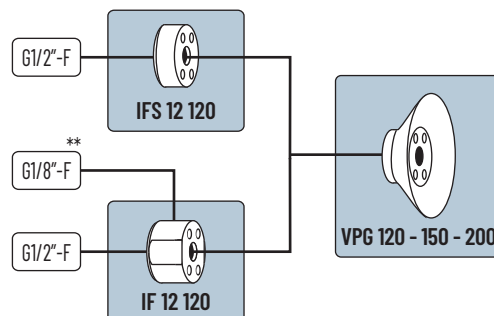
VPG 60 - 95

Removable fittings



VPG 120 - 200

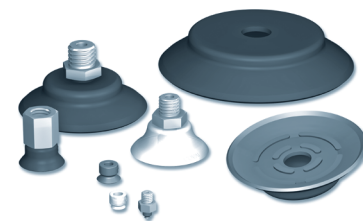
Removable fittings



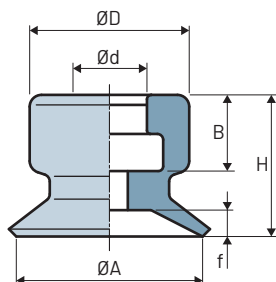
** Female auxiliary radial output

Configurations (suction cup + fitting) refer to page 2/10.

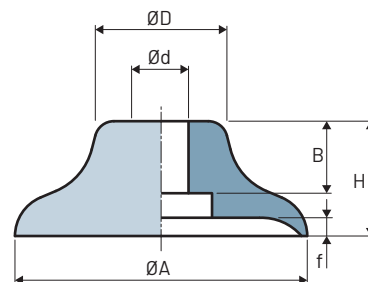
Fittings and suction cups dimensions: see page 2/15 and 2/16.



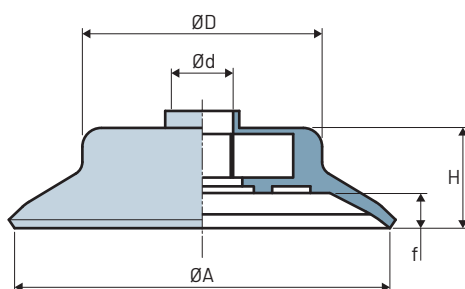
VPG 2 - 10



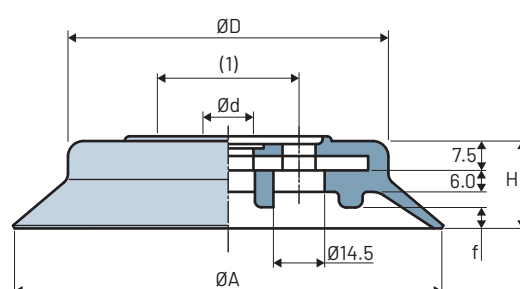
VPG 15 - 50



VPG 60 - 95



VPG 120 - 200

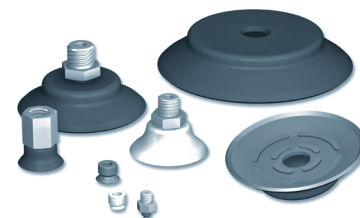


(1) 4 holes Ø 9 on Ø 40

 (Ø)	ØA	H	Ød	ØD	f ⁽¹⁾	B	 (g)
VPG 2	2	4	2	4	0.5	2.5	0.03
VPG 3.5	3.5	4	2	4	0.5	2.5	0.04
VPG 5	5	6.5	4	7.5	0.8	4	0.16
VPG 6	6	6.5	4	7.5	0.8	4	0.17
VPG 8	8	7	4	8	1.2	4	0.23
VPG 10	10	7.5	4	8.7	1.5	4	0.3
VPG 15	15	8	4.5	12	1.9	2.5	0.7
VPG 20	20	10	4.5	15	2.3	4.5	1.5
VPG 25	25	14	6	16	3	7	2.8
VPG 30	30	12	6	15	2	7	3.3
VPG 35	35	14	6	20.5	3	7	5.8
VPG 40	40	14	6	23.5	3.5	7	7.3
VPG 50	50	15	8	29	4	7	11.1
VPG 60	60	16	M10x125-F	38	5	-	25.4
VPG 60S	60	16	G1/4"-F	38	5	-	25.4
VPG 80	80	18	M10x125-F	53	6	-	53
VPG 80S	80	18	G1/4"-F	53	6	-	53
VPG 95	95	19	M10x125-F	68	6	-	93.2
VPG 95S	95	19	G1/4"-F	68	6	-	93.2
VPG 120	120	24.5	14.5	89.5	6	-	230
VPG 150	150	30.5	13	105	9	-	400
VPG 200	200	35.5	13	143	12.5	-	690

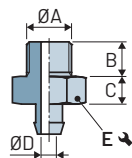
The values represent the average characteristics of our products.
Note: All dimensions are in mm.

(1) f = Deflection of the suction cup.

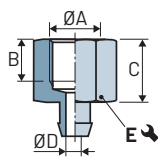


Barbed Fittings

Male - IM



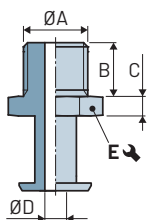
Female - IF



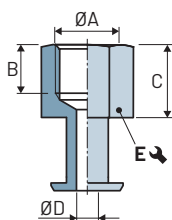
	ØA	B	C	ØD	E	Material	(g)
IM 3 VPG2	M3-M	3	2	1	5	Aluminum	0.18
IM 5 VPG2	M5-M	4.5	3.5	1	7	Aluminum	0.61
IM 5 VPG5	M5-M	4.5	3.5	2.2	7	Aluminum	0.7
IM 18 VPG5	G1/8"-M	8	5	2.2	14	Aluminum	3.9
IM 18 VPG15	G1/8"-M	8	5	2.2	14	Aluminum	4
IF 5 VPG5	M5-F	6	9	2.2	8	Aluminum	1.2
IF 18 VPG5	G1/8"-F	9	15	2.2	14	Aluminum	5.1
IF 18 VPG15	G1/8"-F	9	15	2.5	14	Aluminum	5.2

Pressed Fittings

Male - IM

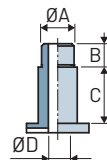


Female - IF



	ØA	B	C	ØD	E	Material	(g)
IM 18 VPG25	G1/8"-M	8	5	4	14	Aluminum	4.08
IF 18 VPG25	G1/8"-F	9	15	4	14	Aluminum	5.5

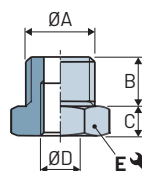
Hollow Screws



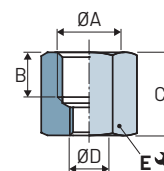
	ØA	B	C	ØD	Material	(g)
IM 5 M15	M5-M	5	2	2.5	Nickel-plated brass	1.3
IM 5 M20	M5-M	5	4	2.5	Nickel-plated brass	2.2
IM 6 M25	M6-M	6	6	3.5	Nickel-plated brass	2.7
IM 6 M50	M6-M	6	6	3.5	Nickel-plated brass	7.5

Adapters for Hollow Screws

Male - IM



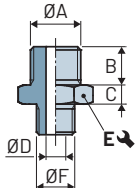
Female - IF



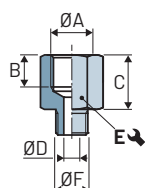
	ØA	B	C	ØD	E	Material	(g)
IM 10 M6F	M10-M	7	3.5	M6-F	13	Brass	5.9
IM 14 M6F	G1/4"-M	8	5	M6-F	17	Nickel-plated brass	15.9
IM 18 M5F	G1/8"-M	6	4.5	M5-F	13	Nickel-plated brass	7.3
IM 18 M6F	G1/8"-M	6	4.5	M6-F	13	Nickel-plated brass	6.6
IF 14 M6F	G1/4"-F	11	16	M6-F	17	Nickel-plated brass	20.5
IF 18 M5F	G1/8"-F	7.5	13	M5-F	13	Nickel-plated brass	10.5
IF 18 M6F	G1/8"-F	7.5	13	M6-F	13	Nickel-plated brass	9.9

Screwed

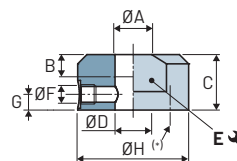
Male - IM



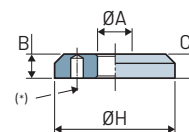
Female - IF



Female - IF 12120



Female - IFS 12120



(*) 4 M8 holes at 90° on Ø40 (screws provided)

	ØA	B	C	ØD	E	ØF	G	H	Material	(g)
IM 14 M10M	G1/4"-M	10	5	5	17	M10x125-M	-	-	Aluminum	7
IF 14 M10M	G1/4"-F	10	17	5	17	M10x125-M	-	-	Aluminum	8.3
IF 12120	G1/2"-F	24	30	19	48	G1/8"-F	8.7	60	Aluminum	224.8
IFS 12120	G1/2"-F	13	13	-	-	-	-	65	Aluminum	143.5

Note: All dimensions are in mm.