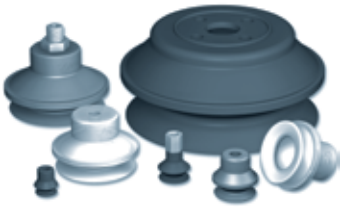
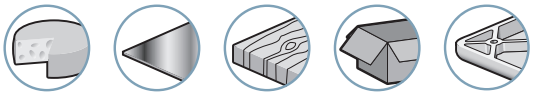
VSAG

Suction Cups with 1.5 Bellows Ø 10 to 150 mm



The VSAG series 1.5 bellows suction cups are recommended for gripping concave of convex products as well as sensitive products due to the cushioning effect of the bellows. The bellows also compensate for height variations in product gripping.

Industry-specific applications



Types of use



Materials

NBR Nitrile
SI Translucent silicone
STN SITON®

Suction Cup Properties

	Ø (mm)	(cm³)	(N) (1)	(N) (1)	Rmin (mm)	NBR	SI	STN
VSAG 10	10.7	0.2	1.8	0.9	4	VSAG10NBR	VSAG10SI	VSAG10STN
VSAG 15	15	0.7	2.5	1.3	6	VSAG15NBR	VSAG15SI	VSAG15STN
VSAG 20B	20	1	4.8	2.4	8	VSAG20BNBR	VSAG20BSI	VSAG20BSTN
VSAG 30	30	4	15.2	7.6	15	VSAG30NBR	VSAG30SI	-
VSAG 40	40	9	23.1	11.6	30	VSAG40NBR	VSAG40SI	-
VSAG 50	50	26	38.3	18.8	40	VSAG50NBR	VSAG50SI	-
VSAG 75	75	76	90.3	44.8	70	VSAG75NBR	VSAG75SI	VSAG75STN
VSAG 110	110	280	191.4	93.9	100	VSAG110NBR	VSAG110SI	VSAG110STN
VSAG 150	150	640	377.7	187.8	130	VSAG150NBR	VSAG150SI	-

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

Choice of Fittings

(Ø)	M5-F	M5-M	M6-M	M10-M	M10x125F	G1/8"-M	G1/8"-F	G1/4"-M	G1/4"-F	G1/2"-F
10...15	■	■	-	-	-	■	■	-	-	-
20...50	-	-	■	□	-	■	■	■	■	-
75	-	-	-	-	■	-	-	■	■	-
110...150	-	-	-	-	-	-	-	-	-	■

■ Standard available configurations (suction cup + fitting) refer to page 2/38
□ Additional mounting configurations see page 2/40
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

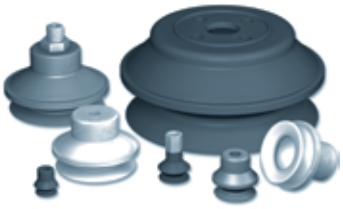
Please specify the part n°. e.g. VSAG10NBRIM18C
Refer to page 2/38

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

VSAG

Suction Cups with 1.5 Bellows Ø 10 to 150 mm

References - "Suction Cup + Fitting"



		C			
	THREAD	M5-M	M5-F	G1/8"-M	G1/8"-F
Ø 10 - 15 mm	VSAG10NBR	VSAG10NBRIMM5C	VSAG10NBRIFM5C	VSAG10NBRIM18C	VSAG10NBRIF18C
	VSAG10SI	VSAG10SIIMM5C	VSAG10SIIFM5C	VSAG10SIIM18C	VSAG10SIIF18C
	VSAG10STN	VSAG10STNIMM5C	VSAG10STNIFM5C	VSAG10STNIM18C	VSAG10STNIF18C
	VSAG15NBR	VSAG15NBRIMM5C	VSAG15NBRIFM5C	VSAG15NBRIM18C	VSAG15NBRIF18C
	VSAG15SI	VSAG15SIIMM5C	VSAG15SIIFM5C	VSAG15SIIM18C	VSAG15SIIF18C
	VSAG15STN	VSAG15STNIMM5C	VSAG15STNIFM5C	VSAG15STNIM18C	VSAG15STNIF18C

		E		V				
	THREAD	G1/8"-M	G1/8"-F	M6-M	G1/8"-M	G1/8"-F	G1/4"-M	G1/4"-F
Ø 20 - 50 mm	VSAG20BNBR	VSAG20BNBRIM18	VSAG20BNBRIF18	VSAG20BNBRIMM6V	VSAG20BNBRIM18V	VSAG20BNBRIF18V	VSAG20BNBRIM14V	VSAG20BNBRIF14V
	VSAG20BSI	VSAG20BSIIM18	VSAG20BSIIF18	VSAG20BSIIMM6V	VSAG20BSIIM18V	VSAG20BSIIF18V	VSAG20BSIIM14V	VSAG20BSIIF14V
	VSAG20BSTN	VSAG20BSTNIM18	VSAG20BSTNIF18	VSAG20BSTNIMM6V	VSAG20BSTNIM18V	VSAG20BSTNIF18V	VSAG20BSTNIM14V	VSAG20BSTNIF14V
	VSAG30NBR	VSAG30NBRIM18	VSAG30NBRIF18	VSAG30NBRIMM6V	VSAG30NBRIM18V	VSAG30NBRIF18V	VSAG30NBRIM14V	VSAG30NBRIF14V
	VSAG30SI	VSAG30SIIM18	VSAG30SIIF18	VSAG30SIIMM6V	VSAG30SIIM18V	VSAG30SIIF18V	VSAG30SIIM14V	VSAG30SIIF14V
	VSAG40NBR	VSAG40NBRIM18	VSAG40NBRIF18	VSAG40NBRIMM6V	VSAG40NBRIM18V	VSAG40NBRIF18V	VSAG40NBRIM14V	VSAG40NBRIF14V
	VSAG40SI	VSAG40SIIM18	VSAG40SIIF18	VSAG40SIIMM6V	VSAG40SIIM18V	VSAG40SIIF18V	VSAG40SIIM14V	VSAG40SIIF14V
	VSAG50NBR	-	-	VSAG50NBRIMM6V	VSAG50NBRIM18V	VSAG50NBRIF18V	VSAG50NBRIM14V	VSAG50NBRIF14V
	VSAG50SI	-	-	VSAG50SIIMM6V	VSAG50SIIM18V	VSAG50SIIF18V	VSAG50SIIM14V	VSAG50SIIF14V

		V		
	THREAD	M10x125 F	G1/4"-M	G1/4"-F
Ø 75 mm	VSAG75NBR	VSAG75NBR	VSAG75NBRIM14V	VSAG75NBRIF14V
	VSAG75SI	VSAG75SI	VSAG75SIIM14V	VSAG75SIIF14V
	VSAG75STN	VSAG75STN	VSAG75STNIM14V	VSAG75STNIF14V

		V	
	THREAD	G1/2"-F *	G1/2"-F **
Ø 110 - 150 mm	VSAG110NBR	VSAG110NBRIFS12V	VSAG110NBRIF12V
	VSAG110SI	VSAG110SIIFS12V	VSAG110SIIF12V
	VSAG110STN	VSAG110STNIFS12V	VSAG110STNIF12V
	VSAG150NBR	VSAG150NBRIFS12V	VSAG150NBRIF12V
	VSAG150SI	VSAG150SIIFS12V	VSAG150SIIF12V

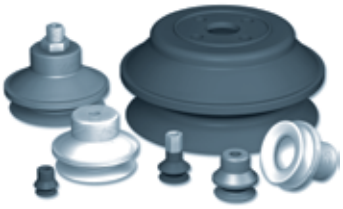
*Configured using fitting n° IFS12120
** Configured using fitting n° IF12120

Additional mounting configurations are available (see page 2/40).
For standard configurations (suction cup+fitting), the C and V versions are delivered unassembled.

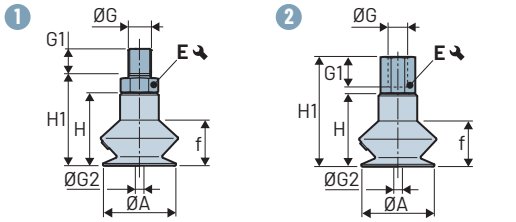
VSAG

Suction Cups with 1.5 Bellows Ø 10 to 150 mm

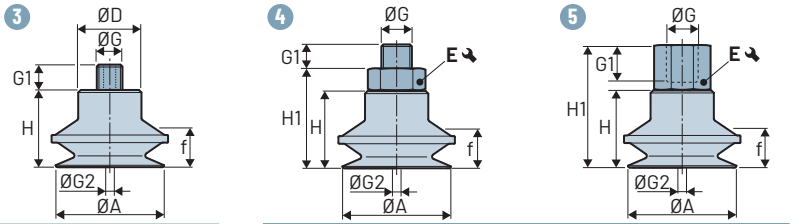
Dimensions - "Suction Cup + Fitting"



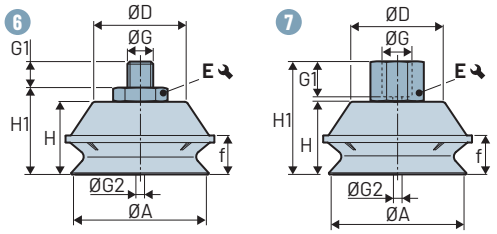
VSAG 10 - 15



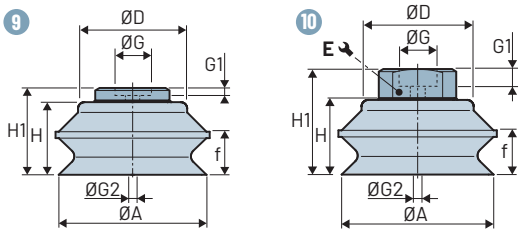
VSAG 20B - 50



VSAG 75



VSAG 110 - 150



		Diagrams	Ø A	Ø D	f (1)	H	H1	Ø G	G1	Ø G2 (2)	E	(g)
Ø 10 - 15 mm	VSAG10---IMM5C	1	10.7	-	5	13.3	16.8	M5-M	4.5	2.2	7	1.3
	VSAG10---IFM5C	2	10.7	-	5	13.3	22.3	M5-F	6	2.2	8	1.8
	VSAG10---IM18C	1	10.7	-	5	13.3	18.3	G1/8"-M	8	2.2	14	4.5
	VSAG10---IF18C	2	10.7	-	5	13.3	28.3	G1/8"-F	9	2.2	14	5.7
	VSAG15---IMM5C	1	15	-	10	16	19.5	M5-M	4.5	2.2	7	1.6
	VSAG15---IFM5C	2	15	-	10	16	25	M5-F	6	2.2	8	2.1
	VSAG15---IM18C	1	15	-	10	16	21	G1/8"-M	8	2.2	14	4.8
	VSAG15---IF18C	2	15	-	10	16	31	G1/8"-F	9	2.2	14	6
Ø 20 - 40 mm	VSAG20B---IM18	4	20	-	12	22	27	G1/8"-M	8	4	14	7.1
	VSAG20B---IF18	5	20	-	12	22	37	G1/8"-F	9	4	14	8.5
	VSAG20B---IMM6V	3	20	15	12	22	-	M6-M	6	3.5	-	5.7
	VSAG20B---IM18V	4	20	-	12	22	26.5	G1/8"-M	6	3.5	13	12.3
	VSAG20B---IF18V	5	20	-	12	22	35	G1/8"-F	7.5	3.5	13	15.6
	VSAG20B---IM14V	4	20	-	12	22	27	G1/4"-M	8	3.5	17	21.6
	VSAG20B---IF14V	5	20	-	12	22	38	G1/4"-F	11	3.5	17	26.2
	VSAG30---IM18	4	30	-	17	30.5	35.5	G1/8"-M	8	4	14	13.2
	VSAG30---IF18	5	30	-	17	30.5	45.5	G1/8"-F	9	4	14	14.6
	VSAG30---IMM6V	3	30	20	17	30.5	-	M6-M	6	3.5	-	11.8
	VSAG30---IM18V	4	30	-	17	30.5	35	G1/8"-M	6	3.5	13	18.4
	VSAG30---IF18V	5	30	-	17	30.5	43.5	G1/8"-F	7.5	3.5	13	21.7
	VSAG30---IM14V	4	30	-	17	30.5	35.5	G1/4"-M	8	3.5	17	27.7
	VSAG30---IF14V	5	30	-	17	30.5	46.5	G1/4"-F	11	3.5	17	32.3
	VSAG40---IM18	4	40	-	15.5	30.5	35.5	G1/8"-M	8	4	14	18.8
	VSAG40---IF18	5	40	-	15.5	30.5	45.5	G1/8"-F	9	4	14	20.2
	VSAG40---IMM6V	3	40	25	15.5	30.5	-	M6-M	6	3.5	-	17.4
	VSAG40---IM18V	4	40	-	15.5	30.5	35	G1/8"-M	6	3.5	13	24
	VSAG40---IF18V	5	40	-	15.5	30.5	43.5	G1/8"-F	7.5	3.5	13	27.3
	VSAG40---IM14V	4	40	-	15.5	30.5	35.5	G1/4"-M	8	3.5	17	33.3
	VSAG40---IF14V	5	40	-	15.5	30.5	46.5	G1/4"-F	11	3.5	17	37.9
Ø 50 mm	VSAG50---IMM6V	3	50	-	20	36.5	-	M6-M	6	3.5	-	30
	VSAG50---IM18V	4	50	-	20	36.5	41	G1/8"-M	6	3.5	13	36.6
	VSAG50---IF18V	5	50	-	20	36.5	49.5	G1/8"-F	7.5	3.5	13	40
	VSAG50---IM14V	4	50	-	20	36.5	41.5	G1/4"-M	8	3.5	17	45.9
	VSAG50---IM14F	5	50	-	20	36.5	52.5	G1/4"-F	11	3.5	17	50.4
Ø 75 - 150 mm	VSAG75---	8	75	50.5	22	43.2	-	M10x125-F	-	-	-	87.6
	VSAG75---IM14V	6	75	50.5	22	43.2	48.2	G1/4"-M	10	5	17	94.6
	VSAG75---IF14V	7	75	50.5	22	43.2	60.2	G1/4"-F	10	5	17	95.9
	VSAG110---IF12V	10	110	85	32.5	55	85	G1/2"-F	24	19	48	488.8
	VSAG110---IFS12V	9	110	85	32.5	55	68	G1/2"-F	13	-	-	407.5
	VSAG150---IF12V	10	150	120	39.5	75.5	105.5	G1/2"-F	24	19	48	911.4
	VSAG150---IFS12V	9	150	120	39.5	75.5	88.5	G1/2"-F	13	-	-	830.1

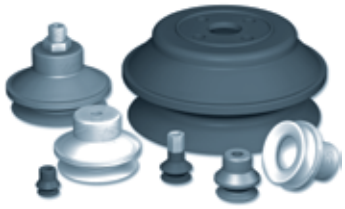
Note: All dimensions are in mm.

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

VSAG

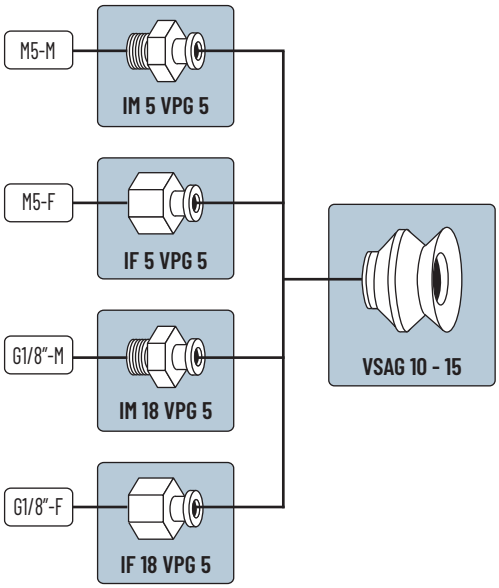
Suction Cups with 1.5 Bellows Ø 10 to 150 mm

Assembly Diagrams



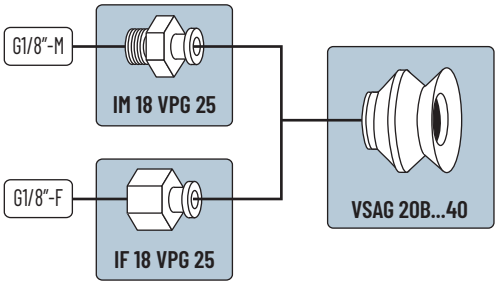
VSAG 10 - 15

Barbed fittings C



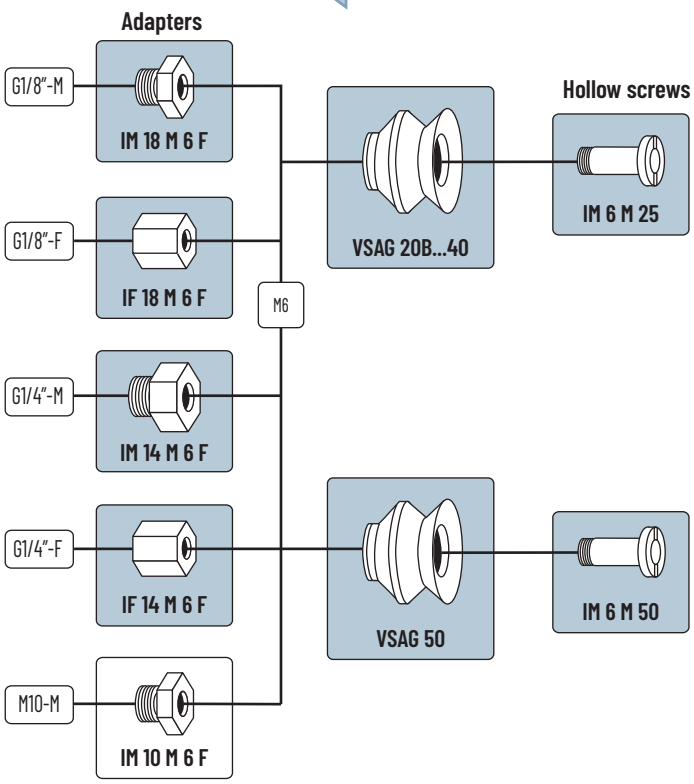
VSAG 20B - 40

Pressed fittings E



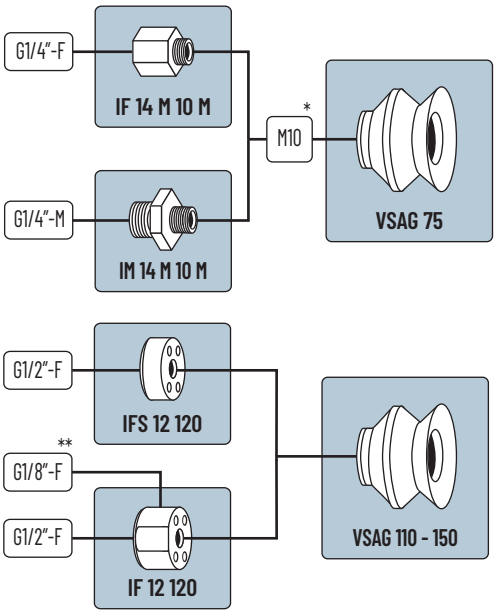
VSAG 20B - 50

Removable fittings V



VSAG 75 - 150

Removable fittings V



* 125 thread
** Female auxiliary radial output

Configurations (suction cup + fitting) refer to page 2/38

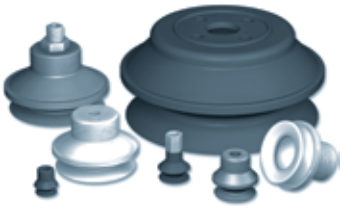
Non-standard configurations must be ordered in seperate part numbers.

Fittings and suction cups dimensions: see pages 2/41 and 2/42.

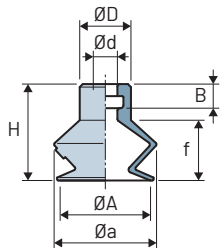
VSAG

Suction Cups with 1.5 Bellows Ø 10 to 150 mm

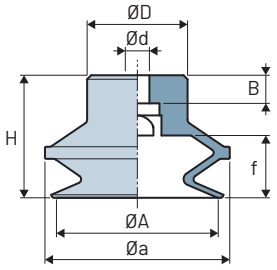
Dimensions - Suction Cups



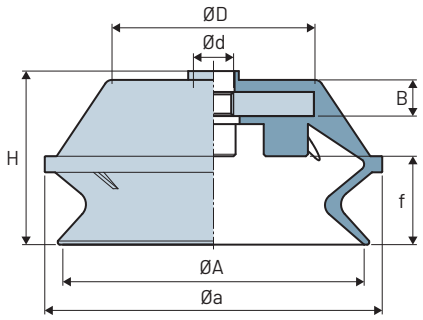
VSAG 10 - 15



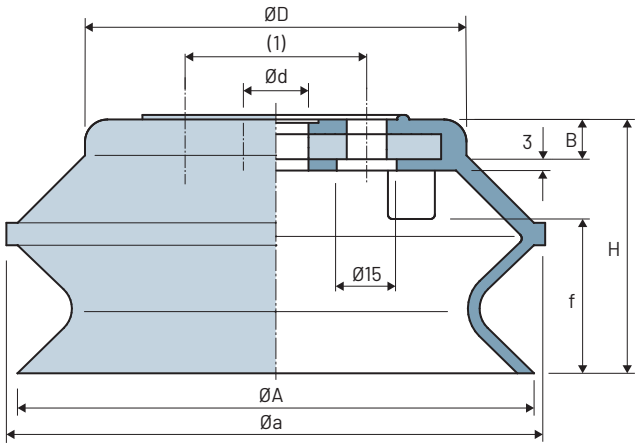
VSAG 20 - 50



VSAG 75



VSAG 110 - 150



(1) 4 holes Ø 9 on Ø 40

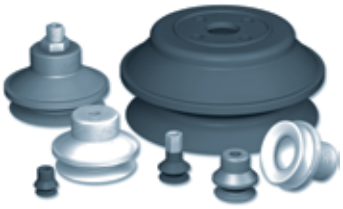
(Ø)	ØA	H	Øa	Ød	ØD	f (1)	B	(g)
VSAG 10	10.7	13.3	12.5	4	8.5	5	4	0.6
VSAG 15	15	16	17	4	8.5	10	4	0.9
VSAG 20 B	20	22	24	6	15	12	7	3
VSAG 30	30	30.5	36	6	20	17	7	9.1
VSAG 40	40	30.5	46	6	25	15.5	7	14.7
VSAG 50	50	36.5	59.5	7.8	28.5	20	7	22.5
VSAG 75	75	43.2	84	M10 x 125 - F	50.5	22	9	87.6
VSAG 110	110	55	121.5	14	85	32.5	9	264
VSAG 150	150	75.5	166	13	120	39.5	11	686.6

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

(1) f = Deflection of the suction cup.

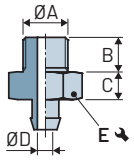
Suction Cups with 1.5 Bellows Ø 10 to 150 mm

Dimensions - Fittings

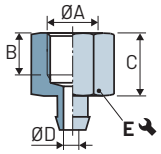


Barbed fittings

Male - IM



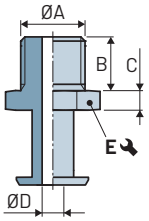
Female - IF



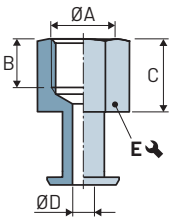
	ØA	B	C	ØD	E	Material	(g)
IM 5 VPG5	M5-M	4.5	3.5	2.2	7	Aluminum	0.7
IM 18 VPG5	G1/8"-M	8	5	2.2	14	Aluminum	3.9
IF 5 VPG5	M5-F	6	9	2.2	8	Aluminum	1.2
IF 18 VPG5	G1/8"-F	9	15	2.2	14	Aluminum	5.1

Pressed Fittings

Male - IM

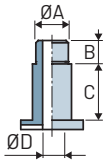


Female - IF



	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

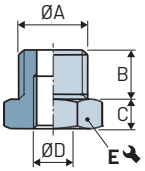
Hollow Screws



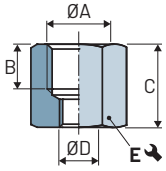
	ØA	B	C	ØD	Material	(g)
IM 6 M25	M6-M	6	6	3.5	Nickel-plated brass	2.7
IM 6 M50	M6-M	6	6	3.5	Nickel-plated brass	7.5

Adapters for Hollow Screws

Male - IM



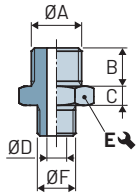
Female - IF



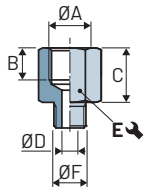
	ØA	B	C	ØD	E	Material	(g)
IM 10 M6F	M10-M	7	3.5	M6	13	Brass	5.9
IM 14 M6F	G1/4"-M	8	5	M6-F	17	Nickel-plated brass	15.9
IM 18 M6F	G1/8"-M	6	4.5	M6-F	13	Nickel-plated brass	6.6
IF 14 M6F	G1/4"-F	11	16	M6-F	17	Nickel-plated brass	20.5
IF 18 M6F	G1/8"-F	7.5	13	M6-F	13	Nickel-plated brass	9.9

Removable Fittings

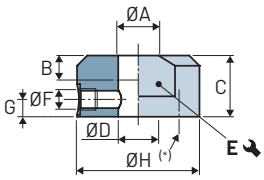
Male - IM



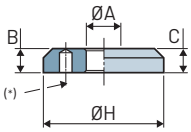
Female - IF



Female - IF 12120



Female - IFS 12120



(1) 4 holes Ø 9 on Ø 40

	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

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