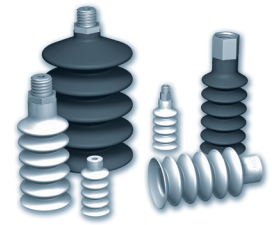


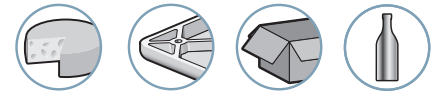
VSD

Long Stroke Suction Cups



Long stroke suction cups (4.5 and 5.5 bellows) are specially recommended for handling spherical or cylindrical objects or which require compensation for varying heights.

Industry-specific applications



Types of use



2 VSD

Materials

- NBR** Nitrile
- SIT3** 30 Shore A translucent
- SIT5** 50 Shore A translucent silicone

Suction Cup Properties

	Ø (mm)	Volume (cm ³)	Force (N) ⁽¹⁾	R _{min} (mm)	NBR	SIT3	SIT5
VSD 18	17.5	2.5	4.5	20	-	-	VSD18SIT5
VSD 32	32	21.7	10.5	35	VSD32NBR	VSD32SIT3	-
VSD 62	62	111	50	75	VSD62NBR	-	-

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

Choice of Fittings

	Group	M5-M	M6-M	M8-M	M10-M	G1/8"-F	G1/8"-M	10/32-M	G1/4"-F	G1/4"-M
VSD 18	1	■	■	-	-	■	■	□	-	-
VSD 32-62	2	□	□	□	□	■	■	-	■	■

■ Standard available configurations (suction cup + fitting) □ Additional mounting configurations
See part n° below see page 2/53

Fitting: M = male F = female

Types of Assembly

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



Version C: Factory-crimped fitting



Version E: Pressed fitting



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

References - "Suction Cup + Fitting"

Group 1					
Ø 18	THREAD	M5-M	M6-M	G1/8"-M	G1/8"-F
VSD18SIT5		VSD18SIT5IMM5C	VSD18SIT5IMM6C	VSD18SIT5IM18C	VSD18SIT5IF18C

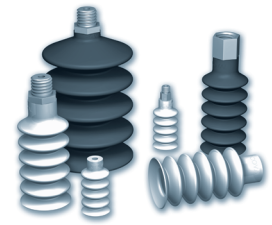
Group 2									
Ø 32-62	THREAD	G1/4"-M	G1/4"-F	G1/4"-M	G1/4"-F	G1/8"-M	G1/8"-F	G1/4"-M	G1/4"-F
VSD32NBR		VSD32NBRIM14C	VSD32NBRIF14C	VSD32NBRIM14	VSD32NBRIF14	VSD32NBRIM18V	VSD32NBRIF18V	VSD32NBRIM14V	VSD32NBRIF14V
VSD32SIT3		VSD32SIT3IM14C	VSD32SIT3IF14C	VSD32SIT3IM14	VSD32SIT3IF14	VSD32SIT3IM18V	VSD32SIT3IF18V	VSD32SIT3IM14V	VSD32SIT3IF14V
VSD62NBR		VSD62NBRIM14C	VSD62NBRIF14C	VSD62NBRIM14	VSD62NBRIF14	VSD62NBRIM18V	VSD62NBRIF18V	VSD62NBRIM14V	VSD62NBRIF14V

Accessories

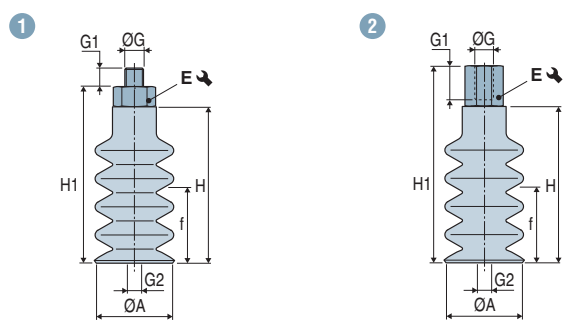
To optimize use of your suction cups, Coval offers a comprehensive range of accessories (sensors, spring systems, extensions, feeder systems, etc.) see chapters 4 and 12.



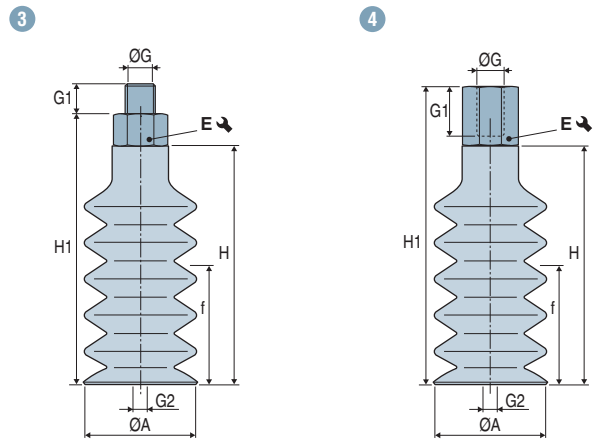
Please specify the part n°. e.g. **VSD18SIT5IMM5C**
See part n° table above



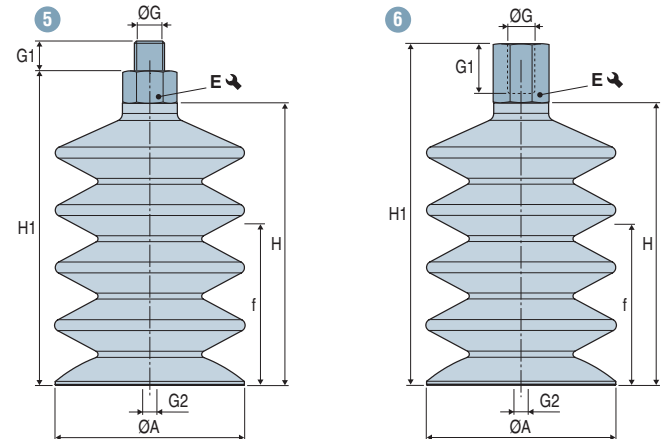
VSD 18 Group 1



VSD 32 Group 2



VSD 62 Group 2



Group 1		Diagram	ØA	f ⁽¹⁾	H	H1	ØG	G1	ØG2 ⁽²⁾	E ↘	⚖ (g)
Ø 18 mm	VSD18-IMM5C	1	17.5	18	36	41	M5-M	4.5	2.5	7	6.2
	VSD18-IMM6C	1	17.5	18	36	41	M6-M	5	3.5	7	5.8
	VSD18-IM18C	1	17.5	18	36	42	G1/8"-M	7.5	3.5	14	7.2
	VSD18-IF18C	2	17.5	18	36	48	G1/8"-F	8	3.5	14	7.1

Group 2		Diagram	ØA	f ⁽¹⁾	H	H1	G	G1	ØG2 ⁽²⁾	E ↘	⚖ (g)
Ø 32 - 62 mm	VSD32-IM18V	3	32	34	65	69.5	G1/8"-M	6	3.5	13	29.2
	VSD32-IF18V	4	32	34	65	78	G1/8"-F	7.5	3.5	13	32.5
	VSD32-IM14	3	32	34	65	69	G1/4"-M	11	4.4	17	22.9
	VSD32-IM14C	3	32	34	65	73	G1/4"-M	10	7	17	23.8
	VSD32-IM14V	3	32	34	65	70	G1/4"-M	8	3.5	17	38.5
	VSD32-IF14	4	32	34	65	80	G1/4"-F	10	4.4	17	23.7
	VSD32-IF14C	4	32	34	65	80	G1/4"-F	12	6.9	17	23.1
	VSD32-IF14V	4	32	34	65	81	G1/4"-F	11	3.5	17	43.5
	VSD62-IM18V	5	62	55	92.5	97	G1/8"-M	6	3.5	13	76.7
	VSD62-IF18V	6	62	55	92.5	105.5	G1/8"-F	7.5	3.5	13	80
	VSD62-IM14	5	62	55	92.5	96.5	G1/4"-M	11	4.4	17	70.4
	VSD62-IM14C	5	62	55	92.5	100.5	G1/4"-M	10	7	17	71.3
	VSD62-IM14V	5	62	55	92.5	97.5	G1/4"-M	8	3.5	17	86
	VSD62-IF14	6	62	55	92.5	107.5	G1/4"-F	10	4.4	17	71.2
VSD62-IF14C	6	62	55	92.5	107.5	G1/4"-F	12	6.9	17	70.6	
VSD62-IF14V	6	62	55	92.5	108.5	G1/4"-F	11	3.5	17	90.6	

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

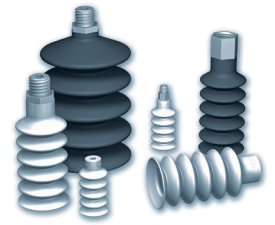
Note: All dimensions are in mm.

Assembly diagrams
See page 2/53.

VSD

Long Stroke Suction Cups

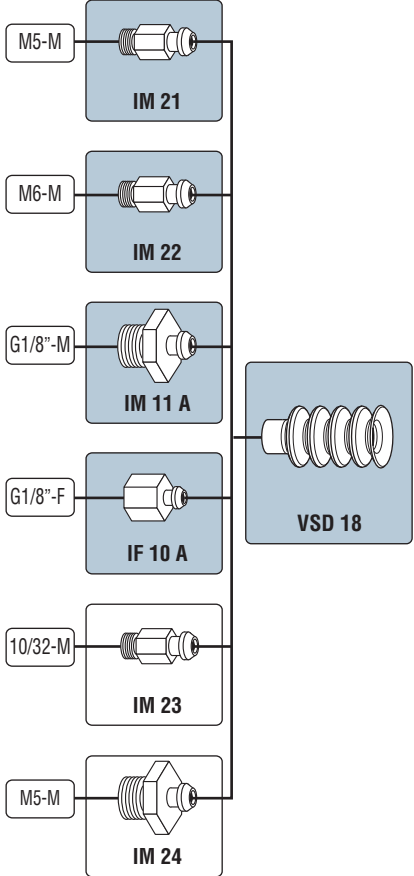
Assembly Diagrams



2
VSD

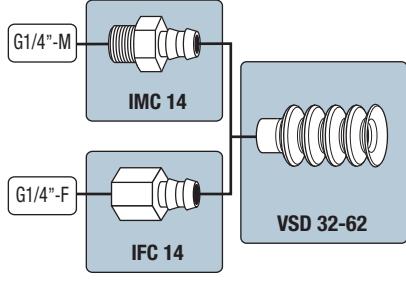
VSD 18 Group 1

Barbed fittings **C**

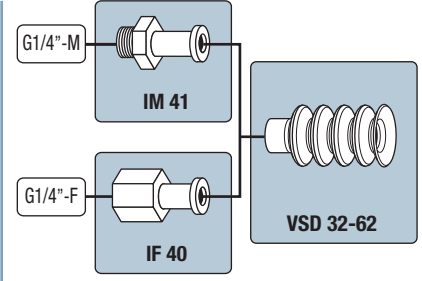


VSD 32-62 Group 2

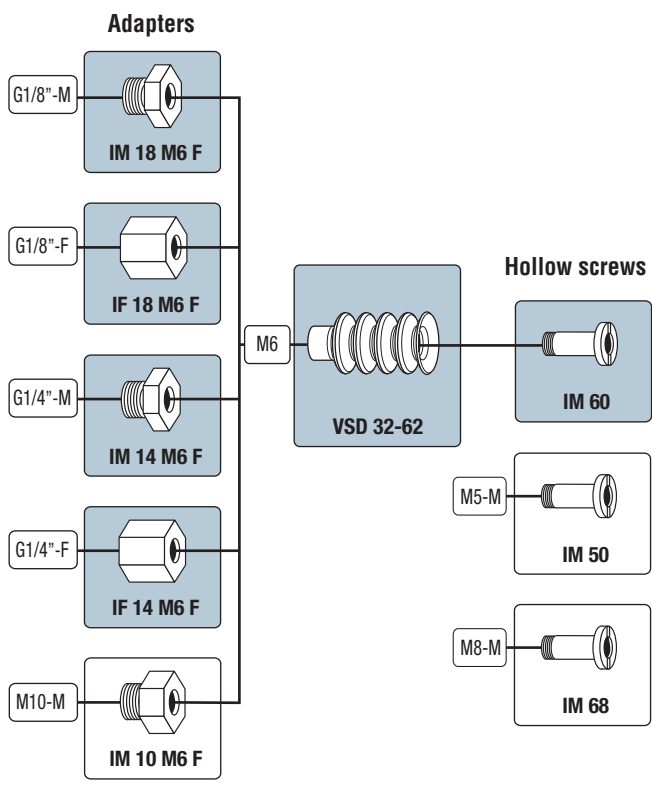
Barbed fittings **C**



Pressed fittings **E**



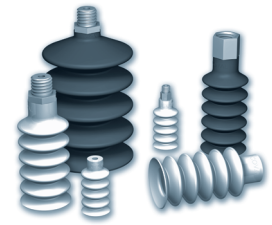
Removable fittings **V**



VSD

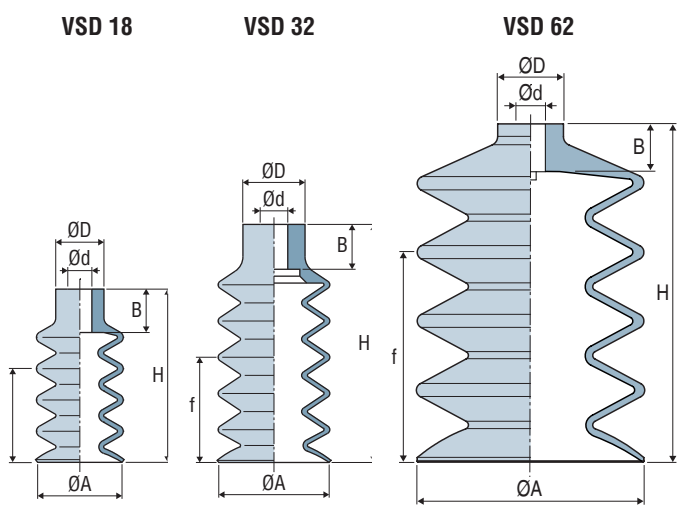
Long Stroke Suction Cups

Dimensions



VSD 2

Suction Cups



	ØA	f ⁽¹⁾	H	Ød	ØD	B	⚖ (g)
VSD 18	17.5	18	36	4	10	9	3.1
VSD 32	32	34	65	8	18	13	15.1
VSD 62	62	55	92.5	8	18	13	62.6

(1) f = Deflection of the suction cup.

Barbed Fittings



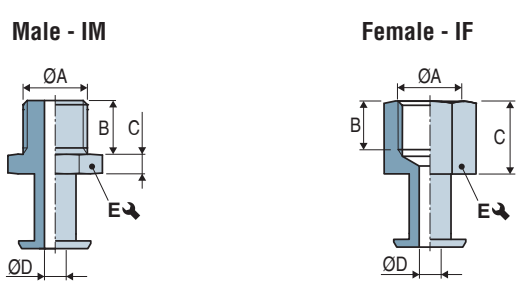
	ØA	B	C	ØD	E ↷	Material	⚖ (g)
IM 11 A	G1/8"-M	7.5	6	3.5	14	Aluminum	4.1
IMC 14	G1/4"-M	10	8	7	17	Aluminum	8.7
IM 21⁽²⁾	M5-M	4.5	5	2.5	7	Nickel-plated brass	3.1
IM 22⁽²⁾	M6-M	5	5	3.5	7	Nickel-plated brass	2.7
IM 23	10/32-M	4.5	5	2.5	7	Brass	3.0
IM 24	M5-M	4.5	2.5	2.5	10	Nickel-plated brass	3.2
IF 10 A	G1/8"-F	8	12	3.5	14	Aluminum	4.0
IFC 14	G1/4"-F	12	15	6.9	17	Aluminum	8.0

Hollow Screws



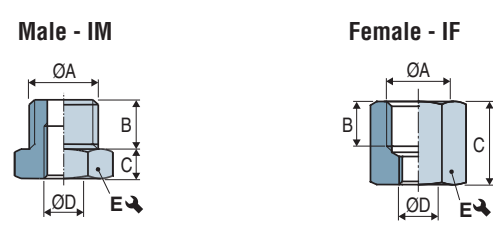
	ØA	B	C	ØD	Material	⚖ (g)
IM 50	M5-M	5	11	2.8	Brass	7.4
IM 60^{(2) (3)}	M6-M	7	11	3.5	Nickel-plated brass	7.5
IM 68	M8-M	8	11	5.2	Nickel-plated brass	6.4

Pressed Fittings



	ØA	B	C	ØD	E ↷	Material	⚖ (g)
IM 41	G1/4"-M	11	4	4.4	17	Aluminum	7.8
IF 40	G1/4"-F	10	15	4.4	17	Aluminum	8.6

Adapters for Hollow Screws



	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 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

The values represent the average characteristics of our products.
 Note: All dimensions are in mm.
 (2) Flow restrictor version available: orifice calibrated to reduce leaks when used with a multi-cup gripper (see page 4/9).
 (3) Available in stainless steel.