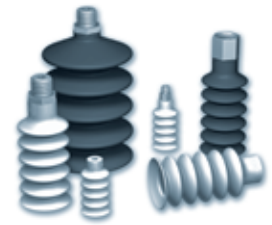


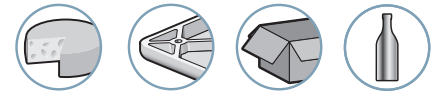
# VSD

## 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 <sup>3</sup> )	Force (lbf) <sup>(1)</sup>	R <sub>min</sub> (mm)	NBR	SIT3	SIT5
<b>VSD 18</b>	17.5	2.5	1	20	-	-	<b>VSD18SIT5</b>
<b>VSD 32</b>	32	21.7	2.35	35	<b>VSD32NBR</b>	<b>VSD32SIT3</b>	-
<b>VSD 62</b>	62	111	11.24	75	<b>VSD62NBR</b>	-	-

(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
<b>VSD 18</b>	1	■	■	-	-	■	■	□	-	-
<b>VSD 32-62</b>	2	□	□	□	□	■	■	-	■	■

■ Standard available configurations (suction cup + fitting) □ Additional mounting configurations  
 See part n° below see page 2/57 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
<b>VSD18SIT5</b>		VSD18SIT5IMM5C	VSD18SIT5IMM6C	VSD18SIT5IM18C	VSD18SIT5IF18C

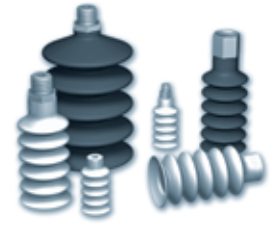
Group 2									
Ø 32-62	THREAD	G1/4"-M	G1/4"-F	G1/4"-M	G1/4"-F	G1/8"-M	G1/8"-F	G1/4"-M	G1/4"-F
<b>VSD32NBR</b>		VSD32NBRIM14C	VSD32NBRIF14C	VSD32NBRIM14	VSD32NBRIF14	VSD32NBRIM18V	VSD32NBRIF18V	VSD32NBRIM14V	VSD32NBRIF14V
<b>VSD32SIT3</b>		VSD32SIT3IM14C	VSD32SIT3IF14C	VSD32SIT3IM14	VSD32SIT3IF14	VSD32SIT3IM18V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

### Accessories

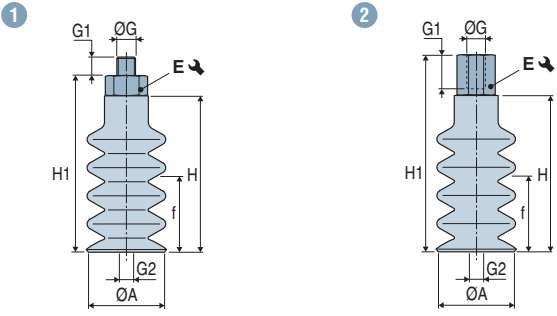
To optimize use of your suction cups, Coval offers a comprehensive range of accessories (sensors, spring systems, extensions, feeder systems, etc.) see chapters 4 and 14.



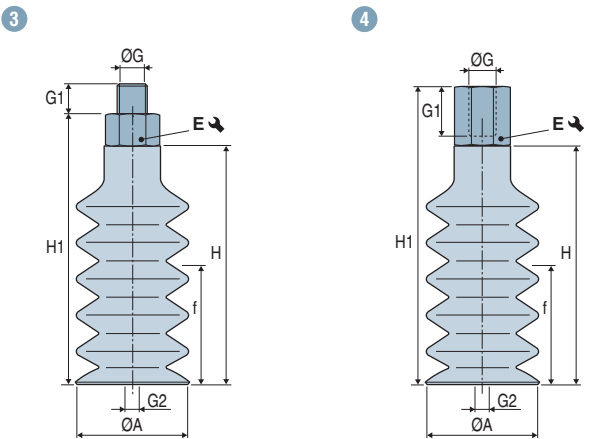
Please specify the part n°. e.g. **VSD18SIT5IMM5C**  
 See part n° table above



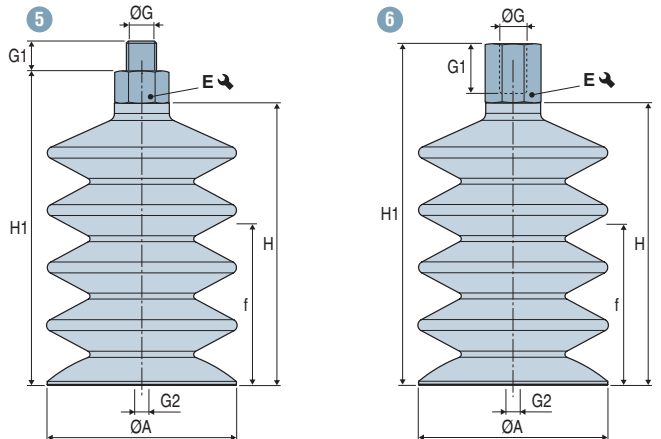
#### VSD 18 Group 1



#### VSD 32 Group 2



#### VSD 62 Group 2



Group 1		Diagram	ØA	f <sup>(1)</sup>	H	H1	ØG	G1	ØG2 <sup>(2)</sup>	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 <sup>(1)</sup>	H	H1	G	G1	ØG2 <sup>(2)</sup>	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.

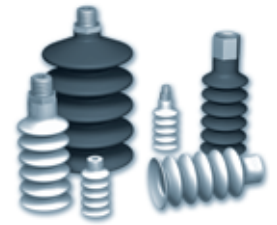
Note: All dimensions are in mm.

**Assembly diagrams**  
See page 2/57.

# VSD

## Long Stroke Suction Cups

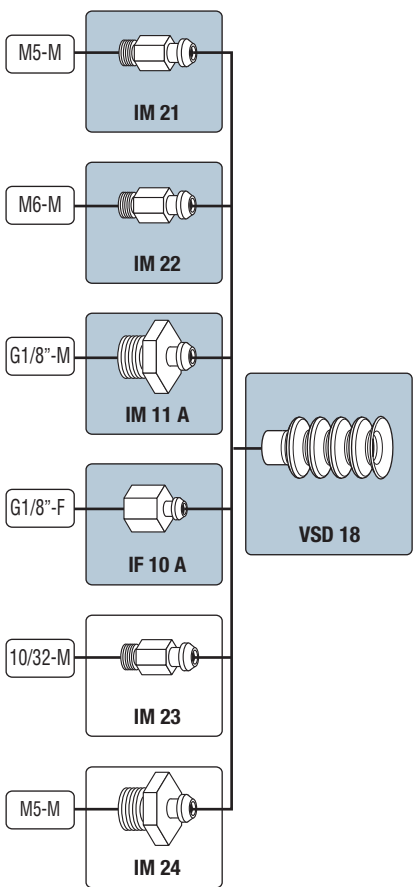
### Assembly Diagrams



2  
VSD

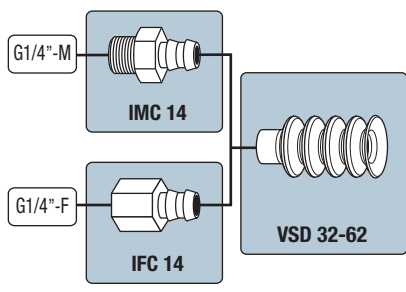
**VSD 18**    **Group 1**

Barbed fittings **C**

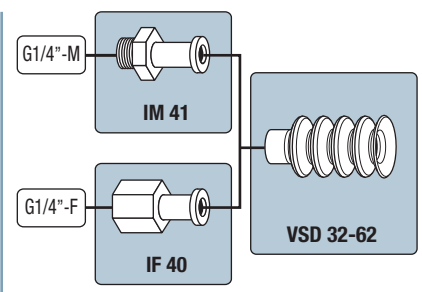


**VSD 32-62**    **Group 2**

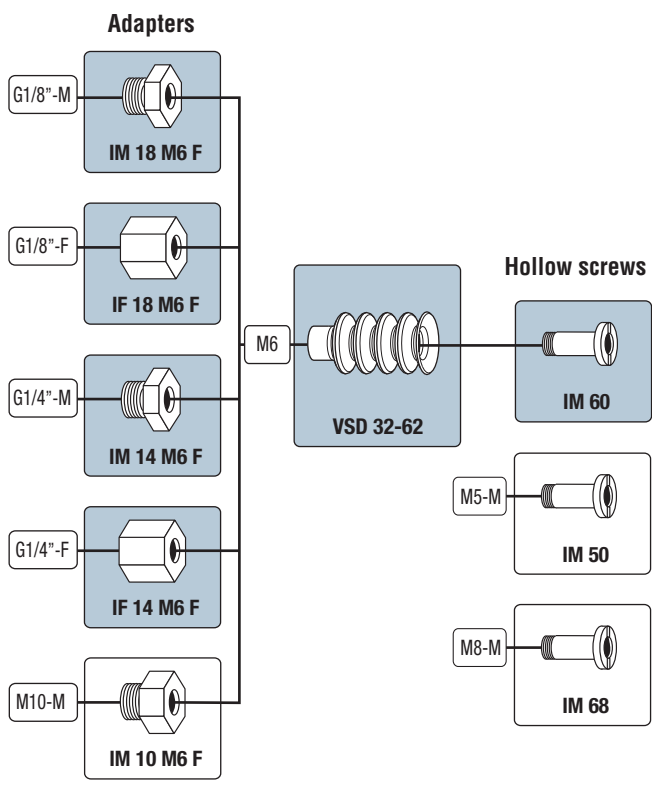
Barbed fittings **C**



Pressed fittings **E**



Removable fittings **V**

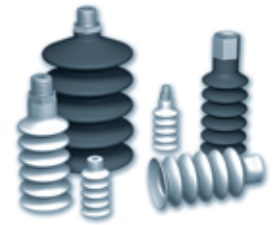


- Configurations (suction cup + fitting) refer to page 2/55
- Non-standard configurations must be ordered in separate part numbers.

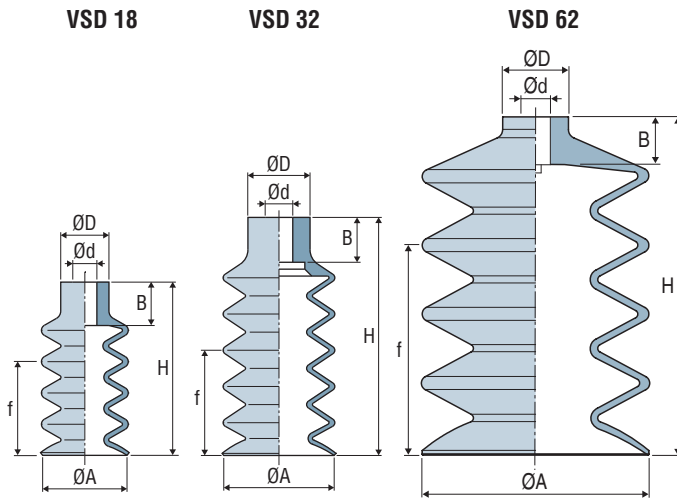
# VSD

## Long Stroke Suction Cups

### Dimensions



#### Suction Cups



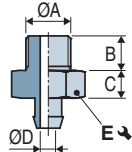
	ØA	f <sup>(1)</sup>	H	Ød	ØD	B	⊃ (g)
<b>VSD 18</b>	17.5	18	36	4	10	9	3.1
<b>VSD 32</b>	32	34	65	8	18	13	15.1
<b>VSD 62</b>	62	55	92.5	8	18	13	62.6

(1) f = Deflection of the suction cup.

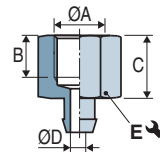
2  
VSD

#### Barbed Fittings

Male - IM

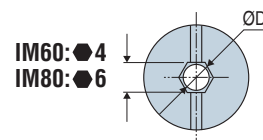
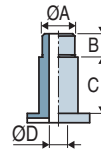


Female - IF



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

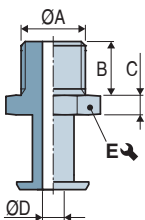
#### Hollow Screws



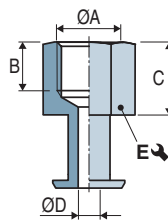
	ØA	B	C	ØD	Material	⊃ (g)
<b>IM 50</b>	M5-M	5	11	2.8	Brass	7.4
<b>IM 60<sup>(2) (3)</sup></b>	M6-M	7	11	3.5	Nickel-plated brass	7.5
<b>IM 68</b>	M8-M	8	11	5.2	Nickel-plated brass	6.4

#### Pressed Fittings

Male - IM



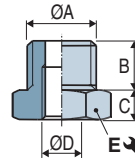
Female - IF



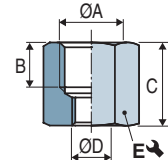
	ØA	B	C	ØD	E	Material	⊃ (g)
<b>IM 41</b>	G1/4"-M	11	4	4.4	17	Aluminum	7.8
<b>IF 40</b>	G1/4"-F	10	15	4.4	17	Aluminum	8.6

#### Adapters for Hollow Screws

Male - IM



Female - IF



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

(3) Available in stainless steel.