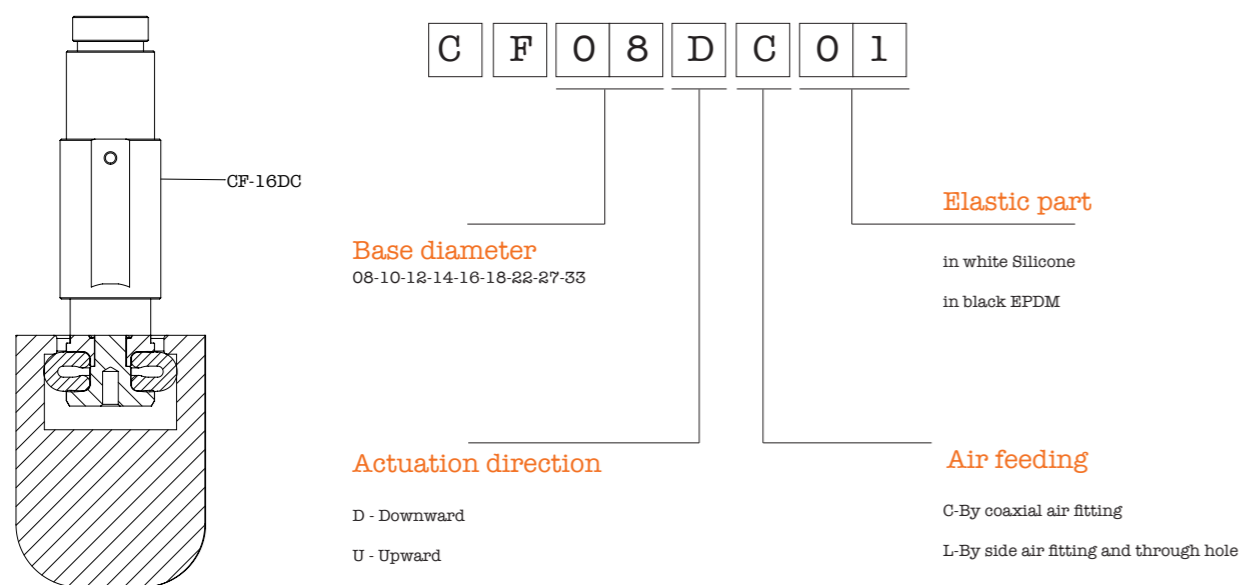


Balloonclip

- New concept for innovative air hands.
- Downward movement (CF-D), or Upward movement (CF-U).
- The elastic part can be in Silicone or EPDM.
- Grip diameters from 8 to 33 mm.
- Optional nose cones for centering.
- Optional proximity magnetic sensors.
- Several mounting accessories.



Balloonclip spare parts

CF-D/CF-U

Model	CF-D/CF-U	T	
CF08-01	Φ8	-70°C~200°C	
CF08-02	Φ8		
CF10-01	Φ10		
CF10-02	Φ10		
CF12-01	Φ12		
CF12-02	Φ12		
CF14-01	Φ14		
CF14-02	Φ14		
CF16-01	Φ16		
CF16-02	Φ16		
CF18-01	Φ18		
CF18-02	Φ18		
CF22-01	Φ22		
CF22-02	Φ22		
CF27-01	Φ27		
CF27-02	Φ27		
CF33-01	Φ33		
CF33-02	Φ33		

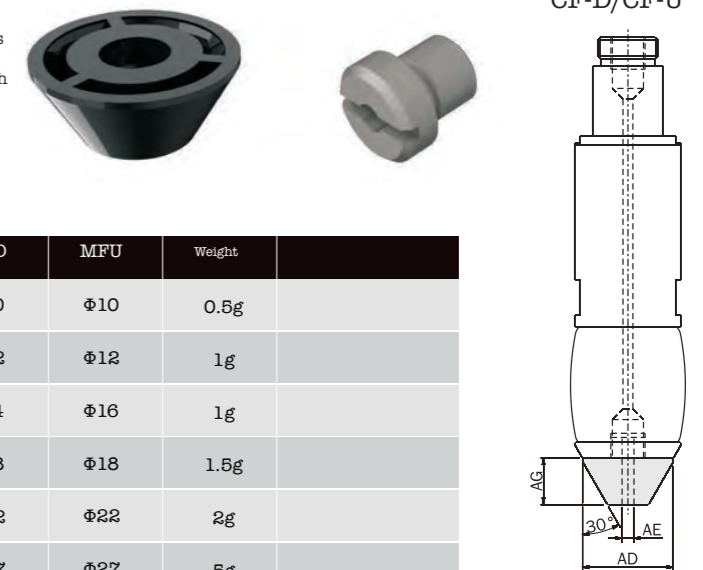


Silicone or EPDM?

- The elastic part can be in white silicone or black EPDM.
- Silicone can be used over a wider temperature range and assures a longer life time, but it is not suitable in some industries, because it makes it difficult to paint or to coat the parts that are touched.
- EPDM is mark-free and provides a higher coefficient of friction.
- The elastic part in Silicone or EPDM is available as a spare part and can be replaced, when worn out.
- The expected medium life time of the elastic part in EPDM is about 0.5 million cycles.
- The expected medium life time of the elastic part in Silicone is about 1 million cycles.

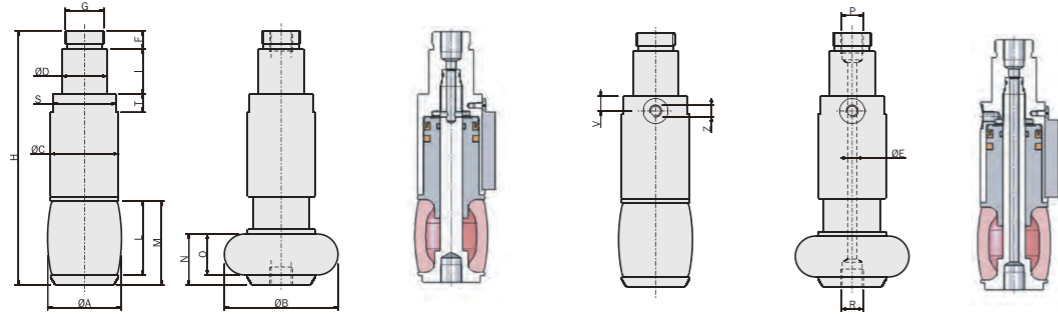
Centering cones

- Centering cones in nylon with the stainless screw, are available as an option.
- For the sizes larger than 33, they are also provided with a through hole.



Model	ΦAD	ΦAE	ΦAG	MFD	MFU	Weight	
CFC10	7.8	-	2.9	Φ10	Φ10	0.5g	
CFC12	10	-	3.5	Φ12	Φ12	1g	
CFC14	11.8	-	4.5	Φ14	Φ16	1g	
CFC18	15.5	-	6.5	Φ18	Φ18	1.5g	
CFC22	18.8	-	8	Φ22	Φ22	2g	
CFC27	21.3	-	9.5	Φ27	Φ27	5g	

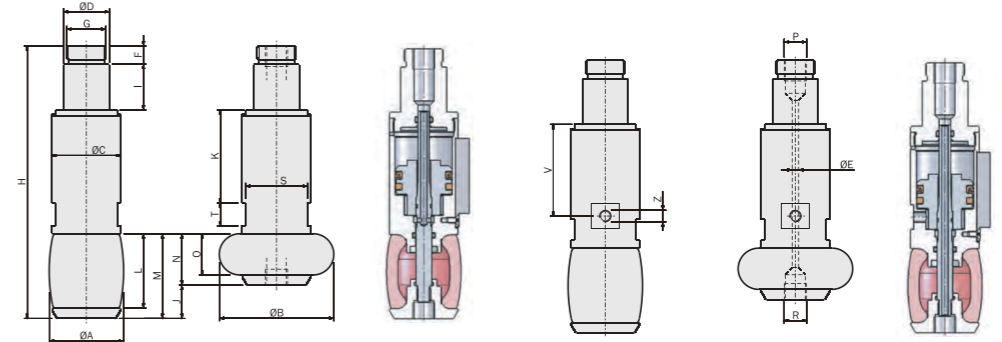
CF-D/CF-U



m [Weight]

Model	m	ØA	ØB	ØC	ØD	ØE	F	G	H	I	L	M	N	O	P	R	S	T	V	Z	X	ØY	
CF-08DC01 CF-08DC02 CF-08DL01 CF-08DL02	15g 15g 15g 15g	8	11	14	14	1.5	5.5	M12x1	59.2	14	7	9.2	5.7	3.5	M5	M2	13	6	4.5	-	M3	14.7	7.6
CF-10DC01 CF-10DC02 CF-10DL01 CF-10DL02	16g 16g 16g 16g	10.5	13.5	14	14	1.5	5.5	M12x1	60.7	14	8.5	10.7	6.7	4.5	M5	M2	13	6	4.5	-	M3	16.2	9.5
CF-12DC01 CF-12DC02 CF-12DL01 CF-12DL02	17g 17g 17g 17g	13	17	14	14	2	5.5	M12x1	62	14	10.5	13	7.5	5	M5	M3	13	6	4.5	-	M3	16.8	11.8
CF-14DC01 CF-14DC02 CF-14DL01 CF-14DL02	17g 17g 17g 17g	15	19.5	14	14	2	5.5	M12x1	62.3	14	13	15.8	8.8	6	M5	M3	13	6	4.5	-	M3	-	-
CF-16DC01 CF-16DC02 CF-16DL01 CF-16DL02	17g 17g 17g 17g	18	21.5	14	14	2	5.5	M12x1	62.3	14	13	15.8	8.8	6	M5	M3	13	6	4.5	-	M3	-	-
CF-18DC01 CF-18DC02 CF-18DL01 CF-18DL02	28g 28g 28g 28g	19.5	24.5	18	14	2.5	5.5	M12x1	70.5	14	16.5	19.5	12	9	M5	M3	16	6	5.3	-	M5	-	-
CF-22DC01 CF-22DC02 CF-22DL01 CF-22DL02	43g 43g 43g 43g	24	31.5	21.5	14	2.5	5.5	M12x1	80	14	21	24.2	12.2	11	M5	M3	19	7	5.5	-	M5	-	-
CF-27DC01 CF-27DC02 CF-27DL01 CF-27DL02	79g 79g 79g 79g	28	37	25	20	3	8	M17x1	98	20	26	30	18	14	G1/8	M5	22	8	7	-	M5	-	-
CF-33DC01 CF-33DC02 CF-33DL01 CF-33DL02	118g 118g 118g 118g	34	45	30	20	4	8	M17x1	112	20	32.5	37	22.5	18	G1/8	G1/8	28	8	6.5	-	M5	-	-

CF-D/CF-U

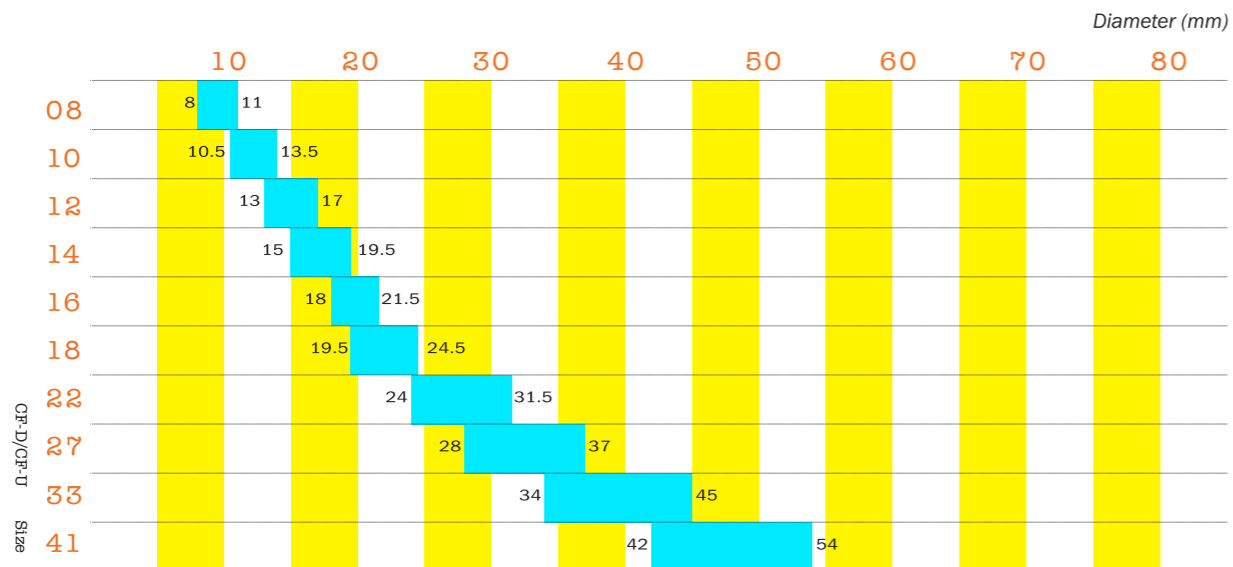


m [Weight]

Model	m	ØA	ØB	ØC	ØD	ØE	F	G	H	I	J	K	L	M	N	O	P	R	S	T	V	Z	X	ØY	
CF-08UC01 CF-08UC02 CF-08UL01 CF-08UL02	16g 16g 16g 16g	8	11	14	14	1.1	5.5	M12x1	61.5	14	3.5	4	7	9.2	5.7	3.5	M5	M2	13	6	20	-	M3	16.3	7.6
CF-10UC01 CF-10UC02 CF-10UL01 CF-10UL02	17g 17g 17g 17g	10.5	13.5	14	14	1.1	5.5	M12x1	62.5	14	4	4	8.5	10.7	6.7	4.5	M5	M2	13	6	20.5	-	M3	17.7	9.5
CF-12UC01 CF-12UC02 CF-12UL01 CF-12UL02	18g 18g 18g 18g	13	17	14	14	1.3	5.5	M12x1	65	14	5.5	4	10.5	13	7.5	5	M5	M3	13	6	21.5	-	M3	20	11.8
CF-14UC01 CF-14UC02 CF-14UL01 CF-14UL02	20g 20g 20g 20g	15	19.5	14	14	1.3	5.5	M12x1	68.5	14	7	24.2	13	15.8	8.8	6	M5	M3	13	6	23.2	-	M3	-	-
CF-16UC01 CF-16UC02 CF-16UL01 CF-16UL02	20g 20g 20g 20g	18	21.5	14	14	1.3	5.5	M12x1	68.5	14	7	24.2	13	15.8	8.8	6	M5	M3	13	6	23.2	-	M3	-	-
CF-18UC01 CF-18UC02 CF-18UL01 CF-18UL02	35g 35g 35g 35g	19.5	24.5	18	14	1.3	5.5	M12x1	78	14	7.5	29	16.5	19.5	12	9	M5	M3	16	7	28	-	M5	-	-
CF-22UC01 CF-22UC02 CF-22UL01 CF-22UL02	50g 50g 50g 50g	24	31.5	21.5	14	1.8	5.5	M12x1	86.5	14	10	31.8	21	24.2	14.2	11	M5	M3	20	8	31.5	-	M5	-	-
CF-27UC01 CF-27UC02 CF-27UL01 CF-27UL02	100g 100g 100g 100g	28	37	25	20	2.5	8	M17x1	108	20	12	37.5	26	30	18	14	G1/8	M5	22	9	37	-	M5	-	-
CF-33UC01 CF-33UC02 CF-33UL01 CF-33UL02	130g 130g 130g 130g	34	45	30	20	2.8	8	M17x1	119	20	14.5	40.5	32.5	37	22.5	18	G1/8	G1/8	28	10	40	-	M5	-	-

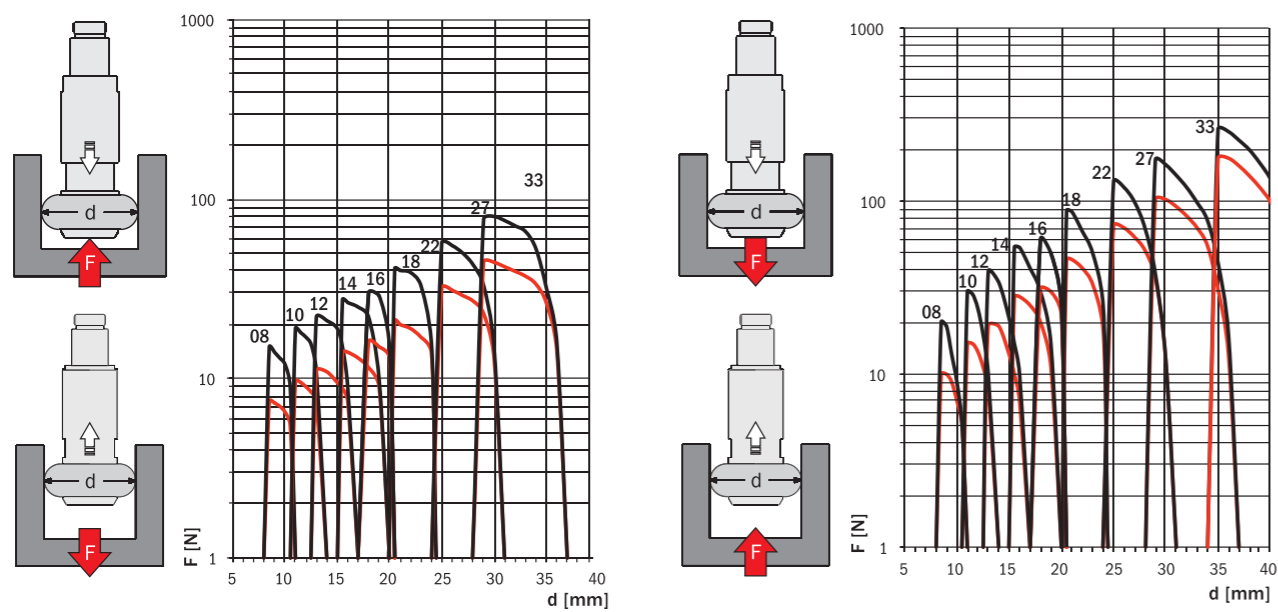
### Gripdiameters

- The gripper size is indicated in the gripper code with a nominal diameter of the elastic part.
- Each model can work in a diameter range between a minimum and a maximum value.



### Gripping force

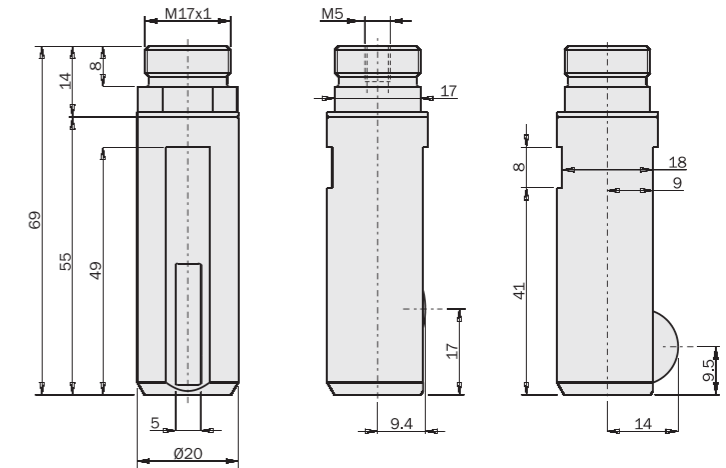
- The force output of an CF-D/CF-U gripper depends on several variables.
- Mainly on the diameter of the picked object, but also on the surface finishing, the coefficient of friction and the air pressure.
- The graphs show the extraction force (F) on the gripped object as a function of its diameter (d).
- Measurements were performed with aluminum rings, with roughness Ra=0.8 while the grippers were fed with 6 bar compressed air.
- The black lines refer to the grippers in EPDM, while the red ones to the grippers in Silicone.



### One finger elastic module

RFD

- Single acting with spring reset.
- Clampable Ø20 mm body.
- Several mounting accessories, modularity.



Model	Medium	Pressure range	Temperature range	Force	6 bar stroke	Maximum working frequency	Cycle air consumption	Weight
RFD20	Filtered, lubricated/ non lubricated compressed air	3-8bar	5°C-60°C	0-145N	4.5mm	2Hz	3cm <sup>3</sup>	40g

### Application example

