

## Type Selection Guide

### Type

#### Flat Cups

The flat suction cups provide accuracy in load gripping and speeds up the cycle process. Flat cups are used for flat and slightly curved surfaces.



#### 1,5 Bellow Cups

The 1,5 bellow cups combine the advantages of the flat suction cups (precision and positioning) with the freedom of belows (angle and flexibility). They provide flexibility, precision and low internal volume suitable for high-speed applications.

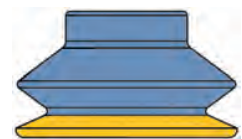
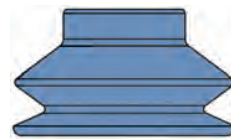
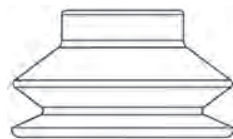


#### 2,5 Bellow Cups

The suction cups with 2,5 bellow are recommended for gripping products with un-even surfaces (large deflection). The 2,5 bellow allow objects to be gripped from an angle (ball-joint effect).



## Material Properties



| Application                      | Silicone       | FlexTemp HT    | Multiflex     |
|----------------------------------|----------------|----------------|---------------|
| Ozone resistance                 | ✓✓✓            | ✓✓             | ✓✓✓           |
| Oil resistance                   | ✓              | ✓✓✓            | ✓✓            |
| Wear resistance                  | ✓✓             | ✓✓             | ✓✓✓           |
| Tensile strength (lifting force) | ✓              | ✓              | ✓✓✓           |
| Leaves marks on products         | ✓              | ✓✓             | ✓✓✓           |
| Temperature resistance           | -70 to + 200°C | -40 to + 160°C | -20 to + 80°C |
| Shore hardness                   | 30-60°         | 60°            | 30-60°        |

The holding force of the suction cups increases proportionally with the difference between the ambient pressure and the pressure inside the cup.

The holding force of a suction pad is calculated with the formula:

$$F = \Delta p \times A$$

F = Holding force.

$\Delta p$  = Difference between ambient pressure and pressure of the system.

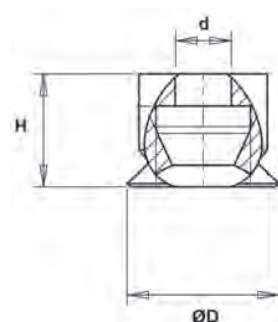
A = Effective suction area (the effective area of a suction pad under vacuum).

This means the holding force is proportional to the pressure difference and the suction area. The greater the difference between ambient pressure and pressure in the suction cup or the larger the effective suction area, the greater the holding force.

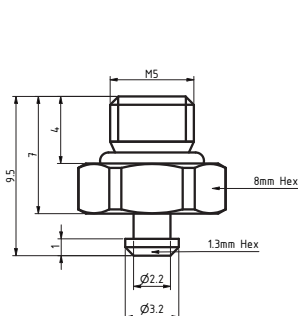
The force can vary depending on a change of the pressure difference and area parameters.

## VACUUM CUPS

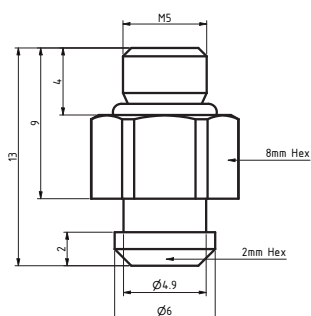
### G Series, Flat Vacuum Cups



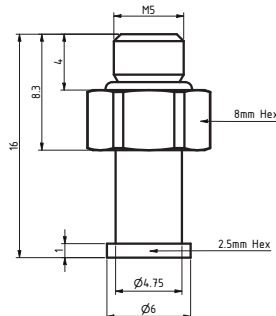
| Part No.<br>Silicone | Part No.<br>TempFlex HT | ØD   | d   | H    |     | Fitting | Fitting | Weight (g) |
|----------------------|-------------------------|------|-----|------|-----|---------|---------|------------|
| G10.06F              | G10.06H                 | 6    | 2,0 | 4,5  | 0,3 |         | 140.005 | 0,06       |
| G10.09F              | G10.09H                 | 9,5  | 3,5 | 7    | 0,5 |         | 140.405 | 0,21       |
| G10.11F              | G10.11H                 | 11,0 | 3,5 | 10,0 | 0,5 | 140.410 | 140.414 | 0,5        |
| G10.16F              | G10.16H                 | 16,2 | 3,5 | 10,5 | 1,5 | 140.410 | 140.414 | 0,62       |
| G10.22F              | G10.22H                 | 22,0 | 8,0 | 11,5 | 2,5 | 140.428 | 140.432 | 1,1        |
| G10.33F              | G10.33H                 | 32,0 | 8,0 | 12,5 | 3,5 | 140.428 | 140.432 | 2          |
| G10.42F              | G10.42H                 | 41,0 | 8,0 | 15,5 | 4,5 | 140.428 | 140.432 | 4          |
| G10.53F              | G10.53H                 | 51,5 | 8,0 | 20,0 | 6,0 | 140.428 | 140.432 | 8          |



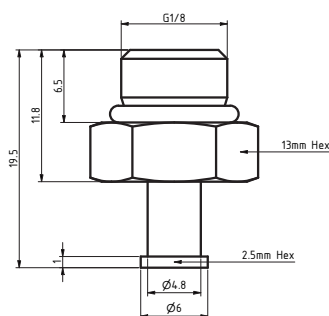
140.005



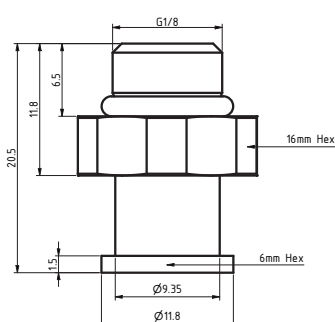
140.405



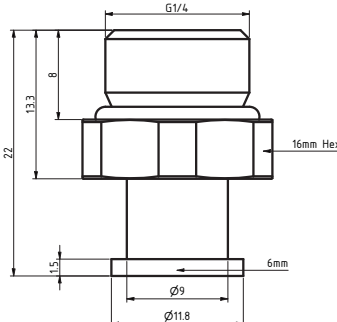
140.410



140.414



140.428



140.432

For gripping flat, smooth and slightly curved products.

HNBR - Suitable for handling plastic parts.

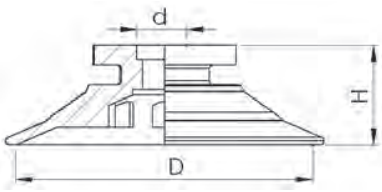
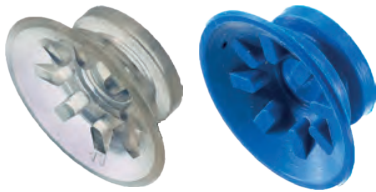
HNBR - PWIS free.

HNBR: Temperature range, -25 to +150°C.

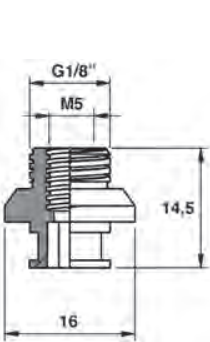
Food grade silicone (FDA approved).

Silicone: Temperature range, -70 to +200°C.

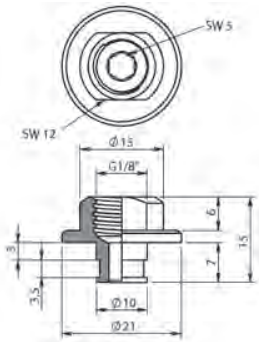
**F Series, Flat Vacuum Cups with Cleats**



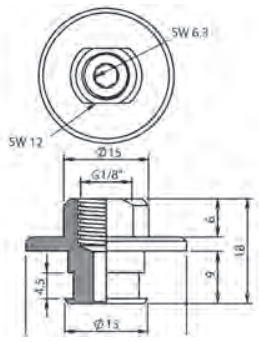
| Part No.<br>Silicone | Part No.<br>TempFlex HT | ØD | H    |  | Fitting | Fitting | Fitting | Weight (g) |
|----------------------|-------------------------|----|------|-----------------------------------------------------------------------------------|---------|---------|---------|------------|
| F20S                 | F20HT                   | 22 | 8    | 0,5                                                                               | F250    |         |         |            |
| F25S                 | F25HT                   | 28 | 9    | 1                                                                                 | F250    |         |         |            |
| F30S                 | F30HT                   | 32 | 10   | 1,5                                                                               | F250    |         |         |            |
| F40S                 | F40HT                   | 42 | 13   | 2                                                                                 |         | F251    |         |            |
| F50S                 | F50HT                   | 53 | 17,5 | 3                                                                                 |         |         | F252    |            |



F250



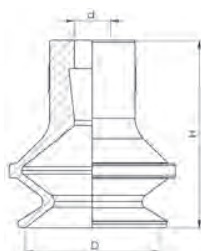
F251



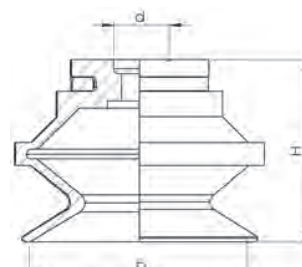
F252

## VACUUM CUPS

### B Series, 1.5 Bellow Vacuum Cups

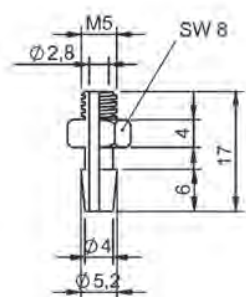


Ø5 - Ø16

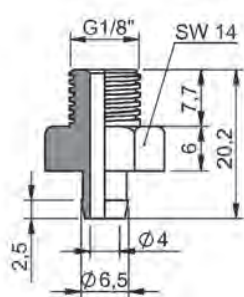


Ø20 - Ø50

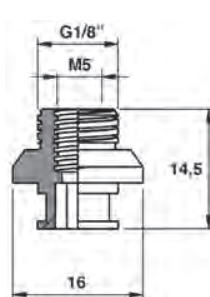
| Part No.<br>Silicone | Part No.<br>TempFlex HT | ØD   | D1   | d    | H   |    | Fitting | Fitting | Weight (g) |
|----------------------|-------------------------|------|------|------|-----|----|---------|---------|------------|
| B05S                 | B05HT                   | 5    |      | 2,6  | 9,5 | 2  |         | 130.591 | 0,12       |
| B08S                 | B08HT                   | 8,8  |      | 2    | 12  | 2  |         | 130.591 | 0,2        |
| B11S                 | B11HT                   | 11,0 |      | 4    | 17  | 5  | F134    | 130.003 | 1,0        |
| B16S                 | B16HT                   | 16,0 |      | 4    | 19  | 7  | F134    | 130.003 | 1,4        |
| B20S                 | B20HT                   | 21,5 | 24,0 | 4,8  | 20  | 9  | F250    |         | 2,5        |
| B30S                 | B30HT                   | 33,0 | 36,0 | 6    | 26  | 9  | F250    |         | 6,5        |
| B40S                 | B40HT                   | 42,0 | 46,0 | 7    | 28  | 9  | F251    |         | 10         |
| B50S                 | B50HT                   | 52,0 | 58,0 | 10,5 | 35  | 12 | F252    |         | 22         |



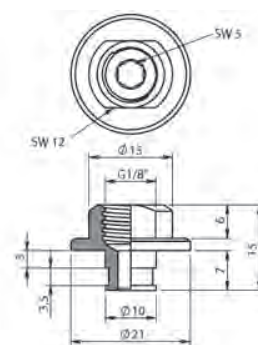
F134



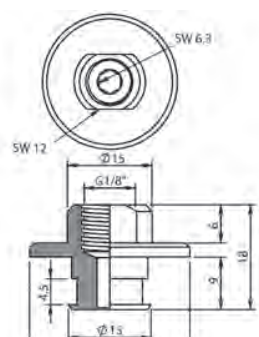
130.003



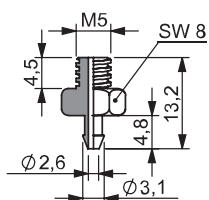
F250



F251

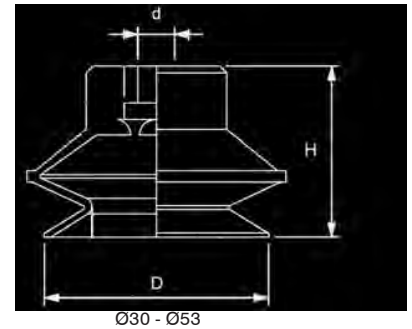
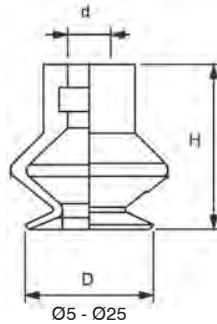


F252

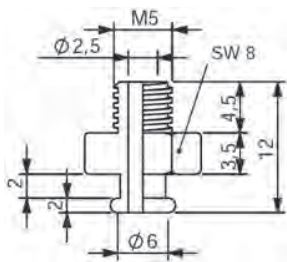


130.591

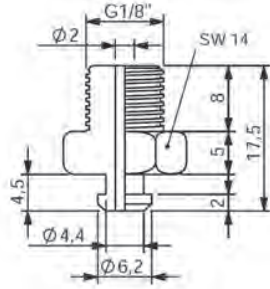
**CM Series, 1.5 Bellow Vacuum Cups**



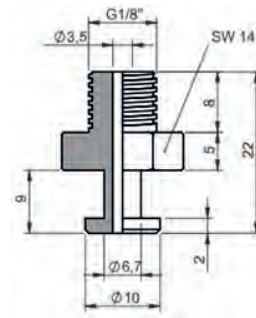
| Part No.<br>Silicone | Part No.<br>TempFlex HT | ØD | d | H    |  | Fitting | Fitting | Weight (g) |
|----------------------|-------------------------|----|---|------|-----------------------------------------------------------------------------------|---------|---------|------------|
| CM-1.5-10-S          | CM-1.5-10-HT            | 10 | 2 | 13,5 | 4                                                                                 | 130.301 | 130.009 | 0,7        |
| CM-1.5-15-S          | CM-1.5-15-HT            | 15 | 4 | 16   | 5                                                                                 | 130.301 | 130.009 | 0,7        |
| CM-1.5-20-S          | CM-1.5-20-HT            | 20 | 5 | 20   | 8                                                                                 | 130.030 | 130.274 | 2,4        |
| CM-1.5-30-S          | CM-1.5-30-HT            | 32 | 6 | 30,5 | 9                                                                                 | 130.030 | 130.274 | 9          |
| CM-1.5-40-S          | CM-1.5-40-HT            | 40 | 6 | 30,5 | 10                                                                                | 130.030 | 130.274 | 12         |



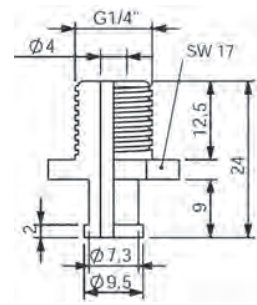
130,301



130,009



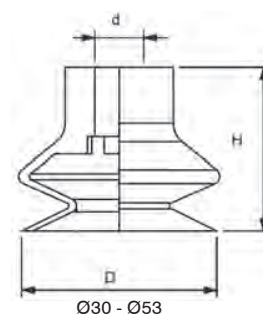
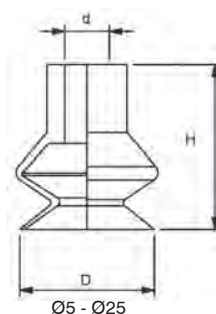
130,030



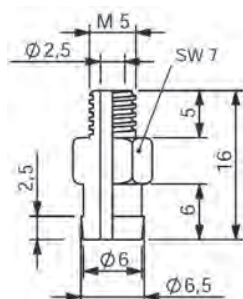
130,274

## VACUUM CUPS

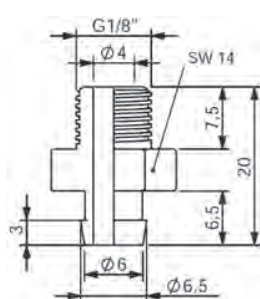
### CL Series, 1.5 Bellow Vacuum Cups



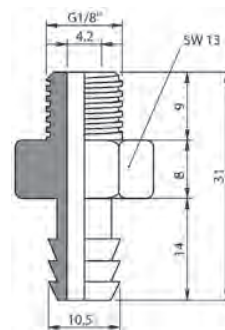
| Part No.<br>Silicone | Part No.<br>TempFlex HT | ØD | d  | H  |     | Fitting | Fitting | Weight (g) |
|----------------------|-------------------------|----|----|----|-----|---------|---------|------------|
| CL-1.5-06-S          | CL-1.5-06-HT            | 6  | 4  | 9  | 5   | 130.301 | 130.009 | 0,2        |
| CL-1.5-11-S          | CL-1.5-11-HT            | 11 | 5  | 16 | 4,5 | 130.013 | 130.003 | 1          |
| CL-1.5-14-S          | CL-1.5-14-HT            | 14 | 5  | 15 | 4   | 130.013 | 130.003 | 1          |
| CL-1.5-16-S          | CL-1.5-16-HT            | 16 | 5  | 19 | 6   | 130.013 | 130.003 | 1,2        |
| CL-1.5-20-S          | CL-1.5-20-HT            | 20 | 4  | 16 | 4   | 130.013 | 130.003 | 1,7        |
| CL-1.5-25-S          | CL-1.5-25-HT            | 25 | 4  | 23 | 9   | 130.013 | 130.003 | 2,4        |
| CL-1.5-30-S          | CL-1.5-30-HT            | 33 | 8  | 28 | 12  | 130.132 | 130.190 | 7          |
| CL-1.5-43-S          | CL-1.5-43-HT            | 43 | 8  | 28 | 12  | 130.132 | 130.190 | 10         |
| CL-1.5-53-S          | CL-1.5-53-HT            | 53 | 8  | 34 | 11  | 130.132 | 130.190 | 19         |
| CL-1.5-63-S          | CL-1.5-63-HT            | 63 | 8  | 34 | 15  | 130.132 | 130.190 | 28         |
| CL-1.5-78-S          | CL-1.5-78-HT            | 78 | 12 | 47 | 14  | 130.622 |         | 55         |



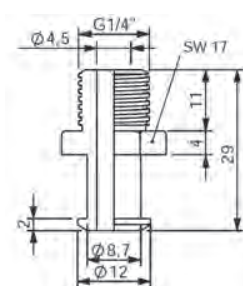
130.013



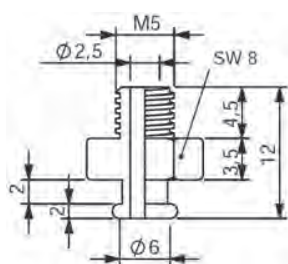
130.003



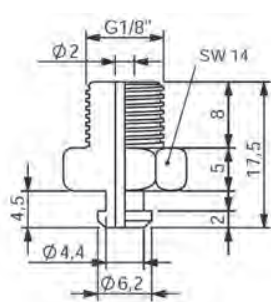
130.132



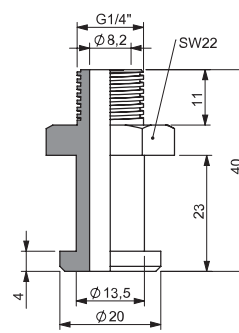
130.190



130.301

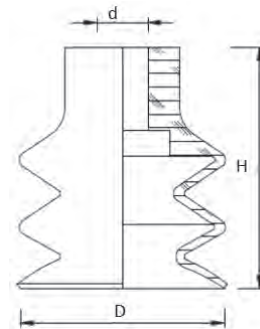


130.009

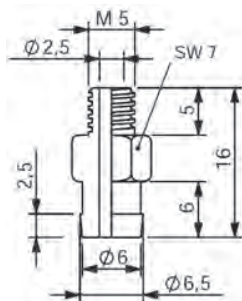


130.622

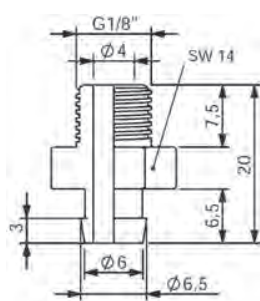
## CL Series, 2.5 Bellow Vacuum Cups



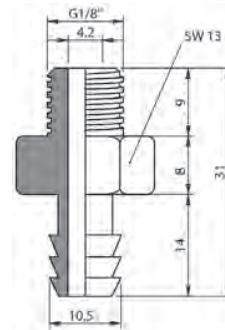
| Part No. Silicone | Part No. TempFlex HT | ØD | d   | H  |     | Fitting | Fitting | Weight (g) |
|-------------------|----------------------|----|-----|----|-----|---------|---------|------------|
| CL-2.5-5          | CL-2.5-5-HT          | 5  | 4   | 14 | 3   | 130.013 | 130.003 | 0,3        |
| CL-2.5-7          | CL-2.5-7-HT          | 7  | 3,8 | 14 | 3   | 130.013 | 130.003 | 0,5        |
| CL-2.5-9          | CL-2.5-9-HT          | 9  | 4   | 15 | 2   | 130.013 | 130.003 | 0,6        |
| CL-2.5-12         | CL-2.5-12-HT         | 12 | 5   | 21 | 8,5 | 130.013 | 130.003 | 1,0        |
| CL-2.5-14         | CL-2.5-14-HT         | 14 | 4   | 22 | 11  | 130.013 | 130.003 | 1,3        |
| CL-2.5-20         | CL-2.5-20-HT         | 20 | 4,5 | 23 | 8   | 130.013 | 130.003 | 2,1        |
| CL-2.5-25         | CL-2.5-25-HT         | 25 | 4   | 34 | 19  | 130.013 | 130.003 | 3,5        |
| CL-2.5-32         | CL-2.5-32-HT         | 32 | 8   | 37 | 13  | 130.132 | 130.190 | 8,3        |
| CL-2.5-42         | CL-2.5-42-HT         | 42 | 8   | 46 | 19  | 130.132 | 130.190 | 18,0       |
| CL-2.5-52         | CL-2.5-52-HT         | 52 | 8   | 49 | 27  | 130.132 | 130.190 | 24,2       |
| CL-2.5-62         | CL-2.5-62-HT         | 62 | 9   | 53 | 25  | 130.093 | 130.281 | 45,7       |



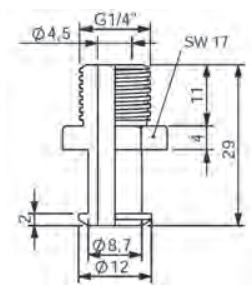
130.013



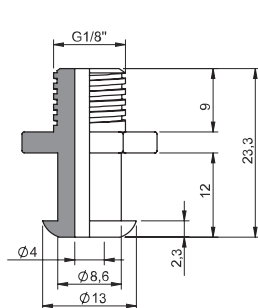
130.003



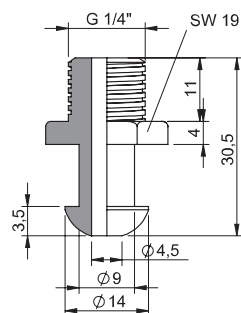
130.132



130.190



130.093

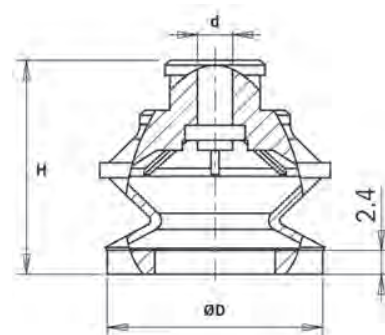


130.281

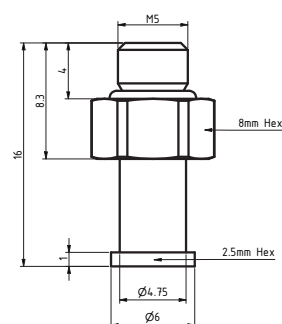


## VACUUM CUPS

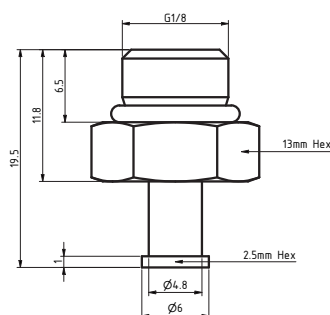
### G Series, Suction Cups, 1.5 Bellow with Silicone Foam Ring



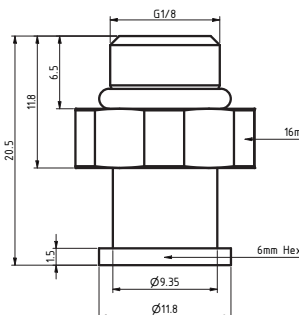
| Part No.   | ØD    | d   | H    |     | Fitting | Fitting | Weight (g) |
|------------|-------|-----|------|-----|---------|---------|------------|
| G15.16F.SF | 15,50 | 3,4 | 21,2 | 7,5 | 140.410 | 140.414 | 2,2        |
| G15.22F.SF | 21,5  | 3,5 | 21,4 | 11  | 140.410 | 140.414 | 2,0        |
| G15.33F.SF | 32,5  | 8   | 28,4 | 16  | 140.428 | 140.432 | 6,2        |
| G15.42F.SF | 41,5  | 8   | 30,6 | 13  | 140.428 | 140.432 | 9,3        |
| G15.53F.SF | 52,5  | 8   | 37,4 | 20  | 140.428 | 140.432 | 16,0       |



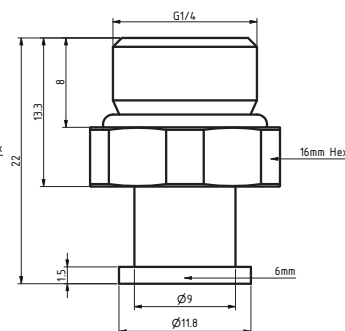
140.410



140.414



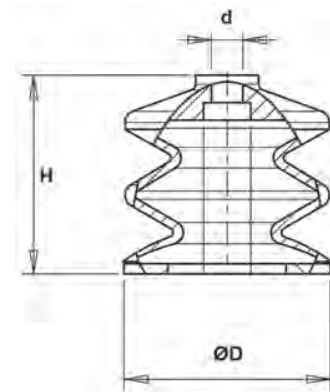
140.428



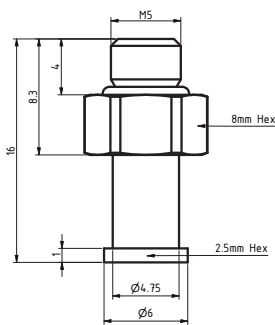
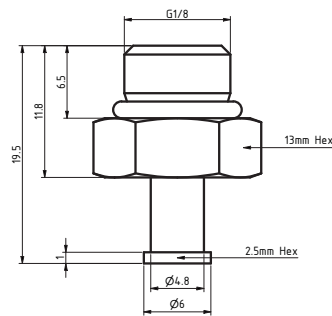
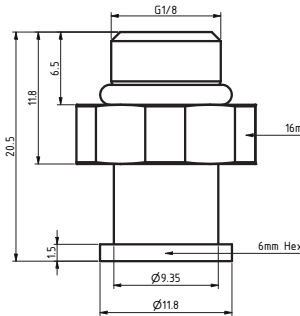
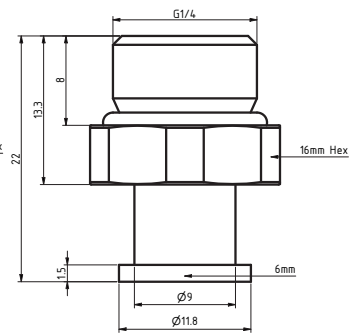
140.432

Ideal to handle uneven, textured and porous surfaces.  
 Ring in mark-free silicone foam.  
 Transparent Silicone - 50 Shore.  
 Temperature range -55 to +200°C.



**G Series, Suction Cups 2.5 Bellow with Silicone Foam Ring**


| Part No.   | ØD | d   | H    |    | Fitting | Fitting | Weight (g) |
|------------|----|-----|------|----|---------|---------|------------|
| G25.16F.SF | 16 | 3,5 | 24   | 10 | 140.410 | 140.414 | 1,2        |
| G25.22F.SF | 22 | 3,5 | 24   | 19 | 140.410 | 140.414 | 2,2        |
| G25.33F.SF | 33 | 8   | 32,6 | 16 | 140.428 | 140.432 | 7,2        |
| G25.42F.SF | 42 | 8   | 43,5 | 21 | 140.428 | 140.432 | 16         |
| G25.53F.SF | 53 | 8   | 50,5 | 26 | 140.428 | 140.432 | 27         |


**140.410**

**140.414**

**140.428**

**140.432**

Ideal to handle uneven, textured and porous surfaces.  
 Ring in mark-free silicone foam.  
 Enable to compensate for differences in height.  
 Transparent Silicone - 50 Shore.  
 Temperature range -70 to +200°C.

## VACUUM CUPS

### Fittings for G Series Vacuum Cups



140.005



140.405



140.410



140.414



140.424



140.428



140.432



140.408



140.412



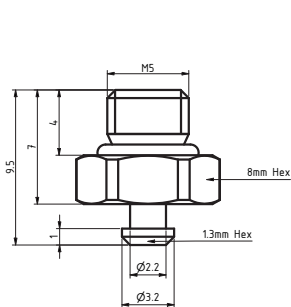
140.422



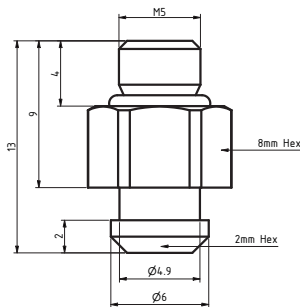
140.426



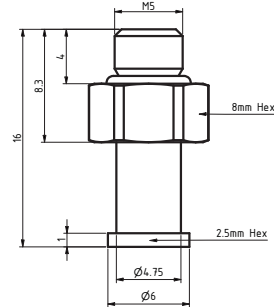
140.430



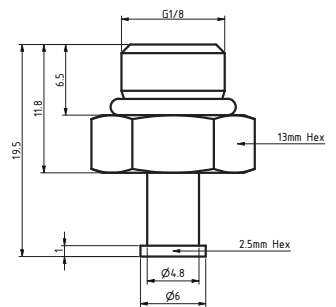
140.005



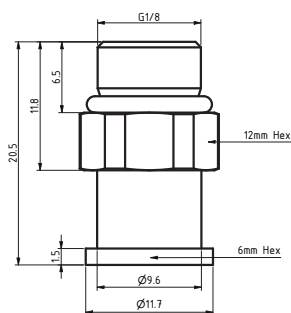
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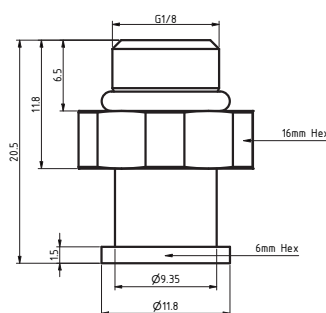
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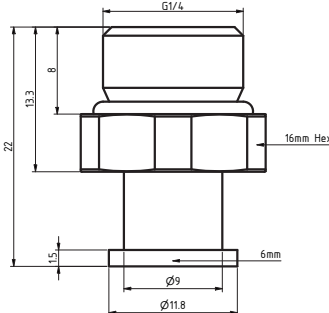
140.414



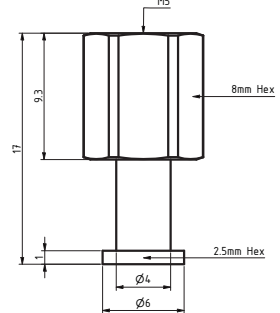
140.424



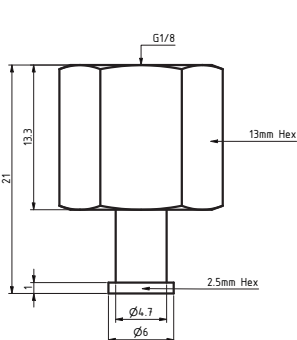
140.428



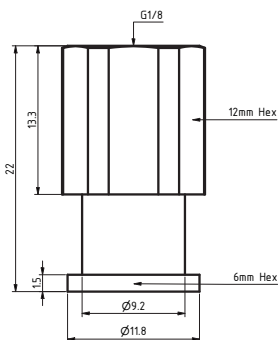
140.432



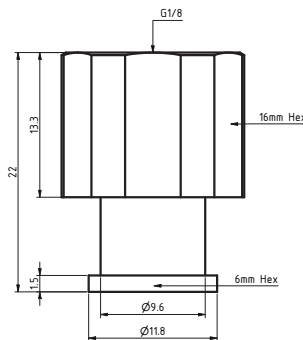
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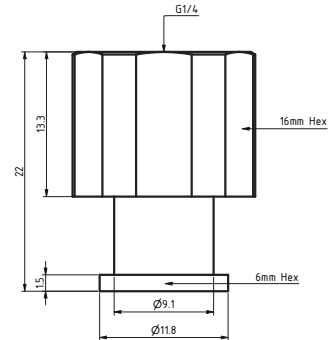
140.412



140.422



140.426



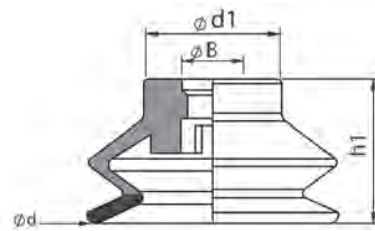
140.430



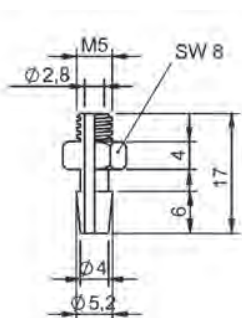
## Mouldpro Multiflex vacuum cups offer outstanding advantages

- Extremely high wear resistance
- Very high lifting force
- Best static friction qualities
- No sticking tendency
- Elasticity remains unchanged for minus temperatures
- Working temperatures from -20°C to + 80°C
- Antimarking

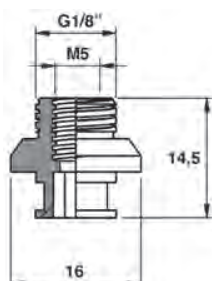
### B Series, Multiflex, 1.5 Bellow Vacuum Cups



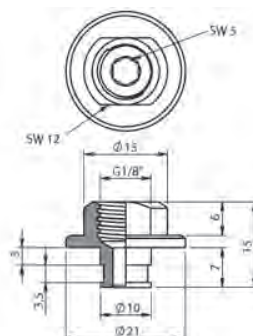
| Part No. | d  | B    | d1   | h1   | Hardness |  | Fitting | Fitting | Fitting | Fitting | Weight (g) |
|----------|----|------|------|------|----------|-------------------------------------------------------------------------------------|---------|---------|---------|---------|------------|
| B15-10MF | 10 | 3,9  | 9    | 16,5 | 40       | 5,5                                                                                 | F134    |         |         |         |            |
| B15-16MF | 16 | 3,9  | 9    | 19   | 30/60    | 5,5                                                                                 | F134    |         |         |         |            |
| B15-20MF | 21 | 5,2  | 12   | 18   | 30/60    | 7,6                                                                                 |         | F250    |         |         |            |
| B15-30MF | 31 | 6,5  | 16,8 | 17   | 30/60    | 7,5                                                                                 |         |         | F251    |         |            |
| B15-40MF | 41 | 6,3  | 22,4 | 22,4 | 30/60    | 9,3                                                                                 |         |         | F251    |         |            |
| B15-50MF | 51 | 10,5 | 28   | 29,2 | 30/60    | 14,4                                                                                |         |         |         | F252    |            |



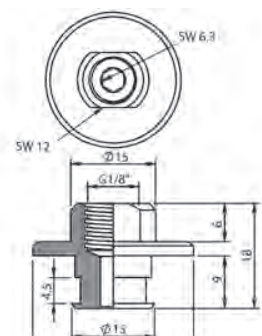
F134



F250



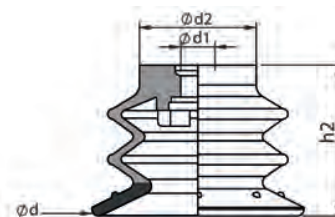
F251



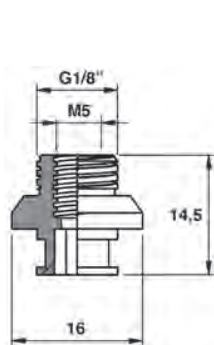
F252

# VACUUM CUPS

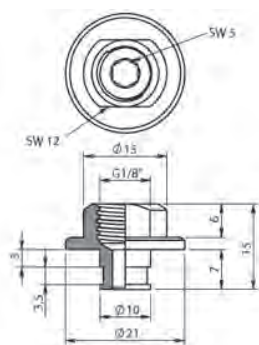
## B Series, Multiflex, 2.5 Bellow Vacuum Cups



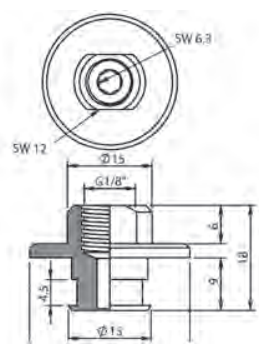
| Part No. | d    | d1   | d2   | h2    | Hardness |      | Fitting | Fitting | Fitting | Weight (g) |
|----------|------|------|------|-------|----------|------|---------|---------|---------|------------|
| B25-20MF | 20,5 | 5    | 12   | 14,8  | 30/60    | 6,5  | F250    |         |         |            |
| B25-25MF | 26   | 5    | 15,4 | 18,9  | 30/60    | 8    | F250    |         |         |            |
| B25-30MF | 30   | 5    | 16,5 | 21,3  | 30/60    | 11   | F250    |         |         |            |
| B25-35MF | 35   | 6,5  | 21   | 25,63 | 30/60    | 11   |         | F251    |         |            |
| B25-40MF | 40   | 6,5  | 22   | 28,4  | 30/60    | 14,7 |         | F251    |         |            |
| B25-50MF | 50   | 10,5 | 27,5 | 35,5  | 30/60    | 20   |         |         | F252    |            |



F250



F251



F252