

Features

- ✓ Wide angle (Max. angle $\pm 21^\circ$)
- ✓ Always returns back to center position
- ✓ No need for tools and screws to assemble or disassemble
- ✓ Integrated low friction Level Compensator (Type ..'L20')
- ✓ Spiral Spring (Triangle Shaped) is compressed with no extra wasted space. (Type ..'L20')
- ✓ Easily interchanges with other cup styles



▲ Ball Joint only
'F \square T - BJ.. \square F'



▲ Ball Joint with long stroke
'F \square T - BJ.. L18 \square '



▲ Ball Joint with short stroke
'F \square T - BJ.. L20 - \square F'



▲ Short stroke only
'F \square T .. L20 - \square F'

Ordering Information

F80T - BJ - N - L20 - 18F

① ② ③ ④ ⑤

① Suction Cup

- F60T - Flat type $\varnothing 60$
- F70T - Flat type $\varnothing 70$
- F80T - Flat type $\varnothing 80$
- F90T - Flat type $\varnothing 90$
- F100T - Flat type $\varnothing 100$

② Ball Joint

- BJ - Built In Ball Joint
- No Mark - Rigid Type**

** : ④ 'L20' option is available only

③ Material

- N - NBR
- S - Silicone
- HS - High Temp. Silicone
- U - Urethane
- A - Mark Free

④ Level Compensator

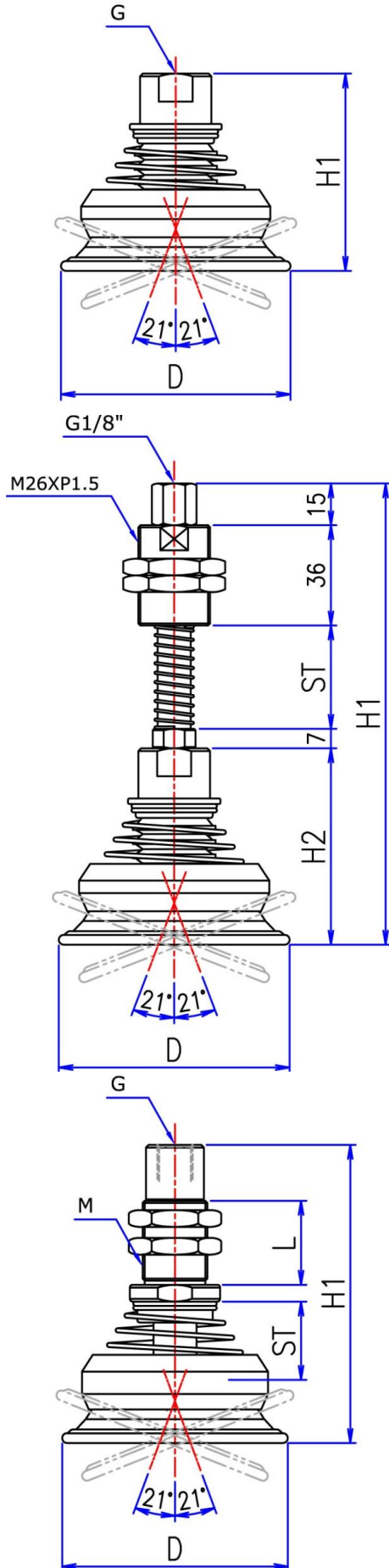
- No Mark - Witout Level Compensator
- L20** - 20mm
- LB1820T - 20mm Stroke Level Compensator with Linear Ball Bush
- LB1850T - 50mm Stroke Level Compensator with Linear Ball Bush

⑤ Thread size

- 18F - G1/8" Female
- 14F - G1/4" Female
- 38F - G3/8" Female
- 38M - G3/8" Male
- 12F - G1/2" Female

** : F60T..L20 is only available for G1/8" female or G3/8" male

Dimensions



◀ With Ball Joint only (Female Vacuum Port)

| Model | D | H1 | G |
|---------------|-------|------|-------|
| F60T-BJ..18F | 62.5 | 65.5 | G1/8" |
| F60T-BJ..14F | | 65.5 | G1/4" |
| F60T-BJ..38F | | 65.5 | G3/8" |
| F60T-BJ..12F | | 65.5 | G1/2" |
| F70T-BJ..18F | 73.7 | 70.5 | G1/8" |
| F70T-BJ..14F | | 70.5 | G1/4" |
| F70T-BJ..38F | | 70.5 | G3/8" |
| F70T-BJ..12F | | 70.5 | G1/2" |
| F80T-BJ..18F | 83.7 | 70.5 | G1/8" |
| F80T-BJ..14F | | 70.5 | G1/4" |
| F80T-BJ..38F | | 70.5 | G3/8" |
| F80T-BJ..12F | | 70.5 | G1/2" |
| F90T-BJ..18F | 93.7 | 70.5 | G1/8" |
| F90T-BJ..14F | | 70.5 | G1/4" |
| F90T-BJ..38F | | 70.5 | G3/8" |
| F90T-BJ..12F | | 70.5 | G1/2" |
| F100T-BJ..18F | 103.7 | 70.5 | G1/8" |
| F100T-BJ..14F | | 70.5 | G1/4" |
| F100T-BJ..38F | | 70.5 | G3/8" |
| F100T-BJ..12F | | 70.5 | G1/2" |

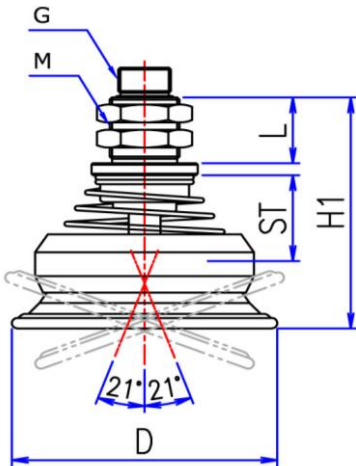
◀ With Level Compensator & Ball Joint (Female Vacuum Port)

| Model | D | H1 | H2 | ST |
|-------------------|-------|-------|------|----|
| F60T-BJ..LB1820T | 62.5 | 150.5 | 65.5 | 20 |
| F60T-BJ..LB1850T | | 188.5 | 65.5 | 50 |
| F70T-BJ..LB1820T | 73.7 | 155.5 | 70.5 | 20 |
| F70T-BJ..LB1850T | | 193.5 | 70.5 | 50 |
| F80T-BJ..LB1820T | 83.7 | 155.5 | 70.5 | 20 |
| F80T-BJ..LB1850T | | 193.5 | 70.5 | 50 |
| F90T-BJ..LB1820T | 93.7 | 155.5 | 70.5 | 20 |
| F90T-BJ..LB1850T | | 193.5 | 70.5 | 50 |
| F100T-BJ..LB1820T | 103.7 | 155.5 | 70.5 | 20 |
| F100T-BJ..LB1850T | | 193.5 | 70.5 | 50 |

◀ With Ball Joint & Built-In Level Compensator (Female Vacuum Port)

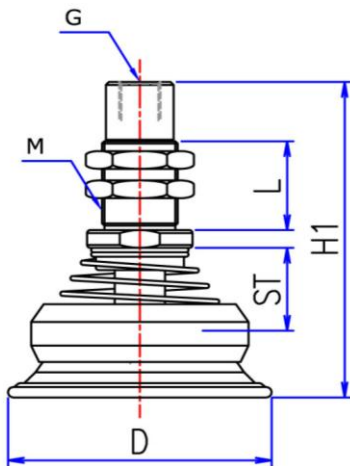
| Model | D | ST | H1 | L | M | G |
|----------------------|-------|----|-------|----|----------|-------|
| F60T - BJ.. L20 -18F | 62.5 | 20 | 94.5 | 25 | M10XP1.0 | G1/8" |
| F70T - BJ.. L20 -14F | 73.7 | 20 | 109.5 | 30 | M24XP1.5 | G1/4" |
| F80T - BJ.. L20 -14F | 83.7 | 20 | 109.5 | 30 | M24XP1.5 | G1/4" |
| F90T - BJ.. L20 -14F | 93.7 | 20 | 109.5 | 30 | M24XP1.5 | G1/4" |
| F100T - BJ..L20 -14F | 103.7 | 20 | 109.5 | 30 | M24XP1.5 | G1/4" |

Dimensions



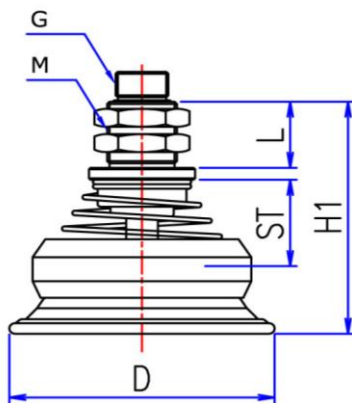
◀ With Ball Joint & Built-In Level Compensator (Male Vacuum Port)

| Model | D | ST | H1 | L | M | G |
|----------------------|-------|----|------|----|----------|-------|
| F60T - BJ.. L20 -38M | 62.5 | 20 | 76.9 | 30 | M10XP1.0 | G3/8" |
| F70T - BJ.. L20 -38M | 73.7 | 20 | 77.3 | 30 | M24XP1.5 | G3/8" |
| F80T - BJ.. L20 -38M | 83.7 | 20 | 77.3 | 30 | M24XP1.5 | G3/8" |
| F90T - BJ.. L20 -38M | 93.7 | 20 | 77.3 | 30 | M24XP1.5 | G3/8" |
| F100T - BJ..L20 -38M | 103.7 | 20 | 77.3 | 30 | M24XP1.5 | G3/8" |



◀ With Built-In Level Compensator only (Female Vacuum Port)

| Model | D | ST | H1 | L | M | G |
|-------------------|-------|----|-------|----|----------|-------|
| F60T .. L20 - 18F | 62.5 | 20 | 94.5 | 25 | M10XP1.0 | G1/8" |
| F70T .. L20 - 14F | 73.7 | 20 | 109.5 | 30 | M24XP1.5 | G1/4" |
| F80T .. L20 - 14F | 83.7 | 20 | 109.5 | 30 | M24XP1.5 | G1/4" |
| F90T .. L20 - 14F | 93.7 | 20 | 109.5 | 30 | M24XP1.5 | G1/4" |
| F100T ..L20 - 14F | 103.7 | 20 | 109.5 | 30 | M24XP1.5 | G1/4" |

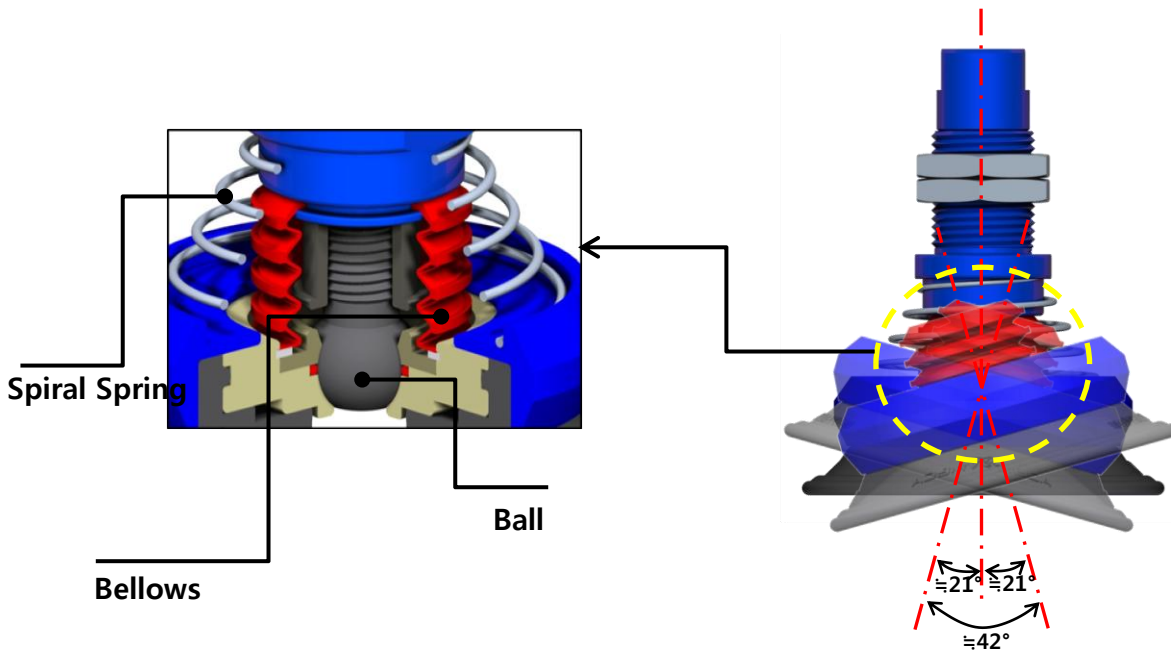


◀ With Built-In Level Compensator only (Male Vacuum Port)

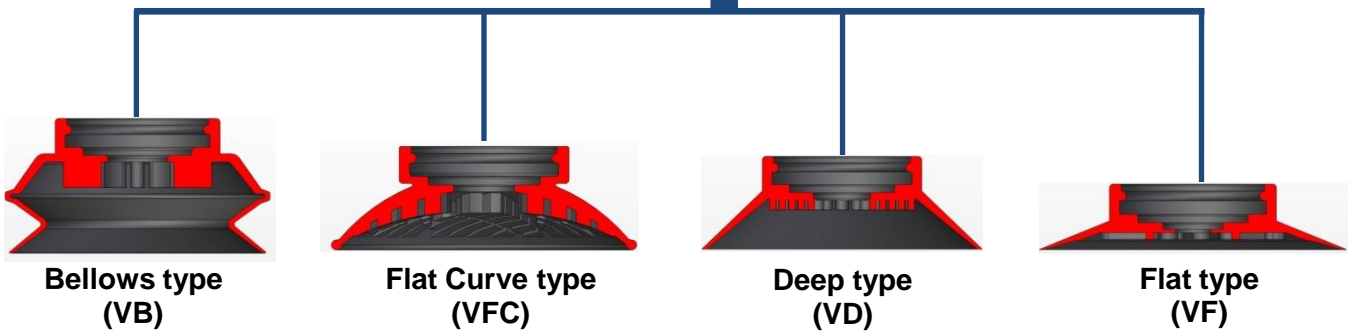
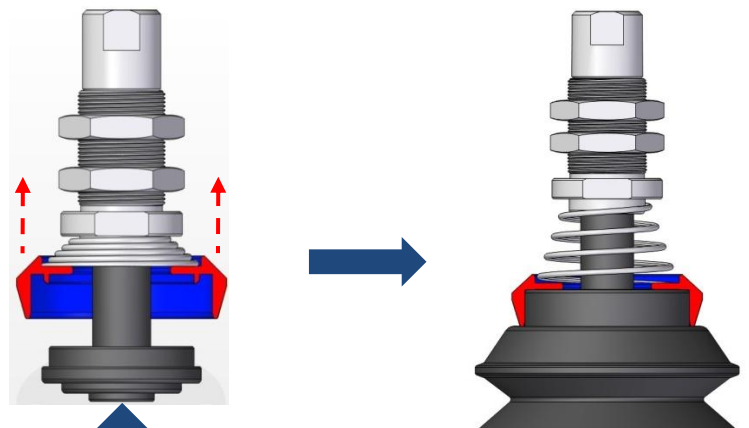
| Model | D | ST | H1 | L | M | G |
|-------------------|-------|----|------|----|----------|-------|
| F60T .. L20 - 38M | 62.5 | 20 | 76.9 | 25 | M10XP1.0 | G3/8" |
| F70T .. L20 - 38M | 73.7 | 20 | 77.3 | 30 | M24XP1.5 | G3/8" |
| F80T .. L20 - 38M | 83.7 | 20 | 77.3 | 30 | M24XP1.5 | G3/8" |
| F90T .. L20 - 38M | 93.7 | 20 | 77.3 | 30 | M24XP1.5 | G3/8" |
| F100T..L20 - 38M | 103.7 | 20 | 77.3 | 30 | M24XP1.5 | G3/8" |

Structure

- The Ball Joint part, consists of a Ball and O-Ring, allows for wide angle movement.
- The triangle shaped Spiral Spring compresses with no extra wasted space.



- There are different types of Suction Cups that you can easily apply for your various applications.



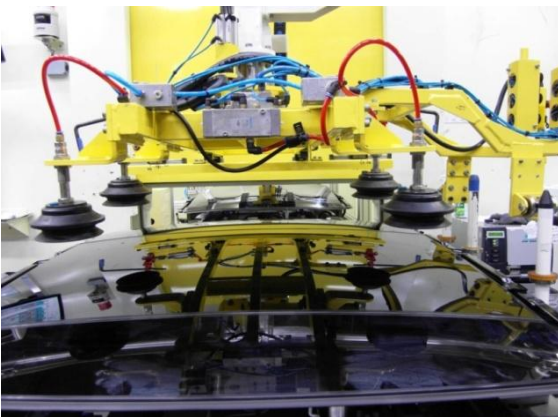
Structure



▲ Automobile Assembly Line



▲ Automobile Assembly Line



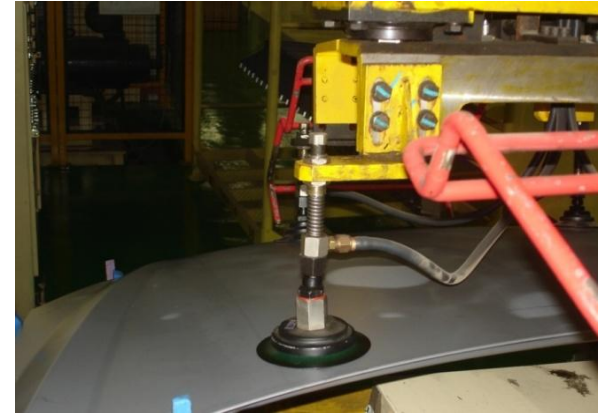
▲ Glass Transfer Line



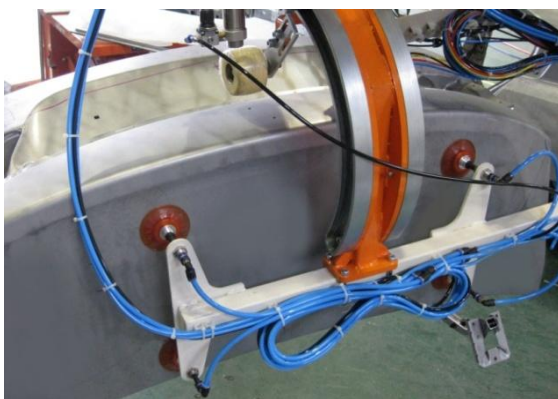
▲ Press Line



▲ Handling Windscreens



▲ Automobile Assembly Line



▲ Automobile Assembly Line



▲ Various Jig Tools in Press Line