

PRODUCT & APPLICATION CATALOGUE

Inflatable Seal Systems

Profiles, air connections
and installation solutions.



cinarsilikon.com

Introduction

Inflates under pressure. Seals through full contact.

Seals

Inflatable seals provide effective sealing in systems where parts move relative to each other and joints open and close frequently. They can be used on large doors, horizontal and vertical sliding doors, and process equipment with rapid opening and closing.

When regulated air pressure is applied, the profile expands to conform to the mating surface. The resulting contact line forms a barrier against moisture, dust and other contaminants. When pressure is released, the profile retracts to allow free movement.

Inflatable seals can operate from -40°C to +200°C, and at higher temperatures for short periods. Expansion capacity depends on the profile cross-section and the gap to be sealed.

Clamping elements

Controlled, uniform pressure along the profile holds parts in place during cutting, machining or bonding. It can also be used for stopping and gripping on conveyor lines.

Actuators

Inflation can push a seal or clamping element towards the contact surface. This arrangement helps accommodate varying gaps.

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The right profile is selected by assessing the contact gap, mounting channel and operating conditions together.

Seal Configurations

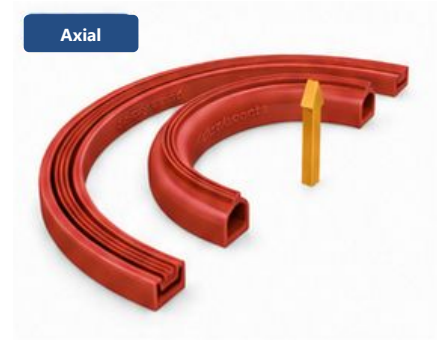
Closed rings, rectangles, U-shapes or straight lengths: seals made to suit the application geometry can expand radially outwards, radially inwards or axially. Moulded corners can be used for tight turns.



R1 / Radially outwards



R2 / Radially inwards



R3 / Axial

Minimum bend radius in the direction of expansion (mm)

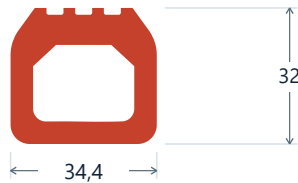
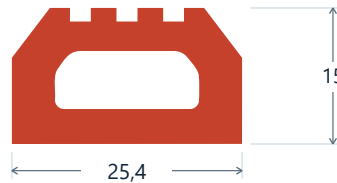
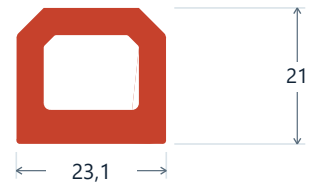
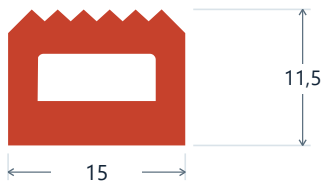
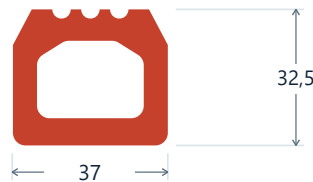
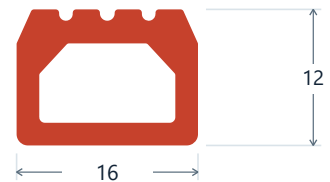
Profile code	Outwards	Inwards	Axial
0368	130	500	450
1091	130	230	210
1092	150	420	335
1342	210	195	250
1565	40	140	140
1602	40	140	120
1742	205	185	420
2139	-	-	-
2251	50	50	150
2264	150	150	320
2296	145	190	400
2357	125	240	450
2427	40	90	70
2668	200	200	-
2774	80	180	150
2924	100	100	150
2969	50	50	140
3015	90	90	130
3069	150	220	225
3074	100	100	250
3091	100	180	130
3104	160	130	300
3158	75	135	200
3192	200	200	250
3886	90	90	200
3991	80	80	110
4008	140	140	240

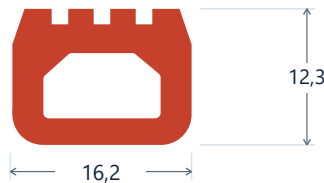
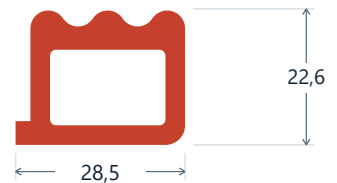
Profile code	Outwards	Inwards	Axial
4145	250	350	500
4245	110	110	150
4272	40	100	80
4418	275	280	485
4539	90	90	200
4565	150	150	150
4654	120	120	200
4681	150	150	230
4725	120	120	130
4732	100	100	170
4739	80	150	130
4805	100	100	240
4812	90	90	140
4822	150	150	310
4893	200	200	400
5101	210	210	300
5233	120	120	240
5296	160	160	200
5407	120	120	340
5485	245	275	Not applicable
5592	300	300	-
5917	220	425	390
5954	-	-	-
5974	150	150	280
6044	160	280	250
6154	150	180	465
6226	200	200	340

Radii are reference values. Cross-section and installation tolerances are assessed for the application.

Castellated Profiles

The castellated contact surface creates an effective seal in heavy-duty applications and at high differential pressures. Used in radial, axial and straight applications; the contact gap is kept relatively small.

0368

1565

3192

3886

4145

4539

5101

5233

5917


Cross-sections are schematic. Width and height dimensions are in mm.

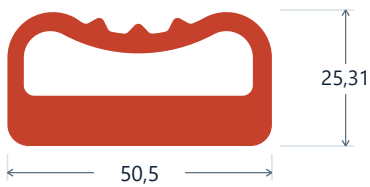
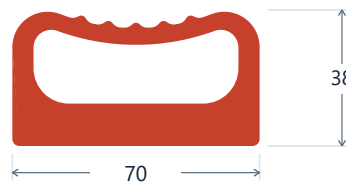
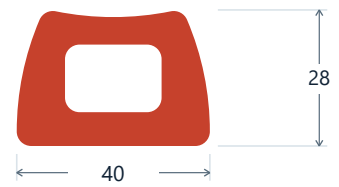
Profile code	Material	Width (mm)	Height (mm)	Inflated height (mm)	Min. pressure (PSI)	Max. pressure (PSI)	Recommended pressure (PSI)	Moulded corner
0368	Silicone	34,4	32	35,5	20	35	30	No
1565	Silicone	25,4	15	16,5	10	20	15	No
3192	Silicone	23,1	21	25	13	20	15	No
3886	Silicone	15	11,5	13,5	10	20	15	No
4145	Silicone	37	32,5	37	20	35	30	No
4539	Silicone	16	12	14	10	18	15	No
5101	Silicone	35,5	32	36,5	20	35	30	No
5233	Silicone	16,2	12,3	14	10	20	15	No
5917	Silicone	28,5	22,6	25,5	8	12	10	No

Cannot find the right size?

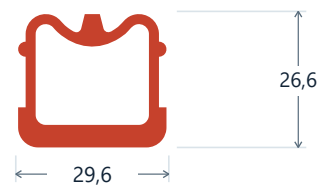
Share your technical drawing; let's assess available cross-sections and custom manufacturing options for your application.

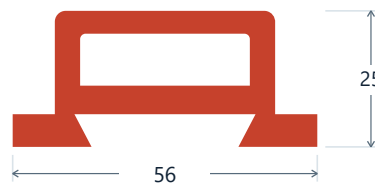
Special-Section Profiles

Custom geometries for applications where standard cross-sections are unsuitable. Installation space, contact direction and required expansion distance are assessed together. A new cross-section may require custom tooling.

2357

2668

3104

6044

4654

5954

2139

1742


Cross-sections are schematic. Width and height dimensions are in mm.

Profile code	Material	Width (mm)	Height (mm)	Inflated height (mm)	Min. pressure (PSI)	Max. pressure (PSI)	Recommended pressure (PSI)	Moulded corner
2357	Silicone	50,5	25,31	38	8	13	10	No
2668	Silicone	70	38	50	20	30	25	No
3104	Silicone	40	28	34	20	35	25	No
6044	Silicone	32,8	28	37	8	15	10	No
4654	Silicone	15	14,5	17	10	20	15	No
5954	Silicone	29,6	26,6	37	4	8	5	No
2139	Silicone	39,9	37,6	40	20	40	30	No
1742	Silicone	56	25	34	10	20	15	No

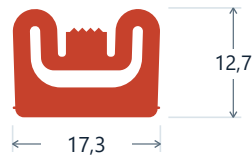
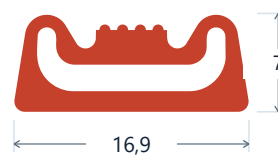
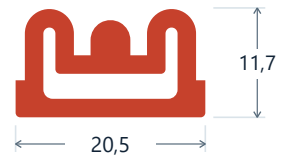
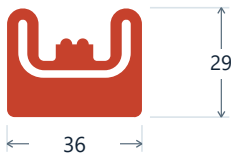
Cannot find the right size?

Share your technical drawing; let's assess available cross-sections and custom manufacturing options for your application.

Flexible-Wall Profiles

The flexible walls provide a wide expansion range relative to the profile dimensions. These profiles fit square-section channels and are used where axial and outward radial expansion are required.

1342

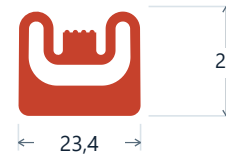
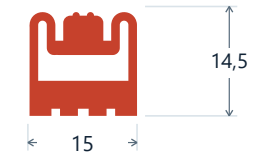
1602

2251

2264

2296

2427

2774

3158

4245

4272

4725

4732


Cross-sections are schematic. Width and height dimensions are in mm.

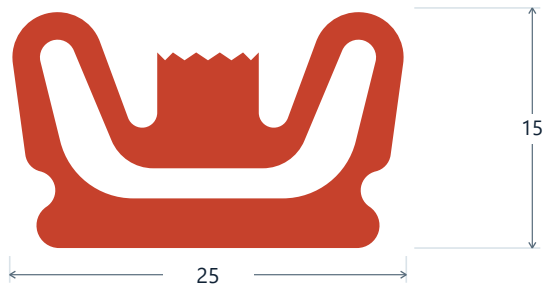
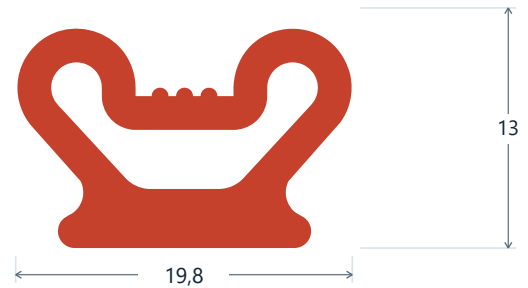
Profile code	Material	Width (mm)	Height (mm)	Inflated height (mm)	Min. pressure (PSI)	Max. pressure (PSI)	Recommended pressure (PSI)	Moulded corner
1342	Silicone	23,6	23	41,5	15	25	20	No
1602	Silicone	17,3	12,7	24	10	20	15	No
2251	Silicone	16,9	7	15	8	16	12	No
2264	Silicone	20,5	11,7	21	10	20	15	No
2296	Silicone	36	29	53	10	18	15	Yes
2427	Silicone	14,4	11,7	18,5	10	18	15	Yes
2774	Silicone	16	12,5	18	10	20	15	No
3158	Silicone	14,3	11,3	20	10	18	15	Yes
4245	Silicone	15,5	11	21	10	15	15	No
4272	Silicone	16	15	26	8	15	10	Yes
4725	Silicone	23,4	20	35	18	25	20	No
4732	Silicone	15	14,5	20	8	15	10	No

Cannot find the right size?

Share your technical drawing; let's assess available cross-sections and custom manufacturing options for your application.

Snap-Fit Base Profiles

The dovetail-shaped base allows the profile to be pressed into a suitable mechanical retainer. Flexible walls provide a wide expansion movement within a compact cross-section.

1091

5974


Cross-sections are schematic. Width and height dimensions are in mm.

Profile code	Material	Width (mm)	Height (mm)	Inflated height (mm)	Min. pressure (PSI)	Max. pressure (PSI)	Recommended pressure (PSI)	Moulded corner
1091	Silicone	25	15	34	15	25	20	No
5974	Silicone	19,8	13	17	8	14	10	Yes

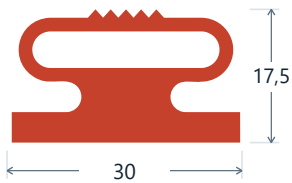
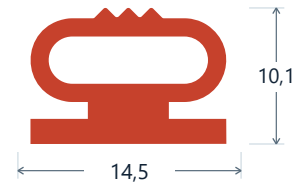
Colour Options

Application-specific colour options are assessed alongside production conditions. Colour and surface appearance depend on the material and production batch; precise colour requirements are defined using a sample.

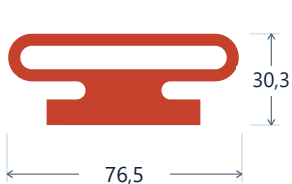
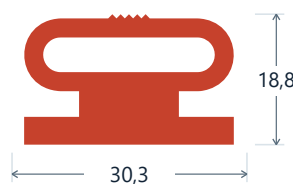
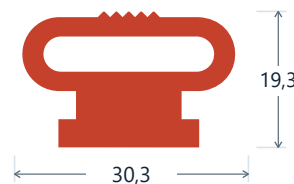
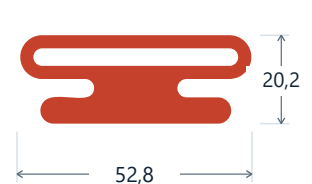


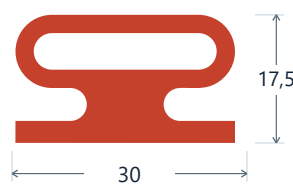
Footed Profiles

The foot at the base allows easy fitting into various mechanical retainers. The body rounds out when inflated, offering a broad contact range suitable for radial, axial and straight applications.

1092

2969

3069

4418

4565

4739

4822

5485

6154

6226


Cross-sections are schematic. Width and height dimensions are in mm.

Profile code	Material	Width (mm)	Height (mm)	Inflated height (mm)	Min. pressure (PSI)	Max. pressure (PSI)	Recommended pressure (PSI)	Moulded corner
1092	Silicone	30	17,5	28	10	20	15	No
2969	Silicone	14,5	10,1	16	8	15	10	No
3069	Silicone	49,2	21	49	15	25	20	No
4418	Silicone	51,4	23	42	15	25	20	No
4565	Silicone	76,5	30,3	63	8	15	10	No
4739	Silicone	30,3	18,8	28	8	15	10	No
4822	Silicone	30,3	19,3	27	8	15	10	No
5485	Silicone	52,8	20,2	42	20	30	25	No
6154	Silicone	31,8	15,9	26	5	12	8	No
6226	Silicone	30	17,5	29	8	15	10	No

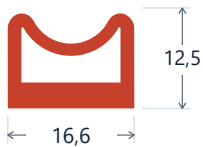
Cannot find the right size?

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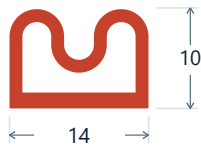
Channel-Fit Profiles

These profiles fit easily into square-section mounting channels. Offering high expansion capacity relative to their width, they suit applications requiring outward radial and axial contact.

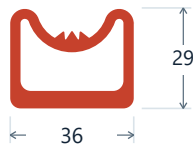
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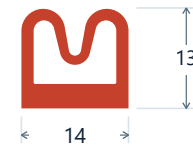
3015



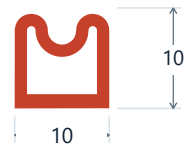
3074



3091



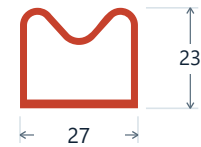
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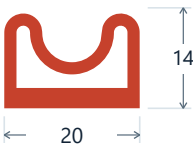
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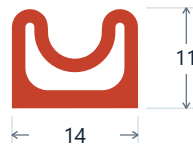
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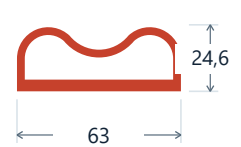
4805



4812



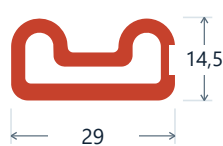
4893



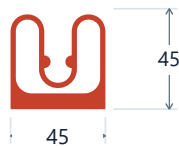
5296



5407



5592



Cross-sections are schematic. Width and height dimensions are in mm.

Profile code	Material	Width (mm)	Height (mm)	Inflated height (mm)	Min. pressure (PSI)	Max. pressure (PSI)	Recommended pressure (PSI)	Moulded corner
2924	Silicone	16,6	12,5	18,5	10	20	15	No
3015	Silicone	14	10	14,5	10	15	15	No
3074	Silicone	36	29	42,5	15	25	20	No
3091	Silicone	14	13	17,3	8	12	10	Yes
3991	Silicone	10	10	13	5	10	8	No
4008	Silicone	33	30	42	15	25	20	No
4681	Silicone	27	23	30	5	15	8	No
4805	Silicone	20	14	19	5	10	5	No
4812	Silicone	14	11	17	10	18	15	No
4893	Silicone	63	24,6	34	5	10	5	No
5296	Silicone	24	24	34	8	15	12	No
5407	Silicone	29	14,5	21	8	15	10	No
5592	Silicone	45	45	70	6	10	8	No

Cannot find the right size?

Share your technical drawing; let's assess available cross-sections and custom manufacturing options for your application.

Applications

The same goal in every application: controlled, continuous contact.



Marine

Sealing solutions that limit water ingress in sliding doors, yacht doors, portholes and cargo hatches. Flexible-wall and channel-fit profiles fit machined channels for a neat appearance.



Airtight doors

Perimeter contact that accommodates door tolerances in cleanrooms, laboratories and process areas. Rapid inflation and deflation are useful for doors requiring frequent access.

TRANSFER / FILLING / STORAGE



Powder and bulk solids transfer

Openable seals at hoppers, butterfly valves, slide gates, drums and bulk bag filling points in food and pharmaceutical processes. Footed and channel-fit profiles are suitable for mechanical retention.

Transport and aerospace

Sealing or uniform pressure in test rigs, wind tunnels, vehicle doors and composite bonding. Connection and installation arrangements are determined by the application.



Energy and process equipment

Controlled contact at access doors, equipment covers and airlocks. Temporary closure during maintenance and applications requiring restricted flow are assessed against operating conditions.



Pharmaceutical and medical

Application-specific profile selection for autoclaves, gloveboxes, sterilisation and aseptic process equipment. Material, cleaning and compliance requirements are assessed together at the start of the project.



Properties of Silicone

Material selection matters as much as profile geometry.

The tables below show reference silicone properties. The product's material formulation and required compliance documentation are confirmed together with the application conditions.

Property	Reference value
Chemical name	Silicone
ASTM designation (ASTM D14/18)	VMQ
Tensile strength (psi)	> 1200
Hardness (Durometer Shore A)	60
Tear resistance	Fair
Abrasion resistance	Poor
Compression set	Very good
Low-temperature resilience	Excellent
High-temperature resilience	Excellent
Radiation resistance	Good
Gas impermeability	Fair
Acid resistance	
Weak / Dilute	Excellent
Strong / Concentrated	Fair
Solvent resistance	*
Aliphatic hydrocarbons	Poor
Aromatic hydrocarbons	Poor
Oxygenated compounds (e.g. ketones)	Poor
Resistance to:	
Swelling in lubricating oil	Poor
Oil and petrol	Fair
Animal fats	Good
Water absorption	Excellent
Oxidation	Excellent
Ozone	Excellent
Sunlight ageing	Excellent
Heat ageing	*
Low temperature	*
Flame	Fair
Vegetable oils	Poor
Chlorinated hydrocarbons	Poor - Fair

* Properties may vary with the silicone grade.

Reference compound data

Property	Value
Shore hardness	60° +/- 5°
Elongation at break	450%
Tensile strength	10 MPA
Tear strength	25 Kn/M
Specific gravity	1.16
Temperature range	-40°C to +200°C
Compression set	35%

Compliance and use

Food contact, sterilisation, chemical environments and medical application requirements must be assessed separately. Requested testing or compliance documentation is considered for the selected material and product.

Colours and surface

Colour sample and surface texture are agreed together. Acceptable colour variation between batches is specified.



Straight-Length Seals and Corners

Straight-length inflatable seals

Straight-length seals have non-expanding closed sections at both ends. These are followed by transition zones where the profile gradually reaches its full height. Fixing with a pressure plate may require a longer closed-end section.

Depending on the application, the air connection can be located at the base or end. Its position is determined together with installation and service access.



Moulded corners

Minimum bend radius depends on the cross-section. At tight radii and 90-degree turns, moulded corners can maintain continuity in an axially expanding seal. Custom corner geometries can be assessed for new or existing cross-sections.



Profile code	Inside radius (mm)	Outside radius (mm)	Outer dimensions (mm)
2296	30	66	75/75
2427	15	29,5	39/39
3091	2	4	30/30
3158	15	29,5	39/39
3158	24	38,5	48,3/48,5
4272	1,5	17,5	41/41
5974	5,2	25	69/69

Corner geometry and joints

For continuous contact, corner radius, joint area and working gap are checked together within the same design.

Air Connections

On ring seals, the air inlet is usually at the profile base. Straight lengths can use a base or end connection. Connection position is determined by the installation space and service access.



Female-Threaded Valve

Tubing dimensions

Code	Inside dia.	Outside dia.	L
ACA1	5	8	400
ACA2	3	6	400
ACA3	4	6	400
ACA4	3,5	6,5	400
ACA5	6	14	400



O-Ring Push-Fit Valve

Code	Inside dia.	Outside dia.	L	A	B	C
ACB1	4	8	18,8	2	2	5,6
ACB2	2,5	6	26,8	5,6	1,8	5,6
ACB3	2,3	7	34,6	7,5	2	5
ACB4	4	11,9	34,5	6	3,2	8
ACB5	4	8	67,7	10,3	1,5	7,7
ACB6	4,2	8	69,7	5,5	1	7,8
ACB7	4,2	8	202	5	1,5	7,8



Barbed Valve

Code	Inside dia.	Outside dia.	L	A	B
ACC1	3	6,6	38,7	15	7,6
ACC2	3	6,6	46,4	12	8
ACC3	3,2	6,3	73	15	7,9
ACC4	3	6,6	38,2	14,5	7,8
ACC5	1,5	4	14,7	7,8	4



Male-Threaded Valve

Code	Inside dia.	Outside dia.	L
ACD1	5	9,7	94,3
ACD2	2	6	30
ACD3	5	9,9	67
ACD4	4	7,8	22,2
ACD5	4,3	7,9	26,5
ACD6	2,9	5,9	40
ACD7	5	9,5	52



Threaded Valve with Spanner Flats

Code	Inside dia.	Outside dia.	L	A	B	C
ACE1	5,3	10	50,5	7,2	7,9	7,4
ACE2	4,1	9,6	35,8	15,5	4,4	7



Part-Threaded Valve

Code	Inside dia.	Outside dia.	L	A
ACF1	4	8	86	34
ACF2	4	8	200	39
ACF3	4	8	200	54

Dimensions are in mm. Product images illustrate the connection type; order dimensions are confirmed by technical drawing.

Fittings and Tubing Connections

Four example arrangements for connecting the air line to the valve. Short red tubes show the connection location and direction.



Straight Male Fitting

Female-Threaded Valve

The male-threaded end screws into the valve; the red tubing fits into the fitting's push-in inlet.



Straight Female Fitting

Male-Threaded / Spanner-Flat / Part-Threaded Valve

The female end screws onto the valve; the red tubing fits into the fitting's push-in inlet.



Jack-Type Push-Fit Socket

O-Ring Push-Fit Valve

The O-ring end seats in a matching push-fit socket; the air line connects to the socket's tubing outlet.



Direct Tubing Connection

Barbed Valve

The red tubing fits directly over the valve's barbed end. No separate fitting is used.

Images illustrate connection arrangements. Thread, tubing and socket compatibility depend on the selected valve.

Mechanical Retainers and Profile Selection

Correct installation. Controlled sealing.

**Z-Clip Retainer**

Two-sided fixing. Easy maintenance.

**One-Piece Slide-In Retainer**

Metal holder for lengthwise insertion.

**Split Channel**

Two-piece fitting and removal.

Let's identify the seal you need.

Share these details for a quotation and technical assessment.

Geometry and clearance

Profile code / channel width / channel depth
Contact gap / total clearance / line length
Straight length or closed ring / corner radius

Operating conditions

Pressure on both sides / inflation pressure
Minimum and maximum temperature
Gas, liquid, abrasives and cleaning media

Movement and quantity

Mating surface movement when inflated
Prototypes, series production and monthly demand
Valve position / air line / service access

**Air inlet from below**

Check positioning, surface contact and profile retraction after deflation.

Let's solve your application together.

Let's assess inflatable silicone seal profiles, air connections and installation solutions for your application.

The right profile. A suitable connection. Controlled contact.

For a quotation, share

- Profile code or dimensioned technical drawing
- Mounting channel, contact gap and operating conditions
- Air connection, overall dimensions and quantity

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