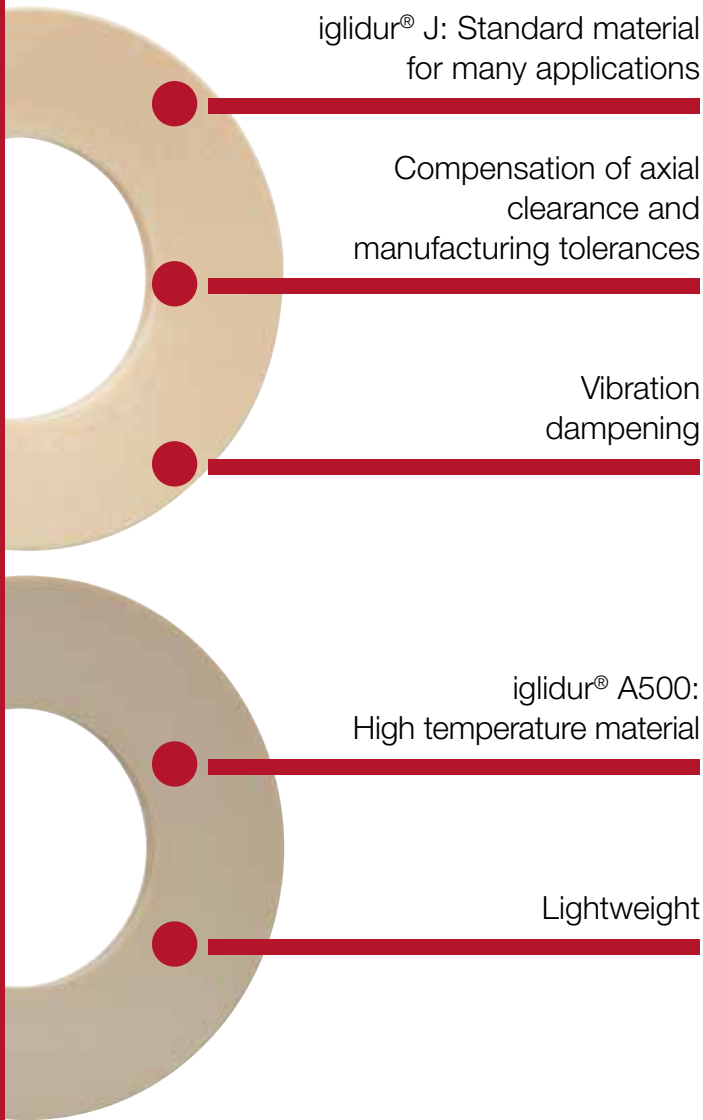


polysorb | Advantages

Cushion and dampen: plastic disc springs



polysorb disc springs

Disc springs are discs that can be axially loaded, which are concave in the axial direction. Disc springs require less space than other spring types and are especially suitable for designs that do not require a high spring length.



When to use it?

- When an application requires disc spring characteristics which are only possible in metal at a considerable expense (slot design)
- For compensation of axial clearances and manufacturing tolerances
- For vibration dampening
- For noise reduction
- When a non-magnetic material is required
- For electrical and thermal insulation



When not to use it?

- When constant spring forces are necessary over a wide temperature range
- When high spring forces are required



Available upon request

Detailed information about delivery time online.



Material properties:

iglidur® J ► Page 159
iglidur® A500 ► Page 393



Depending on material:

iglidur® J: -50°C up to +90°C
iglidur® A500: -100°C up to +250°C



1 type, 2 materials
Ø 5–20mm

More dimensions upon request

General properties

The spring deflection of the disc spring is relatively small. Therefore a number of disc springs are combined in practice. Disc springs that are alternately stacked increase the spring length proportionally to the amount of springs. In order to increase the force, the disc springs can be parallel stacked to form a spring packet.

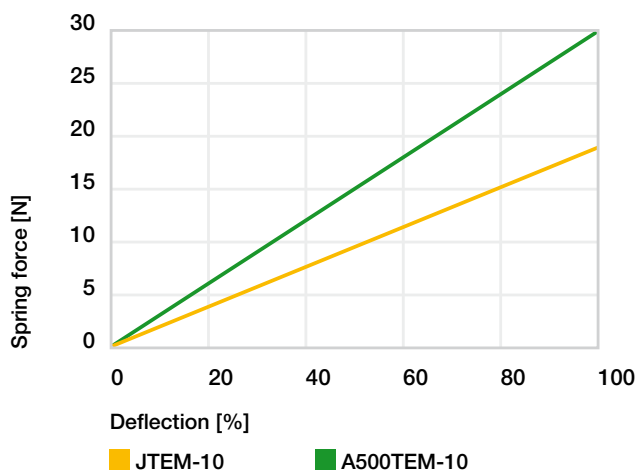


Diagram 01: Spring force [N] as a function of percental deflection measured with size 10

The force deformation curves of polysorb disc springs are approximately linear.

Additional properties

Chemical resistance

polysorb disc springs are resistant to a variety of chemicals. iglidur® A500 has a higher resistance than iglidur® J.

Chemicals	Resistance	
	igidur® J	igidur® A500
Alcohols	+	+
Hydrocarbons	+	+
Greases, oils without additives	+	+
Fuels	+	+
Diluted acids	0 to –	+
Strong acids	–	+
Diluted alkalines	+	+
Strong alkalines	+ up to 0	+

+ resistant 0 conditionally resistant – not resistant

All data given at room temperature [+20°C]

Table 01: Chemical resistance

Moisture absorption

The low moisture absorption permits the use in wet or moist environments.

polysorb disc springs absorb moisture and in the process the mechanical properties change. However, in the worst application case – a long-term use in water – polysorb disc springs still have a high spring force.

	Standard environment	Saturated in water
	20°C/50% r. h.	
J	18	15
A500	24	23

Table 02: Spring force [N] as a function of the absorbed moisture

Increased temperatures

Increased temperatures reduce the rigidity of polymers. polysorb disc springs made from iglidur® J (JTEM-10) still have a maximum spring force of 8N at the maximum permissible temperature of +90°C. The spring force against ambient temperature is shown in diagram 02.

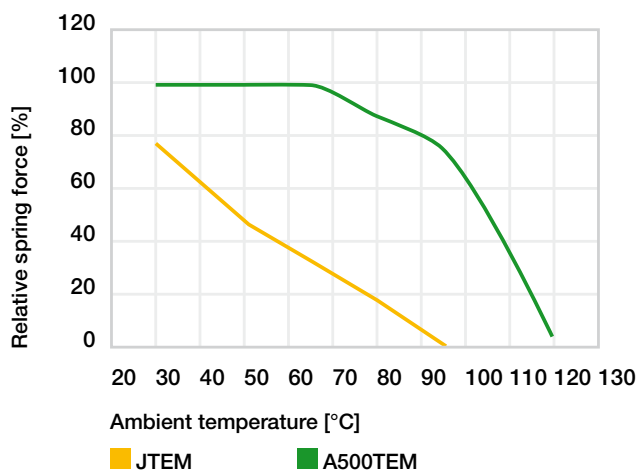


Diagram 02: Effect of ambient temperature on the spring force

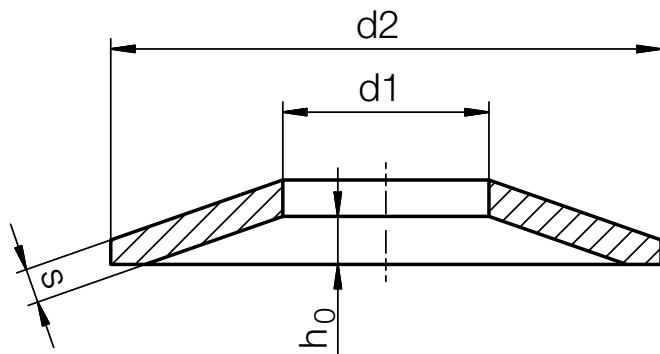
Plastic disc springs



igidur® J



igidur® A500



Dimensions based on DIN 2093

Dimensions [mm]

d1	d2	s	h ₀	Standard values: Spring lengths and forces		Weight [g]	Part No. ¹⁵⁾
				F _{1.0} iglidur® J [N]	F _{1.0} iglidur® A500 [N]		
5.2	10.0	0.5	0.25	5	8	0.04	<input type="text"/> TEM-05
6.2	12.5	0.7	0.30	10	15	0.11	<input type="text"/> TEM-06
8.2	16.0	0.9	0.35	16	24	0.20	<input type="text"/> TEM-08
10.2	20.0	1.1	0.45	24	35	0.33	<input type="text"/> TEM-10
12.2	25.0	1.5	0.55	45	70	0.85	<input type="text"/> TEM-12
16.3	31.5	1.75	0.70	65	85	1.44	<input type="text"/> TEM-16
20.4	40.0	2.25	0.90	130	150	3.10	<input type="text"/> TEM-20

The standard values for the spring lengths and forces are rounded mean values.

¹⁵⁾ Material: iglidur® J: JTEM, standard

igidur® A500: A500TEM, high temperature and chemical resistance

Symbols and units:

- F = Force [N]
- h₀ = Maximum spring displacement [mm]
- F_{1.0} = Spring force 100% displacement [N]



Order key

Type Dimensions [mm]

T E M -05

- igidur® material
- Thrust washer style
- "Elastic spring"
- Metric
- Inner Ø d1

Options:

igidur® J

for low wear

igidur® A500

for high temperature applications requiring FDA-compliance



Material:

igidur® J ▶ Page 159

igidur® A500 ▶ Page 393