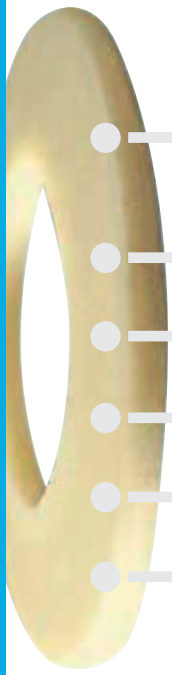
iglidur® Polysorb

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



Compensation for axial clearances and manufacturing tolerances

Vibration dampening

Noise dampening

Corrosion-free

Light weight

Electrical and thermal insulation

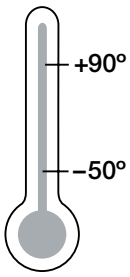
When to use it?

- Application requires disc spring characteristics which are only possible in metal at a considerable expense (slotted design)
- Compensation of axial clearances and manufacturing tolerances
- Vibration dampening
- Noise reduction
- Non-magnetic
- Electrical and thermal insulation

When not to use it?

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

Temperature



Product range

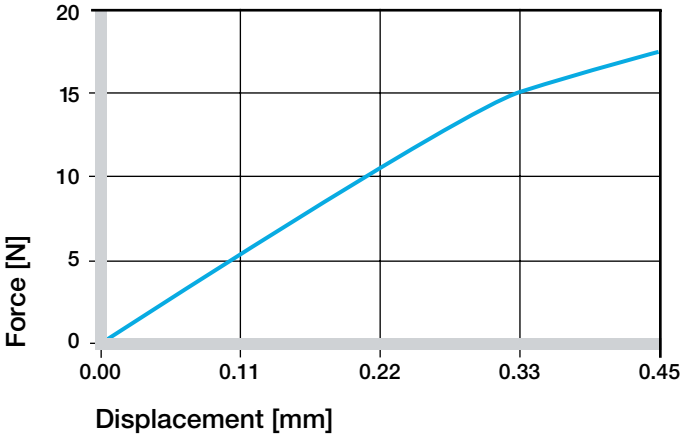
1 style
Ø 10–40 mm
more dimensions
on request

iglidur® Polysorb | Technical Data

General Properties

Spring washers are discs that can be axially loaded and which are concave in the axial direction. Polysorb disc springs require less space than other spring types, and are especially suitable for designs that do not require a high spring length as the height of a disc spring is relatively small. In practice, a number of disc springs are combined.

Disc springs that are alternately stacked increase the spring length proportionally to the amount of springs. The total spring force is as large as the force of one single disc spring. In order to increase the force, the disc springs can be parallel stacked to form a spring packet. Please contact us if you have any questions regarding the stacking of Polysorb disc springs.



Graph 02: Experimental test results between the force ratio $F/F_{1,0}$ and the spring length ratio S/h_0 ($S_{1,0} = H_0$), using part number JTEM-10

Additional Properties

Chemical Resistance

Polysorb disc springs are resistant to diluted alkalines and very weak acids, as well as against fuels and all types of lubricants. The low moisture absorption permits the use in wet or moist environments.

Medium	Resistance
Alcohol	+
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	0 to –
Strong acids	–
Diluted alkalines	+
Strong alkalines	+ to 0

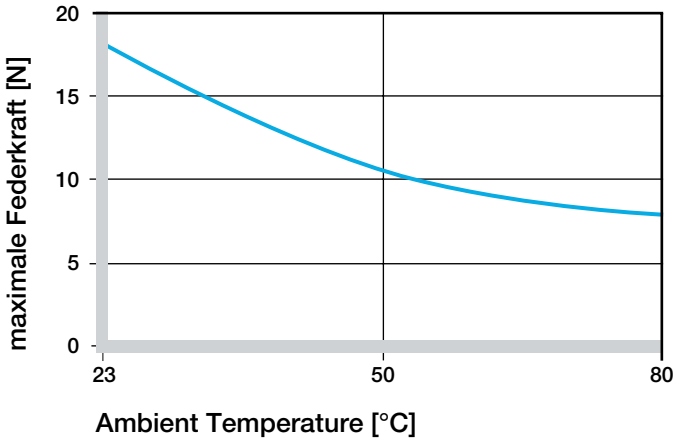
+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 05: Chemical resistance

Moisture Absorption

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 maximum spring force of 10 N.

Increased Temperatures

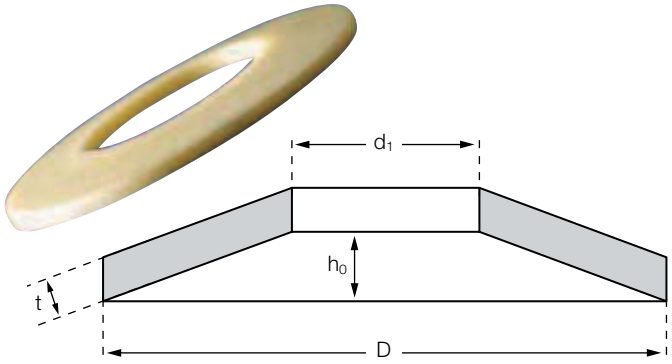
Increased temperatures reduce the rigidity of polymers. Polysorb disc springs still have a maximum spring force of 8 N at the maximum permissible temperature of +80 ° C. The spring force against ambient temperature is shown in Graph 03.



Graph 03: Effect of ambient temperature on the spring force, using part number JTEM-10

iglidur® Polysorb | Product Range

Polymer disc springs



Order key

JTEM-05

- Inner diameter d1
- Metric
- “Elastic spring”
- Thrust washer style
- Material iglidur® J

Dimensions based on DIN 2093

Dimension [mm]

Part number	Standard values: spring lengths and forces											
	D_e	D_i	t	h_0	$S_{0,25}$	$F_{0,25}$ [N]	$S_{0,5}$	$F_{0,5}$ [N]	$S_{0,75}$	$F_{0,75}$ [N]	$F_{1,0}$ [N]	M [g]
JTEM-05	10.0	5.2	0,5	0.25	0.06	1	0.13	2.4	0.19	3,6	5	0.04
JTEM-06	12.5	6.2	0,7	0.30	0.08	3	0.15	5.1	0.23	8	12	0.11
JTEM-08	16.0	8.2	0,9	0.35	0.09	4	0.18	8	0.28	11	12	0.20
JTEM-10	20.0	10.2	1.1	0.45	0.11	5	0.22	10	0.33	15	18	0.33
JTEM-12	25.0	12.2	1.5	0.55	0.14	9	0.28	18	0.42	27	35	0.85
JTEM-16	31.5	16.3	1.75	0.70	0.18	15	0.35	32	0.53	51	70	1.44
JTEM-20	40.0	20.4	2.25	0.90	0.23	35	0.45	70	0.68	110	140	3.10

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

Symbols and Units:

F = Force
S = Spring length
D_e = Outside diameter [mm]
D_i = Inside diameter [mm]
t = Plate thickness [mm]
h_0 = Maximum spring displacement [mm]
$S_{0,25}$ = 25 % of maximal spring displacement [mm]
$F_{0,25}$ = Spring force 25 % displacement [N]
$S_{0,5}$ = 50 % of max. spring displacement [mm]
$F_{0,5}$ = Spring force 50 % displacement [N]
$S_{0,75}$ = 75 % of max. spring displacement [mm]
$F_{0,75}$ = Spring force 75 % displacement [N]
$F_{1,0}$ = Spring force 100 % displacement [N]
M = Mass of one disc spring [g]

delivery time available from stock
prices price list online www.igus.eu/eu/polysorb
order example part number JTEM-05