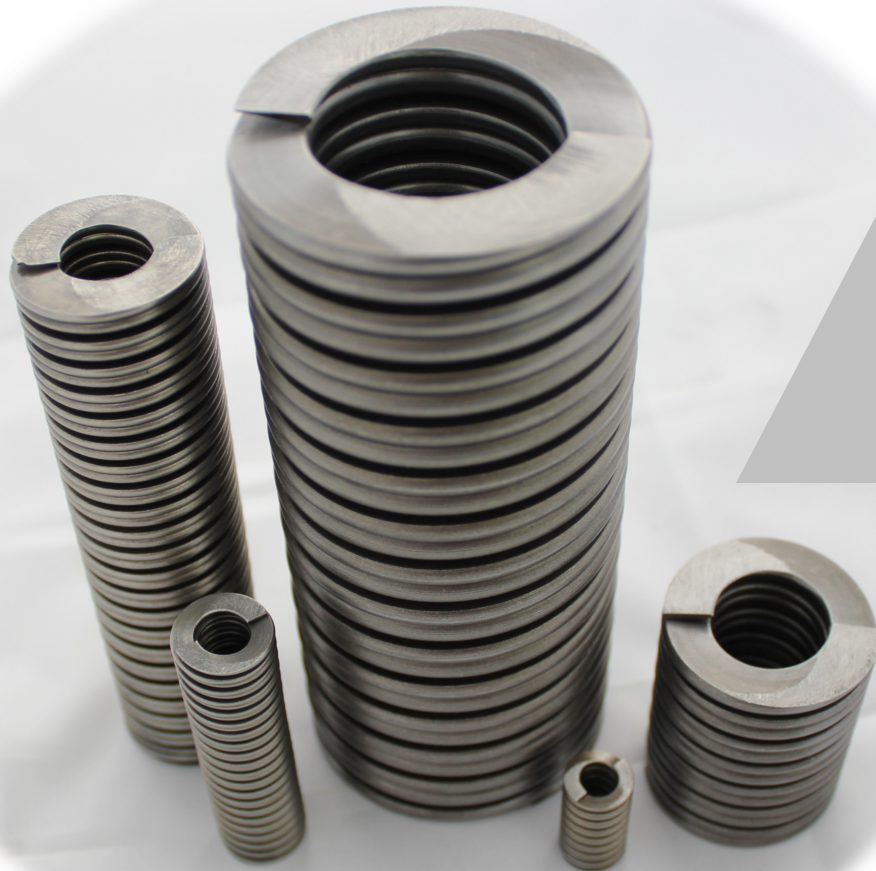


TES SMA



Tailor Made Single-Piece-Stack Disk Spring



Made in
Germany



TESSMA

pressure
spring



disk
spring
set



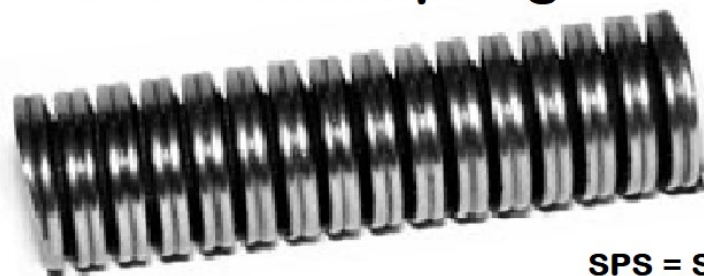
Improvement

- ✓ Very versatile in shape, size and identification
- ✓ One piece component
- ✓ No assembly errors
- ✓ No assembly effort

- ✓ Large selection of characteristic curves
- ✓ Large spring force with small spring deflection
- ✓ Space saving
- ✓ Consistent performance
- ✓ Longer life cycle
- ✓ Self damping

The sum of
both benefits =>

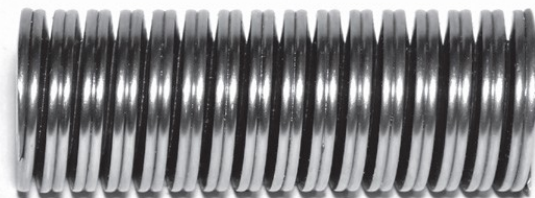
SPS - disk spring



SPS = Single Piece Set

10 good reasons for the use of SPS disk springs

- 1) The SPS disk spring is a one-piece machine element designed with manufacturer's certification.
- 2) The SPS disk springs is cost effective to assemble, disassemble, lubricate and maintain.
- 3) In production of SPS disk springs, the cross section is customized to meet your needs. Individual characteristics can be produced economically
- 4) The SPS disk spring has a longer service life than a comparable disk spring package with the same outer diameter and overall length.
- 5) The SPS disk spring offers process reliability and ensures error-free assembly.
- 6) SPS disc springs always provide 100% nominal load over the entire functional length, since layering errors and disintegration into parts are excluded.
- 7) SPS disk springs offer a high force level and optimum safety even in the event of spring breakage. Scattered parts are not known to occur.
- 8) The SPS disk spring minimizes wear and prevents friction losses due to rounded edges, resulting in low surface pressure.
- 9) With a short SPS disk spring or with an buckling proof design, a continuous mandrel can be dispensed with
- 10) SPS disk springs are manufactured cost-effectively in the best quality for a long service life and are also available in stainless steel design.



Do you have spring design problems?

- A spring with the required force will not fit into the available space?
- Springs are too stiff in the compressed state [not enough compression force available]?
- Insufficient service life?
- Insufficient travel when using Belleville springs?
- Excess friction is an unacceptable factor?
- Stacking of Belleville springs is too time consuming?
- Concerns about broken springs in your system?
- Need a custom-designed spring?

We supply custom-made, spiral wound disk springs with significantly improved engineering characteristics over conventional disk spring sets. In addition, in many applications the SPS disk spring allows for a second spring inside the main spring for increased stiffness and better guidance on a shaft.

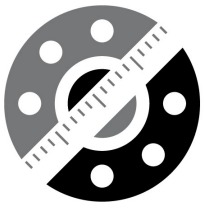


These performance data are not achieved by any other spring than SPS disk springs

MANDREL in mm	BUSH in mm	L ₀ in mm	F~75% in N	F~100% in N	s~75 % in mm	s~100% in mm
10	23	52,2	2250	2980	12,9	17,1
10	23	70	6600	8800	7,5	10
10	23	92	11000	14800	4	5,4
15	33	77,5	5000	6600	18	23,8
15	33	100	12000	16000	10	13,4
15	33	126	21000	28500	6	8,1
20	40	90	6200	8400	22	29,5
20	40	114	16250	21500	13	17
20	40	145	30000	39600	8,5	11,2
30	60	128	13000	17450	31,5	42
30	60	148	22000	29000	24,5	32,3
30	60	184,5	48000	65400	12,5	17

The special design is used in several diverse applications:

- Tool clamping [power drawbars]
- Work-piece clamping
- Various machine tool clamping
- Packaging machinery
- Motor mounts for large Diesel motors
- General clamping
- Automotive



SPS Disk Spring Specification

Application

Please describe:

Geometrie

single spring set of 2 springs

Diameter shaft: max: _____ mm min: _____ mm (inner diameter spring)

Diameter sleeve: max: _____ mm min: _____ mm (outer diameter spring)

Spring Data:

Assembly length: L0 = _____ mm

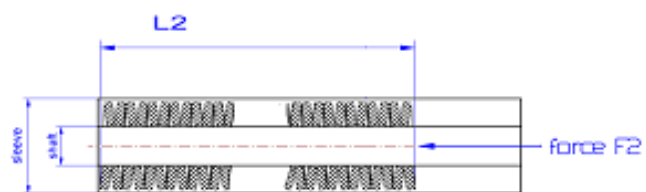
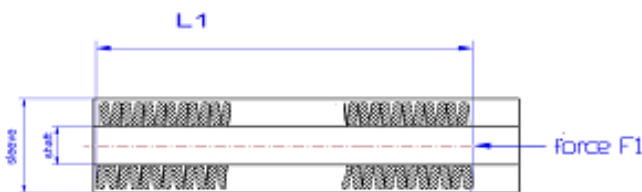
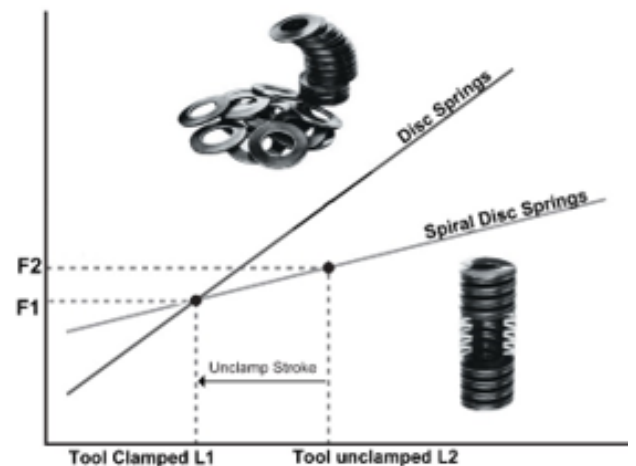
Unloaded length: L1 = _____ mm

Unloaded force at L1: F1 = _____ N

Loaded length: L2 = _____ mm

Clamping force at L2: F2 = _____ N

Stroke: sh = _____ mm



Requirements:

Number of cycles N = _____

Spindle revolutions max: _____ 1/min

Temperature range max: _____ °C min: _____ °C

Describe special requirements

General:

Pieces required: _____ (minimum order quantity 10 pcs each)