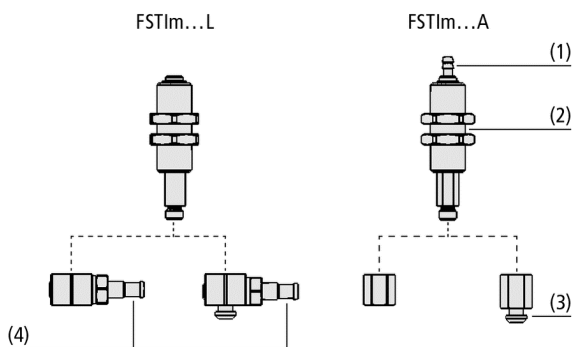
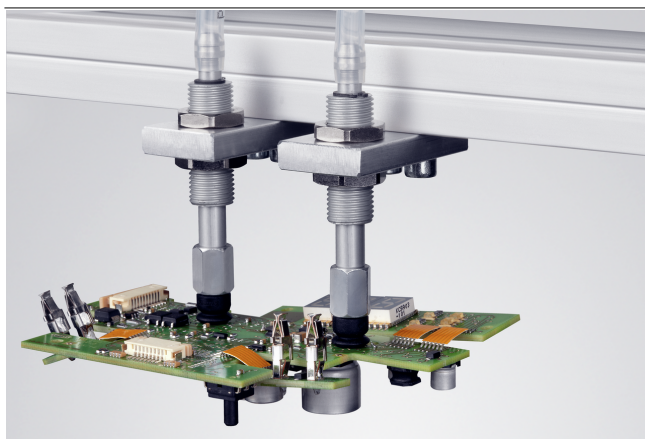


Spring Plungers FSTIm



System design Spring Plungers FSTIm



Spring plungers being used for handling conductor boards

Suitability for industry specific applications

Application

- Compact spring plunger with internal damping spring for handling workpieces with height differences or curvatures
- Handling of very sensitive workpieces (e.g. printed circuit boards) without additional control expenses; ensures gentle placement
- Handling tasks in the electronics industry
- Suitable for cleanroom applications – depending on the application and the loading case, up to cleanroom class ISO1 (according to ISO 14644-1)

Design

- Modular spring plunger with axial (1) or lateral (4) vacuum connection, version with anti-rotation guard only axial
- Two lock nuts (2) for mounting
- Connection for suction cups of the nipple families N004 and N016 (3) or alternatively via internal thread

Product highlights

- Low spring forces protect very sensitive workpieces
- Minimal, lightweight design optimized for the smallest space and highest dynamics
- Internal damping spring protected against dirt and mechanical damage
- Connection of a second lateral vacuum guide possible for series connection of several spring plungers

Spring Plungers FSTIm

Stroke from 5 mm to 20 mm

Designation code Spring Plungers FSTIm

FSTIm	–	M3-IG	–	4/2.5	–	A	–	5	–	VG
1		2		3		4		5		6

1 – Abbreviated designation

Code	Version
FSTIm	FSTIm

2 – Suction cup connection

Code	Connection
M3-IG	M3-IG (IG= female(F))
M5-IG	M5-IG
N004	N004
N016	N016

3 – Hose diameter

Code	Dimensions in mm
4/2.5	4/2.5
6/4	6/4

4 – Vacuum connection

Code	Connection
A	Axial
L	Lateral

5 – Plunger stroke

Code	Plunger stroke in mm
5...20	5 to 20

6 – Product addition

Code	Type
CO	Conductive
IN	Insulating
VG-CO	With anti-rotation guard and conductive
VG-IN	With anti-rotation guard and insulating

Spring plunger FSTIm is delivered assembled.

Available accessories: vacuum hose, hose sleeve

Spring Plungers FSTIm

Stroke from 5 mm to 20 mm

Ordering data Spring Plungers FSTIm

Type*						Plunger stroke in mm:		
						5	10	20
FSTIm	M3-IG	-	M5-F	A	IN	10.01.02.01488	-	-
FSTIm	M3-IG	-	M5-F	A	VG-IN	10.01.02.01487	-	-
FSTIm	M5-IG	-	M5-F	A	IN	10.01.02.01480	10.01.02.01474	10.01.02.01477
FSTIm	M5-IG	-	M5-F	A	VG-IN	10.01.02.01485 	10.01.02.01482 	10.01.02.01483 
FSTIm	M3-IG	-	Hose 4/2.5	A	IN	10.01.02.01333	-	-
FSTIm	M3-IG	-	Hose 4/2.5	A	VG-IN	10.01.02.01259	-	-
FSTIm	M3-IG	-	Hose 4/2.5	L	IN	10.01.02.01334	-	-
FSTIm	-	N004	Hose 4/2.5	A	IN	10.01.02.01335	-	-
FSTIm	-	N004	Hose 4/2.5	A	VG-IN	10.01.02.01275	-	-
FSTIm	-	N004	Hose 4/2.5	L	IN	10.01.02.01336	-	-
FSTIm	M5-IG	-	Hose 6/4	A	IN	-	10.01.02.01337	10.01.02.01344
FSTIm	M5-IG	-	Hose 6/4	A	VG-IN	-	10.01.02.01247	10.01.02.01293
FSTIm	M5-IG	-	Hose 6/4	L	IN	-	10.01.02.01338	10.01.02.01343
FSTIm	-	N004	Hose 6/4	A	IN	-	10.01.02.01339	-
FSTIm	-	N004	Hose 6/4	A	VG-IN	-	10.01.02.01282	-
FSTIm	-	N004	Hose 6/4	L	IN	-	10.01.02.01340	-
FSTIm	-	N016	Hose 6/4	A	IN	-	-	10.01.02.01342
FSTIm	-	N016	Hose 6/4	A	VG-IN	-	-	10.01.02.01285
FSTIm	-	N016	Hose 6/4	L	IN	-	-	10.01.02.01341
FSTIm	M5-IG	-	-	A	CO	10.01.02.01621	10.01.02.01549	-
FSTIm	M5-IG	-	-	A	VG-CO	10.01.02.01620	10.01.02.01619	-

*Recommendation: To raise the lifetime in continuous operation, prevent the maximal slide stroke

Ordering data Accessories Spring Plungers FSTIm

Type			Compressed-air hose	Hose sleeve
FSTIm	A	5	10.07.09.00142	-
FSTIm	L	5	10.07.09.00142	10.08.03.00312
FSTIm	A	10	10.07.09.00141	-
FSTIm	L	10	10.07.09.00141	10.08.03.00311
FSTIm	A	20	10.07.09.00141	-
FSTIm	L	20	10.07.09.00141	10.08.03.00311

Spring Plungers FSTIm

Stroke from 5 mm to 20 mm

Technical data Spring Plungers FSTIm

Type	Spring rate [N/mm]	Spring pretension [N]	Spring force center [N]*	Vertical load [N]**	Horizontal load [N]***	Anzugsdrehmoment (max) [Nm]	Weight [g]	Operating temperature [°C]
FSTIm M3-IG 4/2.5 A 5 IN	0.055	0.5	0.64	15	10.0	4	14	0 ... 80 °C
FSTIm M3-IG 4/2.5 A 5 VG-IN	0.055	0.5	0.64	15	10.0	4	14	0 ... 80 °C
FSTIm M3-IG 4/2.5 L 5 IN	0.055	0.5	0.64	15	10.0	4	16	0 ... 80 °C
FSTIm M5-IG 6/4 A 10 IN	0.050	0.5	0.75	15	10.0	4	16	0 ... 80 °C
FSTIm M5-IG 6/4 A 10 VG-IN	0.050	0.5	0.75	15	10.0	4	16	0 ... 80 °C
FSTIm M5-IG 6/4 A 20 IN	0.052	0.5	1.02	15	10.0	4	21	0 ... 80 °C
FSTIm M5-IG 6/4 A 20 VG-IN	0.052	0.5	1.02	15	10.0	4	21	0 ... 80 °C
FSTIm M5-IG 6/4 L 10 IN	0.050	0.5	0.75	15	10.0	4	18	0 ... 80 °C
FSTIm M5-IG 6/4 L 20 IN	0.052	0.5	1.02	15	10.0	4	23	0 ... 80 °C
FSTIm M5-IG M5-IG A 10 CO	0.050	0.5	0.75	15	10.0	4	19	0 ... 80 °C
FSTIm M5-IG M5-IG A 10 VG-CO	0.050	0.5	0.75	15	10.0	4	19	0 ... 80 °C
FSTIm M5-IG M5-IG A 5 CO	0.055	0.5	0.64	15	10.0	4	18	0 ... 80 °C
FSTIm M5-IG M5-IG A 5 IN	0.055	0.5	0.64	15	10.0	4	18	0 ... 80 °C
FSTIm M5-IG M5-IG A 5 VG-CO	0.055	0.5	0.64	15	10.0	4	18	0 ... 80 °C
FSTIm M5-IG M5-IG A 5 VG-IN	0.055	0.5	0.64	15	10.0	4	18	0 ... 80 °C
FSTIm N004 4/2.5 A 5 IN	0.055	0.5	0.64	15	10.0	4	12	0 ... 80 °C
FSTIm N004 4/2.5 A 5 VG-IN	0.055	0.5	0.64	15	10.0	4	12	0 ... 80 °C
FSTIm N004 4/2.5 L 5 IN	0.055	0.5	0.64	15	10.0	4	16	0 ... 80 °C
FSTIm N004 6/4 A 10 IN	0.050	0.5	0.75	15	10.0	4	15	0 ... 80 °C
FSTIm N004 6/4 A 10 VG-IN	0.050	0.5	0.75	15	10.0	4	15	0 ... 80 °C
FSTIm N004 6/4 L 10 IN	0.050	0.5	0.75	15	10.0	4	18	0 ... 80 °C
FSTIm N016 6/4 A 20 IN	0.052	0.5	1.02	15	10.0	4	20	0 ... 80 °C
FSTIm N016 6/4 A 20 VG-IN	0.052	0.5	1.02	15	10.0	4	19	0 ... 80 °C
FSTIm N016 6/4 L 20 IN	0.052	0.5	1.02	15	10.0	4	23	0 ... 80 °C

*Referred to 50 % of operating stroke

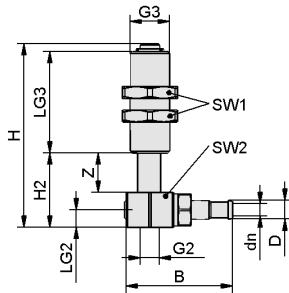
**Maximum static loading

***The specification of the horizontal load refers to the lower edge of the plunger with extended spring. It is a maximum static stress and it impairs the spring compression and extension in horizontal position.

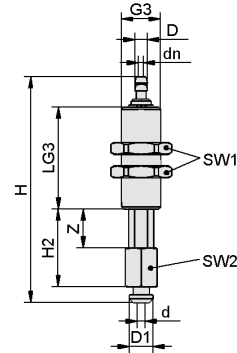
Spring Plungers FSTIm

Stroke from 5 mm to 20 mm

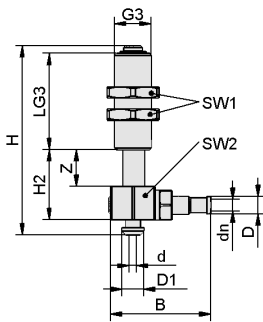
Design data Spring Plungers FSTIm



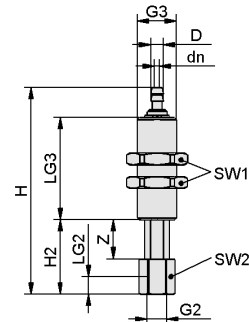
FSTIm M3-IG, M5-IG L



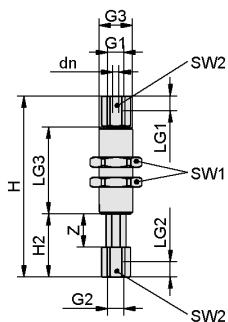
FSTIm N004, N016 A



FSTIm N004, N016 L



FSTIm M3-IG, M5-IG A



FSTIm M5, M5 A

Spring Plungers FSTIm

Stroke from 5 mm to 20 mm

Design data Spring Plungers FSTIm

Type	B [mm]	d [mm]	dn [mm]	D [mm]	D1 [mm]	G2	G3	H [mm]	H2 [mm]	LG2 [mm]	LG3 [mm]	SW1 [mm]	SW2 [mm]	Z (Stroke) [mm]
FSTIm M3-IG 4/2.5 A 5 IN	-	-	1.3	2.5	-	M3-F	M10x1-M	40.7	14.0	5	19	14	8	5
FSTIm M3-IG 4/2.5 A 5 VG-IN	-	-	1.3	2.5	-	M3-F	M10x1-M	40.7	14.0	5	19	14	8	5
FSTIm M3-IG 4/2.5 L 5 IN	21.5	-	1.8	2.5	-	M3-F	M10x1-M	37.0	16.0	6	19	14	13	5
FSTIm N004 4/2.5 A 5 IN	-	2.0	1.3	3.2	6.0	-	M10x1-M	45.7	15.0	-	19	14	8	5
FSTIm N004 4/2.5 A 5 VG-IN	-	2.0	1.3	2.5	6.0	-	M10x1-M	45.7	15.0	-	19	14	8	5
FSTIm N004 4/2.5 L 5 IN	21.5	2.0	1.8	2.5	6.0	-	M10x1-M	39.0	14.0	-	19	14	13	5
FSTIm M5-IG 6/4 A 10 IN	-	-	2.0	4.0	-	M5-F	M10x1-M	54.7	19.0	5	26	14	8	10
FSTIm M5-IG 6/4 A 10 VG-IN	-	-	2.0	4.0	-	M5-F	M10x1-M	54.7	19.0	5	26	14	8	10
FSTIm M5-IG 6/4 L 10 IN	23.2	-	2.5	4.0	-	M5-F	M10x1-M	49.0	21.0	6	26	14	13	10
FSTIm N004 6/4 A 10 IN	-	2.0	2.0	4.0	6.0	-	M10x1-M	59.7	20.0	-	26	14	8	10
FSTIm N004 6/4 A 10 VG-IN	-	2.0	2.0	4.0	6.0	-	M10x1-M	59.7	20.0	-	26	14	8	10
FSTIm N004 6/4 L 10 IN	23.2	2.0	2.5	4.0	6.0	-	M10x1-M	51.0	19.0	-	26	14	13	10
FSTIm M5-IG 6/4 A 20 IN	-	-	2.0	4.0	-	M5-F	M10x1-M	79.7	29.0	5	41	14	8	20
FSTIm M5-IG 6/4 A 20 VG-IN	-	-	2.0	4.0	-	M5-F	M10x1-M	79.7	29.0	5	41	14	8	20
FSTIm M5-IG 6/4 L 20 IN	23.2	-	2.5	4.0	-	M5-F	M10x1-M	74.0	31.0	6	41	14	13	20
FSTIm N016 6/4 A 20 IN	-	2.5	2.0	4.0	6.5	-	M10x1-M	86.7	30.0	-	41	14	8	20
FSTIm N016 6/4 A 20 VG-IN	-	2.5	2.0	4.0	6.5	-	M10x1-M	86.7	30.0	-	41	14	8	20
FSTIm N016 6/4 L 20 IN	23.2	2.5	2.5	4.0	6.5	-	M10x1-M	78.0	29.0	-	41	14	13	20
FSTIm M5-IG M5-IG A 5 IN	-	-	2.0	4.0	-	M5-F	M10x1-M	42.4	14.0	5	19	14	8	5

Spring Plungers FSTIm

Stroke from 5 mm to 20 mm

Type	B [mm]	d [mm]	dn [mm]	D [mm]	D1 [mm]	G2	G3	H [mm]	H2 [mm]	LG2 [mm]	LG3 [mm]	SW1 [mm]	SW2 [mm]	Z (Stroke) [mm]
FSTIm M5-IG M5-IG A 5 CO	-	-	2.0	-	-	M5-F	M10x1-M	42.4	14.0	5	20	14	8	5
FSTIm M5-IG M5-IG A 5 VG-IN	-	-	2.0	-	-	M5-F	M10x1-M	42.4	14.0	5	19	14	8	5
FSTIm M5-IG M5-IG A 5 VG-CO	-	-	2.0	-	-	M5-F	M10x1-M	42.4	14.0	5	20	14	8	5
FSTIm M5-IG M5-IG A 10 CO	-	-	2.0	-	-	M5-F	M10x1-M	54.4	19.0	5	26	14	8	10
FSTIm M5-IG M5-IG A 10 VG-CO	-	-	2.0	4.0	-	M5-F	M10x1-M	54.4	19.0	5	27	14	8	10