

Spring plungers

Spring plunger FSTE-HD



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Our highlights...

- Spring plunger with high-quality sliding bearings and smoothed plunger rod
- Spring plunger with one or two damping springs
- Wide range of connection threads and stroke lengths
- Anti-rotation guard available as option

Your advantages...

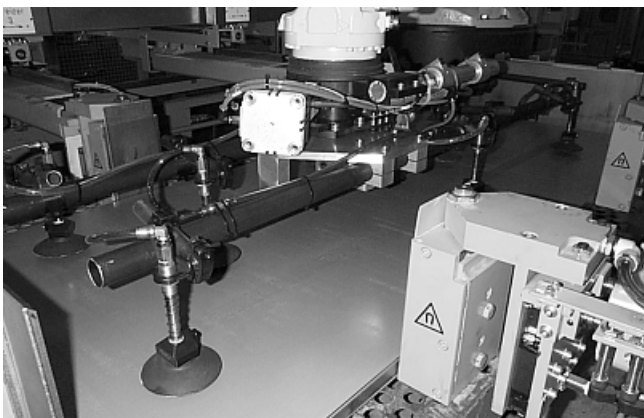
- >Maintenance-free, with extremely long operating lifetime; suitable for short cycle times
- >Guarantees soft placement on easily damaged workpieces. Absorbs shocks and vibration. Prevents excessively long strokes.
- >Available for a wide range of applications and for all standard suction pads
- >Suitable for use with oval suction pads



Spring plungers FSTE-HD on a vacuum spider for handling of sheet metal in the automobile industry

Applications

- Handling of workpieces with differing heights (such as curved metal sheets, etc.)
- Handling of easily damaged workpieces (such as sheets of glass) without additional control functions to prevent damage, since the plunger ensures soft placement
- For use under rough operating conditions
- For handling tasks with very dynamic motion and short cycle times



Vacuum spider with spring plungers FSTE-HD

Construction

- Spring plunger consisting of high-strength stainless steel rod, brass sleeve with integrated bearing and damping springs
- Plunger rod with integrated vacuum feed (connection thread at top)
- Anti-rotation guard due to flat side on the rod and a correspondingly shaped guide sleeve
- Thread for suction pad is always a male thread
- Thread for vacuum line is always a female thread



Suitability for branch-specific applications

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Designation code Spring plunger FSTE-HD

Short designation	Version	Suction-pad connection	Plunger stroke in mm	Additional function
Example: FSTE	HD	G1/8-AG	15	VG
FSTE	HD...Heavy Duty (hard use)	G1/8-AG (AG = male) G1/4-AG G3/8-AG G1/2-AG	15 to 90	VG...with anti-rotation guard

Ordering data Spring plunger FSTE-HD

Type*	Plunger stroke in mm**				
	15	25	50	75	90
FSTE-HD G1/8	10.01.02.00756	10.01.02.00757	10.01.02.00758	-	-
FSTE-HD G1/8 VG	10.01.02.00872	10.01.02.00873	10.01.02.00874	-	-
FSTE-HD G1/4	-	10.01.02.00763	10.01.02.00764	10.01.02.00765	-
FSTE-HD G1/4 VG	-	10.01.02.00875	10.01.02.00876	10.01.02.00877	10.01.02.01056
FSTE-HD G3/8	-	10.01.02.00811	-	10.01.02.00812	10.01.02.00813
FSTE-HD G3/8 VG	-	10.01.02.00878	-	10.01.02.00879	10.01.02.00880
FSTE-HD G1/2	-	10.01.02.00770	-	10.01.02.00771	10.01.02.00772
FSTE-HD G1/2 VG	-	10.01.02.00881	-	10.01.02.00882	10.01.02.00883

*VG = Version with rotation lock for repeatedly accurate positioning of suction pads

**Commendation: To raise the lifetime in continuous duty, prevent the maximal slide stroke

Technical data Spring plunger FSTE-HD

Type	Spring rate [N/mm]	Spring pre-tension [N]	Spring force [N]*	Vertical load [N]**	Horizontal load [N]***	Weight [g]	Operating temperature [°C]
FSTE-HD G1/8-AG 15	0,221	3,53	5,19	3700	385	80	0...80
FSTE-HD G1/8-AG 15 VG	0,221	3,53	5,19	3700	385	80	0...80
FSTE-HD G1/8-AG 25	0,143	3,57	5,36	3700	283	90	0...80
FSTE-HD G1/8-AG 25 VG	0,143	3,57	5,36	3700	283	90	0...80
FSTE-HD G1/8-AG 50	0,097	2,92	5,34	3700	173	110	0...80
FSTE-HD G1/8-AG 50 VG	0,097	2,92	5,34	3700	173	110	0...80
FSTE-HD G1/4-AG 25	0,711	6,47	15,36	2400	747	145	0...80
FSTE-HD G1/4-AG 25 VG	0,711	6,47	15,36	2400	747	145	0...80
FSTE-HD G1/4-AG 50	0,452	1,40	12,70	2400	466	175	0...80
FSTE-HD G1/4-AG 50 VG	0,452	1,40	12,70	2400	466	175	0...80
FSTE-HD G1/4-AG 75	0,262	5,38	15,20	2400	340	190	0...80
FSTE-HD G1/4-AG 75 VG	0,262	5,38	15,20	2400	340	190	0...80
FSTE-HD G3/8-AG 25	3,829	25,64	73,50	4800	1870	400	0...80
FSTE-HD G3/8-AG 25 VG	3,829	25,64	73,50	4800	1870	400	0...80
FSTE-HD G3/8-AG 75	1,072	37,20	77,40	4800	800	530	0...80
FSTE-HD G3/8-AG 75 VG	1,072	37,20	77,40	4800	800	530	0...80
FSTE-HD G3/8-AG 90	1,072	24,38	75,30	4800	730	545	0...80
FSTE-HD G3/8-AG 90 VG	1,072	24,38	75,30	4800	730	545	0...80
FSTE-HD G1/2-AG 25	3,829	25,64	73,50	4900	1870	400	0...80
FSTE-HD G1/2-AG 25 VG	3,829	25,64	73,50	4900	1870	400	0...80
FSTE-HD G1/2-AG 75	1,072	37,20	77,40	4900	800	530	0...80
FSTE-HD G1/2-AG 75 VG	1,072	37,20	77,40	4900	800	530	0...80
FSTE-HD G1/2-AG 90	1,072	24,38	75,30	4900	730	544	0...80
FSTE-HD G1/2-AG 90 VG	1,072	24,38	75,30	4900	730	545	0...80
FSTE-HD G1/4-AG 90 VG	0,262	1,49	13,28	1500	-	-	-

*Referred to 50% of operating stroke

**Maximum static loading

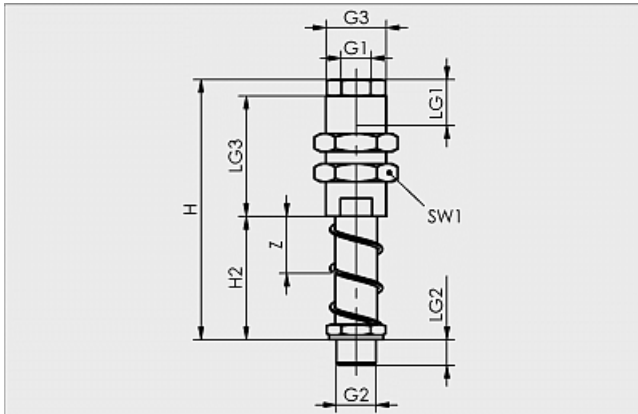
***The horizontal loading is a maximum static loading and has a negative effect on the in and out movement in a horizontal position

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Design data Spring plunger FSTE-HD



FSTE-HD 1/8 to 1/2(-VG)

Type	Dimensions in mm									
	G1	G2	G3	H	H2	LG1	LG2	LG3	SW1	Z (Stroke)
FSTE-HD G1/8-AG 15	G1/8"-F	G1/8"-M	M16x1-M	72,5	28,5	8	6,5	30	22	15
FSTE-HD G1/8-AG 15 VG	G1/8"-F	G1/8"-M	M16x1-M	72,5	28,5	8	6,5	30	22	15
FSTE-HD G1/8-AG 25	G1/8"-F	G1/8"-M	M16x1-M	85,5	41,5	8	6,5	30	22	25
FSTE-HD G1/8-AG 25 VG	G1/8"-F	G1/8"-M	M16x1-M	85,5	41,5	8	6,5	30	22	25
FSTE-HD G1/8-AG 50	G1/8"-F	G1/8"-M	M16x1-M	116,5	72,5	8	6,5	30	22	50
FSTE-HD G1/8-AG 50 VG	G1/8"-F	G1/8"-M	M16x1-M	116,5	72,5	8	6,5	30	22	50
FSTE-HD G1/4-AG 25	G1/8"-F	G1/4"-M	M20x1.5-M	86,0	40,5	12	8,5	40	24	25
FSTE-HD G1/4-AG 25 VG	G1/8"-F	G1/4"-M	M20x1.5-M	86,0	40,5	12	8,5	40	24	25
FSTE-HD G1/4-AG 50	G1/8"-F	G1/4"-M	M20x1.5-M	115,5	70,0	12	8,5	40	24	50
FSTE-HD G1/4-AG 50 VG	G1/8"-F	G1/4"-M	M20x1.5-M	115,5	70,0	12	8,5	40	24	50
FSTE-HD G1/4-AG 75	G1/8"-F	G1/4"-M	M20x1.5-M	145,5	100,0	12	8,5	40	24	75
FSTE-HD G1/4-AG 75 VG	G1/8"-F	G1/4"-M	M20x1.5-M	145,0	99,5	12	8,5	40	24	75
FSTE-HD G3/8-AG 25	G3/8"-F	G3/8"-M	M30x1.5-M	106,0	41,0	12	10,5	53	36	25
FSTE-HD G3/8-AG 25 VG	G3/8"-F	G3/8"-M	M30x1.5-M	106,0	41,0	12	10,5	53	36	25
FSTE-HD G3/8-AG 75	G3/8"-F	G3/8"-M	M30x1.5-M	177,0	112,0	12	10,5	53	36	75
FSTE-HD G3/8-AG 75 VG	G3/8"-F	G3/8"-M	M30x1.5-M	177,0	112,0	12	10,5	53	36	75
FSTE-HD G3/8-AG 90	G3/8"-F	G3/8"-M	M30x1.5-M	189,0	124,0	12	10,5	53	36	90
FSTE-HD G3/8-AG 90 VG	G3/8"-F	G3/8"-M	M30x1.5-M	189,0	124,0	12	10,5	53	36	90
FSTE-HD G1/2-AG 25	G3/8"-F	G1/2"-M	M30x1.5-M	105,5	40,5	12	10,5	53	36	25
FSTE-HD G1/2-AG 25 VG	G3/8"-F	G1/2"-M	M30x1.5-M	105,5	40,5	12	10,5	53	36	25
FSTE-HD G1/2-AG 75	G3/8"-F	G1/2"-M	M30x1.5-M	176,5	111,5	12	10,5	53	36	75
FSTE-HD G1/2-AG 75 VG	G3/8"-F	G1/2"-M	M30x1.5-M	176,5	111,5	12	10,5	53	36	75
FSTE-HD G1/2-AG 90	G3/8"-F	G1/2"-M	M30x1.5-M	188,5	123,5	12	10,5	53	36	90
FSTE-HD G1/2-AG 90 VG	G3/8"-F	G1/2"-M	M30x1.5-M	188,5	123,5	12	10,5	53	36	90
FSTE-HD G1/4-AG 90 VG	G1/8"-F	G1/4"-M	M20x1.5-M	160,0	-	12	8,5	40	24	90