

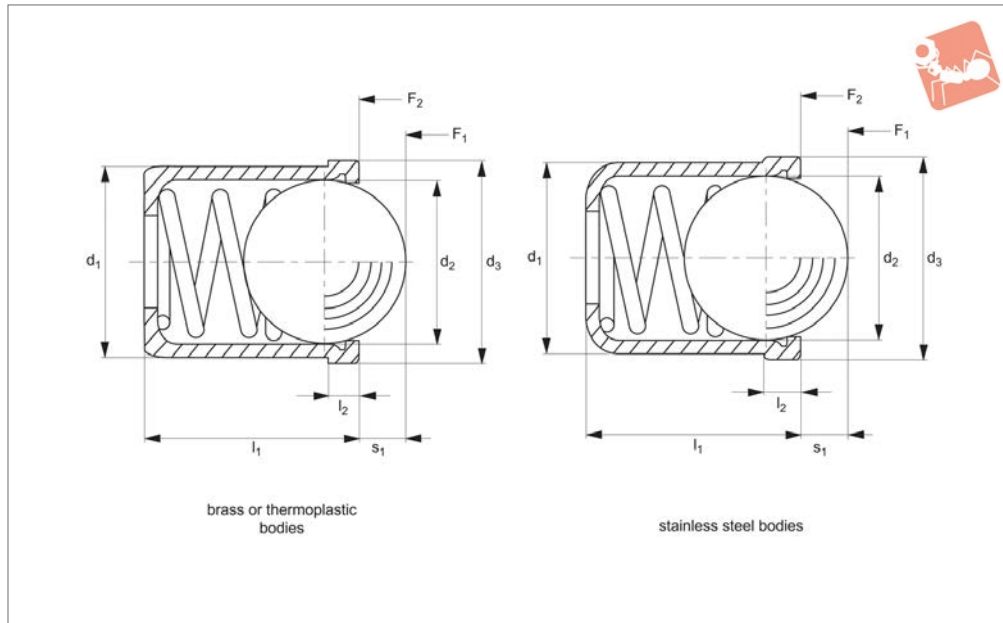


Spring Plungers

smooth model, with collar and ball- stainless steel



Spring Plunger & Detent Pins



32300

SPRING PLUNGER & DETENT PINS

Material

Body: stainless steel 1.4303 (AISI 305), brass, or thermoplastic POM, blue.
 Ball: ball bearing steel 1.3505 (100Cr6) hardened or thermoplastic POM, white.
 Spring: stainless steel 1.4568 (X7CrNiAl17-7).

Technical Notes

Used for locating, applying pressure or

lifting off.

Spring loads * = statistical average values.
 Thermo type temperature range -30°C to +50°C.
 Stainless and brass type, temperature range max. 250°C.
 For calculation of indexing resistance please refer to spring plunger technical pages.

Tips

These are press fit spring plungers. Typical hole tolerance is H7 for manual assembly. These fit tolerances vary with type of material so a trial hole is recommended. Light spring load- marked with one line. Standard spring load- no marking. Heavy spring load- marked with two lines. Special types available on request.

Order No.	Spring load	Finish	d ₁ -0 +0.1	d ₂	d ₃	l ₁	l ₂ ≈	s ₁	Spring load		Temperature °C max.	Weight g
									F ₁ N ≈	F ₂ N ≈		
32300.W1004	Light	Body & Ball Stainless	4	3,00	4,6	5,0	0,90	1,00	0,4	1,0	250	0,30
32300.W1005	Light	Body & Ball Stainless	5	4,00	5,6	6,0	0,90	1,40	0,5	4,7	250	0,60
32300.W1006	Light	Body & Ball Stainless	6	5,00	6,5	7,0	1,00	1,80	2,3	6,5	250	1,00
32300.W1008	Light	Body & Ball Stainless	8	6,50	8,5	9,0	1,10	2,40	4,0	9,0	250	2,10
32300.W1010	Light	Body & Ball Stainless	10	8,50	11,0	13,0	1,50	3,30	3,9	10,0	250	4,40
32300.W1012	Light	Body & Ball Stainless	12	10,00	13,0	16,0	2,30	4,00	6,2	14,6	250	7,30
32300.W0003	Standard	Body & Ball Stainless	3	2,38	3,5	4,0	0,60	0,70	1,8	3,5	+250	0,20
32300.W0004	Standard	Body & Ball Stainless	4	3,00	4,6	5,0	0,90	1,00	2,5	6,0	+250	0,30
32300.W0005	Standard	Body & Ball Stainless	5	4,00	5,6	6,0	0,90	1,40	3,0	6,5	+250	0,60
32300.W0006	Standard	Body & Ball Stainless	6	5,00	6,5	7,0	1,00	1,80	5,5	11,5	+250	1,00
32300.W0008	Standard	Body & Ball Stainless	8	6,50	8,5	9,0	1,10	2,40	7,0	12,5	+250	2,10
32300.W0010	Standard	Body & Ball Stainless	10	8,50	11,0	13,0	1,50	3,30	8,5	18,5	+250	4,40
32300.W0012	Standard	Body & Ball Stainless	12	10,00	13,0	16,0	2,30	4,00	12,0	26,5	+250	7,30
32300.W0203	Standard	Body Brass, Ball Stainless	3	2,38	3,6	4,0	0,60	0,60	1,8	3,5	+250	0,20
32300.W0204	Standard	Body Brass, Ball Stainless	4	3,00	4,5	5,0	1,00	0,80	3,0	6,0	+250	0,50
32300.W0205	Standard	Body Brass, Ball Stainless	5	4,00	5,5	6,0	1,00	1,00	4,0	6,5	+250	0,80
32300.W0206	Standard	Body Brass, Ball Stainless	6	5,00	6,5	7,0	1,00	1,60	6,0	11,5	+250	1,30
32300.W0208	Standard	Body Brass, Ball Stainless	8	6,50	8,5	9,0	1,00	1,90	8,0	12,5	+250	2,80
32300.W0403	Standard	Body Thermo, Ball S/S	3	2,00	3,6	4,0	0,60	0,55	1,7	3,5	-30/+50	0,09
32300.W0404	Standard	Body Thermo, Ball S/S	4	3,00	4,6	5,0	1,00	0,80	3,0	6,5	-30/+50	0,20
32300.W0405	Standard	Body Thermo, Ball S/S	5	4,00	5,6	6,0	1,00	1,00	6,0	9,4	-30/+50	0,40
32300.W0406	Standard	Body Thermo, Ball S/S	6	5,00	6,5	7,0	1,00	1,60	6,2	12,6	-30/+50	0,70
32300.W0408	Standard	Body Thermo, Ball S/S	8	6,50	8,5	9,0	1,00	1,90	10,0	20,4	-30/+50	1,50
32300.W0410	Standard	Body Thermo, Ball S/S	10	8,00	11,0	13,5	1,50	2,40	11,9	22,3	-30/+50	3,20
32300.W0412	Standard	Body Thermo, Ball S/S	12	10,00	13,0	16,0	1,50	3,30	14,0	25,0	-30/+50	5,80
32300.W0604	Standard	Body & Ball Thermoplast	4	3,00	4,6	5,0	1,00	0,80	3,0	6,5	-30/+50	0,10

Spring Plunger & Detent Pins

Spring Plungers

smooth model, with collar and ball- stainless steel



SPRING PLUNGER & DETENT PINS

Order No.	Spring load	Finish	d ₁ -0 +0.1	d ₂	d ₃	l ₁	l ₂ ≈	s ₁	Spring load	Spring load	Temperature °C max.	Weight g
									F ₁ N ≈	F ₂ N ≈		
32300.W0605	Standard	Body & Ball Thermoplast	5	4,00	5,6	6,0	1,00	1,00	6,0	9,4	-30/+50	0,20
32300.W0606	Standard	Body & Ball Thermoplast	6	5,00	6,5	7,0	1,00	1,60	6,2	12,6	-30/+50	0,30
32300.W0608	Standard	Body & Ball Thermoplast	8	6,50	8,5	9,0	1,00	1,90	10,0	20,4	-30/+50	0,60
32300.W0610	Standard	Body & Ball Thermoplast	10	8,00	11,0	13,5	1,50	2,40	11,9	22,3	-30/+50	1,50
32300.W0612	Standard	Body & Ball Thermoplast	12	10,00	13,0	16,0	1,50	3,30	14,0	25,0	-30/+50	2,50
32300.W2004	Heavy	Body & Ball Stainless	4	3,00	4,6	5,0	0,90	1,00	5,0	10,4	+250	0,30
32300.W2005	Heavy	Body & Ball Stainless	5	4,00	5,6	6,0	0,90	1,40	6,0	12,0	+250	0,60
32300.W2006	Heavy	Body & Ball Stainless	6	5,00	6,5	7,0	1,00	1,80	7,3	19,0	+250	1,00
32300.W2008	Heavy	Body & Ball Stainless	8	6,50	8,5	9,0	1,10	2,40	11,0	25,0	+250	2,10
32300.W2010	Heavy	Body & Ball Stainless	10	8,50	11,0	13,0	1,50	3,30	17,0	37,0	+250	4,40
32300.W2012	Heavy	Body & Ball Stainless	12	10,00	13,0	16,0	2,30	4,00	30,0	54,0	+250	7,30

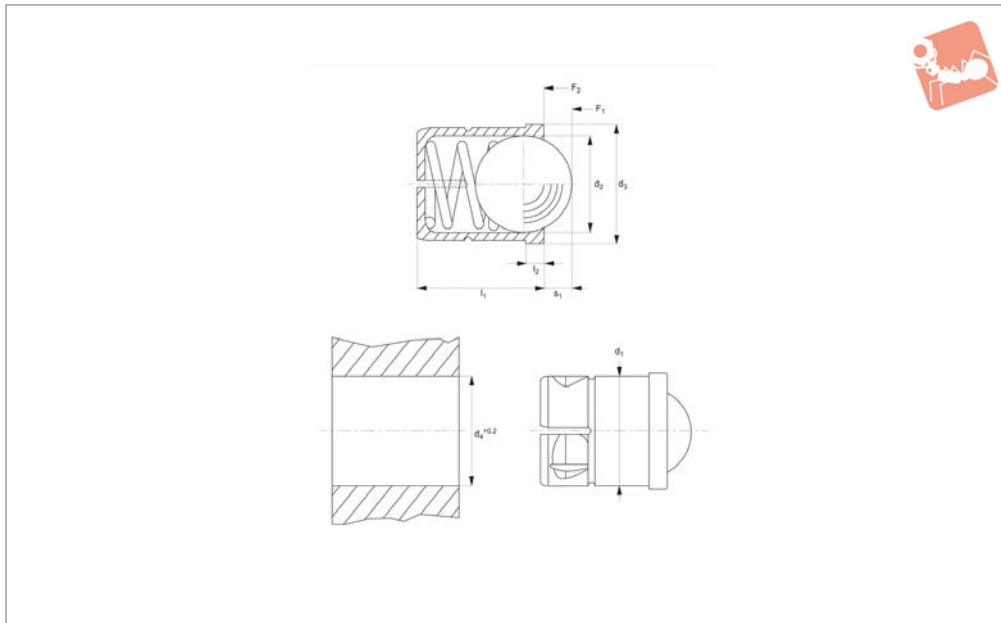




Expander Fit Spring Plunger

smooth body - thermoplastic

Spring Plunger & Detent Pins



32302

SPRING PLUNGER & DETENT PINS

Material

Body: thermoplastic POM, black.
 Ball: ball bearing steel 1.3505 (100Cr6) hardened or thermoplastic POM, white.
 Spring: stainless steel.

Technical Notes

Unique body design flexes to expand and contract to fit in location bore tolerances

as wide as +0,2mm of d_4 . Especially suited to installation in plastic moulded components where hole and bore precision is not high.
 Guarantees a secure overhead installation. Simple push fit design, no special tooling necessary.
 For calculation of indexing resistance

please refer to spring plunger technical pages.

Tips

Spring load* - statistical average value.
 Temperature range -30°C to +50°C

See Wixroyd.com for:
 32305 - Spring plungers - INCH

Order No.	Finish	d_1 +0.1	d_2	d_3	d_4 +0.2	l_1 ±0.2	l_2 ≈	s_1	Spring load F_1 N ≈	Spring load F_2 N ≈	Temperature °C max.	Weight g
32302.W0704	Body Thermo & Ball Stainless	4	3,0	4,6	4	5,0	1,0	0,8	3,0	6,5	-30/+50	0,12
32302.W0705	Body Thermo & Ball Stainless	5	4,0	5,6	5	6,0	1,0	1,0	6,0	9,4	-30/+50	0,34
32302.W0706	Body Thermo & Ball Stainless	6	5,0	6,5	6	7,0	1,0	1,6	6,2	12,6	-30/+50	0,63
32302.W0708	Body Thermo & Ball Stainless	8	6,5	8,5	8	9,0	1,0	1,9	10,0	20,4	-30/+50	1,40
32302.W0710	Body Thermo & Ball Stainless	10	8,0	11,0	10	13,5	1,5	2,4	11,9	22,3	-30/+50	2,90
32302.W0804	Body & Ball Thermo	4	3,0	4,6	4	5,0	1,0	0,8	3,0	6,5	-30/+50	0,06
32302.W0805	Body & Ball Thermo	5	4,0	5,6	5	6,0	1,0	1,0	6,0	9,4	-30/+50	0,17
32302.W0806	Body & Ball Thermo	6	5,0	6,5	6	7,0	1,0	1,6	6,2	12,6	-30/+50	0,23
32302.W0808	Body & Ball Thermo	8	6,5	8,5	8	9,0	1,0	1,9	10,0	20,4	-30/+50	0,57
32302.W0810	Body & Ball Thermo	10	8,0	11,0	10	13,5	1,5	2,4	11,9	22,3	-30/+50	1,21



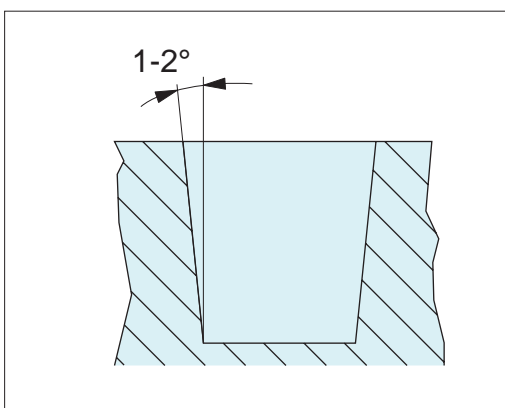
Struggle with inconsistent location bore tolerances and wide material variation?

Looking to reduce machining costs?

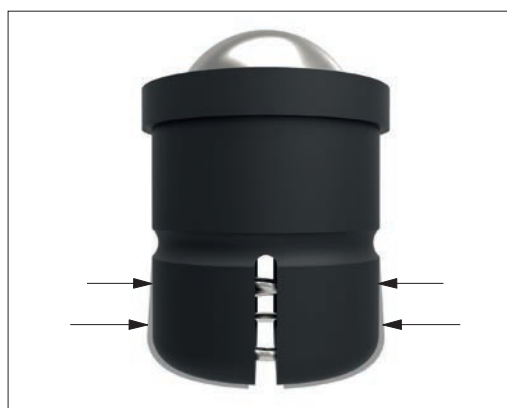
Our smooth body expander fit spring plunger offers a simple and accommodating solution - with the capacity to accommodate location bore tolerances as wide as $+0.2\text{mm}$.



Unique Expander Fit Design

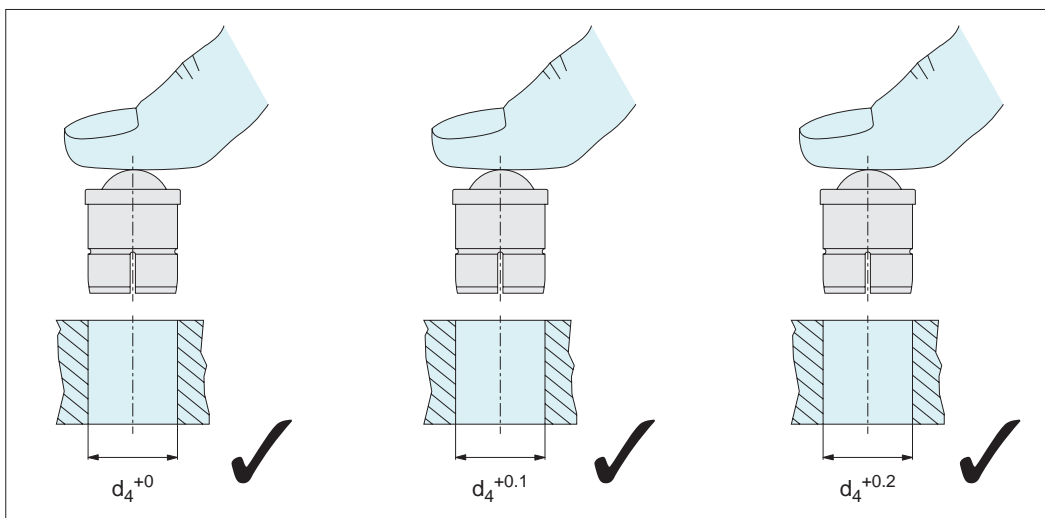


Typically, unmachined plastic injection moulded holes can vary widely in accuracy, with sidewall variation of ± 1 to 2° .



Unique body design flexes to expand and contract to fit in location bore tolerances as wide as $+0,2\text{mm}$.

Especially suited to installation in plastic moulded components where hole and bore precision is not high.



Expands/contracts to fit a range of hole tolerances from $+0$ to $+0,2$.

Unique Advantages

- Speed and flexibility in production and assembly.
- Removes need and cost of high tolerance machining and workpiece preparation.
- Easy push fit installation, no special tools or punches required.

Important Note

Important Note: It is not recommended to repeatedly install and uninstall expander fit spring plungers between locating bores of different tolerances, as such repeated action can lead to reduction of its capacity to expand into holes of wider tolerances (due to slight plastic fatigue).

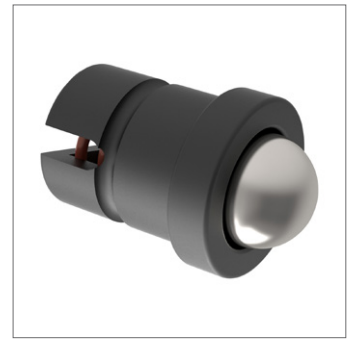
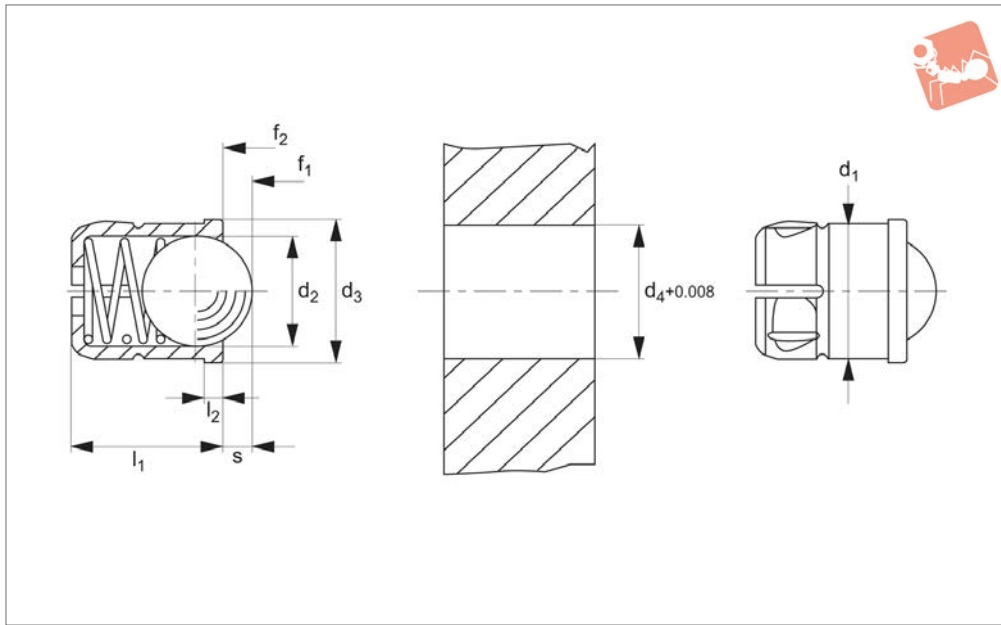
As with all our smooth bodied spring plungers, best results are achieved when used as a single one-off installation.



Expander Fit Spring Plungers

smooth body, with collar and ball- **stainless steel**

Spring Plunger & Detent Pins



32305.web

SPRING PLUNGER & DETENT PINS

Material

Body: thermoplastic POM, black.
Ball: stainless steel hardened.
Spring: stainless steel.

detent or ejection.

Spring loads * = statistical average values.
Temperature range -5°C to +50°C.

Special types available on request.

Technical Notes

Used for locating, applying pressure,

Tips

Typical location hole tolerance is 0,008 inch due to flexible body.

Order No.	d ₁ +0.004	d ₂	d ₃ inch	d ₄ +0.008	l ₁ ±0.01	l ₂	Stroke s inch	Spring load f ₁ lb	Spring load f ₂ lb	Weight oz
32305.W0050	3/16	0.157	0.220	3/16	0.236	0.039	0.039	1.3	2.1	0.01
32305.W0060	1/4	0.197	0.276	1/4	0.276	0.039	0.059	1.4	2.8	0.02
32305.W0080	5/16	0.256	0.335	5/16	0.354	0.039	0.075	1.9	4.5	0.05
32305.W0090	3/8	0.315	0.433	3/8	0.531	0.059	0.091	2.7	5.0	0.10
32305.W0120	1/2	0.394	0.551	1/2	0.630	0.059	0.126	3.1	5.6	0.18

Spring Plunger & Detent Pins

Spring Plunger - Pin End - Smooth

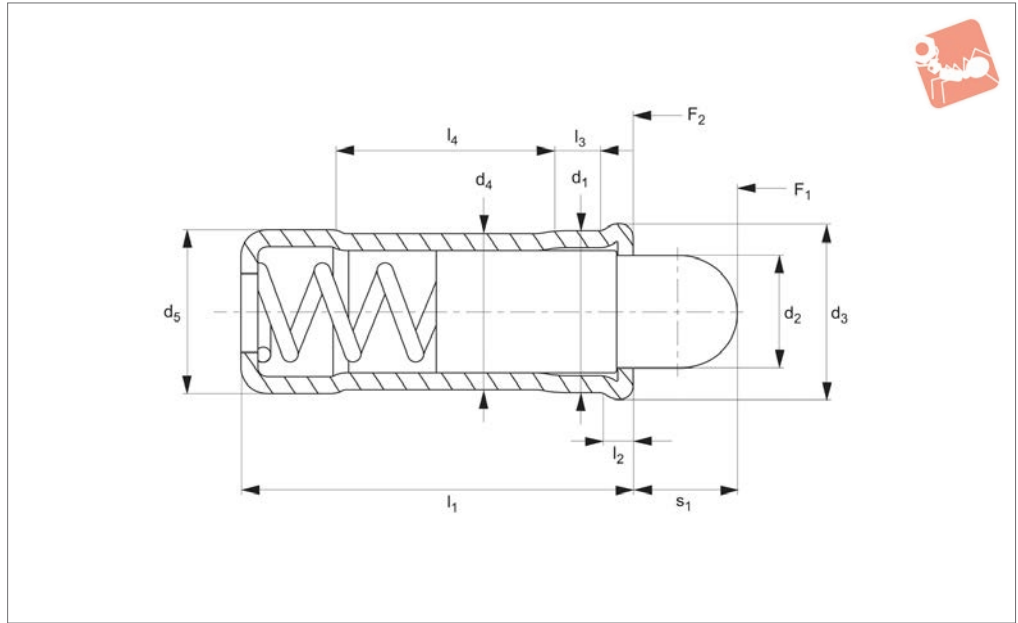
stainless steel - with collar



SPRING PLUNGER & DETENT PINS



32282



Material

Body: stainless steel 1.4303 (AISI 305).
 Pin: stainless steel 1.4305 (AISI 303), or thermoplastic POM white.
 Spring: stainless steel

lifting off.

Thermoplastic type temperature range - 30°C to +50°C.

Stainless type, temperature range max. 250°C.

Spring load * = statistical average value.

Tips

Special types available on request.

A tolerance of H7 is recommended for the locating hole of d_1 .

Technical Notes

Used for locating, applying pressure or

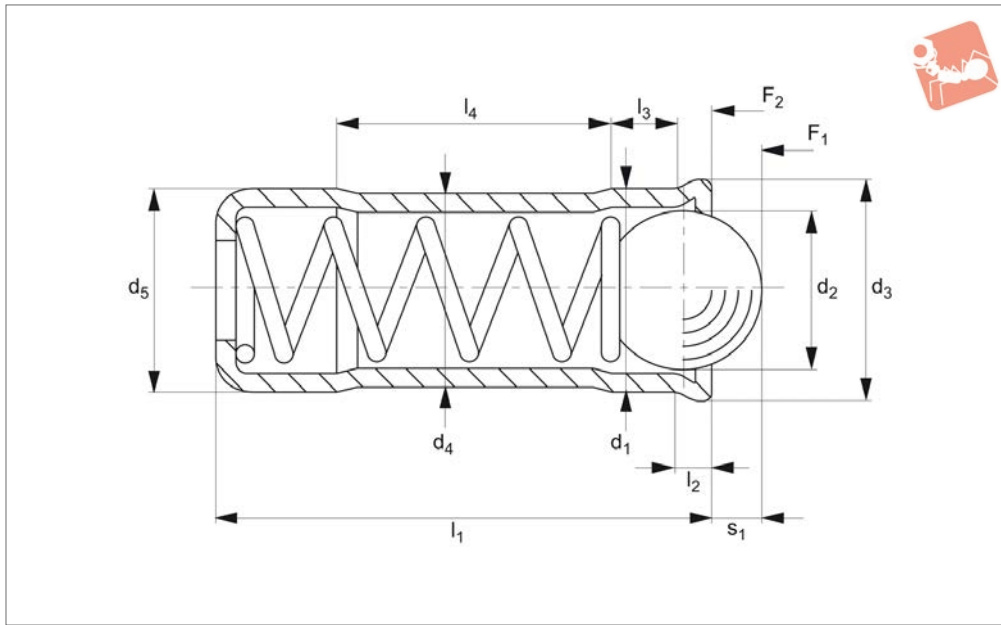
Order No.	Pin type	d_1 +0.1 +0.04	d_2	d_3	d_4	d_5 ±0.04	l_1	l_2 ≈	l_3 ≈	l_4 ≈	s_1	Spring load F_1 N ≈	Spring load F_2 N ≈	Temperature °C max.	Weight g
32282.W0104	Stainless	4	2,8	4,6	3,85	4	10,7	0,9	1,8	5,6	2,7	3,0	8,2	+250	0,7
32282.W0105	Stainless	5	3,8	5,6	4,85	5	12,0	0,9	2,1	6,0	4,0	3,3	9,0	+250	1,2
32282.W0106	Stainless	6	4,8	6,5	5,85	6	15,0	1,0	2,3	8,2	5,5	6,1	12,0	+250	2,2
32282.W0108	Stainless	8	6,2	8,5	7,55	8	18,0	1,1	2,9	9,5	6,5	9,0	20,1	+250	4,2
32282.W0110	Stainless	10	8,1	11,0	9,55	10	26,0	1,5	4,2	14,3	8,0	16,2	29,0	+250	9,0
32282.W0124	Plastic	4	2,8	4,6	3,85	4	10,7	0,9	1,8	5,6	2,7	3,0	8,2	-30/+50	0,5
32282.W0125	Plastic	5	3,8	5,6	4,85	5	12,0	0,9	2,1	6,0	4,0	3,3	9,0	-30/+50	0,8
32282.W0126	Plastic	6	4,8	6,5	5,85	6	15,0	1,0	2,3	8,2	5,5	6,1	12,0	-30/+50	1,3
32282.W0128	Plastic	8	6,2	8,5	7,55	8	18,0	1,1	2,9	9,5	6,5	9,0	20,1	-30/+50	2,5
32282.W0130	Plastic	10	8,1	11,0	9,55	10	26,0	1,5	4,2	15,0	8,0	16,2	29,0	-30/+50	5,0



Spring Plunger - Ball End - Smooth

stainless steel - with collar

Spring Plunger & Detent Pins



32284

SPRING PLUNGER & DETENT PINS

Material

Body: stainless steel 1.4303 (AISI 303).
Pin: stainless steel 1.4303 (AISI 303),
Spring: stainless steel.

lifting off.

Temperature range max. 250°C.
Spring load * = statistical average value.

locating hole of d_1 .

Technical Notes

Used for locating, applying pressure or

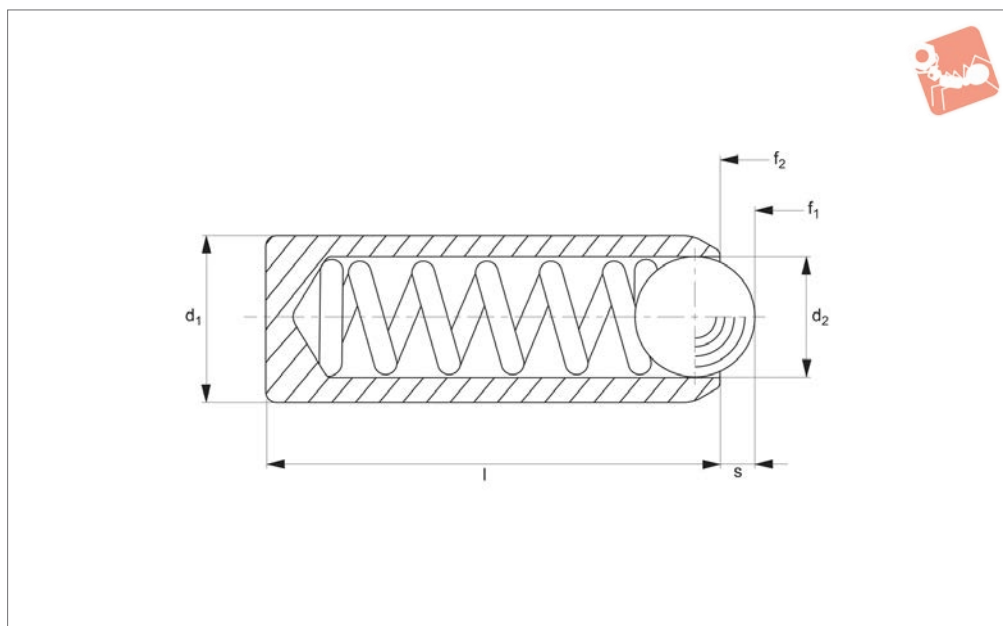
Tips

Special types available on request.
A tolerance of H7 is recommended for the

Order No.	d_1 +0.10 +0.04	d_2	d_3	d_4	d_5 ±0.04	l_1	l_2 ≈	l_3 ≈	l_4 ≈	Spring load F_1 N ≈	Spring load F_2 N ≈	Stroke s_1	Weight g
32284.W1104	4	3.0	4.6	3.85	4	10.7	0.9	1.8	5.6	12.9	19.0	0.9	0.6
32284.W1105	5	4.0	5.6	4.85	5	12.0	0.9	2.1	6.0	19.3	29.2	1.3	1.0
32284.W1106	6	5.0	6.5	5.85	6	15.0	1.0	2.3	8.2	28.0	47.5	1.7	2.0
32284.W1108	8	6.5	8.5	7.55	8	18.0	1.1	2.9	9.5	40.0	67.3	2.3	4.0
32284.W1110	10	8.5	11.0	9.55	10	26.0	1.5	4.2	14.3	66.0	105.0	3.1	8.0



32280



Material

Body: stainless steel 1.4305 (AISI 303).
 Ball: ball bearing steel 1.3505 (100Cr6) hardened.
 Spring: stainless steel

Technical Notes

Used for locating, applying pressure or

lifting off.

Temperature range up to +250°C. Spring load * = statistical average value.

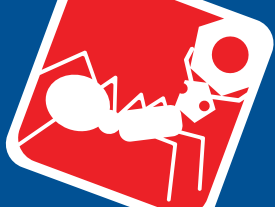
Tips

These are press fit spring plungers, use tolerance of F8 for easy fit, or H9 when tight fit required. These tolerances vary

with material type, hence a trial hole is recommended.

Special types available on request.

Order No.	Pressure	d ₁ ±0.04	d ₂	l ₁	s ₁	Spring load F ₁ N ≈	Spring load F ₂ N ≈	Weight g
32280.W0306	Standard pressure	2.0	1.0	3.5	0.3	0.8	1.5	0.1
32280.W0308	Standard pressure	2.5	1.5	5.0	0.40	2.8	4.7	0.2
32280.W0310	Standard pressure	3.0	2.0	7.0	0.7	4.5	7.5	0.4
32280.W0312	Standard pressure	3.5	2.5	9.0	0.8	6.0	14.5	0.6
32280.W0315	Standard pressure	4.0	3.0	11.0	0.9	8.0	14.0	0.8
32280.W0317	Standard pressure	4.5	3.2	12.0	1.0	9.5	16.5	1.1
32280.W0320	Standard pressure	5.0	3.5	13.0	1.0	11.0	18.0	1.5
32280.W0322	Standard pressure	5.5	4.0	14.0	1.2	15.5	25.0	1.9
32280.W0325	Standard pressure	6.0	4.5	15.0	1.5	18.0	31.0	2.3
32280.W0327	Standard pressure	8.0	6.0	18.0	2.0	24.0	45.0	5.0
32280.W0330	Standard pressure	10.0	8.0	20.0	2.5	26.0	49.0	8.3
32280.W0332	Standard pressure	12.0	10.0	22.0	3.5	41.0	86.0	12
32280.W0356	High pressure	2.0	1.0	3.5	0.3	1.3	2.2	0.1
32280.W0358	High pressure	2.5	1.5	5.0	2.5	4.7	7.1	0.2
32280.W0360	High pressure	3.0	2.0	7.0	0.7	7.8	11.6	0.3
32280.W0362	High pressure	3.5	2.5	9.0	0.8	12.0	18.0	0.5
32280.W0365	High pressure	4.0	3.0	11.0	0.9	15.0	22.0	0.7
32280.W0367	High pressure	4.5	3.2	12.0	1.0	18.7	25.1	1.0
32280.W0370	High pressure	5.0	3.5	13.0	1.0	19.3	26.6	1.4
32280.W0372	High pressure	5.5	4.0	14.0	1.2	25.1	39.2	1.8
32280.W0375	High pressure	6.0	4.5	15.0	1.5	36.0	60.5	2.3
32280.W0377	High pressure	8.0	6.0	18.0	2.0	57.0	103.5	5.2
32280.W0380	High pressure	10.0	8.0	20.0	2.5	61.0	110.0	8.5
32280.W0382	High pressure	12.0	10.0	22.0	3.5	68.0	143.0	13

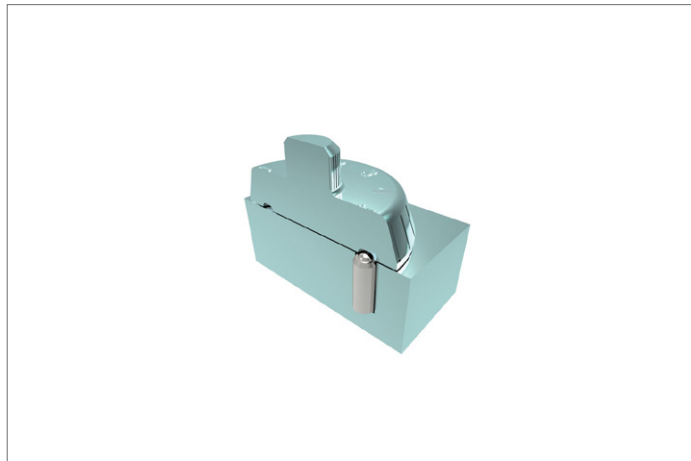


Spring Plungers

smooth model, without collar - stainless steel



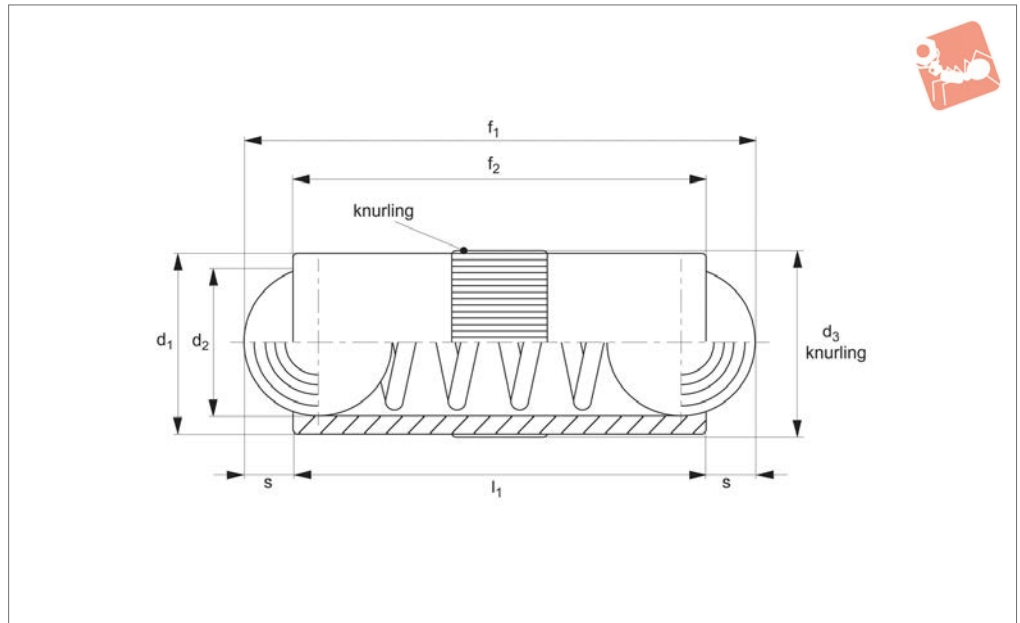
Spring Plunger & Detent Pins



SPRING PLUNGER & DETENT PINS



32350



Material

Body: brass.
Ball: stainless steel, hardened.
Spring: stainless steel.

Technical Notes

Double ended spring plungers are used for axial locations and securing of bolts, as

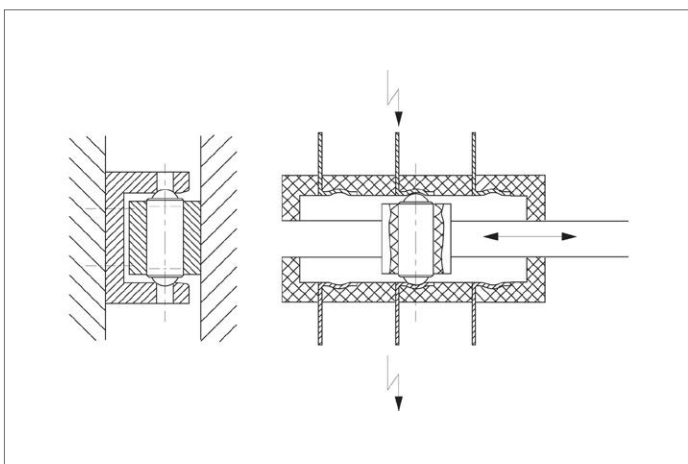
well as a means of electrical contact (see diagram). Spring loads * = statistical average value.
For calculation of indexing resistance please refer to spring plunger technical pages.

Temperature resistance up to 250°C

Tips

Suggested hole tolerance for these spring plungers is H8.
Special types available on request.

Order No.	d_1 tol. h10	d_2	d_3 +0.05	l_1	s	Spring load F_1 N ≈	Spring load F_2 N ≈	Weight g
32350.W0025	2.5	2.0	2.52	5.3	0.65	1.3	2.5	0.22
32350.W0030	3.0	2.5	3.02	7.3	0.80	2.0	4.5	0.34
32350.W0040	4.0	3.0	4.03	9.0	0.90	2.5	7.5	0.65
32350.W0050	5.0	4.0	5.03	10.8	1.20	3.5	8.0	1.27
32350.W0060	6.0	5.0	6.03	12.6	1.60	3.5	10.5	1.99
32350.W0070	7.0	6.0	7.03	14.0	2.00	4.0	12.0	3.00
32350.W0080	8.0	6.5	8.03	18.0	2.10	6.0	15.0	5.10

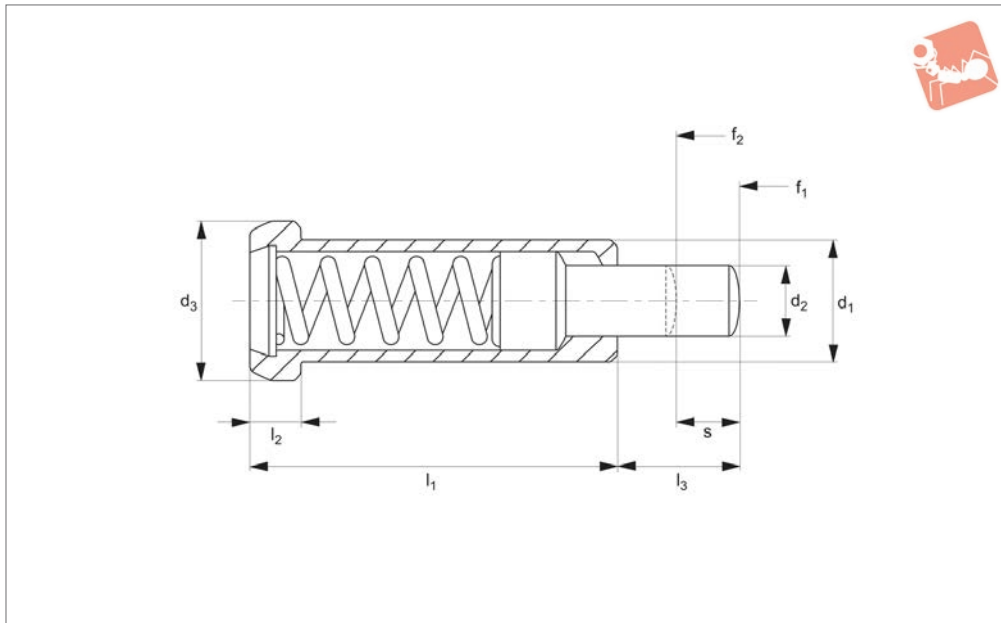




Spring Plungers

smooth model, long

Spring Plunger & Detent Pins



32400

SPRING PLUNGER & DETENT PINS

Material

Body: free cutting steel, blackened.
 Pin: case hardened steel, blackened.
 Spring: stainless steel.

Technical Notes

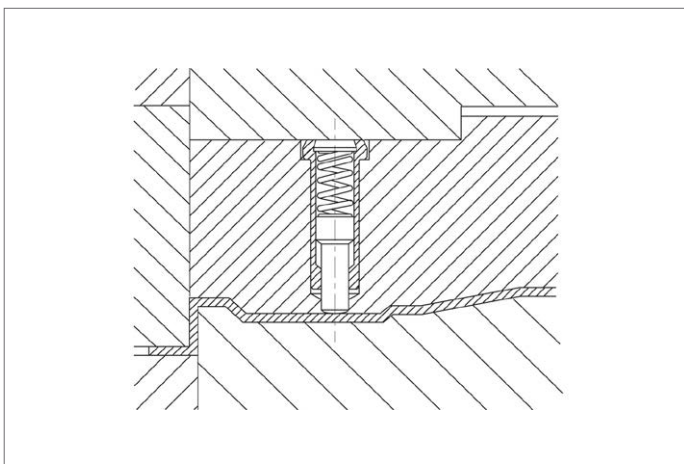
Used as pulling off pins and spring stops in

tool making. No part of the spring plunger can come out of the retaining bore. Recommended installation hole tolerance H7. Temperature range up to 250°C. Spring load * = statistical average values.

Tips

Do not push pin beyond spring range ,s', as this will damage spring and result in reduction of spring load. Special types available on request.

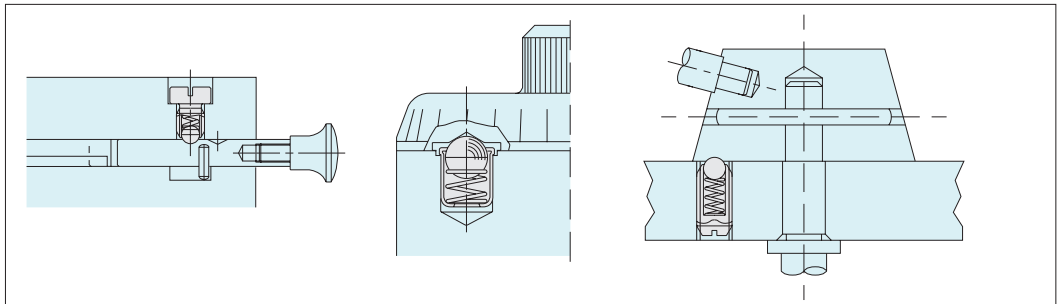
Order No.	d ₁ 0 -0.05	d ₂	d ₃	l ₁	l ₂	l ₃	Spring load F ₁ N ≈	Spring load F ₂ N ≈	s spring range	Weight g
32400.W0010	10	5.9	13	30	4.0	10	42	110	5.5	16.0
32400.W0006	6	2.7	8	20	3.2	6	10	22	3.5	4.2
32400.W0008	8	3.9	10	24	3.2	8	30	88	4.5	7.7
32400.W0012	12	7.9	16	36	5.0	12	50	130	6.5	27.0





Wixroyd Spring Plungers - A Range of Endless Possibilities

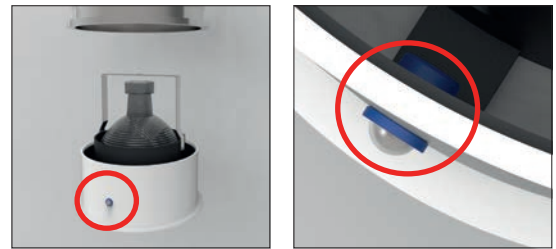
Made of high quality steel and stainless steel, Wixroyd's Spring Plunger range is proven to be reliable for millions of repetitions in securing, positioning, positive locking, indexing and quick release. Their application is limited only by the imagination!



SPRING PLUNGER & DETENT PINS

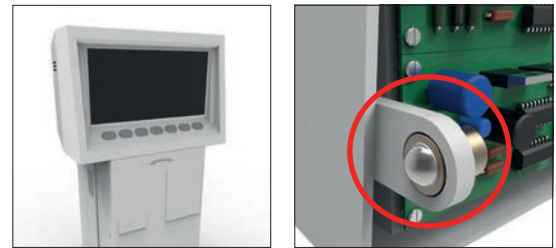
Commercial Lighting

Three push-fit spring plungers no. 32000 have been added to the design of this recessed commercial light fitting. The push-fit design of the plunger makes for easy assembly during production. Their use greatly simplifies the mounting and servicing of the units, reducing handling costs and saving valuable operator time.



Medical Applications

Used in conjunction with a simple hinge, Wixroyd spring plunger 32300 provides an easy and secure means to positively position and secure the back panel of a blood gas analysis machine. With both brass and stainless steel varieties, our spring plungers have a wide range of application in the medical, pharmaceutical, food and drink processing industries.



Applications

Uses

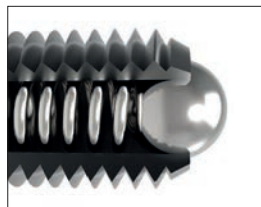
- For location, applying pressure and "lifting off".
- Securing and positioning.
- Positive locking and indexing.
- Quick release.

Industry Sectors

- Machine and fixture design.
- Measuring equipment.
- Electronic components.
- Lighting equipment.
- Medical, optics and orthopaedics.

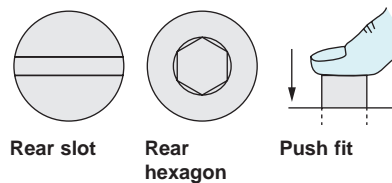
Wixroyd Spring Plungers - Uses and Mounting Options

Ball Type

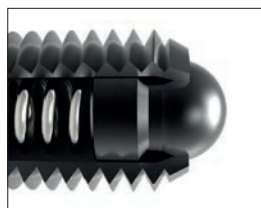


- 31400
- 31420
- 31500
- 32000
- 32100
- 32102
- 32280
- 32300
- 32302
- 32350

Mounting Options

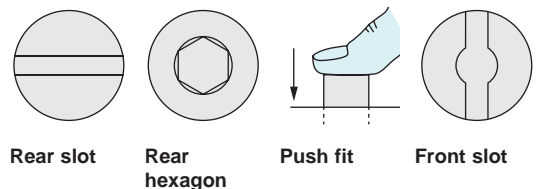


Pin Head Type



- 31000
- 31600
- 32150
- 32200
- 32220
- 32282
- 32400
- 32420

Mounting Options





Quality products every time

- Every spring plunger that is produced on the Wixroyd assembly line is individually tested. That is how we guarantee the quality of our products.
- A Wixroyd spring plunger is tested against four key criteria during manufacture.

100% Testing

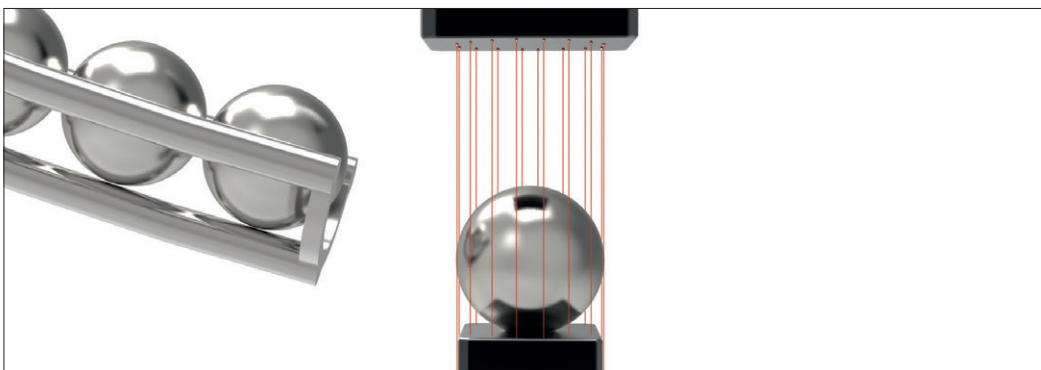
Accuracy of 'S' Stroke/ Spring Range



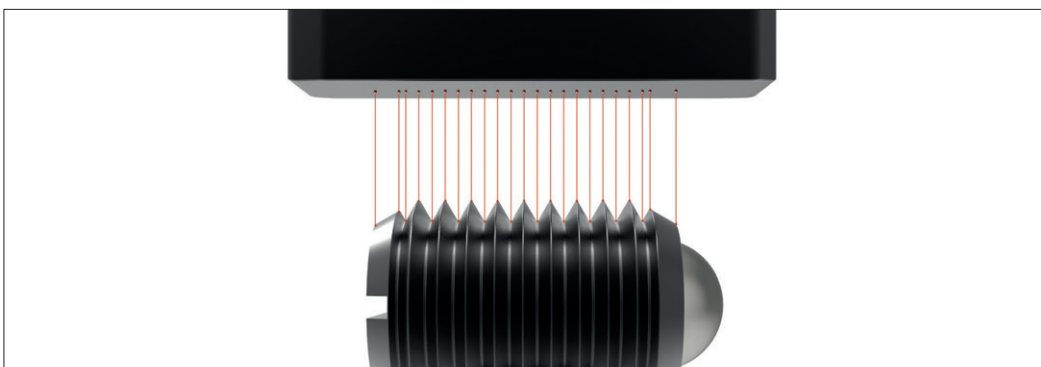
Accuracy of f_1 and f_2 Spring Forces



Accuracy of Ball Diameter



Accuracy of Thread





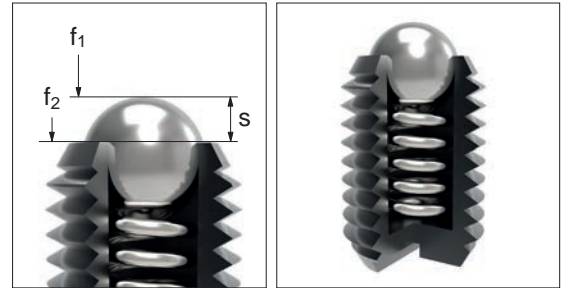
Thread Details

All Wixroyd metric spring plungers have a coarse thread.

Thread (D) Pitch	ISO metric coarse threads (mm)															
	3	3,5	4	4,5	5	6	7	8	10	12	14	16	18	20	22	24
	0,5	0,6	0,7	0,75	0,8	1,0	1,0	1,25	1,5	1,75	2,00	2,0	2,5	2,5	2,5	3,0

Spring Loads

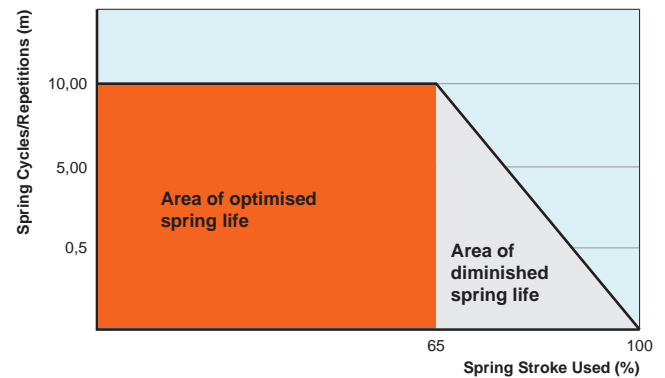
- s Stroke, or movement of plunger's ball or pin.
- f₁ The force required in Newtons (N) to overcome the static strength of the spring and achieve initial movement of the plunger's ball or pin.
- f₂ The force required in Newtons (N) to fully compress the spring until the ball or pin is fully depressed against the plunger's body.



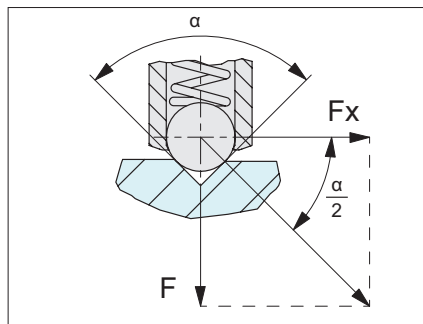
Typical Spring Repetitions

Although dependent upon a number of application specific factors, we are able to give the following guide relating to the maximum number of spring repetitions or cycles of our spring plungers.

- 100% or full stroke "s" used: approx. 300,000 cycles.
- 65% of stroke "s" used: approx 10,000,000 cycles.



Calculating Indexing Resistance



Important Note: This is only an approximation formula. For more accurate calculation the roughness of the counterpart surface as well as any variation in the plungers spring force (due to age or high repetitions) should be considered.

We are able to provide the following formula as an approximation of the pull or push force (N) required to 'release' a ball plunger from its indexing counterpart.

$$F_x = \frac{F}{\tan \frac{\alpha}{2}}$$

F_x = pull or push force (N)
 F = plungers spring force (see relevant product table)
 α = angle of the indexing counterpart face

For example:

For Spring plunger 31500.W0010;
 $F = 24\text{N}$ (see product table)

If $\alpha = 90^\circ$

$$F_x = \frac{24}{\tan \frac{90}{2}} = 24\text{N}$$

If $\alpha = 60^\circ$

$$F_x = \frac{24}{\tan \frac{60}{2}} = 41,5\text{N}$$

If $\alpha = 120^\circ$

$$F_x = \frac{24}{\tan \frac{120}{2}} = 13,8\text{N}$$

Electrical Conductivity

We are often asked the electrical conductivity of our spring plungers, unfortunately we are unable to provide any reliable information related to this as there are many factors in an application. We recommend you study the specific material properties of the spring plunger's component parts to make your own calculations, alternatively if in doubt make a test application.

Specials to Your Own Design

Manufacturing exactly to your specific requirements is also our strength. If you need a variation in spring pressure, plunger body or pin design we can assist with a special design item for volumes as low as 1,000 units.

For further information, or to request a quotation, please call our sales office on 0333 207 4497.