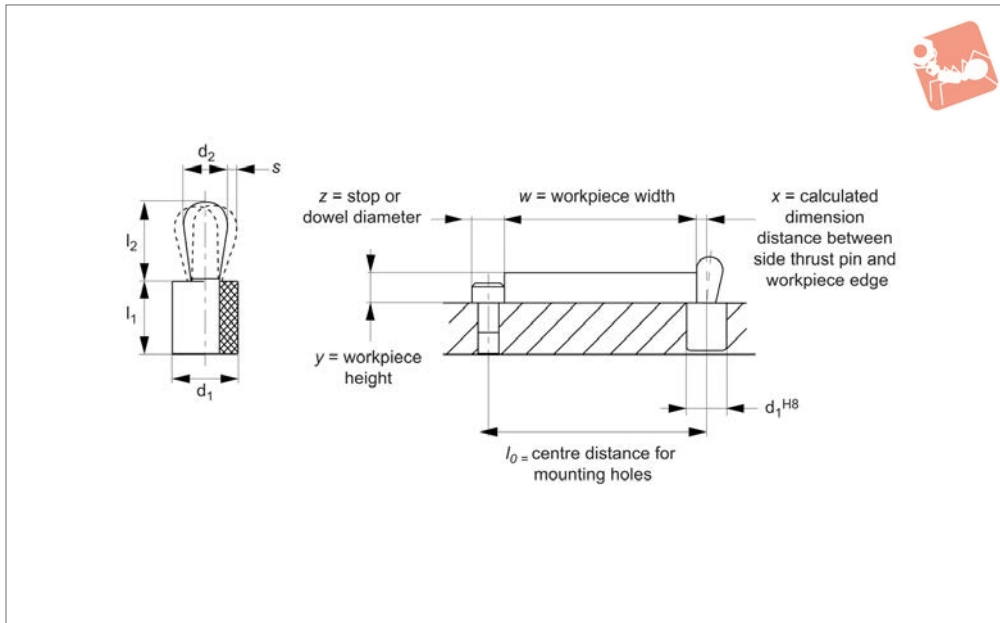




Side-Thrust Pins with plastic spring

Spring Plunger & Detent Pins



32870

SPRING PLUNGER & DETENT PINS

Material

Spring Body: plastic.

Pin: steel, case hardened and galvanized, stainless steel or thermoplastic (POM) white.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).

Installation calculations;

A) Calculating centre distance for mounting holes (l_0);

$$l_0 = (z/2) + w + x$$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s$

When workpiece height (y) is less than $l_2 - (d_2/2)$ then (x) is calculated as; $x = (d_2/2) - s - \{ [l_2 - (d_2/2) - y] * 0.123 \}$

l_0 = centre distance for mounting holes

y = workpiece height

w = workpiece width

x = distance between side-thrust pin and workpiece edge

s = stroke

z = stop or dowel stop diameter

Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.

Spring colour gives visual indication of spring pressure (N).

Light spring load = blue plastic.

Standard spring load = red plastic.

Heavy spring load = green plastic.

Order No.	Pin material	Spring load	d_1	d_2	l_{-1}	Weight g
32870.W0001	Steel Pin	Light	6	3	7	1
32870.W0002	Steel Pin	Standard	6	3	7	1
32870.W0003	Steel Pin	Light	8	4	9	1
32870.W0004	Steel Pin	Standard	8	4	9	1
32870.W0005	Steel Pin	Light	10	5	9	2
32870.W0006	Steel Pin	Standard	10	5	9	2
32870.W0007	Steel Pin	Heavy	10	5	9	2
32870.W0008	Steel Pin	Light	10	6	9	3
32870.W0009	Steel Pin	Standard	10	6	9	3
32870.W0010	Steel Pin	Heavy	10	6	9	3
32870.W0012	Steel Pin	Standard	12	8	13	7
32870.W0013	Steel Pin	Heavy	12	8	13	7
32870.W0014	Steel Pin	Standard	16	10	16	15
32870.W0015	Steel Pin	Heavy	16	10	16	15
32870.W0401	Plastic Pin	Light	6	3	7	1
32870.W0402	Plastic Pin	Standard	6	3	7	1
32870.W0403	Plastic Pin	Light	8	4	9	1
32870.W0404	Plastic Pin	Standard	8	4	9	1
32870.W0405	Plastic Pin	Light	10	5	9	2
32870.W0406	Plastic Pin	Standard	10	5	9	2
32870.W0407	Plastic Pin	Heavy	10	5	9	2
32870.W0408	Plastic Pin	Light	10	6	9	3
32870.W0409	Plastic Pin	Standard	10	6	9	3



Order No.	Pin material	Spring load	d ₁	d ₂	l ₁ -i	Weight g
32870.W0410	Plastic Pin	Heavy	10	6	9	3
32870.W0412	Plastic Pin	Standard	12	8	13	7
32870.W0413	Plastic Pin	Heavy	12	8	13	7
32870.W0414	Plastic Pin	Standard	16	10	16	15
32870.W0415	Plastic Pin	Heavy	16	10	16	15
32870.W0601	Stainless Pin	Light	6	3	7	1
32870.W0602	Stainless Pin	Standard	6	3	7	1
32870.W0603	Stainless Pin	Light	8	4	9	1
32870.W0604	Stainless Pin	Standard	8	4	9	1
32870.W0605	Stainless Pin	Light	10	5	9	2
32870.W0606	Stainless Pin	Standard	10	5	9	2
32870.W0607	Stainless Pin	Heavy	10	5	9	2
32870.W0608	Stainless Pin	Light	10	6	9	3
32870.W0609	Stainless Pin	Standard	10	6	9	3
32870.W0610	Stainless Pin	Heavy	10	6	9	3
32870.W0612	Stainless Pin	Standard	12	8	13	7
32870.W0613	Stainless Pin	Heavy	12	8	13	7
32870.W0614	Stainless Pin	Standard	16	10	16	15
32870.W0615	Stainless Pin	Heavy	16	10	16	15
32870.W0840	Fitting Tool	-	-	-	-	23
32870.W0841	Fitting Tool	-	-	-	-	47
32870.W0842	Fitting Tool	-	-	-	-	46
32870.W0843	Fitting Tool	-	-	-	-	98
32870.W0844	Fitting Tool	-	-	-	-	145

Order No.	l ₂ ±0.5	Location hole d ₁ tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32870
32870.W0001	3.7	5.9	Blue	10	0.4	100	.W0840
32870.W0002	3.7	5.9	Red	20	0.4	100	.W0840
32870.W0003	5.2	7.9	Blue	15	0.6	100	.W0841
32870.W0004	5.2	7.9	Red	30	0.6	100	.W0841
32870.W0005	7.3	9.9	Blue	30	0.8	100	.W0842
32870.W0006	7.3	9.9	Red	60	0.8	100	.W0842
32870.W0007	7.3	9.9	Green	90	0.8	100	.W0842
32870.W0008	10.3	9.9	Blue	20	1.0	100	.W0842
32870.W0009	10.3	9.9	Red	30	1.0	100	.W0842
32870.W0010	10.3	9.9	Green	60	1.0	100	.W0842
32870.W0012	13.3	11.6	Red	50	1.2	100	.W0843
32870.W0013	13.3	11.9	Green	100	1.2	100	.W0843
32870.W0014	16.9	15.9	Red	60	1.6	100	.W0844
32870.W0015	16.9	15.9	Green	160	1.6	100	.W0844
32870.W0401	3.7	5.9	Blue	10	0.4	100	.W0840
32870.W0402	3.7	5.9	Red	20	0.4	100	.W0840
32870.W0403	5.2	7.9	Blue	15	0.6	100	.W0841
32870.W0404	5.2	7.9	Red	30	0.6	100	.W0841
32870.W0405	7.3	9.9	Blue	30	0.8	100	.W0842
32870.W0406	7.3	9.9	Red	60	0.8	100	.W0842
32870.W0407	7.3	9.9	Green	90	0.8	100	.W0842
32870.W0408	10.3	9.9	Blue	20	1.0	100	.W0842
32870.W0409	10.3	9.9	Red	30	1.0	100	.W0842
32870.W0410	10.3	9.9	Green	60	1.0	100	.W0842
32870.W0412	13.3	11.6	Red	50	1.2	100	.W0843
32870.W0413	13.3	11.9	Green	100	1.2	100	.W0843
32870.W0414	16.9	15.9	Red	60	1.6	100	.W0844
32870.W0415	16.9	15.9	Green	160	1.6	100	.W0844
32870.W0601	3.7	5.9	Blue	10	0.4	100	.W0840
32870.W0602	3.7	5.9	Red	20	0.4	100	.W0840
32870.W0603	5.2	7.9	Blue	15	0.6	100	.W0841
32870.W0604	5.2	7.9	Red	30	0.6	100	.W0841
32870.W0605	7.3	9.9	Blue	30	0.8	100	.W0842
32870.W0606	7.3	9.9	Red	60	0.8	100	.W0842
32870.W0607	7.3	9.9	Green	90	0.8	100	.W0842
32870.W0608	10.3	9.9	Blue	20	1.0	100	.W0842
32870.W0609	10.3	9.9	Red	30	1.0	100	.W0842
32870.W0610	10.3	9.9	Green	60	1.0	100	.W0842
32870.W0612	13.3	11.6	Red	50	1.2	100	.W0843
32870.W0613	13.3	11.9	Green	100	1.2	100	.W0843

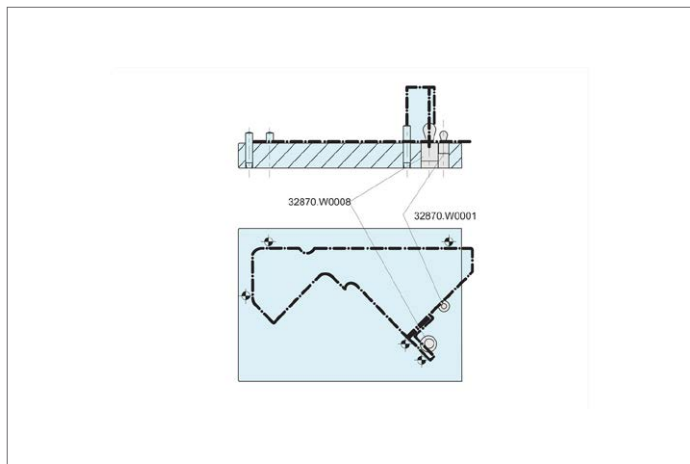


Side-Thrust Pins with plastic spring



Spring Plunger & Detent Pins

Order No.	l_2 ± 0.5	Location hole d_1 tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance $^{\circ}\text{C}$ max.	Fitting tool 32870
32870.W0614	16.9	15.9	Red	60	1.6	100	.W0844
32870.W0615	16.9	15.9	Green	160	1.6	100	.W0844
32870.W0840	-	-	-	-	-	-	-
32870.W0841	-	-	-	-	-	-	-
32870.W0842	-	-	-	-	-	-	-
32870.W0843	-	-	-	-	-	-	-
32870.W0844	-	-	-	-	-	-	-





A Wide Selection of Solutions

Applications

- Locating and positioning.
- Indexing.
- Securing.
- Positive locking.
- Rapid adjustment of all kinds of tables, platforms and fixtures.
- Machine and fixture design.
- OEM products.
- Sports equipment.
- Medical aides (wheelchairs etc.).
- Aerospace.
- Machine cabinets.

Materials



Steel with plastic grip



Stainless with plastic grip



Stainless body and grip

Locking or Non Locking



Locking (park)



Non locking (spring back)



Push pull

Handling and Actuation Methods



Standard grip



Lever grip



T-handle



Pull ring



Threaded for bespoke handle

Mounting Options



Fine threaded (standard)



Coarse thread



Flange mount



Thin wall mount



Weldable

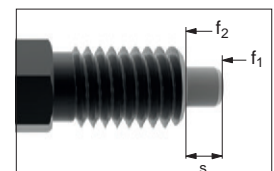
Additional Technical Notes

- Unless otherwise stated, grips on index plungers are not removable.
- Many of the pins on index plungers are toleranced to either the pin or the hole. Please refer to the specific product table.
- Index plungers are not recommended for shear load applications.

	Pin Tol.	Hole Tol.
①	h_9	+0,03 +0,08
②	-0,02 -0,04	H_7

Spring Loads

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





Wixroyd Side-Thrust Pins

for clamping, positioning and holding components

32810 - 32870

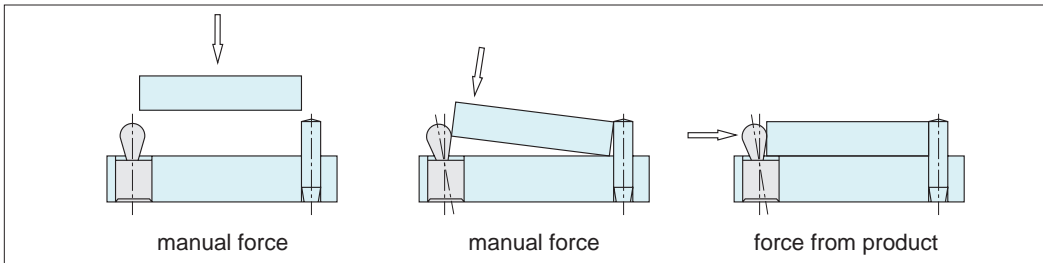
Positioning Elements

Wixroyd side-thrust pins are an economical way to clamp, hold and position components – from low height PCB's to relatively large castings.



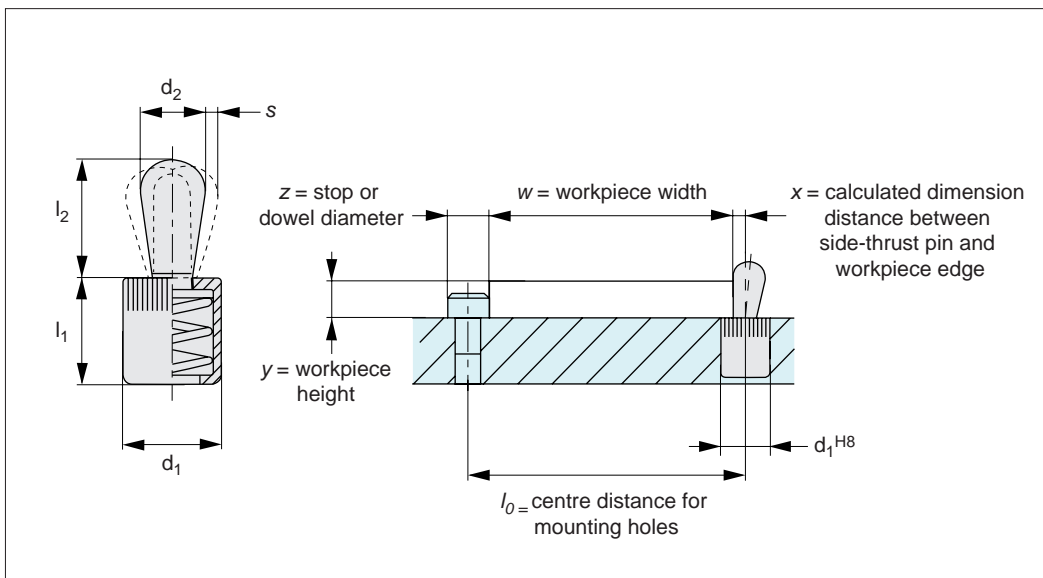
Easy to Use

Simple to mount, easy to use and space saving.



- Easy handling.
- Minimum mounting space.
- Simple and rapid changeover.
- Ideal for flat pieces.
- Reduced clamping times.
- Constant clamping pressure.

Installation Calculations of Side Thrust Pins



A) Calculating centre distance for mounting holes (l_0);

$$l_0 = (z/2) + w + x$$

B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2 - (d_2/2)$ then (x) is calculated as;

$$x = (d_2/2) - s$$

When workpiece height (y) is less than $l_2 - (d_2/2)$ then (x) is calculated as;

$$x = (d_2/2) - s - \{ [l_2 - (d_2/2) - y] * 0.123 \}$$

l_0 = centre distance for mounting holes

y = workpiece height

w = workpiece width

x = distance between side-thrust pin and workpiece edge

s = stroke

z = stop or dowel stop diameter



The best selection of side thrust pins is made with consideration to the following four factors:

- a) Pin size Ø
- b) Pin material
- c) Sealed or non-sealed pin
- d) Required pin force

Pin Size Ø

Pin size Ø	Application
3 mm	Circuit boards, thin metals
4 mm	Electronics, measuring equipment, small precise parts
5 mm	Drilling jigs, sheet metal, measuring devices, welding fixtures
6 mm	Fixtures for light machine parts and castings
8 mm	Fixtures for medium machine parts and castings
10 mm	Fixtures for heavy machine parts and castings

Pin Material

Plastic pins for sensitive parts. Steel pins for other parts. Stainless steel pins in corrosive environments.

Sealed or Non-sealed Pin

With/without seal	Application	Operation
Use side-thrust pins with seal e.g. 32820, 32850 etc	Milling, drilling, reaming, broaching, honing, engraving	Machining
	Washing, polishing, painting, sand blasting	After machining
Use side-thrust pins without seal e.g. 32810, 32840 etc	Gluing, welding, hard soldering	Prior to machining
	Gripping, inserting, fitting	Final mounting
	Measuring, controlling, loading	Quality assurance
	Soft soldering, checking	Processing circuit boards

Pinforce - Guide Only

Positioning applications 30 - 60 N. Clamping applications 90 - 150 N.

Compression Spring Type

Available in an aluminium body, and in various spring pressures from 10 to 300N. Each pin size is usually available in 3 spring pressures.

Pressure	Low	Medium	High
Spring Colour	Stainless	Black	Blue

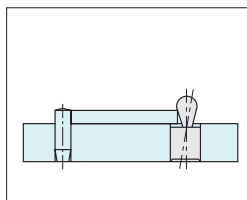
Elastomer Spring Type

Available in elastomer body and in various spring pressures from 10 to 160N.

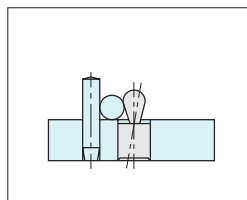
Typical Applications

Side-thrust pins find applications in the following industries and more:

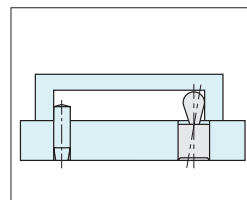
- Automotive.
- Aviation.
- Electronics.
- Computing.
- Plastics.
- Medical.
- Precision engineering.
- Tool manufacturing.



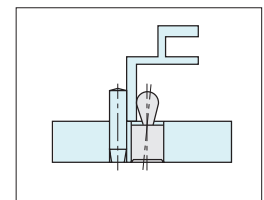
Positioning and clamping even extremely flat parts (e.g. metal sheets and printed circuit boards).



Positioning and clamping round metal using the deep drawing effect.



Space saving positioning and clamping from the inside to the outside.



Positioning and clamping different profiles when welding. Material expansions compensated for by flexibility of the side-thrust pin.