



The choice between different types of lead screws and lead screw nuts available is generally made after taking into account the following factors.

### Choice of the screw

#### Working environment

For work environments where there are no particular corrosive or oxidising agents our steel (L1320 and L1321) lead screws can be used.

Where these conditions are not met, we recommend using our stainless steel screws (L1322 and L1323) which are particularly suitable in the following cases:

- With a relative humidity of 70-80% and above.
- Immersed in water (including sea water).
- In the presence of particular corrosive agents such as chlorides. In case of highly corrosive agents please contact our Technical Department.
- In the food industry or pharmaceutical industry, where they are used with stainless steel or bronze nuts.
- Where the lead screws cannot be reached for lubrication. In particular, for lubricating "maintenance free" fittings they are coupled with plastic nuts.
- Where working temperatures are relatively high (above 200°C) - because stainless steel has a structure that is more suited to higher temperatures.

#### Backdrive

Irreversibility defines how much the nut can "backdrive" down the lead screw. If a nut cannot backdrive down the screw then it is irreversible. This is especially important if the lead screw and nut are being used in a vertical application i.e. in this situation no backdrive is normally acceptable.

Lead screws with a lead angle of  $<2^\circ$  are completely irreversible i.e., they cannot backdrive.

Lead screws with a lead angle  $>5^\circ$  but  $<6^\circ$  still have a good degree of irreversibility and may in some instances exhibit some backdrive.

Lead screws with a lead angle  $>6^\circ$  have zero irreversibility, therefore the nut may backdrive down the lead screw with little or no load applied.

This is important to know in vertical applications.

### Choice of the nut

#### Working environment

Our bronze and stainless steel 303 lead screw nuts, are resistant to standard oxidizing agents that occur in various applications.

Where corrosive agents are present, please contact our Technical Department for advice.

**In applications where the presence of added lubricant (grease or oil) is not allowed we recommend the use of self-lubricating plastic nuts.**

**The use of plastics can however be limited by the specific working conditions, therefore please consult our Technical Department should you wish. This is because plastics have excellent self-lubrication features, but at the same time have restrictions on the working temperature or moisture absorption problems, (as well as some mechanical properties that may not be suitable for the intended use).**



### Single start and double start

#### Pitch

The axial distance between threads. Pitch is equal to the lead in a single start screw.

#### Lead

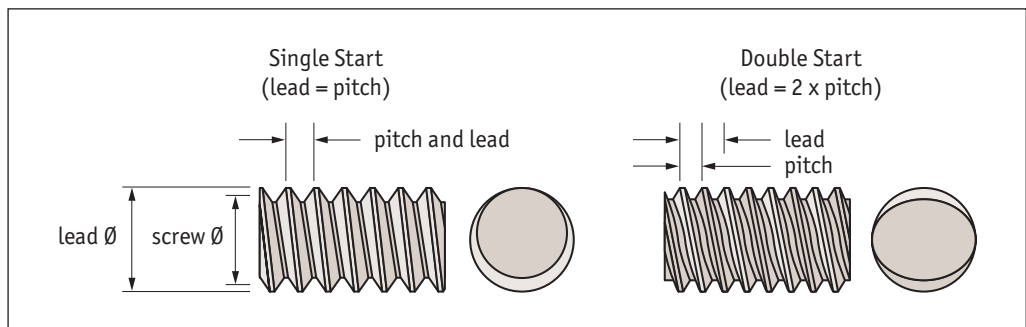
The axial distance the nut advances in one revolution of the screw. The lead is equal to the pitch times the number of starts.

$$\text{Lead} = \text{Pitch} \times \text{No. of starts}$$

For example: A 10mm diameter lead screw has a pitch of 2mm. On a single start lead screw the lead is also 2mm. On a twin start lead screw the lead is 4mm.

#### Screw starts

The number of independent threads on the screw shaft, example one or two.



### Straightness

Automation Components lead screws are produced with controlled straightness.

Screw straightness is checked by measuring the variation of the deflection  $f$ , when the screw is supported at the ends on two fixed points and slightly rotated.

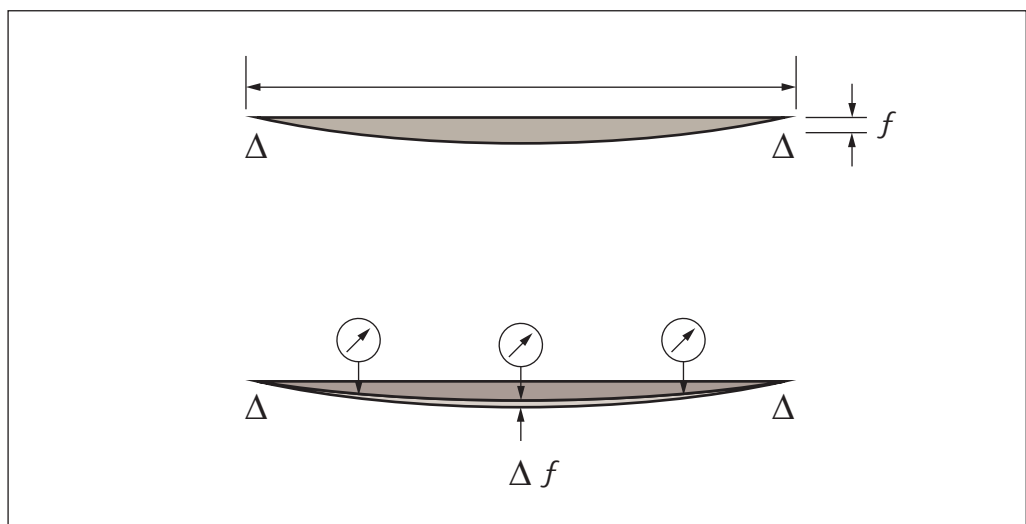
For example, the screw L1320.R30-06 has a straightness of 0.2 mm over 300 mm.

This means that a screw 30x6 300 mm long resting on two fixed points at the ends and rotated slightly displays a camber variation  $\Delta f$  less than 0.2 mm at all points on the screw.

#### Straightness

$\Delta f$  = lead screw weight camber.

Good screw straightness gives operation with load always centred on the axis, hence uniform distribution of surface contact pressure between screw and nut. This allows smooth running and a regular rotation.

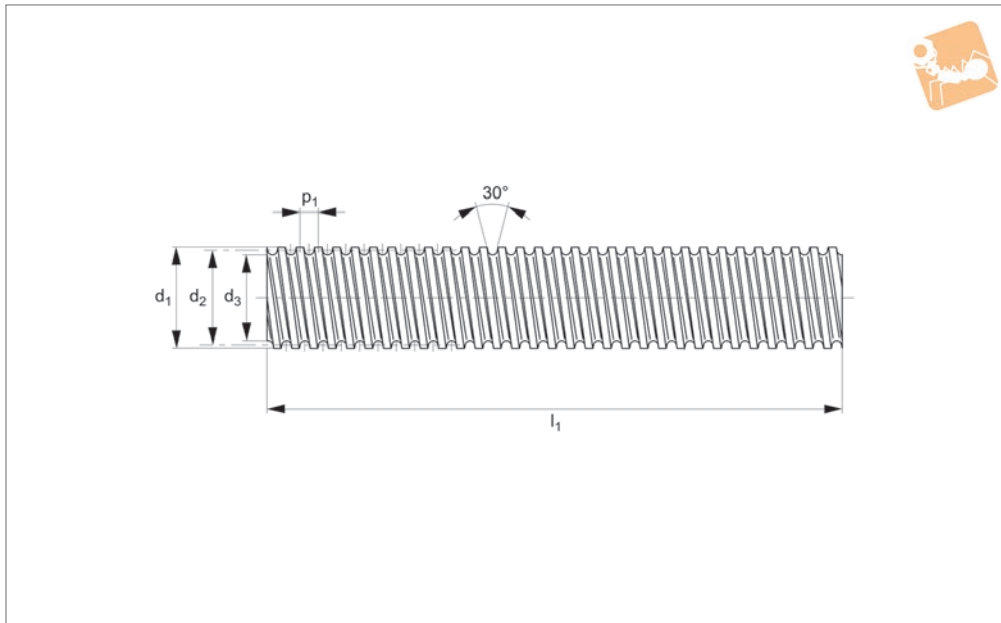




# Steel Lead Screws

right hand thread

# Lead Screws & Nuts



## L1320

LEAD SCREWS & NUTS

### Material

Rolled trapezoidal thread, steel EN 10083-2 (C35, DIN 1.0501) or (C45, DIN 1.0503). Manufactured to ISO 2901/2903 (DIN 103). Surface hardness approx. 250HB.

Select a suitable lead screw nut (part nos. L1330 to L1343) to suit the lead screw - the most popular nuts are the flanged, bronze nuts part no. L1331. Single start lead screws are less expensive than twin start lead screws.

see part no. L1321. For stainless steel right hand lead screws see part no. L1322. Cutting to required length and machining of ends - on request. Lead screw lengths of up to 6 metres can be provided for a diameter >30mm.

### Technical Notes

'Lead' refers to the distance that a nut will travel for a complete revolution of the screw.

### Tips

These are the standard right hand thread lead screws - for left hand thread versions

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7e	Lead	p <sub>1</sub>	d <sub>2</sub> tol. 7e min.	d <sub>2</sub> tol. 7e max.	d <sub>3</sub> tol. 7h min.	d <sub>3</sub> tol. 7h max.	l <sub>1</sub>	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm	Weight kg
L1320.R10-02-1.0	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	1000	4°07'	0,2	0,5	0,48
L1320.R10-02-1.5	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	1500	4°07'	0,2	0,5	0,72
L1320.R10-02-2.0	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	2000	4°07'	0,2	0,5	0,96
L1320.R10-02-3.0	TR10x2	1	10	2	2	8,739	8,929	7,685	7,500	3000	4°07'	0,2	0,5	1,44
L1320.R10-04-1.0	TR10x4	2	10	4	2	8,716	8,929	7,685	7,500	1000	8°12'	0,3	0,5	0,48
L1320.R10-04-1.5	TR10x4	2	10	4	2	8,716	8,929	9,685	7,500	1500	8°12'	0,3	0,5	0,72
L1320.R10-04-2.0	TR10x4	2	10	4	2	8,716	8,929	9,685	7,500	2000	8°12'	0,3	0,5	0,96
L1320.R10-04-3.0	TR10x4	2	10	4	2	8,716	8,929	6,891	7,500	3000	8°12'	0,3	0,5	1,44
L1320.R12-03-1.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	1000	5°17'	0,2	0,5	0,65
L1320.R12-03-1.5	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	1500	5°17'	0,2	0,5	0,97
L1320.R12-03-2.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	2000	5°17'	0,2	0,5	1,30
L1320.R12-03-3.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	3000	5°17'	0,2	0,5	1,95
L1320.R12-06-1.0	TR12x6	2	12	6	3	10,164	10,415	7,685	8,500	1000	10°30'	0,3	0,5	0,65
L1320.R12-06-1.5	TR12x6	2	12	6	3	10,164	10,415	7,685	8,500	1500	10°30'	0,3	0,5	0,97
L1320.R12-06-2.0	TR12x6	2	12	6	3	10,164	10,415	7,685	8,500	2000	10°30'	0,3	0,5	1,30
L1320.R12-06-3.0	TR12x6	2	12	6	3	10,164	10,415	7,685	8,500	3000	10°30'	0,3	0,5	1,95
L1320.R14-03-1.0	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	1000	4°26'	0,2	0,5	0,93
L1320.R14-03-1.5	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	1500	4°26'	0,2	0,5	1,39
L1320.R14-03-2.0	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	2000	4°26'	0,2	0,5	1,86
L1320.R14-03-3.0	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	3000	4°26'	0,2	0,5	2,79
L1320.R14-06-1.0	TR14x6	2	14	6	3	12,164	12,415	9,685	10,500	1000	8°49'	0,3	0,5	0,93
L1320.R14-06-1.5	TR14x6	2	14	6	3	12,164	12,415	9,685	10,500	1500	8°49'	0,3	0,5	1,39
L1320.R14-06-2.0	TR14x6	2	14	6	3	12,164	12,415	9,685	10,500	2000	8°49'	0,3	0,5	1,86
L1320.R14-06-3.0	TR14x6	2	14	6	3	12,164	12,415	9,685	10,500	3000	8°49'	0,3	0,5	2,79
L1320.R16-04-1.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	1000	5°16'	0,05	0,5	1,17



Order No.	Size	No. of starts	d <sub>1</sub> tol. 7e	Lead	p <sub>1</sub>	d <sub>2</sub> tol. 7e min.	d <sub>2</sub> tol. 7e max.	d <sub>3</sub> tol. 7h min.	d <sub>3</sub> tol. 7h max.	l <sub>1</sub>	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm	Weight kg
L1320.R16-04-1.5	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	1500	5°16'	0,05	0,5	1,75
L1320.R16-04-2.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	2000	5°16'	0,05	0,5	2,34
L1320.R16-04-3.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	3000	5°16'	0,05	0,5	3,51
L1320.R16-08-1.0	TR16x8	2	16	8	4	13,608	13,905	10,474	11,500	1000	10°29'	0,1	0,5	1,17
L1320.R16-08-1.5	TR16x8	2	16	8	4	13,608	13,905	10,474	11,500	1500	10°29'	0,1	0,5	1,75
L1320.R16-08-2.0	TR16x8	2	16	8	4	13,608	13,905	10,474	11,500	2000	10°29'	0,1	0,5	2,34
L1320.R16-08-3.0	TR16x8	2	16	8	4	13,608	13,905	10,474	11,500	3000	10°29'	0,1	0,5	3,51
L1320.R18-04-1.0	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	1000	4°36'	0,05	0,5	1,52
L1320.R18-04-1.5	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	1500	4°36'	0,05	0,5	2,28
L1320.R18-04-2.0	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	2000	4°36'	0,05	0,5	3,04
L1320.R18-04-3.0	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	3000	4°36'	0,05	0,5	4,56
L1320.R18-08-1.0	TR18x8	2	18	8	4	15,608	15,905	12,474	13,500	1000	9°20'	0,1	0,5	1,52
L1320.R18-08-1.5	TR18x8	2	18	8	4	15,608	15,905	12,474	13,500	1500	9°20'	0,1	0,5	2,28
L1320.R18-08-2.0	TR18x8	2	18	8	4	15,608	15,905	12,474	13,500	2000	9°20'	0,1	0,5	3,04
L1320.R18-08-3.0	TR18x8	2	18	8	4	15,608	15,905	12,474	13,500	3000	9°20'	0,1	0,5	4,56
L1320.R20-04-1.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	1000	4°05'	0,05	0,5	1,94
L1320.R20-04-1.5	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	1500	4°05'	0,05	0,5	2,91
L1320.R20-04-2.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	2000	4°05'	0,05	0,5	3,88
L1320.R20-04-3.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	3000	4°05'	0,05	0,5	5,82
L1320.R20-08-1.0	TR20x8	2	20	8	4	17,608	17,905	14,474	15,500	1000	8°09'	0,1	0,5	1,94
L1320.R20-08-1.5	TR20x8	2	20	8	4	17,608	17,905	14,474	15,500	1500	8°09'	0,1	0,5	2,91
L1320.R20-08-2.0	TR20x8	2	20	8	4	17,608	17,905	14,474	15,500	2000	8°09'	0,1	0,5	3,88
L1320.R20-08-3.0	TR20x8	2	20	8	4	17,608	17,905	14,474	15,500	3000	8°09'	0,1	0,5	5,82
L1320.R22-05-1.0	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	1000	4°43'	0,05	0,2	2,29
L1320.R22-05-1.5	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	1500	4°43'	0,05	0,2	3,43
L1320.R22-05-2.0	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	2000	4°43'	0,05	0,2	4,58
L1320.R22-05-3.0	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	3000	4°43'	0,05	0,2	6,87
L1320.R22-10-1.0	TR22x10	2	22	10	5	19,058	19,394	15,294	16,500	1000	9°23'	0,2	0,3	2,29
L1320.R22-10-1.5	TR22x10	2	22	10	5	19,058	19,394	15,294	16,500	1500	9°23'	0,2	0,3	3,43
L1320.R22-10-2.0	TR22x10	2	22	10	5	19,058	19,394	15,294	16,500	2000	9°23'	0,2	0,3	4,58
L1320.R22-10-3.0	TR22x10	2	22	10	5	19,058	19,394	15,294	16,500	3000	9°23'	0,2	0,3	6,87
L1320.R24-05-1.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	1000	4°17'	0,05	0,2	2,78
L1320.R24-05-1.5	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	1500	4°17'	0,05	0,2	4,17
L1320.R24-05-2.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	2000	4°17'	0,05	0,2	5,56
L1320.R24-05-3.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	3000	4°17'	0,05	0,2	8,34
L1320.R24-10-1.0	TR24x10	2	24	10	5	21,058	21,394	17,269	18,500	1000	8°31'	0,2	0,3	2,78
L1320.R24-10-1.5	TR24x10	2	24	10	5	21,094	21,394	17,269	18,500	1500	8°31'	0,2	0,3	4,17
L1320.R24-10-2.0	TR24x10	2	24	10	5	21,094	21,394	17,269	18,500	2000	8°31'	0,2	0,3	5,56
L1320.R24-10-3.0	TR24x10	2	24	10	5	21,094	21,394	17,269	18,500	3000	8°31'	0,2	0,3	8,34
L1320.R26-05-1.0	TR26x5	1	26	5	5	23,094	23,394	19,269	20,500	1000	3°55'	0,05	0,2	3,32
L1320.R26-05-1.5	TR26x5	1	26	5	5	23,094	23,394	19,269	20,500	1500	3°55'	0,05	0,2	4,98
L1320.R26-05-2.0	TR26x5	1	26	5	5	23,094	23,394	19,269	20,500	2000	3°55'	0,05	0,2	6,64
L1320.R26-05-3.0	TR26x5	1	26	5	5	23,094	23,394	19,269	20,500	13000	3°55'	0,05	0,2	9,96
L1320.R26-10-1.0	TR26x10	2	26	10	5	23,058	23,394	19,269	20,500	1000	7°48'	0,2	0,3	3,32
L1320.R26-10-1.5	TR26x10	2	26	10	5	23,094	23,394	19,269	20,500	1500	7°48'	0,2	0,3	4,98
L1320.R26-10-2.0	TR26x10	2	26	10	5	23,094	23,394	19,269	20,500	2000	7°48'	0,2	0,3	6,64
L1320.R26-10-3.0	TR26x10	2	26	10	5	23,094	23,394	19,269	20,500	3000	7°48'	0,2	0,3	9,96
L1320.R28-05-1.0	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	1000	3°36'	0,05	0,2	3,90
L1320.R28-05-1.5	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	1500	3°36'	0,05	0,2	5,85
L1320.R28-05-2.0	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	2000	3°36'	0,05	0,2	7,8
L1320.R28-05-3.0	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	3000	3°36'	0,05	0,2	11,7
L1320.R28-10-1.0	TR28x10	2	28	10	5	25,058	25,394	21,269	22,500	1000	7°12'	0,2	0,3	3,90
L1320.R28-10-1.5	TR28x10	2	28	10	5	25,094	25,394	21,269	22,500	1500	7°12'	0,2	0,3	5,85
L1320.R28-10-2.0	TR28x10	2	28	10	5	25,094	25,394	21,269	22,500	2000	7°12'	0,2	0,3	7,80
L1320.R28-10-3.0	TR28x10	2	28	10	5	25,094	25,394	21,269	22,500	3000	7°12'	0,2	0,3	11,7
L1320.R30-06-1.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	1000	4°05'	0,07	0,2	4,35
L1320.R30-06-1.5	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	1500	4°05'	0,07	0,2	6,52
L1320.R30-06-2.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	2000	4°05'	0,07	0,2	8,70
L1320.R30-06-3.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	3000	4°05'	0,07	0,2	13,05
L1320.R30-12-1.0	TR30x12	2	30	12	6	26,058	26,882	21,563	23,000	1000	8°08'	0,2	0,3	4,35
L1320.R30-12-1.5	TR30x12	2	30	12	6	26,547	26,882	21,563	23,000	1500	8°08'	0,2	0,3	6,52
L1320.R30-12-2.0	TR30x12	2	30	12	6	26,547	26,882	21,563	23,000	2000	8°08'	0,2	0,3	8,70
L1320.R30-12-3.0	TR30x12	2	30	12	6	26,547	26,882	21,563	23,000	3000	8°08'	0,2	0,3	13,05
L1320.R32-06-1.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	1000	3°48'	0,07	0,2	5,03
L1320.R32-06-1.5	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	1500	3°48'	0,07	0,2	7,54
L1320.R32-06-2.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	2000	3°48'	0,07	0,2	10,06



# Steel Lead Screws

right hand thread

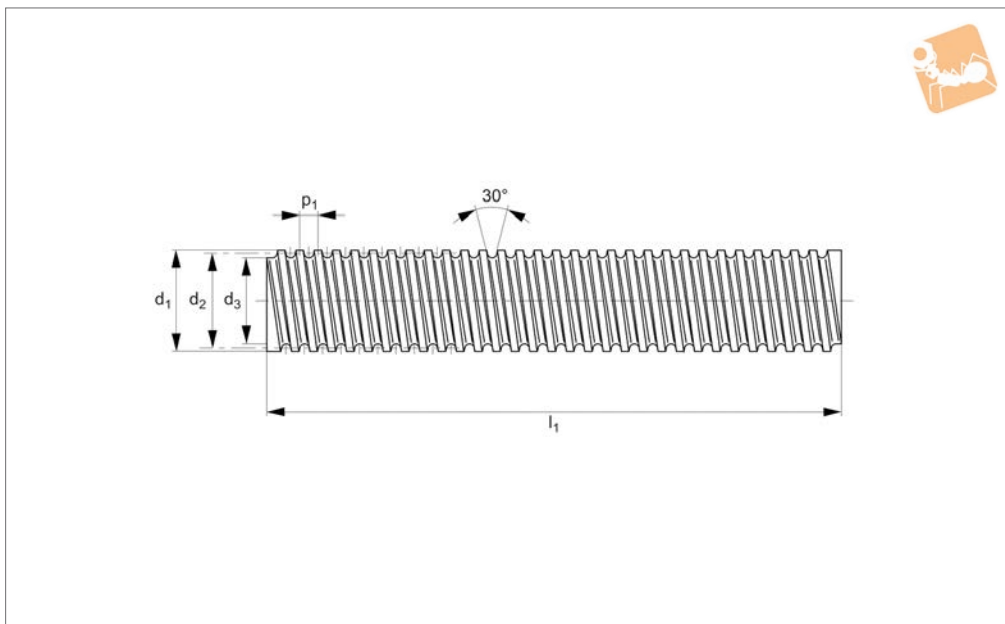
# Lead Screws & Nuts

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7e	Lead	p <sub>1</sub>	d <sub>2</sub> tol. 7e min.	d <sub>2</sub> tol. 7e max.	d <sub>3</sub> tol. 7h min.	d <sub>3</sub> tol. 7h max.	l <sub>1</sub>	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm	Weight kg
L1320.R32-06-3.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	3000	3°48'	0,07	0,2	15,09
L1320.R32-12-1.0	TR32x12	2	32	12	6	28,507	28,882	23,563	25,000	1000	7°34'	0,2	0,3	5,03
L1320.R32-12-1.5	TR32x12	2	32	12	6	28,547	28,882	23,563	25,000	1500	7°34'	0,2	0,3	7,54
L1320.R32-12-2.0	TR32x12	2	32	12	6	28,547	28,882	23,563	25,000	2000	7°34'	0,2	0,3	10,06
L1320.R32-12-3.0	TR32x12	2	32	12	6	28,547	28,882	23,563	25,000	3000	7°34'	0,2	0,3	15,09
L1320.R36-06-1.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	1000	3°20'	0,07	0,2	6,54
L1320.R36-06-1.5	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	1500	3°20'	0,07	0,2	9,81
L1320.R36-06-2.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	2000	3°20'	0,07	0,2	13,08
L1320.R36-06-3.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	3000	3°20'	0,07	0,2	19,62
L1320.R36-12-1.0	TR36x12	2	36	12	6	32,507	32,882	27,563	29,000	1000	6°39'	0,2	0,3	6,54
L1320.R36-12-1.5	TR36x12	2	36	12	6	32,547	32,882	27,563	29,000	1500	6°39'	0,2	0,3	9,81
L1320.R36-12-2.0	TR36x12	2	36	12	6	32,547	32,882	27,563	29,000	2000	6°39'	0,2	0,3	13,08
L1320.R36-12-3.0	TR36x12	2	36	12	6	32,547	32,882	27,563	29,000	3000	6°39'	0,2	0,3	19,62
L1320.R40-07-1.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	1000	3°31'	0,08	0,2	7,98
L1320.R40-07-1.5	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	1500	3°31'	0,08	0,2	11,97
L1320.R40-07-2.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	2000	3°31'	0,08	0,2	15,96
L1320.R40-07-3.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	3000	3°31'	0,08	0,2	23,94
L1320.R40-14-1.0	TR40x14	2	40	14	7	35,977	36,375	30,381	32,000	1000	7°01'	0,2	0,3	7,98
L1320.R40-14-1.5	TR40x14	2	40	14	7	36,020	36,375	30,381	32,000	1500	7°01'	0,2	0,3	11,97
L1320.R40-14-2.0	TR40x14	2	40	14	7	36,020	36,375	30,381	32,000	2000	7°01'	0,2	0,3	15,96
L1320.R40-14-3.0	TR40x14	2	40	14	7	36,020	36,375	30,381	32,000	3000	7°01'	0,2	0,3	23,94
L1320.R44-07-1.0	TR44x7	1	44	7	7	40,020	40,375	34,381	36,000	1000	3°10'	0,08	0,2	9,85
L1320.R44-07-1.5	TR44x7	1	44	7	7	40,020	40,375	34,381	36,000	1500	3°10'	0,08	0,2	14,78
L1320.R44-07-2.0	TR44x7	1	44	7	7	40,020	40,375	34,381	36,000	2000	3°10'	0,08	0,2	19,70
L1320.R44-07-3.0	TR44x7	1	44	7	7	40,020	40,375	34,381	36,000	3000	3°10'	0,08	0,2	29,55
L1320.R44-14-1.0	TR44x14	2	44	14	7	39,977	40,375	34,381	36,000	1000	6°20'	0,2	0,3	9,85
L1320.R44-14-1.5	TR44x14	2	44	14	7	39,977	40,375	34,381	36,000	1500	6°20'	0,2	0,3	14,78
L1320.R44-14-2.0	TR44x14	2	44	14	7	39,977	40,375	34,381	36,000	2000	6°20'	0,2	0,3	19,70
L1320.R44-14-3.0	TR44x14	2	44	14	7	39,977	40,375	34,381	36,000	3000	6°20'	0,2	0,3	29,55
L1320.R50-08-1.0	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	1000	3°11'	0,1	0,2	12,69
L1320.R50-08-1.5	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	1500	3°11'	0,1	0,2	19,03
L1320.R50-08-2.0	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	2000	3°11'	0,1	0,2	25,38
L1320.R50-08-3.0	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	3000	3°11'	0,1	0,2	38,07
L1320.R55-09-1.0	TR55x9	1	55	9	9	49,935	50,360	42,979	45,000	1000	3°16'	0,1	0,2	15,40
L1320.R55-09-1.5	TR55x9	1	55	9	9	49,935	50,360	42,979	45,000	1500	3°16'	0,1	0,2	23,10
L1320.R55-09-2.0	TR55x9	1	55	9	9	49,935	50,360	42,979	45,000	2000	3°16'	0,1	0,2	30,80
L1320.R55-09-3.0	TR55x9	1	55	9	9	49,935	50,360	42,979	45,000	3000	3°16'	0,1	0,2	46,20
L1320.R60-09-1.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	1000	2°58'	0,1	0,2	18,49
L1320.R60-09-1.5	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	1500	2°58'	0,1	0,2	27,73
L1320.R60-09-2.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	2000	2°58'	0,1	0,2	36,98
L1320.R60-09-3.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	3000	2°58'	0,1	0,2	55,47
L1320.R70-10-1.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	1000	2°49'	0,1	0,4	25,62
L1320.R70-10-1.5	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	1500	2°49'	0,1	0,4	38,43
L1320.R70-10-2.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	2000	2°49'	0,1	0,4	51,24
L1320.R70-10-3.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	3000	2°49'	0,1	0,4	76,86
L1320.R80-10-1.0	TR80x10	1	80	10	10	74,425	74,850	66,819	69,000	1000	2°27'	0,1	0,4	34,18
L1320.R80-10-1.5	TR80x10	1	80	10	10	74,425	74,850	66,819	69,000	1500	2°27'	0,1	0,4	51,27
L1320.R80-10-2.0	TR80x10	1	80	10	10	74,425	74,850	66,819	69,000	2000	2°27'	0,1	0,4	68,36
L1320.R80-10-3.0	TR80x10	1	80	10	10	74,425	74,850	66,819	69,000	3000	2°27'	0,1	0,4	102,54
L1320.R90-12-1.0	TR90x12	1	90	12	12	83,365	83,840	74,446	77,000	1000	2°36'	0,2	0,5	43,00
L1320.R90-12-1.5	TR90x12	1	90	12	12	83,365	83,840	74,446	77,000	1500	2°36'	0,2	0,5	64,50
L1320.R90-12-2.0	TR90x12	1	90	12	12	83,365	83,840	74,446	77,000	2000	2°36'	0,2	0,5	86,00
L1320.R90-12-3.0	TR90x12	1	90	12	12	83,365	83,840	74,446	77,000	3000	2°36'	0,2	0,5	129,00
L1320.R95-16-1.0	TR95x16	1	95	16	16	86,250	86,810	73,710	77,000	1000	3°22'	0,2	1,0	45,60
L1320.R95-16-1.5	TR95x16	1	95	16	16	86,250	86,810	73,710	77,000	1500	3°22'	0,2	1,0	68,40
L1320.R95-16-2.0	TR95x16	1	95	16	16	86,250	86,810	73,710	77,000	2000	3°22'	0,2	1,0	91,20
L1320.R95-16-3.0	TR95x16	1	95	16	16	86,250	86,810	73,710	77,000	3000	3°22'	0,2	1,0	136,80
L1320.R100-16-1.0	TR100x16	1	100	16	16	91,250	91,810	78,710	82,000	1000	3°11'	0,2	1,0	51,00
L1320.R100-16-1.5	TR100x16	1	100	16	16	91,250	91,810	78,710	82,000	1500	3°11'	0,2	1,0	76,50
L1320.R100-16-2.0	TR100x16	1	100	16	16	91,250	91,810	78,710	82,000	2000	3°11'	0,2	1,0	102,00
L1320.R100-16-3.0	TR100x16	1	100	16	16	91,250	91,810	78,710	82,000	3000	3°11'	0,2	1,0	153,00
L1320.R120-16-1.0	TR120x16	1	120	16	16	111,25	111,81	98,710	102,00	1000	2°36'	0,2	1,0	76,00
L1320.R120-16-1.5	TR120x16	1	120	16	16	111,25	111,81	98,710	102,00	1500	2°36'	0,2	1,0	114,00
L1320.R120-16-2.0	TR120x16	1	120	16	16	111,25	111,81	98,710	102,00	2000	2°36'	0,2	1,0	152,00
L1320.R120-16-3.0	TR120x16	1	120	16	16	111,25	111,81	98,710	102,00	3000	2°36'	0,2	1,0	228,00

LEAD SCREWS & NUTS



### L1321



#### Material

Rolled trapezoidal thread, steel EN 10083-2 (C35, DIN 1.0501) or (C45, DIN 1.0503). Manufactured to ISO 2901/2903 (DIN 103). Surface hardness approx. 250HB.

#### Technical Notes

'Lead' refers to the distance that a nut will travel for a complete revolution of the screw.

Select a suitable lead screw nut (part nos. L1330 to L1343) to suit the lead screw - the most popular nuts are the flanged, bronze nuts part no. L1331. Single start lead screws are less expensive than twin start lead screws.

#### Tips

These are left hand thread lead screws - for the standard right hand threads see part

no. L1320.

For stainless steel left hand lead screws see part no. L1323.

Cutting to required length and machining of ends - on request.

Lead screw lengths of up to 6 metres can be provided for a diameter >30mm.

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7e	Lead	p <sub>1</sub>	d <sub>2</sub> tol. 7e min.	d <sub>2</sub> tol. 7e max.	d <sub>3</sub> tol. 7h min.	d <sub>3</sub> tol. 7h max.	l <sub>1</sub>	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm	Weight kg
L1321.L10-02-1.0	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	1000	4°07'	0,2	0,5	0,48
L1321.L10-02-1.5	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	1500	4°07'	0,2	0,5	0,72
L1321.L10-02-2.0	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	2000	4°07'	0,2	0,5	0,96
L1321.L10-02-3.0	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	3000	4°07'	0,2	0,5	1,44
L1321.L12-03-1.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	1000	5°17'	0,2	0,5	0,65
L1321.L12-03-1.5	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	1500	5°17'	0,2	0,5	0,97
L1321.L12-03-2.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	2000	5°17'	0,2	0,5	1,30
L1321.L12-03-3.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	3000	5°17'	0,2	0,5	1,95
L1321.L14-03-1.0	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	1000	4°26'	0,2	0,5	0,93
L1321.L14-03-1.5	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	1500	4°26'	0,2	0,5	1,39
L1321.L14-03-2.0	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	2000	4°26'	0,2	0,5	1,86
L1321.L14-03-3.0	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	3000	4°26'	0,2	0,5	2,79
L1321.L16-04-1.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	1000	5°16'	0,05	0,5	1,17
L1321.L16-04-1.5	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	1500	5°16'	0,05	0,5	1,75
L1321.L16-04-2.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	2000	5°16'	0,05	0,5	2,34
L1321.L16-04-3.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	3000	5°16'	0,05	0,5	3,51
L1321.L18-04-1.0	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	1000	4°36'	0,05	0,5	1,52
L1321.L18-04-1.5	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	1500	4°36'	0,05	0,5	2,28
L1321.L18-04-2.0	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	2000	4°36'	0,05	0,5	3,04
L1321.L18-04-3.0	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	3000	4°36'	0,05	0,5	4,56
L1321.L20-04-1.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	1000	4°05'	0,05	0,5	1,94
L1321.L20-04-1.5	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	1500	4°05'	0,05	0,5	2,91
L1321.L20-04-2.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	2000	4°05'	0,05	0,5	3,88
L1321.L20-04-3.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	3000	4°05'	0,05	0,5	5,82
L1321.L22-05-1.0	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	1000	4°43'	0,05	0,2	2,29



# Steel Lead Screws

left hand thread

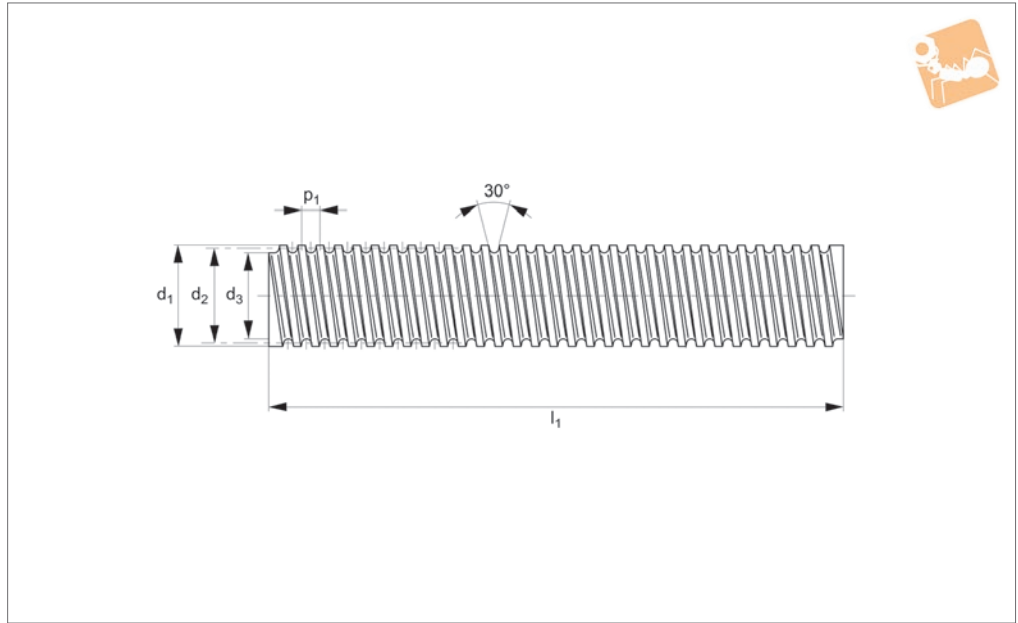
# Lead Screws & Nuts

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7e	Lead	p <sub>1</sub>	d <sub>2</sub> tol. 7e min.	d <sub>2</sub> tol. 7e max.	d <sub>3</sub> tol. 7h min.	d <sub>3</sub> tol. 7h max.	l <sub>1</sub>	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm	Weight kg
L1321.L22-05-1.5	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	1500	4°43'	0,05	0,2	3,43
L1321.L22-05-2.0	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	2000	4°43'	0,05	0,2	4,58
L1321.L22-05-3.0	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	3000	4°43'	0,05	0,2	6,87
L1321.L24-05-1.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	1000	4°17'	0,05	0,2	2,78
L1321.L24-05-1.5	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	1500	4°17'	0,05	0,2	4,17
L1321.L24-05-2.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	2000	4°17'	0,05	0,2	5,56
L1321.L24-05-3.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	3000	4°17'	0,05	0,2	8,34
L1321.L26-05-1.0	TR26x5	1	26	5	5	23,094	23,394	19,269	25,500	1000	3°55'	0,05	0,2	3,32
L1321.L26-05-1.5	TR26x5	1	26	5	5	23,094	23,394	19,269	25,500	1500	3°55'	0,05	0,2	4,98
L1321.L26-05-2.0	TR26x5	1	26	5	5	23,094	23,394	19,269	25,500	2000	3°55'	0,05	0,2	6,64
L1321.L26-05-3.0	TR26x5	1	26	5	5	23,094	23,394	19,269	25,500	3000	3°55'	0,05	0,2	9,96
L1321.L28-05-1.0	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	1000	3°36'	0,05	0,2	3,90
L1321.L28-05-1.5	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	1500	3°36'	0,05	0,2	5,85
L1321.L28-05-2.0	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	2000	3°36'	0,05	0,2	7,80
L1321.L28-05-3.0	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	3000	3°36'	0,05	0,2	11,7
L1321.L30-06-1.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	1000	4°05'	0,07	0,2	4,35
L1321.L30-06-1.5	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	1500	4°05'	0,07	0,2	6,52
L1321.L30-06-2.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	2000	4°05'	0,07	0,2	8,70
L1321.L30-06-3.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	3000	4°05'	0,07	0,2	13,05
L1321.L32-06-1.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	1000	3°48'	0,07	0,2	5,03
L1321.L32-06-1.5	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	1500	3°48'	0,07	0,2	7,54
L1321.L32-06-2.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	2000	3°48'	0,07	0,2	10,06
L1321.L32-06-3.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	3000	3°48'	0,07	0,2	15,09
L1321.L36-06-1.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	1000	3°20'	0,07	0,2	6,54
L1321.L36-06-1.5	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	1500	3°20'	0,07	0,2	9,81
L1321.L36-06-2.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	2000	3°20'	0,07	0,2	13,08
L1321.L36-06-3.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	3000	3°20'	0,07	0,2	19,62
L1321.L40-07-1.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	1000	3°31'	0,08	0,2	7,98
L1321.L40-07-1.5	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	1500	3°31'	0,08	0,2	11,97
L1321.L40-07-2.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	2000	3°31'	0,08	0,2	15,96
L1321.L40-07-3.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	3000	3°31'	0,08	0,2	23,94
L1321.L44-07-1.0	TR44x7	1	44	7	7	40,020	40,375	34,381	36,000	1000	3°10'	0,08	0,2	9,58
L1321.L44-07-1.5	TR44x7	1	44	7	7	40,020	40,375	34,381	36,000	1500	3°10'	0,08	0,2	14,37
L1321.L44-07-2.0	TR44x7	1	44	7	7	40,020	40,375	34,381	36,000	2000	3°10'	0,08	0,2	19,16
L1321.L44-07-3.0	TR44x7	1	44	7	7	40,020	40,375	34,381	36,000	3000	3°10'	0,08	0,2	28,74
L1321.L50-08-1.0	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	1000	3°11'	0,1	0,2	12,69
L1321.L50-08-1.5	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	1500	3°11'	0,1	0,2	19,03
L1321.L50-08-2.0	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	2000	3°11'	0,1	0,2	25,38
L1321.L50-08-3.0	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	3000	3°11'	0,1	0,2	38,07
L1321.L60-09-1.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	1000	2°58'	0,1	0,2	18,49
L1321.L60-09-1.5	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	1500	2°58'	0,1	0,2	27,73
L1321.L60-09-2.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	2000	2°58'	0,1	0,2	36,98
L1321.L60-09-3.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	3000	2°58'	0,1	0,2	55,47
L1321.L70-10-1.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	1000	2°49'	0,1	0,4	25,62
L1321.L70-10-1.5	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	1500	2°49'	0,1	0,4	38,43
L1321.L70-10-2.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	2000	2°49'	0,1	0,4	51,24
L1321.L70-10-3.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	3000	2°49'	0,1	0,4	76,86
L1321.L80-10-1.0	TR80x10	1	80	10	10	74,425	74,850	66,819	69,000	1000	2°27'	0,1	0,4	34,18
L1321.L80-10-1.5	TR80x10	1	80	10	10	74,425	74,850	66,819	69,000	1500	2°27'	0,1	0,4	51,27
L1321.L80-10-2.0	TR80x10	1	80	10	10	74,425	74,850	66,819	69,000	2000	2°27'	0,1	0,4	68,36
L1321.L80-10-3.0	TR80x10	1	80	10	10	74,425	74,850	66,819	69,000	3000	2°27'	0,1	0,4	102,54

LEAD SCREWS & NUTS



### L1322



#### Material

Rolled trapezoidal thread, stainless steel (AISI 316L, A4). Resistant to nearly all types of corrosion (can be used in a wet or corrosive environment). Manufactured to ISO 2901/2093, DIN103. Surface hardness approx. 280HB.

travel for a complete revolution of the screw.

Select a suitable lead screw nut (part nos. L1330 to L1343) to suit the lead screw - the most popular nuts are the flanged, bronze nuts part no. L1331.

For left hand stainless steel threads see part no. L1323.

Cutting to required length and machining of ends - on request.

Lead screw lengths of up to 6 metres can be provided for a diameter >30mm.

#### Technical Notes

,Lead' refers to the distance that a nut will

#### Tips

Right hand thread lead screws are standard.

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7e	Lead	p <sub>1</sub>	d <sub>2</sub> tol. 7e min.	d <sub>2</sub> tol. 7e max.	d <sub>3</sub> tol. 7h min.	d <sub>3</sub> tol. 7h max.	l <sub>1</sub>	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm	Weight kg
L1322.R10-02-1.0	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	1000	4°07'	0,3	1.5	0,48
L1322.R10-02-1.5	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	1500	4°07'	0,3	1.5	0,72
L1322.R10-02-2.0	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	2000	4°07'	0,3	1.5	0,96
L1322.R10-02-3.0	TR10x2	1	10	2	2	8,739	8,929	6,891	7,500	3000	4°07'	0,3	1.5	1,44
L1322.R12-03-1.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	1000	5°17'	0,3	1.5	0,65
L1322.R12-03-1.5	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	1500	5°17'	0,3	1.5	0,97
L1322.R12-03-2.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	2000	5°17'	0,3	1.5	1,30
L1322.R12-03-3.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	3000	5°17'	0,3	1.5	1,95
L1322.R14-03-1.0	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	1000	4°26'	0,3	1.5	0,93
L1322.R14-03-1.5	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	1500	4°26'	0,3	1.5	1,39
L1322.R14-03-2.0	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	2000	4°26'	0,3	1.5	1,86
L1322.R14-03-3.0	TR14x3	1	14	3	3	12,191	12,415	9,685	10,500	3000	4°26'	0,3	1.5	2,79
L1322.R16-04-1.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	1000	5°16'	0,1	1.5	1,17
L1322.R16-04-1.5	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	1500	5°16'	0,1	1.5	1,75
L1322.R16-04-2.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	2000	5°16'	0,1	1.5	2,34
L1322.R16-04-3.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	3000	5°16'	0,1	1.5	3,51
L1322.R18-04-1.0	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	1000	4°36'	0,1	1.5	1,52
L1322.R18-04-1.5	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	1500	4°36'	0,1	1.5	2,28
L1322.R18-04-2.0	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	2000	4°36'	0,1	1.5	3,04
L1322.R18-04-3.0	TR18x4	1	18	4	4	15,640	15,905	12,474	13,500	3000	4°36'	0,1	1.5	4,56
L1322.R20-04-1.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	1000	4°05'	0,1	1.5	1,94
L1322.R20-04-1.5	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	1500	4°05'	0,1	1.5	2,91
L1322.R20-04-2.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	2000	4°05'	0,1	1.5	3,88
L1322.R20-04-3.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	3000	4°05'	0,1	1.5	5,82
L1322.R22-05-1.0	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	1000	4°43'	0,1	1.5	2,29



# Stainless Lead Screws

right hand thread

# Lead Screws & Nuts

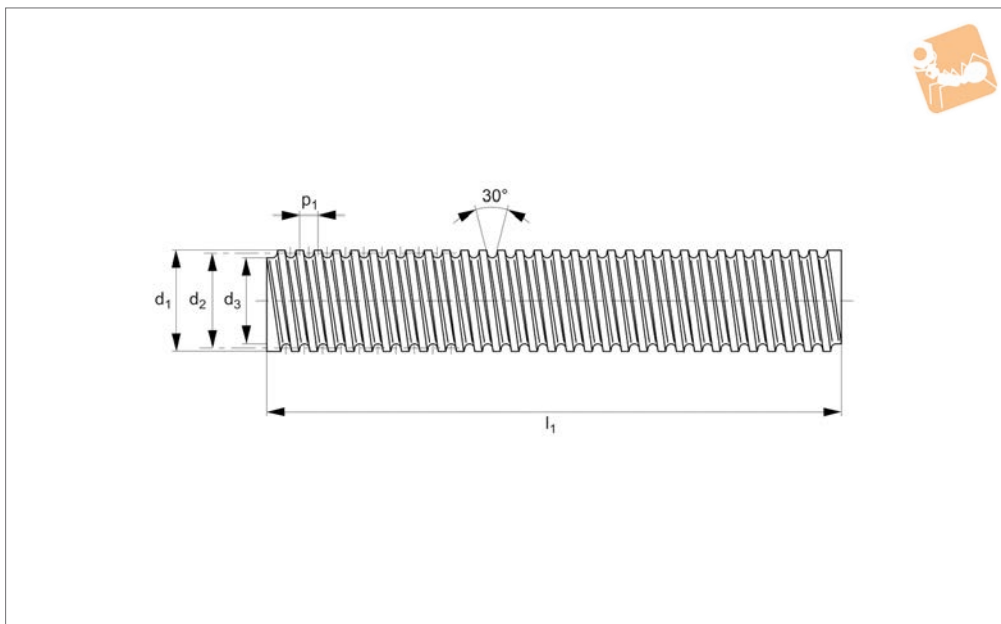


Order No.	Size	No. of starts	d <sub>1</sub> tol. 7e	Lead	p <sub>1</sub>	d <sub>2</sub> tol. 7e min.	d <sub>2</sub> tol. 7e max.	d <sub>3</sub> tol. 7h min.	d <sub>3</sub> tol. 7h max.	l <sub>1</sub>	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm	Weight kg
L1322.R22-05-1.5	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	1500	4°43'	0.1	1.5	3,43
L1322.R22-05-2.0	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	2000	4°43'	0.1	1.5	4,58
L1322.R22-05-3.0	TR22x5	1	22	5	5	19,114	19,394	15,294	16,500	3000	4°43'	0.1	1.5	6,87
L1322.R24-05-1.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	1000	4°17'	0.1	1.5	2,78
L1322.R24-05-1.5	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	1500	4°17'	0.1	1.5	4,17
L1322.R24-05-2.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	2000	4°17'	0.1	1.5	5,56
L1322.R24-05-3.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	3000	4°17'	0.1	1.5	8,34
L1322.R26-05-1.0	TR26x5	1	26	5	5	23,094	23,394	19,269	20,500	1000	3°55'	0.1	1.5	3,32
L1322.R26-05-1.5	TR26x5	1	26	5	5	23,094	23,394	19,269	20,500	1500	3°55'	0.1	1.5	4,98
L1322.R26-05-2.0	TR26x5	1	26	5	5	23,094	23,394	19,269	20,500	2000	3°55'	0.1	1.5	6,64
L1322.R26-05-3.0	TR26x5	1	26	5	5	23,094	23,394	19,269	20,500	3000	3°55'	0.1	1.5	9,96
L1322.R28-05-1.0	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	1000	3°36'	0.1	1.5	3,90
L1322.R28-05-1.5	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	1500	3°36'	0.1	1.5	5,85
L1322.R28-05-2.0	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	2000	3°36'	0.1	1.5	7,80
L1322.R28-05-3.0	TR28x5	1	28	5	5	25,094	25,394	21,269	22,500	3000	3°36'	0.1	1.5	11,7
L1322.R30-06-1.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	1000	4°05'	0.1	1.5	4,35
L1322.R30-06-1.5	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	1500	4°05'	0.1	1.5	6,52
L1322.R30-06-2.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	2000	4°05'	0.1	1.5	8,70
L1322.R30-06-3.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	3000	4°05'	0.1	1.5	13,05
L1322.R32-06-1.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	1000	3°48'	0.1	1.5	5,03
L1322.R32-06-1.5	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	1500	3°48'	0.1	1.5	7,54
L1322.R32-06-2.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	2000	3°48'	0.1	1.5	10,06
L1322.R32-06-3.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	3000	3°48'	0.1	1.5	15,09
L1322.R36-06-1.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	1000	3°20'	0.1	1.5	6,54
L1322.R36-06-1.5	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	1500	3°20'	0.1	1.5	9,81
L1322.R36-06-2.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	2000	3°20'	0.1	1.5	13,08
L1322.R36-06-3.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	3000	3°20'	0.1	1.5	19,62
L1322.R40-07-1.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	1000	3°31'	0.015	1.5	7,98
L1322.R40-07-1.5	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	1500	3°31'	0.015	1.5	11,97
L1322.R40-07-2.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	2000	3°31'	0.015	1.5	15,96
L1322.R40-07-3.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	3000	3°31'	0.015	1.5	23,94
L1322.R50-08-1.0	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	1000	3°11'	0.015	0.2	12,69
L1322.R50-08-1.5	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	1500	3°11'	0.015	0.2	19,03
L1322.R50-08-2.0	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	2000	3°11'	0.015	0.2	25,38
L1322.R50-08-3.0	TR50x8	1	50	8	8	45,468	45,868	39,168	41,000	3000	3°11'	0.015	0.2	38,07
L1322.R60-09-1.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	1000	2°58'	0.015	0.2	18,49
L1322.R60-09-1.5	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	1500	2°58'	0.015	0.2	27,73
L1322.R60-09-2.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	2000	2°58'	0.015	0.2	36,98
L1322.R60-09-3.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	3000	2°58'	0.015	0.2	55,47
L1322.R70-10-1.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	1000	2°49'	0.015	0.2	25,62
L1322.R70-10-1.5	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	1500	2°49'	0.015	0.2	38,43
L1322.R70-10-2.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	2000	2°49'	0.015	0.2	51,24
L1322.R70-10-3.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	3000	2°49'	0.015	0.2	76,86

LEAD SCREWS & NUTS



### L1323



#### Material

Rolled trapezoidal thread, stainless steel (AISI 316L, A4). Resistant to nearly all types of corrosion (can be used in a wet or corrosive environment). Manufactured to ISO 2901/2093, DIN103. Surface hardness approx. 280HB.

travel for a complete revolution of the screw.

Select a suitable lead screw nut (part nos. L1330 to L1343) to suit the lead screw - the most popular nuts are the flanged, bronze nuts part no. L1331.

lead screws.

For the standard right hand threads in stainless steel see part no. L1322. Cutting to required length and machining of ends - on request. Lead screw lengths of up to 6 metres can be provided for a diameter >30mm.

#### Technical Notes

,Lead' refers to the distance that a nut will

#### Tips

These are stainless steel left hand thread

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7e	Lead	p <sub>1</sub>	d <sub>2</sub> tol. 7e min.	d <sub>2</sub> tol. 7e max.	d <sub>3</sub> tol. 7h min.	d <sub>3</sub> tol. 7h max.	l <sub>1</sub>	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm	Weight kg
L1323.L12-03-1.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	1000	5°17'	0,3	0,5	0,65
L1323.L12-03-1.5	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	1500	5°17'	0,3	0,5	0,97
L1323.L12-03-2.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	2000	5°17'	0,3	0,5	1,30
L1323.L12-03-3.0	TR12x3	1	12	3	3	10,191	10,415	7,685	8,500	3000	5°17'	0,3	0,5	1,95
L1323.L16-04-1.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	1000	5°16'	0,2	0,1	1,17
L1323.L16-04-1.5	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	1500	5°16'	0,2	0,1	1,75
L1323.L16-04-2.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	2000	5°16'	0,2	0,1	2,34
L1323.L16-04-3.0	TR16x4	1	16	4	4	13,640	13,905	10,474	11,500	3000	5°16'	0,2	0,1	3,51
L1323.L20-04-1.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	1000	4°05'	0,2	0,1	1,94
L1323.L20-04-1.5	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	1500	4°05'	0,2	0,1	2,91
L1323.L20-04-2.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	2000	4°05'	0,2	0,1	3,88
L1323.L20-04-3.0	TR20x4	1	20	4	4	17,640	17,905	14,474	15,500	3000	4°05'	0,2	0,1	5,82
L1323.L24-05-1.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	1000	4°17'	0,5	0,1	2,78
L1323.L24-05-1.5	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	1500	4°17'	0,5	0,1	4,17
L1323.L24-05-2.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	2000	4°17'	0,5	0,1	5,56
L1323.L24-05-3.0	TR24x5	1	24	5	5	21,094	21,394	17,269	18,500	3000	4°17'	0,5	0,1	8,34
L1323.L30-06-1.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	1000	4°05'	0,5	0,1	4,35
L1323.L30-06-1.5	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	1500	4°05'	0,5	0,1	6,52
L1323.L30-06-2.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	2000	4°05'	0,5	0,1	8,70
L1323.L30-06-3.0	TR30x6	1	30	6	6	26,547	26,882	21,563	23,000	3000	4°05'	0,5	0,1	13,05
L1323.L32-06-1.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	1000	3°48'	0,5	0,1	5,03
L1323.L32-06-1.5	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	1500	3°48'	0,5	0,1	7,54
L1323.L32-06-2.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	2000	3°48'	0,5	0,1	10,06
L1323.L32-06-3.0	TR32x6	1	32	6	6	28,547	28,882	23,563	25,000	3000	3°48'	0,5	0,1	15,09
L1323.L36-06-1.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	1000	3°20'	0,5	0,1	6,54
L1323.L36-06-1.5	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	1500	3°20'	0,5	0,1	9,81

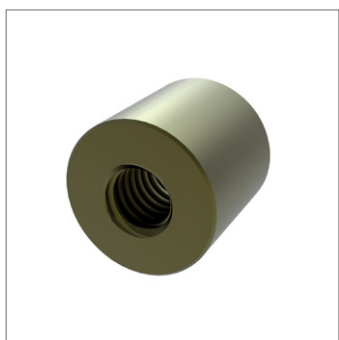
# Stainless Lead Screws

left hand thread

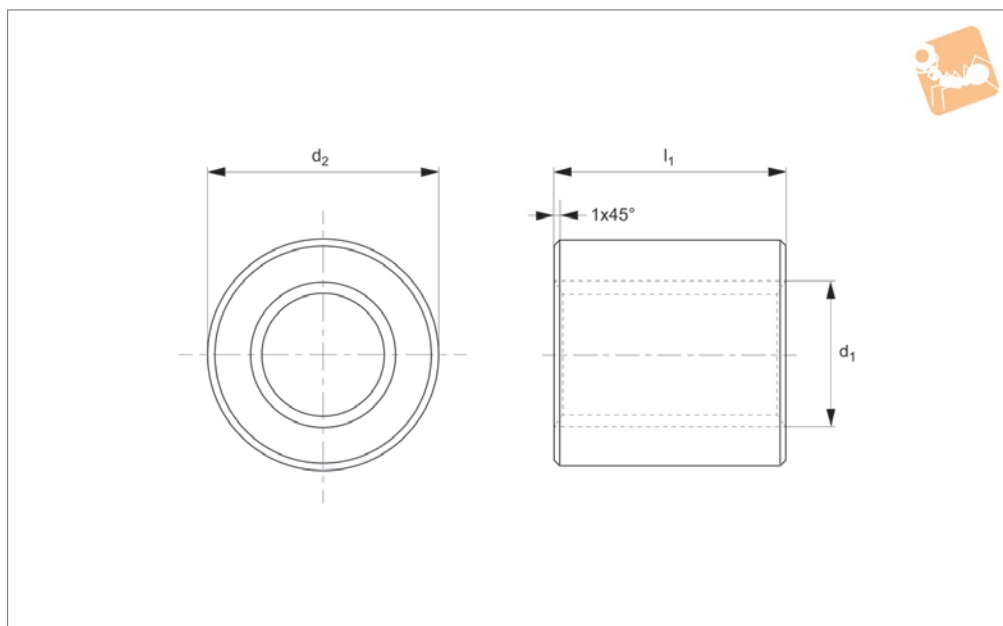
## Lead Screws & Nuts



Order No.	Size	No. of starts	$d_1$ tol. 7e	Lead	$p_1$	$d_2$ tol. 7e min.	$d_2$ tol. 7e max.	$d_3$ tol. 7h min.	$d_3$ tol. 7h max.	$l_1$	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm	Weight kg
L1323.L36-06-2.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	2000	3°20'	0,5	0,1	13,08
L1323.L36-06-3.0	TR36x6	1	36	6	6	32,547	32,882	27,563	29,000	3000	3°20'	0,5	0,1	19,62
L1323.L40-07-1.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	1000	3°31'	0,5	0,15	7,98
L1323.L40-07-1.5	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	1500	3°31'	0,5	0,15	11,97
L1323.L40-07-2.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	2000	3°31'	0,5	0,15	15,96
L1323.L40-07-3.0	TR40x7	1	40	7	7	36,020	36,375	30,381	32,000	3000	3°31'	0,5	0,15	23,94
L1323.L60-09-1.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	1000	2°58'	0,05	0,15	18,49
L1323.L60-09-1.5	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	1500	2°58'	0,05	0,15	27,73
L1323.L60-09-2.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	2000	2°58'	0,05	0,15	36,98
L1323.L60-09-3.0	TR60x9	1	60	9	9	54,935	55,360	47,979	50,000	3000	2°58'	0,05	0,15	55,47
L1323.L70-10-1.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	1000	2°49'	0,05	0,15	25,62
L1323.L70-10-1.5	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	1500	2°49'	0,05	0,15	38,43
L1323.L70-10-2.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	2000	2°49'	0,05	0,15	51,24
L1323.L70-10-3.0	TR70x10	1	70	10	10	64,425	64,850	56,819	59,000	3000	2°49'	0,05	0,15	76,86



### L1330



#### Material

Bronze (CuSn7ZnPb). To ISO 2901/2903 and DIN 103.

#### Technical Notes

For manual or powered applications at low

and medium rotation and under loads.

#### Tips

Standard nuts are right hand thread, single starts.

For use with steel or stainless steel lead

screws, L1320, L1321, L1322, and L1323.

Order No.	Size	No. of starts	$d_1$ tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	$d_2$ tol. h10	$l_1$	Weight kg
L1330.R10-02	TR10x 2	1	10	2	Right	200	22	20	0.053
L1330.R10-04	TR10x 4	2	10	4	Right	200	22	20	0.053
L1330.R12-03	TR12x 3	1	12	3	Right	280	26	24	0.083
L1330.R12-06	TR12x 6	2	12	6	Right	280	26	24	0.083
L1330.R14-03	TR14x 3	1	14	3	Right	380	30	28	0.135
L1330.R14-06	TR14x 6	2	14	6	Right	380	30	28	0.135
L1330.R16-04	TR16x 4	1	16	4	Right	490	36	32	0.232
L1330.R16-08	TR16x 8	2	16	8	Right	490	36	32	0.232
L1330.R18-04	TR18x 4	1	18	4	Right	630	40	36	0.320
L1330.R18-08	TR18x 8	2	18	8	Right	630	40	36	0.320
L1330.R20-04	TR20x 4	1	20	4	Right	790	45	40	0.455
L1330.R20-08	TR20x 8	2	20	8	Right	790	45	40	0.455
L1330.R22-05	TR22x 5	1	22	5	Right	940	45	44	0.480
L1330.R22-10	TR22x10	2	22	10	Right	940	45	44	0.480
L1330.R24-05	TR24x 5	1	24	5	Right	1130	50	48	0.656
L1330.R24-10	TR24x10	2	24	10	Right	1130	50	48	0.656
L1330.R26-05	TR26x 5	1	26	5	Right	1340	50	52	0.670
L1330.R28-05	TR28x 5	1	28	5	Right	2400	60	56	1.102
L1330.R28-10	TR28x10	2	28	10	Right	1570	60	56	1.102
L1330.R30-06	TR30x 6	1	30	6	Right	1780	60	60	1.140
L1330.R30-12	TR30x12	2	30	12	Right	1780	60	60	1.140
L1330.R32-06	TR32x 6	1	32	6	Right	1910	60	64	1.177
L1330.R32-12	TR32x12	2	32	12	Right	1910	60	64	1.177
L1330.R36-06	TR36x 6	1	36	6	Right	2610	75	72	2.189
L1330.R36-12	TR36x12	2	36	12	Right	2610	75	72	2.189
L1330.R40-07	TR40x 7	1	40	7	Right	3210	80	80	2.725
L1330.R40-14	TR40x14	2	40	14	Right	3210	80	80	2.725
L1330.R44-07	TR44x 7	1	44	7	Right	3920	80	88	2.815
L1330.R50-08	TR50x 8	1	50	8	Right	5060	90	100	4.014
L1330.R60-09	TR60x 9	1	60	9	Right	7320	100	120	5.150
L1330.R70-10	TR70x10	1	70	10	Right	10000	110	140	7.805
L1330.R80-10	TR80x10	1	80	10	Right	12950	120	160	9.800

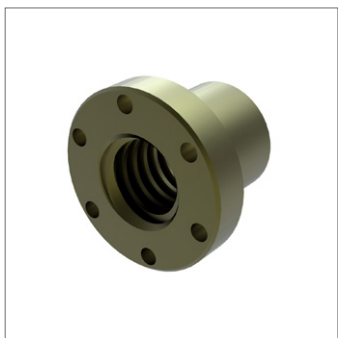


## Cylindrical Bronze Nuts for lead screws

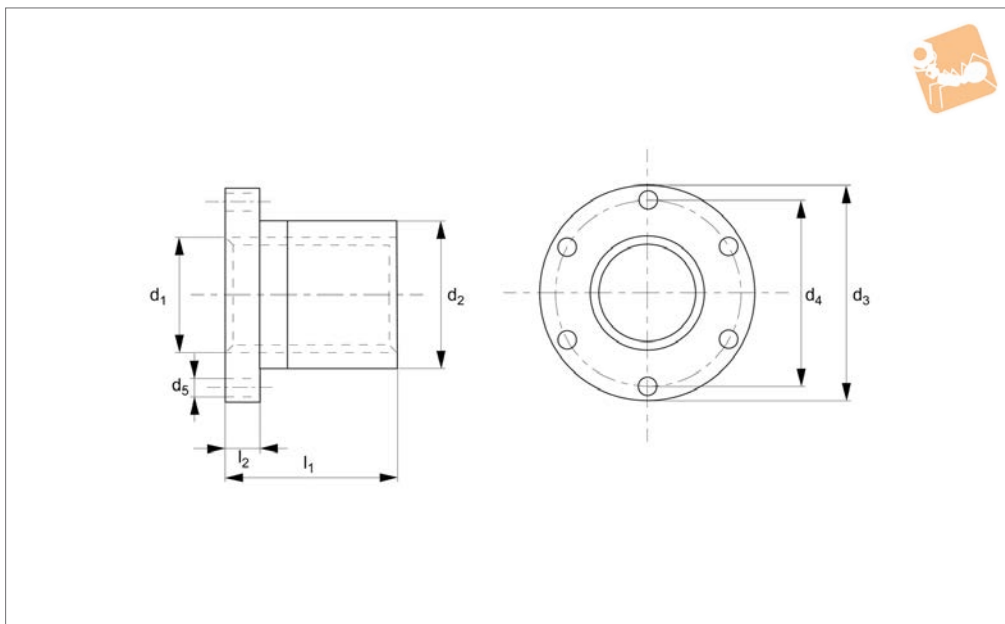
## Lead Screws & Nuts



Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	d <sub>2</sub> tol. h10	l <sub>1</sub>	Weight kg
L1330.L10-02	TR10x 2	1	10	2	Left	200	22	20	0.053
L1330.L12-03	TR12x 3	1	12	3	Left	280	26	24	0.083
L1330.L14-03	TR14x 3	1	14	3	Left	380	30	28	0.136
L1330.L16-04	TR16x 4	1	16	4	Left	490	36	32	0.232
L1330.L18-04	TR18x 4	1	18	4	Left	630	40	36	0.320
L1330.L20-04	TR20x 4	1	20	4	Left	790	45	40	0.455
L1330.L22-05	TR22x 5	1	22	5	Left	940	45	44	0.480
L1330.L24-05	TR24x 5	1	24	5	Left	1130	50	48	0.656
L1330.L26-05	TR26x 5	1	26	5	Left	1340	50	52	0.670
L1330.L28-05	TR28x 5	1	28	5	Left	2400	60	56	1.102
L1330.L30-06	TR30x 6	1	30	6	Left	1780	60	60	1.140
L1330.L32-06	TR32x 6	1	32	6	Left	1910	60	64	1.177
L1330.L36-06	TR36x 6	1	36	6	Left	2610	75	72	2.189
L1330.L40-07	TR40x 7	1	40	7	Left	3210	80	80	2.725
L1330.L44-07	TR44x 7	1	44	7	Left	3920	80	88	2.815
L1330.L50-08	TR50x 8	1	50	8	Left	5060	90	100	4.014
L1330.L60-09	TR60x 9	1	60	9	Left	7320	100	120	5.150
L1330.L70-10	TR70x10	1	70	10	Left	10000	110	140	7.805
L1330.L80-10	TR80x10	1	80	10	Left	12950	120	160	9.800



## L1331



**Material**  
Bronze (CuSn7ZnPb).

medium/low rotation speeds under load.

For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

**Technical Notes**  
For manual or powered applications at

**Tips**  
Standard nuts are right hand thread, single starts.

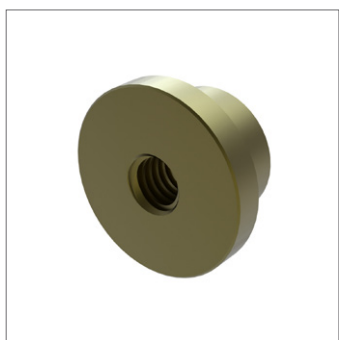
Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread hand	Contact surface mm <sup>2</sup>	d <sub>2</sub> tol. h9	d <sub>3</sub> tol. h11	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub> ±0.2	l <sub>2</sub> +0.15 -0.0	Weight kg
L1331.R10-02	TR10x 2	1	10	2	Right	250	25	42	34	5	25	10	0.164
L1331.R10-04	TR10x 4	2	10	4	Right	250	25	42	34	5	25	10	0.164
L1331.R12-03	TR12x 3	1	12	3	Right	400	28	48	38	6	35	12	0.266
L1331.R12-06	TR12x 6	2	12	6	Right	400	28	48	38	6	35	12	0.266
L1331.R14-03	TR14x 3	1	14	3	Right	460	28	48	38	6	35	12	0.258
L1331.R14-06	TR14x 6	2	14	6	Right	460	28	48	38	6	35	12	0.258
L1331.R16-04	TR16x 4	1	16	4	Right	530	28	48	38	6	35	12	0.244
L1331.R16-08	TR16x 8	2	16	8	Right	530	28	48	38	6	35	12	0.244
L1331.R18-04	TR18x 4	1	18	4	Right	610	28	48	38	6	35	12	0.228
L1331.R18-08	TR18x 8	2	18	8	Right	610	28	48	38	6	35	12	0.228
L1331.R20-04	TR20x 4	1	20	4	Right	870	32	55	45	7	44	12	0.346
L1331.R20-08	TR20x 8	2	20	8	Right	870	32	55	45	7	44	12	0.346
L1331.R22-05	TR22x 5	1	22	5	Right	1030	32	55	45	7	44	12	0.322
L1331.R22-10	TR22x10	2	22	10	Right	1030	32	55	45	7	44	12	0.322
L1331.R24-05	TR24x 5	1	24	5	Right	1040	32	55	45	7	44	12	0.304
L1331.R24-10	TR24x10	2	24	10	Right	1040	32	55	45	7	44	12	0.304
L1331.R26-05	TR26x 5	1	26	5	Right	1280	38	62	50	7	46	14	0.474
L1331.R26-10	TR26x10	2	26	10	Right	1280	38	62	50	7	46	14	0.474
L1331.R28-05	TR28x 5	1	28	5	Right	1200	38	62	50	7	46	14	0.442
L1331.R28-10	TR28x10	2	28	10	Right	1200	38	62	50	7	46	14	0.442
L1331.R30-06	TR30x 6	1	30	6	Right	1370	38	62	50	7	46	14	0.408
L1331.R30-12	TR30x12	2	30	12	Right	1370	38	62	50	7	46	14	0.408
L1331.R32-06	TR32x 6	1	32	6	Right	1710	45	70	58	7	54	16	0.706
L1331.R32-12	TR32x12	2	32	12	Right	1710	45	70	58	7	54	16	0.706
L1331.R36-06	TR36x 6	1	36	6	Right	1950	45	70	58	7	54	16	0.606
L1331.R36-12	TR36x12	2	36	12	Right	1950	45	70	58	7	54	16	0.606
L1331.R40-07	TR40x 7	1	40	7	Right	2650	63	95	78	9	66	16	1.700
L1331.R40-14	TR40x14	2	40	14	Right	2650	63	95	78	9	66	16	1.700
L1331.R44-07	TR44x 7	1	44	7	Right	2940	63	95	78	9	66	16	1.524
L1331.R50-08	TR50x 8	1	50	8	Right	4540	72	110	90	11	75	18	2.324
L1331.R60-09	TR60x 9	1	60	9	Right	5490	88	130	110	13	90	20	3.942
L1331.R70-10	TR70x10	1	70	10	Right	7500	95	140	120	13	105	22	4.465
L1331.L10-02	TR10x 2	1	10	2	Left	250	25	42	34	5	25	10	0.164
L1331.L12-03	TR12x 3	1	12	3	Left	400	28	48	38	6	35	12	0.266



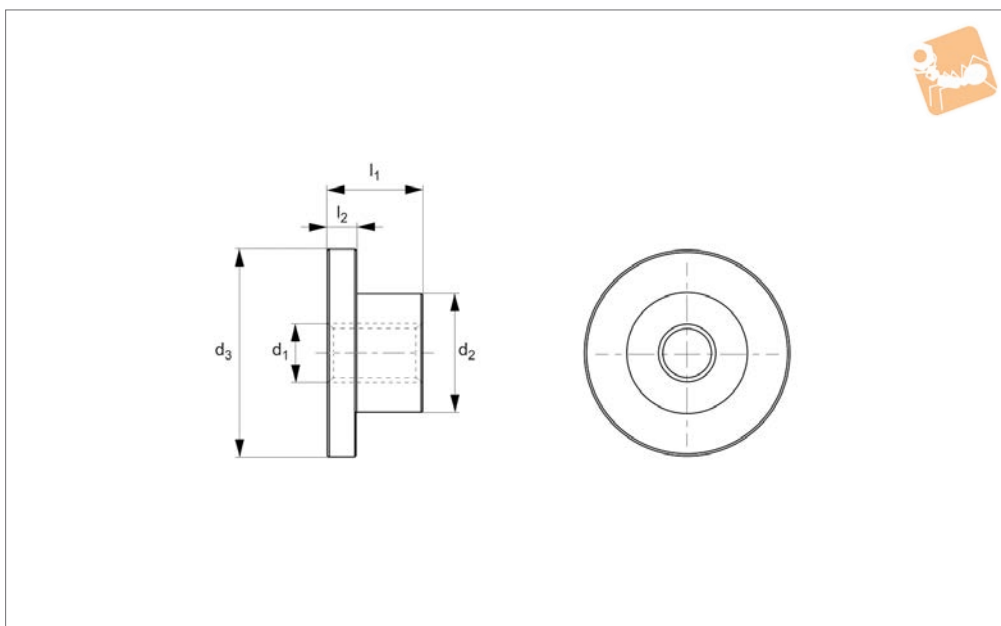
# Flanged Bronze Nuts for lead screws

## Lead Screws & Nuts

Order No.	Size	No. of starts	$d_1$ tol. 7H	Lead	Thread hand	Contact surface mm <sup>2</sup>	$d_2$ tol. h9	$d_3$ tol. h11	$d_4$	$d_5$	$l_1$ ±0.2	$l_2$ +0.15 -0.0	Weight kg
L1331.L14-03	TR14x 3	1	14	3	Left	460	28	48	38	6	35	12	0.258
L1331.L16-04	TR16x 4	1	16	4	Left	530	28	48	38	6	35	12	0.244
L1331.L18-04	TR18x 4	1	18	4	Left	610	28	48	38	6	35	12	0.228
L1331.L20-04	TR20x 4	1	20	4	Left	870	32	55	45	7	44	12	0.346
L1331.L22-05	TR22x 5	1	22	5	Left	1030	32	55	45	7	44	12	0.322
L1331.L24-05	TR24x 5	1	24	5	Left	1040	32	55	45	7	44	12	0.304
L1331.L26-05	TR26x 5	1	26	5	Left	1280	38	62	50	7	46	14	0.474
L1331.L28-05	TR28x 5	1	28	5	Left	1200	38	62	50	7	46	14	0.442
L1331.L30-06	TR30x 6	1	30	6	Left	1370	38	62	50	7	46	14	0.408
L1331.L32-06	TR32x 6	1	32	6	Left	1710	45	70	58	7	54	16	0.706
L1331.L36-06	TR36x 6	1	36	6	Left	1950	45	70	58	7	54	16	0.606
L1331.L40-07	TR40x 7	1	40	7	Left	2650	63	95	78	9	66	16	1.700
L1331.L44-07	TR44x 7	1	44	7	Left	2940	63	95	78	9	66	16	1.524
L1331.L50-08	TR50x 8	1	50	8	Left	4540	72	110	90	11	75	18	2.324
L1331.L60-09	TR60x 9	1	60	9	Left	5490	88	130	110	13	90	20	3.942
L1331.L70-10	TR70x10	1	70	10	Left	7500	95	140	120	13	105	22	4.465



### L1332



**Material**  
Bronze (CuSn7ZnPb).

medium/low rotation speeds under load.

For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

**Technical Notes**  
For manual or powered applications at

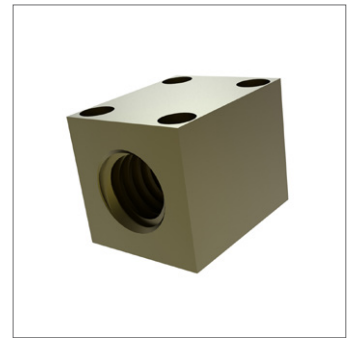
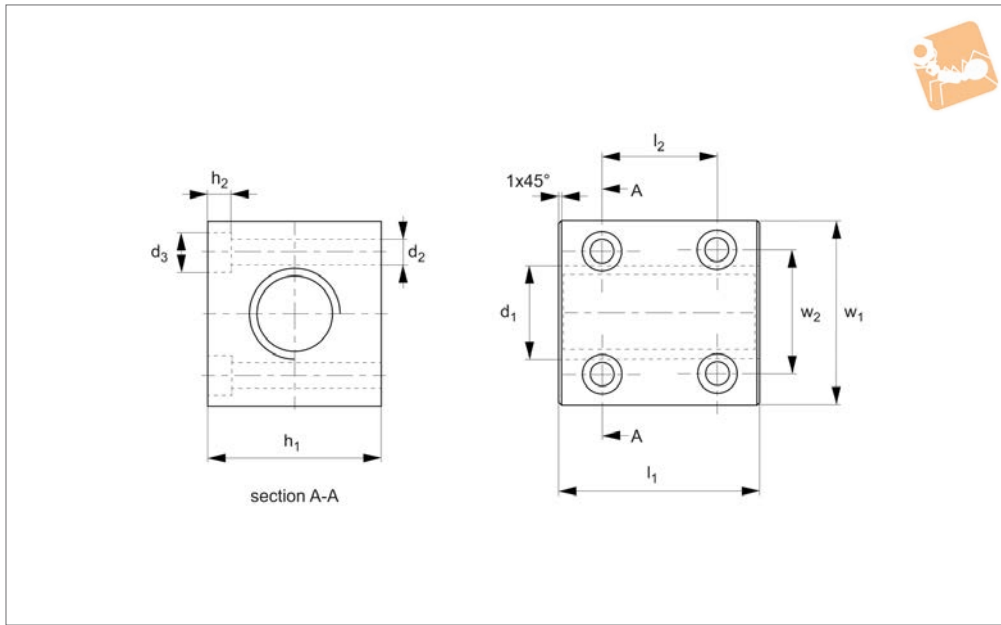
**Tips**  
Standard nuts are right hand thread, single starts.

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	d <sub>2</sub> tol. h11	d <sub>3</sub> tol. h9	l <sub>1</sub>	l <sub>2</sub>	Weight kg
L1332.R10-02	TR10x 2	1	10	2	Right	150	20	35	15	6	0.068
L1332.R10-04	TR10x 2	2	10	4	Right	150	20	35	15	6	0.068
L1332.R12-03	TR12x 3	1	12	3	Right	228	24	42	20	7	0.120
L1332.R12-06	TR12x 6	2	12	6	Right	262	24	42	20	7	0.120
L1332.R14-03	TR14x 3	1	14	3	Right	315	30	52	24	10	0.260
L1332.R16-04	TR16x 4	1	16	4	Right	363	30	52	24	10	0.250
L1332.R16-08	TR16x 8	2	16	8	Right	363	30	52	24	12	0.250
L1332.R20-04	TR20x 4	1	20	4	Right	514	38	62	26	11	0.400
L1332.R20-08	TR20x 8	2	20	8	Right	514	38	62	26	12	0.400
L1332.R24-05	TR24x 5	1	24	5	Right	780	50	77	33	13	0.750
L1332.R24-10	TR24x10	2	24	10	Right	780	50	77	33	12	0.750
L1332.R30-06	TR30x 6	1	30	6	Right	1430	58	90	48	15	1.400
L1332.R30-12	TR30x12	2	30	12	Right	1430	58	90	48	14	1.400
L1332.R36-06	TR36x 6	1	36	6	Right	2166	80	115	60	20	3.200
L1332.R36-12	TR36x12	2	36	12	Right	2166	80	115	60	16	3.200
L1332.R40-07	TR40x 7	1	40	7	Right	2610	80	140	65	20	4.100
L1332.R40-14	TR40x14	2	40	14	Right	2610	80	140	65	16	4.100
L1332.R50-08	TR50x 8	1	50	8	Right	4237	90	170	70	20	5.900
L1332.L10-02	TR10x2	1	10	2	Left	150	20	35	15	6	0.068
L1332.L12-03	TR12x3	1	12	3	Left	228	24	42	20	7	0.120
L1332.L14-03	TR14x3	1	14	3	Left	315	30	52	24	10	0.260
L1332.L16-04	TR16x4	1	16	4	Left	363	30	52	24	10	0.250
L1332.L20-04	TR20x4	1	20	4	Left	514	38	62	26	11	0.400
L1332.L24-05	TR24x5	1	24	5	Left	780	50	77	33	13	0.750
L1332.L30-06	TR30x6	1	30	6	Left	1430	58	90	48	15	1.400
L1332.L36-06	TR36x6	1	36	6	Left	2166	80	115	60	20	3.200
L1332.L40-07	TR40x7	1	40	7	Left	2610	80	140	65	20	4.100
L1332.L50-08	TR50x8	1	50	8	Left	4237	90	170	70	20	5.900





# Square Bronze Nut with Through for lead screws



### L1334

LEAD SCREWS & NUTS

**Material**  
Bronze (CuSn7ZnPb).

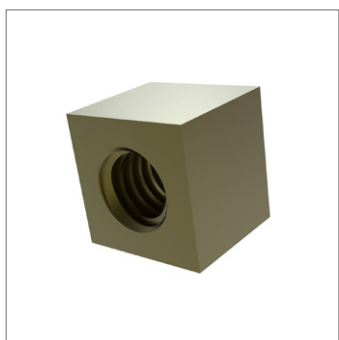
**Technical Notes**  
Suitable for movements with medium duty

loads.

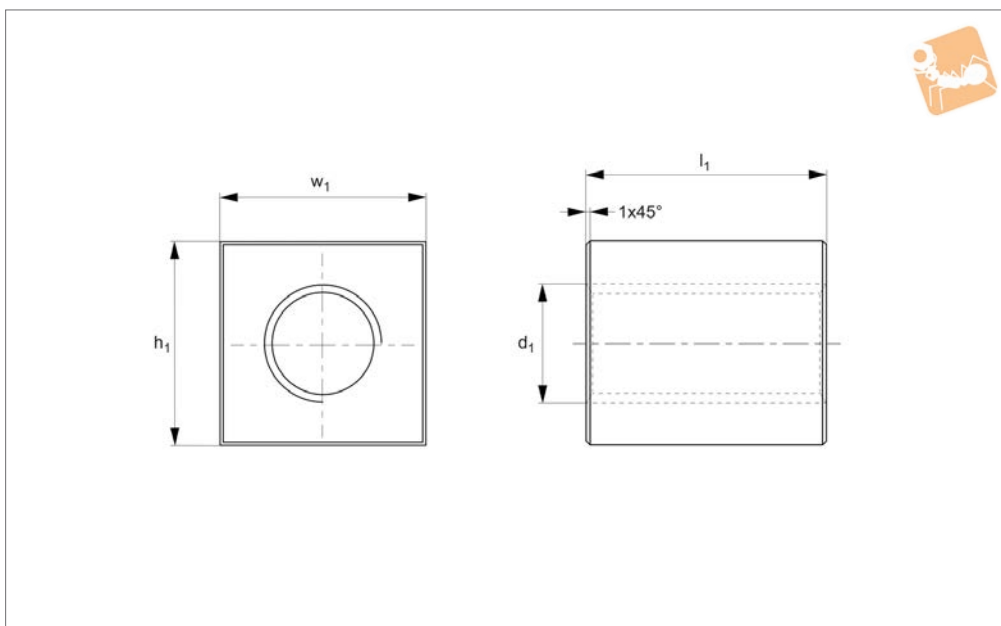
**Tips**  
Standard nuts are right hand thread, single starts.

For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.  
\*Special M8 fixing screw with a reduced head diameter.

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub> & w <sub>1</sub> tol. h9	h <sub>2</sub>	l <sub>1</sub> +0.0 -0.2	l <sub>2</sub>	w <sub>2</sub>	For screw	Weight kg
L1334.R16-04	TR16x4	1	16	4	Right	770	5	9,5	35	5,2	40	26	24	M 5	0,34
L1334.R20-04	TR20x4	1	20	4	Right	1412	6	10,0	40	6,5	50	38	28	M 6	0,57
L1334.R30-06	TR30x6	1	30	6	Right	2544	6	10,0	50	6,5	60	49	38	M 6	0,98
L1334.R40-07	TR40x7	1	40	7	Right	4013	8*	9,9*	60	8,5	75	55	49	M 8*	1,60
L1334.L16-04	TR16x4	1	16	4	Left	770	5	9,5	35	5,2	40	26	24	M 5	0,34
L1334.L20-04	TR20x4	1	20	4	Left	1412	6	10,0	40	6,5	50	38	28	M 6	0,57
L1334.L30-06	TR30x6	1	30	6	Left	2544	6	10,0	50	6,5	60	49	38	M 6	0,98
L1334.L40-07	TR40x7	1	40	7	Left	4013	8*	9,9*	60	8,5	75	55	49	M 8*	1,60



### L1335



#### Material

Brass (EN 12164, CW614N-M).

#### Tips

Standard nuts are right hand thread.  
For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

#### Technical Notes

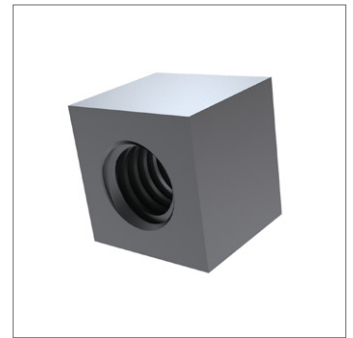
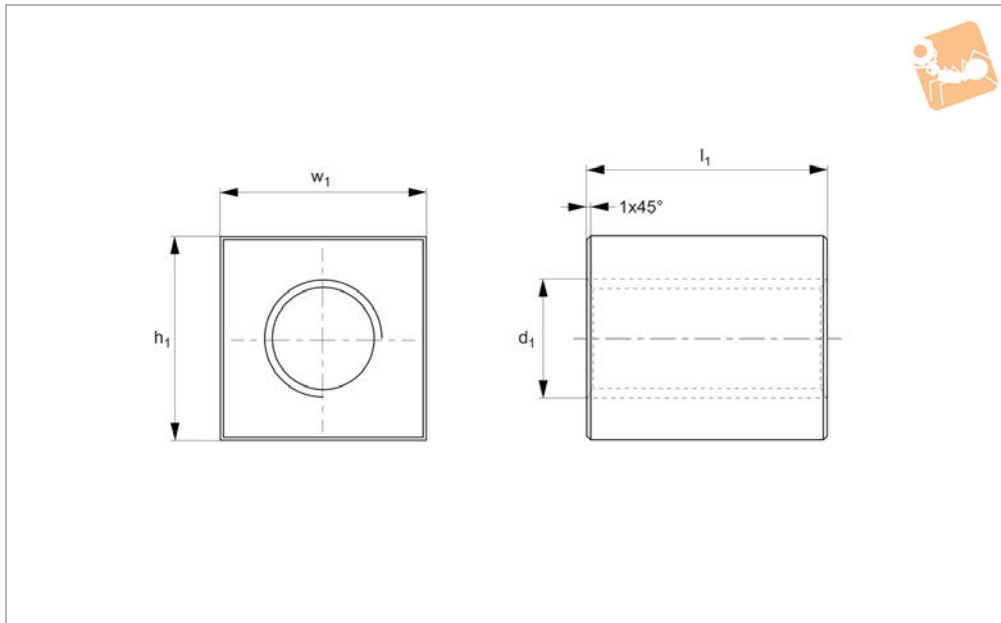
Used for fairly light loads.

Order No.	Size	No. of starts	$d_1$ tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	$h_1$ & $w_1$ tol. h11	$l_1$ +0.0 -0.2	Weight kg
L1335.R12-03	TR12x3	1	12	3	Right	411	25	25	0.11
L1335.R16-04	TR16x4	1	16	4	Right	770	30	35	0.21
L1335.R18-04	TR18x4	1	18	4	Right	1131	35	45	0.38
L1335.R20-04	TR20x4	1	20	4	Right	1412	40	50	0.55
L1335.R30-06	TR30x6	1	30	6	Right	2544	50	60	0.95
L1335.R36-06	TR36x6	1	36	6	Right	3630	60	70	1.56
L1335.R40-07	TR40x7	1	40	7	Right	4013	60	70	1.46
L1335.L12-03	TR12x3	1	12	3	Left	411	25	25	0.11
L1335.L16-04	TR16x4	1	16	4	Left	770	30	35	0.21
L1335.L18-04	TR18x4	1	18	4	Left	1131	35	45	0.38
L1335.L20-04	TR20x4	1	20	4	Left	1412	40	50	0.55
L1335.L30-06	TR30x6	1	30	6	Left	2554	50	60	0.95
L1335.L36-06	TR32x6	1	36	6	Left	3630	60	70	1.56
L1335.L40-07	TR40x7	1	40	7	Left	4013	60	70	1.46



# Square Steel Nuts for lead screws

## Lead Screws & Nuts



### L1336

LEAD SCREWS & NUTS

#### Material

Steel (11SMnPb37). Manufactured to ISO 2901/2903 (DIN 103).

#### Technical Notes

Used for low rotation speeds, manual

control, for clamping or locking functions and for receiving dead weights. The use of steel to steel contact surface is not suitable for motorised motion.

#### Tips

Standard nuts are right hand thread, single starts.

For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	h <sub>1</sub> & w <sub>1</sub> tol. h11	l <sub>1</sub> +0.01-0.2	Weight kg
L1336.R10-02	TR10x 2	1	10	2	Right	150	17	15	0.027
L1336.R10-04	TR10x 4	2	10	4	Right	150	17	15	0.027
L1336.R12-03	TR12x 3	1	12	3	Right	210	25	18	0.076
L1336.R12-06	TR12x 6	2	12	6	Right	210	25	18	0.076
L1336.R14-03	TR14x 3	1	14	3	Right	285	25	20	0.079
L1336.R14-06	TR14x 6	2	14	6	Right	285	25	20	0.079
L1336.R16-04	TR16x 4	1	16	4	Right	770	28	24	0.199
L1336.R16-08	TR16x 8	2	16	8	Right	365	28	24	0.119
L1336.R18-04	TR18x 4	1	18	4	Right	1131	30	28	0.353
L1336.R18-08	TR18x 8	2	18	8	Right	470	30	28	0.154
L1336.R20-04	TR20x 4	1	20	4	Right	1412	35	30	0.517
L1336.R20-08	TR20x 8	2	20	8	Right	590	35	30	0.259
L1336.R22-05	TR22x 5	1	22	5	Right	700	35	33	0.240
L1336.R22-10	TR22x10	2	22	10	Right	700	35	33	0.240
L1336.R24-05	TR24x 5	1	24	5	Right	845	40	36	0.354
L1336.R24-10	TR24x19	2	24	10	Right	845	40	36	0.354
L1336.R26-05	TR26x 5	1	26	5	Right	1005	40	39	0.363
L1336.R26-10	TR26x10	2	26	10	Right	1005	40	39	0.363
L1336.R28-05	TR28x 5	1	28	5	Right	1175	45	42	0.506
L1336.R28-10	TR28x10	2	28	10	Right	1175	45	42	0.506
L1336.R30-06	TR30x 6	1	30	6	Right	2544	45	45	0.877
L1336.R30-12	TR30x12	2	30	12	Right	1335	45	45	0.513
L1336.R32-06	TR32x 6	1	32	6	Right	1430	55	48	0.891
L1336.R32-12	TR32x12	2	32	12	Right	1430	55	48	0.891
L1336.R36-06	TR36x 6	1	36	6	Right	3630	60	54	1.465
L1336.R36-12	TR36x12	2	36	12	Right	1950	60	54	1.163
L1336.R40-07	TR40x 7	1	40	7	Right	4013	60	60	1.347
L1336.R40-14	TR40x14	2	40	14	Right	2400	60	60	1.216
L1336.R44-07	TR44x 7	1	44	7	Right	2940	65	66	1.538
L1336.L10-02	TR10x2	1	10	2	Left	150	17	15	0.027
L1336.L12-03	TR12x3	1	12	3	Left	739	25	18	0.123
L1336.L14-03	TR14x3	1	14	3	Left	285	25	20	0.079

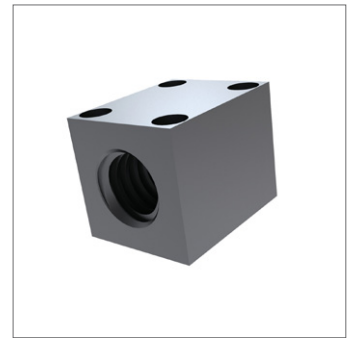
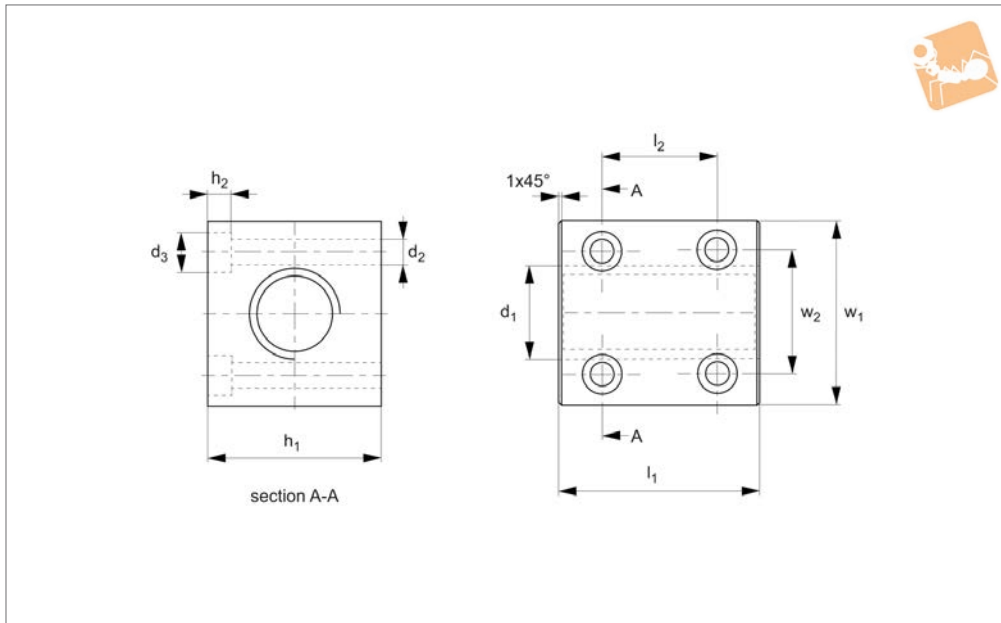


Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	h <sub>1</sub> & w <sub>1</sub> tol. h1 I	l <sub>1</sub> +0.0 -0.2	Weight kg
L1336.L16-04	TR16x4	1	16	4	Left	770	28	24	0.199
L1336.L18-04	TR18x4	1	18	4	Left	1131	30	28	0.353
L1336.L20-04	TR20x4	1	20	4	Left	1412	35	30	0.517
L1336.L22-05	TR22x5	1	22	5	Left	700	35	33	0.240
L1336.L24-05	TR24x5	1	24	5	Left	845	40	36	0.354
L1336.L26-05	TR26x5	1	26	5	Left	1005	40	39	0.363
L1336.L28-05	TR28x5	1	28	5	Left	1175	45	42	0.506
L1336.L30-06	TR30x6	1	30	6	Left	2544	45	45	0.877
L1336.L32-06	TR32x6	1	32	6	Left	1430	55	48	0.891
L1336.L36-06	TR36x6	1	36	6	Left	1950	60	54	1.163
L1336.L40-07	TR40x7	1	40	7	Left	4013	60	60	1.347
L1336.L44-07	TR44x7	1	44	7	Left	2940	65	66	1.538



# Square Steel Nut with Holes for lead screws

## Lead Screws & Nuts



### L1337

LEAD SCREWS & NUTS

#### Material

Steel (EN 10277-3, 11SMnPb37).

#### Technical Notes

Used as a fixing nut or for manual movements where the load is not important, as the steel to steel coupling used for moving

under heavy loads tends to seize.

The use of steel/steel contact surface is not suitable for motorised motion.

#### Tips

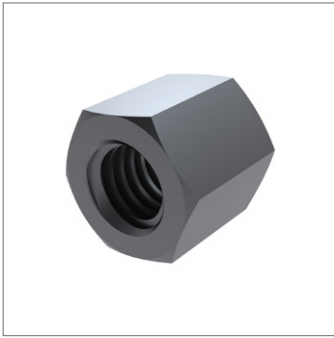
Standard nuts are right hand thread.

For use with steel or stainless steel lead

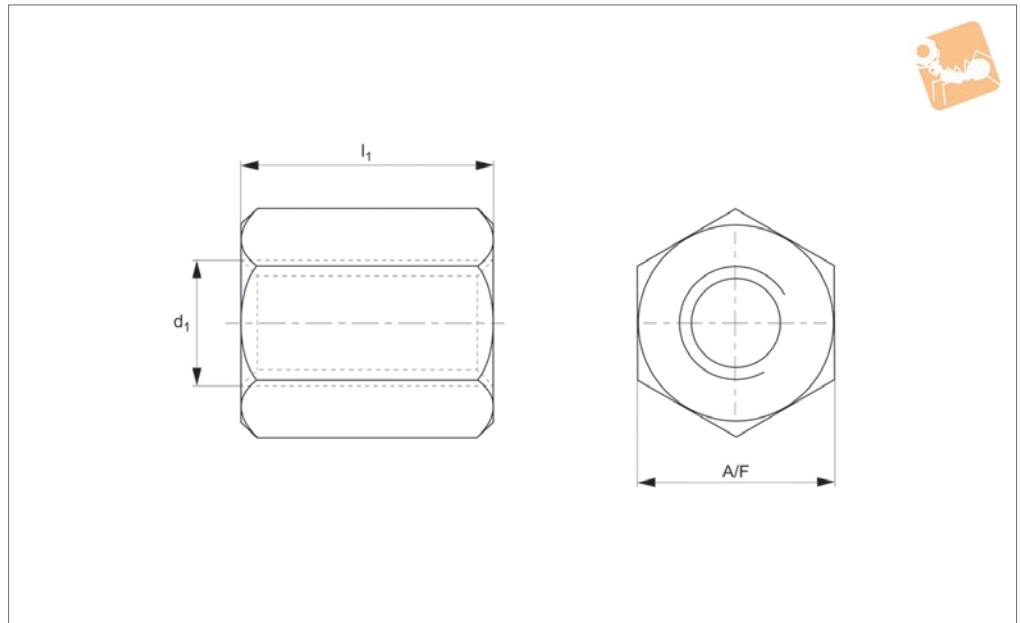
screws, L1320 and L1322.

\*Special M8 fixing screw with a reduced head diameter.

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub> & w <sub>1</sub> tol. h11	h <sub>2</sub>	l <sub>1</sub> +0.0 -0.2	l <sub>2</sub>	w <sub>2</sub>	Weight kg
L1337.R12-03	TR12x3	1	12	3	Right	739	4	7,0	25	4,2	30	20	17	0,123
L1337.R16-04	TR16x4	1	16	4	Right	770	5	9,5	35	5,2	40	24	21	0,199
L1337.R18-04	TR18x4	1	18	4	Right	1131	6	10,0	35	6,5	45	26	24	0,353
L1337.R20-04	TR20x4	1	20	4	Right	1412	6	10,0	40	6,5	50	38	28	0,517
L1337.R30-06	TR30x6	1	30	6	Right	2544	6	10,0	50	6,5	60	48	38	0,877
L1337.R40-07	TR40x7	1	40	7	Right	4013	8*	9,9*	60	8,5	70	55	49	1,347
L1337.R50-08	TR50x8	1	50	8	Right	6502	8*	9,9*	70	8,5	90	70	60	2,183
L1337.R60-09	TR60x9	1	60	9	Right	8718	8*	9,9*	80	8,5	100	80	69	2,990
L1337.L12-03	TR12x3	1	12	3	Left	739	4	7,0	25	4,2	30	20	17	0,123
L1337.L16-04	TR16x4	1	16	4	Left	770	5	9,5	35	5,2	40	24	21	0,199
L1337.L18-04	TR18x4	1	18	4	Left	1131	6	10,0	35	6,5	45	26	24	0,353
L1337.L20-04	TR20x4	1	20	4	Left	1412	6	10,0	40	6,5	50	38	28	0,517
L1337.L30-06	TR30x6	1	30	6	Left	2544	6	10,0	50	6,5	60	48	38	0,877
L1337.L40-07	TR40x7	1	40	7	Left	4013	8*	9,9*	60	8,5	70	55	49	1,347
L1337.L50-08	TR50x8	1	50	8	Left	6502	8*	9,9*	70	8,5	90	70	60	2,183
L1337.L60-09	TR60x9	1	60	9	Left	8718	8*	9,9*	80	8,5	100	80	69	2,990



## L1338



### Material

Steel (EN10277-3, 11SMnPb37). Manufactured to ISO 2901/2903 (DIN103).

### Technical Notes

Used for low rotation speeds, manual

control, for clamping or locking functions and for receiving dead weights.

The use of steel to steel contact surface is not suitable for motorised motion.

### Tips

Standard nuts are right hand thread, single starts.

For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

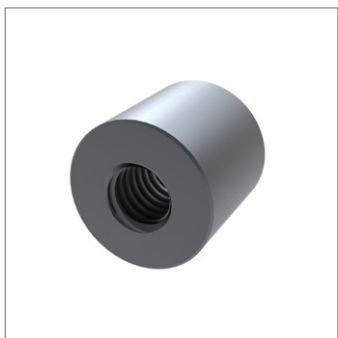
Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	A/F tol. h11	I <sub>1</sub> +0.0 -0.2	Weight kg
L1338.R10-02	TR10x 2	1	10	2	Right	150	17	15	0.022
L1338.R10-04	TR10x 4	2	10	4	Right	150	17	15	0.022
L1338.R12-03	TR12x 3	1	12	3	Right	210	19	18	0.032
L1338.R12-06	TR12x 6	2	12	6	Right	210	19	18	0.032
L1338.R14-03	TR14x 3	1	14	3	Right	285	22	21	0.049
L1338.R14-06	TR14x 6	2	14	6	Right	285	22	21	0.049
L1338.R16-04	TR16x 4	1	16	4	Right	365	24	24	0.065
L1338.R16-08	TR16x 8	2	16	8	Right	365	24	24	0.065
L1338.R18-04	TR18x 4	1	18	4	Right	470	27	27	0.091
L1338.R18-08	TR18x 8	2	18	8	Right	470	27	27	0.091
L1338.R20-04	TR20x 4	1	20	4	Right	590	30	30	0.124
L1338.R20-08	TR20x 8	2	20	8	Right	590	30	30	0.124
L1338.R22-05	TR22x 5	1	22	5	Right	700	30	33	0.125
L1338.R22-10	TR22x10	2	22	5	Right	700	30	33	0.125
L1338.R24-05	TR24x 5	1	24	5	Right	845	36	36	0.219
L1338.R24-10	TR24x10	2	24	10	Right	845	36	36	0.219
L1338.R26-05	TR26x 5	1	26	5	Right	1005	36	39	0.216
L1338.R26-10	TR26x10	2	26	10	Right	1005	36	39	0.216
L1338.R28-05	TR28x 5	1	28	5	Right	1175	41	42	0.318
L1338.R28-10	TR28x10	2	28	5	Right	1175	41	42	0.318
L1338.R30-06	TR30x 6	1	30	6	Right	1335	46	45	0.445
L1338.R30-12	TR30x12	2	30	12	Right	1335	55	54	0.445
L1338.R32-06	TR32x 6	1	32	6	Right	1430	50	48	0.567
L1338.R32-12	TR32x12	2	32	6	Right	1430	50	48	0.567
L1338.R36-06	TR36x 6	1	36	6	Right	1950	55	54	0.708
L1338.R36-12	TR36x12	2	36	12	Right	1950	55	54	0.708
L1338.R40-07	TR40x 7	1	40	7	Right	2400	60	60	0.893
L1338.R40-14	TR40x14	2	40	14	Right	2400	60	60	0.893
L1338.R44-07	TR44x 7	1	44	7	Right	2940	65	66	1.538
L1338.R50-08	TR50x 8	1	50	8	Right	3790	75	75	1.889
L1338.R60-09	TR60x 9	1	60	9	Right	5490	90	90	3.227
L1338.L10-02	TR10x2	1	10	2	Left	150	17	15	0.022



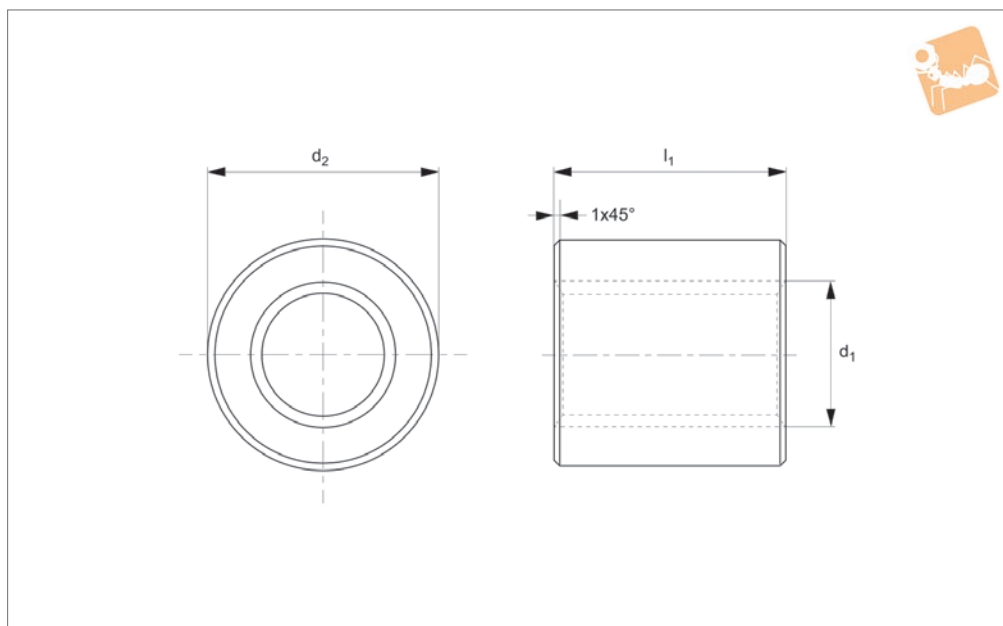
## Hexagon Steel Nuts

## Lead Screws & Nuts

Order No.	Size	No. of starts	$d_1$ tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	A/F tol. h11	$l_1$ +0.0 -0.2	Weight kg
L1338.L12-03	TR12x3	1	12	3	Left	210	19	18	0.032
L1338.L14-03	TR14x3	1	14	3	Left	285	22	21	0.049
L1338.L16-04	TR16x4	1	16	4	Left	365	24	24	0.065
L1338.L18-04	TR18x4	1	18	4	Left	470	27	27	0.091
L1338.L20-04	TR20x4	1	20	4	Left	590	30	30	0.124
L1338.L22-05	TR22x5	1	22	5	Left	700	30	33	0.125
L1338.L24-05	TR24x5	1	24	5	Left	845	36	36	0.219
L1338.L26-05	TR26x5	1	26	5	Left	1005	36	39	0.216
L1338.L28-05	TR28x5	1	28	5	Left	1175	41	42	0.318
L1338.L30-06	TR30x6	1	30	6	Left	1335	46	45	0.445
L1338.L32-06	TR32x6	1	32	6	Left	1430	50	48	0.567
L1338.L36-06	TR36x6	1	36	6	Left	1950	55	54	0.708
L1338.L40-07	TR40x7	1	40	7	Left	2400	60	60	0.893
L1338.L44-07	TR44x7	1	44	7	Left	2940	65	66	1.538
L1338.L50-08	TR50x8	1	50	8	Left	3790	75	75	1.889
L1338.L60-09	TR60x9	1	60	9	Left	5490	90	90	3.227



### L1339



#### Material

Steel (EN10277-3, 11SMnPb37). Manufactured to ISO2901/2903 (DIN 103).

control, for clamping or locking functions and for receiving dead weights.

The use of steel to steel contact surface is not suitable for motorised motion.

starts.

For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

#### Technical Notes

Used for low rotation speeds, manual

#### Tips

Standard nuts are right hand thread, single

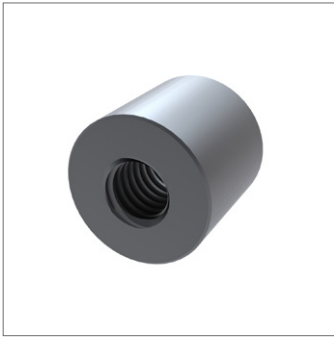
Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread hand	Contact surface mm <sup>2</sup>	d <sub>2</sub> tol. h10	l <sub>1</sub> +0.0 -0.1	Weight kg
L1339.R10-02	TR10x 2	1	10	2	Right	150	22	15	0.04
L1339.R10-04	TR10x 4	2	10	4	Right	150	22	15	0.04
L1339.R12-03	TR12x 3	1	12	3	Right	210	26	18	0.06
L1339.R12-06	TR12x 6	2	12	6	Right	210	26	18	0.06
L1339.R14-03	TR14x 3	1	14	3	Right	285	30	21	0.09
L1339.R14-06	TR14x 6	2	14	6	Right	285	30	21	0.09
L1339.R16-04	TR16x 4	1	16	4	Right	365	36	24	0.16
L1339.R16-08	TR16x 8	2	16	8	Right	365	36	24	0.16
L1339.R18-04	TR18x 4	1	18	4	Right	470	40	27	0.22
L1339.R18-08	TR18x 8	2	18	8	Right	470	40	27	0.22
L1339.R20-04	TR20x 4	1	20	4	Right	590	45	30	0.31
L1339.R20-08	TR20x 8	2	20	8	Right	590	45	30	0.31
L1339.R22-05	TR22x 5	1	22	5	Right	700	45	33	0.32
L1339.R22-10	TR22x10	2	22	10	Right	700	45	33	0.32
L1339.R24-05	TR24x 5	1	24	5	Right	845	50	36	0.44
L1339.R24-10	TR24x10	2	24	10	Right	845	50	36	0.44
L1339.R26-05	TR26x 5	1	26	5	Right	1005	50	39	0.45
L1339.R26-10	TR26x10	2	26	10	Right	1005	50	39	0.45
L1339.R28-05	TR28x 5	1	28	5	Right	1175	60	42	0.75
L1339.R28-10	TR28x10	2	28	10	Right	1175	60	42	0.75
L1339.R30-06	TR30x 6	1	30	6	Right	1335	60	45	0.77
L1339.R30-12	TR30x12	2	30	12	Right	1335	60	45	0.77
L1339.R32-06	TR32x 6	1	32	6	Right	1430	60	48	0.79
L1339.R32-12	TR32x12	2	32	12	Right	1430	60	48	0.79
L1339.R36-06	TR36x 6	1	36	6	Right	1950	75	54	1.48
L1339.R36-12	TR36x12	2	36	12	Right	1950	75	54	1.49
L1339.R40-07	TR40x 7	1	40	7	Right	2400	80	60	1.83
L1339.R40-14	TR40x14	2	40	14	Right	2400	80	60	1.83
L1339.R44-07	TR44x 7	1	44	7	Right	2940	80	66	1.89
L1339.R50-08	TR50x 8	1	50	8	Right	3790	90	75	2.69
L1339.R60-09	TR60x 9	1	60	9	Right	5490	100	90	3.87



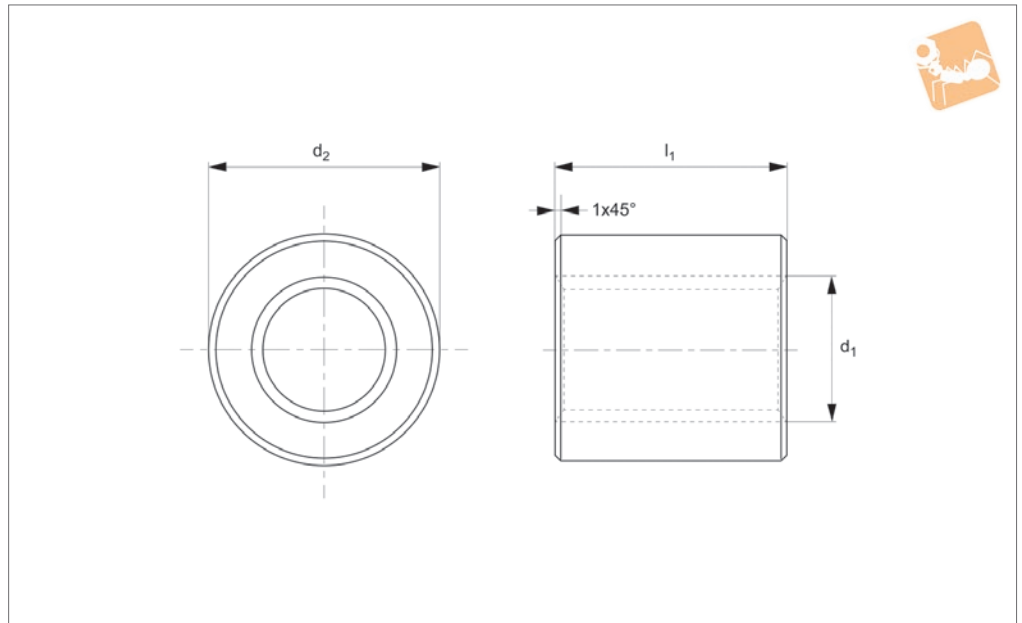
# Cylindrical Steel Nuts for lead screws

## Lead Screws & Nuts

Order No.	Size	No. of starts	$d_1$ tol. 7H	Lead	Thread hand	Contact surface mm <sup>2</sup>	$d_2$ tol. h10	$l_1$ +0.0 -0.1	Weight kg
L1339.R70-10	TR70x10	1	70	10	Right	7140	110	100	5.12
L1339.R80-10	TR80x10	1	80	10	Right	8900	120	110	6.00
L1339.L10-02	TR10x 2	1	10	2	Left	150	22	15	0.04
L1339.L12-03	TR12x 3	1	12	3	Left	210	26	18	0.06
L1339.L14-03	TR14x 3	1	14	3	Left	210	30	21	0.09
L1339.L16-04	TR16x 4	1	16	4	Left	365	36	24	0.16
L1339.L18-04	TR18x 4	1	18	4	Left	470	40	27	0.22
L1339.L20-04	TR20x 4	1	20	4	Left	590	45	30	0.31
L1339.L22-05	TR22x 5	1	22	5	Left	700	45	33	0.32
L1339.L24-05	TR24x 5	1	24	5	Left	845	50	36	0.44
L1339.L26-05	TR26x 5	1	26	5	Left	1005	50	39	0.45
L1339.L28-05	TR28x 5	1	28	5	Left	1175	60	42	0.75
L1339.L30-06	TR30x 6	1	30	6	Left	1335	60	45	0.77
L1339.L32-06	TR32x 6	1	32	6	Left	1430	60	48	0.79
L1339.L36-06	TR36x 6	1	36	6	Left	1950	75	54	1.48
L1339.L40-07	TR40x 7	1	40	7	Left	2400	80	60	1.83
L1339.L44-07	TR44x 7	1	44	7	Left	2940	80	66	1.88
L1339.L50-08	TR50x 8	1	50	8	Left	3790	90	75	2.69
L1339.L60-09	TR60x 9	1	60	9	Left	5490	100	90	3.87
L1339.L70-10	TR70x10	1	70	10	Left	7140	110	100	5.12
L1339.L80-10	TR80x10	1	80	10	Left	8900	120	110	6.00



## L1340



### Material

Steel (EN10277-3, 11SMnPb37). Manufactured to ISO2901/2903 (DIN 103).

### Technical Notes

Used for low rotation speeds, manual

control, for clamping or locking functions and for receiving dead weights.

The use of steel to steel contact surface is not suitable for motorised motion.

### Tips

Standard nuts are right hand thread, single starts.

For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	d <sub>2</sub> tol. h10	l <sub>1</sub> +0.0 -0.1	Weight kg
L1340.R10-02	TR10x 2	1	10	2	Right	150	22	20	0.05
L1340.R10-04	TR10x 4	2	10	4	Right	150	22	20	0.05
L1340.R12-03	TR12x 3	1	12	3	Right	210	26	24	0.07
L1340.R12-06	TR12x 6	2	12	6	Right	210	26	24	0.07
L1340.R14-03	TR14x 3	1	14	3	Right	285	30	28	0.12
L1340.R14-06	TR14x 6	2	14	6	Right	285	30	28	0.12
L1340.R16-04	TR16x 4	1	16	4	Right	365	36	32	0.21
L1340.R16-08	TR16x 8	2	16	8	Right	365	36	32	0.21
L1340.R18-04	TR18x 4	1	18	4	Right	470	40	36	0.29
L1340.R18-08	TR18x 8	2	18	8	Right	470	40	36	0.29
L1340.R20-04	TR20x 4	1	20	4	Right	590	45	40	0.41
L1340.R20-08	TR20x 8	2	20	8	Right	590	45	40	0.41
L1340.R22-05	TR22x 5	1	22	5	Right	700	45	44	0.43
L1340.R22-10	TR22x10	2	22	10	Right	700	45	44	0.43
L1340.R24-05	TR24x 5	1	24	5	Right	845	50	48	0.59
L1340.R24-10	TR24x10	2	24	10	Right	845	50	48	0.59
L1340.R26-05	TR26x 5	1	26	5	Right	1005	50	52	0.60
L1340.R26-10	TR26x10	2	26	10	Right	1005	50	52	0.60
L1340.R28-05	TR28x 5	1	28	5	Right	1175	60	56	0.98
L1340.R30-06	TR30x 6	1	30	6	Right	1335	60	60	1.02
L1340.R30-12	TR30x12	2	30	12	Right	1335	60	60	1.02
L1340.R32-06	TR32x 6	1	32	6	Right	1430	60	64	1.05
L1340.R32-12	TR32x12	2	32	12	Right	1430	60	64	1.05
L1340.R36-06	TR36x 6	1	36	6	Right	1950	75	72	1.96
L1340.R36-12	TR36x12	2	36	12	Right	1950	75	72	1.96
L1340.R40-07	TR40x 7	1	40	7	Right	2400	80	80	2.43
L1340.R40-14	TR40x14	2	40	14	Right	2400	80	80	2.43
L1340.R44-07	TR44x 7	1	44	7	Right	2940	80	88	2.51
L1340.L10-02	TR10x2	1	10	2	Left	150	22	20	0.05
L1340.L12-03	TR12x3	1	12	3	Left	210	26	24	0.07
L1340.L14-03	TR14x3	1	14	3	Left	285	30	28	0.12
L1340.L16-04	TR16x4	1	16	4	Left	365	36	32	0.21



# Long Cylindrical Steel Nuts for lead screws

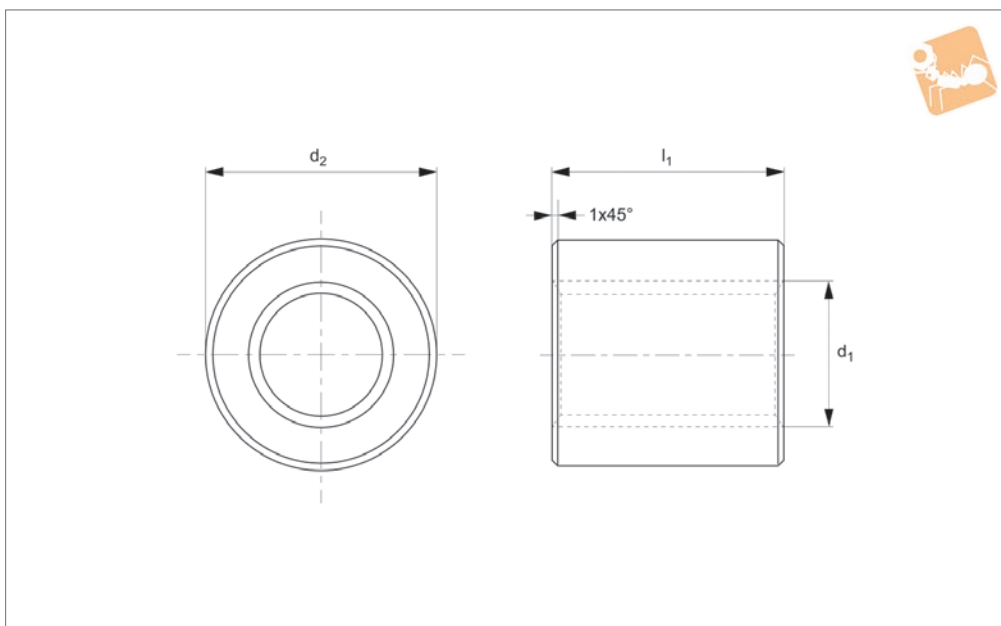
## Lead Screws & Nuts



Order No.	Size	No. of starts	$d_1$ tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	$d_2$ tol. h10	$l_1$ +0.0 -0.1	Weight kg
L1340.L18-04	TR18x4	1	18	4	Left	470	40	36	0.29
L1340.L20-04	TR20x4	1	20	4	Left	590	45	40	0.41
L1340.L22-05	TR22x5	1	22	5	Left	700	45	44	0.43
L1340.L24-05	TR24x5	1	24	5	Left	845	50	48	0.59
L1340.L26-05	TR26x5	1	26	5	Left	1005	50	52	0.60
L1340.L28-05	TR28x5	1	28	5	Left	1175	60	56	0.98
L1340.L30-06	TR30x6	1	30	6	Left	1335	60	60	1.02
L1340.L32-06	TR32x6	1	32	6	Left	1430	60	64	1.05
L1340.L36-06	TR36x6	1	36	6	Left	1950	75	72	1.96
L1340.L40-07	TR40x7	1	40	7	Left	2400	80	80	2.43
L1340.L44-07	TR44x7	1	44	7	Left	2940	80	88	2.51



### L1341



**Material**  
Stainless steel (AISI 303).

**Technical Notes**  
Especially suitable to withstand corrosive

chemicals.

**Tips**  
Standard nuts are right hand thread.  
For use with stainless steel lead screws

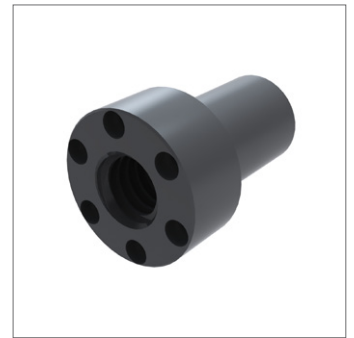
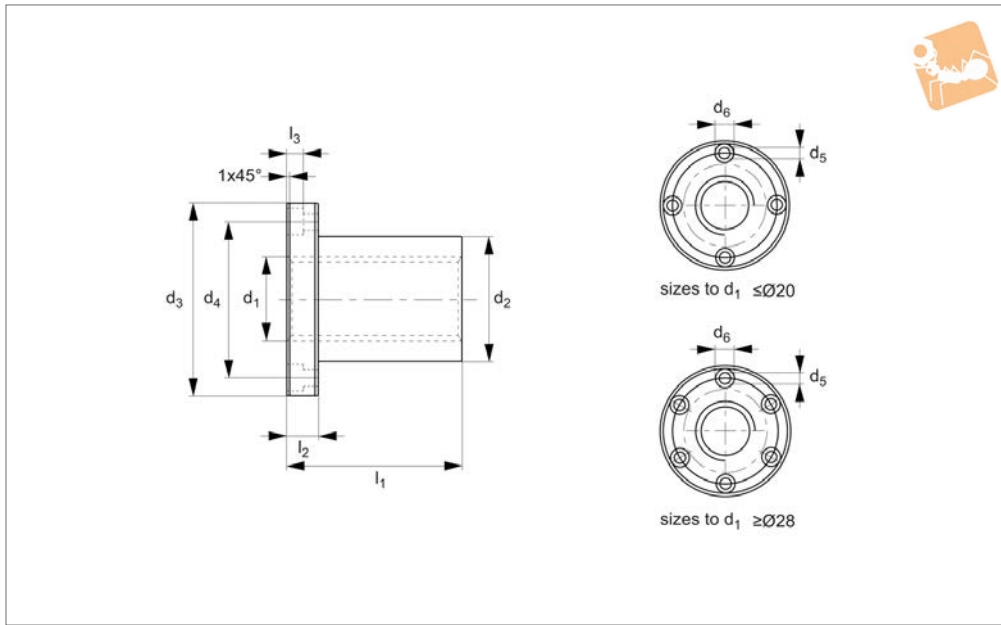
nos. L1322 and L1323.

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	d <sub>2</sub> tol. h11	l <sub>1</sub> +0.0 -0.2	Weight kg
L1341.R12-03	TR12x3	1	12	3	Right	297	26	18	0.060
L1341.R16-04	TR16x4	1	16	4	Right	528	36	24	0.157
L1341.R20-04	TR20x4	1	20	4	Right	847	45	30	0.305
L1341.R24-05	TR24x5	1	24	5	Right	1215	50	36	0.436
L1341.R30-06	TR30x6	1	30	6	Right	1908	60	45	0.766
L1341.R36-06	TR36x6	1	36	6	Right	2799	75	54	1.462
L1341.R40-07	TR40x7	1	40	7	Right	3440	80	60	1.808
L1341.R50-08	TR50x8	1	50	8	Right	5418	90	75	2.653
L1341.L12-03	TR12x3	1	12	3	Left	297	26	18	0.060
L1341.L16-04	TR16x4	1	16	4	Left	528	36	24	0.157
L1341.L20-04	TR20x4	1	20	4	Left	847	45	30	0.305
L1341.L24-05	TR24x5	1	24	5	Left	1215	50	36	0.436
L1341.L30-06	TR30x6	1	30	6	Left	1908	60	45	0.766
L1341.L36-06	TR36x6	1	36	6	Left	2799	75	54	1.462
L1341.L40-07	TR40x7	1	40	7	Left	3440	80	60	1.808
L1341.L50-08	TR50x8	1	50	8	Left	5418	90	75	2.653



# Flanged Self-Lubricating Plastic Nut for lead screws

## Lead Screws & Nuts



### L1342

LEAD SCREWS & NUTS

#### Material

Plastic (PA6.6 & MoS2).

#### Technical Notes

This nut type is made of a very wear resi-

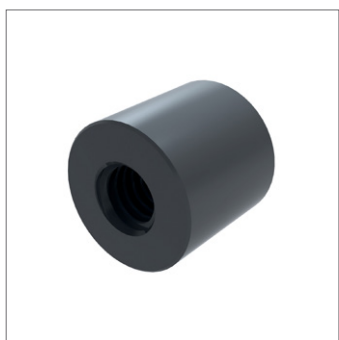
stant, self-lubricating plastic.

The extra length of these lead screw nuts (three x nominal thread  $\varnothing$ ) greatly reduces wear.

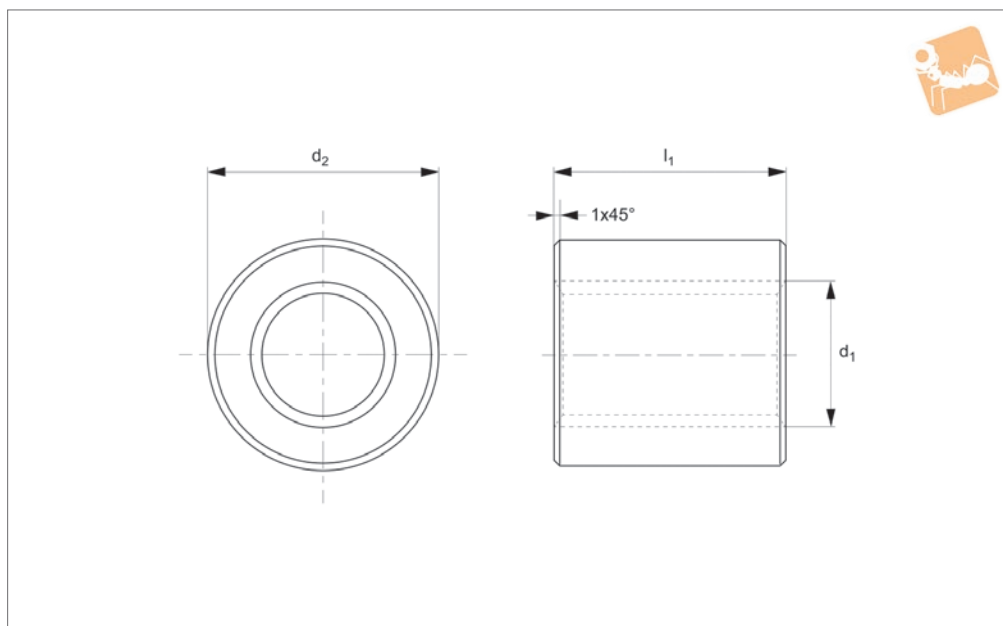
#### Tips

Standard nuts are right hand thread. For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

Order No.	Size	No. of starts	$d_1$ tol. 7H	Lead	Thread hand	Contact surface mm <sup>2</sup>	$d_2$ +0.0 -0.3	$d_3$ +0.0 -0.1	$d_4$	$d_5$	$d_6$	$l_1$	$l_2$	$l_3$	Weight kg
L1342.R12-03	TR12x 3	1	12	3	Right	594	18	37	26	4,5	7,5	36	12	4,2	0,02
L1342.R16-04	TR16x 4	1	16	4	Right	1056	22	45	32	5,5	9,5	48	16	5,2	0,03
L1342.R20-04	TR20x 4	1	20	4	Right	1696	30	52	40	5,5	9,5	60	20	5,2	0,06
L1342.R20-08	TR20x 8	2	20	8	Right	1696	30	52	40	5,5	9,5	60	20	5,2	0,06
L1342.R28-05	TR28x 5	1	28	5	Right	3600	40	68	53	6,5	11,0	90	30	6,5	0,14
L1342.R28-10	TR28x10	2	28	10	Right	3600	40	68	53	6,5	11,0	90	30	6,5	0,14
L1342.R30-06	TR30x 6	1	30	6	Right	3816	40	68	53	6,5	11,0	90	30	6,5	0,13
L1342.R40-07	TR40x 7	1	40	7	Right	6880	55	84	68	8,5	14,0	120	40	8,5	0,29
L1342.R50-08	TR50x 8	1	50	8	Right	10840	65	100	80	10,5	17,0	150	50	10,5	0,48
L1342.L12-03	TR12x3	1	12	3	Left	594	18	37	26	4,5	7,5	36	12	4,2	0,02
L1342.L16-04	TR16x4	1	16	4	Left	1056	22	45	32	5,5	9,5	48	16	5,2	0,03
L1342.L20-04	TR20x4	1	20	4	Left	1696	30	52	40	5,5	9,5	60	20	5,2	0,06
L1342.L28-05	TR28x5	1	28	5	Left	3600	40	68	53	6,5	11,0	90	30	6,5	0,14
L1342.L30-06	TR30x6	1	30	6	Left	3816	40	68	53	6,5	11,0	90	30	6,5	0,13
L1342.L40-07	TR40x7	1	40	7	Left	6880	55	84	68	8,5	14,0	120	40	8,5	0,29
L1342.L50-08	TR50x8	1	50	8	Left	10840	65	100	80	10,5	17,0	150	50	10,5	0,48



## L1343



**Material**  
Nylon (PA 6.6).

**Technical Notes**  
For manual or powered control and medium/high speeds under moderate

loads. Low sound levels.  
Can be used without lubrication but this reduces service life.

**Tips**  
Standard nuts are right hand thread, single

starts.  
For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

Order No.	Size	No. of starts	d <sub>1</sub> tol. 7H	Lead	Thread direction	Contact surface mm <sup>2</sup>	d <sub>2</sub> tol. h10	l <sub>1</sub> +0.0 -0.1	Weight kg
L1343.R10-02	TR10x 2	1	10	2	Right	200	22	20	0.010
L1343.R10-04	TR10x 4	2	10	4	Right	200	22	20	0.010
L1343.R12-03	TR12x 3	1	12	3	Right	280	26	24	0.012
L1343.R12-06	TR12x 6	2	12	6	Right	280	26	24	0.012
L1343.R16-04	TR16x 4	1	16	4	Right	490	36	32	0.032
L1343.R16-08	TR16x 8	2	16	8	Right	490	36	32	0.032
L1343.R20-04	TR20x 4	1	20	4	Right	790	45	40	0.060
L1343.R20-08	TR20x 8	2	20	8	Right	790	45	40	0.060
L1343.R24-05	TR24x 5	1	24	5	Right	1130	50	48	0.088
L1343.R24-10	TR24x10	2	24	10	Right	1130	50	48	0.088
L1343.R30-06	TR30x 6	1	30	6	Right	1780	60	60	0.150
L1343.R30-12	TR30x12	2	30	12	Right	1780	60	60	0.150
L1343.R36-06	TR36x 6	1	36	6	Right	2160	75	72	0.300
L1343.R36-12	TR36x12	2	36	12	Right	2160	75	72	0.300
L1343.R40-07	TR40x 7	1	40	7	Right	3210	80	80	0.370
L1343.R40-14	TR40x14	2	40	14	Right	3210	80	80	0.370
L1343.L10-02	TR10x2	1	10	2	Left	200	22	20	0.010
L1343.L12-03	TR12x3	1	12	3	Left	280	26	24	0.012
L1343.L16-04	TR16x4	1	16	4	Left	490	36	32	0.032
L1343.L20-04	TR20x4	1	20	4	Left	790	45	40	0.060
L1343.L24-05	TR24x5	1	24	5	Left	1130	50	48	0.088
L1343.L30-06	TR30x6	1	30	6	Left	1780	60	60	0.150
L1343.L36-06	TR36x6	1	36	6	Left	2160	75	72	0.300
L1343.L40-07	TR40x7	1	40	7	Left	3210	80	80	0.370



To select the correct size of lead screw and nut to use, please take into consideration the following three points:

1. The size required to minimise the wear of the nut due to friction.
2. The maximum load the screw can take before it bends.
3. The maximum rpm the screw can run at before it begins to vibrate.

### Finding a size to minimise the wear of a nut

Due to friction between the lead screw and nut, some of the power put into the lead screw is lost as heat. The solution is to limit the contact surface area between the lead screw and nut as this will help reduce the amount of friction and wear on the nut.

Lead screws are used to convert rotary motion into linear motion.

The efficiency of a lead screw and nut is defined as the amount of power you get from the nut in relation to the amount of power you put into the lead screw to begin with.

For example,  $P_t$  (the power you put into the screw) divided by  $P_u$  (the power you get from the nut) = the efficiency.

The efficiency depends on the friction between the contact surfaces of the lead screw and nut, and the lead angle of the thread.

The speed the nut moves along the lead screw must also be taken into consideration in order to limit the amount of friction in the system.

Please see the formulae on the next page which help in calculating the speeds in your application.

### Calculation of the Contact Surface Pressure p

The contact surface pressure p is calculated using the following formula.

$$p = \frac{F}{A_t}$$

F = Axial Force (N)

$A_t$  = Contact Surface Area (mm<sup>2</sup>)

For standard nuts each  $A_t$  value has been listed in the product tables



### Calculating of the sliding speed $V_{st}$

The sliding speed is the result of the speed at which the nut moves and the friction.

Calculating the sliding speed helps you to calculate the required rpm of a screw if you know what speed the nut must move at, or help to calculate how fast the nut will move if you know the rpm of the screw.

You must first find the sliding speed of your lead screw and nut using one of the below formulae and then use this to calculate either rpm or output speed of the nut.

The sliding speed is calculated using one of the following formulae.

If the rpm of the screw has already been defined:

$$V_{st} = \frac{n \cdot P}{1000 \cdot \sin \alpha}$$

$V_{st}$  = sliding speed on mean diameter (m/min)

$n$  = rpm

$P$  = thread pitch (mm)

$\alpha$  = thread helix angle

If you have already established at which speed the nut must move:

$$V_{st} = \frac{V_{tr}}{\sin \alpha}$$

$V_{st}$  = sliding speed on mean diameter (m/min)

$V_{tr}$  = motion speed (m/min)

$\alpha$  = thread helix angle

Please note that the rpm and the speed at which the nut moves are bounded as follows:

$$n \text{ (rpm)} = \frac{1000 \cdot V_{tr}}{P}$$

$n$  = rpm

$V_{tr}$  = speed at which the nut moves (m/min)

$P$  = thread pitch (mm)





The critical rpm is the speed at which screw vibration begins to appear. This rpm speed must never be reached because the vibrations cause serious operating issues. The critical rpm depends on lead screw diameter, how the ends of the lead screw are supported, the free length (lg), and how accurately the lead screw is assembled.

For values shown in the following graphs assume a minimum safety factor for assembly accuracy as per the following chart.

### Assembly accuracy coefficient

Assembly accuracy	Conditions	Safety coefficient
<b>Good assembly accuracy:</b> Nut alignment to screw within 0,05mm	Assembly to which the bearing mounts are assembled CNC machined very accurately.	1,3 – 1,6
<b>Average assembly accuracy:</b> Nut alignment to screw within 0,10mm	Bearing mounts installed onto assembly that has not been CNC machined, alignments accurately checked after mounting.	1,7 – 2,5
<b>Low assembly accuracy:</b> Nut alignment to screw within 0,25mm	Bearing mounts installed onto assembly that has not been CNC machined and alignment is not checked accurately.	2,6 – 4,5

### Example

To find the critical rpm of a lead screw 40 mm diameter with 7 mm lead, 3 metres long with end support configuration double bearing one end, single bearing the other end (see graph 3) with average assembly accuracy.

Critical rpm graph 3 gives the critical rotation speed of 1000 rpm.

From the assembly accuracy coefficient chart we take the maximum value for the safety coefficient = 2,5

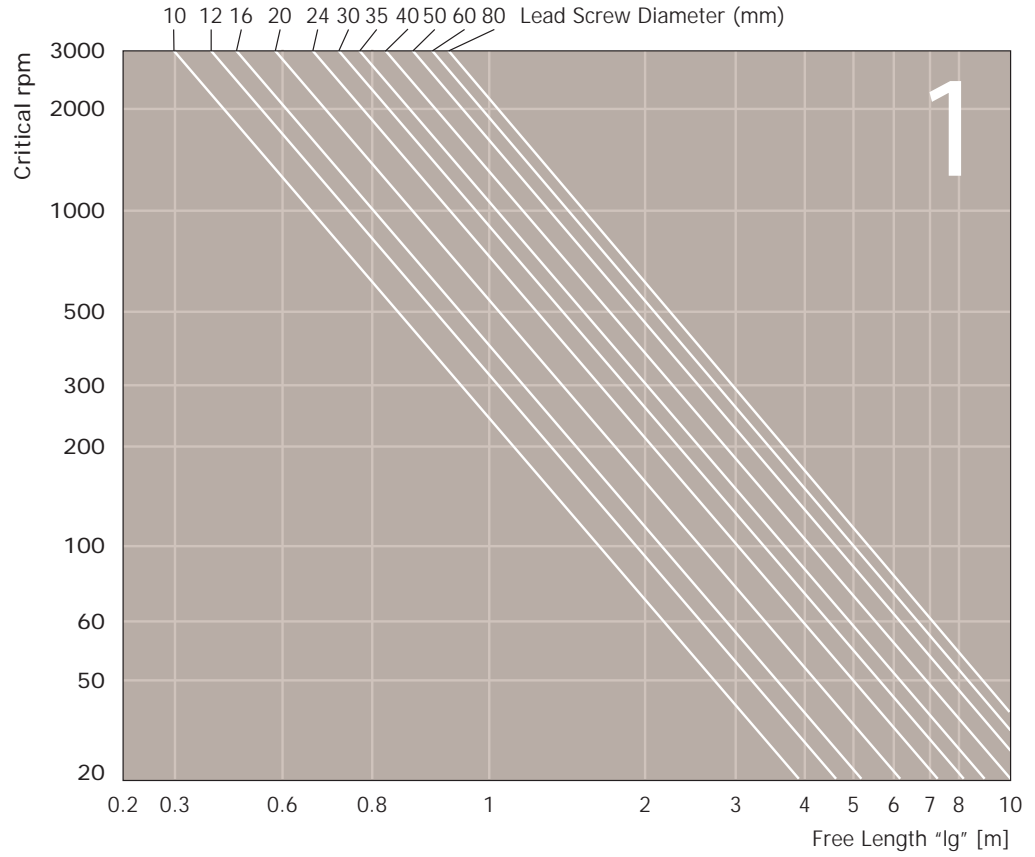
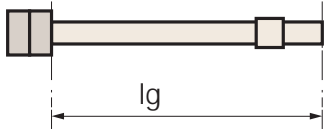
We can calculate the acceptable working speed at a maximum rpm of

$$N_{max} = 1000/2,5 = 400 \text{ rpm}$$



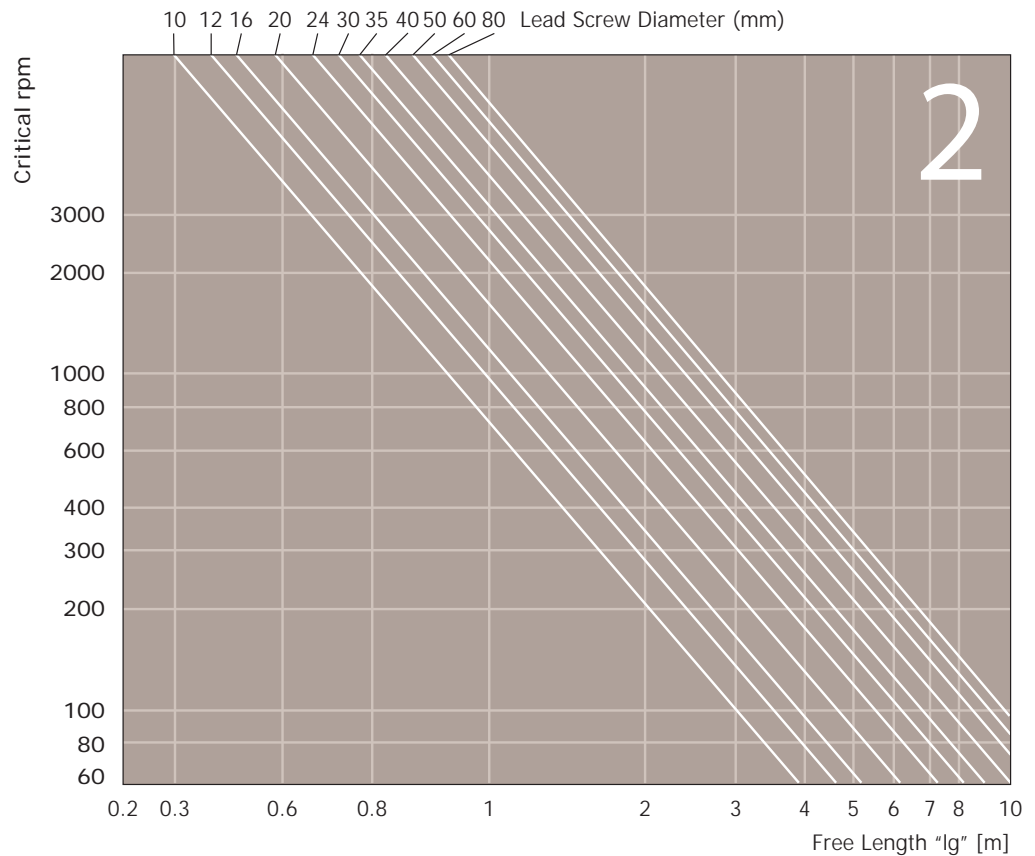
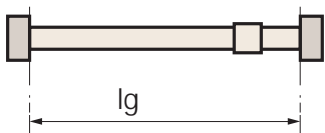
**Critical RPM - Graph 1**

Supported one end only by double bearing



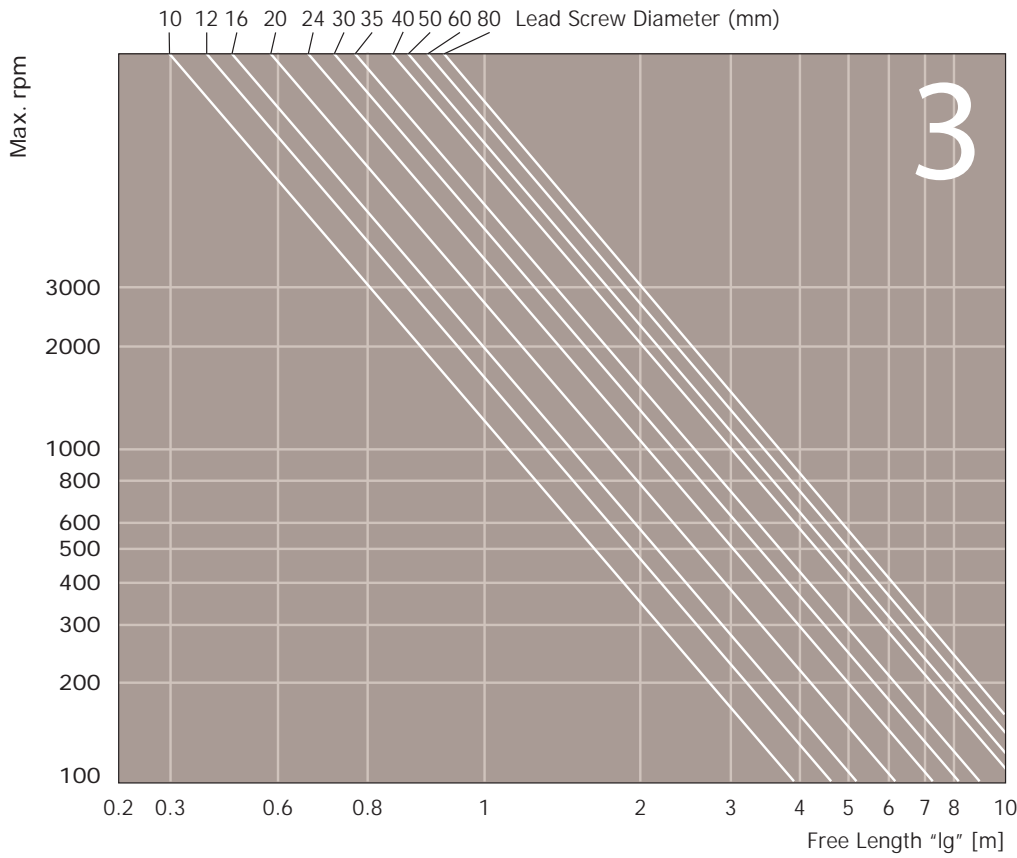
**Critical RPM - Graph 2**

Supported each end by single bearings

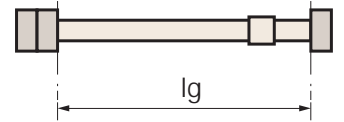




**Critical RPM Graph 3**

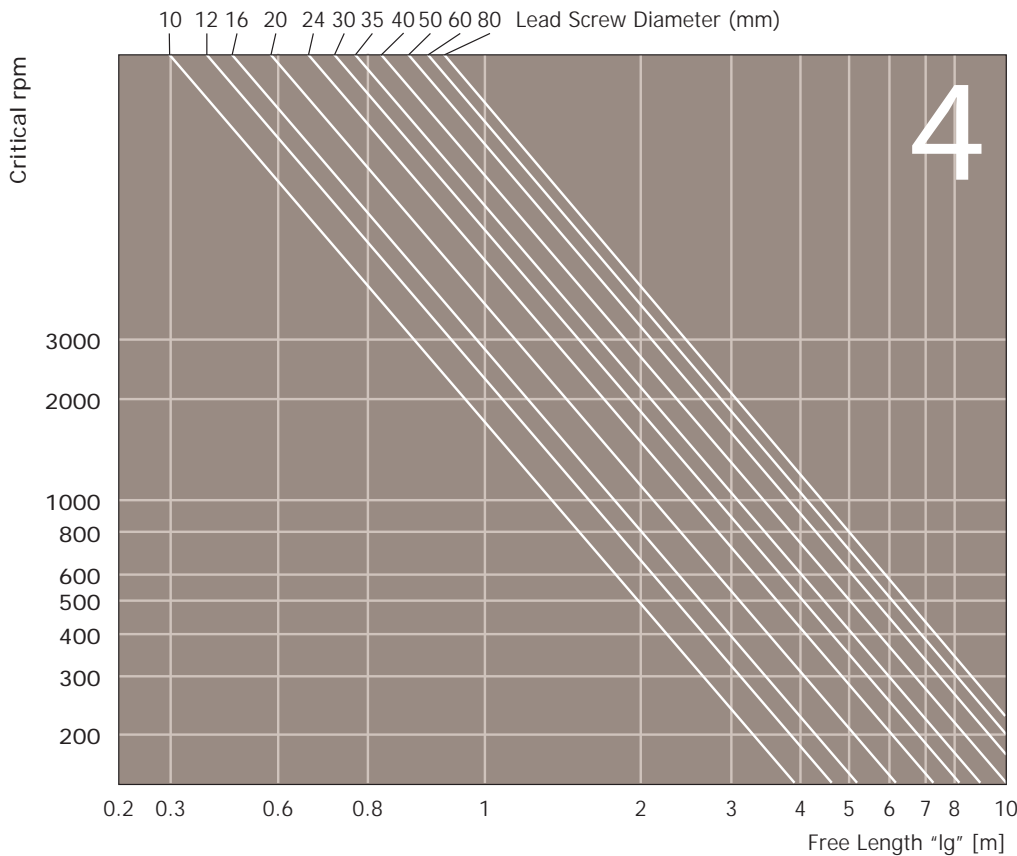


**Supported each end. Double bearing one end, single bearing the other end**

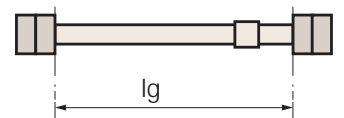


LEAD SCREWS & NUTS

**Critical RPM Graph 4**



**Supported by double bearings each end**





**Efficiency**

The numerical efficiency values of each limit are shown in the table 'Trapezoidal Lead Screw and Nut Specifications'.

The larger the lead angle of a lead screw, the greater the efficiency is for the lead screw. It is therefore recommended, where possible, to use a lead screw with a lead angle as high as possible.

The lead angle for each size of screw can also be found in the trapezoidal lead screw and nut specifications table. To help reduce friction as far as possible, we make precision rolled trapezoidal lead screws with minimal roughness on the side of the threads, always less than 1µ Ra (usually 0.2 to 0.7 µ).

For applications where low friction is important, we also make wear resistant self lubricating flanged plastic nuts. The friction factor of these is 0.1 with the initial breakaway friction factor being 0.15.

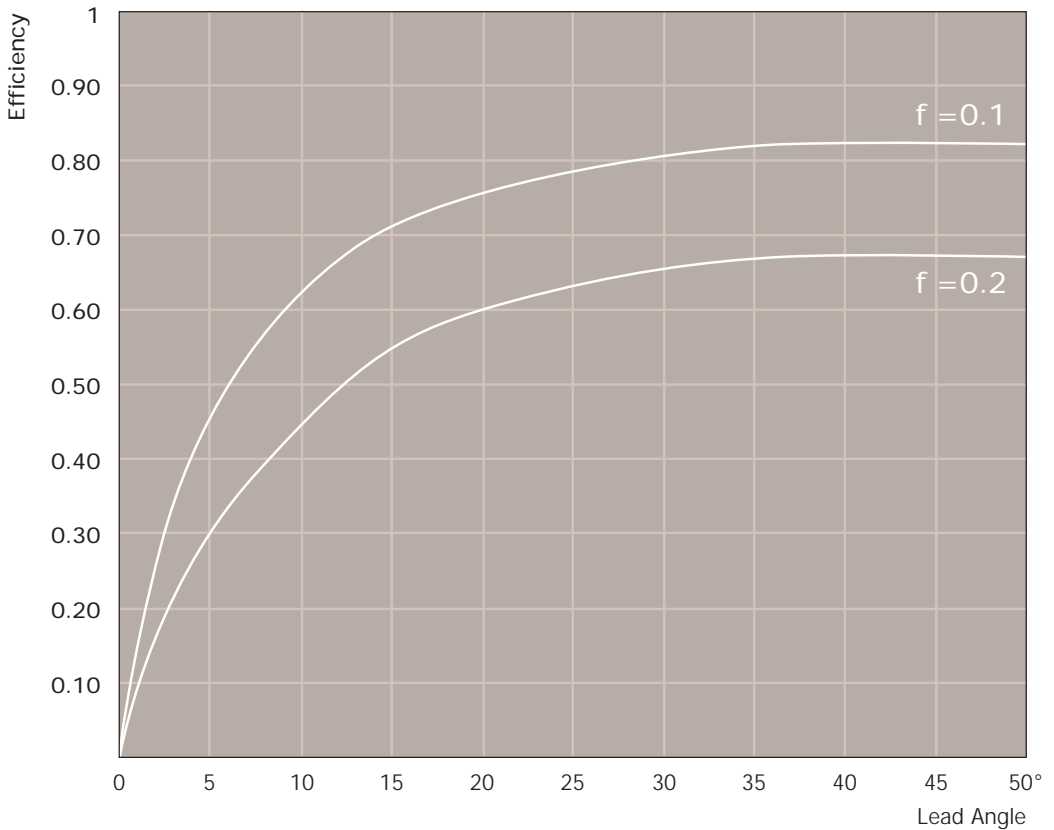
Lead Screws from Automation Components

$$\eta = \frac{1 - f \cdot \tan\alpha}{1 + \frac{f}{\tan\alpha}}$$

η = efficiency  
 f = dynamic friction factor between screw and nut materials  
 α = lead angle of threads

The numerical efficiency values of each limit are shown in the 'Trapezoidal Lead Screw and Nut Specifications' table.

**Efficiency**





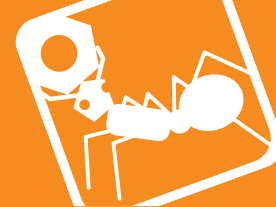
## Trapezoidal screw specifications



Diameter x lead	Lead angle	Max. efficiency $\eta f=0.1^*$	Min. efficiency $\eta f=0.2^*$	Moment of inertia $mm^4$	Radial play between screw and nut min.	Radial play between screw and nut max.	Axial play between screw and nut min.	Axial play between screw and nut max.
10 x 2	4°02'	0,41	0,26	131	0,071	0,511	0,019	0,137
10 x 4	8°03'	0,58	0,40	131	0,071	0,511	0,019	0,137
12 x 3	5°12'	0,47	0,31	215	0,085	0,609	0,023	0,163
12 x 6	10°19'	0,63	0,46	215	0,085	0,609	0,023	0,163
14 x 3	4°22'	0,43	0,27	518	0,085	0,609	0,023	0,163
14 x 6	8°41'	0,59	0,42	518	0,085	0,609	0,023	0,163
16 x 4	5°12'	0,47	0,31	738	0,095	0,715	0,025	0,192
16 x 8	10°19'	0,63	0,46	738	0,095	0,715	0,025	0,192
18 x 4	4°33'	0,44	0,28	1434	0,095	0,715	0,025	0,192
18 x 8	9°02'	0,60	0,43	1434	0,095	0,715	0,025	0,192
20 x 4	4°03'	0,41	0,26	2534	0,095	0,715	0,025	0,192
20 x 8	8°03'	0,58	0,40	2534	0,095	0,715	0,025	0,192
22 x 5	4°40'	0,45	0,28	3232	0,106	0,761	0,028	0,204
22 x 10	9°16'	0,61	0,43	3232	0,106	0,761	0,028	0,204
24 x 5	4°14'	0,42	0,27	5175	0,106	0,806	0,028	0,216
24 x 10	8°25'	0,59	0,41	5175	0,106	0,806	0,028	0,216
26 x 5	3°52'	0,40	0,25	7884	0,106	0,806	0,028	0,216
26 x 10	7°42'	0,57	0,39	7884	0,106	0,806	0,028	0,216
28 x 5	3°34'	0,38	0,23	11539	0,106	0,806	0,028	0,216
28 x 10	7°07'	0,55	0,37	11539	0,106	0,806	0,028	0,216
30 x 6	4°03'	0,41	0,26	13650	0,118	0,903	0,032	0,242
30 x 12	8°03'	0,58	0,40	13650	0,118	0,903	0,032	0,242
32 x 6	3°46'	0,39	0,24	17580	0,118	0,903	0,032	0,242
32 x 12	7°30'	0,56	0,38	17580	0,118	0,903	0,032	0,242
36 x 6	3°19'	0,36	0,22	34540	0,118	0,903	0,032	0,242
36 x 12	6°36'	0,53	0,36	34540	0,118	0,903	0,032	0,242
40 x 7	3°30'	0,38	0,23	51030	0,125	0,955	0,033	0,256
40 x 14	6°58'	0,54	0,37	51030	0,125	0,955	0,033	0,256
44 x 7	3°09'	0,35	0,21	81820	0,125	0,955	0,033	0,256
50 x 8	3°10'	0,35	0,21	136900	0,132	1,062	0,035	0,285
55 x 9	3°15'	0,36	0,22	189550	0,140	1,125	0,038	0,301
60 x 9	2°57'	0,34	0,20	302600	0,140	1,125	0,038	0,301
70 x 10	2°48'	0,33	0,19	587500	0,150	1,135	0,040	0,304
80 x 10	2°26'	0,30	0,17	1069000	0,150	1,135	0,040	0,304
90 x 12	2°36'	0,31	0,18	1658000	0,170	1,295	0,046	0,347
95 x 16	3°21'	0,37	0,22	1647000	0,190	1,500	0,051	0,402
100 x 16	3°10'	0,35	0,21	2124000	0,190	1,500	0,051	0,402
120 x 16	2°36'	0,31	0,16	5130000	0,190	1,500	0,051	0,402

\* Please refer to page 248 for more information on the efficiency.

Diameter x lead	Lead accuracy $\mu/300mm$	Straightness $mm/\mu$
10 x 2 to 20 x 4	0,1	0,5/300
22 x 5 to 60 x 9	0,1	0,2/300
70 x 10 to 80 x 10	0,1	0,4/300
90 x 12	0,2	0,5/300
95 x 16 to 120 x 16	0,2	1,0/300



$$h_1 = 0,5 P$$

$$h_3 = h_4 = h_1 + x = 0,5 P + x$$

$$z = 0,25 P = h_1/2$$

$$d_3 = d - 2 h_3$$

$$d_2 = D_2 = d - 2 z = d - 0,5 P$$

$$D_2 = d + 2 x$$

P = thread pitch

$d_1$  = nominal thread diameter

$d_3$  = core thread diameter

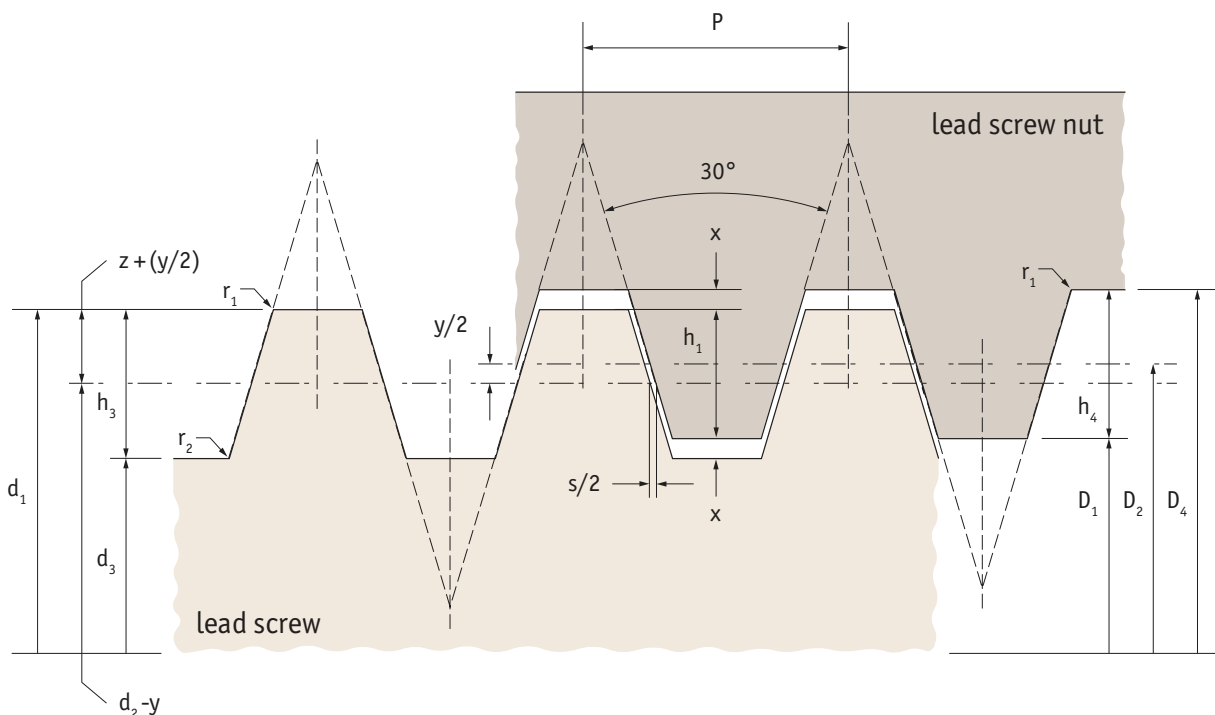
x = bottom play

y = top deviation for screw

s = 0,26795 y

$r_1$  max. = 0,5 x

$r_2$  max. = x



### Reversibility/backdrive

No backdrive where lead angle  $< 2^\circ 30'$ .

At angles up to  $5-6^\circ$  there is a low potential of system backdrive.

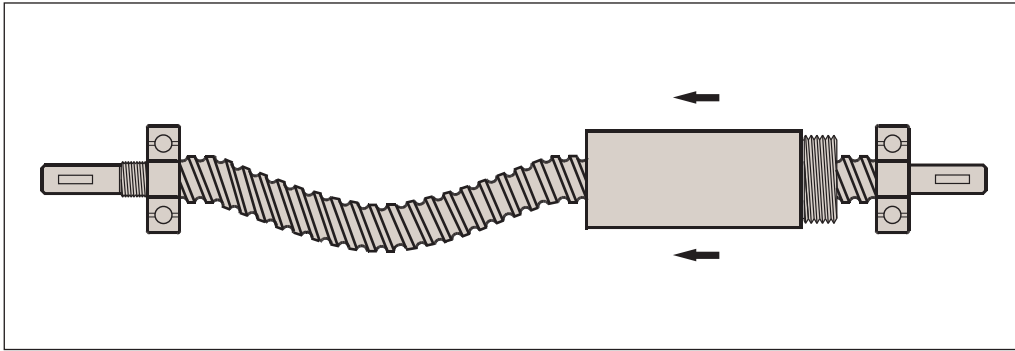
Backdrive is important in vertical applications.



### Maximum compression load

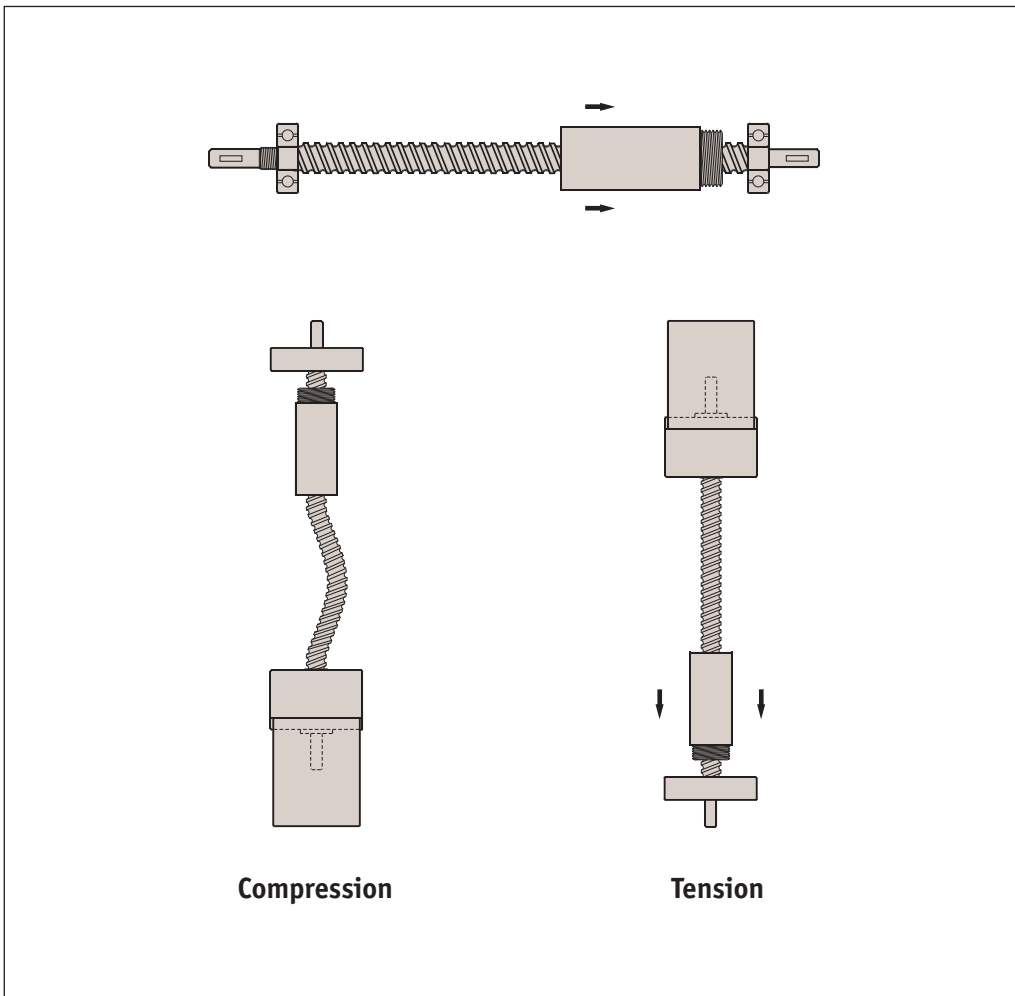
The load acting upon a nut that would tend to compress or buckle the screw. Also referred to as column loading, this rating is effected by the load, support type, screw diameter, and length between the load point and support housing.

Normally, a screw also experiences a tension load (a force which attempts to stretch the screw). For vertical applications, it is better to configure the screw assembly so that the screw is in tension, and not in compression. To find maximum compression load a screw can take, please refer to critical axial load technical pages.



### Tension loading

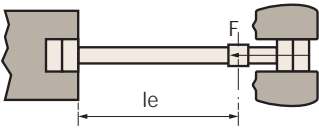
The load acting upon a nut that would tend to stretch the screw. The maximum tension load of a screw assembly is the load rating of the nut. For vertical applications, it is better to configure the ball screw assembly so that the screw is in tension and not in compression.





When choosing a lead screw you need to consider the critical axial load to avoid the screw bending under excessive loads. This is the buckling load. This is important where the end screws are being used in compression. The critical axial load depends on the core diameter of the lead screw ( $d_g$ ), how the lead screw is supported at each end, and the free length of screw ( $l_e$ ). In the graphs below, please allow a minimum safety factor of  $> 2$ .

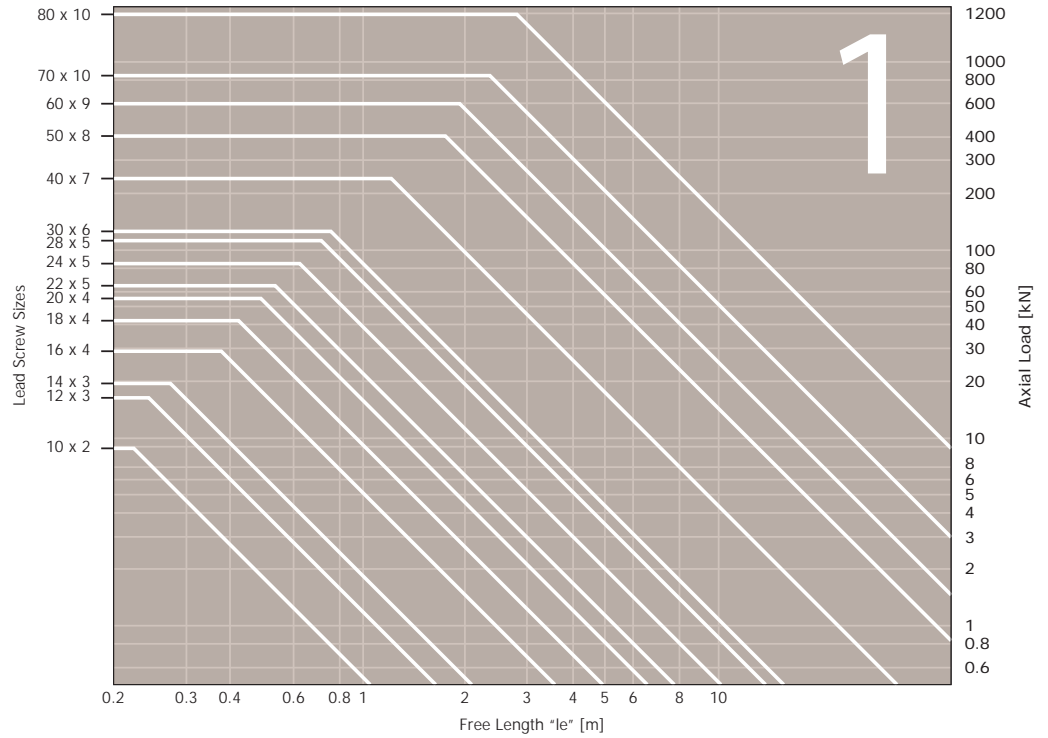
### Supported each end by double bearings



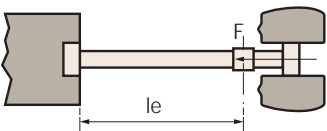
#### Example

Find the allowable axial load of a 30x6 screw 3000mm long with constraint conditions as in drawing 1. From the accompanying graph take  $F_{max}=11kN$  with safety factor of 2 and assume  $F_{allw} = 11/2=5,5kN$ .

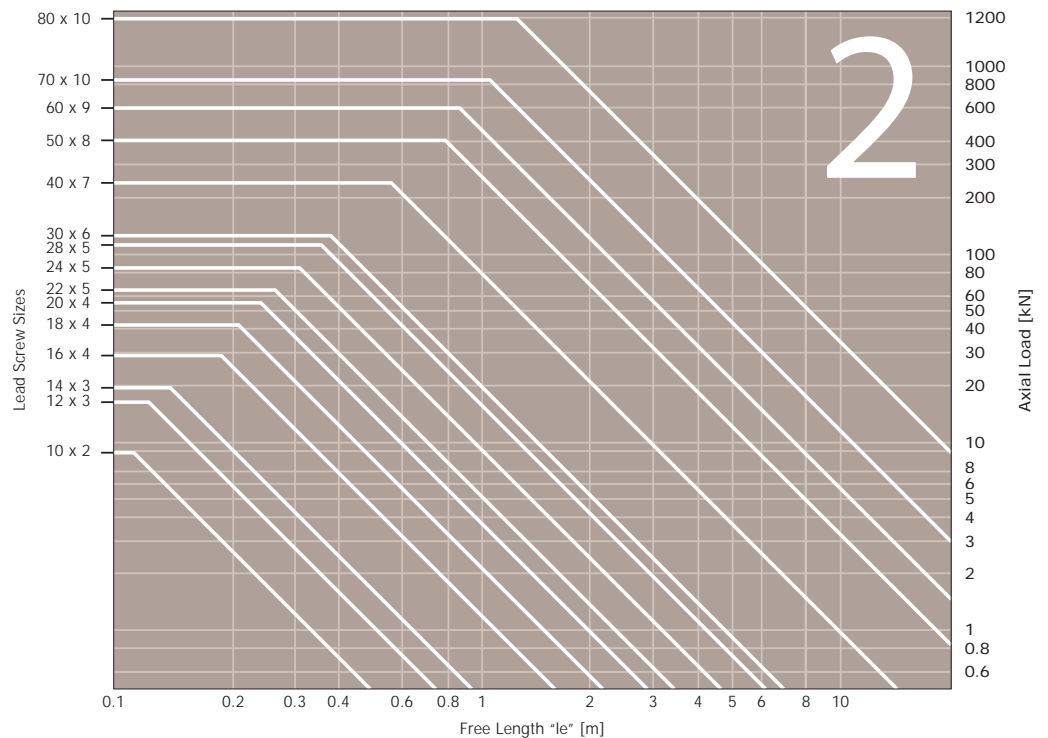
### Critical axial load - Double bearings



### Supported each end by single bearings



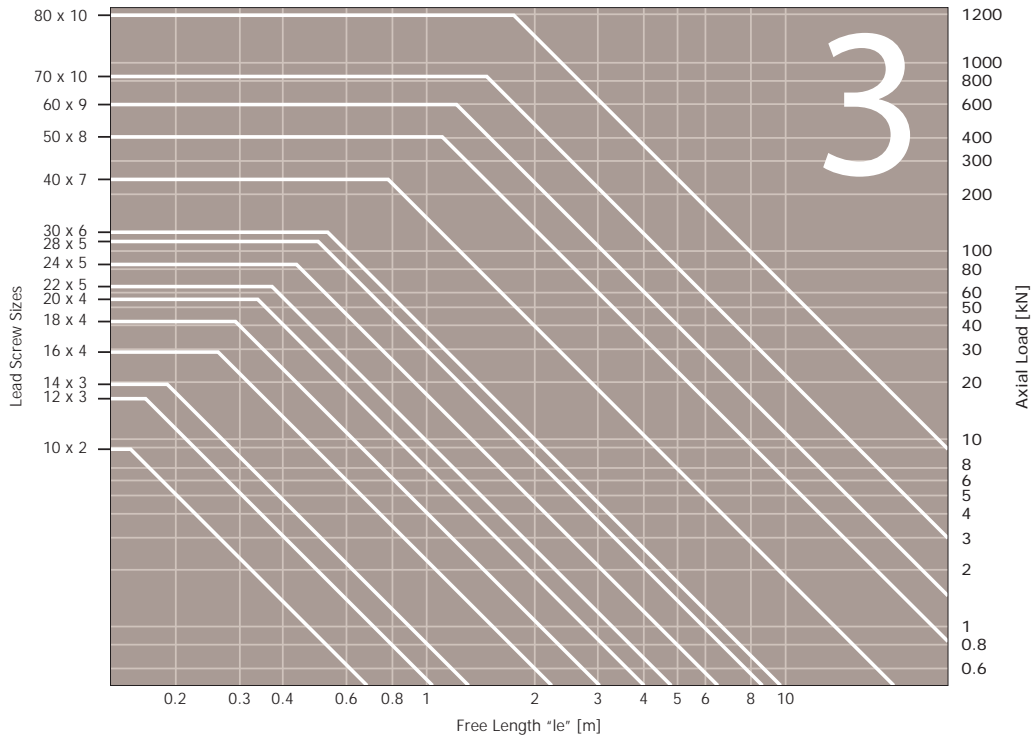
### Critical axial load - Single bearings



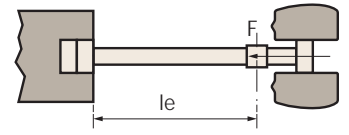




### Critical axial load- Double/single bearings

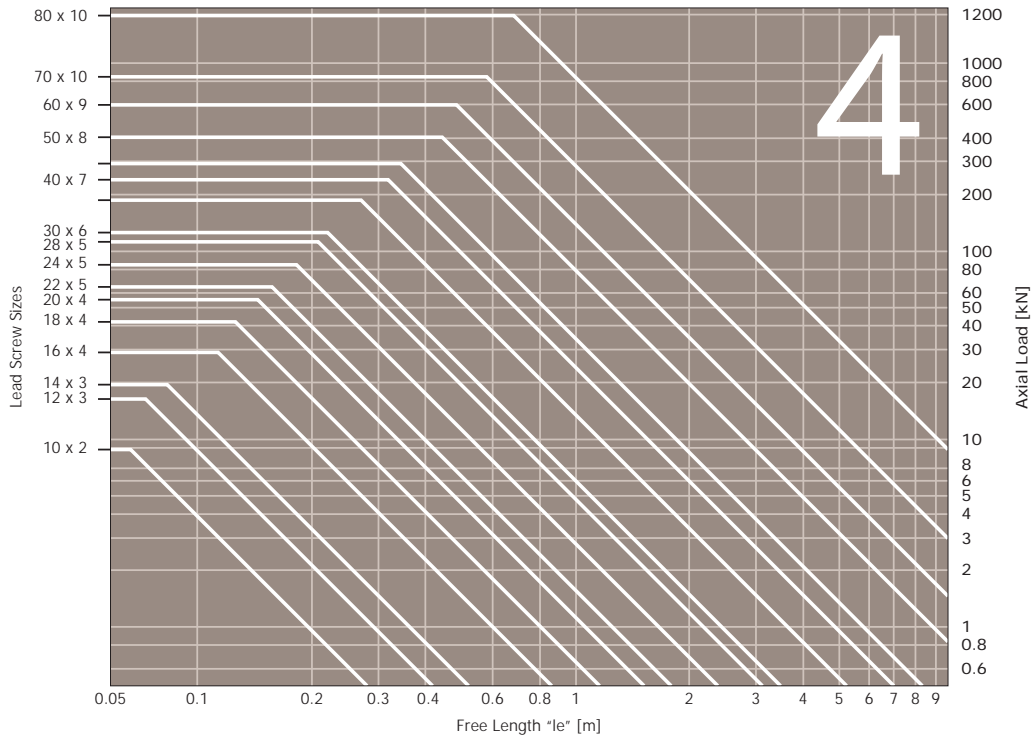


Supported each end.  
Double bearings one end,  
single bearing the other end

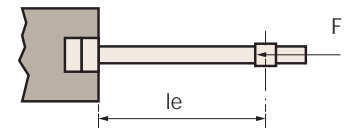


LEAD SCREWS & NUTS

### Critical axial load- Double bearing one end



Supported one end only by  
double bearing





### Torque

The torque necessary to move a screw and nut system is calculated from the following equation.

$$C = \frac{F \cdot P}{2\pi \cdot n \cdot 1000}$$

C = torque (input) (Nm)

F = axial force on nut (N)

P = true lead of screw (mm)

$\eta$  = efficiency (assume efficiency with first breakaway friction factor  $f = 0.2$ )

#### Example

Find the torque required to move a 30x6 lead screw and nut

Resistant axial force = 10.000 N

$\eta = 0.26$

Screw lead = 6 mm

$$\text{Torque} = \frac{F \cdot P}{2\pi \cdot n \cdot 1000} = \frac{10.000 \text{ (N)} \cdot 6 \text{ (mm)}}{2 \cdot \pi \cdot 0.26 \cdot 1000} = 36.7 \text{ Nm}$$

The torque value however does not consider the efficiency of mechanical parts moving together with the screw system, such as bearings, belts or other transmission components.

In a planning project phase, an increase between the 20% and 30% of the theoretical value is recommended. If electric motors with low static torque are used assume another increase of 50% to find nominal torque.

$$C = 36.7 \text{ (Nm)} \cdot 1.3 \cdot 1.5 = 71.6 \text{ Nm}$$

### Power

The power necessary to move a trapezoidal screw and nut system is calculated from the following equation.

$$P = \frac{C \cdot n}{9550}$$

9550 is a constant    P = power (kW)    C = torque (Nm)    n = rpm

#### Example of calculation

Calculate the power necessary to move the screw 30 x 6 in the above example at 600 rpm

$$C = \frac{C \cdot n}{9550} = \frac{71.6 \text{ (Nm)} \cdot 600 \text{ (rpm)}}{9550} = 4.5 \text{ kW}$$

This is the minimum power necessary to move the system



### General considerations for bronze nuts

In all three situations described, the wear of the nut is affected by the lubrication used during operation and as such, giving accurate figures for the life expectancy of the nut is impossible.

Extra care must be taken when the temperature of the application is above +140°/150°C, as such temperatures can damage lubricants and as a consequence, cause the nut to wear quicker. In these situations we recommend the use of lubricants designed for high temperatures.

### Safety factor for the forces of inertia $f_i$

During the selection process we must also check that the inertia forces present during acceleration and deceleration are relatively low so that the value of  $p \bullet Vst$  remains within the controlled limits. Whereas this calculation is difficult, in the presence of a non-uniform movement or under great variations, safety factors reported in the chart below must be considered.

### Safety factors with respect to the forces of inertia

Load type	$f_i$
Loads with constant acc. / dec. controlled	from 1,00 to 0,50
Loads with constant start and stop at tear	from 0,50 to 0,33
Loads and speed greatly variable	from 0,33 to 0,25
Loads in presence of shocks and vibrations	from 0,25 to 0,17

The coefficient  $f_i$  is used to correct the value of  $(p \bullet Vst)_{max}$  derived from the 'Sliding Condition for Bronze' graph, considering the maximum allowable sliding speed in relation to the contact surface in working conditions. Working area limits (A, B or C) must be taken into consideration.

To calculate the admissible  $p \bullet Vst$  of the nut in working conditions the following must be used

$$p \bullet Vst_{am} = (p \bullet Vst)_{max} \bullet f_i$$

### Example of calculation with bronze nut

Selecting a bronze nut which must operate continuously and remain within the maximum limit value of  $p \bullet Vst = 21$  (Area A), with good lubrication. Constant axial load without relevant variations, with forces of inertia limited by controlled acceleration/deceleration.

Axial Load  $F = 1200N$  (1Kg  $f=9,81N$ )  
 Constant motion speed  $Vtr = 2,8m/min$

Evaluation of  $p \bullet Vst$  using nut L1331.R30-06 (bronze flanged nut with thread Tr 30x6 1 start, right)

$$P = \frac{F}{At} = \frac{1200 (N)}{1370 (mm^2)} = 0,87 N/mm^2$$

F = Axial Force (N)

At = Contact Surface Area (mm<sup>2</sup>).

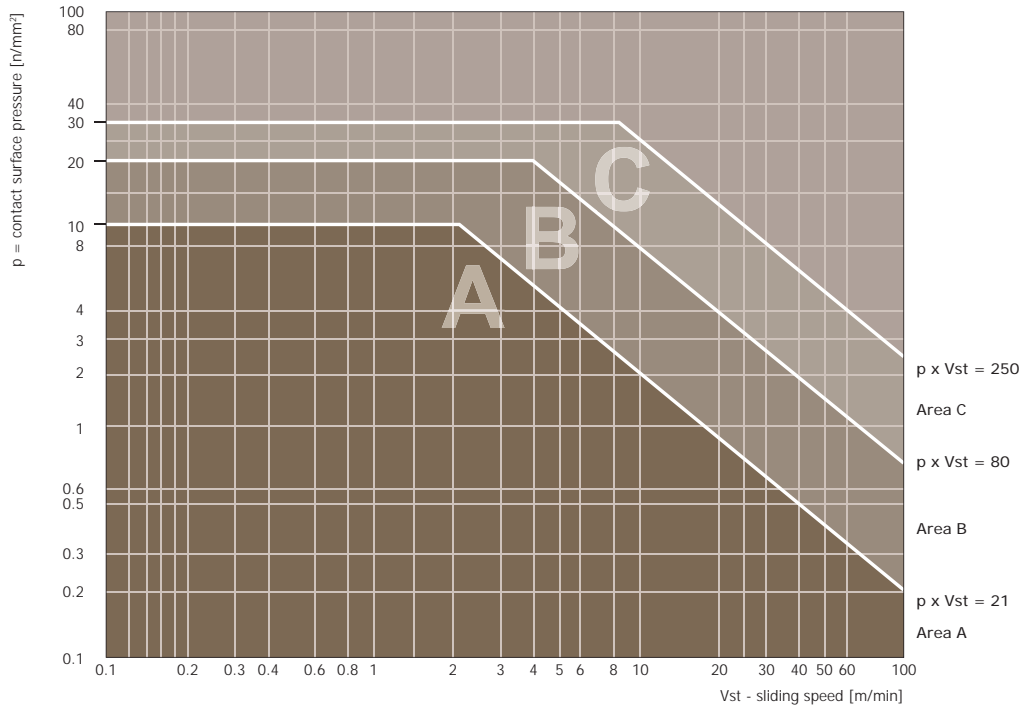
For standard nuts each At value is listed in the product tables.



**Bronze nut sizing**

When using a bronze nut, calculate the sliding speed and use the graph below to see if it is suitable. The graph has three areas each characterised by certain working conditions. These figures are evaluations obtained from the results of experiments we have carried out. Good lubrication is always required, if little or no lubrication is used the working conditions may vary greatly.

**Sliding condition for bronze.**



**Area A** Area A is enclosed by the limit  $p \cdot V_{st} = 21$  (N/mm<sup>2</sup> • m/min)

These are the best operating conditions.

Continuous operation is possible as the amount of friction produced within these limits  $p \cdot V_{st}$  is pretty low. Therefore the life of the nut is very good.

**Area B** Area B is enclosed by the limit  $p \cdot V_{st} = 80$  (N/mm<sup>2</sup> • m/min)

These operating conditions are more severe. Constant lubrication is required to help prevent wear of the nut and improve its lifetime.

Continuous operation is possible for limited periods only as the amount of friction produces overheating of the nut. Although lubrication helps reduce heat, the life of the nut is limited.

**Area C** Area C is enclosed by the limit  $p \cdot V_{st} = 250$  (N/mm<sup>2</sup> • m/min)

In this area, the operating conditions are very severe.

Continuous operation is not possible.

Even with good lubrication the amount of friction and heat produced causes rapid wear of the nut.



The sliding speed is calculated using formulae:

$$V_{st} = \frac{V_{tr}}{\sin \alpha} = \frac{2.8 \text{ m/min}}{\sin 4^\circ 03'}$$

$$V_{st} \cong 39,84 \text{ m/min}$$

$V_{tr}$  = motion speed (m/min)     $\alpha$  = thread helix angle

The value  $p \bullet V_{st}$  is:

$$p \bullet V_{st} = 0,87 \text{ N/mm}^2 \bullet 39,84 \text{ m/min} \cong 34,66 \text{ N/mm}^2 \bullet \text{m/min}$$

In order to remain within the continuous working conditions, corrected by the safety factor  $f_i$  from the table, in this case =0,77, the maximum allowable value of  $p \bullet V_{st}$  is:

$$p \bullet V_{st \text{ am}} = (p \bullet V_{st})_{\text{max}} \bullet f_i = 21 \bullet 0,77 \text{ N/mm}^2 \bullet \text{m/min}$$

$$p \bullet V_{st \text{ am}} = 16,15 \text{ N/mm}^2 \bullet \text{m/min}$$

As the maximum allowable value of  $p \bullet V_{st}$  is lower than the value obtained with a nut L1331.R30-06, we shall try using a nut L1335.R36-06 (square bronze nut with 36x6 thread)

The contact surface pressure is:

$$p = \frac{F}{A_t} = \frac{1200 \text{ (N)}}{3630 \text{ (mm}^2)} = 0,33 \text{ N/mm}^2$$

F = Axial Force (N)

$A_t$  = Contact Surface Area (mm<sup>2</sup>)

The sliding speed remains the same as the previous calculation

$$V_{st} = 39,84 \text{ N/mm}^2$$

The value of  $p \bullet V_{st}$  is now:

$$p \bullet V_{st} = 0,33 \text{ N/mm}^2 \bullet 39,84 \text{ m/min} \cong 13,15 \text{ N/mm}^2 \bullet \text{m/min}$$

The value obtained is now lower than the allowable one, therefore the L1335.R36-06 will be suitable.



In applications where low noise is important or where lubrication is not allowed (grease or oil), self lubricating plastic nuts are recommended. The use of plastics is very constrained by the actual working conditions, we suggest discussing the application with our technical department and not relying on a choice based only on intuition. This is because plastic materials have good features such as low friction and self-lubrication, but at the same time limitations caused by operating temperatures, hygroscopic problems, or certain mechanical features that may not be suitable for the intended use. An advanced study of the application in this case is therefore required in order to obtain optimum performance.

Regarding the plastic nuts, the study of the product p•Vst allows you to draw a chart which shows a curve that limits the values of p•Vst within which we have a gentle flow of the surfaces in contact with limited wearing of the nut and constant in time. Operating outside the limit drawn on the chart is not possible as in this case as the nut would wear quickly.

**Cylindrical Nut L1343**

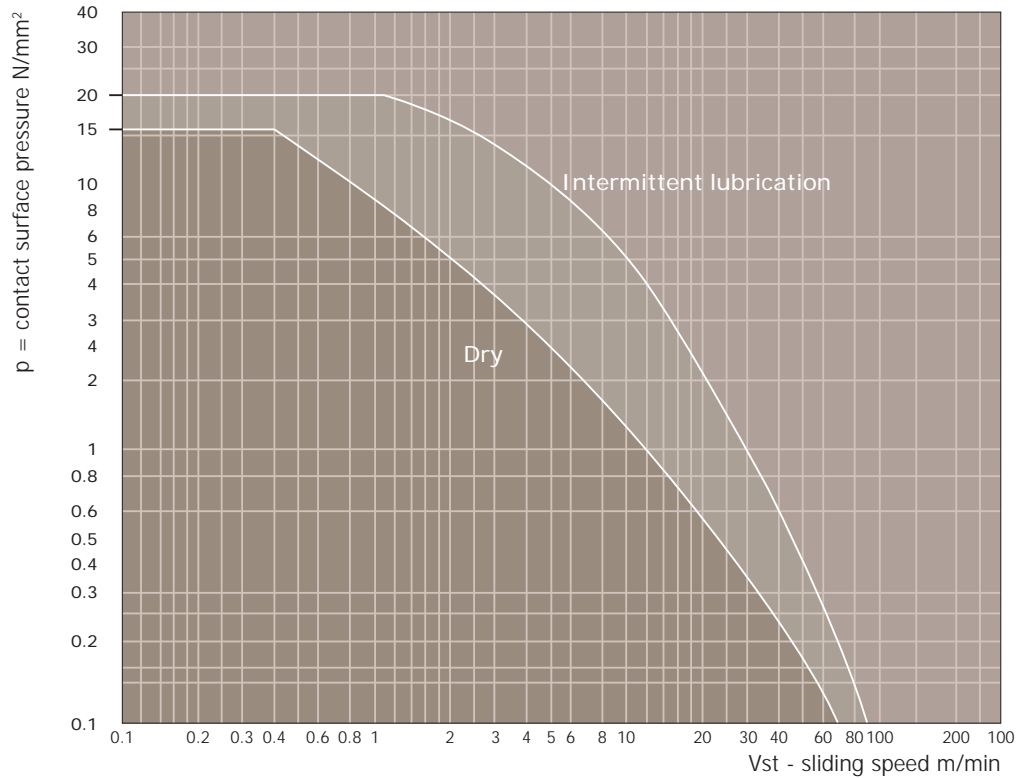
The graph below shows the limit of p•Vst of the cylindrical nut L1343. As this plastic is resistant to wear but not self-lubricating, the following limits have been shown when the nut is dry, and when it is lubricated intermittently.

**Sliding condition for nuts L1343**

Test conditions:

- Continuous operation.
- Temperature 23°C.
- Relative humidity approx 50%.

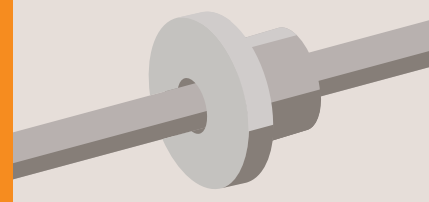
Recommended Speeds





# Lead Screws

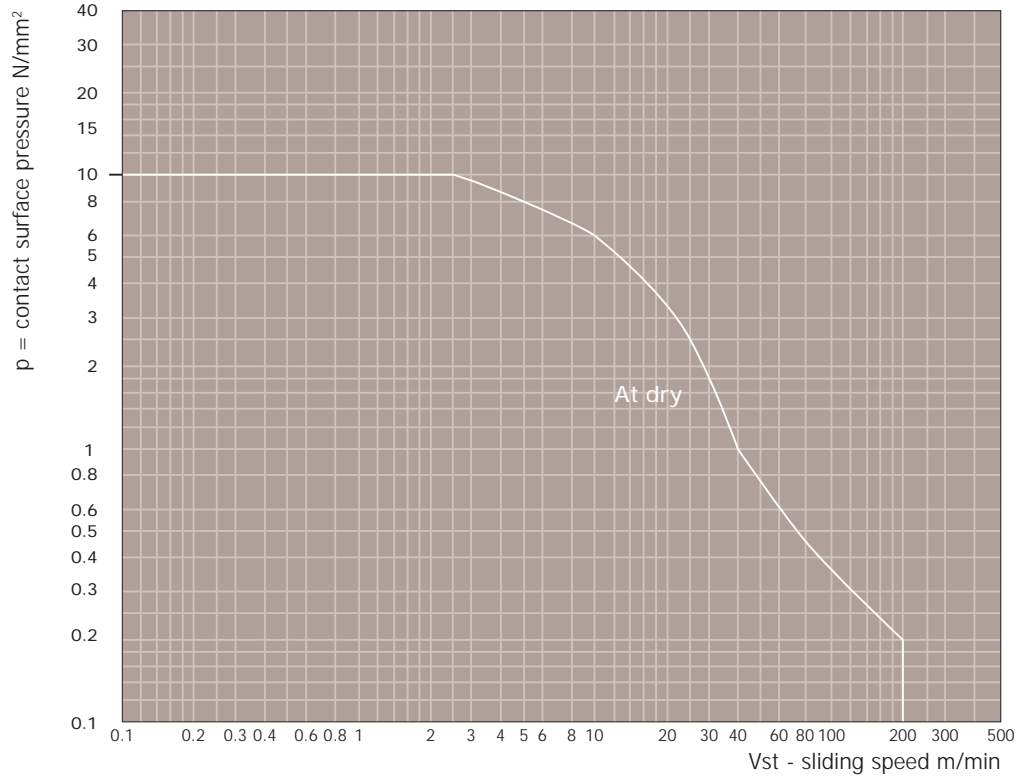
## Self-lubricating plastic flanged nut L1342



The graph below shows the limit of  $p \bullet V_{st}$  of nut L1342. The plastic used for the L1342 features a strong resistance to wear and complete self-lubricating properties.

**Prior to using the L1342, please read the previous pages.**

Lead Screws from Automation Components



### Sliding conditions for self-lubricating plastic nuts L1342

Test conditions:

- Continuous operation.
- Temperature 23°C.
- Relative humidity approx 50% with no lubrication.



#### Compact rail

##### Advantages

Easy to install. Allows for some misalignment at installation. Compact system, small footprint compared to other rail systems. Preload adjustable by hand.

##### Disadvantages

Although it can take very large loads it cannot take anywhere near as much load as the linear guideways rail system.



#### X Rail

##### Advantages

Cheaper alternative to the compact rail. Use of T and U rails allows for misalignment at installation. Preload adjustable by hand.

Available in AISI 316L stainless steel suitable for use in applications requiring a high level of corrosion resistance, including sea water.

##### Disadvantages

Cannot take as much load as other systems. Not suitable for moment loads.



#### Linear guideways

##### Advantages

Can take extremely high loads including moment loads. Very smooth in operation.

##### Disadvantages

Must be aligned very accurately which costs time and money preparing the mounting surface properly.







### Shafts + bearings

#### Advantages

Available in a range of materials and sizes. A length of shaft bar is typically cheaper than the cost of an equivalent size precision linear rail.

#### Disadvantages

A larger diameter shaft would be required when there are long lengths and high loads involved compared with the size of an equivalent shaft support rail you would need. This is because they would only be supported at the ends and the shaft ends could bend in the middle if the diameter was too small.



### Shaft support rail

#### Advantages

Shaft support rail systems have a shaft support along the full length so are less likely to flex.

#### Disadvantages

Similar to linear guideways, must be aligned very accurately otherwise any mis-alignment may cause the system to 'snatch'.





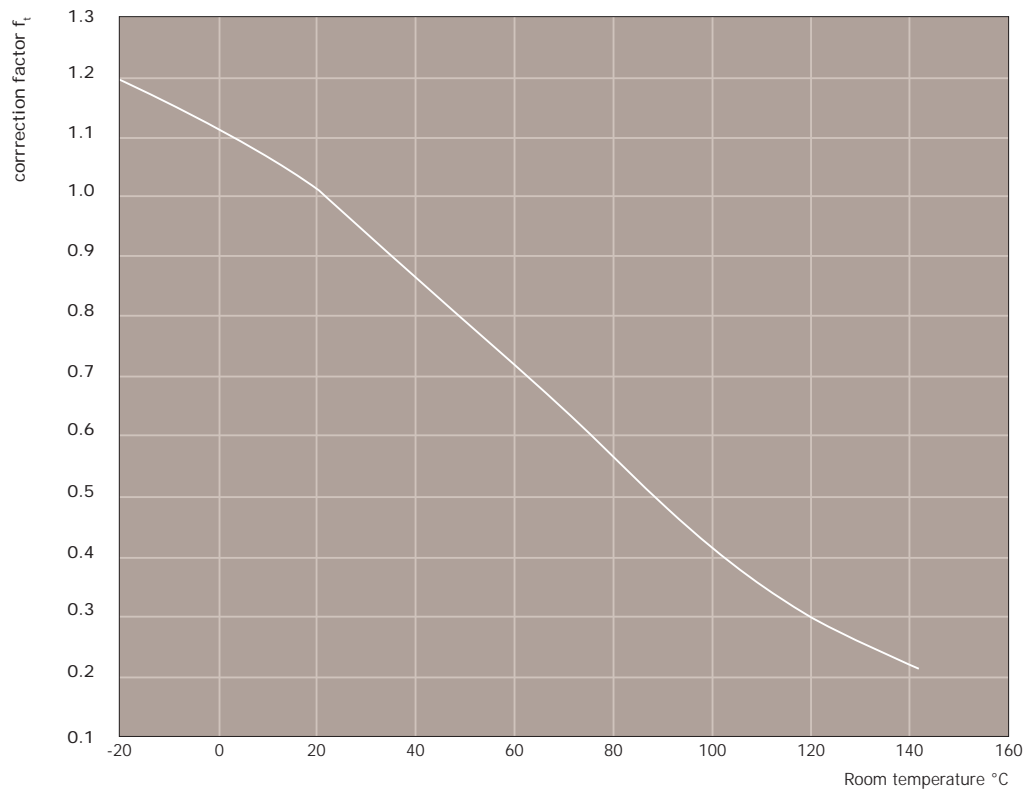
**Safety factor or the forces of inertia  $f_i$**

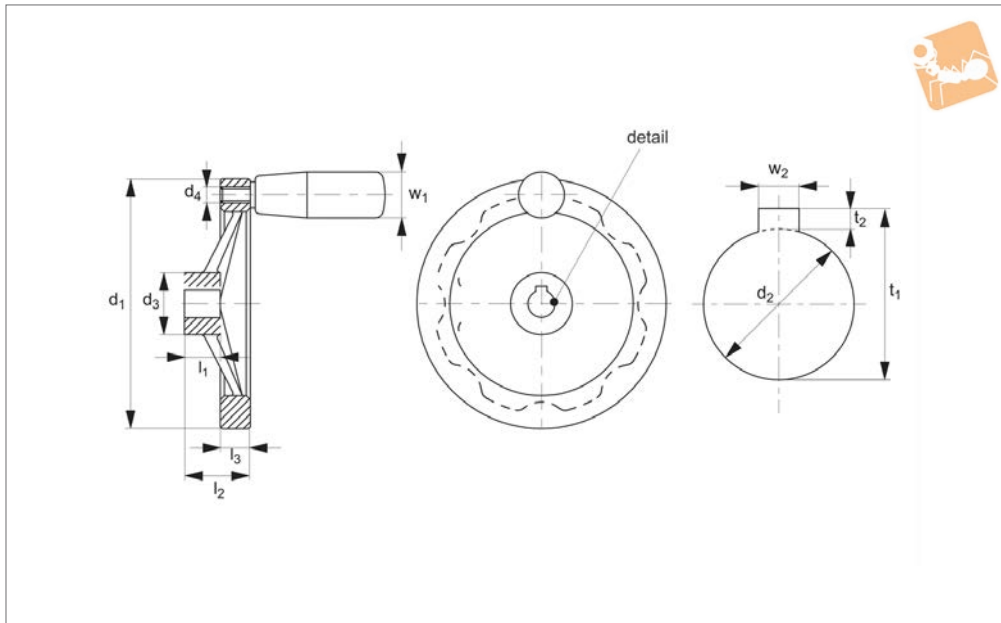
During the selection process check that the inertia forces present during acceleration and deceleration are relatively low so that the value of  $p \bullet Vst$  remains within the required controlled limits. Whereas this calculation is difficult, in the presence of a non-uniform movement or under great variations a safety factor in the chart below must be applied.

Load type	$f_i$
Loads with constant ramps of acc. / dec. controlled	from 1,00 to 0,50
Loads with constant start and stops	from 0,50 to 0,33
Loads and speed greatly variable	from 0,33 to 0,25
Loads in presence of shocks and vibrations	from 0,25 to 0,17

**Correction factor for working environment temperature**

Using plastic nuts L1343 or L1342, the value of  $p \bullet Vst$  must be corrected in relation to the working temperature. Plastic becomes softer at higher temperature and can handle less load. At lower temperatures, it becomes harder and takes heavier loads. Correction factor  $f_t$  is shown in the graph below.





## L1458

LEAD SCREWS & NUTS

### Material

Aluminium mould casting. Handle duroplast DF 31 black.  
Hub machined; rim turned and mirror-finished on all sides, non-machined surfaces cleanly blasted.  
For corresponding handle details see no. rotating handle.

### Technical Notes

There are gripping indentations on the rear sides.  
The non-machined, raw surfaces are blasted; together with the mirror-polished rim these handwheels are therefore showing a finish which in most cases does not require additional lacquering.

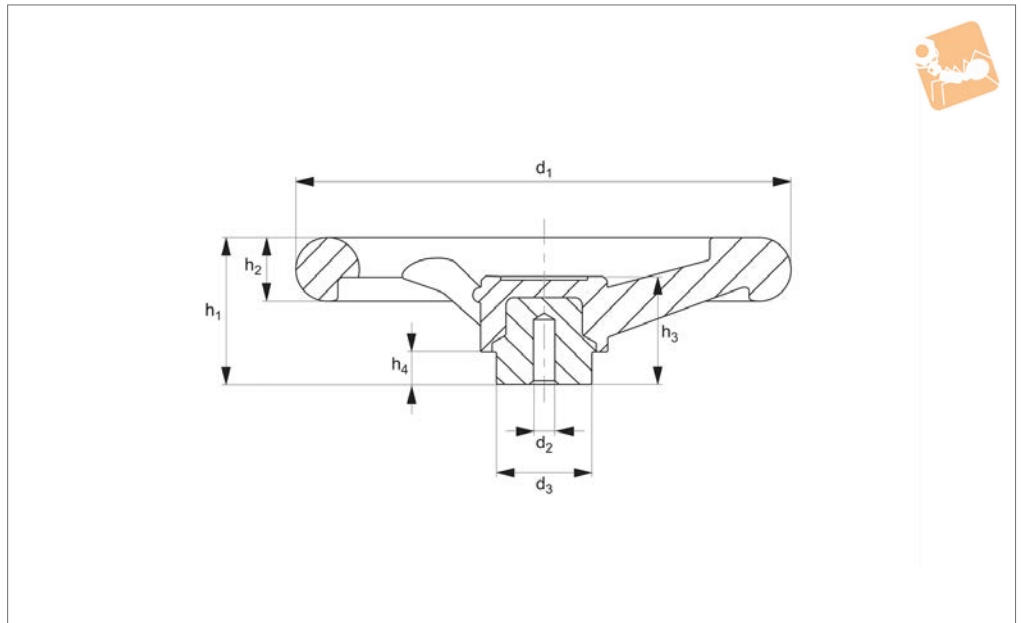
Temperature range up to 110°C. Also available in black plastic coated - on request.

**For keyways information (dim.  $t_1$  and  $b_3$ ) to DIN 6885.**

Order No.	Finish	Bore dia.	$d_1$	$d_2$ tol. H7 Small	$d_2$ tol. H7 Large	$d_3$	$d_4$	$l_1$	$l_2$ ≈	$l_3$	$w_1$	Weight g
L1458.080-C	W/o Keyway, With Handle	d2 Large	80	10	12	26	M 6	16	26	13.0	18	160
L1458.100-C	W/o Keyway, With Handle	d2 Large	100	10	12	28	M 6	17	30	14.0	21	255
L1458.125-C	W/o Keyway, With Handle	d2 Large	125	12	14	31	M 8	18	33	15.0	23	390
L1458.140-C	W/o Keyway, With Handle	d2 Large	140	14	16	36	M 8	19	36	16.5	23	510
L1458.160-C	W/o Keyway, With Handle	d2 Large	160	14	16	36	M10	20	39	18.0	26	675
L1458.200-C	W/o Keyway, With Handle	d2 Large	200	18	20	42	M10	24	45	20.5	26	995
L1458.250-C	W/o Keyway, With Handle	d2 Large	250	22	26	48	M10	28	51	23.0	28	1625
L1458.080-D	With Keyway, With Handle	d2 Large	80	10	12	26	M 6	16	26	13.0	18	160
L1458.100-D	With Keyway, With Handle	d2 Large	100	10	12	28	M 6	17	30	14.0	21	255
L1458.125-D	With Keyway, With Handle	d2 Large	125	12	14	31	M 8	18	33	15.0	23	390
L1458.140-D	With Keyway, With Handle	d2 Large	140	14	16	36	M 8	19	36	16.5	23	510
L1458.160-D	With Keyway, With Handle	d2 Large	160	14	16	36	M10	20	39	18.0	26	675
L1458.200-D	With Keyway, With Handle	d2 Large	200	18	20	42	M10	24	45	20.5	26	995
L1458.250-D	With Keyway, With Handle	d2 Large	250	22	26	48	M10	28	51	23.0	28	1625



L1459



**Material**

**Standard:** Duroplast, black. Zinc plated steel hub.

**Reinforced:** Duroplast with glass fibre

beads of increased strength, black zinc plated steel hub.

**Technical Notes**

The pilot hole allows various sizes of holes, keyways etc. to be machined into the boss.

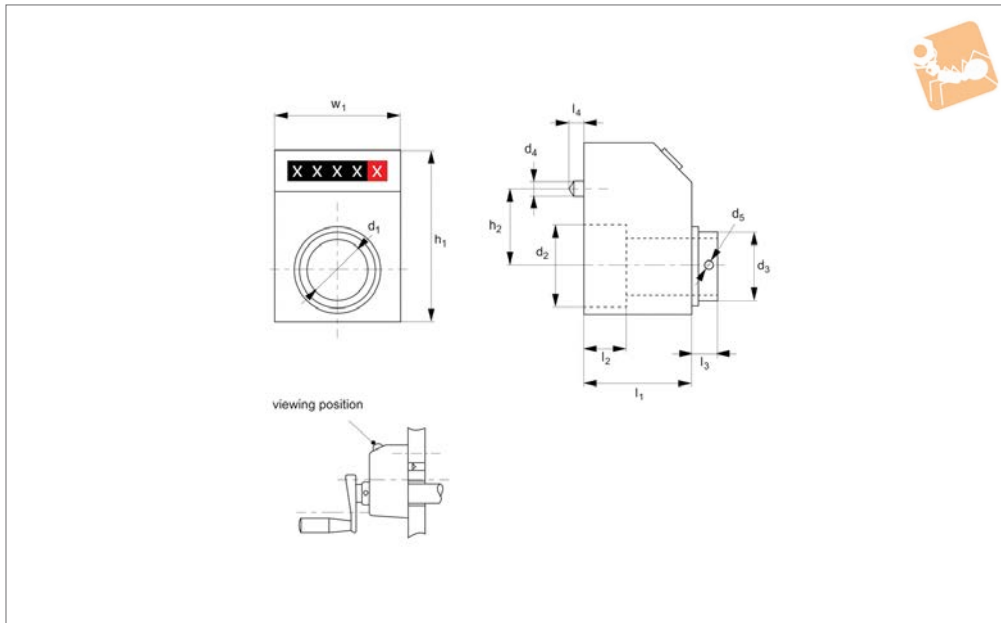
Order No.	d <sub>1</sub>	d <sub>3</sub>	Weight g
L1459.100-A	100	24	159
L1459.125-A	125	24	240
L1459.150-A	150	32	380
L1459.175-A	175	40	603
L1459.200-A	200	40	736
L1459.250-A	250	48	1200
L1459.300-A	300	58	2032
L1459.100-B	100	24	162
L1459.125-B	125	24	260
L1459.175-B	175	40	611
L1459.200-B	200	40	761



# Position Counters

4 digit display

# Lead Screws & Nuts



**L1470**

LEAD SCREWS & NUTS

**Material**

Black thermoplastic, burnished steel bushing.

**Technical Notes**

Max. temperature +70°C.

Other ratios and spacers available on request. Different location of position indicator on counter available on request. Four digit readout, red indicates decimals.

**Tips**

Clockwise rotation: part numbers end with -C.  
Anti-Clockwise rotation: part numbers end with -A.

Order No.	Ratio	Pitch	Counter after one revolution	d <sub>1</sub> tol. H7	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub>
L1470.005-C	1:05	0.5	0005	14	26	20	6	M4	24
L1470.010-C	1:10	1.0	0010	14	26	20	6	M4	24
L1470.015-C	1:15	1.5	0015	14	26	20	6	M4	24
L1470.020-C	1:20	2.0	0020	14	26	20	6	M4	24
L1470.025-C	1:25	2.5	0025	14	26	20	6	M4	24
L1470.030-C	1:30	3.0	0030	14	26	20	6	M4	24
L1470.040-C	1:40	4.0	0040	14	26	20	6	M4	24
L1470.050-C	1:50	5.0	0050	14	26	20	6	M4	24
L1470.060-C	1:60	6.0	0060	14	26	20	6	M4	24
L1470.100-C	1:100	10.0	0100	14	26	20	6	M4	24
L1470.005-A	1:05	0.5	0005	14	26	20	6	M4	24
L1470.010-A	1:10	1.0	0010	14	26	20	6	M4	24
L1470.015-A	1:15	1.5	0015	14	26	20	6	M4	24
L1470.020-A	1:20	2.0	0020	14	26	20	6	M4	24
L1470.025-A	1:25	2.5	0025	14	26	20	6	M4	24
L1470.030-A	1:30	3.0	0030	14	26	20	6	M4	24
L1470.040-A	1:40	4.0	0040	14	26	20	6	M4	24
L1470.050-A	1:50	5.0	0050	14	26	20	6	M4	24
L1470.060-A	1:60	6.0	0060	14	26	20	6	M4	24
L1470.100-A	1:100	10.0	0100	14	26	20	6	M4	24

Order No.	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	Speed rpm max.	Revolution
L1470.005-C	7.5	6.5	33	45	16.5	22	500	Clockwise
L1470.010-C	7.5	6.5	33	45	16.5	22	300	Clockwise
L1470.015-C	7.5	6.5	33	45	16.5	22	300	Clockwise
L1470.020-C	7.5	6.5	33	45	16.5	22	300	Clockwise
L1470.025-C	7.5	6.5	33	45	16.5	22	300	Clockwise
L1470.030-C	7.5	6.5	33	45	16.5	22	300	Clockwise
L1470.040-C	7.5	6.5	33	45	16.5	22	200	Clockwise
L1470.050-C	7.5	6.5	33	45	16.5	22	200	Clockwise



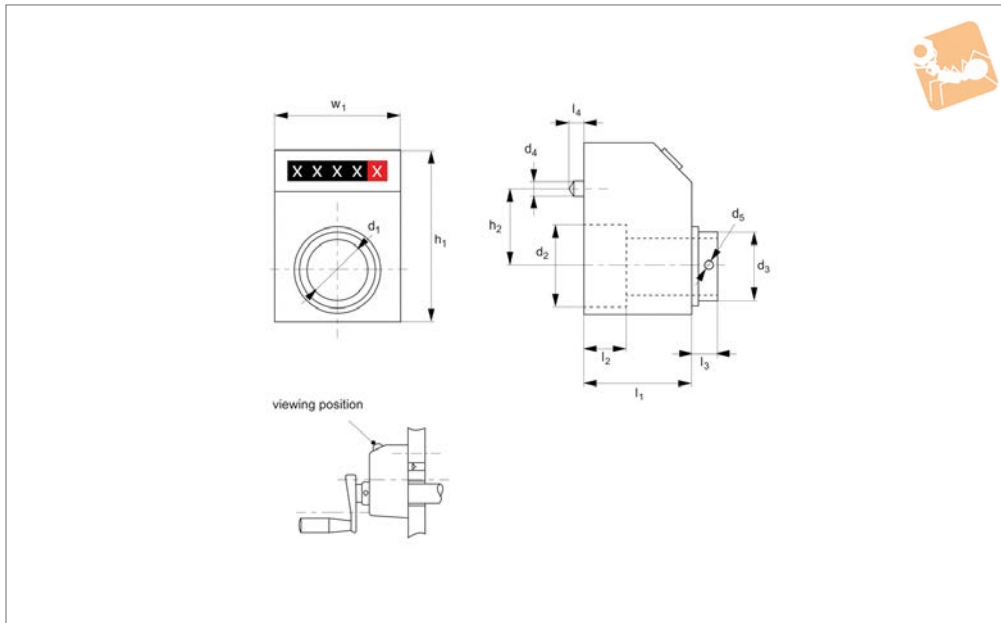
Order No.	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	Speed rpm max.	Revolution
L1470.060-C	7.5	6.5	33	45	16.5	22	200	Clockwise
L1470.100-C	7.5	6.5	33	45	16.5	22	150	Clockwise
L1470.005-A	7.5	6.5	33	45	16.5	22	500	Anti-clockwise
L1470.010-A	7.5	6.5	33	45	16.5	22	300	Anti-clockwise
L1470.015-A	7.5	6.5	33	45	16.5	22	300	Anti-clockwise
L1470.020-A	7.5	6.5	33	45	16.5	22	300	Anti-clockwise
L1470.025-A	7.5	6.5	33	45	16.5	22	300	Anti-clockwise
L1470.030-A	7.5	6.5	33	45	16.5	22	300	Anti-clockwise
L1470.040-A	7.5	6.5	33	45	16.5	22	200	Anti-clockwise
L1470.050-A	7.5	6.5	33	45	16.5	22	200	Anti-clockwise
L1470.060-A	7.5	6.5	33	45	16.5	22	200	Anti-clockwise
L1470.100-A	7.5	6.5	33	45	16.5	22	150	Anti-clockwise



# Position Counters

5 digit display

## Lead Screws & Nuts



**L1472**

LEAD SCREWS & NUTS

**Material**

Black thermoplastic, burnished steel bushing.

**Technical Notes**

Max. temperature +70°C.

Other ratios and spacers available on request. Different location of position indicator on counter available on request. Five digit readout, red indicates decimals.

**Tips**

Clockwise rotation: part numbers end with -C.  
Anti-Clockwise rotation: part numbers end with -A.

Order No.	Ratio	Pitch	Counter after one revolution	d <sub>1</sub> tol. H7	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub>
L1472.005-C	1:05	0.5	00005	20	40	27	6	M5	42
L1472.015-C	1:15	1.5	00015	20	40	27	6	M5	42
L1472.020-C	1:20	2.0	00020	20	40	27	6	M5	42
L1472.025-C	1:25	2.5	00025	20	40	27	6	M5	42
L1472.030-C	1:30	3.0	00030	20	40	27	6	M5	42
L1472.040-C	1:40	4.0	00040	20	40	27	6	M5	42
L1472.100-C	1:100	10.0	00100	20	40	27	6	M5	42
L1472.120-C	1:120	12.0	00120	20	40	27	6	M5	42
L1472.005-A	1:05	0.5	00005	20	40	27	6	M5	42
L1472.010-A	1:10	1.0	00010	20	40	27	6	M5	42
L1472.015-A	1:15	1.5	00015	20	40	27	6	M5	42
L1472.020-A	1:20	2.0	00020	20	40	27	6	M5	42
L1472.025-A	1:25	2.5	00025	20	40	27	6	M5	42
L1472.030-A	1:30	3.0	00030	20	40	27	6	M5	42
L1472.040-A	1:40	4.0	00040	20	40	27	6	M5	42
L1472.050-A	1:50	5.0	00050	20	40	27	6	M5	42
L1472.060-A	1:60	6.0	00060	20	40	27	6	M5	42
L1472.100-A	1:100	10.0	00100	20	40	27	6	M5	42
L1472.120-A	1:120	12.0	00120	20	40	27	6	M5	42

Order No.	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	w <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	Speed rpm max.	Revolution
L1472.005-C	16.5	10	6	49	67	30	500	Clockwise
L1472.015-C	16.5	10	6	49	67	30	300	Clockwise
L1472.020-C	16.5	10	6	49	67	30	300	Clockwise
L1472.025-C	16.5	10	6	49	67	30	300	Clockwise
L1472.030-C	16.5	10	6	49	67	30	300	Clockwise
L1472.040-C	16.5	10	6	49	67	30	200	Clockwise
L1472.100-C	16.5	10	6	49	67	30	150	Clockwise
L1472.120-C	16.5	10	6	49	67	30	150	Clockwise
L1472.005-A	16.5	10	6	49	67	30	500	Anti-clockwise

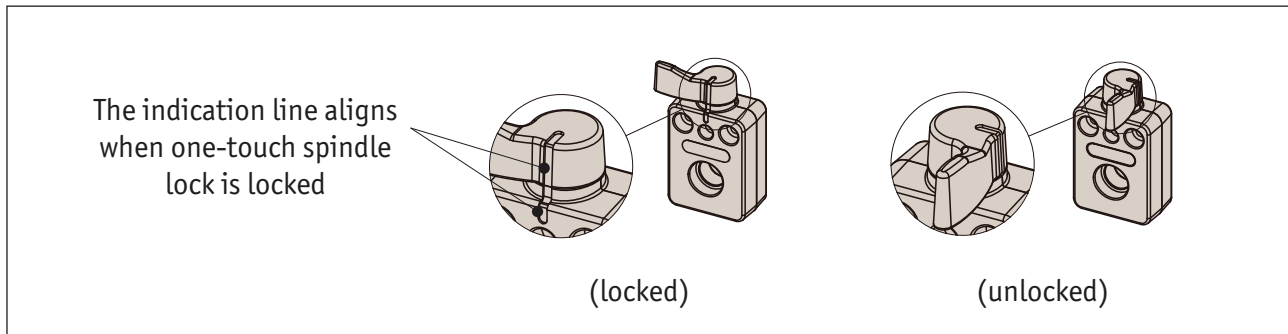


Order No.	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	w <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	Speed rpm max.	Revolution
L1472.010-A	16.5	10	6	49	67	30	300	Anti-clockwise
L1472.015-A	16.5	10	6	49	67	30	300	Anti-clockwise
L1472.020-A	16.5	10	6	49	67	30	300	Anti-clock wise
L1472.025-A	16.5	10	6	49	67	30	300	Anti-clockwise
L1472.030-A	16.5	10	6	49	67	30	300	Anti-clockwise
L1472.040-A	16.5	10	6	49	67	30	200	Anti-clockwise
L1472.050-A	16.5	10	6	49	67	30	200	Anti-clockwise
L1472.060-A	16.5	10	6	49	67	30	200	Anti-clockwise
L1472.100-A	16.5	10	6	49	67	30	150	Anti-clockwise
L1472.120-A	16.5	10	6	49	67	30	150	Anti-clockwise

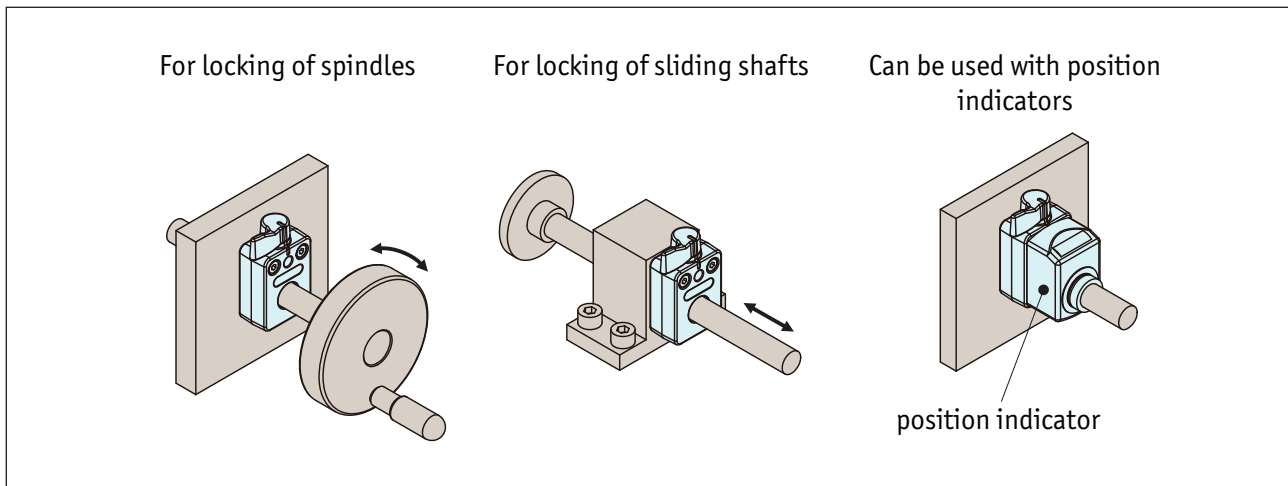


### Features

- One-touch spindle locks enable quick and secure locking of shafts with one click of the knob.
- When the one-touch spindle lock is operated, the knob clicks and the shaft is locked with a steady force. This provides reliable locking of shafts.
- The knob position and the indication line clearly indicate lock/unlock position.



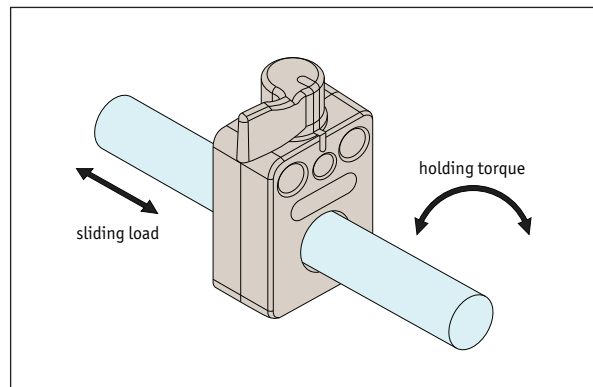
### How to use



### Technical Information

One-touch spindle locks can fix both revolving and sliding of shafts.

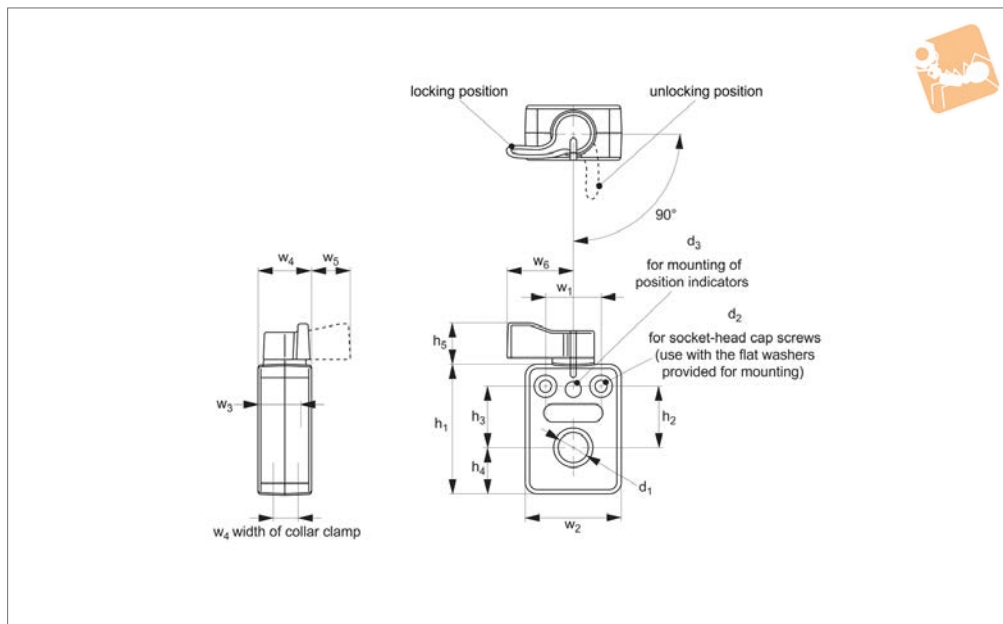
Part Numbers	Max. holding torque (N•m)	Max. sliding load (N)
L1480.008-040	3	400
L1480.010-040		
L1480.012-040	4	400
L1480.014-040		
L1480.012-050	5	500
L1480.015-050		
L1480.016-050	6	500
L1480.020-050		



Note: The above information is for cold finished hardened steel shafts with a h7 tolerance.



## L1480



### Material

Housing: Polyamide (glass-fibre reinforced)

Boss: Polyamide (glass-fibre reinforced)

Base: Polyamide (glass-fibre reinforced)

Insert: Stainless steel

### Technical Notes

It has teeth inside and it engages at every 7.2° (=360°/ 50).

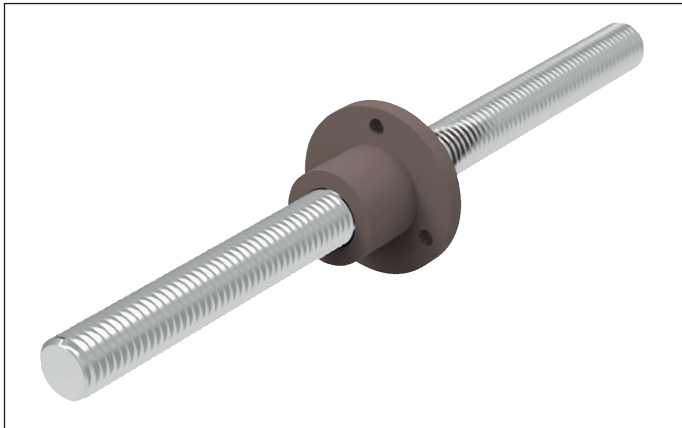
pulls the spindle by the inner spring with 70N force to prevent chattering of the spindle. Note: The spindle should be fully inserted into the knob for 25mm.

Order No.	Handle	d <sub>1</sub> for shaft dia. tol. h7	d <sub>2</sub>	d <sub>3</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	Weight g
L1480.008-040	Orange	8	M 4	6	48.5	23.5	22	17	50
L1480.010-040	Orange	10	M 4	6	48.5	23.5	22	17	50
L1480.012-040	Orange	12	M 4	6	48.5	23.5	22	17	50
L1480.014-040	Orange	14	M 4	6	48.5	23.5	22	17	50
L1480.012-050	Orange	12	M 5	6	69.0	17.0	30	26	100
L1480.015-050	Orange	15	M 5	6	69.0	17.0	30	26	100
L1480.016-050	Orange	16	M 5	6	69.0	17.0	30	26	100
L1480.020-050	Orange	20	M 5	6	69.0	17.0	30	26	100

Order No.	h <sub>5</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	w <sub>5</sub>	w <sub>6</sub>	Allowable holding torque	Allowable sliding torque
								Nm max.	Nm max.
L1480.008-040	15.5	21	36	14.0	20	15	25	3	400
L1480.010-040	15.5	21	36	14.0	20	15	25	3	400
L1480.012-040	15.5	21	36	14.0	20	15	25	4	400
L1480.014-040	15.5	21	36	14.0	20	15	25	4	400
L1480.012-050	15.5	34	51	12.5	20	15	25	5	500
L1480.015-050	15.5	34	51	12.5	20	15	25	5	500
L1480.016-050	15.5	34	51	12.5	20	15	25	6	500
L1480.020-050	15.5	34	51	12.5	20	15	25	6	500



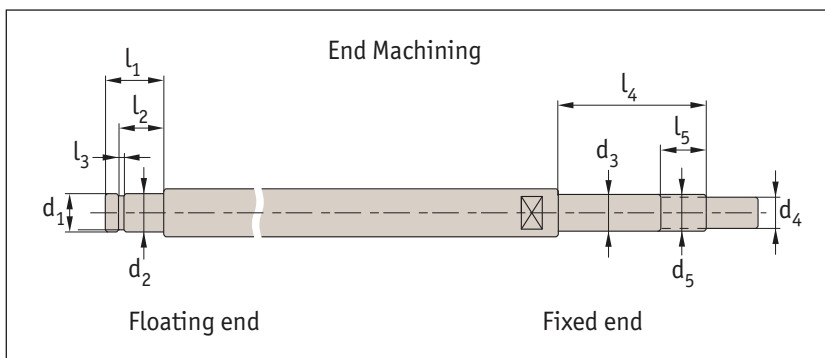
- Select the relevant size lead screw diameter and load required.



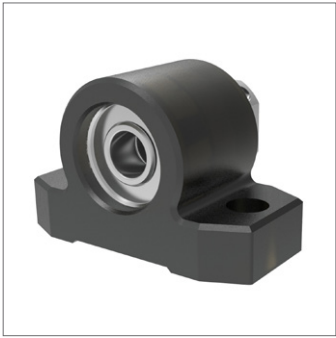
- These are precision, high helix lead screws from stainless steel (304 grade)
- We can cut length to suit and/or machine the ends to your requirements
- They have an accumulative lead error of  $\pm 0.20/300\text{mm}$  (C10 grade)
- The actual clearance depends on the nut selected L1350 standard flanged nut or L1351 anti-backlash nut
- Nuts are very smooth running with little friction. They are made from plastic resin (PPS).
- The anti-backlash nuts are longer than the standard length nuts as they incorporate a spring pushing the two halves of the unit apart.

Lead screw $\varnothing$	Lead (distance travelled per revolution)														
	1	2	4	5	6	8	9	10	12	15	18	20	24	30	36
4	•	•													
6	•	•					•				•				
8	•	•							•				•		
10		•			•			•		•				•	
12		•	•				•			•		•			•
15				•					•			•			
20									•			•			

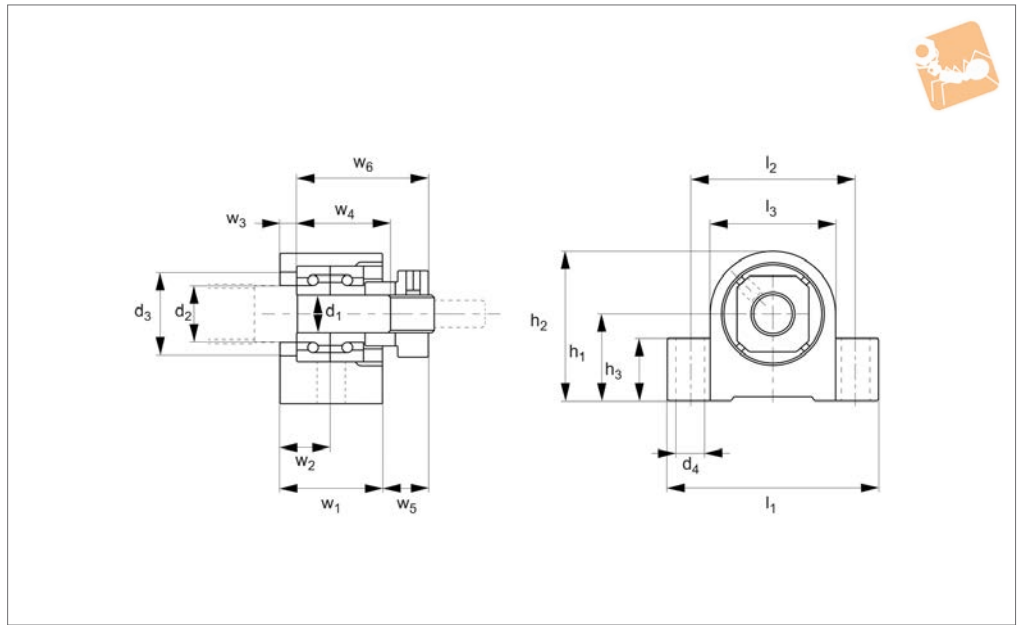
### End machining to suit miniature bearing support units



Screw $\varnothing$	Type	Floating	Fixed	$d_1$		$d_2$		$l_1$		$l_2$		$l_3$		$d_3$		$d_4$	$l_4$	$l_5$	$d_5 \times p$
4	Pillow	L1355.030	L1353.030	2		1,59		5	4	+0,05		0,5	+0,05	3		2	17,5	6,5	M3x0,5
4	Flanged	L1356.030	L1354.030																
6	Pillow	L1355.040	L1353.040	3		2,73	0	5,5	4,5	0		0,5	0	4	-0,010	3	18,5	7	M4x0,5
6	Flanged	L1356.040	L1354.040																
6	Pillow	L1355.050	L1353.050	4	-0,010	3,73	-0,06	6,5	5,5			0,5		5	-0,028	4	19,5	7	M5x0,5
6	Flanged	L1356.050	L1354.050																
8	Pillow	L1355.060	L1353.060	6		5,7		8	6,8	+0,1		0,8	+0,1	6		5	23	7	M6x0,75
8	Flanged	L1356.060	L1354.060																
10	Pillow	L1355.080	L1353.080	6		5,7		8	6,8	0		0,8	0	8	-0,013 -0,035	6.5	27	8,5	M8x1,0
10	Flanged	L1356.080	L1354.080																



### L1353



#### Technical Notes

Generally used with small diameter lead screws - see technical pages for lead screw core diameters and end machining

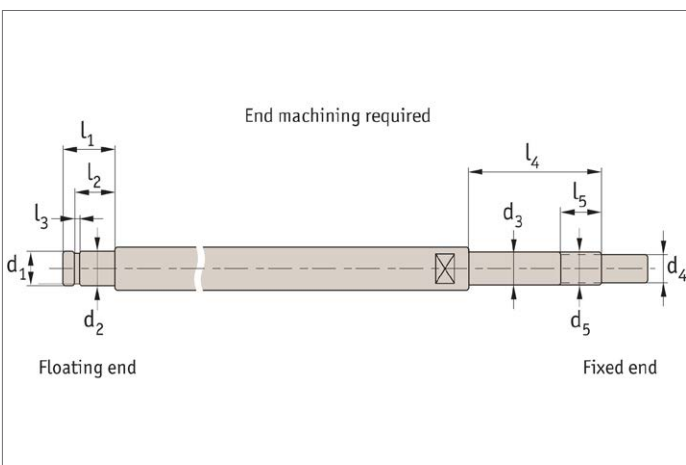
required.

Use with floating support unit (L1355). For required end machining of the lead screws see technical pages.

#### Tips

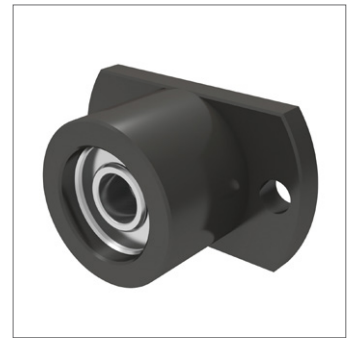
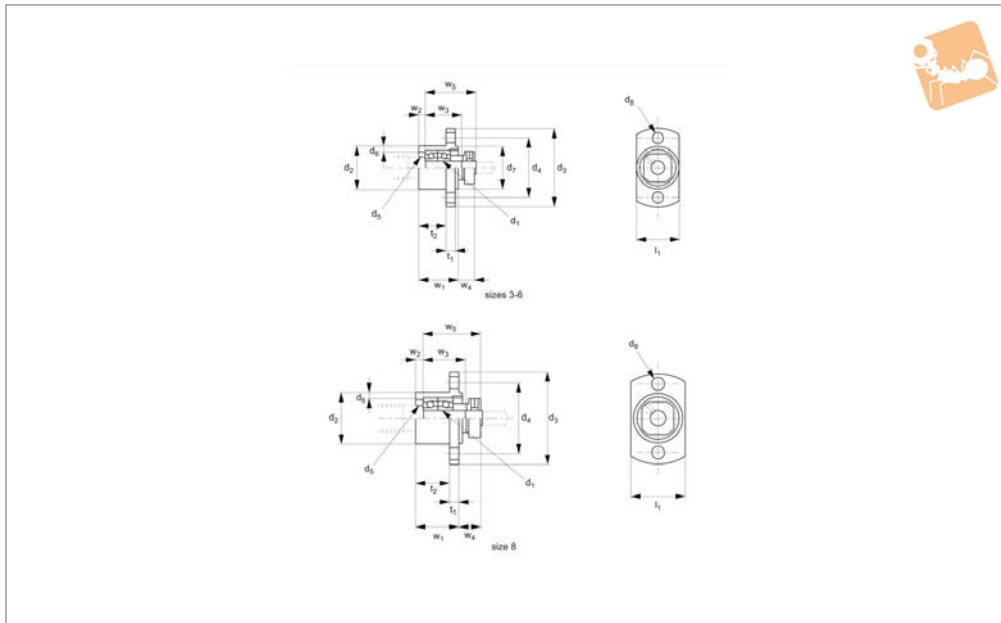
End machining of lead screws on request.

Order No.	d <sub>1</sub>	h <sub>1</sub> +0 -0.03	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	h <sub>2</sub>	h <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	w <sub>5</sub>	w <sub>6</sub>
L1353.030	3	9	4.3	7.3	3.5	14.5	5	24.0	18	11	12.5	6.25	1.5	11.0	5.5	16.5
L1353.040	4	10	6.0	9.5	3.5	17.0	6	27.0	21	14	14.0	7.0	2.0	11.5	5.5	17.5
L1353.050	5	11	8.0	11.5	4.5	19.5	6	30.5	23	17	15.0	7.5	2.0	12.5	5.5	18.5
L1353.060	6	13	9.5	13.3	5.5	22.5	8	35.0	26	19	17.0	8.5	2.5	16.0	7.5	22.0
L1353.080	8	17	11.5	16.5	5.6	29.0	12	41.0	32	24	20.0	10.0	3.0	18.5	9.0	26.0





# Miniature Flanged Fixed Support for miniature lead screws



### L1354

LEAD SCREWS & NUTS

#### Technical Notes

Generally used with small diameter lead screws - see technical pages for lead screw core diameters and end machining

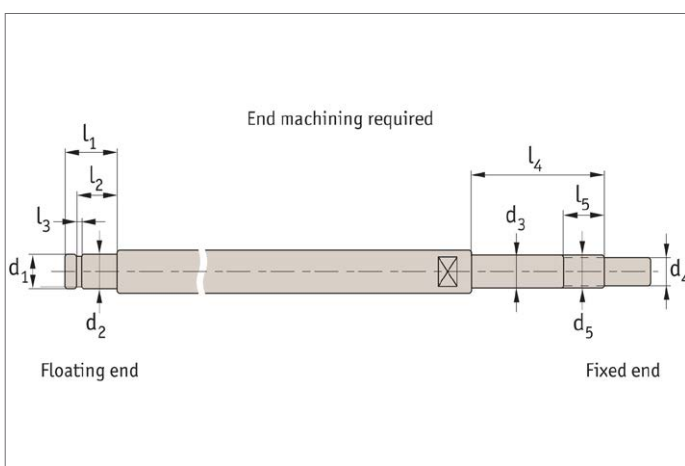
required.

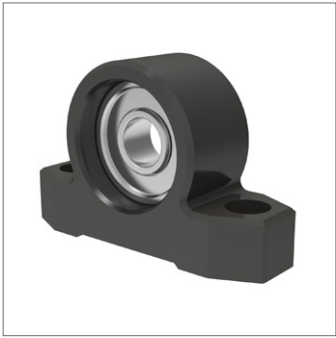
Use with floating support unit (L1356). For required end machining of the lead screws see technical pages.

#### Tips

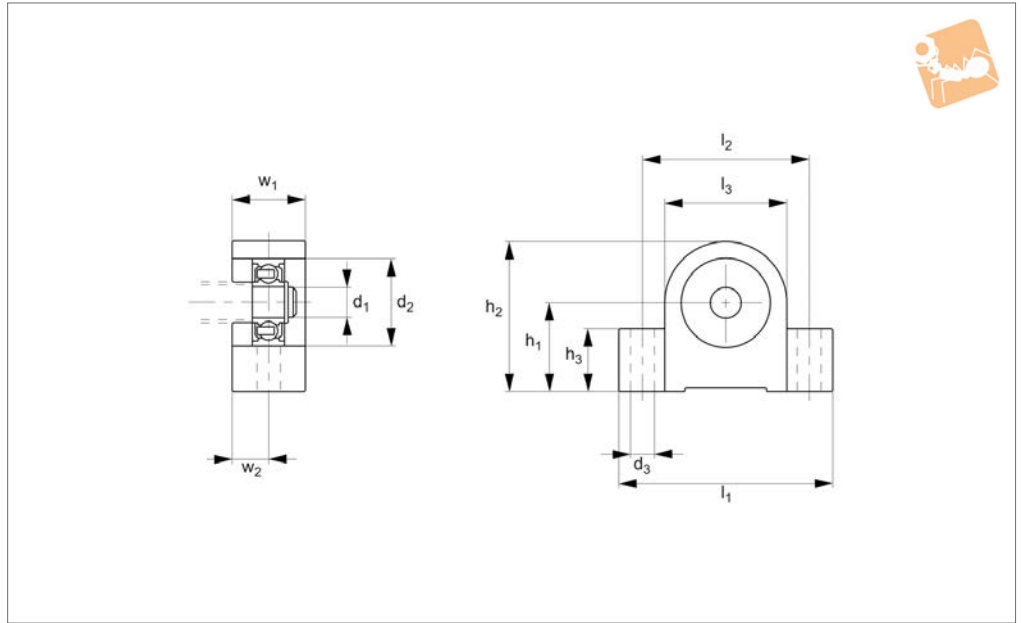
End machining of lead screws on request.

Order No.	d <sub>1</sub>	d <sub>2</sub> -0.007   -0.020	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	d <sub>7</sub>	d <sub>8</sub>	l <sub>1</sub>	t <sub>1</sub>	t <sub>2</sub>	w <sub>1</sub>	w <sub>2</sub>	w <sub>3</sub>	w <sub>4</sub>	w <sub>5</sub>
L1354.030	3	11	23	17	4.3	7.3	11.0	3.5	11	3	7.5	12.5	1.5	11.0	5.5	16.5
L1354.040	4	14	26	20	6.0	9.5	14.0	3.5	14	3	8.5	13.5	1.5	11.5	5.5	1.5
L1354.050	5	17	29	23	8.0	11.5	17.0	3.5	17	3	10.0	15.0	2.0	12.5	5.5	18.5
L1354.060	6	19	34	26	9.5	13.3	18.5	4.5	19	4	12.0	17.0	2.5	16.	7.5	22.0
L1354.080	8	24	39	31	11.5	16.5	-	4.5	24	4	16.0	20.0	3.0	18.5	9.0	26.0





### L1355



#### Technical Notes

Generally used with small diameter lead screws - see technical pages for lead screw core diameters and end machining

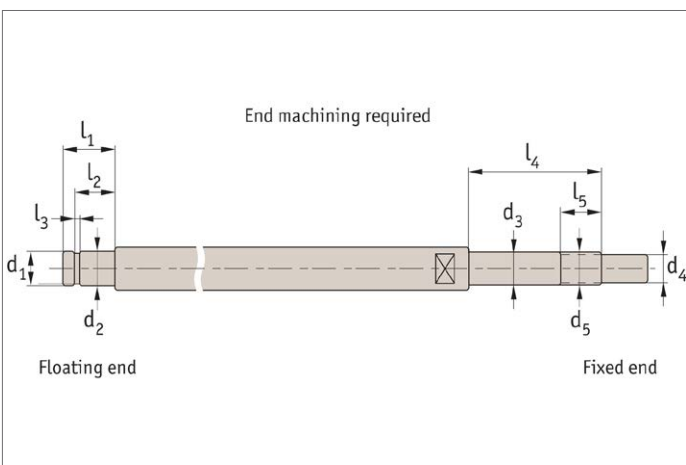
required.

Use with fixed support unit (L1353). For required end machining of the lead screws see technical pages.

#### Tips

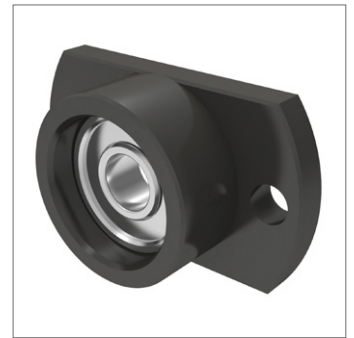
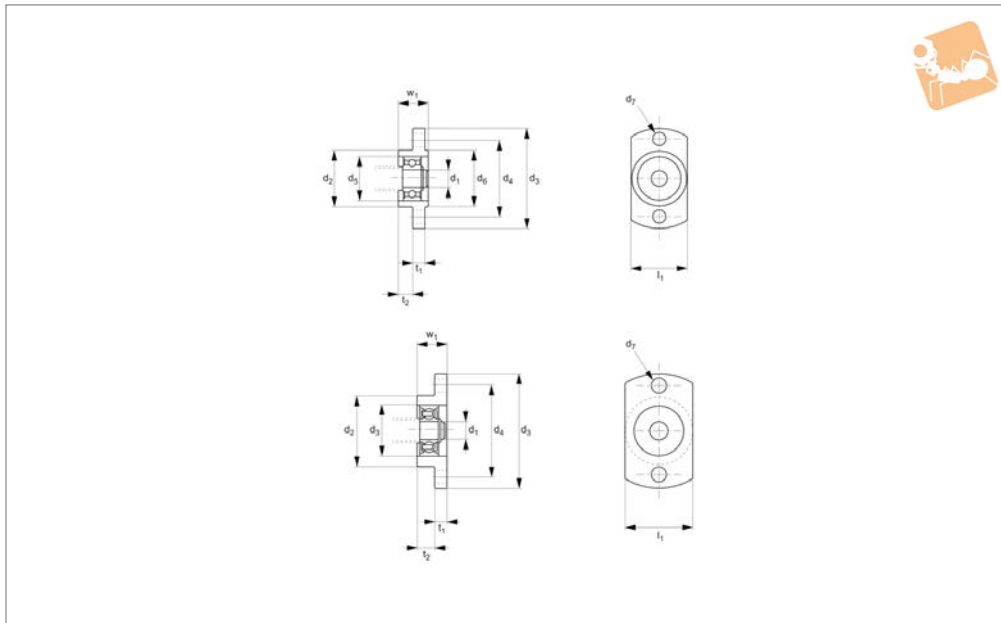
End machining of lead screws on request.

Order No.	$d_1$	$h_1$ +0 -0.03	$d_2$	$d_3$	$h_2$	$h_3$	$l_1$	$l_2$	$l_3$	$w_1$	$w_2$
L1355.030	2	9	7	3.5	14.5	5	24.0	18	11	8	4
L1355.040	3	10	10	3.5	17.0	6	27.0	21	14	10	5
L1355.050	4	11	13	4.5	19.5	6	30.5	23	17	10	5
L1355.060	6	13	15	5.5	22.5	8	35.0	26	19	12	6
L1355.080	6	17	17	5.5	29.0	12	41.0	32	24	14	7





# Miniature Flanged Floating Support for miniature lead screws



### L1356

LEAD SCREWS & NUTS

#### Technical Notes

Generally used with small diameter lead screws - see technical pages for lead screw core diameters and end machining

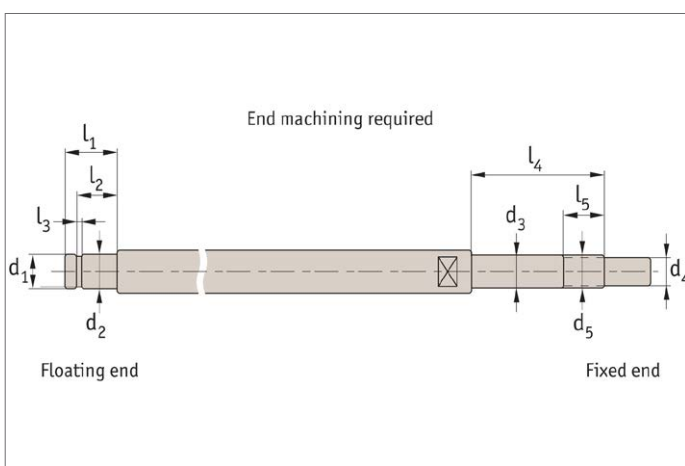
required.

Use with fixed support unit (L1354). For required end machining of the lead screws see technical pages.

#### Tips

End machining of lead screws on request.

Order No.	d <sub>1</sub>	d <sub>2</sub> -0.007   -0.020	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	d <sub>7</sub>	l <sub>1</sub>	t <sub>1</sub>	t <sub>2</sub>	w <sub>1</sub>
L1356.030	2	11	23	17	7	11.0	3.5	11	3	3	8
L1356.040	3	14	26	20	10	14.0	3.5	14	3	5	10
L1356.050	4	17	29	23	13	17.0	3.5	17	3	5	10
L1356.060	6	19	34	26	15	18.5	4.5	19	4	5	10
L1356.080	6	24	39	31	17	-	4.5	24	4	6	10





**Precision lead screws**

The high lead thread form maximises linear motion and minimises shaft rotation. The close tolerance, free running nuts are individually matched to their lead screws and are ideal for miniature applications requiring rotary to linear, or linear to rotary actuation.

**Anti-backlash nuts**

For applications requiring precision positioning there is now a newly patented Anti-backlash nut. This device, consisting of only three components, utilises the constant force of a compression spring to push two halves apart. This action eliminates any play (backlash) which exists between the internal thread of the nut and the external screw thread.

To ensure accuracy and repeatability the nut can be fine tuned through the use of many available spring constants, to meet any preload design requirements.

<b>Lead screw specification</b>	High precision lead screw
<b>Lead error</b>	±0,2mm/300mm
<b>Repeatability</b>	0,01mm
<b>Straightness</b>	0,03mm/100mm
<b>Backlash</b>	0,08mm (zero when using anti-backlash nut)
<b>Temperature range</b>	-30°C to +90°C

**Design considerations**

**Critical speed**

The critical speed of a lead screw is the maximum speed (rpm) before the screw will become dynamically unstable. This results when the forced frequency of the rotating screw corresponds to its natural frequency. Its value is dependent on the length of the screw, the diameter of the thread, and the support configuration. The critical speed value is governed by the following equation.

**Critical screw speed (RPM) =  $K \times C \times 10^6 \times (d/L^2)$**

Where;

<p><b>K</b> = End support factor</p> <p>0,36 one end fixed, other free</p> <p>1,00 simple supports both ends</p> <p>1,47 one end fixed, one simple</p> <p>2,23 both ends fixed</p>	<p><b>C</b> = Material factor</p> <p>4,5 for Stainless Steel screws</p> <p>1,6 for Aluminium screws</p> <p><b>d</b> = Root diameter of the screws</p> <p><b>L</b> = Length between bearing supports</p>
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### Load

In order to properly incorporate a lead screw into a design, load requirements must be taken into account. These numbers are based on the shear of the nuts and does not take shaft buckling into account. Wherever possible, nuts should be positioned so as to be put in tension, pulling the load. This eliminates the need for buckling considerations.

Listed below are some helpful formulae to assist in proper lead screw selection.

$$\text{Critical load (N)} = K \times C \times 10^6 \times (d^4/D^2)$$

Where;

K = End support factor

0,25 one end fixed, other free  
(figure 1)

1,00 simple supports both ends  
(figure 2)

2,00 one end fixed, one simple  
(figure 3)

4,00 both ends fixed (figure 4)

C = Material factor

13,4 for Stainless Steel screws

4,8 for Aluminium screws

d = Root diameter of the screws

D = Length between bearing supports

$$\text{Torque to move a load (T)} = F \times L/2 \times \pi \times E$$

Where;

F = Load

L = Lead

E = Efficiency (see product pages)

### End fixing configurations

Figure 1



Double bearing,  
one end only

Figure 3



Double bearing one end,  
single bearing other end

Figure 2



Single bearing both ends

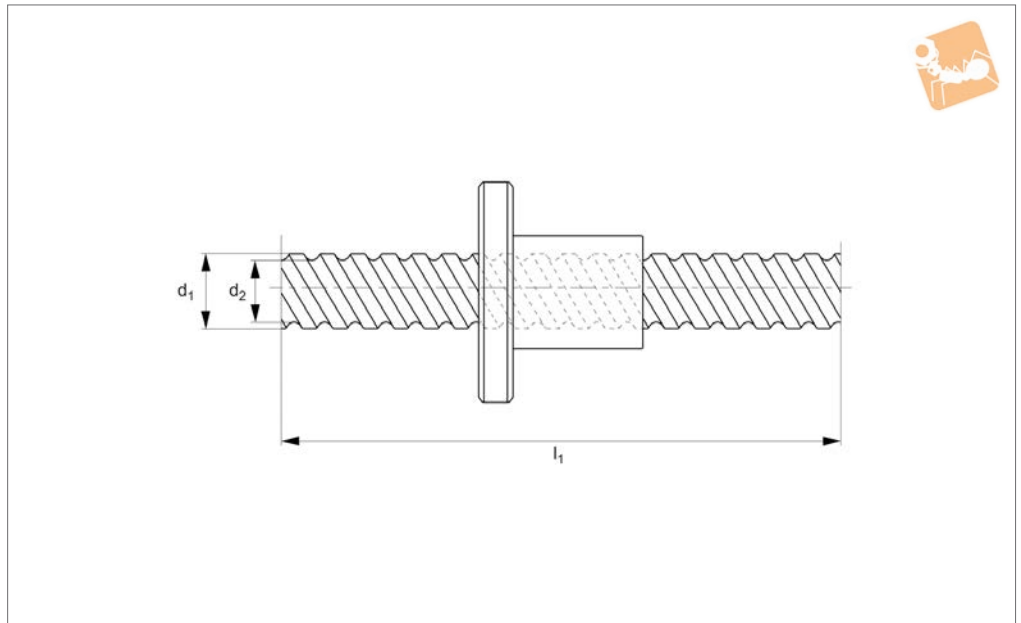
Figure 4



Double bearing both ends



### L1349



**Material**  
Stainless steel screw (SUS 304).

**Technical Notes**  
High precision.

The 'lead' refers to the distance the nut will travel for one complete revolution of the thread. L1350.  
Order corresponding lead screw- see part

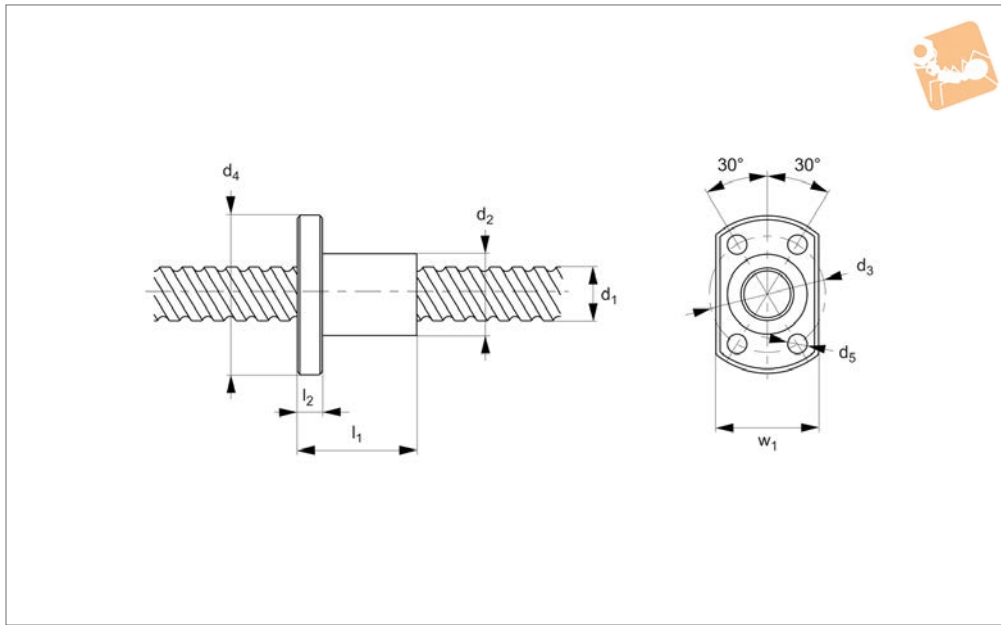
Order No.	Lead	d <sub>1</sub>	l <sub>1</sub>	d <sub>2</sub> core
L1349.04-01-0.2	1	4	200	3.3
L1349.04-02-0.2	2	4	200	3.3
L1349.06-01-0.3	1	6	300	5.3
L1349.06-02-0.3	2	6	300	5.3
L1349.06-09-0.3	9	6	300	5.4
L1349.06-18-0.3	18	6	300	5.6
L1349.08-01-0.3	1	8	300	7.3
L1349.08-02-0.3	2	8	300	6.6
L1349.08-12-0.4	12	8	400	6.7
L1349.08-24-0.4	24	8	400	7.5
L1349.10-02-0.3	2	10	300	8.6
L1349.10-06-1.0	6	10	1000	8.0
L1349.10-10-1.0	10	10	1000	8.0
L1349.10-15-0.5	15	10	450	8.4
L1349.10-30-0.5	30	10	450	8.9
L1349.12-02-0.3	2	12	300	10.6
L1349.12-04-1.0	4	12	1000	10.0
L1349.12-08-1.0	8	12	1000	9.8
L1349.12-12-1.0	12	12	1000	10.3
L1349.12-18-0.5	18	12	500	10.6
L1349.12-36-0.5	36	12	500	10.9
L1349.15-05-2.0	5	15	2000	12.2
L1349.15-10-2.0	10	15	2000	12.3
L1349.15-20-2.0	20	15	2000	12.6
L1349.20-10-2.0	10	20	2000	17.5
L1349.20-20-2.0	20	20	2000	17.6



# Flanged High Helix Lead Screw Nuts

nut only (to suit L1349)

## Lead Screws & Nuts



**L1350**

LEAD SCREWS & NUTS

### Material

Resin nut (PPS), to suit lead screw L1349.

### Technical Notes

High precision.

The 'lead' refers to the distance the nut will travel for one complete revolution of the thread.

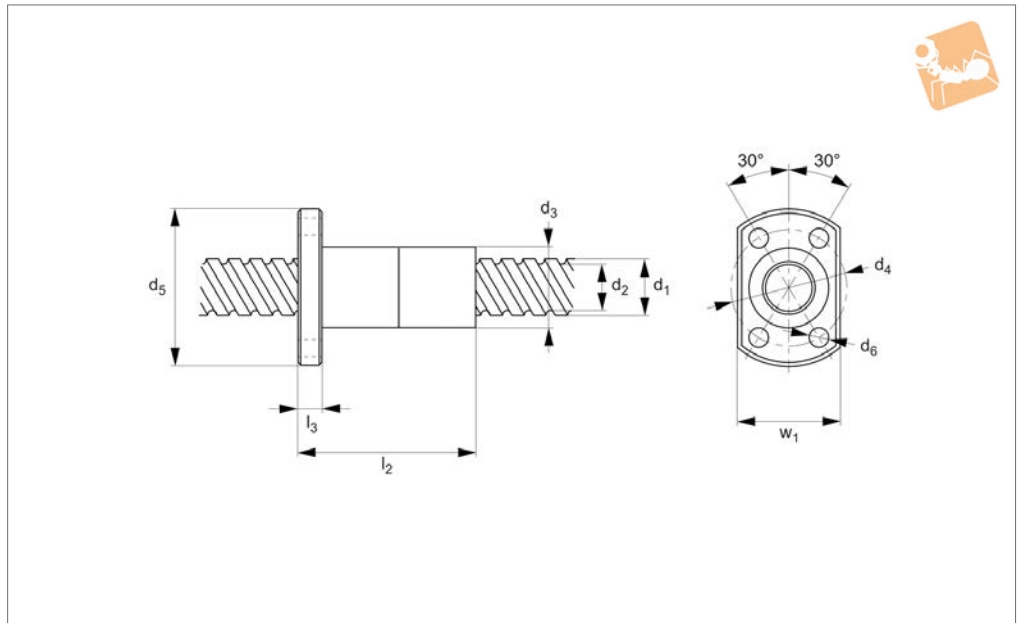
Tight axial clearance.

Order corresponding nut - see part L1349.

Order No.	Lead	d <sub>1</sub> nom.	l <sub>1</sub>	w <sub>1</sub>	l <sub>2</sub>	d <sub>2</sub>	d <sub>3</sub> pcd	d <sub>4</sub>	d <sub>5</sub>	Axial clearance μm	Thrust load N max.	rpm max.	Torque screw to Nm
L1350.04-01	1	4	11.5	15	3.5	10	15	23	2.9	50	50	2000	0.25
L1350.04-02	2	4	11.5	15	3.5	10	15	23	2.9	50	60	2000	0.25
L1350.06-01	1	6	14.5	17	3.5	12	18	26	3.4	50	120	2000	0.60
L1350.06-02	2	6	14.5	17	3.5	12	18	26	3.4	50	60	2000	0.60
L1350.06-09	9	6	14.5	17	3.5	12	18	26	3.4	100	90	2000	0.60
L1350.06-18	18	6	14.5	17	3.5	12	18	26	3.4	100	70	2000	0.60
L1350.08-01	1	8	18.0	18	4.0	14	21	29	4.5	50	200	2000	0.60
L1350.08-02	2	8	18.0	18	4.0	14	21	29	4.5	50	290	2000	0.60
L1350.08-12	12	8	18.0	18	4.0	14	21	29	4.5	100	210	2000	0.60
L1350.08-24	24	8	18.0	18	4.0	14	21	29	4.5	100	210	2000	0.60
L1350.10-02	2	10	22.0	22	5.0	16	24	33	4.5	50	460	1500	0.80
L1350.10-06	6	10	22.0	22	5.0	16	24	33	4.5	100	370	1500	0.80
L1350.10-10	10	10	22.0	22	5.0	16	24	33	4.5	100	250	1500	0.80
L1350.10-15	15	10	22.0	22	5.0	16	24	33	4.5	100	410	1500	0.80
L1350.10-30	30	10	22.0	22	5.0	16	24	33	4.5	100	410	1500	0.80
L1350.12-02	2	12	25.0	25	5.0	18	26	35	4.5	50	660	1000	0.80
L1350.12-04	4	12	25.0	25	5.0	18	26	35	4.5	100	620	1000	0.80
L1350.12-08	8	12	25.0	25	5.0	18	26	35	4.5	100	820	1000	0.80
L1350.12-12	12	12	25.0	25	5.0	18	26	35	4.5	100	470	1000	0.80
L1350.12-18	18	12	25.0	25	5.0	18	26	35	4.5	100	750	1000	0.80
L1350.12-36	36	12	25.0	25	5.0	18	26	35	4.5	100	540	1000	0.80
L1350.15-05	5	15	30.0	30	6.0	24	33	42	4.5	100	890	800	0.80
L1350.15-10	10	15	30.0	30	6.0	24	33	42	4.5	100	1040	800	0.80
L1350.15-20	20	15	30.0	30	6.0	24	33	42	4.5	100	1100	800	0.80
L1350.20-10	10	20	36.0	36	7.0	30	40	50	5.5	100	1240	600	1.0
L1350.20-20	20	20	36.0	36	7.0	30	40	50	5.5	100	1420	600	1.0



## L1351



### Material

Stainless steel screw (SUS 304), resin nut (PPS).

### Technical Notes

High precision. No backlash.

The 'lead' refers to the distance the nut will travel for one complete revolution of the thread. ordered separately.

Nut fitted to screw, to ensure anti-backlash - unlike L1349 and L1350 which can be

Order No.	Lead	d <sub>1</sub> nom.	l <sub>1</sub>	w <sub>1</sub>	l <sub>2</sub>	d <sub>2</sub> core	d <sub>3</sub>	d <sub>4</sub> pcd	d <sub>5</sub>	d <sub>6</sub>	l <sub>3</sub>	Axial clearance μm	Thrust load N max.	rpm max.	Torque screw to Nm
L1351.04-01-0.2	1	4	200	15	17,5	3,3	10	15	23	2,9	3,5	50	50	2000	0,25
L1351.04-02-0.2	2	4	200	15	17,5	3,3	10	15	23	2,9	3,5	50	60	2000	0,25
L1351.06-01-0.3	1	6	300	17	23,5	5,3	12	18	26	3,4	3,5	50	120	2000	0,6
L1351.06-02-0.3	2	6	300	17	23,5	5,3	12	18	26	3,4	3,5	50	60	2000	0,6
L1351.06-09-0.3	9	6	300	17	23,5	5,4	12	18	26	3,4	3,5	100	90	2000	0,6
L1351.06-18-0.3	18	6	300	17	23,5	5,6	12	18	26	3,4	3,5	100	70	2000	0,6
L1351.08-01-0.3	1	8	300	18	29,0	7,3	14	21	29	4,5	4,0	50	200	2000	0,6
L1351.08-02-0.3	2	8	300	18	29,0	6,6	14	21	29	4,5	4,0	50	290	2000	0,6
L1351.08-12-0.4	12	8	400	18	29,0	6,7	14	21	29	4,5	4,0	100	210	2000	0,6
L1351.08-24-0.4	24	8	400	18	29,0	7,5	14	21	29	4,5	4,0	100	210	2000	0,6
L1351.10-02-0.3	2	10	300	21	35,0	8,6	16	24	33	4,5	5,0	50	460	1500	0,8
L1351.10-06-1.0	6	10	1000	21	35,0	8,0	16	24	33	4,5	5,0	100	370	1500	0,8
L1351.10-10-1.0	10	10	1000	21	35,0	8,0	16	24	33	4,5	5,0	100	250	1500	0,8
L1351.10-15-0.5	15	10	450	21	35,0	8,4	16	24	33	4,5	5,0	100	410	1500	0,8
L1351.10-30-0.5	30	10	450	21	35,0	8,9	16	24	33	4,5	5,0	100	410	1500	0,8
L1351.12-02-0.3	2	12	300	22	40,0	10,6	18	26	35	4,5	5,0	50	660	1000	0,8
L1351.12-04-1.0	4	12	1000	22	40,0	10,0	18	26	35	4,5	5,0	100	620	1000	0,8
L1351.12-08-1.0	8	12	1000	22	40,0	9,8	18	26	35	4,5	5,0	100	820	1000	0,8
L1351.12-12-1.0	12	12	1000	22	40,0	10,3	18	26	35	4,5	5,0	100	470	1000	0,8
L1351.12-18-0.5	18	12	500	22	40,0	10,6	18	26	35	4,5	5,0	100	750	1000	0,8
L1351.12-36-0.5	36	12	500	22	40,0	10,9	18	26	35	4,5	5,0	100	540	1000	0,8
L1351.15-05-2.0	5	15	2000	27	48,0	12,2	24	33	42	4,5	6,0	100	890	800	0,8
L1351.15-10-2.0	10	15	2000	27	48,0	12,3	24	33	42	4,5	6,0	100	1040	800	0,8
L1351.15-20-2.0	20	15	2000	27	48,0	12,6	24	33	42	4,5	6,0	100	1100	800	0,8
L1351.20-10-2.0	10	20	2000	32	57,0	17,5	30	40	50	5,5	7,0	100	1240	600	1,0
L1351.20-20-2.0	20	20	2000	32	57,0	17,6	30	40	50	5,5	7,0	100	1420	600	1,0