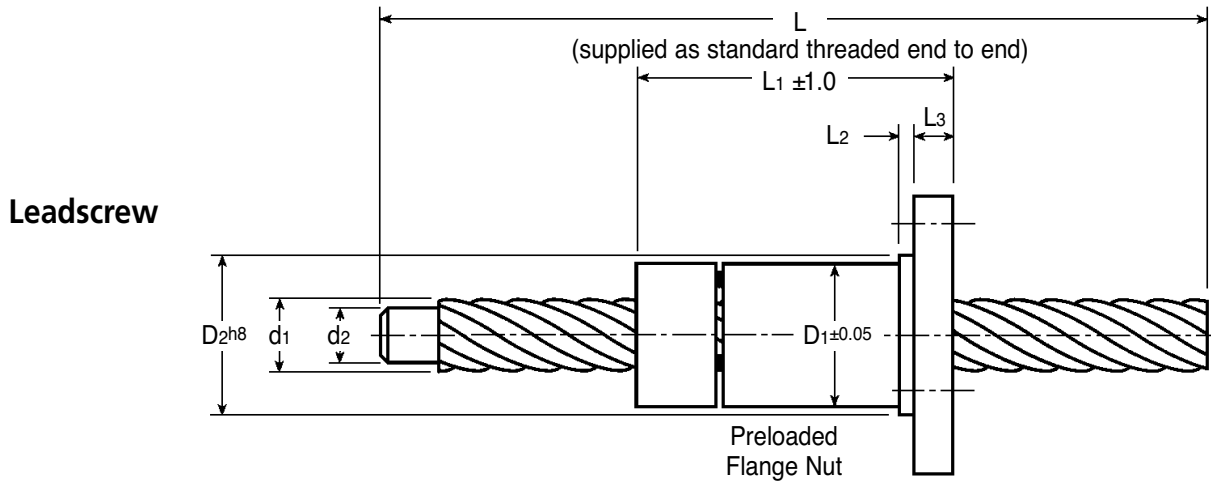
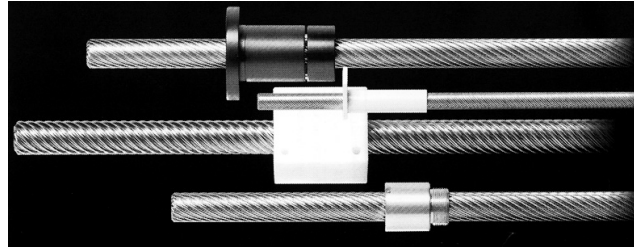
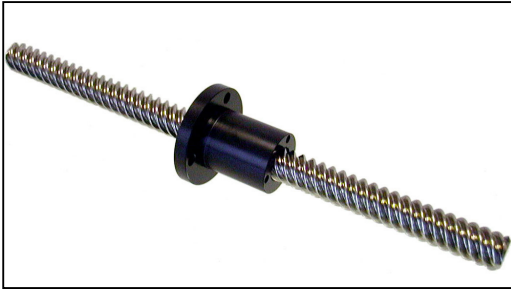


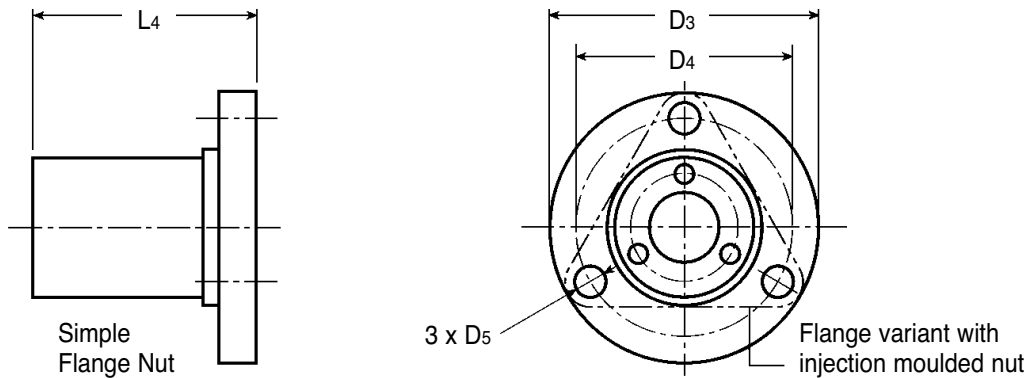
SPED

LINEAR MOTION

High Helix Leadscrew Standard Thread



Nuts available



Material

Screw: Stainless (Std.) X20Cr13, material No. 1.4021 (420 S37)

Nut: (POM) Thermoplastic delrin (standard)

(Bronze) CuSn12, material No. 2.1052 (on request)

Note: Other thermoplastic materials available on request.

Ordering

When ordering leadscrews, please insert the following information in place of the suffixes to the part number:-

L – Screw length (available in 300, 600 & 1000mm lengths). End machining available at extra cost.

M – Screw Material: SS = Stainless Steel

eg. **SPED8x10300SS** = Leadscrew of 8mm Nominal diameter, 10mm Lead, 300mm screw length, manufactured from Stainless Steel

When ordering nuts, please insert the following information in place of the suffixes to the part number:-

BRO = Bronze (simple - POA)

BRO-PRE = Bronze Pre-loaded Nut (POA)

POM = Thermoplastic delrin (simple - STD)

POM-PRE = Thermoplastic delrin Pre-loaded Nut (POA)

eg. **SPED8x10BRO** = Nut of 8mm Nominal screw diameter, 10mm Lead, manufactured from bronze

or **SPED8x10BRO-PRE** = Nut of 8mm Nominal screw diameter, 10mm Lead, manufactured from bronze & pre-loaded

Price on application for all nuts, apart from the standard POM type.

Options

Other dimensions, tolerances and designs - in particular special screw diameters and higher/lower pitch as well as special nut designs and materials - are available on request. For higher loads, please ask for details of our cold rolled transport ball screws.

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LINEAR MOTION

SPED

High Helix Leadscrew 8 - 36mm Screw Dia., 8 - 200mm Thread

Discounts: 10+ -5% 20+ -10% 50+ -15%

Part Number 300SS Screw	POM Nut	Screw Dimensions					Nut Dimensions											Load CO(N) POM	Price Each 300SS Screw	1-9 POM Nut
		d0	P	d1	d2 RootØ	i	D1 ±0.05	D2 h8	D3	D4	D5	L1 POM	L1 Bronze	L2	L3	L4 POM	L4 Bronze			
SPED8X10L	SPED8X10POM	8	10	8.2	5.5	4	23.5	24	42	32	4.2	38	31	3	5	25	18	800	£39.13	£85.07
SPED10X12L	SPED10X12POM	10	12	10.0	7.1	4	23.5	24	42	32	4.2	38	31	3	5	25	18	1200	£38.95	£85.07
SPED12X15L	SPED12X15POM	12	15	12.2	9.2	5	23.5	24	42	32	4.2	38	31	3	5	25	18	1400	£41.62	£74.34
SPED12X25L	SPED12X25POM	12	25	11.9	8.0	5	23.5	24	42	32	4.2	38	31	3	5	25	18	1500	£42.47	£85.07
SPED10X50L	SPED10X50POM	10	50	10.0	7.4	10	25.5	26	46	36	5.1	58	46	3	7	42	30	1250	£47.33	£96.89
SPED11X60L	SPED11X60POM	11	60	11.7	9.1	12	25.5	26	46	36	5.1	58	46	3	7	42	30	1500	£44.22	£96.89
SPED13X20L	SPED13X20POM	13	20	13.3	8.8	4	25.5	26	46	36	5.1	58	46	3	7	42	30	1300	£52.94	£96.89
SPED13X70L	SPED13X70POM	13	70	13.5	10.9	14	25.5	26	46	36	5.1	58	46	3	7	42	30	1750	£55.13	£96.89
SPED14X8L	SPED14X8POM	14	8	14.0	9.8	2	25.5	26	46	36	5.1	58	46	3	7	42	30	900	£54.58	£96.89
SPED14X18L	SPED14X18POM	14	18	14.3	11.4	6	25.5	26	46	36	5.1	58	46	3	7	42	30	1600	£54.58	£96.89
SPED14X30L	SPED14X30POM	14	30	13.9	10.1	6	25.5	26	46	36	5.1	58	46	3	7	42	30	1750	£56.24	£96.89
SPED15X20L	SPED15X20POM	15	20	15.2	12.5	8	29.5	30	49	39	5.1	58	46	3	7	42	30	1600	£59.95	£106.73
SPED15X80L	SPED15X80POM	15	80	15.2	12.6	16	29.5	30	49	39	5.1	58	46	3	7	42	30	2000	£59.95	£106.73
SPED16X21L	SPED16X21POM	16	21	16.5	13.6	7	29.5	30	49	39	5.1	58	46	3	7	42	30	1800	£60.11	£106.73
SPED16X25L	SPED16X25POM	16	25	16.0	11.5	5	29.5	30	49	39	5.1	58	46	3	7	42	30	1550	£61.98	£106.73
SPED16X35L	SPED16X35POM	16	35	15.9	12.1	7	29.5	30	49	39	5.1	58	46	3	7	42	30	2000	£63.19	£106.73
SPED16X90L	SPED16X90POM	16	90	17.0	14.3	18	29.5	30	49	39	5.1	58	46	3	7	42	30	2250	£64.01	£106.73
SPED18X16L	SPED18X16POM	18	16	18.0	14.3	4	29.5	30	49	39	5.1	58	46	3	7	42	30	1100	£71.21	£113.00
SPED18X24L	SPED18X24POM	18	24	18.7	15.7	8	29.5	30	49	39	5.1	58	46	3	7	42	30	2000	£72.59	£113.00
SPED18X40L	SPED18X40POM	18	40	17.9	14.1	8	29.5	30	49	39	5.1	58	46	3	7	42	30	2250	£74.00	£114.61
SPED18X100L	SPED18X100POM	18	100	18.8	16.2	20	29.5	30	49	39	5.1	58	46	3	7	42	30	2500	£77.34	£113.00
SPED19X30L	SPED19X30POM	19	30	18.8	14.2	6	29.5	30	49	39	5.1	58	46	3	7	42	30	1800	£81.17	£113.00
SPED20X12L	SPED20X12POM	20	12	20.0	15.8	3	35.5	36	59	47	6.2	64	50	5	8	46	32	1200	£83.27	£125.64
SPED20X45L	SPED20X45POM	20	45	20.0	16.1	9	35.5	36	59	47	6.2	64	50	5	8	46	32	2500	£85.22	£125.64
SPED21X27L	SPED21X27POM	21	27	20.8	17.9	9	35.5	36	59	47	6.2	64	50	5	8	46	32	2200	£92.32	£125.64
SPED21X35L	SPED21X35POM	21	35	21.5	17.0	7	35.5	36	59	47	6.2	64	50	5	8	46	32	2050	£92.32	£125.64
SPED22X20L	SPED22X20POM	22	20	22.0	18.3	5	35.5	36	59	47	6.2	64	50	5	8	46	32	1400	£99.79	£125.64
SPED22X50L	SPED22X50POM	22	50	22.0	18.1	10	35.5	36	59	47	6.2	64	50	5	8	46	32	2750	£99.79	£125.64
SPED23X30L	SPED23X30POM	23	30	23.0	20.0	10	35.5	36	59	47	6.2	64	50	5	8	46	32	2400	£103.16	£125.64
SPED24X40L	SPED24X40POM	24	40	24.3	19.8	8	35.5	36	59	47	6.2	64	50	5	8	46	32	2300	£122.76	£125.64
SPED24X55L	SPED24X55POM	24	55	24.0	20.1	11	35.5	36	59	47	6.2	64	50	5	8	46	32	3000	£125.64	£125.64
SPED26X16L	SPED26X16POM	26	16	26.0	21.8	4	41.5	42	64	53	6.2	71	56	5	8	50	35	1400	£134.30	£135.98
SPED26X24L	SPED26X24POM	26	24	26.0	22.3	6	41.5	42	64	53	6.2	71	56	5	8	50	35	2000	£134.30	£135.98
SPED26X60L	SPED26X60POM	26	60	26.0	22.2	12	41.5	42	64	53	6.2	71	56	5	8	50	35	3250	£137.04	£135.98
SPED27X45L	SPED27X45POM	27	45	27.0	22.5	9	41.5	42	64	53	6.2	71	56	5	8	50	35	2550	£147.34	£135.98
SPED28X65L	SPED28X65POM	28	65	28.0	24.2	13	41.5	42	64	53	6.2	71	56	5	8	50	35	3500	£159.13	£135.98
SPED30X28L	SPED30X28POM	30	28	30.0	26.5	7	41.5	42	64	53	6.2	71	56	5	8	50	35	2000	£176.08	£135.98
SPED30X50L	SPED30X50POM	30	50	29.8	25.3	10	41.5	42	64	53	6.2	71	56	5	8	50	35	2800	£179.71	£135.98
SPED30X70L	SPED30X70POM	30	70	30.0	26.2	14	41.5	42	64	53	6.2	71	56	5	8	50	35	3750	£185.11	£135.98
SPED32X20L	SPED32X20POM	32	20	32.0	27.8	5	49.5	50	80	65	9.0	-	-	10	12	70	50	2000	£191.48	£240.75
SPED32X75L	SPED32X75POM	32	75	32.0	28.2	15	49.5	50	80	65	9.0	-	-	10	12	70	50	4000	£197.75	£240.75
SPED34X32L	SPED34X32POM	34	32	34.0	30.5	8	49.5	50	80	65	9.0	-	-	10	12	70	50	2300	£214.98	£240.75
SPED34X80L	SPED34X80POM	34	80	34.0	30.2	16	49.5	50	80	65	9.0	-	-	10	12	70	50	4250	£219.28	£240.75
SPED36X200L	SPED36X200POM	36	200	36.0	33.4	40	49.5	50	80	65	9.0	-	-	10	12	70	50	4500	£251.62	£240.75

d0 = Nominal screw diameter
d2 = Core diameter
P = Nominal lead
i = Number of threads
M = Material

L = Screw length (available in 300 600 & 1000mm lengths)
PL = Pre-loaded nut
CO = Static load rate for non-preloaded POM nuts (N);
bronze nuts must be used for higher load rates.
(load rates for bronze nuts = 1.3 x load rates of POM nuts)
* = Available in left and right handed thread.

NB: Prices are for 300mm long stainless steel leadscrews and standard plastic nuts. For other lengths, nuts and materials please contact Sales.

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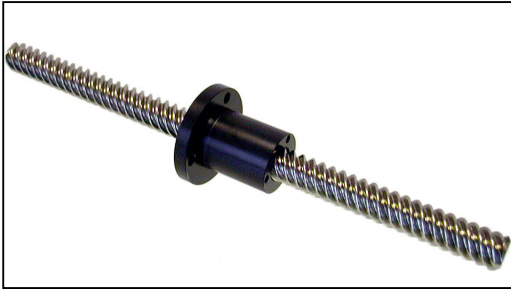
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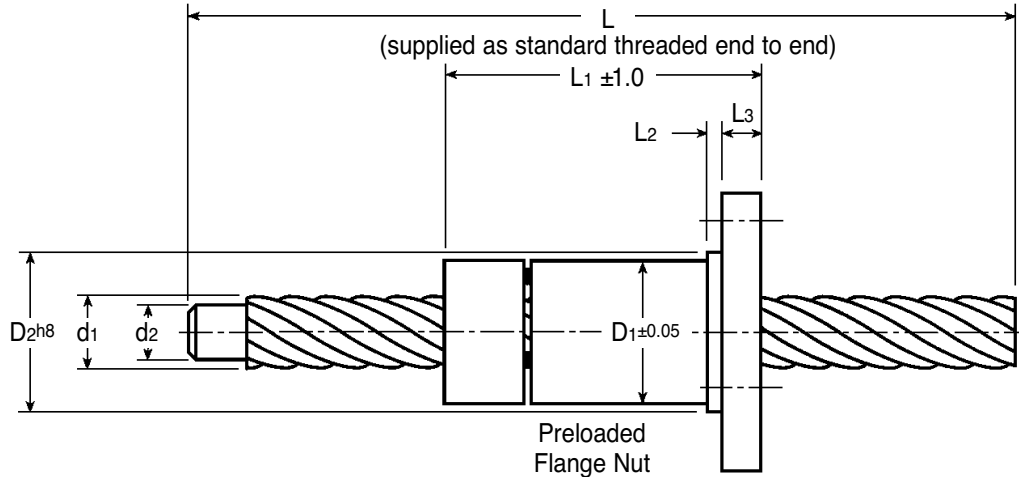
SPED

LINEAR MOTION

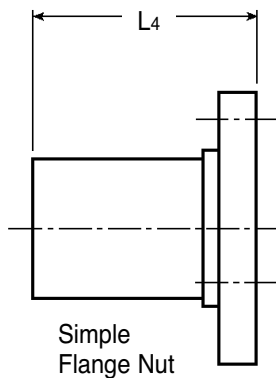
High Helix Leadscrew Fine Pitch Thread



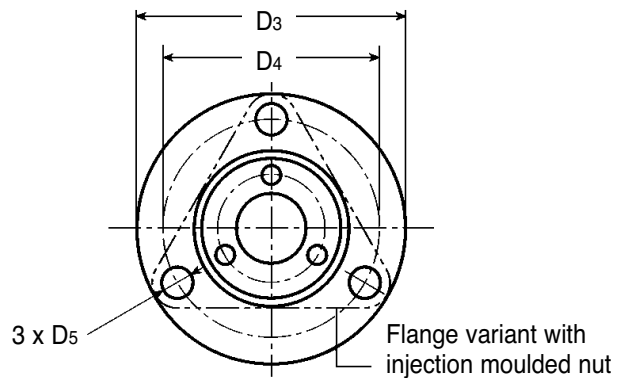
Leadscrew



Nuts available



Simple Flange Nut



Material

Screw: Stainless (Std.) X20Cr13, material No. 1.4021 (420 S37)

Nut: (POM) Thermoplastic delrin (standard)

(Bronze) CuSn12, material No. 2.1052 (on request)

Note: Other thermoplastic materials available on request.

Performance

Standard Tolerance: $p = \pm 0.21\text{mm}/300\text{mm}$ (Precision Class 10; DIN 69051). Tolerances of $\pm 0.1\text{mm}/300\text{mm}$ available on request.

Operating Temperature Range: **POM Nuts:** -40°C to +60°C **Brass Nuts:** -40°C to +200°C

Efficiency: ~0.5 to 0.75 (depending on the pitch).

Ordering

When ordering leadscrews, please insert the following information in place of the suffixes to the part number:-

L – Screw length (available in 300, 600 & 1000mm lengths). End machining available at extra cost.

M – Screw Material: AL = Aluminium, SS = Stainless Steel

eg. **SPED5x5300SS** = Leadscrew of 5mm Nominal diameter, 5mm Lead, 300mm screw length, manufactured from Stainless Steel

When ordering nuts, please insert the following information in place of the suffixes to the part number:-

BRO = Bronze (simple - POA)

BRO-PRE = Bronze Pre-loaded Nut (POA)

POM = Thermoplastic delrin (simple - STD)

POM-PRE = Thermoplastic delrin Pre-loaded Nut (POA)

eg. **SPED5x5BRO** = Nut of 5mm Nominal screw diameter, 5mm Lead, manufactured from bronze

or **SPED5x5BRO-PRE** = Nut of 5mm Nominal screw diameter, 5mm Lead, manufactured from bronze & pre-loaded

Price on application for all nuts, apart from the standard POM type.

Options

Other dimensions, tolerances and designs - in particular special screw diameters and higher/lower pitch as well as special nut designs and materials - are available on request. For higher loads, please ask for details of our cold rolled transport ball screws.

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LINEAR MOTION

SPED

High Helix Leadscrew 5 - 45mm Screw Dia., 5 - 12mm Thread

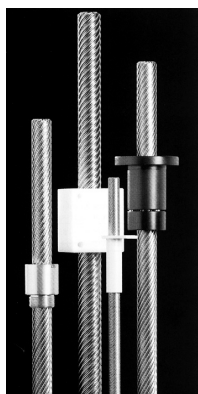
Discounts: 10+ -5% | 20+ -10% | 50+ -15%

Part Number 300SS Screw	POM Nut	Screw Dimensions					Nut Dimensions											Load CO(N) POM	Price Each 300SS Screw	1-9 POM Nut
		d0	P	d1	d2 RootØ	i	D1 ±0.05	D2 h8	D3	D4	D5	L1 POM	L1 Bronze	L2	L3	L4 POM	L4 Bronze			
SPED5X5L	SPED5X5POM	5.0	5.0	5.4	3.6	4	20.5	21	38	29	4.2	38	31	3	5	25	18	300	£33.53	£81.43
SPED5X20L	SPED5X20POM	5.0	20.0	6.0	5.0	16	20.5	21	38	29	4.2	38	31	3	5	25	18	300	£35.31	£81.43
SPED6X25L	SPED6X25POM	6.0	25.0	7.4	6.3	20	20.5	21	38	29	4.2	38	31	3	5	25	18	400	£37.14	£81.43
SPED7.5X7.5L	SPED7.5X7.5POM	7.5	7.5	7.7	5.9	6	20.5	21	38	29	4.2	38	31	3	5	25	18	450	£38.14	£81.43
SPED8X30L	SPED8X30POM	8.0	30.0	8.6	7.5	24	20.5	21	38	29	4.2	38	31	3	5	25	18	500	£39.13	£81.43
SPED10X10L	SPED10X10POM	10.0	10.0	10.0	8.2	8	23.5	24	42	32	4.2	38	31	3	5	25	18	600	£40.24	£85.07
SPED10X35L	SPED10X35POM	10.0	35.0	10.1	8.9	28	23.5	24	42	32	4.2	38	31	3	5	25	18	600	£41.42	£85.07
SPED11X40L	SPED11X40POM	11.0	40.0	11.5	10.2	32	23.5	24	42	32	4.2	38	31	3	5	25	18	700	£41.53	£85.07
SPED12X45L	SPED12X45POM	12.0	45.0	12.8	11.4	36	23.5	24	42	32	4.2	38	31	3	5	25	18	800	£44.31	£85.07

d0 = Nominal screw diameter
d2 = Core diameter
P = Nominal lead
i = Number of threads
M = Material

L = Screw length (available in 300 600 & 1000mm lengths)
PL = Pre-loaded nut
CO = Static load rate for non-preloaded POM nuts (N);
bronze nuts must be used for higher load rates.
(load rates for bronze nuts = 1.3 x load rates of POM nuts)
* = Available in left and right handed thread.

NB: Prices are for 300mm long stainless steel leadscrews and standard plastic nuts. For other lengths, nuts and materials please contact Sales.



The range of high-helix leadscrews allow phenomenal operating speeds. Never before have such high moving speeds been obtained at such low rotational speeds. This has been made possible by using a helix pitch unheard of before. High-helix leadscrews are made of stainless steel or aluminium and are formed by the cold rolling process. They are coupled with high wear-resistant thermoplastic nuts (POM) or for higher loads with brass nuts in preloaded and non-preloaded backlash designs which are zero backlash. For special applications, superior thermoplastic materials may also be used for the nuts.

Duty Cycle

Load rates, lubrication instructions and basic calculation with load factor fL are based on a duty cycle of 10% for a leadscrew with non-preloaded POM Nut.

Lubrication

In many instances, a single lubrication with grease or oil is sufficient. However, any lubrication cycle depends on the application environment. Bronze nuts have to be lubricated regularly.

Applications

High-helix leadscrews are suitable for a variety of applications. For short strokes, they are a substitute for drive belts due to their low production cost. In addition, they are perfectly suited as substitutes for hydraulic and pneumatic cylinders. Indeed, they allow low-friction acceleration as well as free positioning and operate without any second energy sources. When appropriate, they are also ideal alternatives to trapezoidal and ball screws due to high efficiency and extremely low cost.

Typical Applications

- Drives for doors, gates and windows
- Handling systems
- Drawing machines
- Drives for valves and dampers
- Climate control systems
- Medical devices
- Textile machines
- Packaging machines, etc.

Basic Calculations

Maximum authorized load depending on speed: $F_{per} = C_0 \cdot f_L (N)$; C_0 = static load rate (N); f_L = load factor (-) for POM nuts

Circumferential speed vc (m/min): 5 10 20 30 40 50

Load factor fL (-): 0.95 0.75 0.45 0.37 0.12 0.08

Calculation Example

Parameters: Leadscrew 10x50 with Non-preloaded POM Nut, d0 = 10mm, p = 50mm and C0 = 1250N;
Required moving speed vs = 200mm/sec.

We need to find: F_{per}

We calculate n (min⁻¹),

$$n = \frac{v_s \text{ (mm/sec)} \cdot 60}{p \text{ (mm)}} = \frac{200 \cdot 60}{50} = 240 \text{ min}^{-1}$$

Circumferential speed vc (m/min)

$$vc = \frac{d_0 \text{ (mm)} \cdot \pi \cdot n \text{ (min}^{-1}\text{)}}{1000} = \frac{10 \cdot \pi \cdot 240}{1000} = 7.53 \text{ m/min}$$

And find load factor fL in the above table:

fL at vc of 7.53m/min ≈ 0.85 (-)

It follows; $F_{per} = C_0 \cdot f_L = 1250 \cdot 0.85 = 1062.5N$

In other words, the maximum load for a leadscrew 10x50 at vs = 200mm/sec.

(Æ n = 240min⁻¹) is 1060N

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