

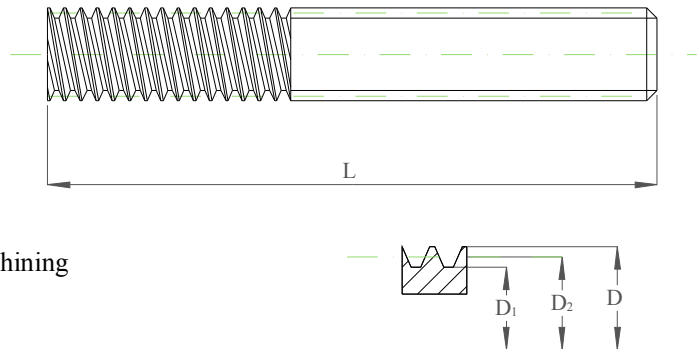


Trapezoidal Screw Shafts

A popular linear drive mechanism for situations where constant motion is not required. Can be hand or motor driven and ideal for machine adjustment, gate or guard openers and presses. Due to its self-locking characteristics it is ideal for intermittent lift mechanisms.

Trapezoidal Shafts

- Available in left and right hand threads
- Material S45C (1045 med tensile)
- Also available in SUS303 stainless (designation TMS)
- Talk to us about bearing journals and machining



Items in **bold** are normal stock items

We will cut to your length for a nominal cutting charge

Part No.	Lead P	Lead Angle	Standard Measurement			Max length	Weight kg/m
			D	D ₂	D ₁		
TMR8	1.5	3.77	8	7.25	6.0	500	0.3
TMR10	2	4.05	10	9.0	7.5	1000	0.5
TMR12	2	3.31	12	11.0	9.5	1000	0.8
TMR14	3	4.37	14	12.5	10.5	2000	1.0
TMR16	3	3.77	16	14.5	12.5	3000	1.3
TMR18	4	4.55	18	16.0	13.5	3000	1.6
TMR20	4	4.05	20	18.0	15.5	3000	2.0
TMR22	5	4.67	22	19.5	16.5	3000	2.3
TMR25	5	4.05	25	22.5	19.5	3000	3.1
TMR28	5	3.57	28	25.5	22.5	3000	4.0
TMR32	6	3.77	32	29.0	25.5	3000	5.2
TMR36	6	3.31	36	33.0	29.5	3000	6.7
TMR40	6	2.96	40	37.0	33.5	3000	8.4
TMR45	8	3.55	45	41.0	36.5	3000	10.4
TMR50	8	3.17	50	46	41.5	3000	13

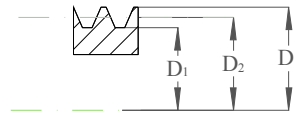
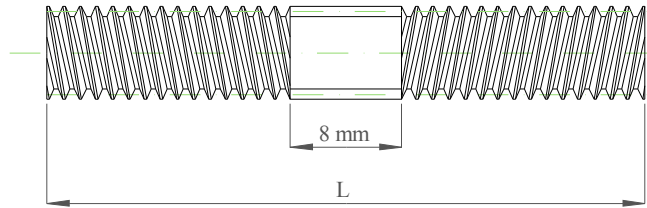
Analogue indicators and hand wheels to suit can also be supplied from stock and make an ideal machine adjuster mechanism.





Double Acting Thread

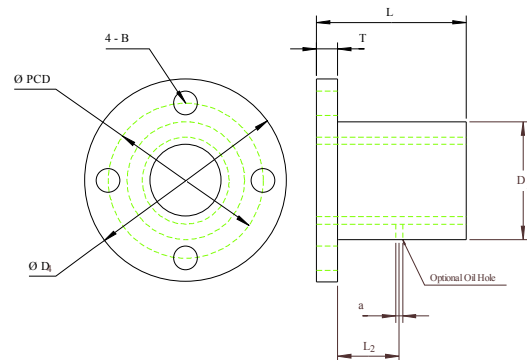
- Material S45C (1045 med tensile)
- Single shaft with left and right hand threads
- Talk to us about non standard lengths and machining



Part No.	Lead P	Lead Angle	Standard Measurement			Max Length	Weight Kg/m
			D	D ₂	D ₁		
TMC10	2	4°02'46"	10	9.0	7.5	500	0.5
TMC12	2	3°18'44"	12	11.0	9.5	750	0.8
TMC14	3	4°22'07"	14	12.5	10.5	750	1.0
TMC16	3	3°46'04"	16	14.5	12.5	1000	1.3
TMC18	4	4°32'59"	18	16.0	13.5	1000	1.6
TMC20	4	4°02'46"	20	18.0	15.5	1250	2.0
TMC22	5	4°39'58"	22	19.5	16.5	1250	2.3
TMC25	5	4°02'56"	25	22.5	19.5	1500	3.1
TMC28	5	3°34'17"	28	25.5	22.5	1500	4.0
TMC32	6	3°46'04"	32	29.0	25.5	1500	5.2

Flanged Nuts

- Available in left and right hand threads
- Material BC6 Bronze
- Optional oil hole (code -O ex TTM25-O)
- Plastic nut available (code -P ex TTMP25)
 - Material Acetal (POM)



Items in **bold** are normal stock items

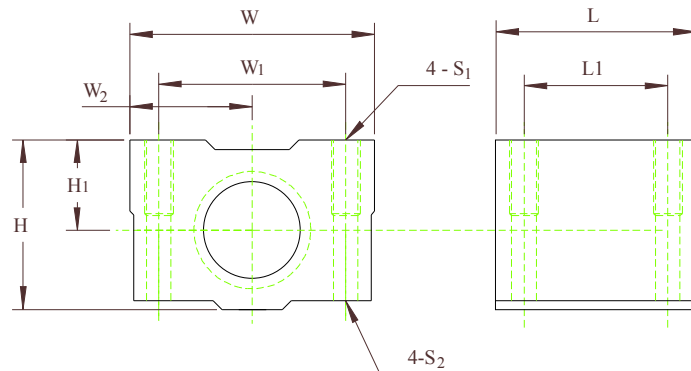
Part No.	Lead P	Lead Angle	Standard Measurement			D ₃	L	D ₄	T	PCD	B	a	L ₂	Weight	Load Plastic nut	Load BC6 nut
			D	D ₂	D ₁									kg	Kgf	Kgf
TTM8	1.5	3.77	8.5	7.25	7.0	15	20	30	4	22	3.3	1.5	8	0.038		150
TTM10	2	4.05	10.5	9.0	8.5	20	24	36	5	26	4.3	1.5	9.5	0.079	23	260
TTM12	2	3.31	12.5	11.0	10.5	22	30	44	5	31	5.4	1.5	12.5	0.118	31	400
TTM14	3	4.37	14.5	12.5	12.5	22	30	44	5	31	5.4	1.5	12.5	0.111	37	500
TTM16	3	3.77	16.5	14.5	13.5	28	35	51	6	38	6.6	1.5	14.5	0.201	52	640
TTM18	4	4.55	18.5	16.0	14.5	32	40	56	6	42	6.6	2	14.5	0.284	71	890
TTM20	4	4.05	20.5	18.0	16.5	32	40	56	6	42	6.6	2	18	0.266	80	1000
TTM22	5	4.67	22.5	19.5	18.0	36	50	61	7	47	6.6	2.5	21.5	0.412	103	1260
TTM25	5	4.05	25.5	22.5	21.0	36	50	61	7	47	6.6	2.5	21.5	0.370	118	1440
TTM28	5	3.57	28.5	25.5	24.0	44	56	76	8	58	9.0	2.5	23	0.671	153	1800
TTM32	6	3.77	32.5	29.0	27.0	44	56	76	8	58	9.0	2.5	23	0.599	176	2090
TTM36	6	3.31	36.5	33.0	31.0	52	60	84	8	66	9.0	3	26	0.865	222	2630
TTM40	6	2.96	40.5	37.0	35.0	58	70	98	10	76	11.0	3	30	1.321	293	3240
TTM45	8	3.55	45.5	41.0	38.0	64	75	104	10	80	11	4	32.5	1.631		4110
TTM50	8	3.17	50.5	46.0	43.0	68	80	109	10	85	11	4	35	1.798		5110

1 kgf = 9.81N



Block Nuts

- Available in left and right hand threads
- Material BC6 Bronze
- Optional oil hole



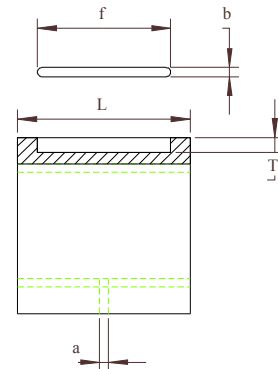
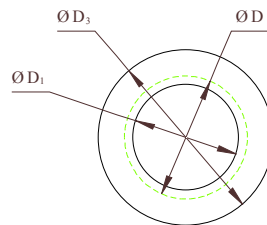
Items in **bold** are normal stock items

Part No.	Lead P	Lead Angle	Standard Measurement			W	L	H	H ₁	W ₂	W ₁	L ₁	S ₁	S ₂	Weight kg	Load Kgf
			D	D ₂	D ₁											
BTM10	2	4°02'46"	10.5	9.0	8.5	30	24	20	10	15	20	16	M4	3.3	0.09	260
BTM12	2	3°18'44"	12.5	11.0	10.5	38	30	22	11	19	26	20	M5	4.3	0.15	400
BTM14	3	4°22'07"	14.5	12.5	12.5	38	30	22	11	19	26	20	M5	4.3	0.14	500
BTM16	3	3°46'04"	16.5	14.5	13.5	44	35	28	14	22	32	24	M5	4.3	0.26	640
BTM18	4	4°32'59"	18.5	16.0	14.5	48	40	32	16	24	36	28	M6	5.1	0.36	890
BTM20	4	4°02'46"	20.5	18.0	16.5	48	40	32	16	24	36	28	M6	5.1	0.35	1000
BTM22	5	4°39'58"	22.5	19.5	18.0	62	50	38	20	31	46	34	M8	6.8	0.64	1260
BTM25	5	4°02'56"	25.5	22.5	21.0	62	50	38	20	31	46	34	M8	6.8	0.64	1440
BTM28	5	3°34'17"	28.5	25.5	24.0	68	56	47	25	34	52	40	M8	6.8	1.04	1800
BTM32	6	3°46'04"	32.5	29.0	27.0	68	56	47	25	34	52	40	M8	6.8	0.97	2090

1 kgf = 9.81N

Tubular Nuts

- Available in left and right hand threads
- Material BC6 Bronze
- Optional oil hole
- Also Available with external keyway



Items in **bold** are normal stock items

Part No.	Lead P	Lead Angle	Standard Measurement			D ₃	L	a	b	f	T	Weight kg	Load Kgf
			D	D ₂	D ₁								
STM10	2	4°02'46"	10.5	9.0	8.5	20	20	1.5	4	14	2	0.043	260
STM12	2	3°18'44"	12.5	11.0	10.5	22	22	1.5	4	16	2	0.054	400
STM14	3	4°22'07"	14.5	12.5	12.5	22	22	1.5	4	16	2	0.048	500
STM16	3	3°46'04"	16.5	14.5	13.5	28	26	1.5	5	18	2.5	0.100	640
STM18	4	4°32'59"	18.5	16.0	14.5	32	31	2	7	22	2.5	0.160	890
STM20	4	4°02'46"	20.5	18.0	16.5	32	31	2	7	22	2.5	0.145	1000
STM22	5	4°39'58"	22.5	19.5	18.0	36	40	2.5	7	26	2.5	0.245	1260
STM25	5	4°02'56"	25.5	22.5	21.0	36	40	2.5	7	26	2.5	0.212	1440
STM28	5	3°34'17"	28.5	25.5	24.0	44	45	2.5	10	32	4	0.388	1800
STM32	6	3°46'04"	32.5	29.0	27.0	44	45	2.5	10	32	4	0.330	2090
STM36	6	3°18'44"	36.5	33.0	31.0	52	49	3	12	40	4.5	0.530	2630
STM40	6	2°57'18"	40.5	37.0	35.0	58	57	3	15	42	5	0.762	3240

1 kgf = 9.81N

Square and H Flanged Nuts are also available on request.





Technical data

Approximate Precision

Single Pitch Error	± 0.02
Accumulative Pitch Error	$\pm 0.15/300$

Lubrication

Periodic lubrication is necessary due to the sliding contact between nut and shaft. For demanding applications oil ports are recommended for periodic lubrication. Other types required periodic grease or oil lubrication to their screw shafts.

Service Conditions	Proper Lubricant
High Speed, Light Load	Turbine Oil 90
Medium Speed, Medium Load	Turbine Oil 140-180, Lithium Soap Group Grease 2 nd Grade
Low Speed, Heavy Load	Lithium Soap Group Grease 2 nd -3 rd Grade

Sizing trapezoidal threads

Sizing can be done by either the PV value or by the rated thrust load (Kgf) for the nut or the PV value for sliding friction. PV values can be calculated from the following.

P_{max}	Maximum contact pressure = 1kgf/mm^2
PV_{max}	Maximum PV value = $2.5\text{kgf/mm}^2 \times \text{m/min}$
F	Thrust load (kgf)
P	Contact surface pressure (kgf/mm^2)
V	Sliding Speed (m/min)
α	Lead angle (deg)
S/2	Contact area (half the contact area of the flank surface)
N	Rotational speed (rpm)
d_o	Pitch circle diameter (mm)
β	Flank angle = 15°
μ	Friction factor (0.1-0.3)
	With lubrication 0.15 for start 0.1 for operation
	Without lubrication 0.2 for start, 0.15 during operation

Acting contact surface pressure: P

$$P = F/(S/2) \quad (\text{kgf/mm}^2)$$

Sliding Speed: V

$$V = (\pi \times d_o \times N) / (\cos \alpha \times 10^3) \quad (\text{m/min})$$

Driving Torque: T

$$T = (F \times d_o/2) \times (\cos \beta \times \tan \alpha + \mu) / (\cos \beta - \mu \tan \alpha) \quad (\text{kgf mm})$$