

Miniature Metric Rolled Ball Screws

Higher load capacity in a smaller package for laboratory, medical and mechatronic applications

Improved load density (more load capacity in a smaller package)

- Design maximizes load capacity by optimising return system
- Quiet and smooth performance
- Enables flexible ball nut mounting configurations and rapid prototyping
- Exceeding 100% more capacity than competition in most sizes

Improved value

- Precision rolled screws to T7 accuracy class standard
- State of the art manufacturing to provide lower cost and improved performance
- Higher load capacity equates to longer life

Genuine Thomson quality and innovation

- Expanding the brand with the greatest product breadth
- Proprietary thread form and processing equal quality and performance
- Expert technical and application support

Introducing the Thomson Miniature Metric Rolled Product Line

The new line of Miniature Metric Rolled Ball Screws from Thomson deliver smooth and quiet operation and best-in-class load capacity while providing ideal solutions for laboratory, medical and mechatronic applications. The improved load density of the new miniature ball screw assemblies and availability of a wide range of diameters and leads create a truly flexible component solution. Ball nuts are precision manufactured to operate efficiently, quietly, and smoothly. Thomson's state of the art production facility and world class supply chain ensure consistent product performance and industry leading delivery.

Product Overview

Standard Configuration

- Threaded mounting configuration
- Carbon steel construction
- Internal ball return systems

Optional Configurations Available

- Cylindrical or flanged mounting configuration
- Stainless steel constructions
- Custom coatings available

Ordering Key															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
T	S	I	A	08	02.5	T7	RH	K	xxxx	K	M	M	00	R	0
Nut Configuration					6. Lead Code 02 = 2mm 02.5 = 2.5mm 03 = 3mm 04 = 4mm 10 = 10mm					11. Right Side Configuration X = Cut to Length K = Machine to Print 12. M = Threaded (std) F* = Flange 13. M = Multiliner (std) K = Diversion Channel (10x10 only) 14. 00 = No Wipers 15. R = Rolled (std) T* = Turned 16. 0 = Standard 1 = Special					
1. T = Threaded F* = Flanged R* = Round 2. S = Single Nut (std) 3. I = Internal Return 4. A = Assembly N = Nut Only S = Screw Only 5. Diameter 06 = Ø6mm 08 = Ø8mm 10 = Ø10mm 12 = Ø12mm 14 = Ø14mm					7. Lead Accuracy T5 = ±23µm/300mm T7 = ±52µm/300mm (std) 8. RH = Right Hand Thread LH* = Left Hand Thread 9. Left Side Configuration X = Cut to Length K = Machine to Print 10. xxxx = Overall Length (mm)										
*Custom Only															

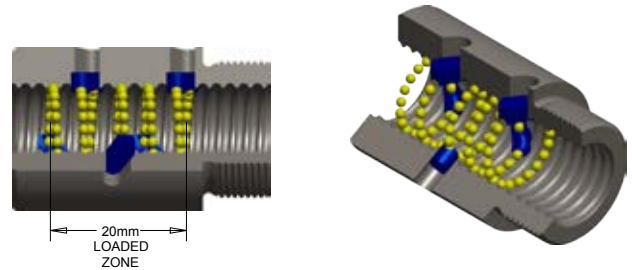
Nominal Diameter	Lead	Ball Screw P/N	Ball Nut P/N	Performance Data				
				Dynamic Load Capacity ¹ (C _{am})		Static Load Capacity (C _o)		Max Axial Backlash ²
				(kN)	(lbs)	(kN)	(lbs)	
6	2	190-9684	8102-448-025	1.6	360	2.1	472	0.10
8	2	190-9685	8103-448-026	2.3	517	2.9	652	0.10
8	2.5	190-9686	8103-448-027	3.1	697	4.0	899	0.10
8	3	190-9687	8103-448-028	2.7	607	3.1	697	0.10
10	2	190-9680	8103-448-022	2.7	607	3.8	854	0.10
10	3	190-9681	8103-448-023	6.7	1506	9.6	2158	0.10
10	4	190-9688	8103-448-029	5.8	1304	8.2	1844	0.10
10	10	190-9689	8103-448-030	4.1	922	5.8	1304	0.10
12	2	190-9690	8105-448-031	4.5	1012	7.6	1709	0.10
12	3	190-9691	8105-448-032	9.6	2158	16.4	3687	0.10
14	3	190-9692	8105-448-033	6.7	1506	11.6	2608	0.10

1 - Based on 1 million revolutions.
2 - Minimum lash 0.05 mm is available upon request.

Challenge - Optimise design of a 12 x 2 ball nut

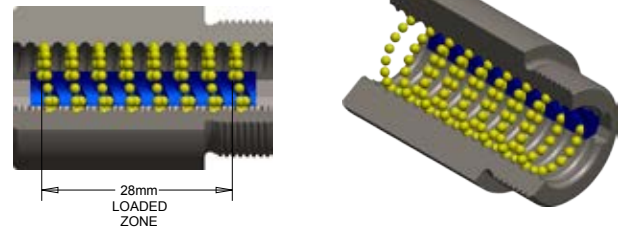
Typical Return System - Single Liner

- Fixed position secured by press or adhesive
- Does not allow full ball complement
- 5 circuits, 105 balls, 4.7kN static capacity

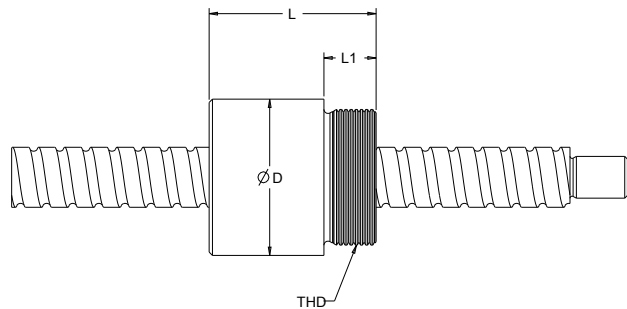


Thomson Multiliner Return System

- Floats axially to compensate for any misalignment
- Maximizes number of circuits and loaded balls
- 8 circuits, 168 balls, 7.6kN static capacity



Conclusion - Thomson provides smoother operation and 62% more load capacity



Screw Specifications				Nut Specifications					
Major Diameter	Minor Diameter	Max Length	Screw Weight	No. of Circuits	Ball Diameter	D (+0 / - .1)	THD	L	L1
(mm)	(mm)	(mm)	(kg/m)		(mm)	(mm)		(mm)	(mm)
5.9	4.9	1000	0.22	8	1.000	16	M12x1	22	8
7.8	6.3	1500	0.38	5	1.588	18	M15x1	24	8
7.8	6.3	1500	0.38	7	1.588	18	M15x1	24	8
7.7	5.9	1500	0.37	3	1.984	18	M16x1	25	8
9.8	8.3	2000	0.59	5	1.588	19.5	M17x1	22	8
9.7	8.0	2000	0.58	7	1.984	21	M18x1	29	9
9.7	7.9	2000	0.58	6	1.984	21	M18x1	35	9
9.7	7.9	2000	0.58	2x1.8	1.984	23	M18x1	35	9
11.8	10.3	2000	0.86	8	1.588	24	M20x1	40	10
11.7	9.9	2000	0.85	9	1.984	26	M20x1	40	10
13.7	12.0	2000	1.16	5	1.984	30	M24x1.5	35	9

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