

Linear Rod Units

Overview

VarioLine WZ



Features

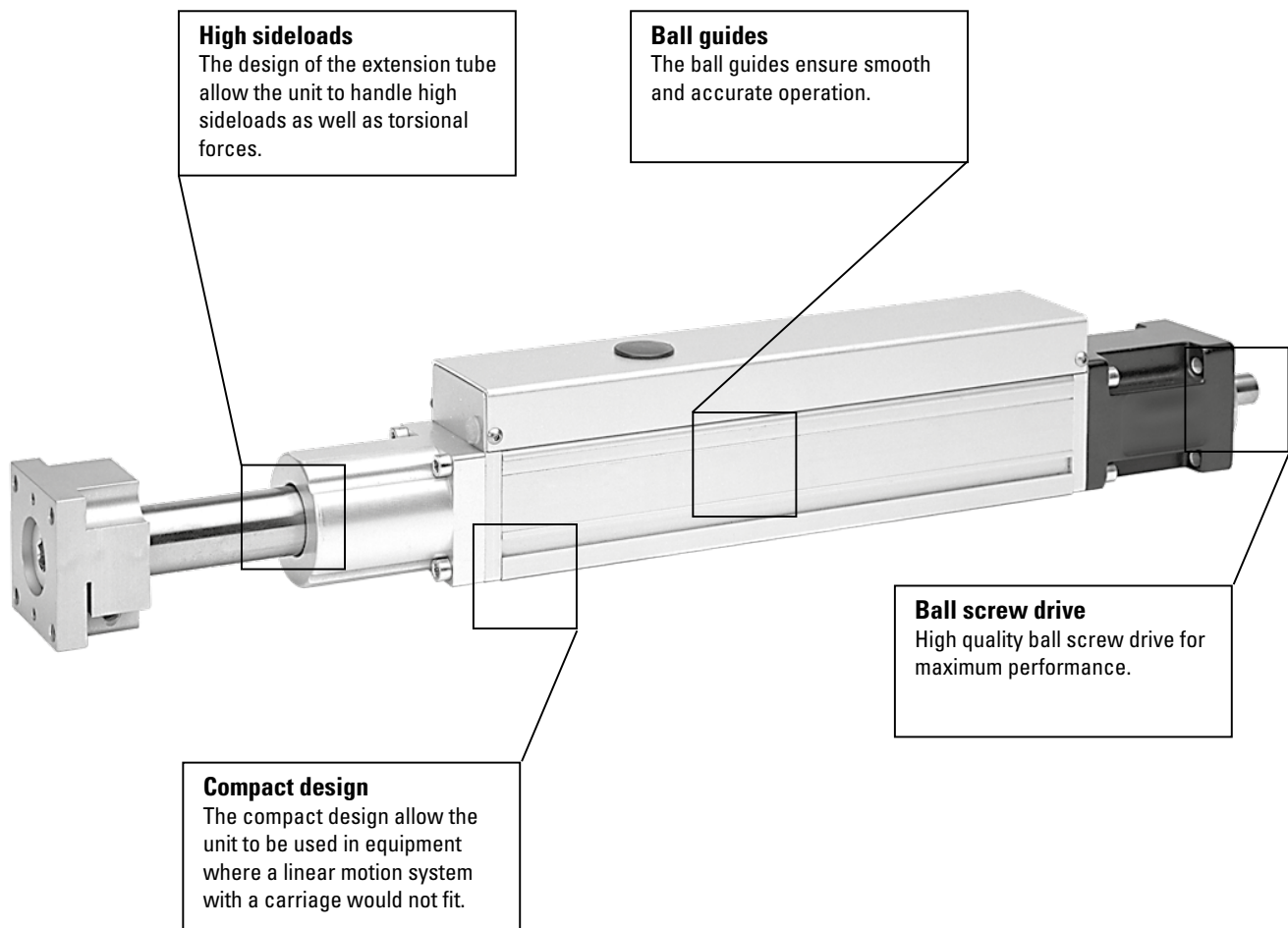
- Can be installed in any orientation
- Ball screw drive
- Ball guides
- Compact

Parameter		WZ60	WZ80
Profile size (width × height)	[mm]	60 × 60	80 × 80
Stroke length (Smax), maximum	[mm]	400	500
Linear speed, maximum	[m/s]	1,5	1,5
Dynamic carriage load (Fx), maximum	[N]	2800	3500
Remarks		-	-
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Linear Rod Units

Overview

WZ-Series Technical Presentation



WZ60

Ball Screw Drive, Ball Guide

- » Ordering key - see page 210
- » Accessories - see page 131
- » Additional data - see page 182

General Specifications

Parameter	WZ60
Profile size (w × h) [mm]	60 × 60
Type of screw	single nut ball screw
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

Rod Idle Torque (M_{idle}) [Nm]

Input speed [rpm]	Screw lead [mm]		
	p = 5	p = 20	p = 50
150	0,7	1,0	1,4
1500	1,1	1,6	2,0
3000	1,5	1,8	2,2

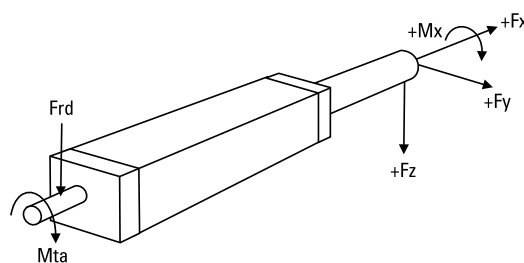
M_{idle} = the input torque needed to move the rod with no load on it.

Performance Specifications

Parameter		WZ60
Stroke length (S _{max}), maximum	[mm]	400
Linear speed, maximum	[m/s]	1,5
Acceleration, maximum	[m/s ²]	20
Repeatability	[± mm]	0,02
Input speed, maximum	[rpm]	3000
Operation temperature limits	[°C]	0 – 80
Dynamic load (F _x), maximum	[N]	2800
Dynamic load (F _y), maximum	[N]	2000 ¹
Dynamic load (F _z), maximum	[N]	2000 ¹
Dynamic load torque (M _x), maximum	[Nm]	50 ¹
Drive shaft force (F _{rd}), maximum	[N]	500
Drive shaft torque (M _{ta}), maximum	[Nm]	30
Ball screw diameter (d _o)	[mm]	20
Ball screw lead (p)	[mm]	5, 20, 50
Weight	[kg]	
of unit with zero stroke		4,5
of every 100 mm of stroke		0,77
of the rod with zero stroke		1,8
of every 100 mm of rod		0,26

¹ Also see diagrams on next page

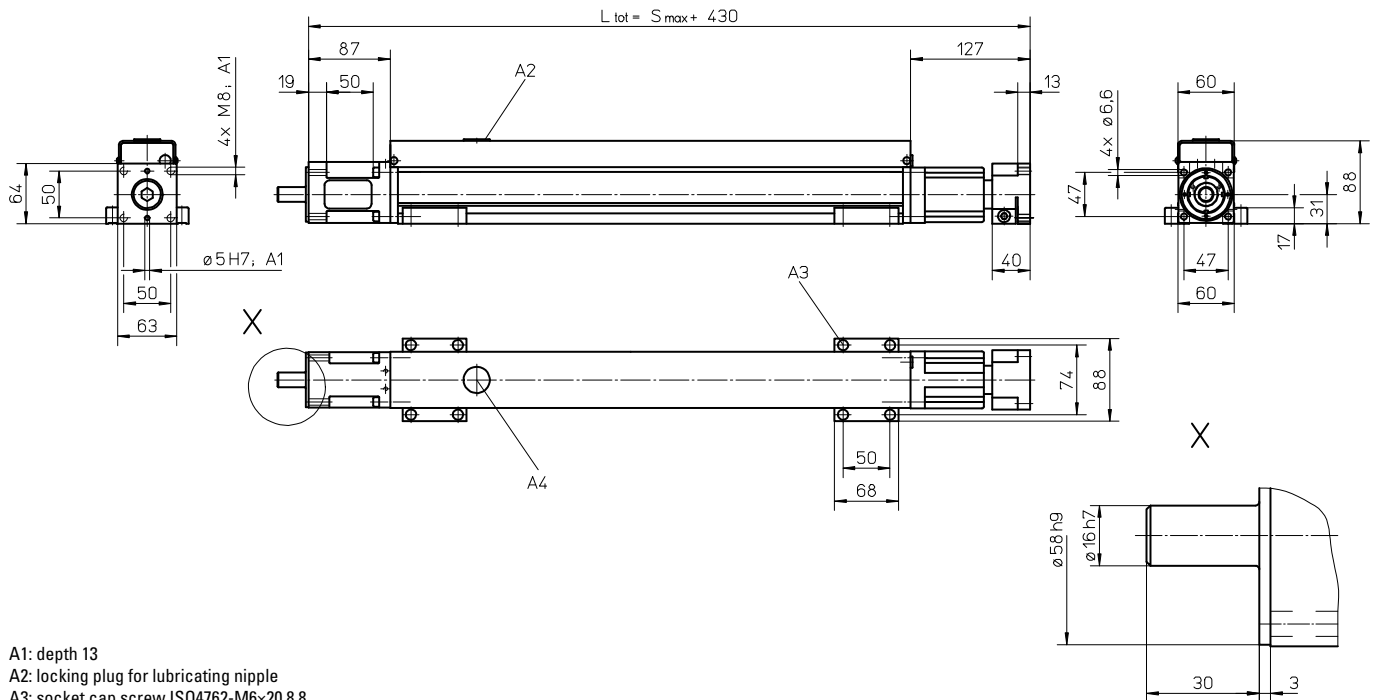
Definition of Forces



WZ60

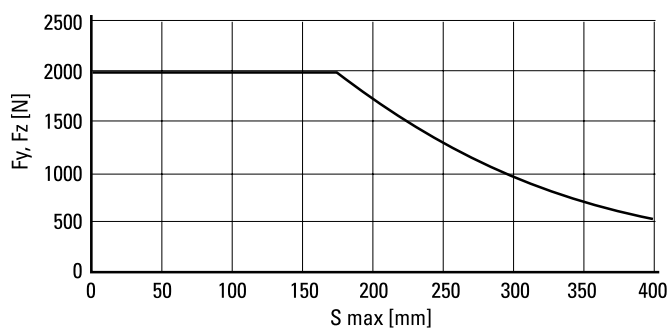
Ball Screw Drive, Ball Guide

Dimensions	Projection	Online Sizing & Selection!
METRIC		www.LinearMotioneering.com

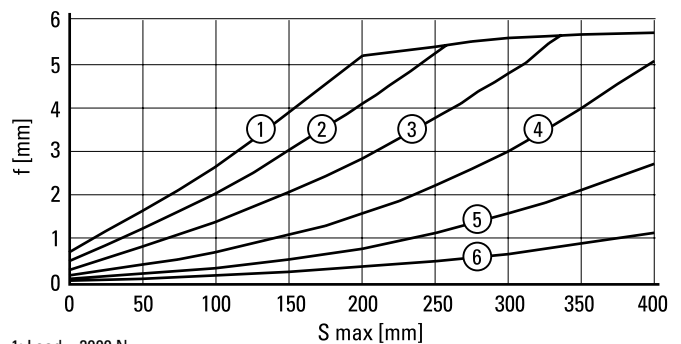


- A1: depth 13
- A2: locking plug for lubricating nipple
- A3: socket cap screw ISO4762-M6x20 8.8
- A4: tapered lubricating nipple to DIN71412 AM6 as standard feature

Maximum Rod Side Forces (F_y, F_z)

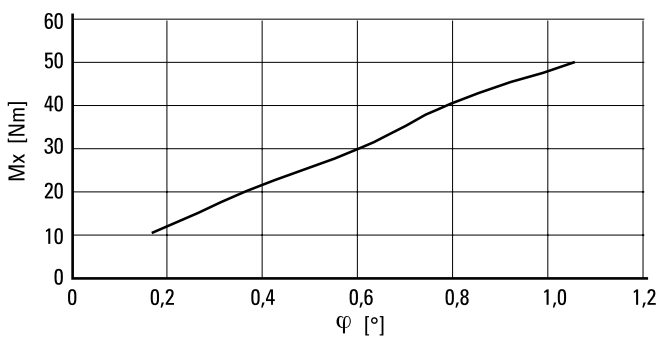


Deflection (f) of Rod due to F_y and F_z



- 1: Load = 2000 N
- 2: Load = 1500 N
- 3: Load = 1000 N
- 4: Load = 500 N
- 5: Load = 250 N
- 6: Load = 125 N

Torsion (ϕ) of Rod due to M_x



WZ80

Ball Screw Drive, Ball Guide

- » Ordering key - see page 210
- » Accessories - see page 131
- » Additional data - see page 182

General Specifications

Parameter	WZ80
Profile size (w × h) [mm]	80 × 80
Type of screw	single nut ball screw
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

Performance Specifications

Parameter		WZ80
Stroke length (Smax), maximum	[mm]	500
Linear speed, maximum	[m/s]	1,5
Acceleration, maximum	[m/s ²]	20
Repeatability	[± mm]	0,02
Input speed, maximum	[rpm]	3000
Operation temperature limits	[°C]	0 – 80
Dynamic load (Fx), maximum	[N]	3500
Dynamic load (Fy), maximum	[N]	3000 ¹
Dynamic load (Fz), maximum	[N]	3000 ¹
Dynamic load torque (Mx), maximum	[Nm]	150 ¹
Drive shaft force (Frd), maximum	[N]	700
Drive shaft torque (Mta), maximum	[Nm]	55
Ball screw diameter (d ₀)	[mm]	25
Ball screw lead (p)	[mm]	5, 10, 20, 50
Weight	[kg]	
of unit with zero stroke		7,5
of every 100 mm of stroke		1,35
of the rod with zero stroke		3,0
of every 100 mm of rod		0,5

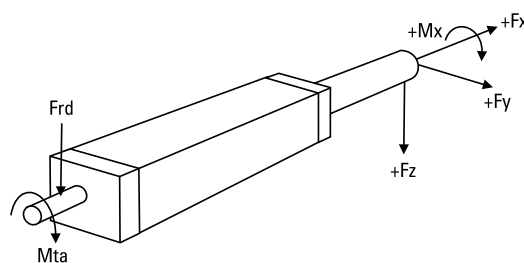
¹ Also see diagrams on next page

Rod Idle Torque (M_{idle}) [Nm]

Input speed [rpm]	Screw lead [mm]			
	p = 5	p = 10	p = 20	p = 50
150	0,6	1,1	1,3	1,8
1500	1,1	1,5	1,6	2,2
3000	1,4	1,8	1,8	2,7

M_{idle} = the input torque needed to move the rod with no load on it.

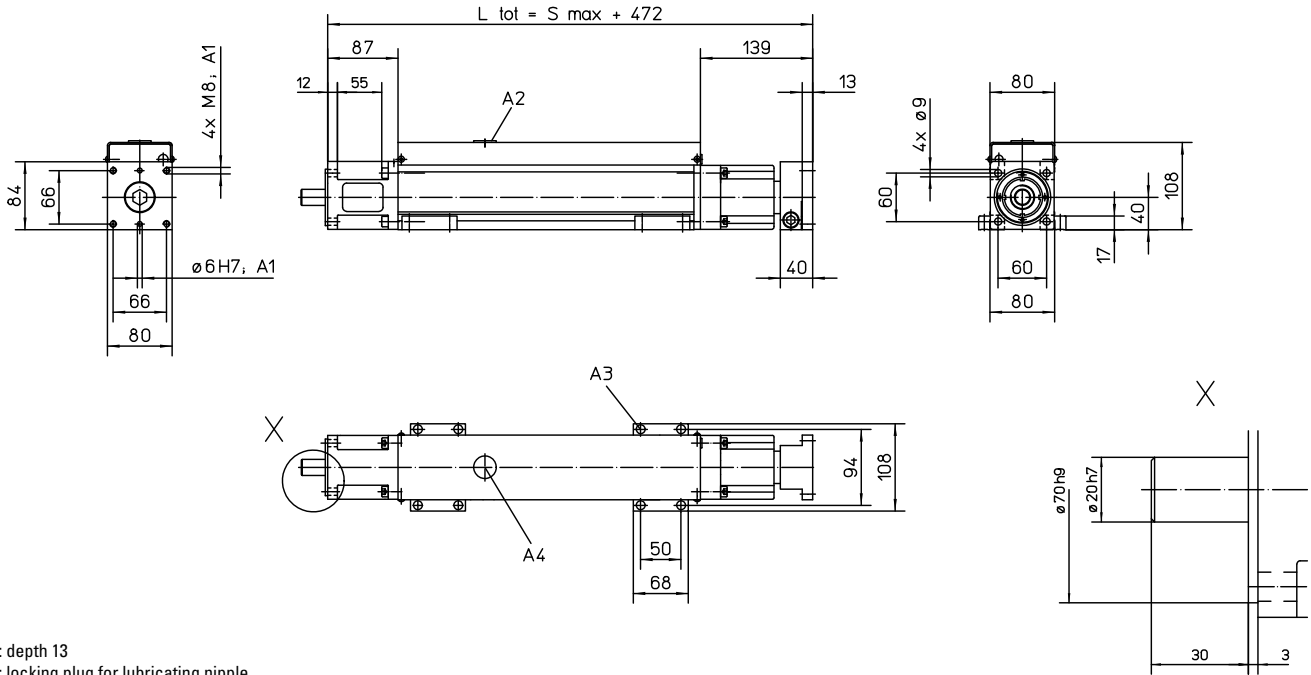
Definition of Forces



WZ80

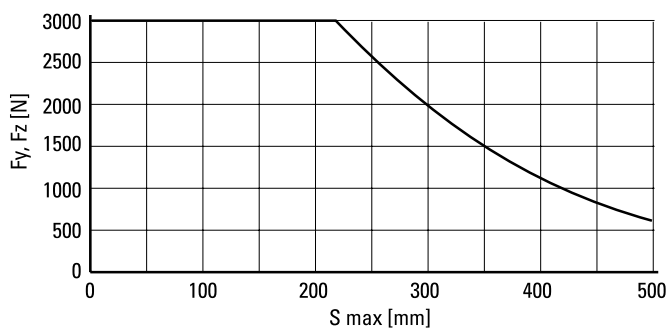
Ball Screw Drive, Ball Guide

Dimensions	Projection	Online Sizing & Selection!
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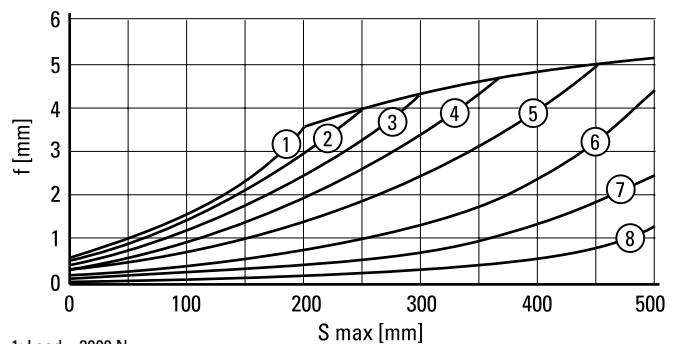


- A1: depth 13
- A2: locking plug for lubricating nipple
- A3: socket cap screw ISO4762-M6x20 8.8
- A4: tapered lubricating nipple to DIN71412 AM6 as standard feature

Maximum Rod Side Forces (F_y, F_z)



Deflection (f) of Rod due to F_y and F_z



- 1: Load = 3000 N
- 2: Load = 2500 N
- 3: Load = 2000 N
- 4: Load = 1500 N
- 5: Load = 1000 N
- 6: Load = 500 N
- 7: Load = 250 N
- 8: Load = 125 N

Torsion (ϕ) of Rod due to M_x

