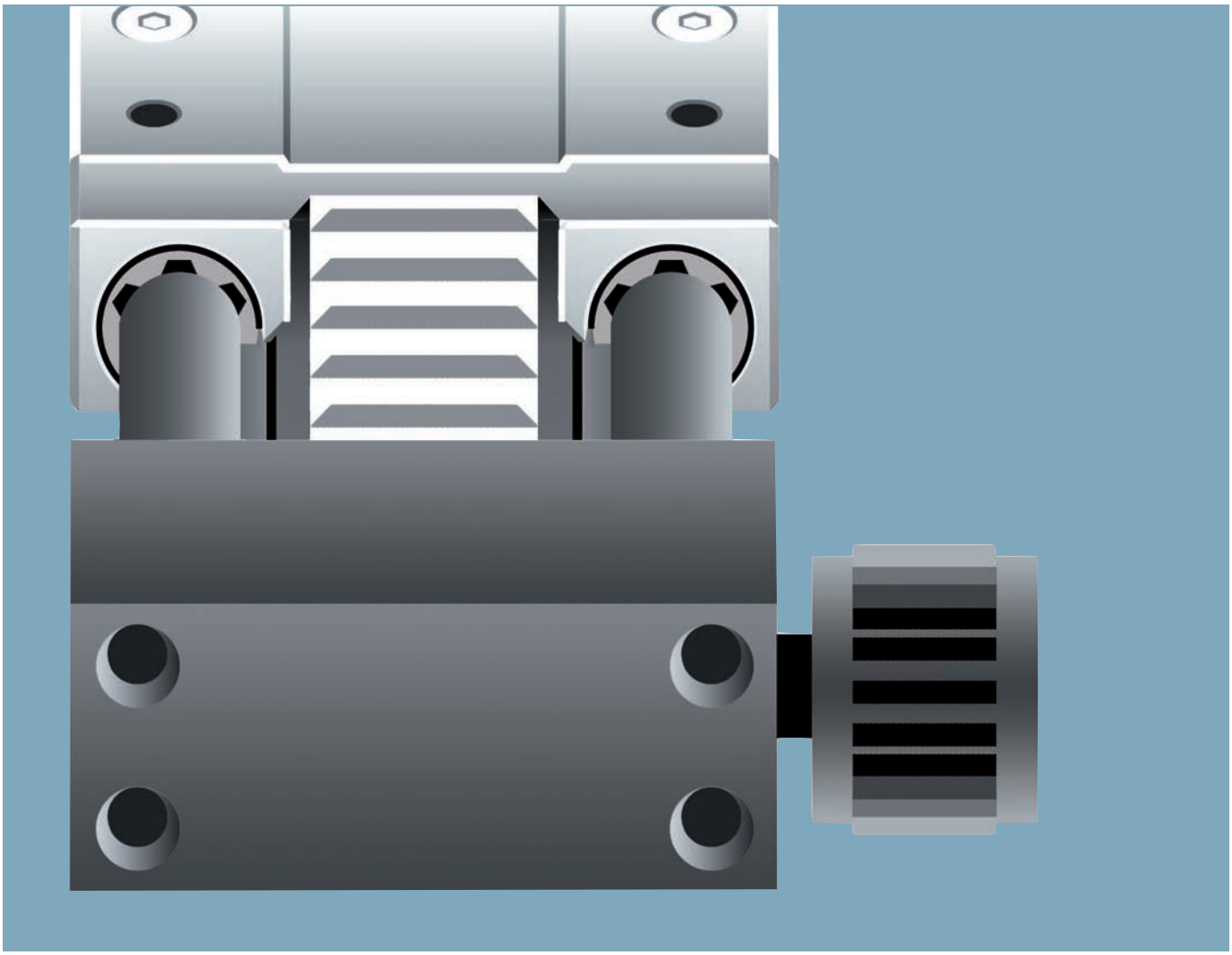
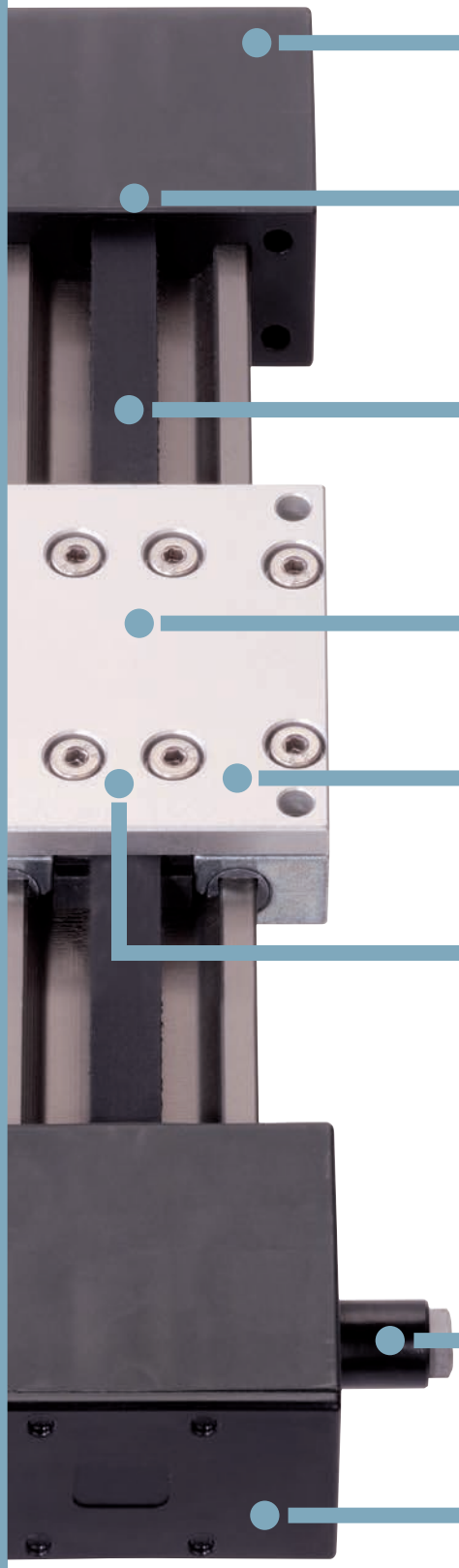


drylin® general drive technology: toothed belt axes ZLW

- Maintenance-free solution
- Plain bearing guide
- For fast positioning
- Ball bearing deflection pulleys
- Lubrication-free linear guide

drylin® ZLW | Toothed Belt Axes

The use of polymer plain bearings on all moving parts makes the toothed belt drive 100% free from maintenance and lubrication. The avoidance of lubricants means a high insensitivity to dirt as particles do not get stuck on the moving parts. Consequently the axis offers a high degree of robustness in many applications. You can select between basic and standard according to the application area and requirement:.



Shaft end supports made from robust plastic with integrated ball bearing

Basic pulley shaft (square with high performance polymer adapter, multiple components) or standard (one piece stainless steel shaft)

Wear-resistant PU timing belts with steel reinforcement (standard) or Neopren with fiberglass (basic)

The complete carriage consists of four lubrication- free drylin® W individual bearing housings with drylin® R liners

Anodized aluminum assembly plates in various lengths

High profile, torsion-resistant drylin® W double shaft profile, made from hard anodized aluminum

Left or right hand one-sided drive shaft, also available as dual-sided upon request

drylin E compatible

Configurable with motor as a ready to fit linear drive (drylin® E) ▶ **page 1089**)

drylin® ZLW | Toothed Belt Axes

ZLW-0630 – Belt drive axis

- For easy adjustment and positioning functions
- Low space requirement, installation height: 31 mm
- Stroke lengths variable (Max. 1,000 mm)
- Type series “Basic 02” and “Standard 02”

▶ page 1082

ZLW-1040 – Belt drive axis

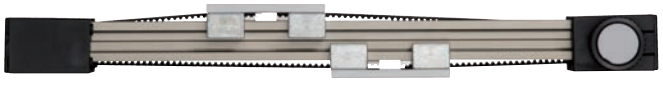
- For many positioning functions
- Installation height: 45 mm
- Stroke lengths variable (Max. 2,000 mm)
- Carriages in three lengths available

▶ page 1082

ZLW-1660 – Belt drive axis

- For adjustment and positioning functions
- Installation height: 72 mm
- Stroke lengths variable (Max. 3,000 mm)
- Type series “Basic 02”

▶ page 1082



ZLW-OD – Opposite belt drive axis

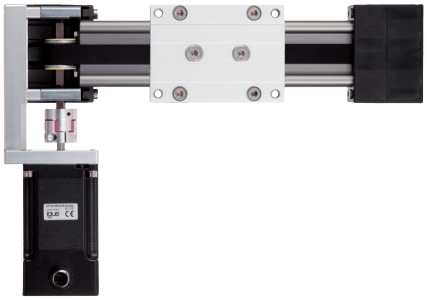
- For quick reverse positioning
- Fast right/left adjustment
- Compact and light
- Lubrication-free

▶ page 1084

ZAW – Cantilever axis

- Drive unit fixed, only profile and load are moved
- Hard-anodized aluminum axis profile
- Totally lubrication-free and corrosion resistant
- Low weight

▶ page 1086



drylin® E - Electrical drive technology

Lubrication-free toothed belt axis with motor

- Maintenance- and lubrication-free
- Ready to fit with motor, cable and initiator
- 3 installation sizes

▶ page 1089

drylin® ZLW | Toothed Belt Axes

Basic series

"Basic" is the designation of the low-priced option of the toothed belt axis. A black neoprene belt with glass fibre reinforcement is used. The toothed belt is supported at each end by a square stainless steel and polymer drive shaft running in two deep grooved ball bearings.

Standard series

The lubrication-free linear guide is also driven by a toothed belt made of steel reinforced polyurethane (white). Deflection shaft and drive pulley – single-piece – are made of plated steel or stainless steel. The pulley shafts are mounted in two deep grooved ball bearings.

Technical Data ZLW-0630

	Weight without stroke [kg]	Weight 100 mm stroke [kg]	Max. length of stroke [mm]	Trans mission [mm/ RPM]	Tooth profile	Belt drive -material	-width [mm]	-tension [N]
Basic 02	0.38	0.08	1,000	54	HTD 3M	Neoprene with GF	9	75
Standard 02	0.43	0.08	1,000	54	MTD3	PU with Steel	9	100

	Max. radial stress [N]	Pulley bearing	Max. speed [m/s]	Max.position accuracy** [mm]
Basic 02	100	ball bearing	2	±0.35
Standard 02	150	ball bearing	2	±0.3

Technical Data ZLW-1040

	Weight without stroke [kg]	Weight 100 mm stroke [kg]	Max.length of stroke [mm]	Trans- mission [mm/RPM]	Tooth profile	Belt dirve -material	-width [mm]	-tension [N]
Basic 02	0.9	0.14	2,000	66	RPP 3M	Neoprene with GF	15	150
Standard 02	1.0	0.14	2,000	70	AT5	PU with Steel	16	200

	Max. radial stress [N]	Pulley bearing	ma. speed [m/s]	Max. position accuracy** [mm]
Basic 02	200	ball bearing	3	±0.3
Standard 02	300	ball bearing	5	±0.2

Technical Data ZLW-1660

	Weight without stroke [kg]	Weight 100 mm stroke [kg]	Max.length of stroke [mm]	Trans- mission [mm/RPM]	Tooth profile	Belt drive -material	-width [mm]	-tension [N]
Standard 02	4.0	0.5	3,000	120	AT5	PU with Steel	32	500

	Max. radial stress [N]	Pulley bearing	Max. speed [m/s]	Max. position accuracy** [mm]
Standard 02	2,000	ball bearing	5	±0.2

* Longer stroke lengths on request

** These values were measured with maximum load in horizontal orientation

drylin® ZLW-0630 | Technical Data

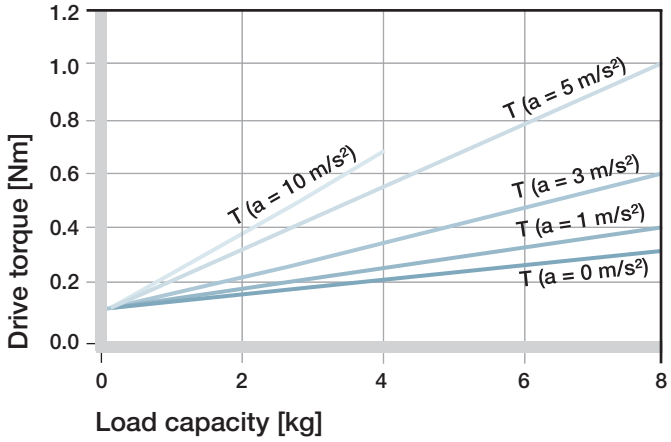


Diagram 01: required drive torque*; horizontal orientation– ZLW-0630, Version basic 02

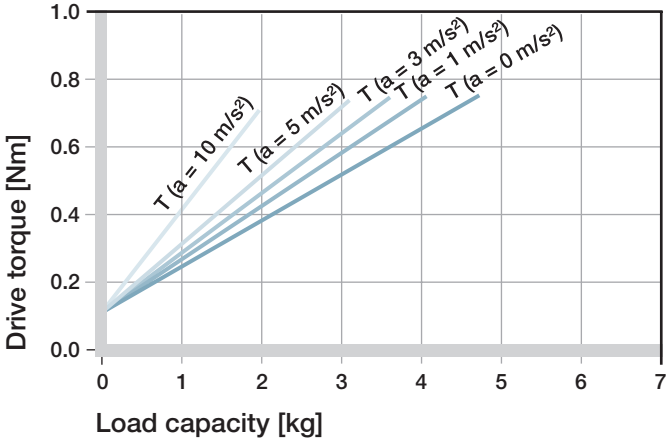


Diagram 02: required drive torque*; vertical orientation – ZLW-0630, Version basic 02

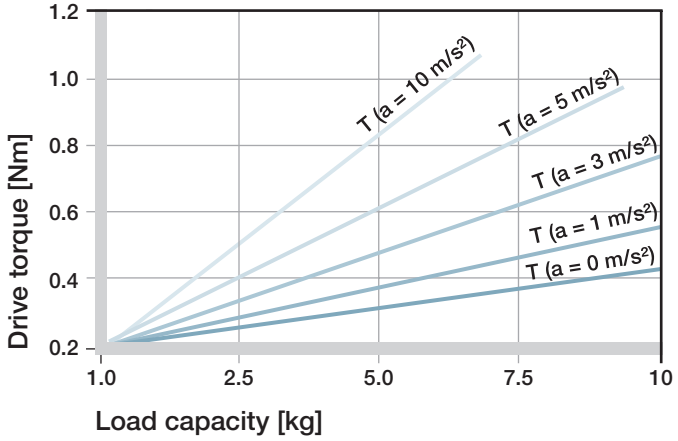


Diagram 03: required drive torque*; horizontal orientation – ZLW-0630, Version standard 02

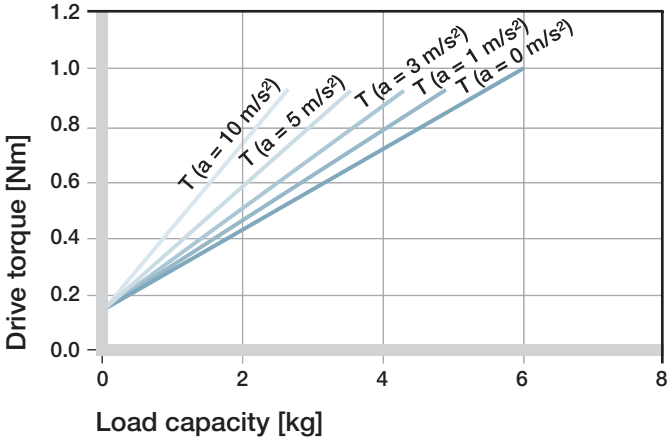


Diagram 04: required drive torque*; vertical orientation – ZLW-0630, Version standard 02

* Assumption: The moving mass is located in a circumscribed circle with a Max. r = 100 mm to the middle of the guiding rail, Max. permissable torque ZLW-0630 Basic 02: 0.75 nm, a = 0 m/s² , ZLW-0630 Standard 02: 1 nm, a = 0 m/s², constant drive without nominal acceleration value

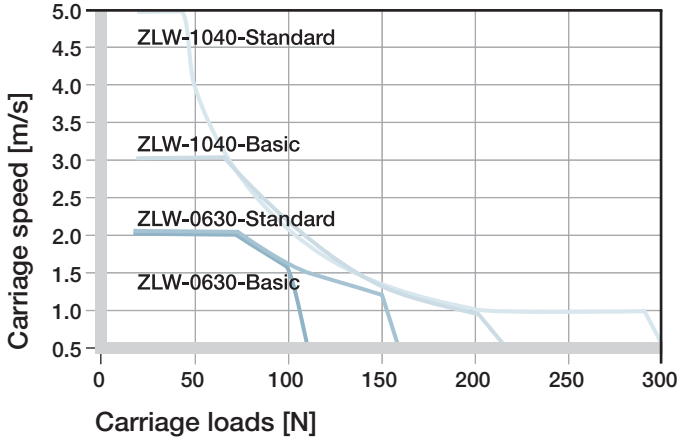


Diagram 05: maximum load compared: ZLW-0630 and ZLW-1040, 100 % OT (On-time). The graph accounts for the sum of all forces active on the carriage.

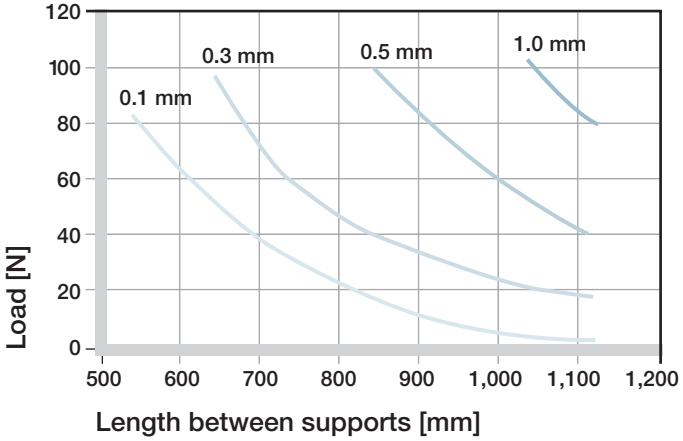


Diagram 06: Sag between unsupported end blocks ZLW-0630, Version basic 02 and standard 02. Sag permissible up to 2 mm maximum.

drylin® ZLW-1040 | Technical Data

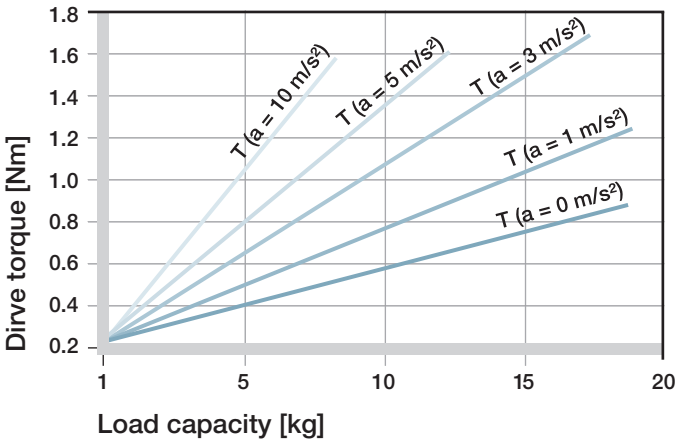


Diagram 07: required drive torque*; horizontal orientation– ZLW-1040, Version basic 02

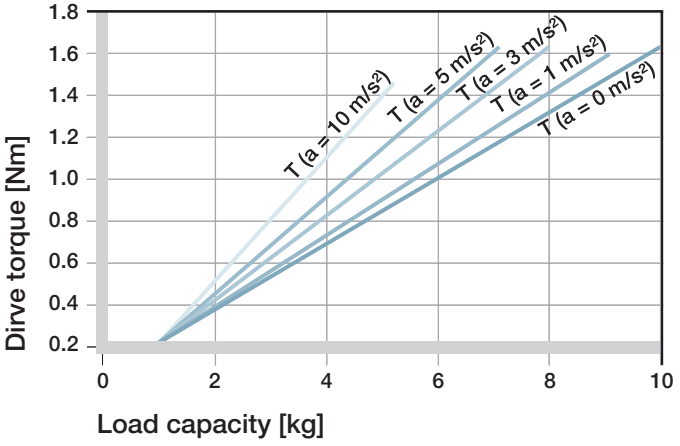


Diagram 08: required drive torque*; vertical orientation – -ZLW-1040 Version basic 02

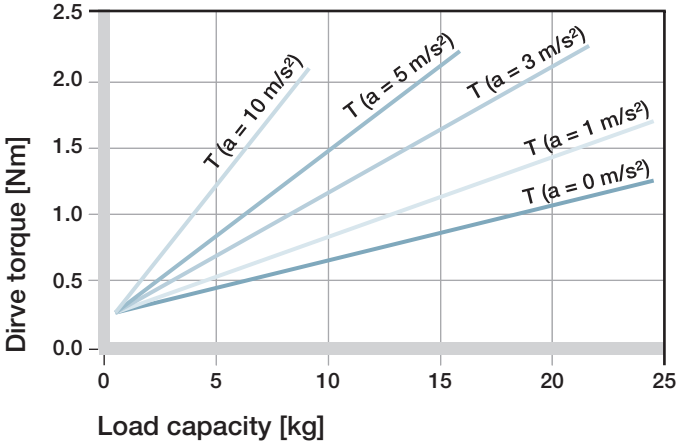


Diagram 09:required drive torque*; horizontal orientation– ZLW-1040, Version standard 02

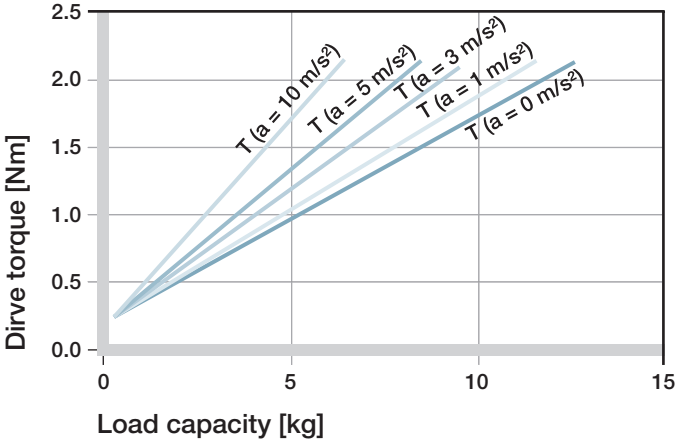


Diagram 10: required drive torque*; vertical orientation – ZLW-1040, Version standard 02

* Assumption: The moving mass is located in a circumscribed circle with a Max. r = 100 mm to the middle of the guiding rail, Max. permissable torque ZLW-1040 Basic 02: 1.75 nm, a = 0 m/s² , ZLW-1040 Standard 02: 2.4 nm, a = 0 m/s², constant drive without nominal acceleration value

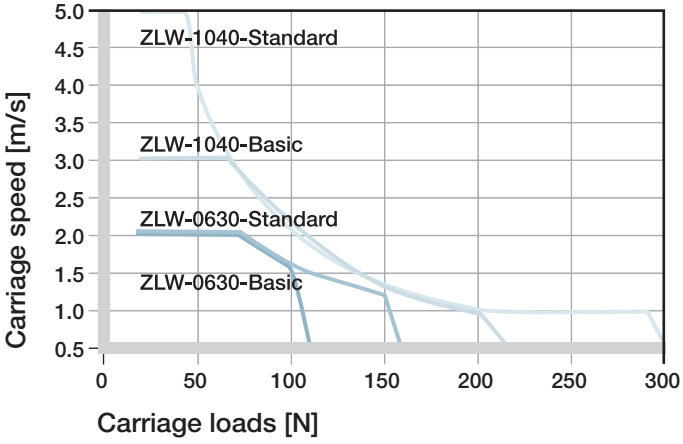


Diagram 11: maximum load compared: ZLW-0630 and ZLW-1040, 100 % OT (On-time). The graph accounts for the sum of all forces active on the carriage.

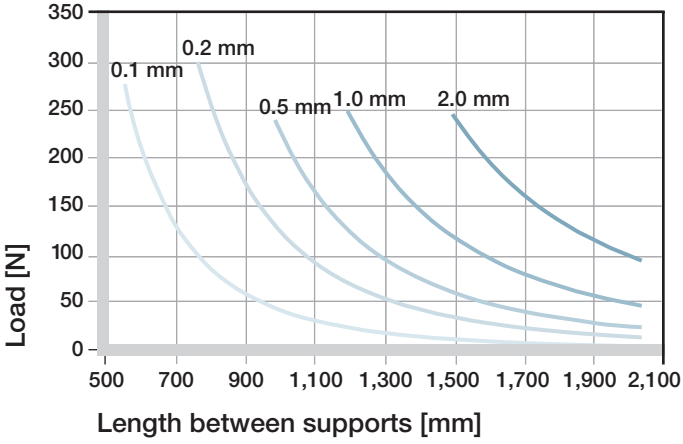


Diagram 12: Sag between unsupported end blocks ZLW-1040, Version basic 02 and standard 02. Sag permissible up to 2mm maximum.

My Sketches

drylin® ZLW | Delivery Program

ZLW-0630 – Belt drive axis

The drylin® ZLW-0630 toothed belt axis is the ideal solution for easy adjustment and positioning tasks in confined spaces. The installation height is only 31 mm. The stroke length is variable (maximum 1,000 mm).
drylin® ZLW-0630 is available in the “Basic 02” and “Standard 02” type series.

ZLW-1040 – Belt drive axis

The drylin® ZLW-1040 toothed belt axis is the ideal solution for many positioning tasks. The installation height is only 45 mm. The stroke length is variable (maximum 2,000 mm). The carriage is available In 3 lengths.
drylin® ZLW-1040 is available in the “Basic 02” and “Standard 02” type series.

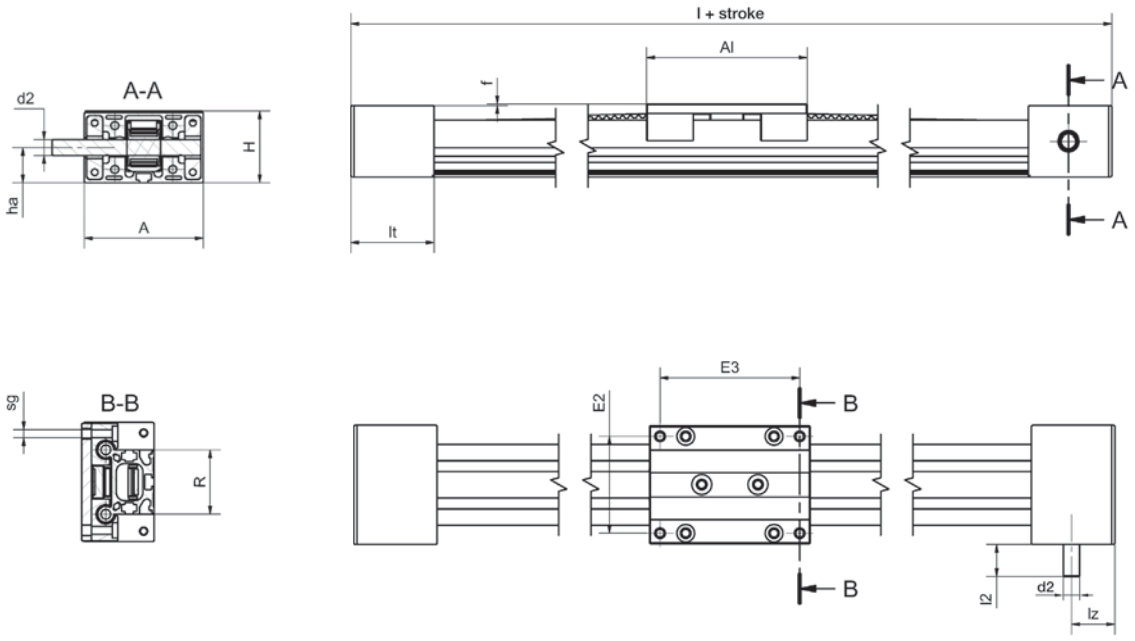
Toothed belt axis ZLW-1660

The toothed belt axis drylin® ZLW-1660 is the ideal solution for easy adjustment and positioning functions in restricted space conditions and expands the product range of drylin® ZLW belt drive axes by an aditional size. The installation height is only 45 mm. The stroke length can be chosen freely (Max. 3,000 mm). The carriage is available in 3 type series. drylin® ZLW-1660 is available in the “Standard 02” type series.

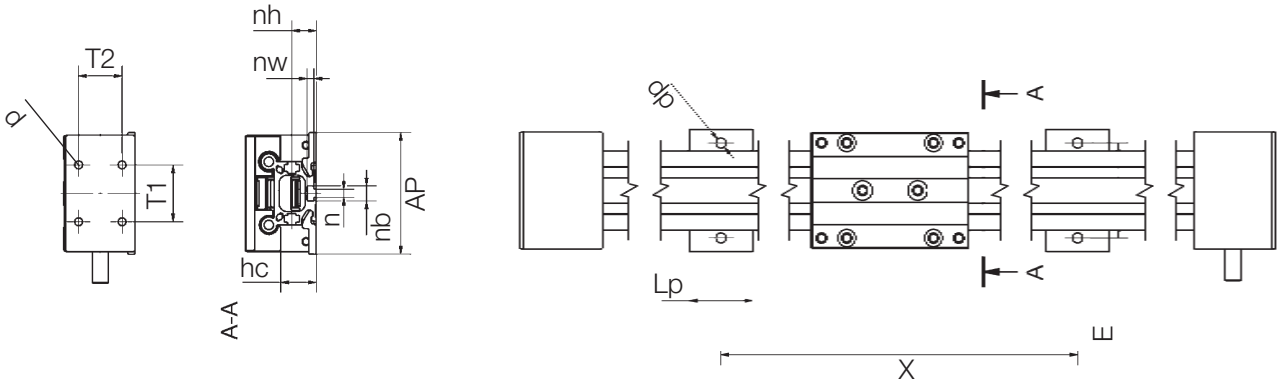
Order key
complete ▶ page 1088

drylin® E compatible
▶ page 1089

drylin® ZLW | Delivery Program



Connecting dimensions



Dimensions [mm]

Part number	A	Al	H	E2	E3	l	R	f	lt	sg	ha	hc	lz	l2	d2
	–0.3			±0.15	±0.15		±0.15		±0.3						h9
ZLW-0630-02-...	54	60	31	45	51	144	30	3	42	M4	14	22.5	22	20	8
ZLW-1040-02-...	74	100	45	60	87	204	40	1	52	M6	22	22.5	27	20	10
ZLW-1660-02-... New!	104	100	72	86	82	252	60	2	76	M8	43	22.5	38	20	14

Connecting dimensions [mm]

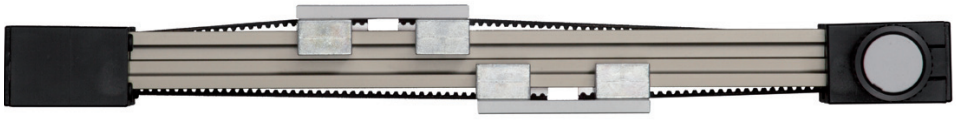
Part number	X	E	Lp	dp	T1	T2	d
		±0.2			±0.25	±0.25	
ZLW-0630-02-...	variable	40	15	5.5	20	21	3.2
ZLW-1040-02-...	variable	60	40	6.4	36	26.5	5.0
ZLW-1660-02-... New!	variable	100	40	9	65	60	M5

Connecting dimensions [mm]

Part number	X	E	AP	Lp	dp	n	nb	nw	nh	T1	T2	d
		±0.2	–1.0							±0.25	±0.25	
ZLW-1040-...-100-L-x	variable	60	78	40	6.4	5.2	9.5	4.3	15.5	36	26.5	5.0

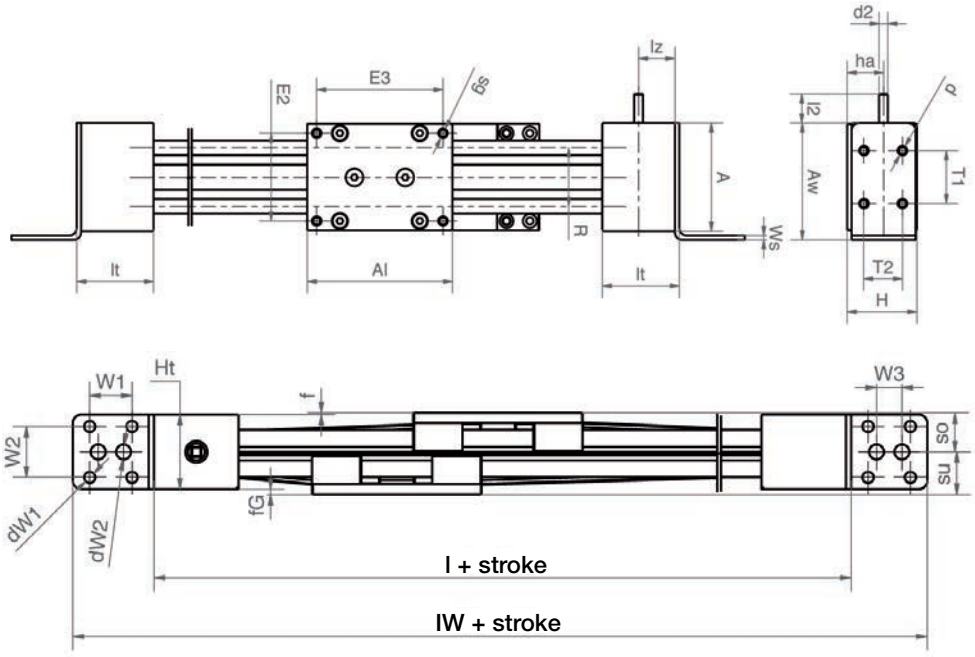
drylin® ZLW | Delivery Program

ZLW-OD – Opposite



- Quick reverse positioning
- Fast right/left adjustment
- Compact and light
- Motor flange for NEMA23 available from stock
- Available as standard and basic version
- Angle flange for fixing

Order key
complete ▶ page 1088



Dimensions [mm]

Part number	A	Al	H	Ht	E2	E3	l	R	f	fG	lt	sg	ha	l2	d2
	-0.3				±0.15	±0.15		±0.15			±0.3				h9
ZLW-0630-OD*	54	60	31	28	45	51	144	30	3	7	42	M4	14	20	8
ZLW-1040-OD	74	100	45	44	60	87	204	40	1	3	52	M6	22	20	10

Part number	d	SU	SO	T1	T2	lz	Ws	W1	W2	W3	dw1	dw2	lW	AW
Con. dimensions				±0.2	–1.0								±0.25	±0.25
ZLW-0630-OD*	4	21	17	20	21	22	2	20	2	10	5.5	6.6	260	60
ZLW-1040-OD	5	25	23	36	26.5	27	3	25	3	15	6.6	8.8	296	80

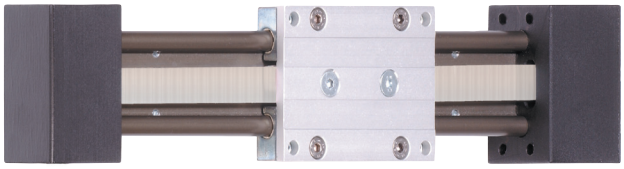
* Basic version: 6 mm square, plastic adapter for pin diameter 10 mm included

delivery time 2-3 days

prices price list online
www.igus.co.uk/en/drylinZLW

drylin® ZLW | Delivery Program

ZLW-1040 Belt drive – specialists



Version LT for cold storage down to –30 °C
Version UW for under water use

Order key
complete ▶ page 1088

The long established toothed belt drives have been developed for the fast positioning of low loads. The linear units with toothed belt drive are corrosion resistant, light and compact, as well as having a low mass inertia due to low mass of guide and sliding carriage.

Technical Data

	Einheit	ZLW-1040-LT for cold storage	ZLW-1040-UW for under water use
Weight without stroke	**kg**	1.0	1.0
Weight 100 mm stroke	**kg**	0.14	0.14
Max. length of stroke	**mm**	2,000	1,000
Transmission	**mm/U**	70	70
Gear Teeth		AT 5	AT 5
Belt drive -material		TPUKF2	PU + stainless steel-reinforcement
-width	**mm**	16	16
-tension	**N**	200	50
Max. radial load	**N**	300	100
Guide bearing		steel ball bearing	xiros®-ball bearing
Max. speed	**m/s**	5	1
position variants of carriage load dependent	**mm**	±0.2	±0.5

delivery time 2-3 days

prices price list online
www.igus.co.uk/en/drylinZLW

drylin® ZLW | Delivery Program

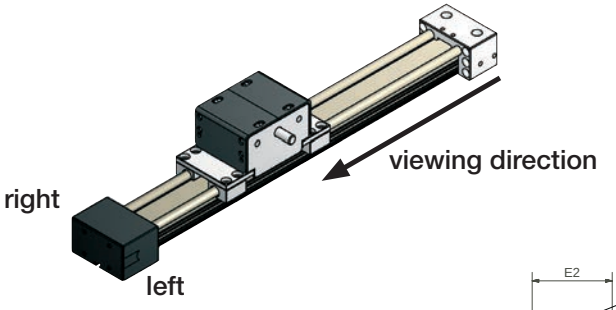
ZAW – Cantilever axis

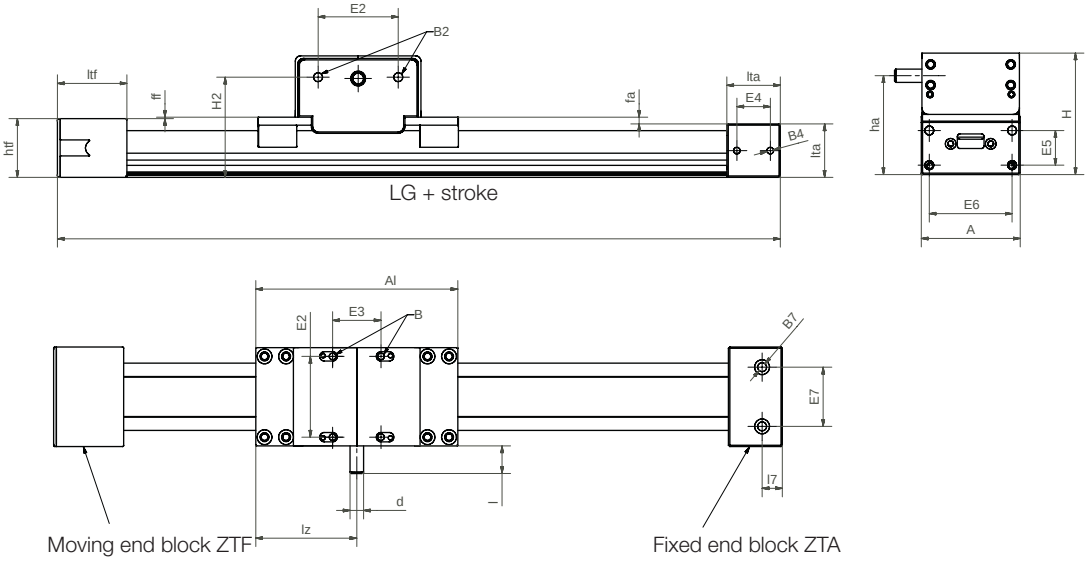
- Drive unit fixed, only profile and load are moved
- Hard-anodized aluminum axis profile
- Totally lubrication-free and corrosion-resistant
- Low weight
- Max. stroke: 1,000 mm
- Max. axial load 50 N
- Available as standard version
- Allowed moment for carriage My max: 15 Nm

Order key

ZAW-1040-02-S-150-L-xxx

- Stroke length in mm
  1040: Max. 1,000
- drive shaft
  - L = drive shaft left
  - R = drive shaft right
  - L/R = drive shaft both-sides
- Length of carriage in mm
- Design
  - S: Size Standard
- Version 02 with deep-groove ball bearings
- Installation size
- Cantilever axis





Dimensions [mm]

Part number	A	H	H2	LG	Al	ha	d	l	l7	lz	E2	E3
	–0.3				±0.3	±0.1	h9	+1			±0.15	±0.15
ZAW-1040	74	91	75	242	150	74	10	20	15	75	60	60

Part number	B	B2	htf	ltf	ff	fa	lta	E4	B4	B7	E5	E6	E7
Con. dimensions	–0.3			±0.3	±0.1	h9	±0.1		±0.15		±0.15		
ZAW-1040	M6	M8	44	52	2	5	40	25	M6	M6	26	62	44

delivery time 8-14 days

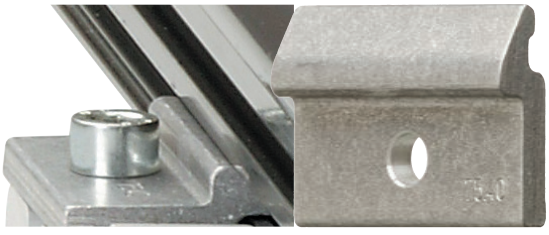
prices price list online
www.igus.co.uk/en/drylinZLW

drylin® ZLW | Accessories | Delivery Program

The drylin® ZLW belt drive can be mounted in different ways (clamp and slot nuts included in delivery):
The orientation of the drive is optional. Overhead installation is the best option against contamination.Directions for installation: The end blocks should not be used as a mechanical stop under any circumstances. A buffer length is to be provided on both sides which corresponds to at least one revolution of the drive shaft The safety distance provided at both sides of the guide carriage can be reduced provided that it is ensured that the housings of the drive and end blocks do not collide with the mechanical parts. The igus® staff would be pleased to provide you with more information on the fastening and connecting of the belt drive.

Clamp

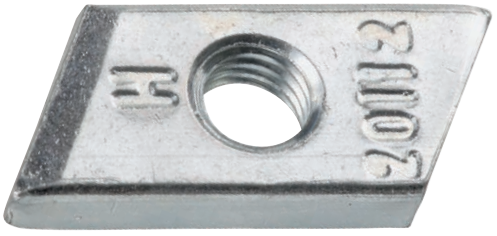
Fixing clamps offer an easy fastening potential of the axis, among other things, on aluminum profiles



4 pieces included in delivery:
Part number 75.40ZLW (Size 1040)
Part number ZTZ-063006 (Size 0630)

Slot nuts

Slot nuts enable the installation in 3 sides (1040: left, right, below) or 2 sides (0630: left, right) as well as the mounting of sensors and proximity switches for positioning.



8 pieces, 4 for each side, included in delivery:
Part number NOR-20602

Screw connection

Front screw connection: Threaded holes for individual- ly insertable screws are located at the extreme rail end

4 x M6/M4 (optional)

delivery time 2-3 days

prices price list online
www.igus.co.uk/en/drylinZLW

drylin® ZLW | Order key

Order key complete System:

ZLW-0630-OD-02-B-60-L-2000

Stroke length in mm
- ZLW-0630: Max. 1,000 mm
- ZLW-1040: Max. 1,000 mm
- ZLW-1660: Max. 3,000 mm

Drive shaft
- L: Drive shaft left
- R: Drive shaft right
- L/R: Drive shaft both sides

Carriage length
- 60: 60 mm
- 100: 100 mm
- 150: 150 mm
- 200: 200 mm
- 250: 250 mm

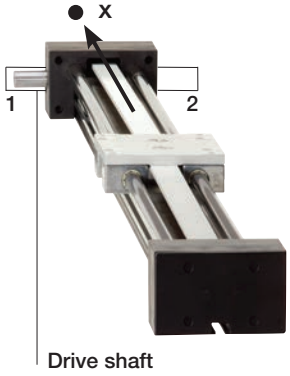
Design
- S: Type Standard
- B: Type Basic

Version
- 02: with grooved ball bearings

Options (optional)
- OD: Reverse
- LT: For cold applications
- UW: For underwater applications

Type
- 0630
- 1040
- 1660

Belt drive axis



Determination of the position of the drive shaft (right or left), in the line of vision x!
1 = drive shaft left
2 = drive shaft right
x = in the line of vision of drive shaft