drylin® N | Design Information

Schematic representation of floating bearings

NW-... NW-... LLZ NW-... LLY NW-... LLYZ

LLZ Floating in z-direction
LLY Floating in y-direction
LLYZ Floating in yz-direction

Floating bearing	NW-17	NW-27	NW-40	NW-80
LLY	0.6	0.45	0.4	0.6
LLZ	0.5	0.8	0.8	0.8
LLYZ	Y = 0.6 | Z = 0.5	Y = 0.3 | Z = 0.4	Y = 0.4 | Z = 0.8	Y = 0.6 | Z = 0.8

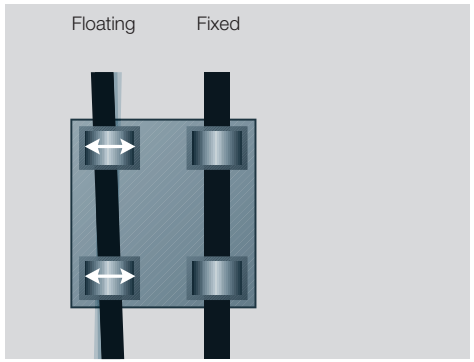
Table 02: Available floating bearings in mm

Floating Bearings for Linear Slide Guides

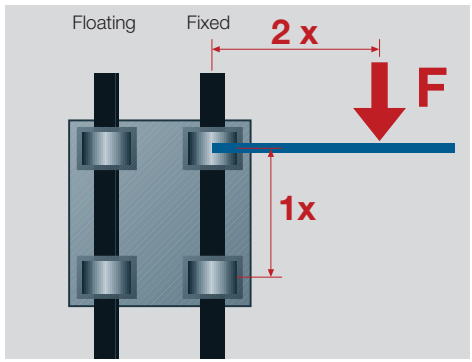
In the case of a system with two parallel guides, one side needs to be configured with floating bearings. A suitable solution comprising fixed & floating bearings is available for every orientation, whether horizontal, vertical or lateral. This type of assembly prevents jamming and blockage on the guides resulting from discrepancies in parallelism. Floating bearings are created through a controlled extension of play in the direction of the expected parallelism error. This creates an additional degree of freedom on one side.
During assembly, it must be ensured that the floating bearings exhibit a similar degree of play in both directions. The contact surfaces on the guides and carriages should be sufficiently flat (for instance, milled down) to prevent strains from occurring in the system.

Eccentric Forces

To ensure successful use of maintenance-free drylin® linear bearings, it is necessary to follow certain recommendations: If the distance between the driving force point and the fixed bearings is more than twice the bearing spacing (2:1 rule), a static friction value of 0.25 can theoretically result in jamming on the guides. This principle applies regardless of the value of the load or drive force. The friction product is always related to the fixed bearings. The greater the distance between the drive and guide bearings, the higher the degree of wear and required drive force. Failure to observe the 2:1 rule during a use of linear slide bearings can result in uneven motion or even system blockage. Such situations can often be remedied with relatively simple modifications. If you have any questions on design and/or assembly, please contact our application engineers.

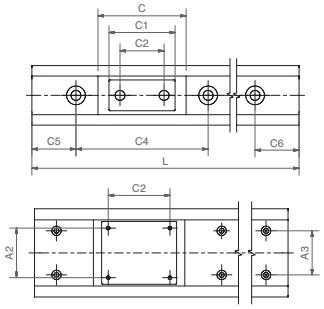


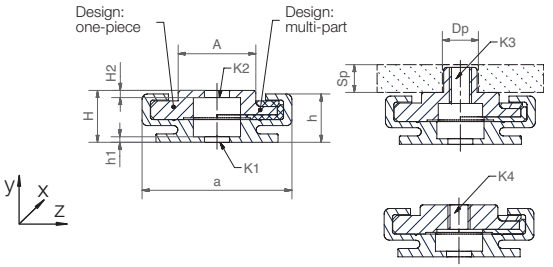
Graph 02: Automatic compensation of parallelism errors



Graph 03: The 2:1 rule

drylin® N | Dimensions





Guide rail – Dimensions [mm]

Part number	L max.	a	C4	A3	C5 = C6 min.	C5 = C6 max.	h	h1	K1*	Iy [mm⁴]	Iz [mm⁴]	Weight [g/m]
NS-01-17	2,000	17	60	–	20	49.5	5.5	0.9	M3	1,700	120	150
NS-01-27	3,000	27	60	–	20	49.5	9	1.1	M4	6,524	588	290
NS-01-40	3,000	40	60	–	20	49.5	8.7	1.3	M4	26,400	970	450
NS-01-80	4,000	80	150	40	25	99.5	11	1.5	M4	27,1200	2,900	1,140

* For cylinder screw with low head
For rails without mounting holes, please use part number suffix “without holes”.

Guide carriage – Dimensions [mm]

Part number	H ±0.35	A	C	C1	C2	A2	H2	K2**	K3**	K4**	M***	Sp	Dp	Weight [g]
NW–02–17	6.0	9.6	20	20	14	–	–	–	M3	–	0.8	2.5	5.0	1.7
NW-02-17P	6.0	9.6	20	20	14	–	–	–	M3	–	0.8	2.5	5.0	1.7
NW-02-17-30 New!	6.0	9.6	30	30	18	–	–	–	M3	–	0.8	2.5	5.0	2.4
NW-22-17-40	6.0	9.6	40	40	28	–	–	–	M3	–	0.8	2.5	5.0	2.6
NW-01-27	9.5	14.0	40	30	20	–	1.2	M4	–	–	–	–	–	10.8
NW-11-27	9.5	14.0	34	30	20	–	1.2	M4	–	–	–	–	–	10.8
NW-01-27P	9.5	14.0	40	30	20	–	1.2	M4	–	–	–	–	–	10.8
NW-01-27-HT	9.5	14.0	40	30	20	–	1.2	M4	–	–	–	–	–	11.0
NW-02-27	9.5	14.0	40	30	20	–	–	–	M4	–	1.2	5.0	6.5	12.5
NW-12-27	9.5	14.0	34	30	20	–	–	–	M4	–	1.2	5.0	6.5	12.5
NW-02-27P	9.5	14.0	40	30	20	–	–	–	M4	–	1.2	5.0	6.5	12.5
NW-02-27-HT	9.5	14.0	40	30	20	–	–	–	M4	–	–	5.0	6.5	13.0
NW-21-27-60P	9.5	14.0	60	60	20	–	0.7	M4	–	–	–	–	–	9.0
NW-22-27-60P	9.5	14.0	60	60	20	–	–	–	M4	–	1.2	5.0	6.5	12.0
NW-11-27-80	9.5	14.0	80	76	60	–	1.2	M4	–	–	–	–	–	25.0
NW-12-27-80	9.5	14.0	80	76	60	–	-	-	M4	–	1.2	5.0	6.5	25.0
NW-01-40	9.5	23.0	50	40	20	–	1.3	M4	–	–	–	–	–	30.0
NW-01-40P New!	9.5	23.0	50	40	20	–	–	–	–	–	–	–	–	30.0
NW-11-40	9.5	23.0	52	40	20	–	1.3	M4	–	–	–	–	–	30.0
NW-02-40	9.5	23.0	50	40	20	–	–	–	M4	–	1.2	5.0	6.5	30.0
NW-02-40P New!	9.4	23.0	50	40	20	–	–	–	M4	–	1.2	5.0	6.5	30.0
NW-12-40	9.5	23.0	52	40	20	–	–	–	M4	–	1.2	5.0	6.5	30.0
NW-02-80	12.0	57.0	80	68	56	45	–	–	–	M4	1.2	–	–	100.0
NW-12-80	12.0	57.0	83	68	56	45	–	–	–	M4	1.2	–	–	146.3

** Metal thread, *** Max. screw torque, **** in this catalog
For floating bearings please add the suffix “-LLX”, “-LLZ” or “-LLZ”

drylin® Low-Profile Linear Guide [17] | Product Range

The smallest size of the drylin® N range is designed to have minimum dimensions coupled with a high load capacity. In addition, this range is free from lubrication and can run at high speeds.

- Rail width 17 mm
- 6 mm installation height
- 100 % lubrication-free
- Up to 50 N load
- Preload “P” (optional), max. increase of shifting force: 10 N

Dimensions ▶ **page 931**

Standard

Preload

Double carriage with threaded pin

Standard with thread	
Part number carriage	**▶ NW-02-17**
Part number carriage, preload available	**▶ NW-02-17P**
Part number rail	**▶ NS-01-17-□***
Carriage weight	1.7 g
Rail weight	150 g/m
Material carriage	iglidur® J
Max. rail length	2,000 mm
Standard bore pattern	symmetrical (C5 = C6)

Double carriage with thread	
Part number carriage	**▶ NW-22-17-30/-40****
Part number rail	**▶ NS-01-17-□***
Carriage weight	2.6 g
Rail weight	150 g/m
Material carriage	iglidur® J
Max. rail length	2,000 mm
Standard bore pattern	symmetrical (C5 = C6)

*** Please add the required length in mm**

**** carriage lenght 30 or 40 mm**

delivery time **from stock**

€ prices **price list online**
www.igus.eu/eu/drylinN

Order notice ▶ page 938

NS = rails (single)
NW= guide carriages (single)
NK = compl. system (NS+NW assembled)

drylin® Low-Profile Linear Guide [27] | Product Range

The NW 27 series is available in 2 different versions: As a slide with a plain bore, and as a slide with a threaded bore. The lubrication free design is capable of running at high linear speeds.

- Rail width 27 mm
- More than 20 carriage-types
- 9.5 mm installation height
- 100 % lubrication-free
- Glide bearing made of iglidur® J
- Up to 500 N load
- Preload “P” (optional), max. increase of shifting force: 10 N

Dimensions ▶ **page 931**

Standard 01
with mounting holes

Standard 02
with thread

Preload with mounting holes or thread

Overmoulded with mounting holes or thread

Standard with mounting holes	
Part number carriage, clipped	**▶ NW-01-27**
Part number carriage, overmolded	**▶ NW-11-27**
Part number carriage, preload available	**▶ NW-01-27P**
Part number carriage, temperatures up to 130°C	**▶ NW-01-27-HT New!****
Part number rail	**▶ NS-01-27-□***
Carriage weight	10.8 g
Rail weight	290 g/m
Material carriage	Zinc die-cast, blue chromated
Max. rail length	3,000 mm
Standard bore pattern	symmetrical (C5 = C6)

Standard with thread	
Part number carriage	**▶ NW-02-27**
Part number carriage, overmolded	**▶ NW-12-27**
Part number rail, preload available	**▶ NW-02-27P**
Part number carriage, temperatures up to 130°C	**▶ NW-02-27-HT New!****
Part number rail	**▶ NS-01-27-□***
Carriage weight	12.5 g
Rail weight	290 g/m
Material carriage	Zinc
Max. rail length	3,000 mm
Standard bore pattern	symmetrical (C5 = C6)

*** Please add the required length in mm**

**** in this catalog**

drylin® Low-Profile Linear Guide [27] | Product Range

Polymer carriage with mounting hole

Polymer carriage with thread

Double carriage with mounting hole

Double carriage with thread

Polymer carriage with mounting hole	
Part number carriage, preload available	**▶ NW-21-27-60P**
Part number rail	**▶ NS-01-27-□***
Carriage weight	9 g
Rail weight	290 g/m
Material carriage	iglidur® J
Max. rail length	3,000 mm
Standard bore pattern	symmetrical (C5 = C6)

Polymer carriage with thread	
Part number carriage, preload available	**▶ NW-22-27-60P**
Part number rail	**▶ NS-01-27-□***
Carriage weight	12 g
Rail weight	290 g/m
Material carriage	iglidur® J
Max. rail length	3,000 mm
Standard bore pattern	symmetrical (C5 = C6)

Double carriage with mounting hole	
Part number carriage, overmolded	**▶ NW-11-27-80**
Part number rail	**▶ NS-01-27-□***
Carriage weight	25 g
Rail weight	290 g/m
Material carriage	Zinc
Material gliding elements	iglidur® J200
Max. rail length	3,000 mm
Standard bore pattern	symmetrical C5 = C6)

Double carriage with thread	
Part number carriage, overmolded	**▶ NW-12-27-80**
Part number rail	**▶ NS-01-27-□***
Carriage weight	25 g
Rail weight	290 g/m
Material carriage	Zinc
Material gliding elements	iglidur® J200
Max. rail length	3,000 mm
Standard bore pattern	symmetrical (C5 = C6)

*** Please add the required length in mm**

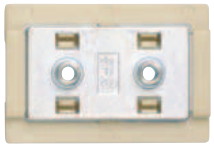
drylin® Low-Profile Linear Guide [40] | Product Range

Compared with smaller series, NW 40 is able to withstand significantly higher loads. The slides of this range come with threaded bores. Like all other drylin® N series, the lubrication free design is capable of running at high linear speeds. The gliding elements are available as clip version, directly injection-moulded with pretension or captive.

- Rail width 40 mm
- Installation heigth 9.5 mm
- Low weight
- High speed (up to 5 m/s)
- iglidur® J plain bearing material
- Up to 700 N load

Dimensions ▶ **page 931**

Standard with mounting hole



Standard with thread

Overmouled with mounting hole

Overmouled with thread

Standard with mounting hole	
Part number carriage, clipped	**▶ NW-01-40**
Part number carriage, preload	**▶ NW-01-40P**
Part number rail, overmolded	**▶ NW-11-40**
Part number rail	**▶ NS-01-40-□***
Carriage weight	30 g
Rail weight	450 g/m
Material carriage	Zinc
Material gliding elements	iglidur® J
Max. rail length	3,000 mm
Standard bore pattern	symmetrical (C5 = C6)

Standard with thread	
Part number carriage, clipped	**▶ NW-02-40**
Part number carriage, preload	**▶ NW-02-40P**
Part number rail, overmolded	**▶ NW-12-40**
Part number rail	**▶ NS-01-40-□***
Carriage weight	30 g
Rail weight	450 g/m
Material carriage	Zinc
Material gliding elements	iglidur® J
Max. rail length	3,000 mm
Standard bore pattern	symmetrical (C5 = C6)

*** Please add the required length in mm**