

## drylin® N Low-Profile Guide Systems



**Low-profile height and width**

**Replaceable polymer sliding pads**

**Anodized aluminium rail**

**High speed and acceleration possible**

**Lubrication-free**

**Low weight**

# drylin® N | Low-Profile Guide Systems

The low-profile range drylin® N offers extremely low profiles in several widths. Like all drylin® products the carriages run without grease or oil in an anodized aluminum profile. The selected materials and the unique design make drylin® N a cost-effective and flexible guide system.



## Lightweight and flat

- Linear guide rails made of aluminum, carriage body in zinc die-cast or solid plastic with brass insert

## Lubrication-free and quiet

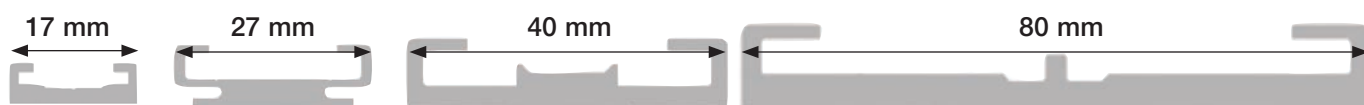
- ① Gliding elements and solid plastic carriage made of high-performance polymer iglidur® J ensure optimum running properties.

## Corrosion resistant

- ② Clear anodized aluminum rails, chromated zinc carriage, plastic bearings in high-performance polymer iglidur® J

## Variety of carriages

- Carriage with threaded hole or through hole; standard and double carriage; carriage body made of zinc or plastic; clip-on or overmoulded bearing material.; floating bearing options for all sizes; no rattling due to pre-tensioned bearings.



## Advantages

- Small mounting height between 6 and 12 mm
- Light weight
- Many carriage options – even with pre-load
- Maintenance-free, dry-running
- Corrosion resistant
- Low wear at a low coefficient of friction
- Rails in silver or black anodized



## When not to use it?

- For loads more than 50 kg  
▶ drylin® T, page 799, ▶ drylin® R, page 869,  
▶ drylin® W, page 835
- If you need high chemical resistance  
▶ drylin® W and drylin® R, stainless steel, page 995
- When interchangeability with conventional recirculating ball bearing systems is required  
▶ drylin® T, page 799, ▶ drylin® R, page 869



Lubrication-free



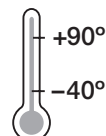
Cleanroom certificated  
IPA Fraunhofer  
▶ page 798



Free of toxins  
ROHS 2002/95/EC



ESD compatible  
(electrostatic  
discharge)  
▶ page 798



Temperature



# drylin® N | Product Overview



## Linear Guide

- Rail width: 17, 27, 40 and 80 mm
- Installation height: 6, 9, 5 and 12 mm
- Standard bore pattern or without holes
- "Black edition": Black anti-reflection surface in rail width 27 and 80 mm

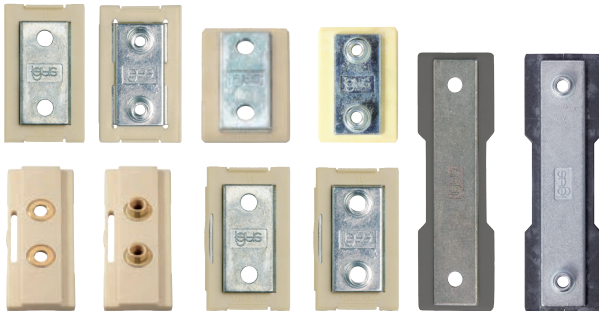
► page 828



## Carriage – Size 17

- Variations: Standard, Preload (PL), Floating (LL)
- Min. dimensions coupled with a high load capacity
- Lubrication-free
- Extremely light weight
- Quiet operation

► page 828



## Carriage – Size 27

- Best range of guide carriages (with through hole, with tapped hole, pre-load, overmoulded, ..., double carriage)
- Many options of length, precision and accessories
- Easy to fit
- Top-selling linear guide system

► page 829



## Carriage – Size 40

- Perfect with standard aluminum profiles
- Carriage with threaded pin or through hole
- Sliding parts as clip version or overmoulded

► page 831



## Carriage – Size 80

- High loads, low installation height
- Lubrication-free
- Standard or overmoulded with thread
- Iglidur® J or J200 bearing material options

► page 832

## drylin® N | Application Examples



### Typical sectors of industry and application areas

- Agricultural ● Vehicle manufacturing
- Medical ● Architectural
- Packaging etc.

Improve technology and reduce costs –  
170 exciting examples online

► [www.igus.co.uk/drylin-applications](http://www.igus.co.uk/drylin-applications)



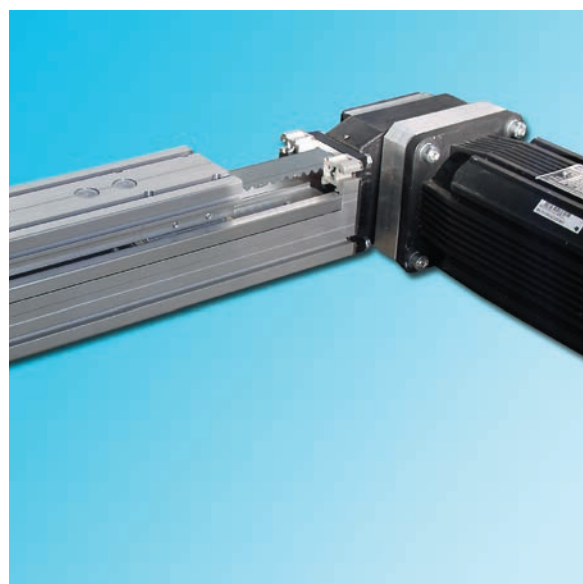
► [www.igus.co.uk/camera](http://www.igus.co.uk/camera)



► [www.igus.co.uk/automated-teller](http://www.igus.co.uk/automated-teller)



Handling device



Toothed belt unit

System selection				
System	N17	N27	N40	N80
Rail width	17 mm	27 mm	40 mm	80 mm
Installation height	6 mm	9.5 mm	9.5 mm	12 mm
General properties				
Rail weight	150 g/m	290 g/m	450 g/m	1,140 g/m
Carriage weight	1.7 g	9–12.5 g	30 g	100 g
Max. rail length	2,000 mm	3,000 mm	3,000 mm	4,000 mm
Load capacities, static				
F <sub>y</sub>	50 N	500 N	700 N	1,000 N
F <sub>z</sub>	50 N	500 N	700 N	1,000 N
M <sub>x</sub>	0.31 Nm	5 Nm	10 Nm	32.4 Nm
M <sub>y</sub> , M <sub>z</sub>	0.18 Nm	2.5 Nm	6 Nm	15 Nm
Carriage options				
Floating bearing Y	●	●	●	●
Floating bearing Z	●	●	●	●
Floating bearing YZ	●	●	●	●
Preload (1 N)	●	●	–	–
Moulded version	–	●	●	●
Carriage with plain bore	–	●	●	–
Carriage with threaded bore	●	●	●	●

Table 01: Material data    ● available – not available

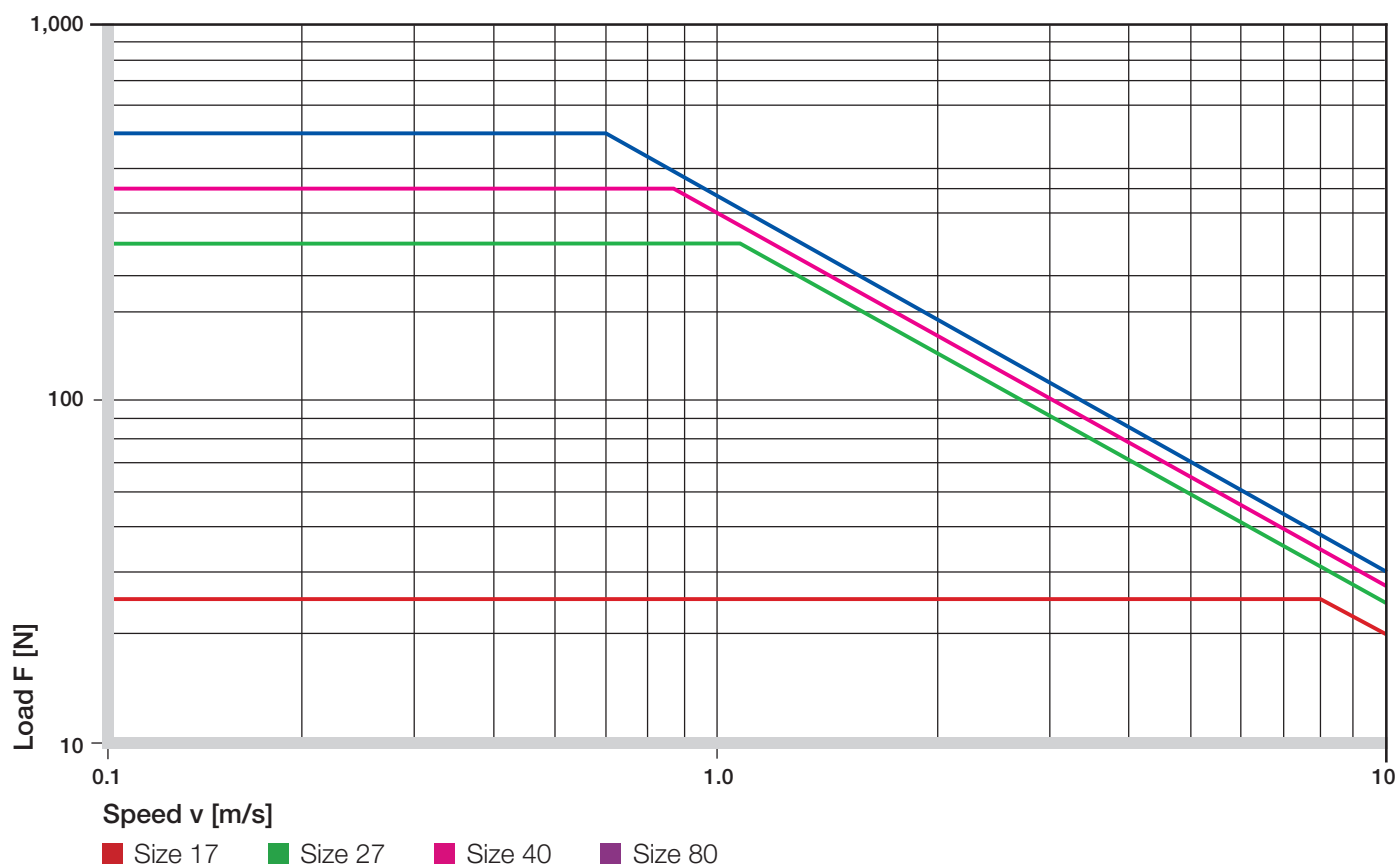


Diagram 01: F v diagram, maximum permissible dynamic loads

## Schematic representation of floating bearings



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: Floating bearing option, mm

## Floating Bearings for Linear Slide Guides

In the case of a system with two rails, 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, machined) to prevent stresses 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.

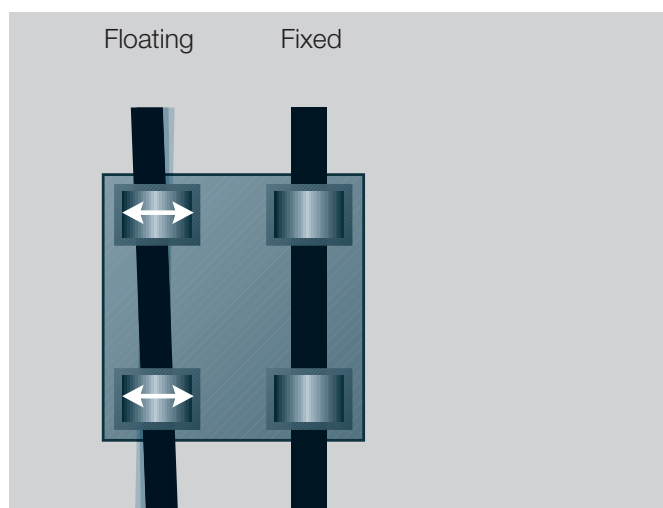


Diagram 02: Automatic compensation of parallelism errors

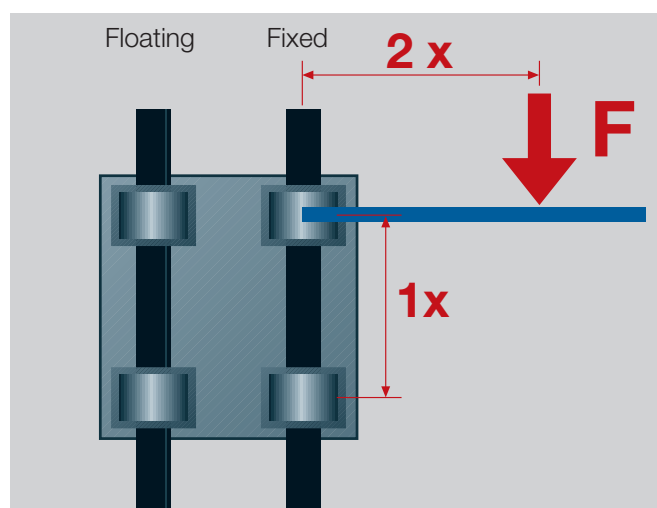
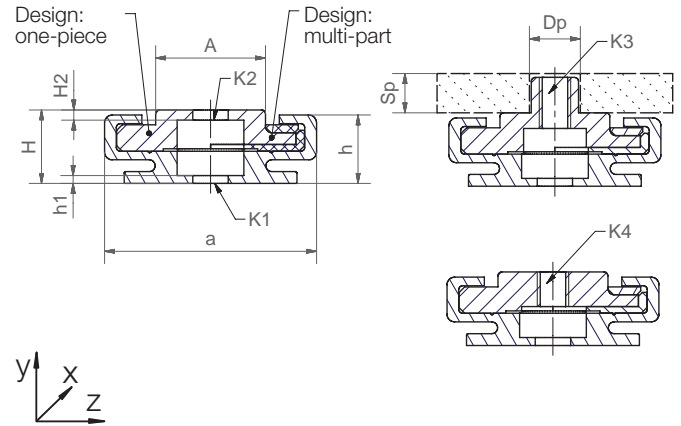
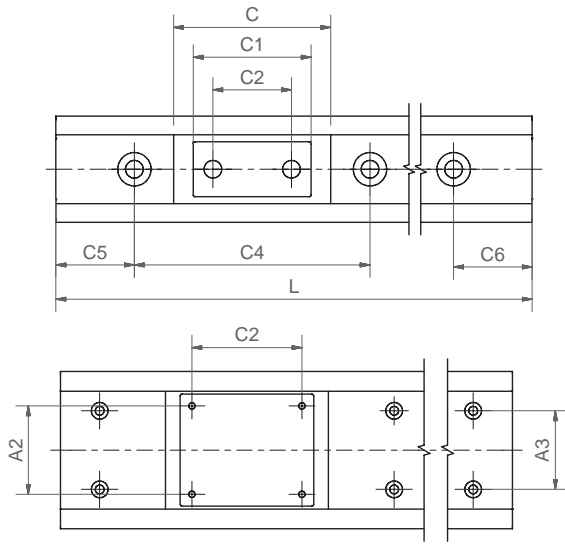


Diagram 03: The 2:1 rule



## drylin® N | Dimensions



## Dimensions [mm] – Guide rail

Part number	L max.	a	C4	A3	C5 = C6 min.	C5 = C6 max.	h	h1	K1*	ly [mm <sup>2</sup> ]	lz [mm <sup>2</sup> ]	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 “no holes”.

## Dimensions [mm] – Guide carriage

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-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	–	1.5	M4	–	–	–	–	–	10.8
NW-11-27	9.5	14.0	34	30	20	–	1.5	M4	–	–	–	–	–	10.8
NW-01-27P	9.5	14.0	40	30	20	–	1.5	M4	–	–	–	–	–	10.8
NW-01-27-HT	9.5	14.0	40	30	20	–	1.5	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	–	1.5	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	–	1.5	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-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-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	–	–	100.0

\*\* 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 driving force: 10 N

Dimensions ► **page 827**



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-□* mm
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-22-17-40
Part number rail	► NS-01-17-□* mm
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



**delivery** from stock  
**time**



**prices** price list online  
[www.igus.co.uk/en/drylinN](http://www.igus.co.uk/en/drylinN)



**Order notice** ► **page 834**

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
- Plain bearing made of iglidur® J
- Up to 500 N load
- Preload "P" (optional), max. increase of driving force: 10 N

Dimensions ► **page 827**



**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 <b>New!**</b>
Part number rail	► NS-01-27-□ * mm
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 <b>New!**</b>
Part number rail	► NS-01-27-□ * mm
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-□* mm
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-□* mm
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, overmoulded	► NW-11-27-80
Part number rail	► NS-01-27-□* mm
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, overmoulded	► NW-12-27-80
Part number rail	► NS-01-27-□* mm
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.

- Rail width 40 mm
- Installation height 9.5 mm
- Low weight
- High speed (up to 15 m/s)
- iglidur® J plain bearing material
- Up to 700 N load

Dimensions ► **page 827**



Standard with  
mounting hole



Standard with  
thread



Overmoulded with  
mounting hole



Overmoulded with  
thread



## Standard with mounting hole

Part number carriage, clipped

► NW-01-40

Part number rail, overmoulded

► NW-11-40

Part number rail

► NS-01-40-□\* mm

Carriage weight

30 g

Rail weight

450 g/m

Material carriage

Zinc

Material gliding elements

igidur® 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 rail, overmoulded

► NW-12-40

Part number rail

► NS-01-40-□\* mm

Carriage weight

30 g

Rail weight

450 g/m

Material carriage

Zinc

Material gliding elements

igidur® J

Max. rail length

3,000 mm

Standard bore pattern

symmetrical (C5 = C6)

\* Please add the required length in mm

## drylin® Low-Profile Linear Guide [80] | Product Range

The largest of the drylin® N series permits low installation heights while offering high load-bearing capacity. The lubrication free design is capable of running at high linear speeds.

- Rail width 80 mm
- Installation height 12 mm
- 100 % lubricant-free
- Wide torque support
- Load up to 1,000 N

Dimensions ► **page 827**



Standard with thread



Overmoulded with thread



#### Standard with thread, clipped

<b>Part number carriage</b>	► <b>NW-02-80</b>
<b>Part number rail</b>	► <b>NS-01-80-<input type="text"/>* mm</b>
Carriage weight	100 g
Rail weight	1,140 g/m
Material carriage	Zinc
Material gliding elements	iglidur® J
Max. rail length	4,000 mm
Standard bore pattern	symmetrical (C5 = C6)



#### Overmoulded with thread

<b>Part number carriage</b>	► <b>NW-12-80</b>
<b>Part number rail</b>	► <b>NS-01-80-<input type="text"/>* mm</b>
Carriage weight	100 g
Rail weight	1,140 g/m
Material carriage	Zinc
Material gliding elements	iglidur® J200
Max. rail length	4,000 mm
Standard bore pattern	symmetrical (C5 = C6)

\* Please add the required length in mm

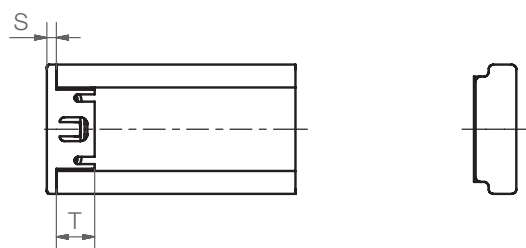
# drylin® N end caps | Product Range

## drylin® N end caps: Easy fit end stops



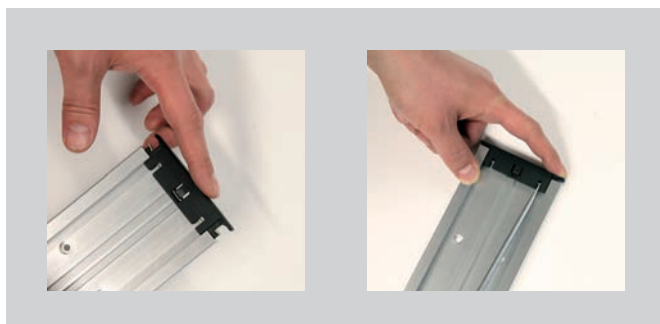
The new plastic end caps, suitable for every rail, offer “protection against loss” for the carriages and cover the sharp open edges of the profiles safely and in an aesthetic way.

- Easy assembly
- Cost-effective
- Dismantling possible
- High retention force

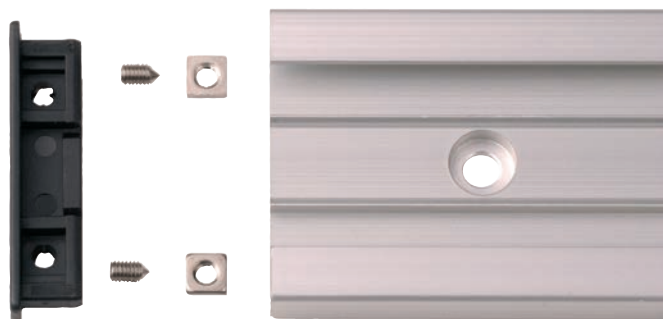


### Dimensions [mm]

Part number	S	T	for rail
NSKB-17	1.5	7	NS-01-17
NSKB-27	2	8	NS-01-27
NSK-40	1.5	8	NS-01-40
NSKB-80	2	17	NS-01-80



Easy assembling by hand and removal with screwdriver



End caps for rail size 40, bolted  
Part number: NSK-40



**delivery** from stock  
**time**



**prices** price list online  
[www.igus.co.uk/en/drylinN](http://www.igus.co.uk/en/drylinN)





Order key for complete system:

**NK-02-27-02-500-LLZ C5 = 20**



## Rail options

- Leave blank: Standard with holes
- NO HOLES: Without holes
- C5 = ... mm: If hole spacing is not symmetrical

## Carriage options

- Leave blank: Standard
- LLZ: Floating z-direction
- LLY: Floating y-direction
- LLYZ: Floating y- and z-direction
- P: Preload (max. 1 N)  
only size 17/27

## Length of rail in mm

## No. of carriages

## Size 17/27/40/80

## Type of carriage

- 01 with plain bore, only size 27, 40
- 02 With thread
- 11-80 double rail, plain bore, only size 27
- 12-80 double rail, thread, only size 27
- 11 with plain bore, overmoulded, only size 27, 40
- 12 with thread, overmoulded, size 27, 40, 80
- 21 with pre-tension and plain bore, only size 27  
(solid polymer)
- 22 with pre-tension and threaded pin, only size 27  
(solid polymer)

## Complete system

## drylin® N replacement liners (set)

Material iglidur® J

Type of carriage	Part number
	<b>Sliding part set</b>
NW-01/02/27	NEK-01-27
NW-01/02-27P	NEK-01-27-P
NW-01/02-27-LLY	NEK-01-27-LLY
NW-01/02-27-LLZ	NEK-01-27-LLZ
NW-01/02-40	NEK-02-40
NW-01/02-40-LLY	NEK-02-40-LLY
NW-01/02-40-LLZ	NEK-02-40-LLZ
NW-02-80	NEK-02-80
NW-02-80-LLY	NEK-02-80-LLY
NW-02-80-LLZ	NEK-02-80-LLZ