



DryLin[®] N Low Profile
Linear Guide System

DryLin® N Selection Guide

Available Carriages



DryLin® N17

- Good for tight design constraints
- Low cost
- Excellent for low loads
- Excellent corrosion resistance



Standard



Preload



Double Carriage



DryLin® N27

- Through hole for flexible mounting
- Threaded boss for easy attachment
- Extremely low friction/low wear
- Replaceable glide pads
- Low weight
- Flexible size
- Excellent for low to medium loads



Standard/holes



Standard/thread



Preload



Overmolded



iglide® J carriage
Double length
with thread



Zinc carriage
Double length
with holes



DryLin® N40

- Flexible size
- Replaceable glide pads
- Excellent for medium to high loads
- Wide base for stable design



Standard/holes



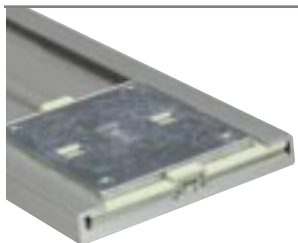
Standard/thread



Overmold/holes



Overmold/thread



DryLin® N80

- Use one rail instead of two narrow rails
- High accelerations possible
- Replaceable glide pads
- Extremely low friction/low wear
- Good for higher loads



Standard/thread

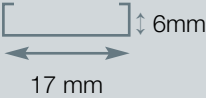
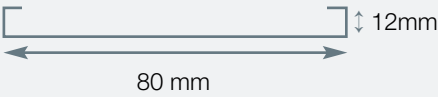


Overmold/thread



Online Lifetime
Calculation
www.igus.com



Dimensional Drawing		Maximum Load	Maximum Speed	Rail Material	Carriage Material
		11 lbs (50 N)	49 fps (15 m/s)	Anodized Aluminum	Brass / Plastic
		110 - 168 lbs (490 - 750 N) Depending on the carriage	49 fps (15 m/s)	Anodized Aluminum	Chromated Zinc / Plastic or Brass / Plastic
		157 lbs (700 N)	49 fps (15 m/s)	Anodized Aluminum	Chromated Zinc / Plastic
		220 lbs (1000 N)	49 fps (15 m/s)	Anodized Aluminum	Chromated Zinc / Plastic Aluminum available

DryLin® N Low Profile Linear Guide Systems

The DryLin® N series offers extremely low profiles in several widths, and is ideal in tight space constraints. Like all DryLin® products the carriages are designed to glide smoothly on anodized aluminum rails without the need for messy lubricants. DryLin® N is a particularly low-cost alternative to miniature ball bearing systems, and is more precise and economical when compared to many custom-machined or simple plastic parts.

Technical Data

Sliding elements:

Maintenance-free polymer

Material:

iglide® J*

Max. surface speed:

50 fps (15 m/s)

Temperature range:

-40°F to +194°F

(-40 °C to +90 °C)

* Other materials upon request

DryLin® N	Height
N17	.24 in (6.0 mm)
N27	.37 in (9.5 mm)
N40	.37 in (9.5 mm)
N80	.47 in (12.0 mm)

Special Features



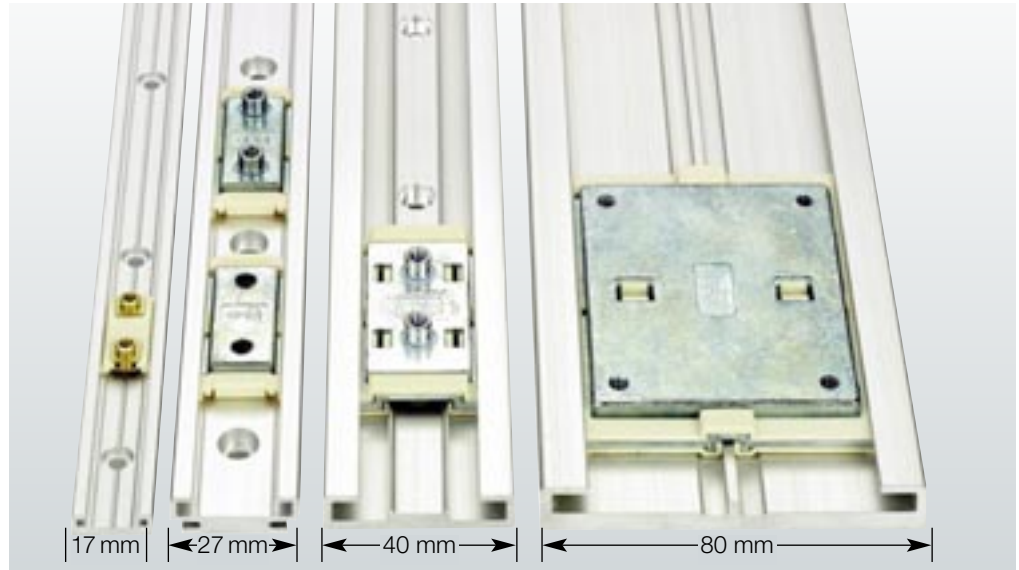
Cleanroom certified -
IPA Fraunhofer



ESD compatible
(electrostatic
discharge)



Free of toxins -
RoHS 2002/95/EC



Advantages of DryLin® N

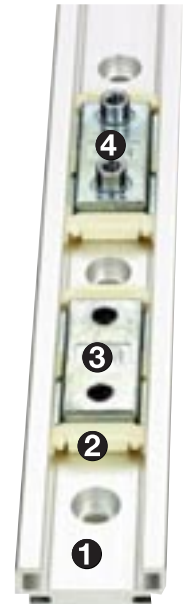
- Small mounting height and width
- Maintenance-free and self-lubricating
- Corrosion-resistant
- Low wear and low coefficient of friction
- Lightweight
- Very high speed and acceleration possible
- Replaceable polymer sliding elements
- Base structure of the carriage made of plastic (size 17) or zinc (size 27, 40 and 80)
- Anodized aluminum rails cut to length



DryLin® N80, black anodized used for adjusting spotlights



DryLin® N80 in a belt-driven linear actuator for high-speed handling up to 12 m/s



- 1 Anodized aluminum rails
- 2 iglide® J plain bearing liner
- 3 Zinc chromated carriage Type 01 (with mounting hole)
- 4 Zinc chromated carriage Type 02 (with thread)



Online Lifetime
Calculation
www.igus.com

DryLin® N Low Profile Linear Guide Systems



Standard



Preload



Floating

DryLin® NW-17 = 17 mm Rail width

NW 17

The smallest size of the DryLin® N range is designed to fit in the tightest space constraints. In addition, this range is free from lubrication and can run at high speeds.

NW 17 Preload

The NW 17 Preload model of the DryLin® N series provides for an automatic pretension to the rail for reduced clearance.



Standard 01
with mounting
hole



Standard 02
with thread



Preload
with mounting
hole or thread



Overmolded
with mounting
hole or thread

DryLin® NW-27 = 27 mm Rail width

NW 27

The NW 27 series is available in multiple carriage lengths and materials, and has great performance-to-cost benefits.

NW 27 Preload

Like NW 17 Preload, this larger NW 27 Preload model of DryLin® N possesses the special feature of automatic pre-tension.

Overmolded

This version is practically identical to the standard slide NW-01/02-27. Overmolded with iglide® J, however, it is easier to assemble for high volume production.

- Quick assembly
- Easier handling

Maximum loads (per carriage)

NW-02-17	=	11 lbs
NW-01/02-27	=	110 lbs
NW-02-40	=	154 lbs
NW-02-80	=	220 lbs



Standard 02
with thread



Overmolded
with thread

DryLin® NW-40 = 40 mm Rail width

NW 40

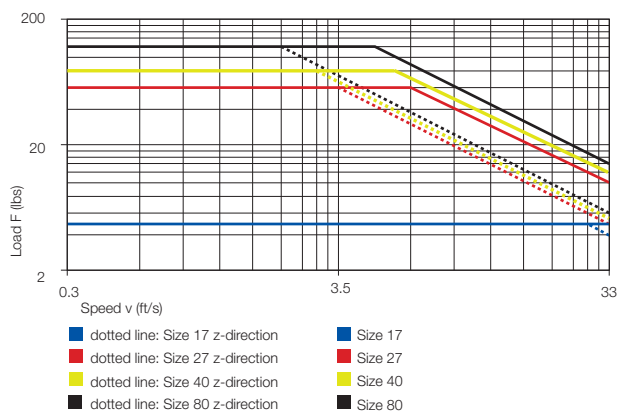
Compared with smaller series, NW 40 is able to withstand significantly higher loads. Like all other DryLin® N series, the lubrication free design is capable of running at high linear speeds.



DryLin® NW-80 = 80 mm rail width

NW 80

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.



F = total of the loads on one rail

Graph 21.1: Fv-Diagram, maximum permissible dynamic loads of DryLin® N

DryLin® N
Linear Guide Systems

PDF: www.igus.com/iglide-pdfs
CAD: www.igus.com/iglide-CAD
RoHS info: www.igus.com/RoHS





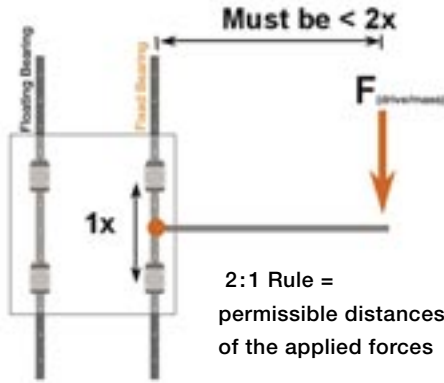
DryLin® N Low Profile Linear Guide Systems

DryLin® N
Linear Guide Systems

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email: sales@igus.com
QuickSpec: <http://www.igus.com/iglide-quickspec>

Eccentric Forces



The 2:1 Rule

When using linear plain bearings it is important to ensure that the acting forces follow the 2:1 Rule (see drawing). If either the load or the drive force (F) is greater than twice the bearing length (1X), then a binding or interrupted motion may occur.

If the location of the drive force or load cannot be changed, simply increase the distance between the bearings, or create a counterbalance to move the center-of-gravity back within the 2 to 1 ratio.



Online Lifetime
Calculation
www.igus.com

Fixed and Floating Bearing Mounting Instructions

When using systems with 2 parallel rails, one side must be designated as the “fixed” rail, and the opposite side the “floating” rail.

Why use floating bearings?

- promotes smooth gliding performance and maximizes bearing life
- prevents binding caused by parallelism and angle errors
- decreases necessary drive force and wear by minimizing friction-forces
- Enhances the precision of the system over the bearings' lifetime.
- Reduce assembly time and cost

Fixed Bearings

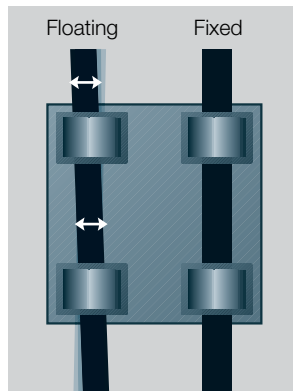
The “fixed” bearing rail should be positioned closest to the drive force. This rail will determine the precision of the system; no system should contain more than two “fixed” bearings.

Floating/Self-Aligning Bearings

The “floating” rail should be the rail located furthest from the drive force. It is to act only as a guide, and will compensate for any misalignments or angle errors in the system ensuring proper functionality.

Mounting Surfaces

The mounting surfaces for rails and bearings should have a very flat surface (e.g milled surface) in order to enhance performance. Variations in these surfaces may be compensated for by using floating bearings.



Automatic compensation of
parallelism errors

DryLin® N - Floating Systems

Maximum float = ± .02” (.5 mm)



Standard Version

Part No.
Fixed Bearing -
CARRIAGE ONLY

NW-02-17

NW-02-27 / NW-02-27

NW-02-40

NW-02-80



Horizontal Float “LLZ”

Part No.
Horizontal Floating -
CARRIAGE ONLY

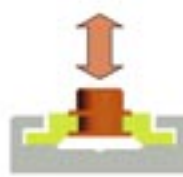
NW-02-17 LLZ

NW-01-27 LLZ

NW-02-27 LLZ

NW-02-40 LLZ

NW-02-80 LLZ



Vertical Float “LLY”

Part No.
Vertical Floating -
CARRIAGE ONLY

NW-02-17 LLY

NW-01-27 LLY

NW-02-27 LLY

NW-02-40 LLY

NW-02-80 LLY



Vertical Float “LLYZ”

Part No.
Horizontal/Vertical Floating -
CARRIAGE ONLY

NW-02-17 LLYZ

NW-01-27 LLYZ

NW-02-27 LLYZ

NW-02-40 LLYZ

NW-02-80 LLYZ

DryLin® N Low Profile Linear Guide Systems



Part No. for single carriages:

Carriages	Carriage/Bearing Material/Color	Mounting Style	Description	Max Static Load
NW-02-17	Plastic/Brass/iglide J/Yellow	Threaded brass boss	Standard	11 lbs (50N)
NW-02-17 P	Plastic/Brass/iglide J/Yellow	Threaded brass boss	Preloaded	11 lbs (50N)
NW-22-17-40	Plastic/Brass/iglide J/Yellow	Threaded brass boss	Overmolded, double-length version	11 lbs (50N)
NW-01-27	Chromated Zinc/iglide J/Yellow	Through holes	Standard, clip-on plastic	112 lbs (500N)
NW-01-27 P	Zinc/iglide J/Yellow	Through holes	Preloaded .22 lbs (1N)	112 lbs (500N)
NW-11-27	Zinc/iglide J/Yellow	Through holes	Overmolded plastic, with through holes	112 lbs (500N)
NW-11-27-SS	Stainless Steel/iglide J/Yellow	Through holes	Overmolded plastic, with through holes	168 lbs (750N)
NW-02-27	Zinc/iglide J/Yellow	Threaded bosses	Standard, clip-on plastic	112 lbs (500N)
NW-02-27 P	Zinc/iglide J/Yellow	Threaded bosses	Preloaded .22 lbs (1N)	112 lbs (500N)
NW-12-27	Zinc/iglide J/Yellow	Threaded bosses	Overmolded plastic, with through holes	112 lbs (500N)
NW-11-27-80	Zinc/iglide J200/Grey	Through holes	Overmolded, double-length version	167 lbs (740N)
NW-21-27-60P	Plastic/iglide J/Yellow	Brass through holes	50% longer, preloaded	112 lbs (500N)
NW-22-27-60P	Plastic/iglide J/Yellow	Brass threaded boss	50% longer, preloaded	112 lbs (500N)
NW-01-40	Chromated Zinc/iglide J/Yellow	Through holes	Standard. clip-on plastic	157 lbs (700N)
NW-02-40	Chromated Zinc/iglide J/Yellow	Threaded bosses	Standard. clip-on plastic	157 lbs (700N)
NW-12-40	Chromated Zinc/iglide J/Yellow	Threaded bosses	Overmolded plastic	157 lbs (700N)
NW-02-80	Chromated Zinc/iglide J/Yellow	Threaded, no bosses	Standard. clip-on plastic	225 lbs (1000N)
NW-12-80	Chromated Zinc/iglide J/Yellow	Threaded, no bosses	Overmolded	225 lbs (1000N)
NW-02-80AL	Aluminum/iglide J/Yellow	Threaded, no bosses	Standard. clip-on plastic	250 lbs (1111N)

Part No. for single rails:

Rail	Material	Description	Maximum Length
NS-01-17	6063-T6 Anodized AL	M3 Mounting holes	6.5 ft
NS-01-17S	6063-T6 Anodized AL	No holes	6.5 ft
NS-01-27	6063-T6 Anodized AL	M4 Mounting holes	12 ft (4000 mm special order)
NS-01-27S	6063-T6 Anodized AL	No holes	12 ft (4000 mm special order)
NS-01-40	6063-T6 Anodized AL	M4 Mounting holes	12 ft (4000 mm special order)
NS-01-40S	6063-T6 Anodized AL	No holes	12 ft (4000 mm special order)
NS-01-80	6063-T6 Anodized AL	M4 Mounting holes	12 ft (4000 mm special order)
NS-01-80S	6063-T6 Anodized AL	No holes	12 ft (4000 mm special order)

Structure of the Part No. for assembled systems:

NK	-02	-27	-02	-500	LLZ	C5=20
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Assembled system

Type of carriage

- 01 with thru bore
- 02 with thread
- 11 with thru bore, overmolded, size 27
- 12 with thread, overmolded, size 27, 40

Size

17/27/40/80

No. of carriages

Length of rail in mm

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 sizes 17/27

Rail options

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

DryLin® N
Linear Guide Systems

PDF: www.igus.com/iglide-pdfs
CAD: www.igus.com/iglide-CAD
RoHS info: www.igus.com/RoHS





DryLin® N Low Profile Linear Guide Systems - NK-02-17

DryLin® N
Linear Guide Systems

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QuickSpec: <http://www.igus.com/iglide-quickspec>



NW-02-17
Standard



NW-22-17-40
Double Length



NW-02-17P
Preloaded

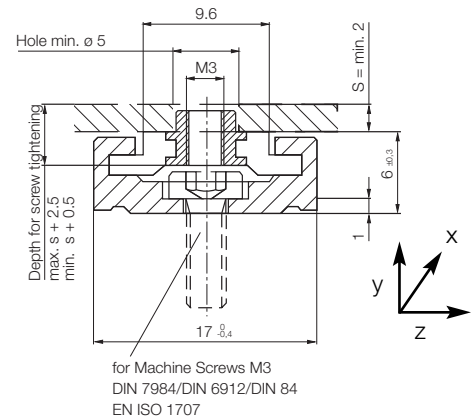
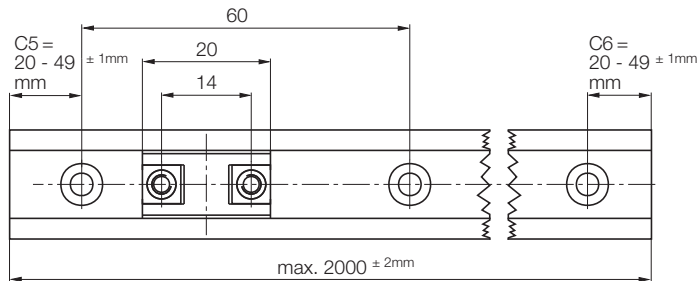
Carriages	Carriage/Bearing Material/Color	Mounting Style	Description	Weight	Max Static Load
NW-02-17	Plastic/Brass/iglide J/Yellow	Threaded brass boss	Standard	.06 oz (1.7g)	11 lbs (50N)
NW-02-17P	Plastic/Brass/iglide J/Yellow	Threaded brass boss	Preloaded .23 lbs (1N)	.06 oz (1.7g)	11 lbs (50N)
NW-22-17-40	Plastic/Brass/iglide J/Yellow	Threaded brass boss	Overmolded, double-length version	.09 oz (2.6g)	11 lbs (50N)
-LLZ	for floating in Z-direction, best for horizontal applications for rail alignment				
-LLY	for floating in Y-direction, best for vertical applications or when flatness of the mounting surface is of concern				
-LLYZ	for floating in both directions				

Floating carriages (see page 21.6 about fixed and floating)

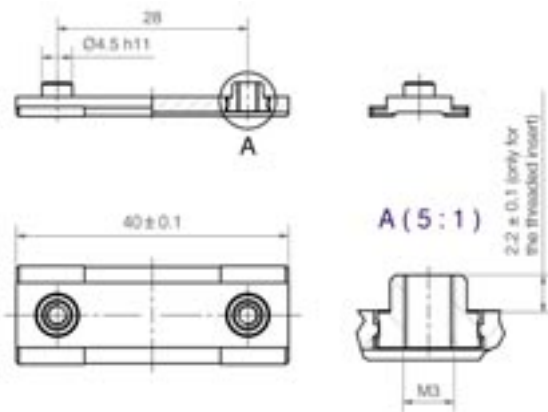
Rail	Material	Description	Weight	Hole Pattern	Max Length
NS-01-17	6063-T6 Anodized AL	M3 Mounting holes	0.1 lbs/ft (150 g/m)	Bore pattern symmetrical C% = C6	6.5 ft
NS-01-17S	6063-T6 Anodized AL	No holes	0.1 lbs/ft (150 g/m)	NA	12 ft

No cut charges for standard C5/C6 and overall length tolerances

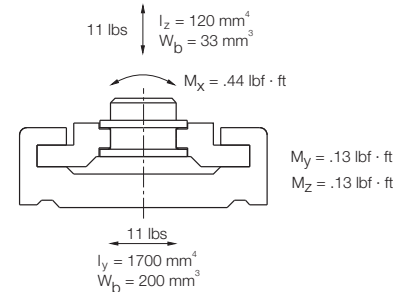
NW-02-17(P)



NW-22-17-40



Static load-bearing capacity and geometric moment of inertia



Structure of the Part No.

NK	-02	-17	P	-2	-500
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Complete system	_____
Thread	_____
Size	_____
"P" for preloaded	_____
Number of carriages	_____
Length of rail (mm)	_____

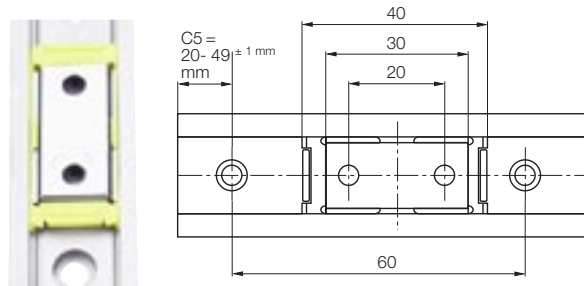
CAD files online:
www.igus.com

DryLin® N Low Profile Linear Guide Systems

NK-01-27 / NK-02-27

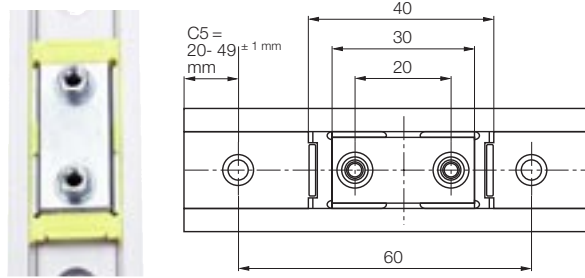


NW-01-27(P)/NW-11-01 Carriages with through hole



Standard cut length tolerance is ± 2 mm

NW-02-27(P)/NW-12-01 Carriages with threaded boss



Standard cut length tolerance is ± 2 mm

Carriages	Carriage/Bearing Material/Color	Mounting Style	Description	Weight	Max Static Load
Standard					
NW-01-27	Chromated Zinc/iglide J/Yellow	Through holes	Standard, clip-on plastic	.38 oz (10.8g)	112 lbs (500N)
NW-02-27	Chromated Zinc/iglide J/Yellow	Threaded bosses	Standard, clip-on plastic	.44 oz (12.5g)	112 lbs (500N)
Overmolded					
NW-11-27	Chromated Zinc/iglide J/Yellow	Through holes	Overmolded plastic	.38 oz (10.8g)	112 lbs (500N)
NW-12-27	Chromated Zinc/iglide J/Yellow	Threaded bosses	Overmolded plastic	.44 oz (12.5g)	112 lbs (500N)
Preloaded					
NW-01-27P	Chromated Zinc/iglide J/Yellow	Through holes	Preloaded .22 lbs (1N), clip-on	.38 oz (10.8g)	112 lbs (500N)
NW-02-27P	Chromated Zinc/iglide J/Yellow	Threaded bosses	Preloaded .22 lbs (1N), clip-on	.44 oz (12.5g)	112 lbs (500N)
-LLZ	for floating in Z-direction, best for horizontal applications for rail alignment				
-LLY	for floating in Y-direction, best for vertical applications or when flatness of the mounting surface is of concern				
-LLYZ	for floating in both directions				

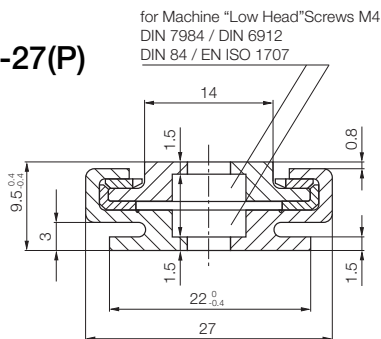
Floating carriages (see page 21.6 about fixed and floating)

Rail	Material	Description	Weight	Hole Pattern	Max Length
NS-01-27	6063-T6 Anodized AL	M4 Mounting holes	0.2 lbs/ft (290 g/m)	Bore pattern symmetrical C5=C6	3658 mm
NS-01-27S	6063-T6 Anodized AL	No holes	0.2 lbs/ft (290 g/m)	NA	3658 mm

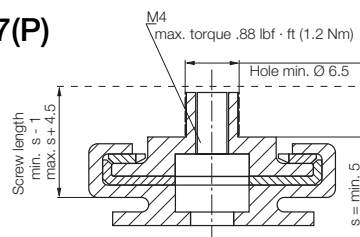
No cut charges for standard C5/C6 and overall length tolerances

* Length of overmolded carriages version NW-11-27 and NW-12-27: 34 ± 0.7 mm

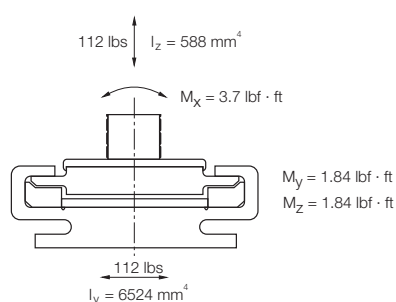
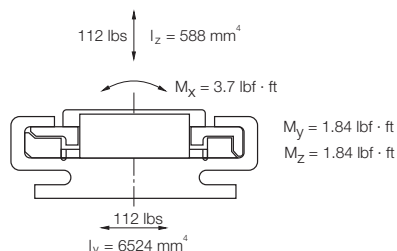
NK-01-27(P)



NK-02-27(P)



Static load-bearing capacity and geometric moment of inertia



CAD files online: www.igus.com

PDF: www.igus.com/iglide-pdfs
CAD: www.igus.com/iglide-CAD
RoHS info: www.igus.com/RoHS





DryLin® N Low Profile Linear Guide Systems NW-11-27-80 Double Length Version

DryLin® N
Linear Guide Systems

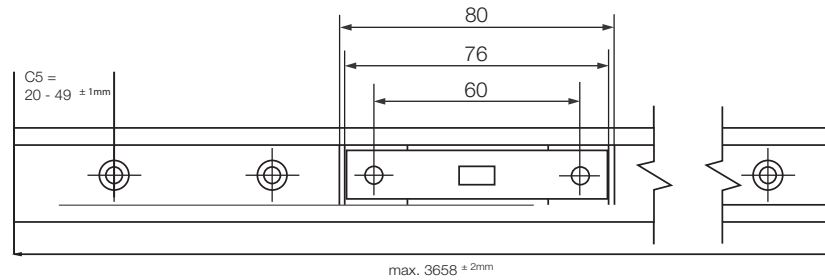
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: <http://www.igus.com>
email: sales@igus.com
QuickSpec: <http://www.igus.com/iglide-quickspec>

Carriages	Carriage/Bearing Material/Color	Mounting Style	Description	Weight	Max Static Load
NW-11-27-80	Chromated Zinc/iglide J200/Grey	Through holes	Overmolded, double length version	.80 oz (25g)	168 lbs (750N)

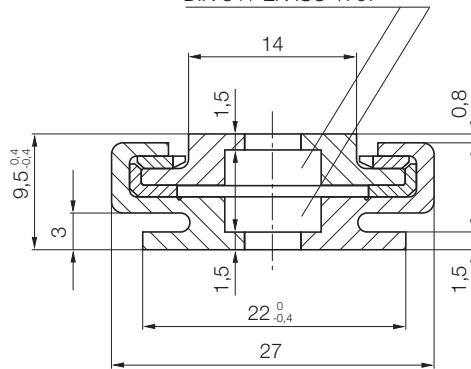
Rail	Material	Description	Weight	Hole Pattern	Max Length
NS-01-27	6063-T6 Anodized AL	M4 Mounting holes	0.2 lbs/ft (290 g/m)	Bore pattern symmetrical C5=C6	12 ft
NS-01-27S	6063-T6 Anodized AL	No holes	0.2 lbs/ft (290 g/m)	NA	12 ft

No cut charges for standard C5/C6 and overall length tolerances

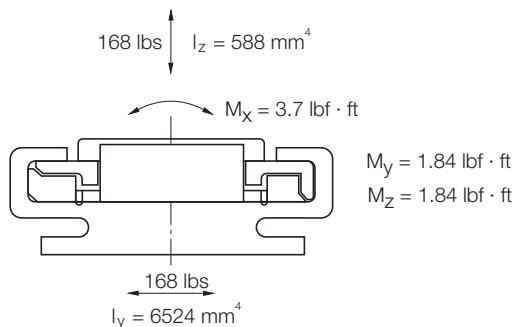


NK-04-27

For M3 holes
DIN 7984 / DIN 6912
DIN 84 / EN ISO 1707



Static load-bearing capacity and geometric moment of inertia



CAD files online:
www.igus.com

DryLin® N Low Profile Linear Guide Systems, Preloaded 50% longer than standard



DryLin® N
Linear Guide Systems

PDF: www.igus.com/iglide-pdfs
CAD: www.igus.com/iglide-CAD
RoHS info: www.igus.com/RoHS



NW-21-27-60-P

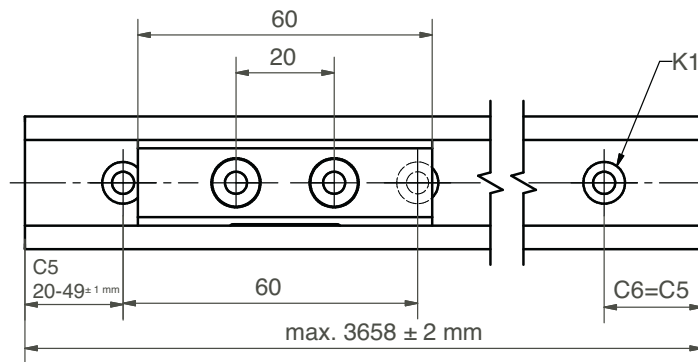


NW-22-27-60-P

Carriages	Carriage/Bearing Material/Color	Mounting Style	Description	Weight	Max Static Load
NW-21-27-60P	Plastic/iglide J/Yellow	Brass through holes	Preloaded	.29 oz (9g)	112 lbs (500N)
NW-22-27-60P	Plastic/iglide J/Yellow	Brass threaded boss	Preloaded	.39 oz (12g)	112 lbs (500N)

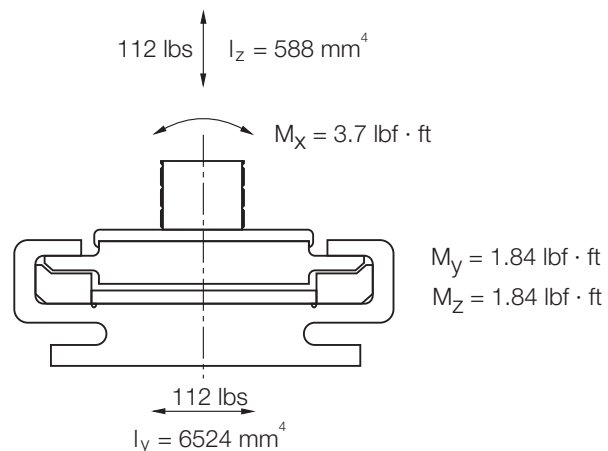
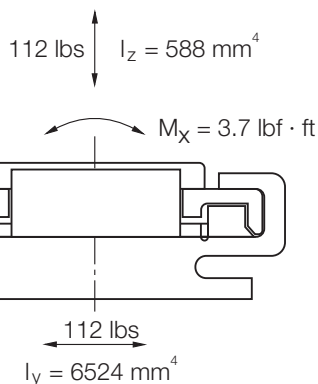
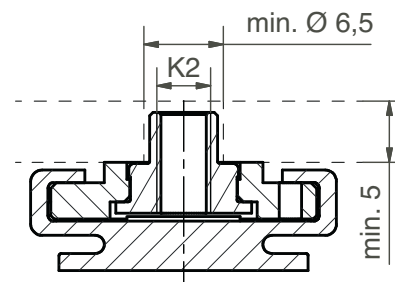
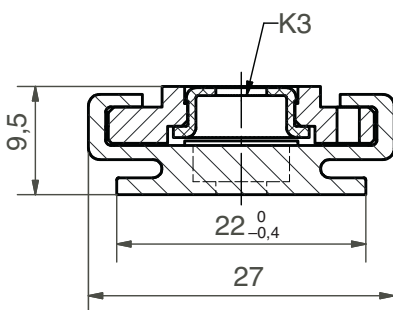
Rail	Material	Description	Weight	Hole Pattern	Max Length
NS-01-27	6063-T6 Anodized AL	M4 Mounting holes	0.2 lbs/ft (290 g/m)	Bore pattern symmetrical C5=C6	12 ft
NS-01-27S	6063-T6 Anodized AL	No holes	0.2 lbs/ft (290 g/m)	NA	12 ft

No cut charges for standard C5/C6 and overall length tolerances



NW-21-27-60-P

NW-22-27-60-P





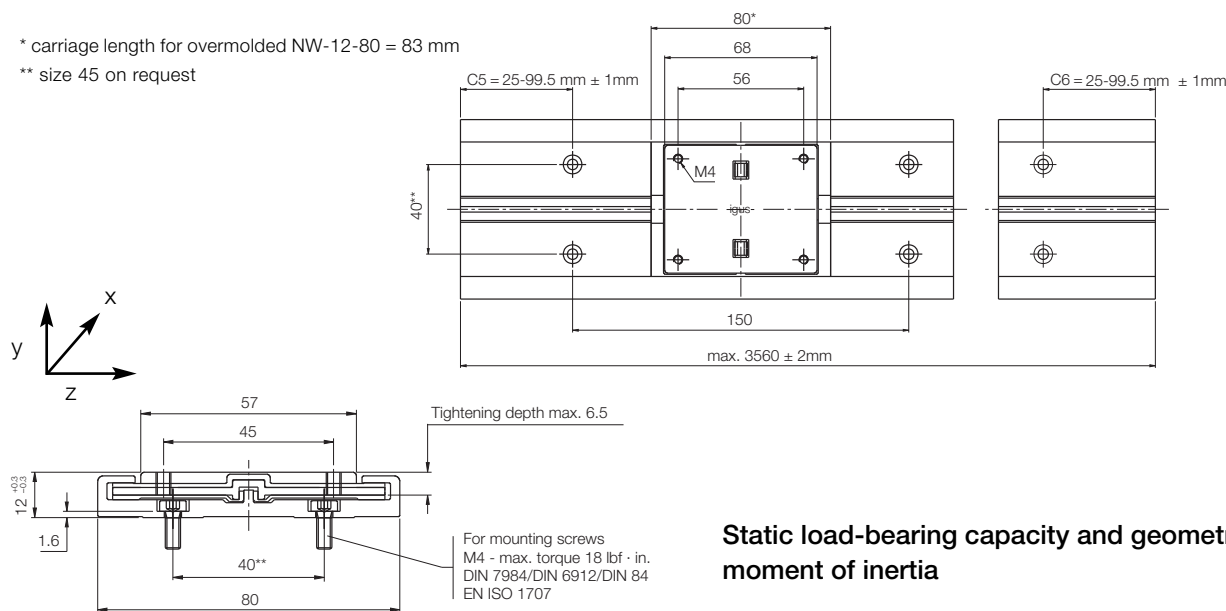
Carriages	Carriage/Bearing Material/Color	Mounting Style	Description	Weight	Max Static Load
NW-02-80	Chromated Zinc/iglide J/Yellow	Threaded no bosses	Standard, clip-on plastic	3.53 oz (100g)	225 lbs (1000N)
NW-12-80	Chromated Zinc/iglide J200/Grey	Threaded no bosses	Overmolded	3.53 oz (100g)	225 lbs (1000N)
NW-02-80AL	Aluminum/iglide J/Yellow	Threaded no bosses	Aluminum, clip-on plastic	2.56 oz (72g)	250 lbs (1111N)

Rail	Material	Description	Weight	Hole Pattern	Max Length
NS-01-80	6063-T6 Anodized AL	M4 Mounting holes	0.3 lbs/ft (450 g/m)	Bore pattern symmetrical C5=C6	12 ft
NS-01-80S	6063-T6 Anodized AL	No holes	0.3 lbs/ft (450 g/m)	NA	12 ft

No cut charges for standard C5/C6 and overall length tolerances

* carriage length for overmolded NW-12-80 = 83 mm

** size 45 on request

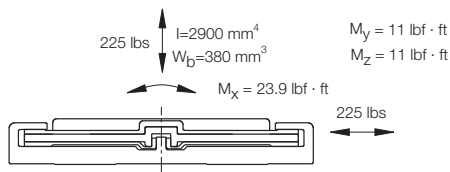


Structure of the Part No. – Standard version

NK	-02	-40	-2	-500	-LLZ
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Carriage option
Standard - Leave blank
Floating z-direction - LLZ
Floating y-direction - LLY
Floating y- and z-direction - LLYZ

Length of rail (mm)
Number of carriages
Size
Thread
Complete system



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