

UHMW Guide Rails

No Hole Type
NLBA

With Counterbored Holes
NLBB

With Counterbore Holes / Hole Position Configurable Type
NLBBF

⊕ Thermal Expansion Factor:
1.7x10⁻⁴/°C

$$*F = \frac{L-P(H-1)}{2}$$

Material: UHMW

No Hole Type

Part Number Type	T	W Selection					L 1mm Increment
		10	15	20	25	30	
NLBA	3	10	15	20	25		100-1800
	5		15	20	25	30 35	
	8			20	25	30 35 40	
	10			20	25	30 35 40	
	15			25	30	35 40	
20				30	35 40		

With Counterbored Holes

Part Number Type	T	W Selection					L 1 mm Increment	H No. of Holes	P 1 mm Increment	Screw Hole Nominal Diameter Configurable			
		10	15	20	25	30				Z	ZN		
NLBB	3	10	15	20	25	100-1200	2-10	P≥20	—				4
	5		15	20	25				30 35	—			4 5 6
	8			20	25				30 35 40	3 4 5	4 5 6		
	10			20	25				30 35 40	4 5 6	5 6		
	15			25	30				35 40	4 5 6 8	—		
20				30	35 40	4 5 6 8	—						

⊕ $[L-P(H-1)]/2 \geq d1/2+2$

With Counterbore Holes, Hole Position Configurable

Part Number Type	T	W Selection					L 1 mm Increment	H No. of Holes	P 1 mm Increment	G 1 mm Increment	Screw Hole Nominal Diameter Configurable			
		15	20	25	30	35					Z	ZN		
NLBBF	3	15	20	25		100-1200	2-10	P≥20	7-20 d1/2+1≤G≤W/2	—				4
	5	15	20	25	30 35					—			4 5 6	
	8		20	25	30 35 40					3 4 5	4 5 6			
	10		20	25	30 35 40					4 5 6	5 6			
	15		25	30	35 40					4 5 6 8	—			
20			30	35 40	4 5 6 8	—								

⊕ $[L-P(H-1)]/2 \geq d1/2+2$

UHMW Guide Rails

continued

Features of UHMW

- (1) Abrasion Resistance Approx. 6x of Fluorinated Resin.
Approx. 5x of Nylon Resin.
Approx. 6x of Polyurethane.
- (2) Self-lubricating tribological property is the same as that of fluororesin.
- (3) Passed standard test No. 20 of Health and Welfare Ministry.

Characteristic Values (Reference Values)

Item	Unit	Ultra High Molecular Weight Polyethylene (UHMW)	Nylon 6	Fluororesin
Specific Gravity	—	0.94	1.08	2.2
Tensile Strength	MPa	44	64	25
Tensile Elongation	%	450	210	300
Hardness	Rockwell R Scale	40	95	32
Impact Strength	Izot Notch kJ/m	>137	13	16
Thermal Expansion Coefficient	10 ⁻⁴ /°C	1.7	0.8	1.0
Heat Resistance Temperature	°C	80	80-120	260-278
Moisture Absorption Ratio	%	<0.01	1.5	<0.01
Dielectric Constant	—	2.3	4.0	2.1
Breakdown Voltage	kV/mm	50	20	20
Strong Acid Resistance	—	Excellent	Poor	Excellent
Alkali Resistance	—	Excellent	Good	Excellent
Organic Solvent Resistance	—	Excellent	Good	Excellent

Part Number Example

Part Number	W	L	H	P	G	Screw Nominal Diameter
NLBA5	25	1200				Z5
NLBB8	20	500	H4	P115		Z5
NLBBF10	25	1100	H4	P115	G12	Z5

Part Number Alterations

Part Number	W	L	H	P	G	Screw Nominal Diameter	(TCC, LCC, RCC)
NLBB8	20	500	H4	P115		Z5	TCC5
NLBBF15	30	1000	H4	P110	G7	Z5	TCC5

Alterations	Corner Cut (End Upper Face)	Corner Cut (End Side Faces)
Spec.	<p>Selection: TCC5 TCC10 ⊕ TCC<F-d1/2-2</p>	<p>Selection: LCC5 LCC10 RCC5 RCC10 ⊕ LCC (RCC)<F-d1/2</p>
Code	TCC	LCC RCC

***Details of Hole Machining**

Z Counterbored

ZN Ultra Low Head Counterbored Hole

Screw Nominal Dia.	Z Counterbored					ZN Ultra Low Head Counterbored Hole		
	3	4	5	6	8	4	5	6
d	3.5	4.5	5.5	6.5	9	4.5	5.5	6.5
d ₁	6.5	8	9.5	11	14	9	10	11
h	3.5	4.5	5.5	6.5	9	2	2.5	2.5

⊕ ZN is applicable to extra low hexagon head cap screws CBSS and CBSTs. P.2394