

UHMW-PE Design Information

The slide blocks use UHMW slide pads. UHMW-PE has one of the highest impact strengths of any thermoplastic. It is abrasion resistant, has high tensile strength, displays resistance to stress cracking, and has a low coefficient of friction. It is well-suited where durability and low friction are of paramount importance. Its high resistance to corrosive chemicals, with the exception of oxidizing acids, make it an ideal choice for a wide variety of corrosive environment applications. Maximum operating temperature is 210°F. UHMW-PE can also operate successfully at temperatures as low as -375°F, making it an excellent material for cryogenic applications.

Coefficient of Friction

UHMW-PE polymer has a lower coefficient of friction than glass. Together with its self-lubricating characteristics, it is an ideal material for bearings, bushings, valves, wear strips, or any application where sliding contact is encountered.

Materials	Static	Kinetic
Aluminium vs. UHMW-PE	0.12	0.016

Anodized 204 R1 spec on extruded aluminum.

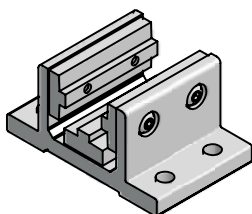
Chemical Resistance of UHMW-PE

Test specimens	Dumb-bell type
Duration of Test	30 days
+ Resistant	Mechanical properties not appreciably affected
/ Limited Resistance	Decreases in yield stress and ultimate tensile strength less than 20%
- Not Resistant	Decreases in yield stress and ultimate tensile strength greater than 20%

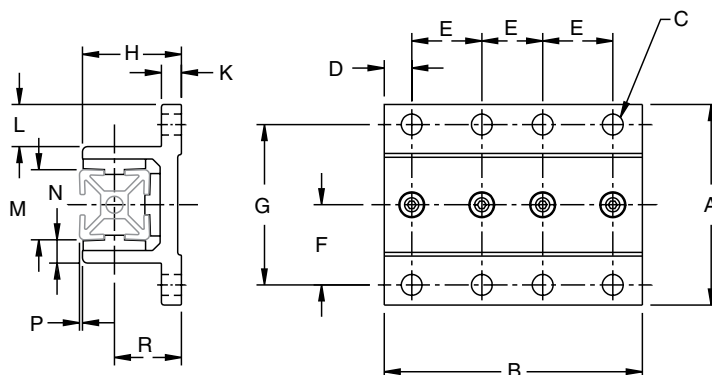
Reagent	20°C	50°C	80°C	Reagent	20°C	50°C	80°C
I. Inorganic Acids				V. Hydrocarbons			
Chromic acid (80%)	+	+	/	Benzene	/	/	-
Hydrochloric acid (conc)	+	+	+	Carbon Tetrachloride	/	-	-
Hydrocyanic acid	+	+	-	Cyclohexane	+	+	-
Hydrofluoric acid	-	-	-	Dichloroethylene	-	-	-
Nitric acid (conc)	/	-	-	Diesel oil	+	+	/
Nitric acid (50%)	+	+	/	n-Heptane	+	+	-
Nitric acid (20%)	+	+	+	Petroleum ether	+	-	-
Phosphoric acid (85%)	+	-	-	Trichloroethylene	/	-	-
Sulphuric acid (conc)	+	-	-	Toluene	/	-	-
Sulphuric acid (50%)	+	+	+	White spirit	+	/	-
				Xylene	/	/	-
II. Alkalis				VI. Alcohols, Ketones, Ester and Amines			
Aqueous ammonia	+	+	-	Acetone	+	+	-
Potassium Hydroxide Solution	+	+	+	Aniline	+	+	/
Sodium Hydroxide Solution	+	+	+	Benzyl alcohol	+	+	+
III. Aqueous Solutions of Inorganic Salts				Butyl alcohol	+	+	+
Aluminum Chloride	+	+	-	Cyclohexanol	+	+	+
Aluminum Nitrate	+	+	+	Ethanol	+	+	-
Bleaching powder	+	+	+	Ethyl acetate	+	+	-
Calcium Chloride	+	+	+	Ethylene glycol	+	+	+
Sodium Carbonate	+	+	+	Glycene	+	+	+
Sodium Chloride	+	+	+	Lauryl alcohol	+	+	+
Sodium Hypochlorite	+	+	+	Propyl alcohol	+	+	+
Zinc Chloride	+	+	+	VII. Miscellaneous			
IV. Organic Acids				Beer	+	+	+
Acetic acid (99%)	+	+	/	Detergents in aqueous solution	+	+	+
Acetic acid (10%)	+	+	+	Distilled water	+	+	+
Butyric acid	+	+	-	Hydrogen peroxide 30%	+	+	-
Citric acid	+	+	+	Linseed oil	+	+	+
Formic acid	+	+	-	Milk	+	+	+
Oleic acid	+	+	/	Olive Oil	+	+	+
				Sea water	+	+	+
				Wine	+	+	+

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Double Flange

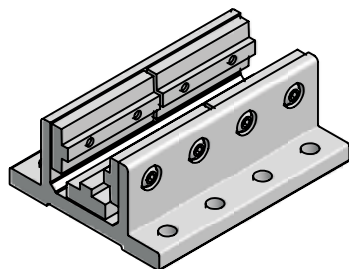


30-2801
30-1002



28 Series							
Part #	A	B	C	D	E	F	G
30-2801	80	50	4xØ8.3	11	28	32	64
30-2808	80	100	8xØ8.3	8	28	32	64
Part #	H	K	L	M	N	P*	R
30-2801	39.5	8	16.75	28	9.25	1.1	26.9
30-2808	39.5	8	16.75	28	9.25	1.1	26.9

* Add 28mm [1.102"] when using 12-248 profile.



30-2808
30-1004

1" Series							
Part #	A	B	C	D	E	F	G
30-1002	3.15"	2.00"	4xØ0.28"	0.50"	1.00"	1.25"	2.50"
30-1004	3.15"	4.00"	8xØ0.28"	0.50"	1.00"	1.25"	2.50"
Part #	H	K	L	M	N	P	R
30-1002	1.56"	0.31"	0.66"	1.03"	0.40"	0.06"	1.11"
30-1004	1.56"	0.31"	0.66"	1.03"	0.40"	0.06"	1.11"

Application

The slide block units offer low cost linear guidance. They utilize glide pads oriented within T-slots. You make your own guidance device, by providing the power – pneumatically, electromechanically or manually.

Shims are available to provide a more precise fit. See page 209 for optional clamping mechanism and page 210 for machining details.

Technical Data

Aluminum, Clear Anodized

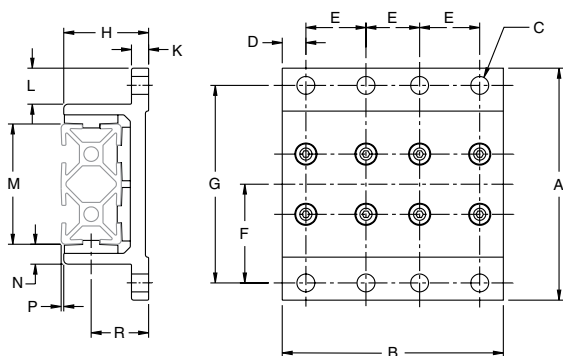
UHMW Glide Pads

Ordering Information

Description	Unit	Weight (g)	Part #
Slide Block 28, 50mm Long	Each	140	30-2801
Slide Block 28, 100mm Long	Each	580	30-2808
Slide Block 1, 2" Long	Each	140	30-1002
Slide Block 1, 4" Long	Each	250	30-1004

Slide Blocks

Double Flange



30-5601
30-2002

28 Series							
Part #	A	B	C	D	E	F	G
30-5601	108	50	4xØ8.3	11	28	46	92
30-5608	108	100	8xØ8.3	8	28	46	92
Part #	H	K	L	M	N	P*	R
30-5601	39.5	8	16.75	56	9.25	1.125	26.75
30-5608	39.5	8	16.75	56	9.25	1.125	26.75

* Add 28mm (1.102") when using 12-056 profile.

1" Series							
Part #	A	B	C	D	E	F	G
30-2002	4.25"	2.00"	4xØ0.28"	0.50"	1.00"	1.75"	3.50"
30-2004	4.25"	4.00"	8xØ0.28"	0.50"	1.00"	1.75"	3.50"
Part #	H	K	L	M	N	P	R
30-2002	1.56"	0.31"	0.66"	2.03"	0.45"	0.06"	1.11"
30-2004	1.56"	0.31"	0.66"	2.03"	0.45"	0.06"	1.11"

30-5608
30-2004

Application Data

These double flange units offer low cost linear guidance. They utilize glide pads oriented within T-slots. You make your own guidance device, by providing the power – pneumatically, electromechanically or manually.

Shims are available to provide a more precise fit. See page 209 for optional clamping mechanism and page 210 for machining details.

Technical Data

Aluminum, Clear Anodized

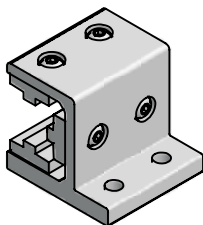
UHMW Glide Pads

Ordering Information

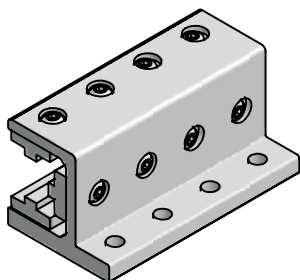
Description	Unit	Weight [g]	Part #
Slide Block 28, 50mm Long	Each	340	30-5601
Slide Block 28, 100mm Long	Each	720	30-5608
Slide Block 2, 2" Long	Each	230	30-2002
Slide Block 2, 4" Long	Each	420	30-2004

Linear

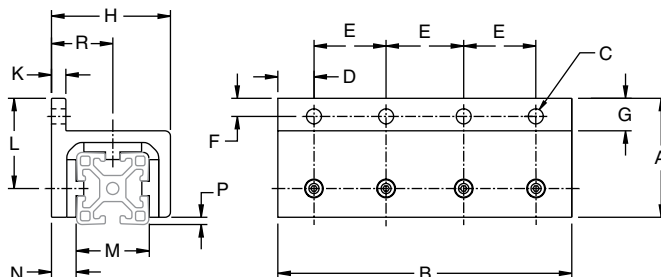
Side Flange



30-2821
30-1012



30-2828
30-1014



28 Series

Part #	A	B	C	D	E	F	G
30-2821	54	50	2xØ8.3	11	28	10	18
30-2828	54	100	4xØ8.3	8	28	10	18
Part #	H	K	L	M	N	P*	R
30-2821	49.5	8	41	28	11.9	1.2	26.3
30-2828	49.5	8	41	28	11.9	1.2	26.3

* Add 28mm [1.102"] when using 12-428 profile.

1" Series

Part #	A	B	C	D	E	F	G
30-1012	2.13"	2.00"	2xØ0.28"	0.50"	1.00"	0.375"	0.71"
30-1014	2.13"	4.00"	4xØ0.28"	0.50"	1.00"	0.375"	0.71"
Part #	H	K	L	M	N	P	R
30-1012	1.95"	0.31"	1.68"	1.03"	0.52"	0.06"	1.03"
30-1014	1.96"	0.31"	1.68"	1.03"	0.52"	0.06"	1.03"

Application

The slide block units offer low cost linear guidance. They utilize glide pads oriented within T-slots. You make your own guidance device, by providing the power – pneumatically, electromechanically or manually.

Shims are available to provide a more precise fit. See page 209 for optional clamping mechanism and page 210 for machining details.

Technical Data

Aluminum, Clear Anodized

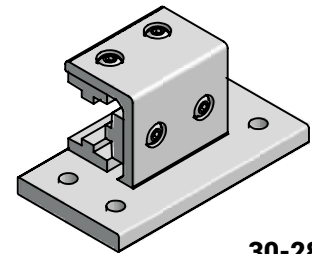
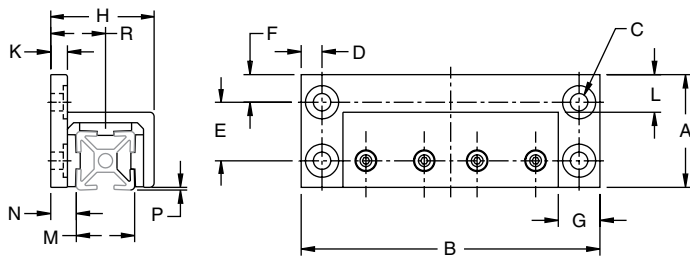
UHMW Glide Pads

Ordering Information

Description	Unit	Weight (g)	Part #
Slide Block 28, 50mm Long	Each	340	30-2821
Slide Block 28, 100mm Long	Each	390	30-2828
Slide Block 1", 2" Long	Each	140	30-1012
Slide Block 1", 4" Long	Each	250	30-1014

Slide Blocks

Side Flange Extended

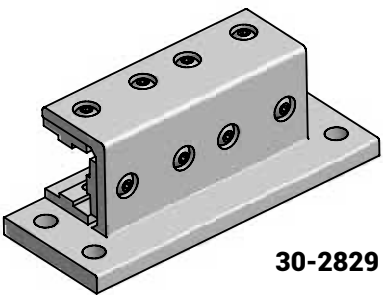


30-2822
30-1024

28 Series							
Part #	A	B	C	D	E	F	G
30-2822	54	90	4xØ8.3	10	28	13.2	20
30-2829	54	140	4xØ8.3	10	28	13.2	20
Part #	H	K	L	M	N	P*	R
30-2822	49.5	8	18	28	12	11.9	26.3
30-2829	49.5	8	18	28	12	11.9	26.3

* Add 28mm (1.102") when using 12-428 profile.

1" Series							
Part #	A	B	C	D	E	F	G
30-1024	2.13"	4.00"	4xØ0.28"	0.50"	1.00"	0.56"	1.00"
Part #	H	K	L	M	N	P	R
30-1024	1.95"	0.31"	0.71"	1.03"	0.52"	0.06"	1.03"



30-2829

Application

The slide block units offer low cost linear guidance. They utilize glide pads oriented within T-slots. You make your own guidance device, by providing the power – pneumatically, electromechanically or manually.

Shims are available to provide a more precise fit. See page 209 for optional clamping mechanism and page 210 for machining details.

Technical Data

Aluminum, Clear Anodized

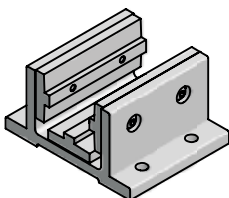
UHMW Glide Pads

Ordering Information

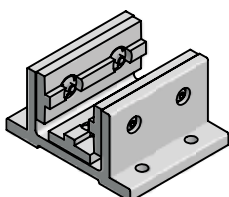
Description	Unit	Weight (g)	Part #
Slide Block 28, 90mm Long	Each	340	30-2822
Slide Block 28, 140mm Long	Each	720	30-2829
Slide Block 1" Extended, 4" Long	Each	260	30-1024

Linear

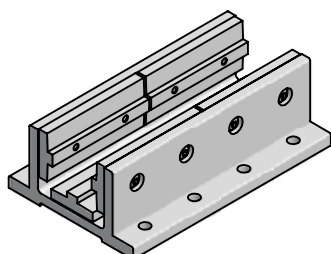
Double Flange



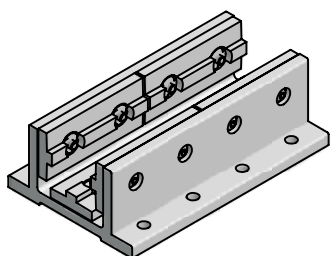
30-4001
30-1503



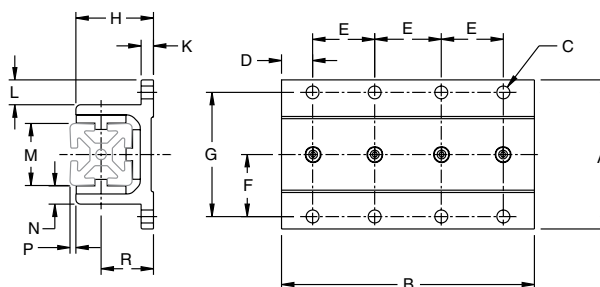
30-4001HC
30-1503HC



30-4008
30-1506



30-4008HC
30-1506HC



40 Series							
Part #	A	B	C	D	E	F	G
30-4001	96	80	4xØ8.3	20	40	40	80
30-4008	96	160	8xØ8.3	20	40	40	80
Part #	H	K	L	M	N	P*	R
30-4001	50	8	16	40	12	4	34
30-4008	50	8	16	40	12	4	34

* Add: 40mm (1.575") when using 10-080, 10-680 or 11-080 profile.
80mm (3.15") when using 10-120 profile.
120mm (4.72") when using 10-164 or 11-140 profile.

1.5" Series							
Part #	A	B	C	D	E	F	G
30-1503	3.78"	3.00"	4xØ0.28"	0.75"	1.50"	1.50"	3.00"
30-1506	3.78"	6.00"	8xØ0.28"	0.75"	1.50"	1.50"	3.00"
Part #	H	K	L	M	N	P	R
30-1503	1.97"	0.31"	0.63"	1.52"	0.50"	0.12"	1.34"
30-1506	1.97"	0.31"	0.63"	1.52"	0.50"	0.12"	1.34"

Application

The slide block units offer low cost linear guidance. They utilize glide pads oriented within T-slots. You make your own guidance device, by providing the power – pneumatically, electromechanically or manually. High cycle (HC) units utilize a steel threaded insert to mount the pad to the unit. These specially designed slide block units are used in high cycle applications.

Shims are available to provide a more precise fit. See page 209 for optional clamping mechanism and page 210 for machining details.

Technical Data

Aluminum, Clear Anodized
UHMW Glide Pads

Safe load:

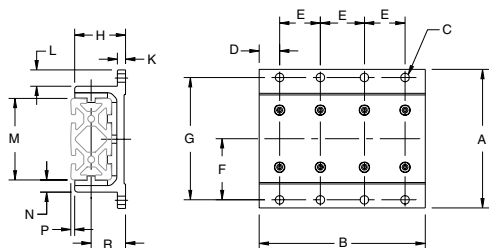
30-4001 or 30-1503 = 102 kg (225 lbs)
30-4008 or 30-1506 = 204 kg (450 lbs)

Ordering Information

Description	Unit	Weight (g)	Part #
Slide Block 40, 80mm Long	Each	310	30-4001
Slide Block 40, 160mm Long	Each	620	30-4008
Slide Block 40 HC, 80mm Long	Each	310	30-4001HC
Slide Block 40 HC, 160mm Long	Each	620	30-4008HC
Slide Block 1.5, 3" Long	Each	310	30-1503
Slide Block 1.5, 6" Long	Each	620	30-1506
Slide Block 1.5 HC, 3" Long	Each	310	30-1503HC
Slide Block 1.5 HC, 6" Long	Each	620	30-1506HC

Slide Blocks

Double Flange



Technical Data

Aluminum, Clear Anodized

UHMW Glide Pads

Safe load:

30-8001 or 30-3003 = 204 kg (450 lb)

30-8008 or 30-3006 = 408 kg (900 lb)

40 Series							
Part #	A	B	C	D	E	F	G
30-8001	136	80	4xØ8.3	20	40	60	120
30-8008	136	160	8xØ8.3	20	40	60	120
Part #	H	K	L	M	N	P*	R
30-8001	50	8	16	80	12	3.7	34
30-8008	50	8	16	80	12	3.7	34

* Add: 40mm (1.575") when using 10-088 or 11-088 profile.
120mm (4.72") when using 10-160 or 11-160 profile.

1.5" Series							
Part #	A	B	C	D	E	F	G
30-3003	5.35"	3.00"	4xØ0.34"	0.75"	1.50"	2.35"	4.69"
30-3006	5.35"	6.00"	8xØ0.34"	0.75"	1.50"	2.35"	4.69"
Part #	H	K	L	M	N	P	R
30-3003	1.97"	0.31"	0.63"	3.02"	0.54"	0.12"	1.34"
30-3006	1.93"	0.31"	0.63"	3.02"	0.54"	0.12"	1.34"

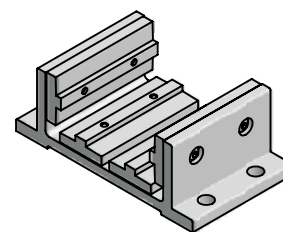
Application

The slide block units offer low cost linear guidance. They utilize glide pads oriented within T-slots. You make your own guidance device, by providing the power – pneumatically, electromechanically or manually. High cycle (HC) units utilize a steel threaded insert to mount the pad to the unit. These specially designed slide block units are used in high cycle applications.

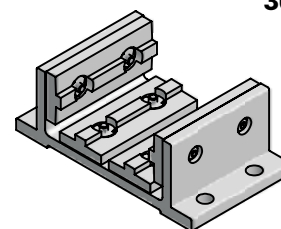
Shims are available to provide a more precise fit. See page 205 for optional clamping mechanism and page 210 for machining details.

Ordering Information

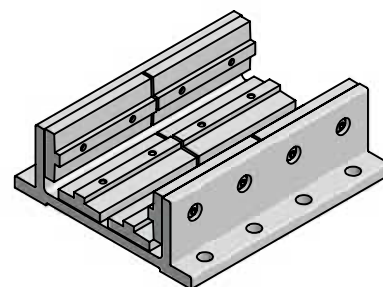
Description	Unit	Weight (g)	Part #
Slide Block 80, 80mm Long	Each	380	30-8001
Slide Block 80, 160mm Long	Each	760	30-8008
Slide Block 80 HC, 80mm Long	Each	380	30-8001HC
Slide Block 80 HC, 160mm Long	Each	760	30-8008HC
Slide Block 3, 3" Long	Each	380	30-3003
Slide Block 3, 6" Long	Each	760	30-3006
Slide Block 3 HC, 3" Long	Each	380	30-3003HC
Slide Block 3 HC, 6" Long	Each	760	30-3006HC



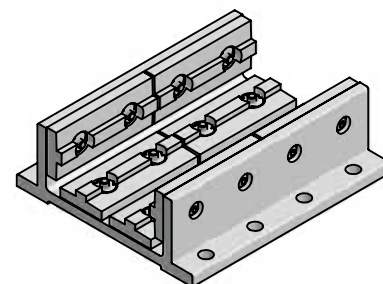
30-8001
30-3003



30-8001HC
30-3003HC



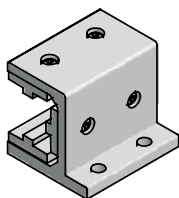
30-8008
30-3006



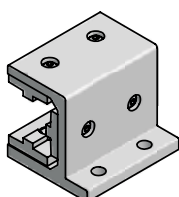
30-8008HC
30-3006HC

Linear

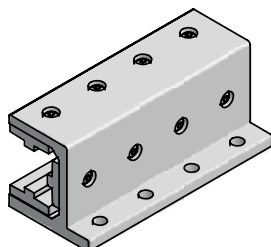
Side Flange



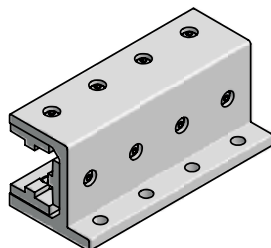
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30-1513



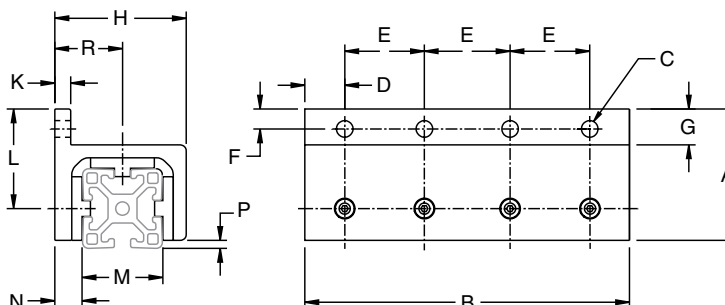
30-4021HC
30-1513HC



30-4028
30-1523



30-4028HC
30-1523HC



40 Series

Part #	A	B	C	D	E	F	G
30-4021	66	80	2xØ8.3	20	40	10	18
30-4028	66	160	4xØ8.3	20	40	10	18
Part #	H	K	L	M	N	P*	R
30-4021	66	8	50	40	14	4	34
30-4028	66	8	50	40	14	4	34

* Add: 40mm [1.575"] when using 10-080, 10-680 or 11-080 profile.
80mm [3.15"] when using 10-120 profile.
120mm [4.72"] when using 10-164 or 11-140 profile.

1.5" Series

Part #	A	B	C	D	E	F	G
30-1513	2.60"	3.00"	2xØ0.34"	0.75"	1.50"	0.38"	0.71"
30-1523	2.60"	6.00"	4xØ0.34"	0.75"	1.50"	0.38"	0.71"
Part #	H	K	L	M	N	P	R
30-1513	2.60"	0.31"	1.97"	1.61"	0.58"	0.12"	1.34"
30-1523	2.60"	0.31"	1.97"	1.61"	0.58"	0.12"	1.34"

Application

The slide block units offer low cost linear guidance. They utilize glide pads oriented within T-slots. You make your own guidance device, by providing the power – pneumatically, electromechanically or manually. High cycle (HC) units utilize a steel threaded insert to mount the pad to the unit. These specially designed slide block units are used in high cycle applications.

Shims are available to provide a more precise fit. See page 209 for optional clamping mechanism and page 210 for machining details.

Technical Data

Aluminum, Clear Anodized

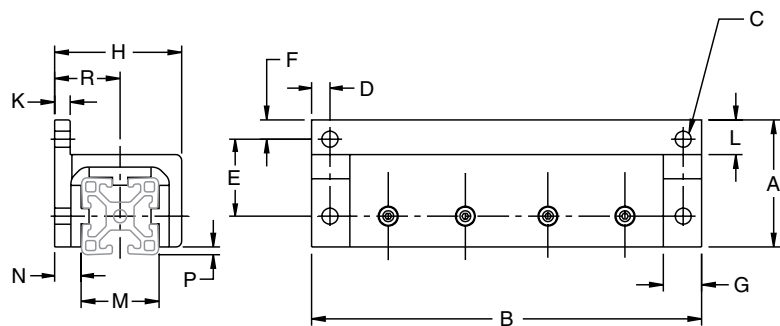
UHMW Glide Pads

Ordering Information

Description	Unit	Weight [g]	Part #
Slide Block 40, 80mm Long	Each	310	30-4021
Slide Block 40, 160mm Long	Each	420	30-4028
Slide Block 40 HC, 80mm Long	Each	310	30-4021HC
Slide Block 40 HC, 160mm Long	Each	420	30-4028HC
Slide Block 1.5, 3" Long	Each	310	30-1513
Slide Block 1.5, 6" Long	Each	620	30-1523
Slide Block 1.5 HC, 3" Long	Each	310	30-1513HC
Slide Block 1.5 HC, 6" Long	Each	620	30-1523HC

Slide Blocks

Side Flange Extended



40 Series							
Part #	A	B	C	D	E	F	G
30-4022	66	120	4xØ8.3	10	40	10	20
30-4029	66	200	4xØ8.3	10	40	10	20
Part #	H	K	L	M	N	P*	R
30-4022	66	8	18	40	14	4	34
30-4029	66	8	18	40	14	4	34

* Add: 40mm [1.575"] when using 10-080, 10-680 or 11-080 profile.
80mm [3.15"] when using 10-120 profile.
120mm [4.72"] when using 10-164 or 11-140 profile.

1.5" Series							
Part #	A	B	C	D	E	F	G
30-1516	2.60"	4.50"	4xØ0.34"	0.50"	1.50"	0.47"	0.75"
Part #	H	K	L	M	N	P*	R
30-1516	2.60"	0.31"	1.97"	1.50"	0.58"	0.12"	1.34"

Application

The slide block units offer low cost linear guidance. They utilize glide pads oriented within T-slots. You make your own guidance device, by providing the power – pneumatically, electromechanically or manually. High cycle (HC) units utilize a steel threaded insert to mount the pad to the unit. These specially designed slide block units are used in high cycle applications.

Shims are available to provide a more precise fit. See page 209 for optional clamping mechanism and page 210 for machining details.

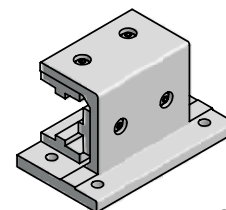
Technical Data

Aluminum, Clear Anodized

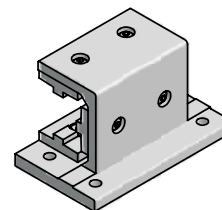
UHMW Glide Pads

Ordering Information

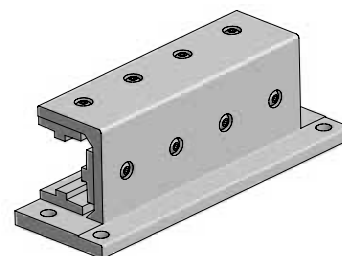
Description	Unit	Weight (g)	Part #
Slide Block 40, 120mm Long	Each	340	30-4022
Slide Block 40, 200mm Long	Each	720	30-4029
Slide Block 40 HC, 120mm Long	Each	340	30-4022HC
Slide Block 40 HC, 200mm Long	Each	720	30-4029HC
Slide Block 1.5, 4.5# Long	Each	370	30-1516
Slide Block 1.5 HC, 4.5# Long	Each	370	30-1516HC



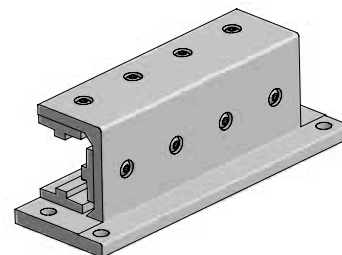
30-4022
30-1516



30-4022HC
30-1516HC



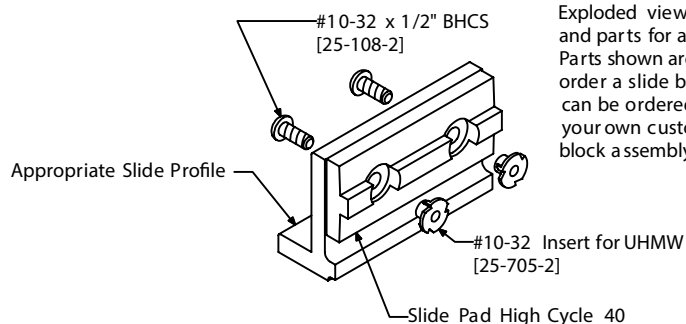
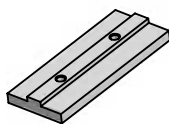
30-4029



30-4029HC

Linear

Slide Pads & Shims



Exploded view of the assembly and parts for a high cycle slide. Parts shown are included when you order a slide block assembly, but can be ordered separately to make your own custom high cycle side block assembly.

Application

Glide pads let you custom design a low friction guidance unit. Slide pad can also be attached to a profile to serve as a guide in sliding door applications.

Technical Data

Slide Pad: UHMW

Shim: PET (Polyethylene Terephthalate), 0.005" Thick

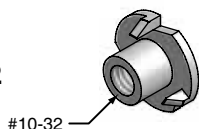
Ordering Information

Description	Unit	Weight [g]	Part #
Slide Pad 28 Series, 50mm*	Each	5	30-2800-2
Slide Pad 40 Series, 80mm*	Each	15	30-4000-2
Slide Pad 40 Series, 80mm High Cycle Each	4	30-4000-6	
Shim 80	Set		30-412Z2
Shim 160	Set		30-812Z2
Slide Pad, 1" x 2" *	Each	13	30-1000
Slide Pad, 1" x 2" Top*	Each	16	30-1001
Slide Pad, 1" x 2" Sides*	Each	16	30-2000
Slide Pad, 1.5" x 3" *	Each	36	30-1500
Slide Pad, 1.5" x 3" High Cycle	Each	33	30-1501
Slide Pad, 3"*	Each	41	30-3000
Slide Pad, 3" High Cycle	Each	38	30-3001

* Tapped

High Cycle Nut

25-705-2



#10-32



Application

Threaded insert nut used to create high cycle UHMW slide blocks.

Technical Data

Steel, Zinc Plated

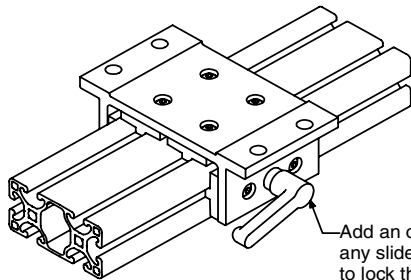
Accepts #10-32 screw.

Ordering Information

Description	Unit	Weight [g]	Part #
High Cycle Nut #10-32	Each	0.5	25-705-2

Slide Blocks

Clamp Accessories



Application

These clamp accessories provide positioning and adjustment for 40 Series slide units. Handles provide mechanism to lock the slide block in place anywhere on the extrusion.

Slide extrusions and pads can be drilled to accept clamp. See page 210.

Ordering Information

Series	Description	Weight (g)	Part Number
40/1.5"	Ratcheting L-Handle	56	30-0011
	Star Handle	39	30-0015
28	Ratcheting L-Handle	49	30-0001
	Star Handle	30	30-0005



30-0001



30-0005



30-0011



30-0015

Ratchet Lever

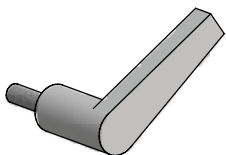
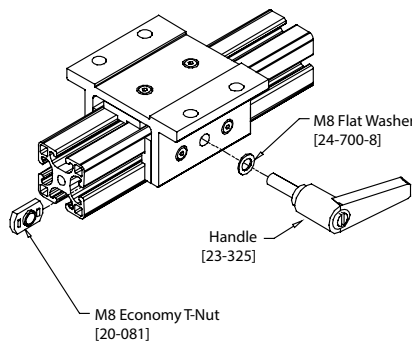
Application

For use on applications where a locking handle is desired, particularly on profile slide blocks. A 9mm hole is required to mount the ratchet lever.

Technical Data

Fiber Reinforced Techno-Polymer Plastic with Metal Insert.

Hardware varies with application.



23-325

Ordering Information

Description	Unit	Weight (g)	Part #
Ratchet Lever M8 x 16	Each	87	23-316
Ratchet Lever M8 x 20	Each	43	23-320
Ratchet Lever M8 x 25	Each	45	23-325
Ratchet Lever M8 x 40	Each	50	23-340
Ratchet Lever M8 x 50	Each	53	23-350
Ratchet Lever M8 x 63	Each	57	23-363

Clamp Machining

Slide blocks may be pre-drilled for mounting of the clamp. If drilling is desired, specify the machining service number and give the location of the hole(s) to be drilled according to the drawings below.

Ordering Information

Profiles	Hole Size	Machining Service No.
28, 40, 1.5"	Ø9	19-140

Ordering Examples:

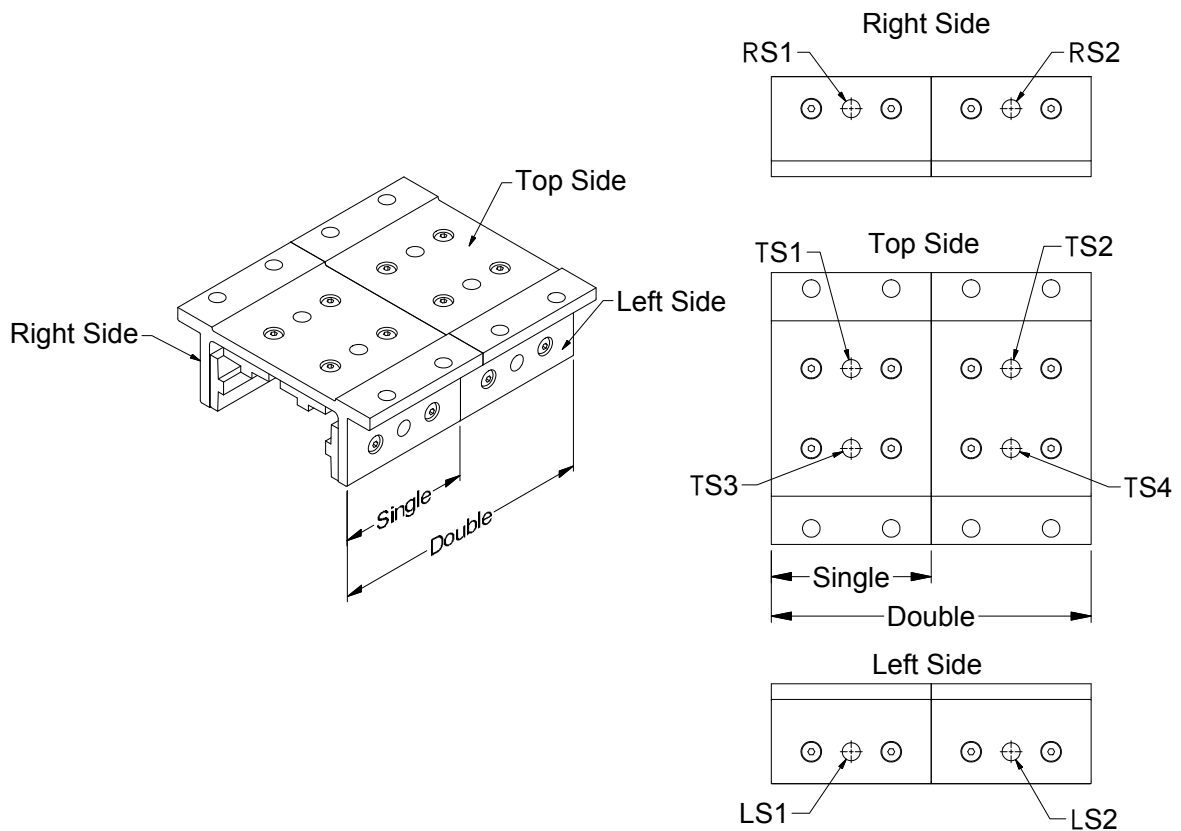
Multiple clamps may be mounted on a slide block. Each clamp requires a hole to be drilled. Note the description and the number of holes is added to the slide block part number.

Guide drilled for two clamps, one on the right and one on the left:

30-4008 w/19-140 @ RS1 and LS1

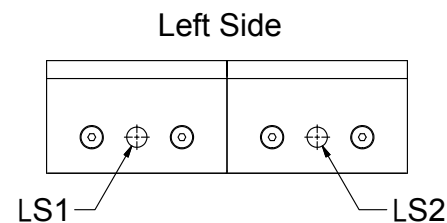
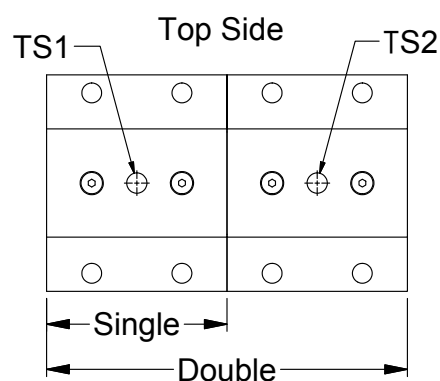
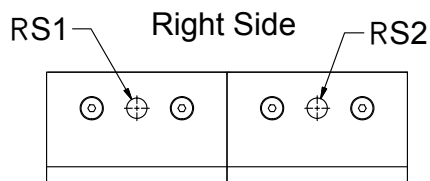
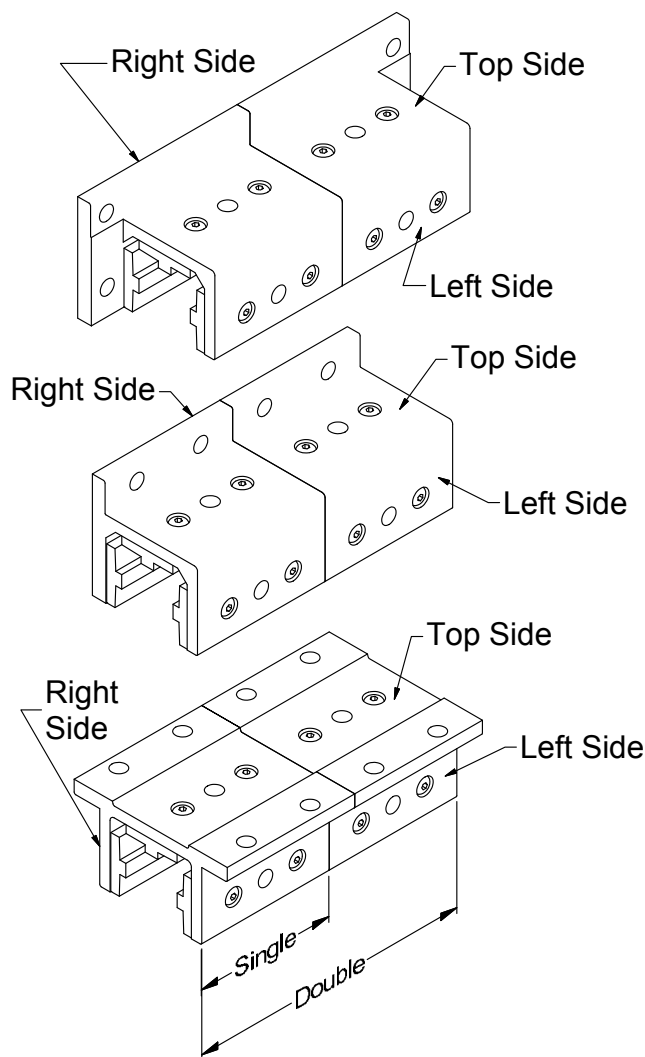
Guide drilled for one clamp on the top:

30-8008 w/19-140 @ TS1

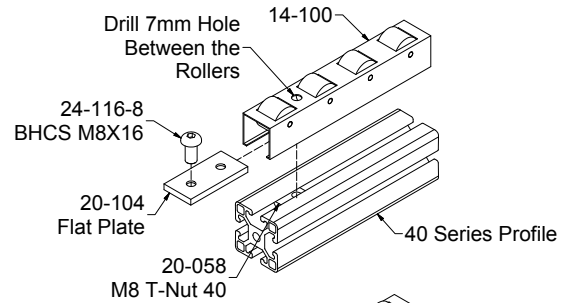


Slide Blocks

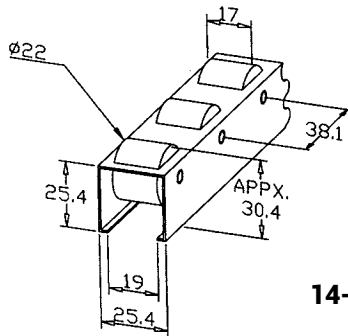
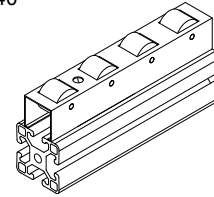
Clamp Machining



Roller Track



Slide the Flat Plate (20-104) with the 24-116-8 (BHCS M8X16) and 20-058 (M8 T-Nut 40) into the bottom of the 14-100. Use the 7mm hole drilled into the 14-100 to tighten the 24-116-8.



14-100

Application

Economical track for flow rack system. Usually use two tracks per runway but three of four may be used with heavy or wide loads. Can be attached to 40, 30 or 28 Series profiles.

Technical Data

Channel: Rolled Steel, Galvanized (0.028")

Roller: PE, White

Load: 2.3 kg (5 lbs) per roller

Weight: 0.47 kg/m

Ordering Information

Description

Roller Track

Cut to Length Service Number

Max. Length

3 meter

Part

14-100

19-007

Linear Roller Systems

The LR Series Linear Roller System

Linear Roller Series products provide a high level of accuracy, load-bearing strength, and flexibility in a modular, low-cost package. These products use standard components and can adapt to a wide range of applications.

The foundation of the LR product line is in the 40 Series of structural profiles that offer numerous mounting configurations. Profiles allowing maximum unsupported spans can be selected, saving valuable space and reducing overall system costs. Standard lengths of 6 meters and the ability to splice multiple selections allow configuration of nearly infinite stroke.

LR roller bearings are made of 100 Cr6 ground and hardened steel and provide low friction, long life, high speed, and heavy load capabilities. Bearing units are available as single and double roller types. Custom carriage configurations using multiple bearing units can be set up to meet off-the-shelf lead times.

The modular design allows for easy assembly, fast engineering, and a flexible platform capable of meeting even the most demanding application.

- Carriage Loads up to 753 lbs
- Custom Carriage Options
- Stroke Lengths over 6 Meters

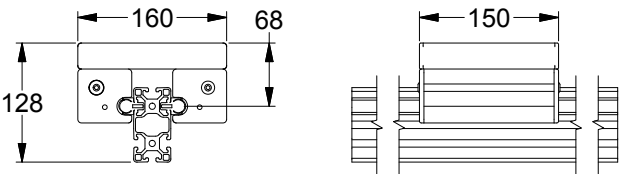
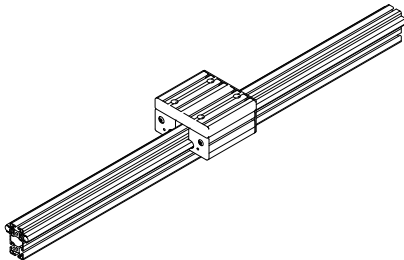
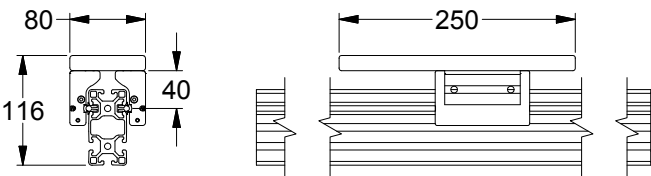
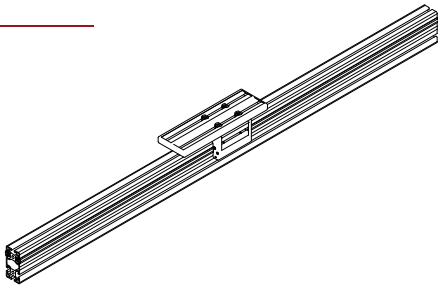
Market applications:

- Material Handling
- Gantry Systems
- Visual Inspection
- Assembly and Transfer Lines

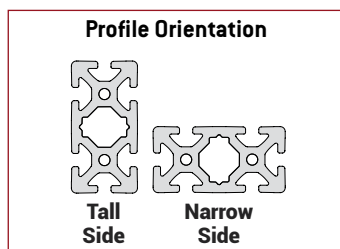
Performance Overview

	LR 6	LR14	LR14HD
Maximum carriage load - kg (lbs)	66 (146)	272 (600)	341 (753)
Maximum travel without splice - mm*	5900	5850	5840
Minimum travel - mm	300	250	240

*Consult factory for long travel lengths



Order Example



		LR	B	5	2	S0150	M	2000
System Size								
LR 6	A							
LR 14.....	B							
LR 14HD	C							
Extrusion Selection*								
40x80 Standard.....	3							
40x80 Heavy	4							
80x80 Standard.....	5							
80x80 Heavy	6							
80x80 Super Heavy.....	7							
80x160 Standard	8							
80x160 Heavy	9							
80x120 Heavy	0							
Profile Orientation								
Tall Side (see example figures).....	1							
Narrow Side (see example figures)	2							
Bearing Configuration								
Double Bearing (xxx is standard carriage length).....	Dxxx							
Single Bearing (see page 200 for min.) (enter total carriage length in mm)	Sxxx							
Type								
Manual.....	M							
Travel								
Travel Length (mm)	xxxx							

* All profiles do not fit with all system sizes.
Contact factory for application assistance.

Linear Roller Systems

Loading Capacity

Static Moment Loads

Determine which moment loads are induced by the static load. Locate the center of gravity of the load and the length of the moment arm.

Moment Arm Lengths

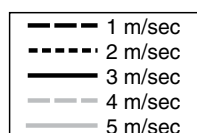
Determine the moment arm lengths associated with each moment load by measuring the distance from the center of the load to the center of the carriage in each moment load direction.

Pitch Moment

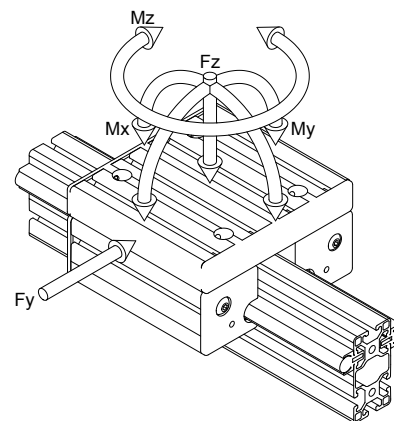
When determining the pitch moment arm, it is necessary to consider the distance from the top of the load attachment plate to the center of the carriage bearings.

Operating Condition	Load Factor
Steady Load	1
Fluctuating Load	—
Low	1.4
Average	1.7
High	2

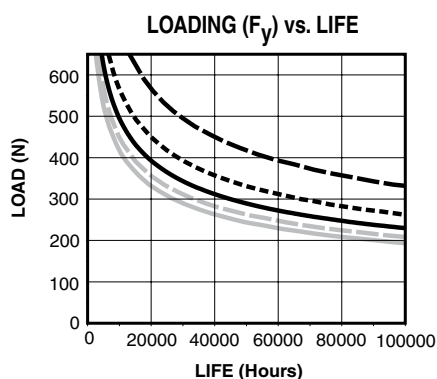
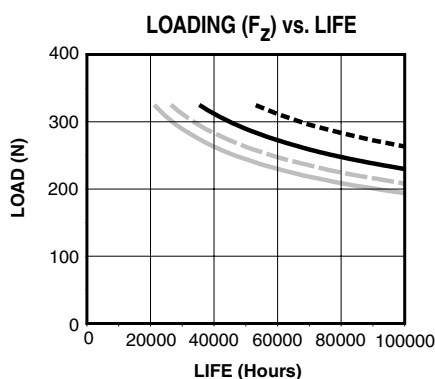
$$\text{Load Capacity} = \text{Load} * \text{Load Factor}$$



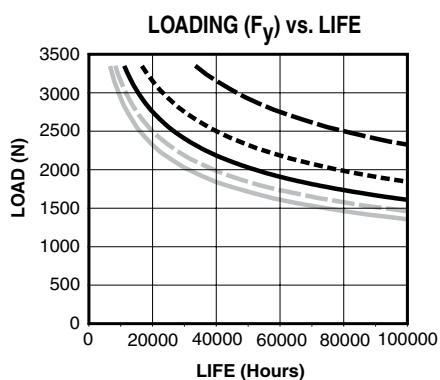
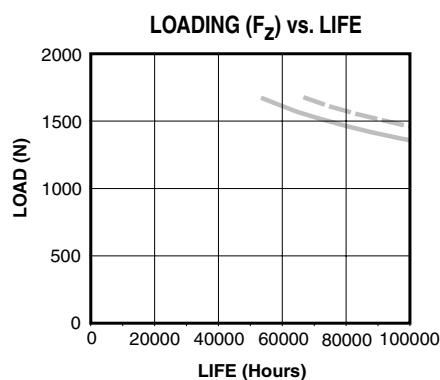
Key for charts on pages 213 and 214



LR6 Series

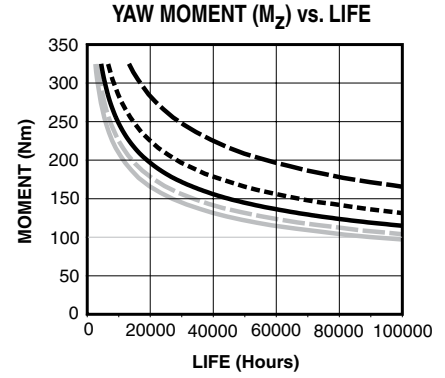
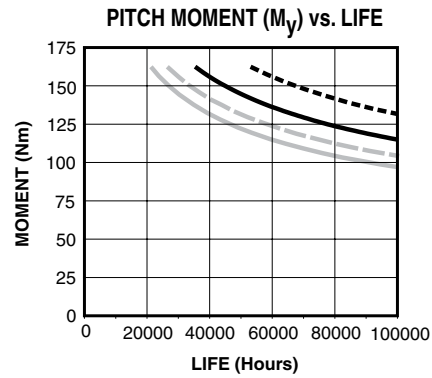
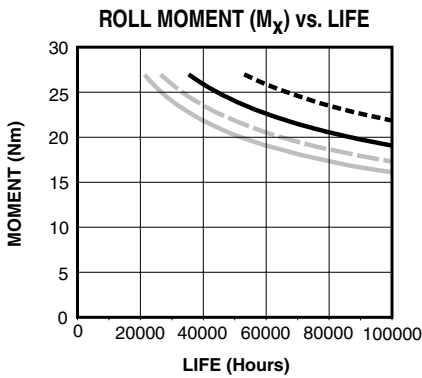


LR14/14HD Series

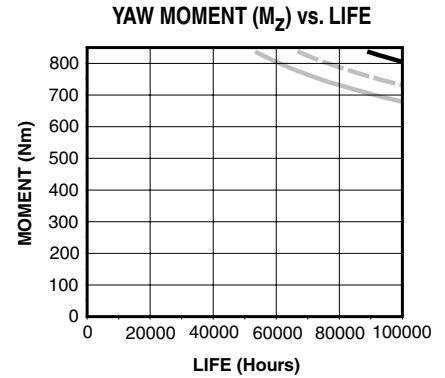
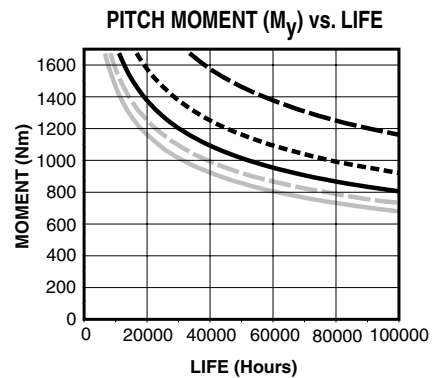
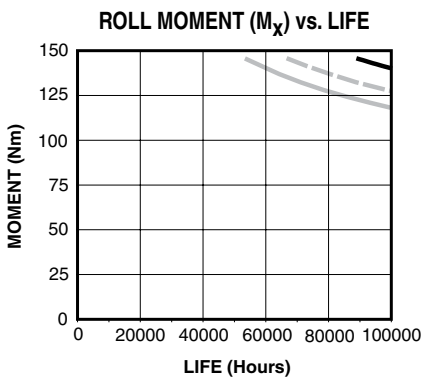


Loading Capacity

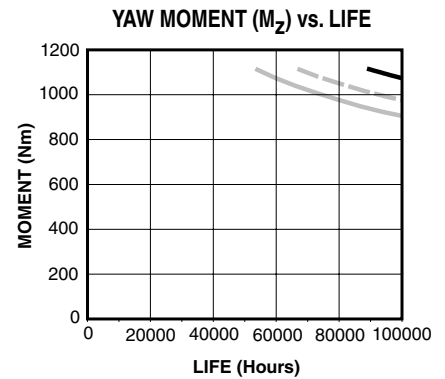
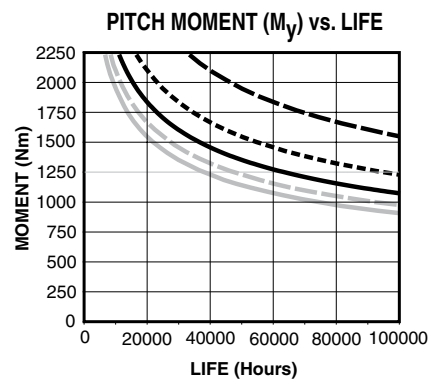
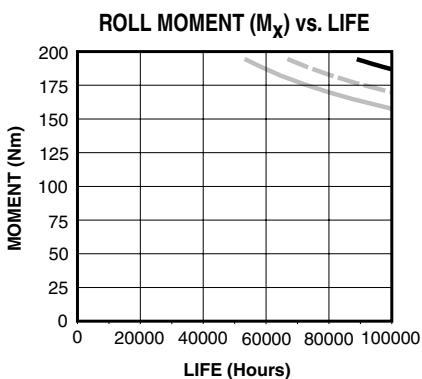
LR6 Series



LR14 Series



LR14HD Series



Linear Roller Systems

Carriage Information

Series	Carriage	Width A	Length B	Thickness C	T-Slot D	Weight (g)
LR6*	Single	80	300**	16	39	Variable
	Double	80	242	16	39	80
LR14*	Single	160	140**	28	40	Variable
	Double	160	141.6	28	40	3240
LR14HD*	Single	159.5	160**	28	40	Variable

* Based on 40 mm Profile Width for LR6, LR14, and LR14HD

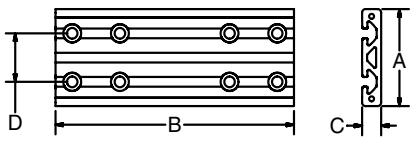
** Minimum length

Carriage Mounting Detail

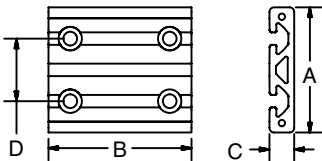
LR Series systems offer unmatched carriage flexibility. Available in fixed length double bearing units or adjustable length single bearing units, the carriage can be tailored to meet specific load requirements.

LR6 Series

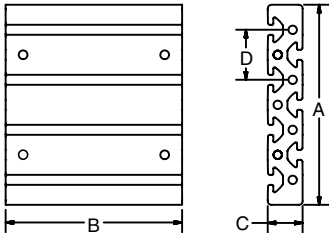
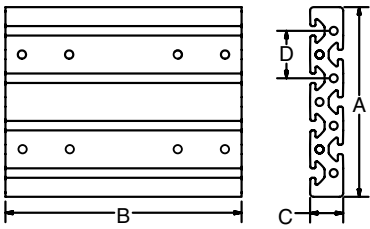
Single Bearing Carriage



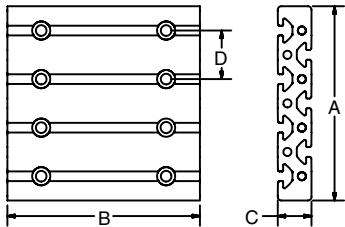
Double Bearing Carriage



LR14 Series



LR14HD Series



Consult Factory

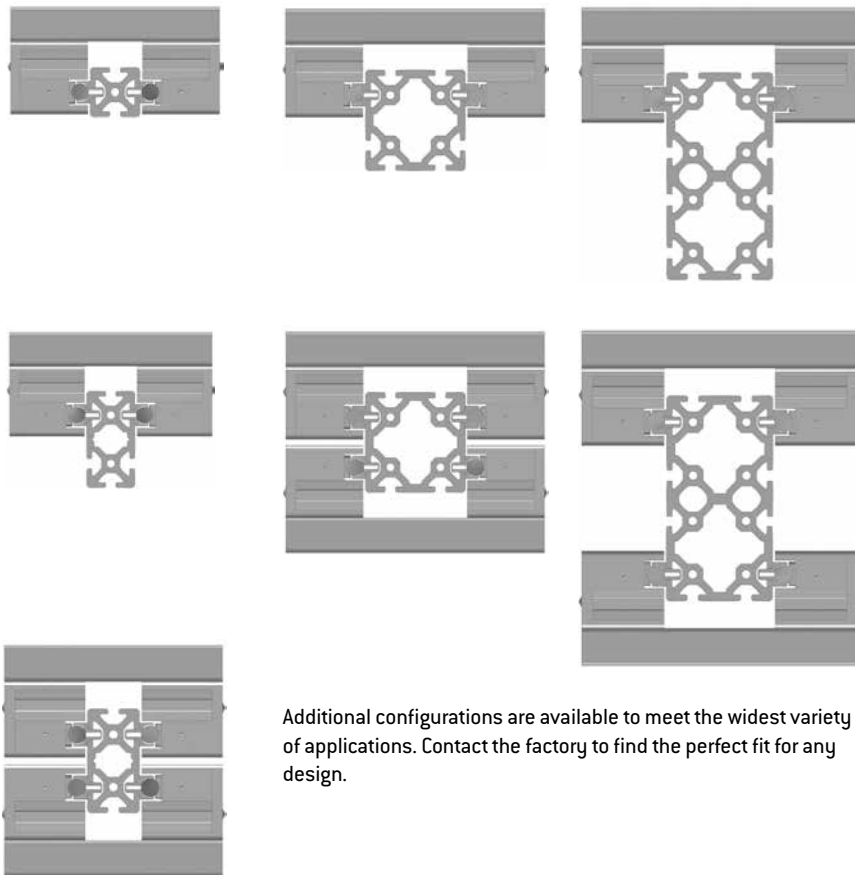
Carriage Information

Carriage Orientation

A variety of carriage orientations are available due to the LR Series' modular design.

Options include multiple linked and multiple independent carriages on a single system and custom carriage lengths.

Selecting the proper profile for load support, and configuring the carriage to suit the specific load and application provides the benefits of a custom product without the additional costs and lead times.



Additional configurations are available to meet the widest variety of applications. Contact the factory to find the perfect fit for any design.

Inertia Values

Linear Inertia (oz-in²) vs Stroke (mm)

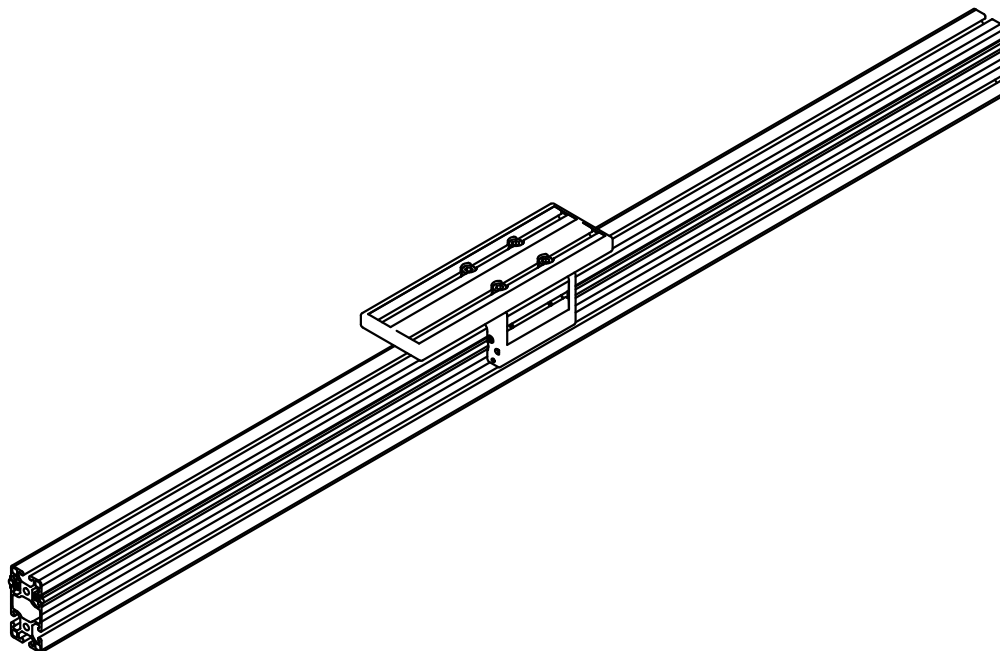
Series	100	200	300	500	750	1000	1500	3000	4000	6000
6	25.87	26.12	26.38	26.89	27.53	28.17	29.45	33.29	35.85	40.96
14	63.95	64.20	64.46	64.97	65.61	66.25	67.53	71.37	73.93	79.04
14HD	73.09	73.35	73.60	74.12	74.76	75.40	76.68	80.51	83.07	88.19

Linear Inertia (kg-cm²) vs Stroke (mm)

Series	100	200	300	500	750	1000	1500	3000	4000	6000
6	4.73	4.78	4.82	4.92	5.04	5.15	5.39	6.09	6.56	7.49
14	11.70	11.74	11.79	11.88	12.00	12.12	12.35	13.05	13.52	14.46
14HD	13.37	13.42	13.46	13.56	13.67	13.79	14.02	14.73	15.19	16.13

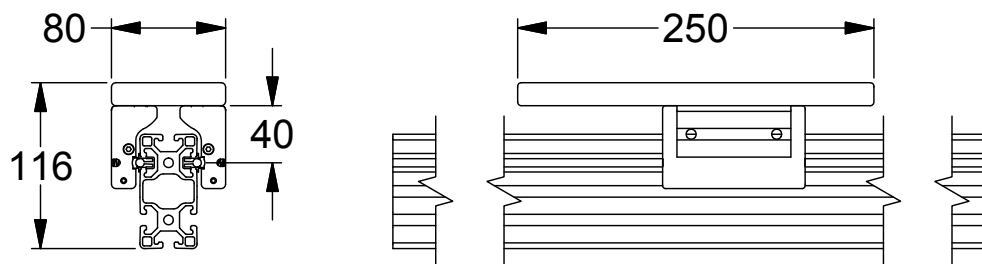
Linear Roller Systems

Roller System 6



Note:

Configuration shown: Double bearing carriage (30-402 and 30-404) on 40x80 extrusion (10-080) with 16x80 extrusion (10-081) for the carriage plate.



Roller System 6

Application

Components for constructing Roller System 6 for light duty applications

Technical Data

Linear Shaft: Cf53 high grade carbon steel (AISI 1050)

Precision ground to ISO h6 tolerance μm $\begin{matrix} +0 \\ -8 \end{matrix}$

Roundness: 4 μm

Parallelism: 5 $\mu\text{m}/1000\text{mm}$

Surface quality: Ra 0.3 μm (Rz 1.6 μm)

Hardness depth: minimum 0.4 mm

Surface hardness: 670 to 840 HV (RC 59 to 65)

Shaft clamp: Aluminum, Anodized

Bearing Units: Aluminum Anodized Housing, Roller 6 (30-008), Bolt 6 Centric (30-006) or Eccentric (30-007), and M6x8 cone point set screw

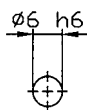
Preload range for eccentric bearing units ± 0.45 mm

End Cap/ Lubricating System (set of left and right):

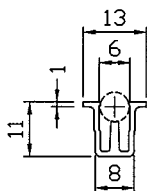
Glass-Filled Nylon, Black; includes felt, spring and M4x10 SHCS

Ordering Information

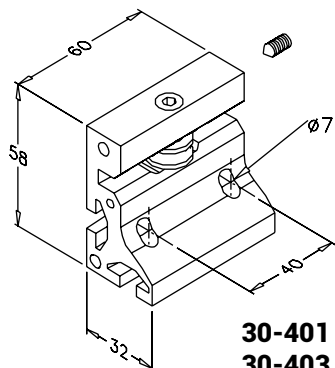
Description	Unit	Weight (g)	Part #
Linear Shaft 6, Hard Chrome Coated	6 meters	0.22 kg/m	13-505
Cut to Length Service Number			19-007
Shaft Clamp 6	3 meters	0.12 kg/m	13-106
Cut to Length Service Number			19-001
Single Bearing Unit 6, Centric	Each	180	30-401
Single Bearing Unit 6, Eccentric	Each	180	30-403
Double Bearing Unit 6, Centric	Each	220	30-402
Double Bearing Unit 6, Eccentric	Each	220	30-404
End Cap/ Lubricating System 6	Set	20	30-407
Replacement Felt 6	Each	0.1	30-407Z5



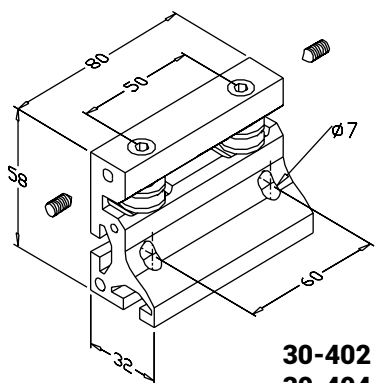
13-505



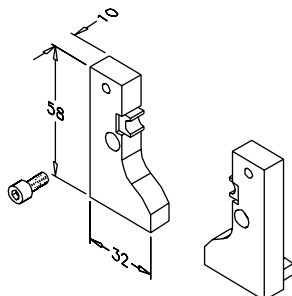
13-106



30-401
30-403



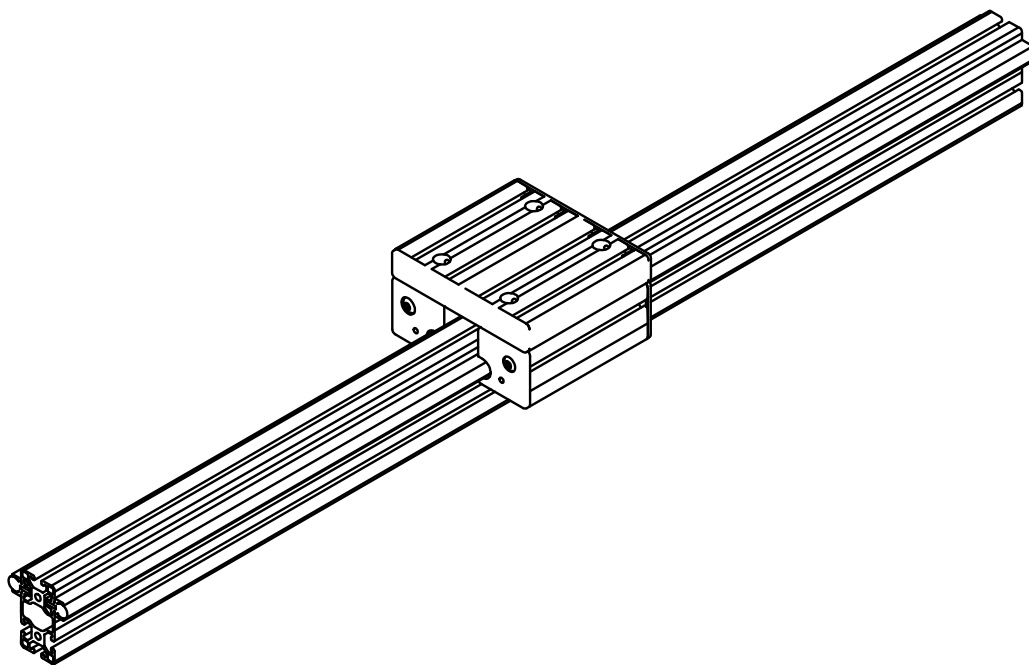
30-402
30-404



30-407

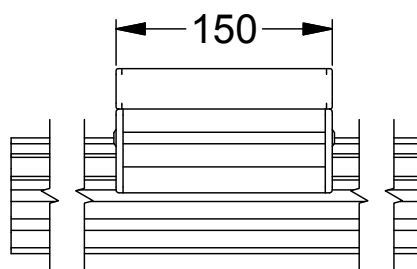
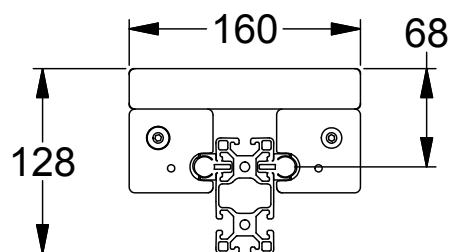
Linear Roller Systems

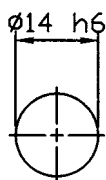
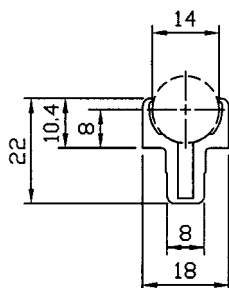
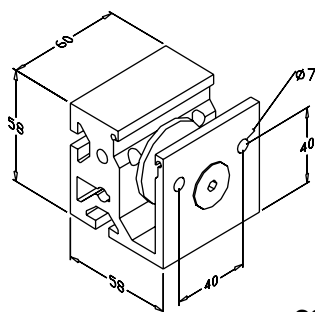
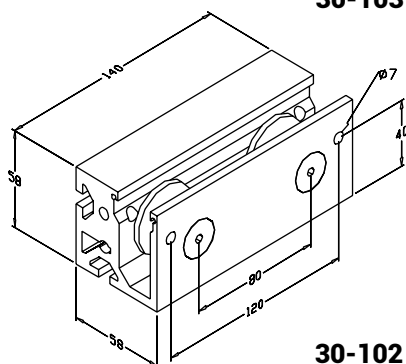
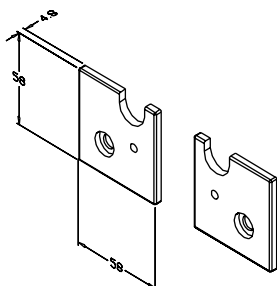
Roller System 14



Note:

Configuration shown: Double bearing carriage (30-102 and 30-104) on 40x80 extrusion (10-080) with 28x160 extrusion (11-128) for the carriage plate.




13-513

13-114

**30-101
30-103**

**30-102
30-104**

30-107

Roller System 14

Application

Components for constructing Roller System 14 for medium duty applications

Technical Data

Linear Shaft: Cf53 high grade carbon steel (AISI 1050)

Precision ground to ISO h6 tolerance μm $\begin{matrix} +0 \\ -11 \end{matrix}$

Roundness: 5 μm

Parallelism: 8 $\mu\text{m}/1000\text{mm}$

Surface quality: Ra 0.3 μm (Rz 1.6 μm)

Hardness depth: minimum 0.6 mm

Surface hardness: 670 to 840 HV (RC 59 to 65)

Shaft Clamp: Aluminum, Anodized

Bearing Units:

Aluminum, Anodized Housing, Roller 14 (30-108),

Bolt 14 Centric (30-105) or Eccentric (30-106), and spacer (30-108z1)

Preload range for eccentric bearing units ± 1.0 mm

End Cap/ Lubricating System (set of left and right):

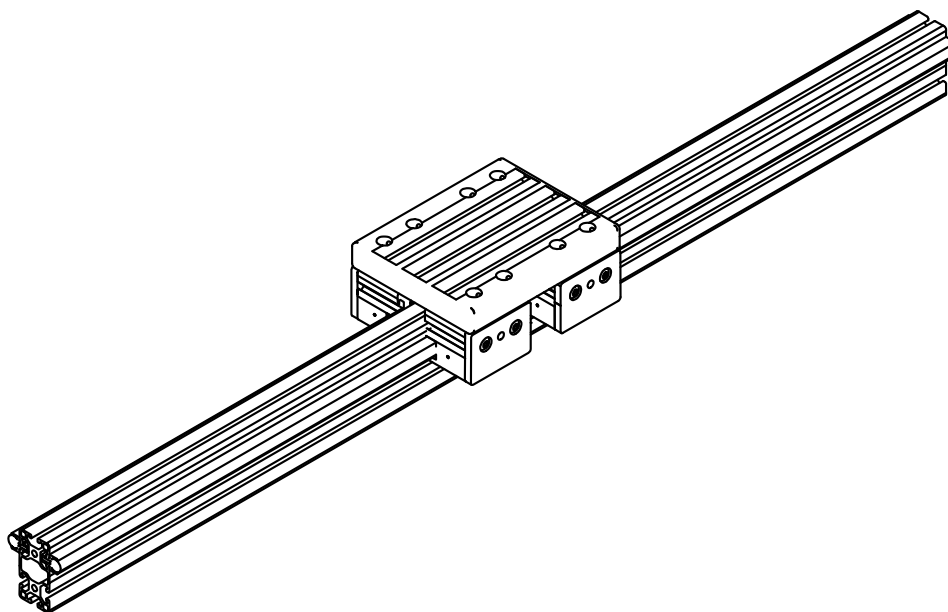
Glass-Filled Nylon, Black; includes felt, spring, M8x10 BHCS

Ordering Information

Description	Unit	Weight (g)	Part #
Linear Shaft 14, (Hard chrome coated)	6 meters	1.21 kg/m	13-513
Cut to Length Service Number			19-007
Shaft Clamp 14	3 meters	0.26 kg/m	13-114
Cut to Length Service Number			19-001
Single Bearing Unit 14, Centric	Each	400	30-101
Single Bearing Unit 14, Eccentric	Each	400	30-103
Double Bearing Unit 14, Centric	Each	880	30-102
Double Bearing Unit 14, Eccentric	Each	880	30-104
End Cap/ Lubricating System 14	Set	50	30-107
Replacement Felt 14	Each	0.2	30-107Z1

Linear Roller Systems

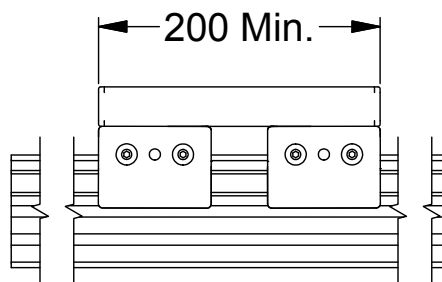
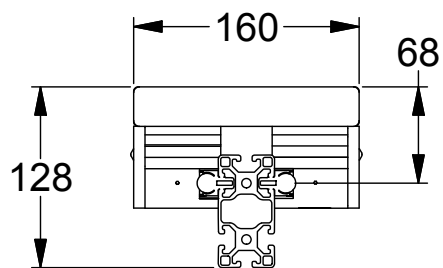
Roller System 14 HD

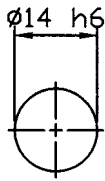


Note:

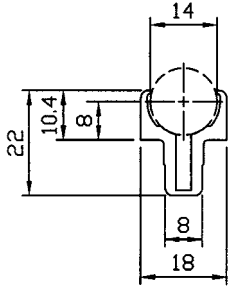
Configuration shown: Single bearing carriage (30-111 and 30-113) on 40x80 extrusion (10-080) with 28x160 extrusion (11-128) for the carriage plate.

The LR14HD only has single bearing blocks. The minimum length of the carriage is 200mm, but it can be made longer.

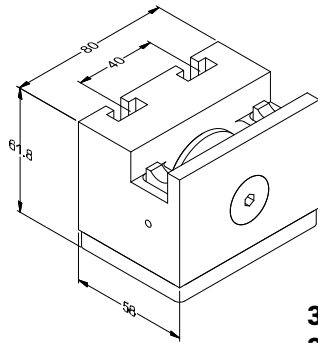




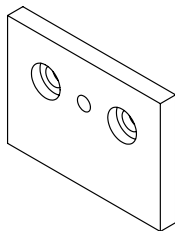
13-513



13-114



**30-111
30-113**



30-503Z6-1

Roller System 14 HD

Application

Components for constructing Roller System 14 HD for medium and heavy duty applications

Technical Data

Linear Shaft: Cf53 high grade carbon steel (AISI 1050)

Precision ground to ISO h6 tolerance μm $\begin{matrix} +0 \\ -11 \end{matrix}$

Roundness: 5 μm

Parallelism: 8 $\mu\text{m}/1000\text{mm}$

Surface quality: Ra 0.3 μm (Rz 1.6 μm)

Hardness depth: minimum 0.6 mm

Surface hardness: 670 to 840 HV (RC 59 to 65)

Shaft Clamp: Aluminum, Anodized

Bearing Units:

Aluminum, Anodized Housing, Roller 14 (30-108),

Bolt 14 Centric (30-105) or Eccentric (30-106),

one spacer per roller (30-114z3), M8x12 nylon tipped set screw (24-689) for eccentric only, End

Cap/ Lubricating System

Preload range for eccentric bearing units ± 1.0 mm

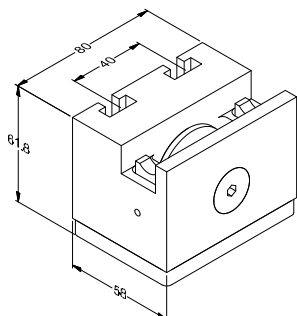
End Cap/ Lubricating System: Trespa Cap with Pin, Felt, Spring, M8x10 BHCS, M4x10 Set Screw, and Access Plug

Ordering Information

Description	Unit	Weight (g)	Part #
Linear Shaft 14, Hard Chrome Coated	6 meters	1.21 kg/m	13-513
Cut to Length Service Number			19-007
Shaft Clamp 14	3 meters	0.25 kg/m	13-114
Cut to Length Service Number			19-001
Single Bearing Unit 14 HD, Centric	Each	580	30-111
Single Bearing Unit 14 HD, Eccentric	Each	580	30-113
End Cap, LR14 HD, Single	Each	52	30-503Z6-1
Replacement Felt 14HD	Each	2	30-114Z5

Linear Roller Systems

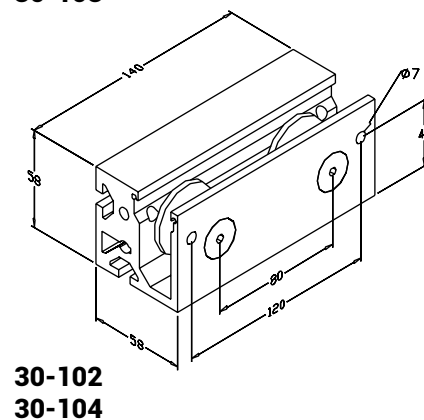
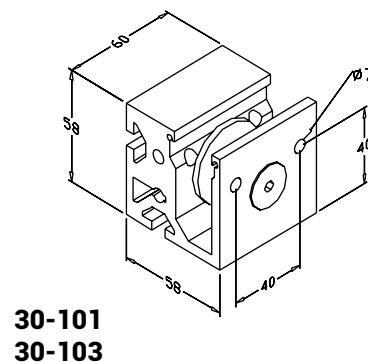
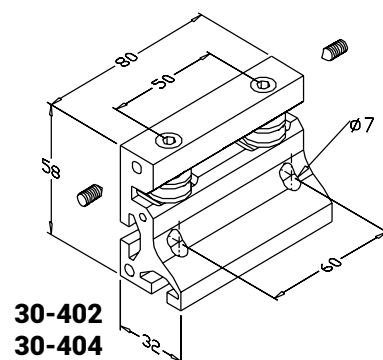
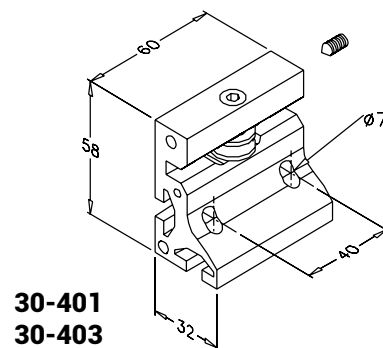
Bearing Unit



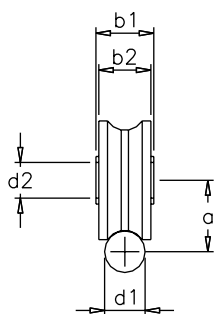
30-111
30-113

Ordering Information

Description	Unit	Weight (g)	Part #
Bearing Unit, Double 6, Centric	Each	220	30-402
Bearing Unit, Double 6, Eccentric	Each	220	30-404
Bearing Unit, Single 6, Centric	Each	180	30-401
Bearing Unit, Single 6, Eccentric	Each	180	30-403
Bearing Unit, Double 14, Centric	Each	880	30-102
Bearing Unit, Double 14, Eccentric	Each	880	30-104
Bearing Unit, Single 14, Centric	Each	400	30-101
Bearing Unit, Single 14, Eccentric	Each	400	30-103
Bearing Unit, Single 14HD, Centric	Each	580	30-111
Bearing Unit, Single 14HD, Eccentric	Each	580	30-113



Linear



Components for Bearing Units

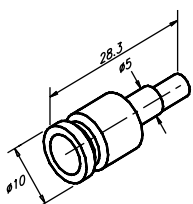
Technical Data

Steel, 100 Cr6, ground and hardened, double ball bearing with two shields, maintenance free

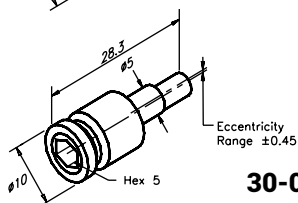
Ordering Information

Dimensions					Weight (g)	Part #
Shaft Dia	d2	a	b1	b2		
6	5	10.5	8	7	7	30-008
14	12	24	20	18	88	30-108

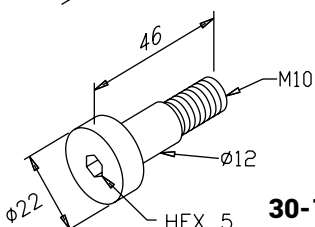
Bolts



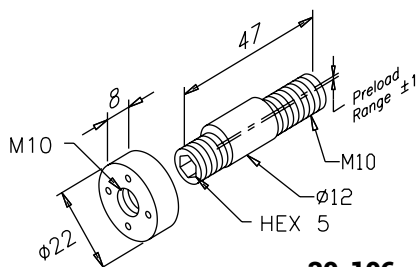
30-006



30-007

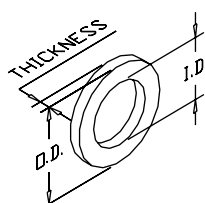


30-105



30-106

Spacers



Technical Data

Steel, Black Oxide

Ordering Information

Type	Eccentricity	Used in Bearing Units	Weight (g)	Part #
6-Centric	N/A	30-401, 30-402	6	30-006
6-Eccentric	0.45	30-403, 30-404	6	30-007
14-Centric	N/A	30-101, 30-102, 30-111	48	30-105
14-Eccentric	1.0	30-103, 30-104, 30-113	46	30-106

Technical Data

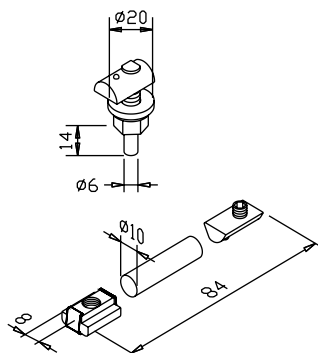
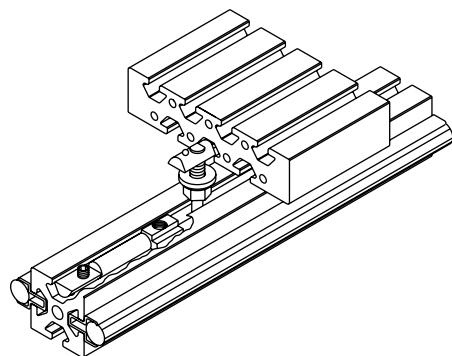
Steel, Black Oxide

Ordering Information

Dimensions			Used in Bearing Units	Qty Required per Roller	Part #
I.D.	O.D.	Thickness			
12	18	1.0	30-101, 30-102, 30-103, 30-104	1	30-108Z1
10.2	19	1.1	30-111, 30-112	1	30-114Z3

Linear Roller Systems

Limit Stop



31-037

Application

To define mechanically the limits of travel. The rubber shock absorber provides for a cushioned end stop.

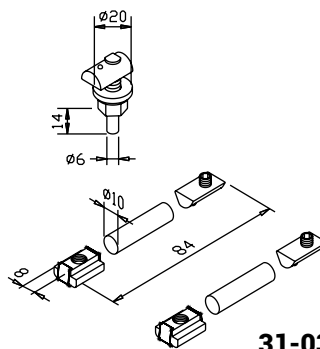
Technical Data

31-037:

M8 T-slot nut HD w/retainer spring, M8x8 cup point set screw, rubber shock absorber, two M8 T-slot nuts, M8x44 set screw, M8 washer, M8 flange nut

31-038:

Two M8 T-slot nuts HD w/retainer spring, two M8x8 cup point set screws, two rubber shock absorbers, three M8 T-slot nuts, M8x44 set screw, M8 washer, M8 flange nut



31-038

Ordering Information

Description	Unit	Weight (g)	Part #
Limit Stop - One Direction	Set	65	31-037
Limit Stop Bi-Directional	Set	93	31-038
Rubber Shock Absorber (40mm Long)	Each		31-037Z3A

Shafts & Clamp

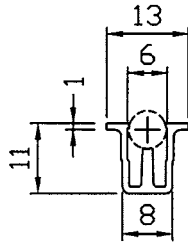
Technical Data

Linear shaft: Cf53 high-grade carbon steel (A151 1050)

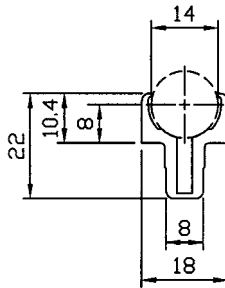
Shaft clamp: Aluminum, clear anodized

Ordering Information

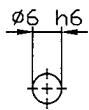
Description	Unit	Weight (g)	Part #
Shaft Clamp Profile 6	6 meters	120	13-106
Shaft Clamp Profile 14	6 meters	260	13-114
Cut To Length Service Number	Each	19-001	
Linear Shaft 6	3 meters	220	13-505
Linear Shaft 14	3 meters	1210	13-513
Cut To Length Service Number	Each	19-007	



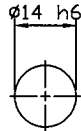
13-106



13-114



13-505



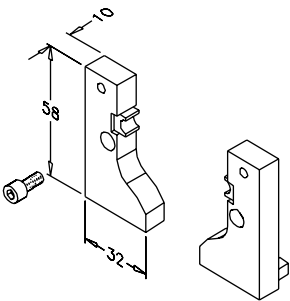
13-513

Linear Roller Systems

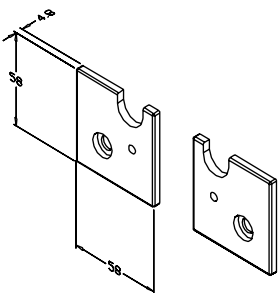
End Caps

Ordering Information

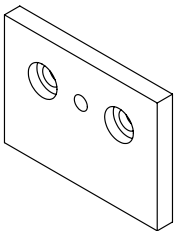
Description		Unit	Weight (g)	Part #
End Cap, Lubricating System 6	Set	20	30-407	
End Cap, Lubricating System 14	Set	50	30-107	
End Cap, 14 HD		Each	52	30-503Z6
Replacement Felt Insert 6		Each	0.1	30-407Z5
Replacement Felt Insert 14		Each	0.2	30-107Z1
Replacement Felt Insert 14HD		Each	2	30-114Z5



30-407



30-107



30-503Z6

Section 9 - Lean, Services, Tips, & Tools

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