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**Patented Linear Bearings and Brakes for our structural T-Slotted Aluminum Extrusions!**



**UniBearing™  
System**

**15 SERIES  
Standard  
Bearings**



**10 SERIES  
Standard  
Bearings**



**HIGH CYCLE  
HIGH CYCLE  
Linear Bearings!**

See Page 308  
For Details!!

**80/20 Inc.**

*The Industrial Erector Set®*

**ORDERING EXAMPLE FOR:**

**LINEAR MOTION**

**Fractional**

Part Number	Quantity	Length (inches)	Machining/Description
6824	2		w/ 7400 in LQ
6715	1		w/ 7401 in LA
6871	2		15 SERIES Short Single Assembly on 1530 x 2.82"
6800	1		15 SERIES Ratcheting L-Handle Brake Kit
6852	1		10 SERIES Wing Nut Brake Kit

*\*See page 18 for a complete order example.*

Listed above are different assemblies of linear motion components, which can be used in many applications. It is important when selecting a bearing to verify your application needs, and look closely at what each type of bearing has to offer. With three types of bearings and multiple options in each, you need to consider the extrusion you are mounting to, the amount of mounting surface required on the bearing, and whether the bearing needs to be removed easily or locked in place.

If you would like a custom bearing, select from the bearing housing profiles (see page 315). Just provide a sketch with specific information such as overall length, mounting hole diameter and location, and any other additional machining. Also, select from the bearing pad profiles (see pages 316-318) to complete your custom bearing.

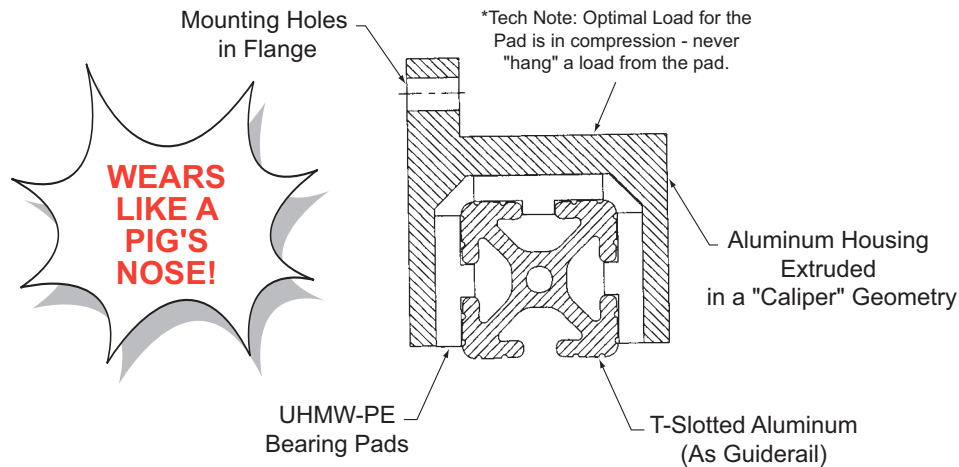
***When ordering linear motion components, consider the following:***

- If you require hardware to mount your application to the bearing, select hardware from Section 3, Fasteners.
- Make sure to order a brake hole on those bearings which need to be lockable. Include the brake hole machining service in the machining service section of your order. (See page 323.)
- Brake kits are available in 10 and 15 SERIES.
- UniBearings have pre-drilled mounting holes and brake holes.

**9**

## Introduction to Section 9: Linear Motion

### The Concept of the Bearing and Guiderail System Patent #5,429,438



\*UHMW-PE stands for Ultra High Molecular Weight Polyethylene. UHMW-PE is an easily machined, self-lubricating plastic with a low coefficient of friction. For more technical information on UHMW-PE see pages 319-321.

## 80/20 Linear Motion Advantages

- *Cost effective alternative to traditional bearings.*
- *Designed to mate and glide on our family of T-slotted aluminum extrusion profiles.*
- *Our bearings are great for unique applications such as: drawer glides, door guides, table saw fences, digital length measuring systems, optical sensing mounts, drum set cymbal mounts, work station height adjustments, etc.*

**80/20 – Put your ideas in motion.**

# 80/20 Inc.

The *Industrial Erector Set*®

## Single Flange Linear Bearings



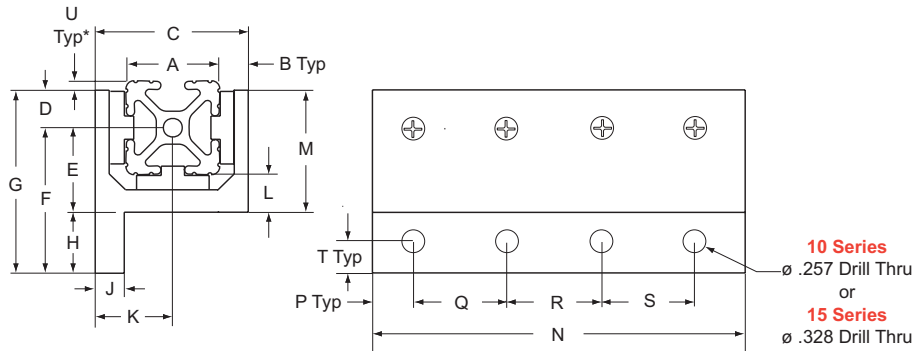
Fractional

**6715** .205 lbs.

**6716** .435 lbs.

**6815** .700 lbs.

**6816** 1.495 lbs.



Part No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U*
6715	1.00	.312	1.625	.406	.903	1.562	1.968	.656	.312	.813	.406	1.312	1.875	.438	1.00	N/A	N/A	.343	.094
6415**	1.00	.312	1.625	.406	.903	1.562	1.968	.656	.312	.813	.406	1.312	1.875	.438	1.00	N/A	N/A	.343	.094
6716	1.00	.312	1.625	.406	.903	1.562	1.968	.656	.312	.813	.406	1.312	4.000	.500	1.00	1.00	1.00	.343	.094
6416**	1.00	.312	1.625	.406	.903	1.562	1.968	.656	.312	.813	.406	1.312	4.000	.500	1.00	1.00	1.00	.343	.094
6815	1.500	.500	2.50	.625	1.375	2.125	2.75	.750	.500	1.25	.625	2.00	2.812	.656	1.50	N/A	N/A	.375	.125
6515**	1.500	.500	2.50	.625	1.375	2.125	2.75	.750	.500	1.25	.625	2.00	2.812	.656	1.50	N/A	N/A	.375	.125
6816	1.500	.500	2.50	.625	1.375	2.125	2.75	.750	.500	1.25	.625	2.00	6.000	.750	1.500	1.500	1.500	.375	.125
6516**	1.500	.500	2.50	.625	1.375	2.125	2.75	.750	.500	1.25	.625	2.00	6.000	.750	1.500	1.500	1.500	.375	.125

\*Add 1.00" when using 1020 extrusion or 2.00" when using 1030 extrusion. Add 1.50" when using 1530 or 1530-Lite extrusion or 3.00" when using 1545 extrusion.

\*\*Brake Kit Ready Bearings are pre-drilled with Brake Holes, refer to page 323 and 367 for additional information.

9

302 We specialize in **FAST** same day shipments!

**Double Flange Linear Bearings**

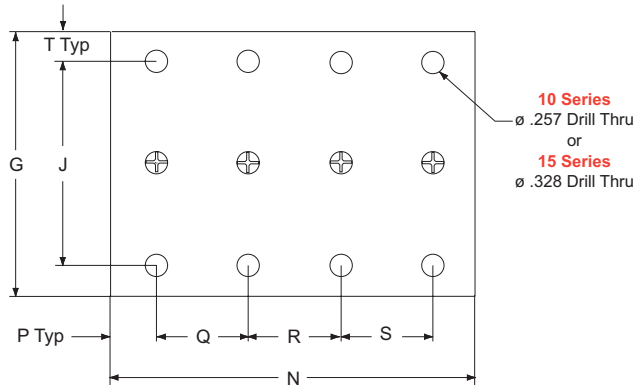
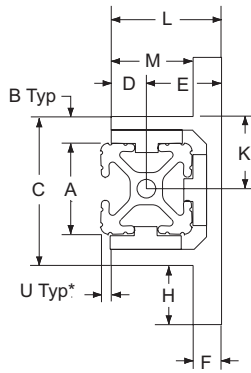
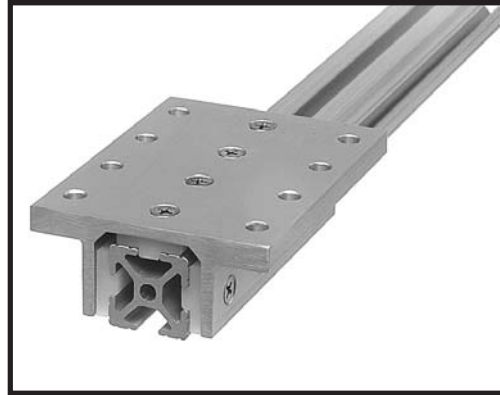


**6725** .215 lbs.

**6726** .450 lbs.

**6825** .665 lbs.

**6826** 1.415 lbs.



Part No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U*
6725	1.00	.312	1.625	.406	.812	.312	2.937	.656	2.250	.812	1.218	.906	1.875	.438	1.00	N/A	N/A	.343	.094
6425**	1.00	.312	1.625	.406	.812	.312	2.937	.656	2.250	.812	1.218	.906	1.875	.438	1.00	N/A	N/A	.343	.094
6726	1.00	.312	1.625	.406	.812	.312	2.937	.656	2.250	.812	1.218	.906	4.000	.500	1.00	1.00	1.00	.343	.094
6426**	1.00	.312	1.625	.406	.812	.312	2.937	.656	2.250	.812	1.218	.906	4.000	.500	1.00	1.00	1.00	.343	.094
6825	1.500	.500	2.50	.640	1.235	.375	4.00	.750	3.250	1.25	1.875	1.50	2.812	.656	1.50	N/A	N/A	.375	.125
6525**	1.500	.500	2.50	.640	1.235	.375	4.00	.750	3.250	1.25	1.875	1.50	2.812	.656	1.50	N/A	N/A	.375	.125
6826	1.500	.500	2.50	.640	1.235	.375	4.00	.750	3.250	1.25	1.875	1.50	6.000	.750	1.50	1.50	1.50	.375	.125
6526**	1.500	.500	2.50	.640	1.235	.375	4.00	.750	3.250	1.25	1.875	1.50	6.000	.750	1.50	1.50	1.50	.375	.125

\*Add 1.00" when using 1020 extrusion or 2.00" when using 1030 extrusion. Add 1.50" when using 1530 or 1530-Lite extrusion or 3.00" when using 1545 extrusion.

\*\*Brake Kit Ready Bearings are pre-drilled with Brake Holes, refer to page 323 and 367 for additional information.

**Fractional**

## Double Flange Linear Bearings Cont.



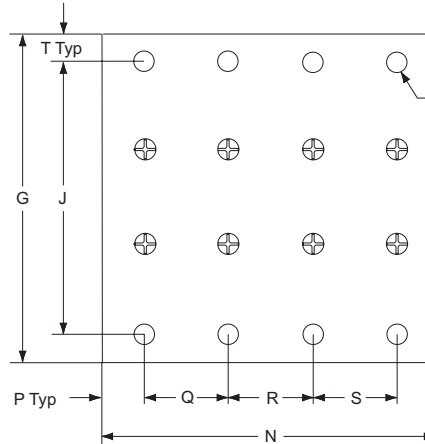
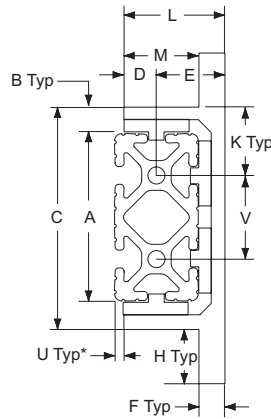
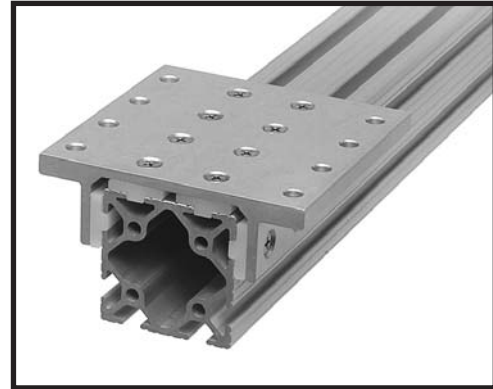
**6723** .250 lbs. ☒

**6724** .525 lbs. ☒

**6823** .810 lbs.

**6824** 1.705 lbs.

Fractional



**10 Series**  
ø .257 Drill Thru  
**or**  
**15 Series**  
ø .328 Drill Thru

9

Part No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U*	V
6723 ☒	2.00	.312	2.63	.406	.812	.312	3.937	.656	3.250	.812	1.218	.906	1.875	.437	1.00	N/A	N/A	.343	.094	1.00
6423** ☒	2.00	.312	2.63	.406	.812	.312	3.937	.656	3.250	.812	1.218	.906	1.875	.437	1.00	N/A	N/A	.343	.094	1.00
6724 ☒	2.00	.312	2.63	.406	.812	.312	3.937	.656	3.250	.812	1.218	.906	4.000	.500	1.00	1.00	1.00	.343	.094	1.00
6424** ☒	2.00	.312	2.63	.406	.812	.312	3.937	.656	3.250	.812	1.218	.906	4.000	.500	1.00	1.00	1.00	.343	.094	1.00
6823	3.00	.500	4.00	.640	1.235	.375	5.50	.750	4.75	1.25	1.875	1.500	2.812	.656	1.50	N/A	N/A	.375	.125	1.50
6523**	3.00	.500	4.00	.640	1.235	.375	5.50	.750	4.75	1.25	1.875	1.500	2.812	.656	1.50	N/A	N/A	.375	.125	1.50
6824	3.00	.500	4.00	.640	1.235	.375	5.50	.750	4.75	1.25	1.875	1.500	6.000	.750	1.50	1.50	1.50	.375	.125	1.50
6524**	3.00	.500	4.00	.640	1.235	.375	5.50	.750	4.75	1.25	1.875	1.500	6.000	.750	1.50	1.50	1.50	.375	.125	1.50

\*Add 1.00" when using 1020 extrusion or 2.00" when using 1030 extrusion. Add 1.50" when using 3030 extrusion or 4.50" when using 3060 extrusion.

\*\*Brake Kit Ready Bearings are pre-drilled with Brake Holes, refer to page 323 and 367 for additional information.

## **HIGH CYCLE Linear Bearings**

---

*When should I use*

**HIGH CYCLE  
HIGH CYCLE  
HIGH CYCLE**

*Linear Bearings?*

**...When you have a hard stop, high  
frequency application in mind!**

The 15 SERIES High-Cycle Linear Bearings contain special threaded inserts in the pads. These inserts allow for a more heavy duty bearing capable of withstanding high cycles with sudden accelerations / decelerations. **80/20's standard bearings will work fine in almost all applications.** However, if you have a rapid acceleration/deceleration, high cycle application in mind, then **80/20's** high cycle bearings were made especially for you!

Use high cycle bearings in applications such as actuators, parts transfers, or pick-and-place operations. The high cycle bearing is just another fine feature offered by **80/20** to add more versatility to your application.

## **80/20 High Cycle Bearing Advantages**

---

- Special threaded inserts specifically designed for sudden accelerations/decelerations.
- Can be shimmed for a precise fit, like all **80/20** linear bearings.
- You can design your own custom high cycle bearing.

# 80/20 Inc.

The *Industrial Erector Set*®

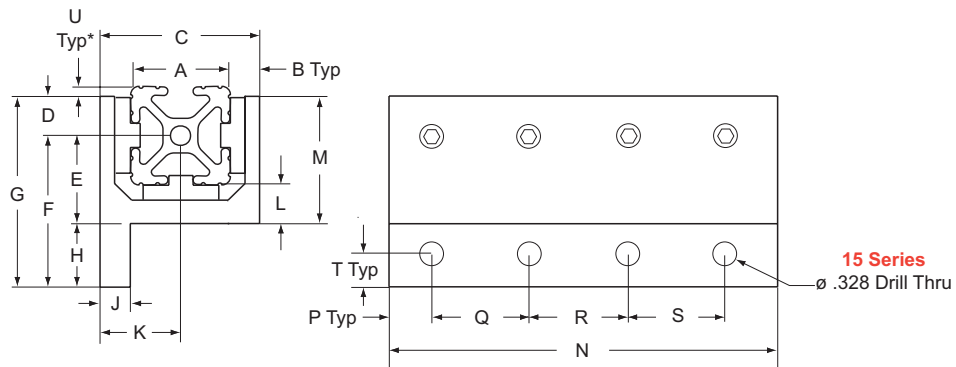
## HIGH CYCLE Single Flange Linear Bearings



Fractional

**6830** .700 lbs.

**6831** 1.495 lbs.



Part No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U*
6830	1.500	.500	2.50	.625	1.375	2.125	2.75	.75	.500	1.25	.625	2.00	2.812	.656	1.50	N/A	N/A	.375	.125
6530**	1.500	.500	2.50	.625	1.375	2.125	2.75	.75	.500	1.25	.625	2.00	2.812	.656	1.50	N/A	N/A	.375	.125
6831	1.500	.500	2.50	.625	1.375	2.125	2.75	.75	.500	1.25	.625	2.00	6.00	.750	1.50	1.50	1.50	.375	.125
6531**	1.500	.500	2.50	.625	1.375	2.125	2.75	.75	.500	1.25	.625	2.00	6.00	.750	1.50	1.50	1.50	.375	.125

\*Add 1.50" when using 1530 or 1530-Lite extrusion or 3.00" when using 1545 extrusion.

\*\*Brake Kit Ready Bearings are pre-drilled with Brake Holes, refer to page 323 and 367 for additional information.

9

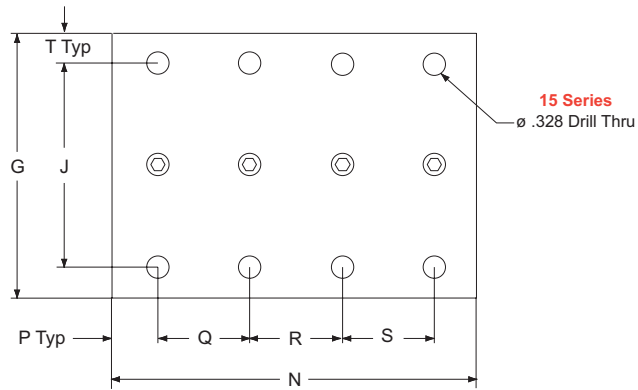
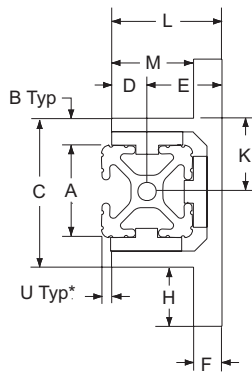
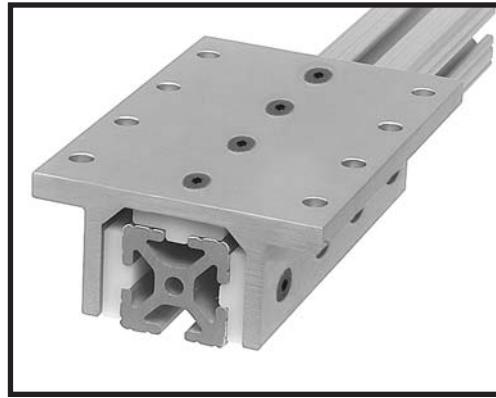
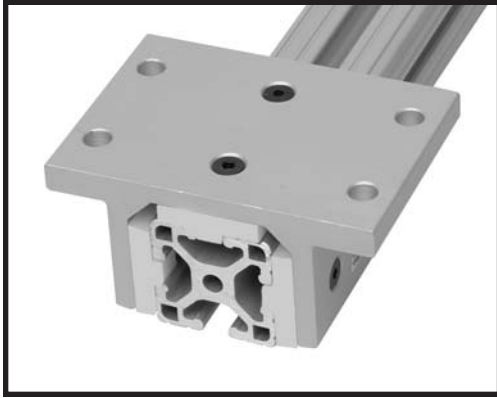
306 We specialize in **FAST** same day shipments!

**HIGH CYCLE Double Flange Linear Bearings**



**6835** .665 lbs.

**6836** 1.415 lbs.



Part No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U*
6835	1.500	.500	2.50	.640	1.235	.375	4.00	.750	3.250	1.25	1.875	1.50	2.812	.656	1.50	N/A	N/A	.375	.125
6535**	1.500	.500	2.50	.640	1.235	.375	4.00	.750	3.250	1.25	1.875	1.50	2.812	.656	1.50	N/A	N/A	.375	.125
6836	1.500	.500	2.50	.640	1.235	.375	4.00	.750	3.250	1.25	1.875	1.50	6.000	.750	1.50	1.50	1.50	.375	.125
6536**	1.500	.500	2.50	.640	1.235	.375	4.00	.750	3.250	1.25	1.875	1.50	6.000	.750	1.50	1.50	1.50	.375	.125

\*Add 1.50" when using 1530 or 1530-Lite extrusion or 3.00" when using 1545 extrusion.

\*\*Brake Kit Ready Bearings are pre-drilled with Brake Holes, refer to page 323 and 367 for additional information.

**Fractional**

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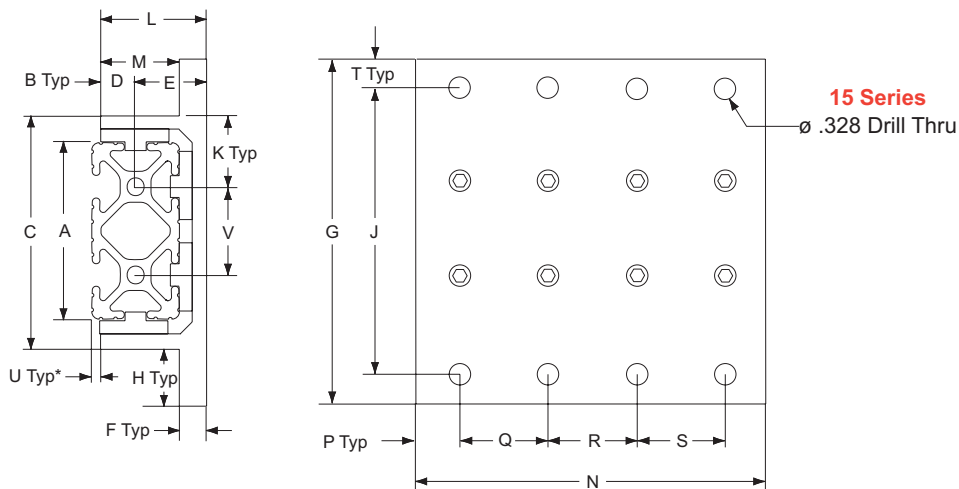
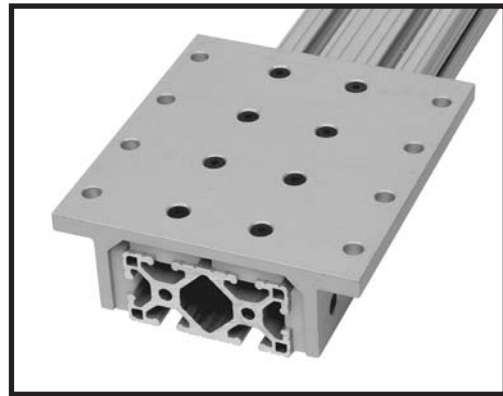
## HIGH CYCLE Double Flange Linear Bearings Cont.



Fractional

**6833** .810 lbs.

**6834** 1.705 lbs.



Part No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U*	V
6833	3.00	.500	4.00	.640	1.235	.375	5.50	.750	4.75	1.25	1.875	1.500	2.812	.656	1.50	N/A	N/A	.375	.125	1.50
6533**	3.00	.500	4.00	.640	1.235	.375	5.50	.750	4.75	1.25	1.875	1.500	2.812	.656	1.50	N/A	N/A	.375	.125	1.50
6834	3.00	.500	4.00	.640	1.235	.375	5.50	.750	4.75	1.25	1.875	1.500	6.000	.750	1.50	1.50	1.50	.375	.125	1.50
6534**	3.00	.500	4.00	.640	1.235	.375	5.50	.750	4.75	1.25	1.875	1.500	6.000	.750	1.50	1.50	1.50	.375	.125	1.50

\*Add 1.50" when using 1530 or 1530-Lite extrusion or 3.00" when using 1545 extrusion.

\*\*Brake Kit Ready Bearings are pre-drilled with Brake Holes, refer to page 323 and 367 for additional information.

9

308 We specialize in **FAST** same day shipments!

## Introduction To UniBearings™

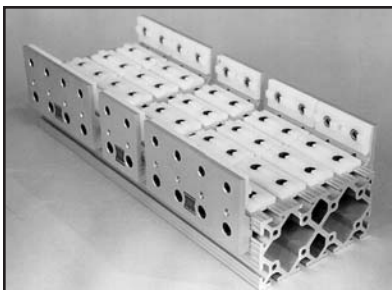
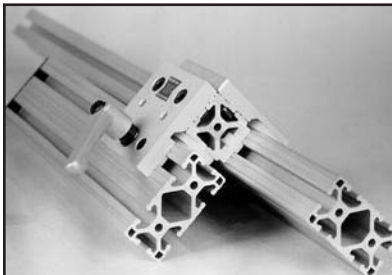
**80/20 Inc.** is proud to offer a family of bearings, UniBearings, to our Linear Motion line of products. The UniBearings are correctly named in that they are universal. Because of their geometry, all **80/20** T-slotted extrusions can be put into motion. This concept was created through a need to remove or install bearings quickly on an existing T-slotted aluminum structure without taking the frame apart. These bearings can greatly enhance productivity in downtime or re-tooling situations. The modularity of UniBearings also creates opportunities in the design world by allowing total flexibility within an engineered structure.

The design of the UniBearings is different from our original bearings. For example, the bearing pads for UniBearings are mounted using stainless steel flat head socket cap screws. The screws are inserted through the pad and screwed securely into the housing. This change eliminates the need for "High Cycle" bearing pads in the UniBearing family.

In designing the UniBearing we have also created a new bearing pad shape. The "Double-Keyed" pad has been born. It is required with the use of the UniBearings in most cases as you'll notice in the following pages. These pads and profiles (pages 315, 318) can be applied to many different applications in addition to the new UniBearing products.



\*\*Please note that the pads on the UniBearing itself are not interchangeable with our original bearing pads.



### UniBearing™ Advantages:

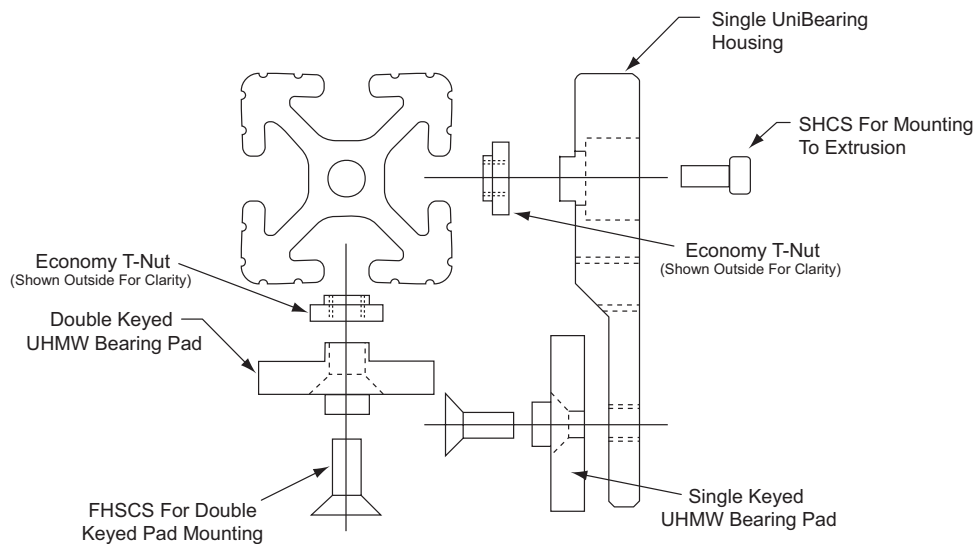
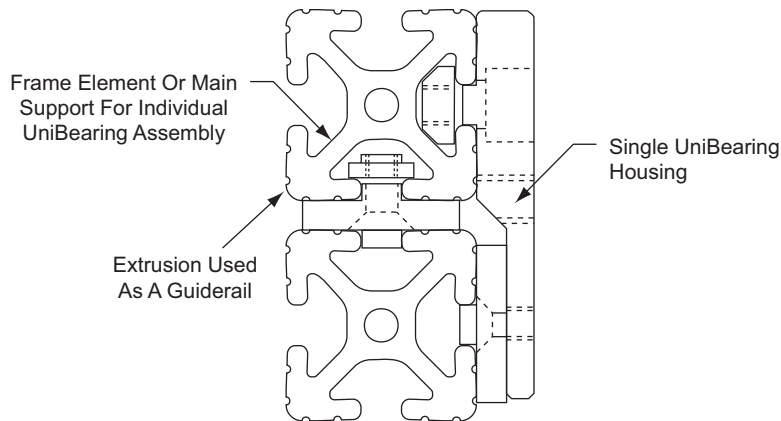
- The motion can be the actual bearing itself that moves or the bearing can be fixed, allowing the guiderail (T-Slotted extrusion) and any associated assembly to move.
- All UniBearings come with pre-drilled brake holes to accept our Brake Kits.
- A set of tapped mounting holes are provided for mounting accessories to a flat surface.



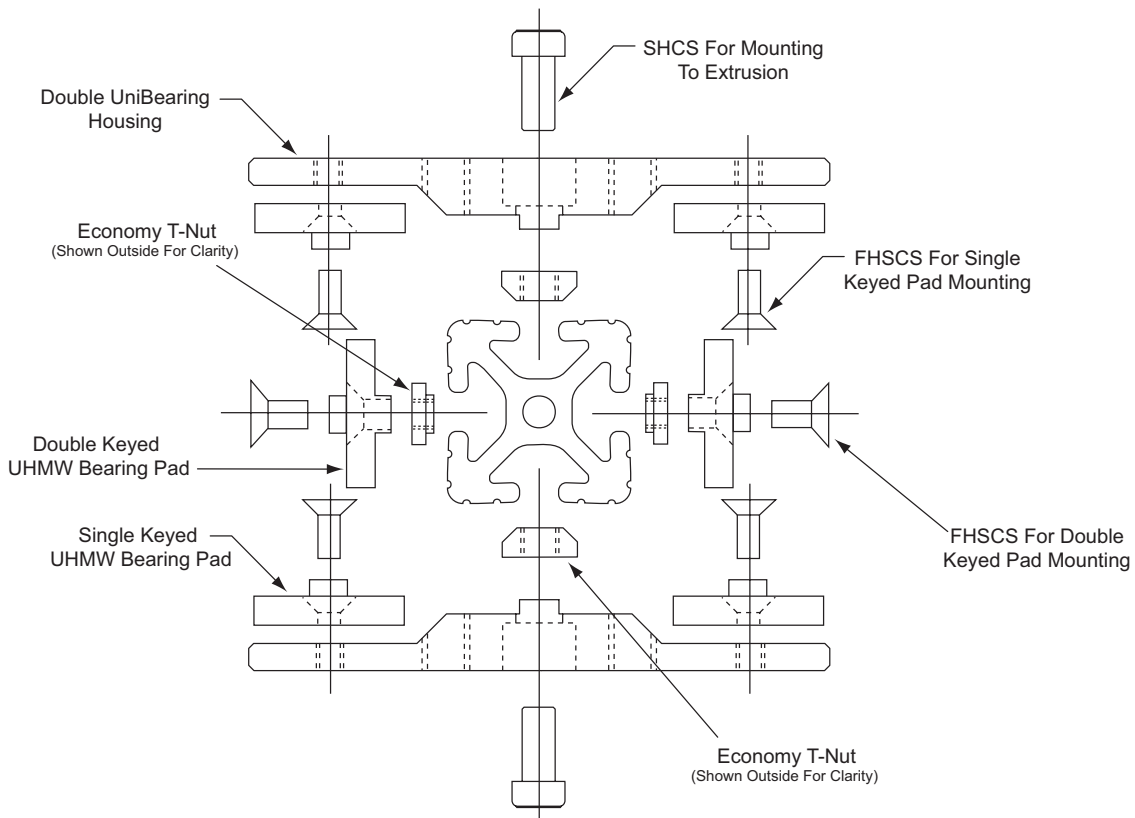
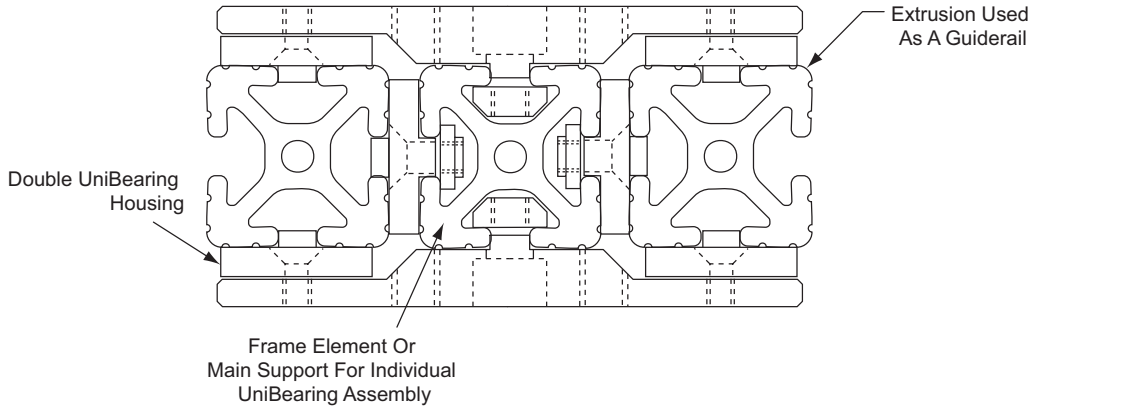
## Single UniBearings™ Concept & Construction

The diagrams on this page and the next illustrate how the UniBearings (single and double) are designed and assembled. These bearings are available in single and double lengths, 10 and 15 SERIES, as sub-assemblies or complete assembled units. All housings are extruded 6105-T5 aluminum with a clear anodize finish. All sub-assemblies include UHMW-PE pads secured with stainless steel FHSCS and mounting hardware (SHCS with economy T-Nut) along with shim kits (see page 316). Please consult page 315 for custom applications.

ORDERING NOTE: T-Slotted extrusions must be ordered separately when ordering UniBearing sub-assemblies (pages 312-313), but are included with UniBearing assemblies (page 314).



**Double UniBearings™ Concept & Construction**



# 80/20 Inc.

# The Industrial Erector Set®

## Single UniBearings™



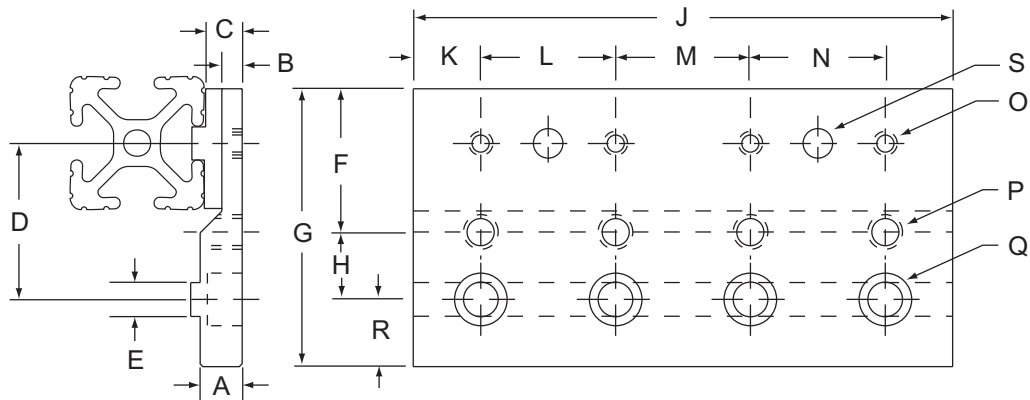
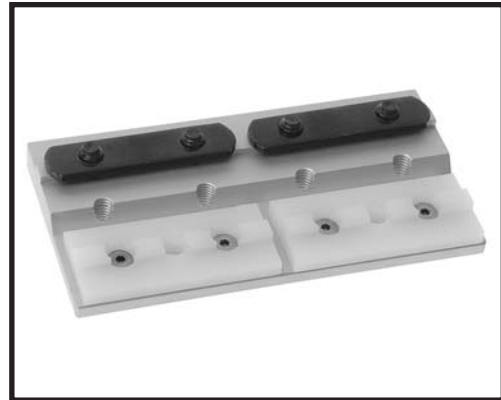
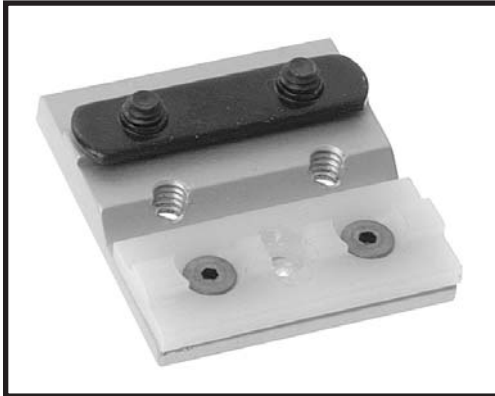
Fractional

**6760** .130 lbs. ☒

**6762** .270 lbs. ☒

**6860** .445 lbs.

**6862** .930 lbs.



### Typical Machining:

9

- O = 10 Series Drill & Tap for #8-32  
15 Series Drill & Tap for #10-24
- P = 10 Series Drill & Tap thru 1/4-20 (Accessory Mount)  
15 Series Drill & Tap thru 5/16-18 (Accessory Mount)
- Q = 10 Series Drill & Counterbore for 1/4-20 SHCS (Mounting Hardware included)  
15 Series Drill & Counterbore for 5/16-18 SHCS (Mounting Hardware included)
- S = 10 Series .265 Brake hole Typ. (see page 322 for Brakes)  
15 Series .328 Brake hole Typ. (see page 322 for Brakes)

Part Number	A	B	C	D	E	F	G	H	J	K	L	M	N	R
6760 ☒	.312	.152	.302	1.165	.250	1.062	2.062	.500	1.875	.437	1.00	N/A	N/A	.500
6762 ☒	.312	.152	.302	1.165	.250	1.062	2.062	.500	4.00	.500	1.00	1.00	1.00	.500
6860	.500	.240	.480	1.76	.310	1.625	3.125	.750	2.812	.656	1.50	N/A	N/A	.750
6862	.500	.240	.480	1.76	.310	1.625	3.125	.750	6.00	.750	1.50	1.50	1.50	.750

312 We specialize in **FAST** same day shipments!

**Double UniBearings™**

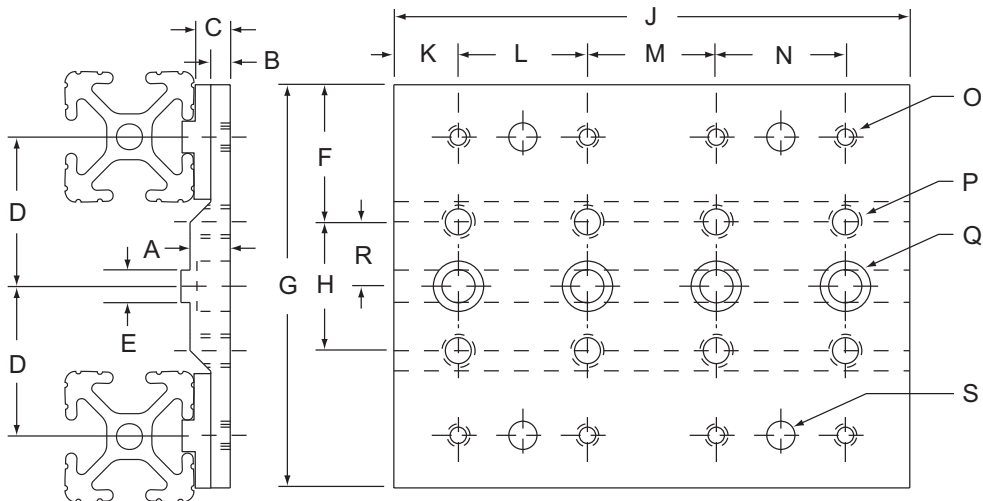
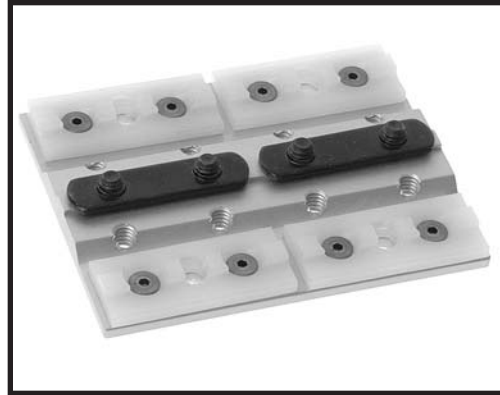


**6764** .165 lbs.

**6766** .350 lbs.

**6864** .580 lbs.

**6866** 1.225 lbs.



**Typical Machining:**

- O = 10 Series Drill & Tap for #8-32  
15 Series Drill & Tap for #10-24
- P = 10 Series Drill & Tap thru 1/4-20 (Accessory Mount)  
15 Series Drill & Tap thru 5/16-18 (Accessory Mount)
- Q = 10 Series Drill & Counterbore for 1/4-20 SHCS (Mounting Hardware included)  
15 Series Drill & Counterbore for 5/16-18 SHCS (Mounting Hardware included)
- S = 10 Series .265 Brake hole Typ. (see page 322 for Brakes)  
15 Series .328 Brake hole Typ. (see page 322 for Brakes)

Part Number	A	B	C	D	E	F	G	H	J	K	L	M	N	R
6764	.312	.152	.302	1.165	.250	1.062	3.125	.500	1.875	.437	1.00	N/A	N/A	1.00
6766	.312	.152	.302	1.165	.250	1.062	3.125	.500	4.00	.500	1.00	1.00	1.00	1.00
6864	.500	.240	.480	1.76	.310	1.625	4.75	.750	2.812	.656	1.50	N/A	N/A	1.50
6866	.500	.240	.480	1.76	.310	1.625	4.75	.750	6.00	.750	1.50	1.50	1.50	1.50

**Fractional**

## UniBearing™ Assemblies

Fractional

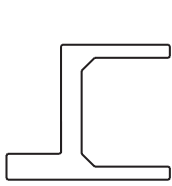
- *In stock for immediate shipment*
- *UniBearing™ pre-assembled to T-slotted extrusion*
- *See page 315 for stock material*
- *Available in 10 and 15 SERIES*
- *Pre-tapped holes in extrusion ends & housing for accessory mounting*
- *See pages 312-313 for individual components*
- *Shim Kit included*



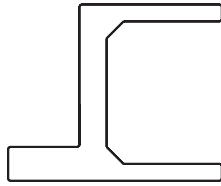
ex: 6873 consists of: (1) 1515 extrusion 6.0, (2) 6862 UniBearing sub-assemblies, (2) 6892 Double Keyed Pads

Part Number	Description	Lbs.
6730	10 SERIES Short Single Assembly on 1010 x 1.87"	.415
6731	10 SERIES Short Single Assembly on 1020 x 1.87"	.680
6732	10 SERIES Long Single Assembly on 1010 x 4.00"	.770
6733	10 SERIES Long Single Assembly on 1020 x 4.00"	.780
6734	10 SERIES Short Double Assembly on 1010 x 1.87"	.470
6735	10 SERIES Short Double Assembly on 1020 x 1.87"	.550
6736	10 SERIES Long Double Assembly on 1010 x 4.00"	1.085
6737	10 SERIES Long Double Assembly on 1020 x 4.00"	1.110
6870	15 SERIES Short Single Assembly on 1515 x 2.82"	.780
6871	15 SERIES Short Single Assembly on 1530 x 2.82"	1.595
6872	15 SERIES Short Single Assembly on 1545 x 2.82"	1.900
6873	15 SERIES Long Single Assembly on 1515 x 6.00"	2.595
6874	15 SERIES Long Single Assembly on 1530 x 6.00"	3.205
6875	15 SERIES Long Single Assembly on 1545 x 6.00"	4.245
6876	15 SERIES Short Double Assembly on 1515 x 2.82"	1.575
6877	15 SERIES Short Double Assembly on 1530 x 2.82"	1.895
6878	15 SERIES Short Double Assembly on 1545 x 2.82"	2.200
6879	15 SERIES Long Double Assembly on 1515 x 6.00"	3.225
6883	15 SERIES Long Double Assembly on 1530 x 6.00"	3.835
6884	15 SERIES Long Double Assembly on 1545 x 6.00"	4.405

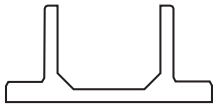
## Custom Linear Bearings



8520



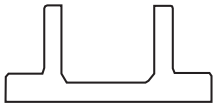
8530



8525



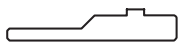
8527



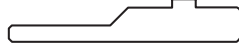
8535



8540



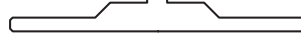
8581



8583



8585



8587

- For bearing profile dimensions see pages 88-89
- Reference information for standard and custom bearing pads on the following pages

### How to Specify

1. Select a bearing housing
2. Produce a sketch or drawing showing overall length, mounting hole diameter and location, and any additional machining desired.
3. Note how many bearing pads and the location for each.
4. We will provide you with prompt quotation and delivery, in 24-72 hours.

See pages 356 and 322-323 for Cut-to-Length, Machining, and Brake Kit Services.

# 80/20 Inc.

The **Industrial Erector Set**®

## Standard Bearing Pads

- **Cost effective and high strength**
- **Simple to install**
- **Low coefficient of friction**
- **Available in black or white UHMW polyethylene**
- **Available in custom lengths up to 145" see page 318**



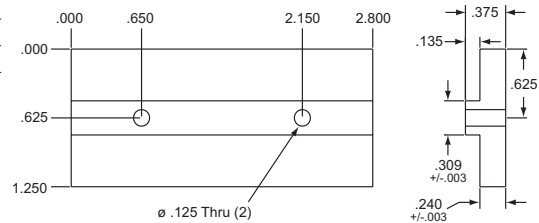
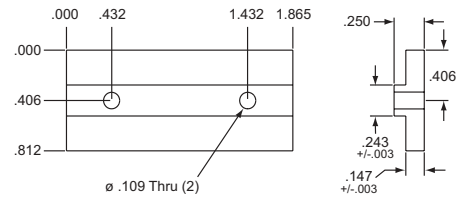
Description	Lbs.	Part Number
Bearing Pads for 10 SERIES Bearings White	.010	6790
Bearing Pads for 10 SERIES Bearings Black	.010	6791
Bearing Pads for 15 SERIES Bearings White	.030	6890
Bearing Pads for 15 SERIES Bearings Black	.030	6891
* Bearing Pads for 10 SERIES Brake Ready Bearings White	.010	6490
* Bearing Pads for 10 SERIES Brake Ready Bearings Black	.010	6491
* Bearing Pads for 15 SERIES Brake Ready Bearings White	.030	6590
* Bearing Pads for 15 SERIES Brake Ready Bearings Black	.030	6591

\* See pages 302-308 for Brake Ready Bearings

☞ = 10 Series compatible part

Description	Lbs.	Part Number
#8 x 3/8" Pad Screw - 10 SERIES	.002	3625
#8 x 1/2" Pad Screw - 10 SERIES	.002	3626
#10 x 5/8" Pad Screw - 15 SERIES	.003	3628
#10 x 3/4" Pad Screw - 15 SERIES	.003	3629

☞ = 10 Series compatible part

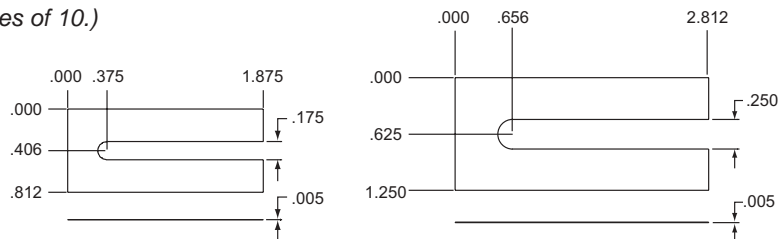


## Standard Shim Stock

Should the bearing fit the application, or should the application fit the bearing? Our linear bearings are designed to fit loosely in low tolerance applications but can be easily shimmed to achieve a more precise fit in critical applications. The shim stock is .13mm thick and is slotted to ease installation. Simply loosen the bearing pad and slide the shims between the bearing pad and housing.



(Sold in packages of 10.)

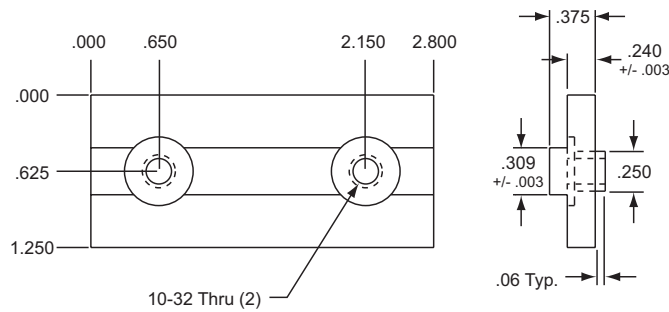
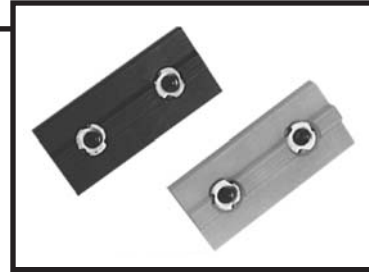


Description	Lbs.	Part Number
.005" Shim Stock Kit for 10 SERIES Bearing Pads	.002	☞ 6780
.005" Shim Stock Kit for 15 SERIES Bearing Pads	.005	6881

☞ = 10 Series compatible part

## HIGH CYCLE Bearing Pads

- *Design your own custom High Cycle bearing*
- *Simple to install & replace existing High Cycle bearing pads*
- *Hardware included*



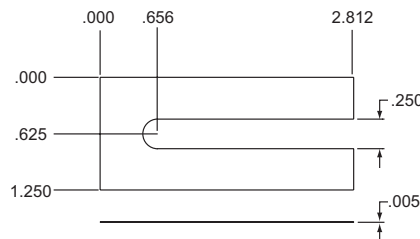
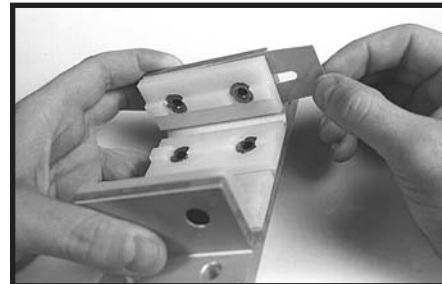
Description	Lbs.	Part Number
15 SERIES Bearing Pads for High-Cycle Bearing White	.010	6895
15 SERIES Bearing Pads for High-Cycle Bearing Black	.010	6896
* 15 SERIES Bearing Pads for High-Cycle Brake Ready Bearing White	.010	6595
* 15 SERIES Bearing Pads for High-Cycle Brake Ready Bearing Black	.010	6596

\* See pages 302-308 for Brake Ready Bearings

## HIGH CYCLE Shim Stock

Like the standard **80/20** bearings, our High-Cycle bearings can also be shimmed for a more precise fit on our 15 SERIES extrusions. The shim stock can be added without even removing the bearing from the extrusion. Simply loosen the bearing pad with an allen wrench and slide the slotted shim between the bearing pad and housing.

(Sold in packages of 10.)



Description	Lbs.	Part Number
.005" Shim Stock Kit for High-Cycle Bearing Pads	.005	6881

Phone: 260-248-8030 • Fax: 260-248-8029  
www.8020.net

# 80/20 Inc.

## The Industrial Erector Set®

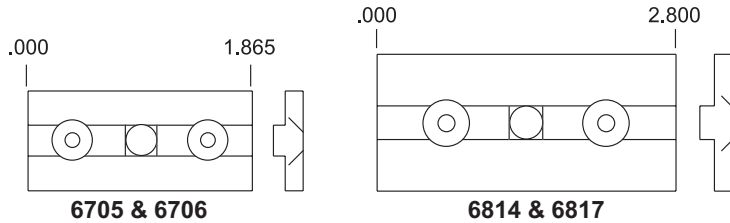
### UniBearings™ Pads

Note: Standard UniBearing™ Pads differ from standard Bearing Pads on p. 316! UniBearing Pads are countersunk 82° for FHSCS and drilled for Brake.

Recommended Hardware	Description	Part #
10 SERIES	S.S. #8-32 x 1/4 FHSCS	3649
15 SERIES	S.S. #10-24 x 3/8 FHSCS	3650

Description	Part Number
10 SERIES White UniBearing™ Pad	☒ 6705
10 SERIES Black UniBearing™ Pad	☒ 6706
15 SERIES White UniBearing™ Pad	6814
15 SERIES Black UniBearing™ Pad	6817

☒ = 10 Series compatible part

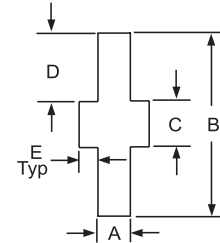
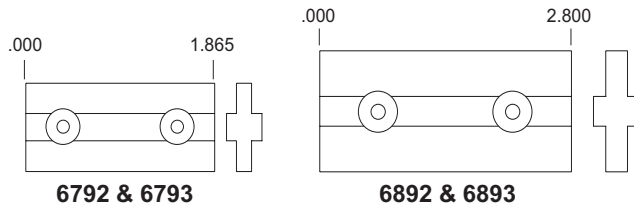


### Double Keyed UniBearings™ Pads

- Simple to install & replace existing Double Keyed UniBearing™ pads
- Low coefficient of friction
- Hardware included

Description	Part No
10 SERIES Double Keyed White Bearing Pad	☒ 6792
10 SERIES Double Keyed Black Bearing Pad	☒ 6793
15 SERIES Double Keyed White Bearing Pad	6892
15 SERIES Double Keyed Black Bearing Pad	6893

☒ = 10 Series compatible part

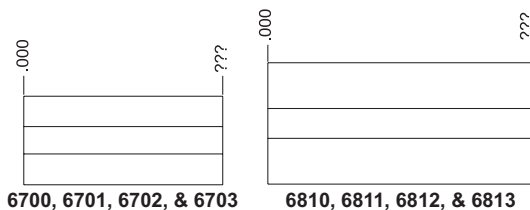


Description	Lbs.	Part Number
.005" Shim Stock Kit for 10 SERIES Double-Keyed Pads	.002	☒ 6782
.005" Shim Stock Kit for 15 SERIES Double-Keyed Pads	.005	6882

Series	A	B	C	D	E
10	.146	.810	.244	.280	.075
15	.238	1.25	.308	.470	.120

## 9

### Custom Bearing Profiles



Description	Part No
10 SERIES White UniBearing™ Profile	☒ 6700
10 SERIES Black UniBearing™ Profile	☒ 6701
15 SERIES White UniBearing™ Profile	6810
15 SERIES Black UniBearing™ Profile	6811
10 SERIES Double Keyed White Bearing Profile	☒ 6702
10 SERIES Double Keyed Black Bearing Profile	☒ 6703
15 SERIES Double Keyed White Bearing Profile	6812
15 SERIES Double Keyed Black Bearing Profile	6813

☒ = 10 Series compatible part

- See page 356 for 7212 Cut to Length Service
- Stock length 145"

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**Engineering Specifications On UHMW-PE Bearing Pad**

Property	Test Method	Unit	Typical Value
Specific Gravity	ASTM D-792	g/cm <sup>3</sup>	0.94
Yield Strength @ 73°F	ASTM D-638	p.s.i.	3400
Ultimate Tensile Strength @ 73°F	ASTM D-638	p.s.i.	6800
Break Elongation @ 73°F	ASTM D-638	%	450
Yield Strength @ 250°F	Stress Strain Diagram	p.s.i.	700
Ultimate Tensile Strength @ 250°F	Stress Strain Diagram	p.s.i.	3300
Break Elongation @ 250°F	Stress Strain Diagram	%	900
Hardness - Rockwell "R" Scale	ASTM D-785	-	64
- Shore "D" Scale	ASTM D-2240	-	67
Flexural Modulus of Elasticity	Bend Creep/1 min. value	p.s.i.	110,000
Shear Strength	ASTM D-732	p.s.i.	3500
Izod Impact @ + 23°C	ASTM D-256A	ft-lbs/in. notch	No break
@ - 140° C	ASTM D-256A	ft-lbs/in. notch	No break
Environmental Stress Cracking @ F50	ASTM D-1693 Mod	hrs.	6000
Water Absorption	ASTM D-570	-	NIL

**F.D.A. and U.S.D.A. Approved**

**Abrasive Resistance**  
Sand Slurry Test

Each material listed below was rotated 24 hours @ 1750 r.p.m.  
Carbon Steel = abrasive rating of 100.  
The weight loss for each material is relative to 100.  
The lower the figure, the better the abrasive resistance.  
50-50 sand/water slurry.

**WEARS LIKE A PIG'S NOSE!**

UHMW-PE .....	15	TFE/glass fiber .....	113
Nylon .....	31	Normal MW polyethylene .....	125
High MW polyethylene .....	44	Phosphor bronze .....	193
TFE .....	72	Yellow brass .....	409
Stainless Steel.....	84	Phenolic laminate .....	571
Polypropylene.....	87	Hickory wood.....	967
Polycarbonate .....	96	Hi Carbon Steel .....	100
Polyacetal.....	110		

**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	Test Method
Aluminum* vs. UHMW-PE	0.12	0.016	
Mild Steel vs. Mild Steel	0.30 - 0.40	0.25 - 0.35	
Mild Steel vs. UHMW-PE	0.15 - 0.20	0.12 - 0.20	ASTM D-1894
UHMW-PE vs. UHMW-PE	0.20 - 0.30	0.20 - 0.30	

\*Anodized 204 R1 Spec on extruded aluminum

**Comparison of Dynamic coefficient of friction on polished steel**

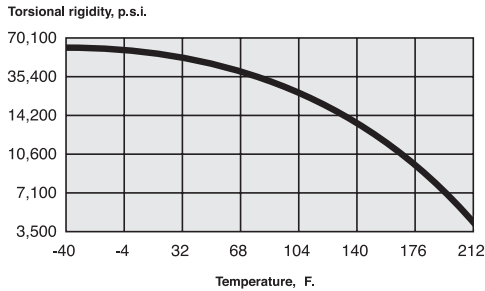
Property	UHMW-PE
Dry	0.10 - 0.22
Water	0.05 - 0.10
Oil	0.05 - 0.08



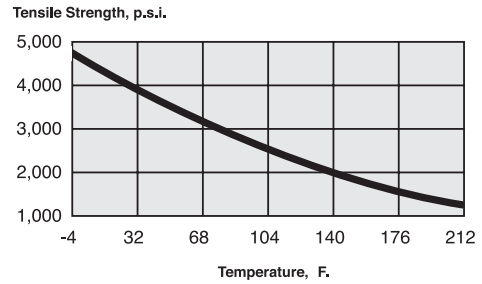
## Load Bearing Properties Of UHMW-PE

Fractional

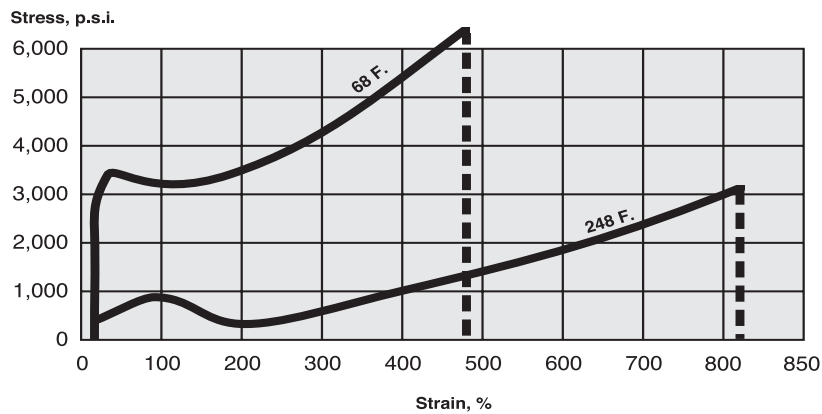
**TORSIONAL RIGIDITY AS A FUNCTION OF TEMPERATURE**  
(measured on compression-molded sheets)



**TENSILE STRENGTH AT THE YIELD POINT AS A FUNCTION OF TEMPERATURE**  
(measured at the feed rate of 3.9 in./min.)

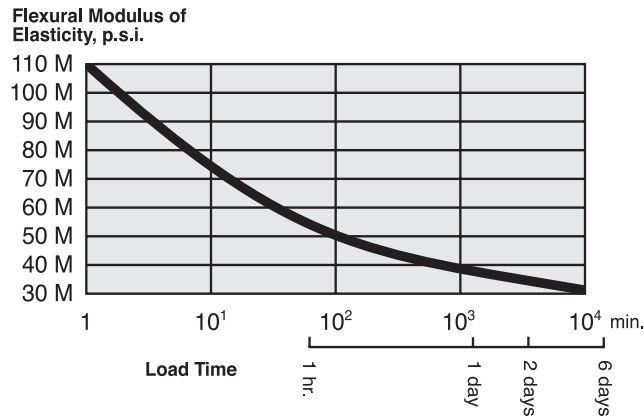


**STRESS-STRAIN AT VARIOUS TEMPERATURES**  
(measured at a feed rate of 1 in./min.)



**FLEXURAL MODULUS OF ELASTICITY AS A FUNCTION OF LOAD TIME**

(measured by the bending creep test with a constant bending stress of 425 p.s.i.)



## Chemical Resistance Of UHMW-PE

**TEST SPECIMENS** Dumb-bell type  
**DURATION OF TEST** 30 Days  
**+ = RESISTANT** Mechanical properties not appreciably affected  
**/ = LIMITED RESISTANT** 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	Temperatures			Reagent	Temperatures		
	20°C	50°C	80°C		20°C	50°C	80°C
<b>I. Inorganic acids</b>				<b>V. Hydrocarbons and halogenated hydrocarbons</b>			
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	+		
				Trichloroethylene	/	-	
Phosphoric acid (85%)	+	-	-	Toluene	/	-	
Sulphuric acid (conc.)	+	-	-	White spirit	+	/	
Sulphuric acid (50%)	+	+	+	Xylene	/	/	-
<b>II. Alkalis</b>				<b>VI. Alcohols, Ketones, Ester, and Amines</b>			
Aqueous ammonia	+	+		Acetone	+	+	
Potassium Hydroxide solution	+	+	+	Aniline	+	+	/
Sodium Hydroxide solution	+	+	+	Benzyl alcohol	+	+	+
				Butyl alcohol	+	+	+
<b>III. Aqueous solutions of inorganic salts</b>				Cyclohexanol	+	+	+
Aluminum chloride	+	+	+	Ethanol	+	+	
Ammonium nitrate	+	+	+	Ethyl acetate	+	+	
Bleaching powder	+	+	+	Ethylene glycol	+	+	
Calcium chloride	+	+	+	Glycerine	+	+	+
Sodium carbonate	+	+	+	Lauryl alcohol	+	+	+
Sodium chloride	+	+	+	Propyl alcohol	+	+	+
Sodium hypochlorite	+	+	+				
Zinc chloride	+	+	+	<b>VII. Miscellaneous</b>			
<b>IV. Organic acids</b>				Beer	+	+	+
Acetic acid (99%)	+	+	/	Detergents in aqueous solution	+	+	+
Acetic acid (10%)	+	+	+	Distilled water	+	+	+
Butyric acid	+	+		Hydrogen peroxide 30% (perhydrol)	+	+	
Citric acid	+	+	+	Linseed oil	+	+	+
Formic acid	+	+		Milk	+	+	+
Oleic acid	+	+	/	Olive oil	+	+	+
				Sea water	+	+	+
				Wine	+	+	+

Because we cannot anticipate or control the many different conditions under which our products may be used, the product information contained in this catalog should be viewed as general guidelines only and not as a recommendation to use our products in any particular situation. Although we believe that all information contained herein is reliable, certain information in this catalog may have been obtained from test results published by other parties, and consequently, we cannot guarantee the accuracy of all information contained in this catalog. In addition, particular conditions of use and reasonable lot-to-lot variations can affect performance. Users of our products should perform their own tests to determine the suitability of any product for their particular purposes.

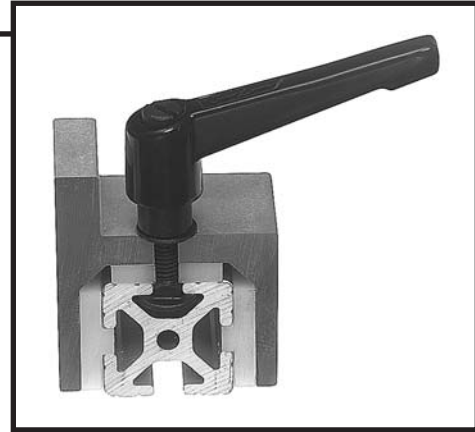
# 80/20 Inc.

The Industrial Erector Set®

## Linear Bearing Brakes



- Work stations
- Tool positioning
- Adjustable stops
- Adjustable boards
- Machine tools
- Semi-permanent fixturing
- Lockdown capability for safety



REFER TO PAGE 323 FOR REQUIRED MACHINING SERVICE

### 15 SERIES Brake Kits (5/16-18)



Several Colors Available

6800

Ratcheting L-Handle



6801

T-Handle



6802

Star Handle



6803

Hex Nut



6804

Wing Nut

### 10 SERIES Brake Kits (1/4-20)



6850

Ratcheting L-Handle



6851

Hex Nut

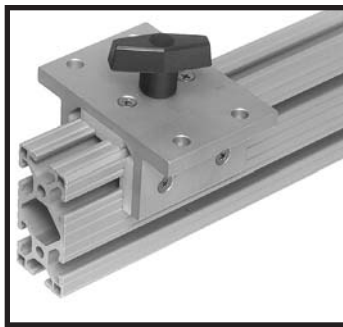


6852

Wing Nut

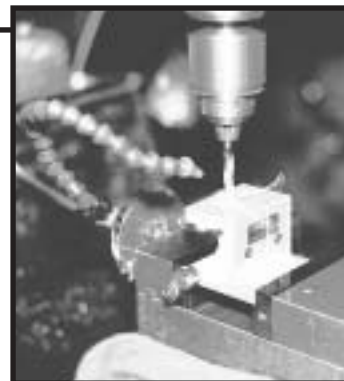
Description	Lbs.	Part Number
15 SERIES L-Handle (Gray)	.337	6800
15 SERIES L-Handle (Blue)	.337	6805
15 SERIES L-Handle (Red)	.337	6806
15 SERIES L-Handle (Yellow)	.337	6807
15 SERIES T-Handle	.100	6801
15 SERIES Star Handle	.111	6802
15 SERIES Hex Nut	.075	6803
15 SERIES Wing Nut	.085	6804
10 SERIES L-Handle	.054	6850 ☒
10 SERIES Hex Nut	.065	6851 ☒
10 SERIES Wing Nut	.075	6852 ☒

☒ = 10 Series compatible part

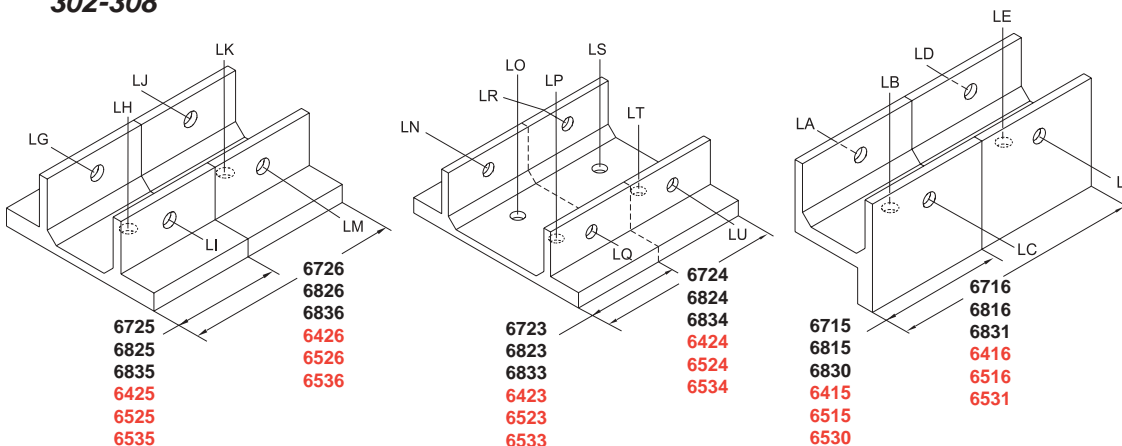


## Linear Bearing Brakes

- Let 80/20 machine your bearing to accept your brake kit, choose a pre-drilled Brake Ready Bearing from pages 302-308, or do it yourself by referring to dimensions shown on page 366-367
- Stop and lock linear bearings in place
- Required when using Brake Kits shown on page 322
- See Linear Bearings on page 302-308
- See our NEW! Brake Kit Ready Bearings on pages 302-308



Fractional



### NEW Brake Kit Ready Bearings\*

Part Number	Pre Drilled Brake Kit Locations
6415	LA, LB, LC
6416	LA, LB, LC, LD, LE, LF
6515	LA, LB, LC
6516	LA, LB, LC, LD, LE, LF
6425	LG, LH, LI
6426	LG, LH, LI, LJ, LK, LM
6525	LG, LH, LI
6526	LG, LH, LI, LJ, LK, LM
6423	LN, LO, LP, LQ
6424	LN, LO, LP, LQ, LR, LS, LT, LU
6523	LN, LO, LP, LQ
6524	LN, LO, LP, LQ, LR, LS, LT, LU
6530	LA, LB, LC
6531	LA, LB, LC, LD, LE, LF
6535	LG, LH, LI
6536	LG, LH, LI, LJ, LK, LM
6533	LN, LO, LP, LQ
6534	LN, LO, LP, LQ, LR, LS, LT, LU

\*See pages 302-308, and 367 for additional information.

Many applications exist where linear bearings require a locking mechanism for adjustability. This chart will allow for clear communication when specifying the required machining for our brake kits.

**How to specify location for Brake Kit mounting holes.**

**Ordering example:**  
 (8) 6815 w/ #7400 @ LB  
 (6) 6824 w/ #7400 @ LP and LQ

Description	Service Number
.328 Dia. drill thru one wall	7400
.265 Dia. drill thru one wall	7401

7401 = 10 Series compatible part

9

# 80/20 Inc.

The *Industrial Erector Set*®

## Roller Wheels



Fractional

- *Ideal for guided linear motion*
- *Mounts to extrusion end or to T-slot*
- *Made of high strength black nylatron*
- *P/N 2290 has a permanently lubricated bronze bushing and P/N 2280 has ball bearing hubs*
- *Includes all mounting hardware*
- *10 and 15 SERIES compatible*



**“Solution looking for a problem!”**



☒ 2281

☒ 2282

2290

2280

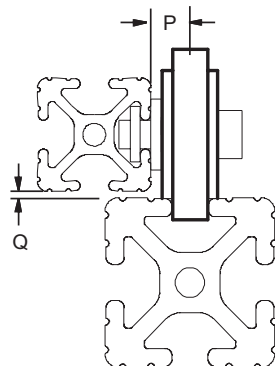
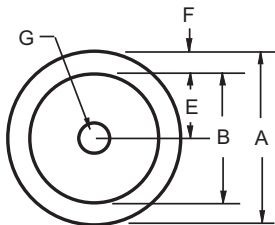
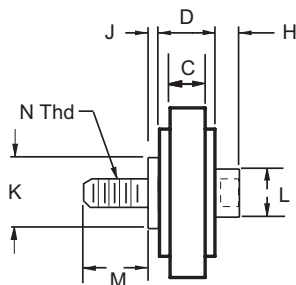
Rolls In	Mounts To												
	1010	1012	1020	1030	2020	2040	1515-Lite	1517	1515	1530	1530-Lite	1545	3030
1010 ☒	2281						N / A						
1012 ☒													
1020 ☒													
1030 ☒													
2020 ☒													
2040 ☒													
1515-Lite	2282						2280 / 2290						
1517													
1515													
1530													
1530-Lite													
1545													
3030													
3060													

9

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## Roller Wheel Dimensions

**P/N 2282 Transition Roller**  
**mounts to 10 SERIES extrusions**  
**and rolls on 15 SERIES extrusions**



Dimension	2280	2290	2282	2281
A	2.00	2.00	1.50	1.50
B	1.625	1.625	1.125	1.125
C	.310	.310	.310	.240
D	.720	.720	.480	.480
E	.812	.812	.563	.563
F	.188	.188	.188	.188
G	.375	.375	.314	.314
H	.250	.250	.219	.219
J	.125	.125	.125	.125
K	.750	.750	.625	.625
L	.562	.562	.435	.435
M	.375	.375	.310	.310
N	5/16-18	5/16-18	1/4-20	1/4-20
Q	.060	.060	.060	.060
P	.485	.485	.370	.370
Lbs.	.185	.165	.070	.075

Bearing Type	DR	PL	PL	PL
DR = Dual Roller Bearing				
PL=Permanent Lube Bronze Bushing				

Description	Bearing Type	Part No.
10 SERIES Roller Wheel	PL Bronze	☒ 2281
10 to 15 SERIES Roller Wheel	PL Bronze	☒ 2282
15 SERIES Roller Wheel	Dual Roller	2280
15 SERIES Roller Wheel	PL Bronze	2290

**Fractional**

## Roller Wheel Bracket



Fractional

- **Ideal for framed doors**
- **10 and 15 SERIES compatible**
- **Assembly part #'s include roller wheels**
- **Assembly & bracket part #'s include all mounting hardware:**

### 10 SERIES-

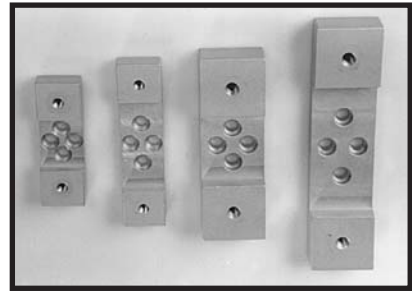
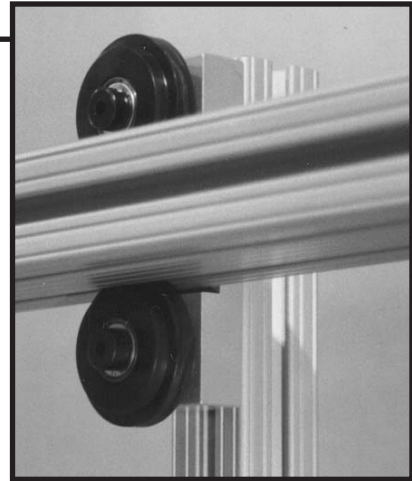
(2) 1/4-20 x 3/8" Low Head Socket Cap Screw

(2) #3204, 1/4-20 Std T-Nut

### 15 SERIES-

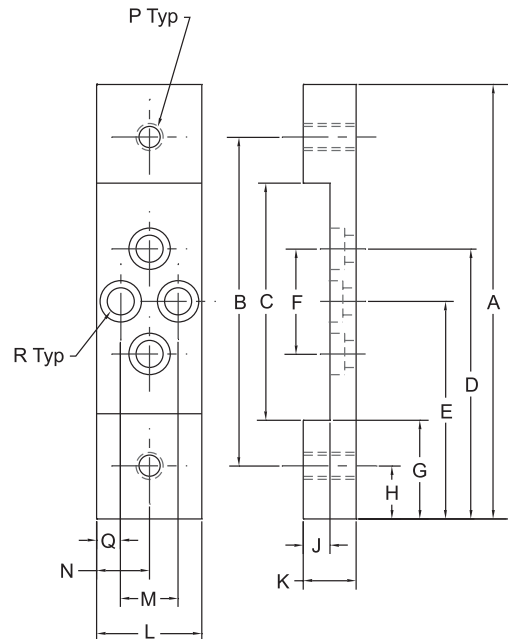
(2) 5/16-18 x 5/8" Low Head Socket Cap Screw

(2) #3203, 5/16-18 Std T-Nut

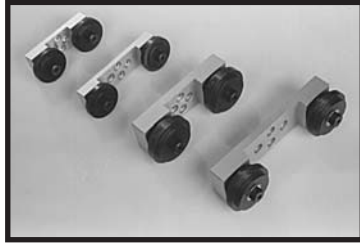


	2750	2752	2754	2757
A	3.125	4.125	4.625	6.125
B	2.125	3.125	3.125	4.625
C	1.250	2.250	1.750	3.250
D	1.897	2.562	2.743	3.813
E	1.563	2.063	2.313	3.063
F	.669	1.000	.860	1.500
G	.938	.938	1.438	1.438
H	.500	.500	.750	.750
J	.255	.255	.390	.390
K	.500	.500	.750	.750
L	1.000	1.000	1.500	1.500
M	.544	.544	.735	.735
N	.500	.500	.750	.750
Q	.228	.228	.383	.383
P	1/4-20 Tap thru	1/4-20 Tap thru	5/16-18 Tap thru	5/16-18 Tap thru
R	DR & C'bore 1/4-20 LHSCS		DR & C'bore 5/16-18 LHSCS	

Note: Be sure to use washer included with roller wheels for proper spacing.



**Roller Wheel Bracket Assemblies**



Mounting Hardware included with Bracket

Individual Part Numbers Assembly Part Numbers	Brackets				Wheels			
	2750	2752	2754	2757	2281	2282	2280	2290
2751  1.0"	1				2			
2753  2.0"		1			2			
2755  1.5"			1				2	
2758  3.0"				1			2	
2756  1.5"			1					2
2759  3.0"				1				2

Fractional

## Introducing HT Series™, a modular aluminum framing system that features prefabricated mounting holes.

Building with this NEW framing system has been simplified by prefabricating .328 diameter mounting holes, which are evenly spaced at 1.50" intervals along each face of the extrusions. These prefabricated mounting holes can be used for fastening other adjoining structural members, fastening components, or accessories anywhere along the extrusion length- all this modularity without the need for any additional machining.

The key to the HT Series™ fastening method is our internal threaded insert. For ease of assembly, the internal threaded insert is placed into the end of the HT Series™ extrusion with the mounting hole in the proper orientation, and secured into place by a spring roll pin or bolt that is inserted through the profile and insert. Align all the HT Series™ components to be fastened and insert a connector bolt through the frame. It's just that quick and easy.

### NEW HT Series™ Profiles

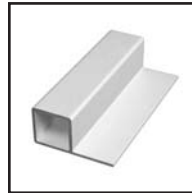
9700



9701



9705



9706



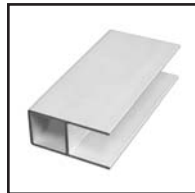
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9710



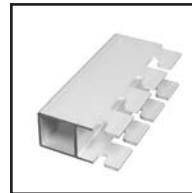
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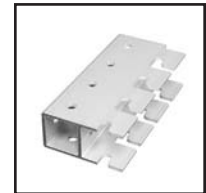
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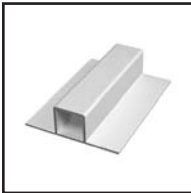
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9728



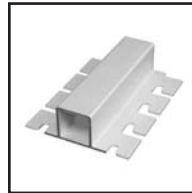
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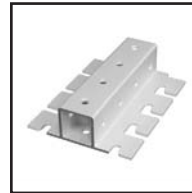
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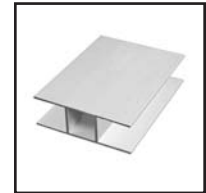
9717



9718



9735



9736



9737



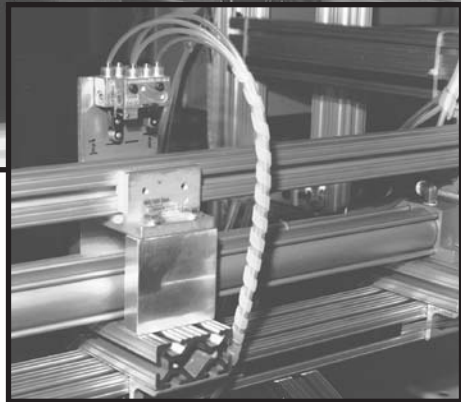
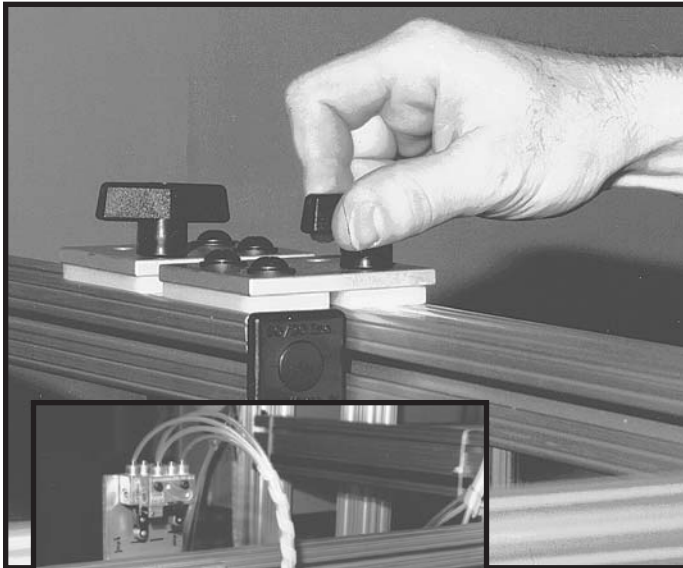
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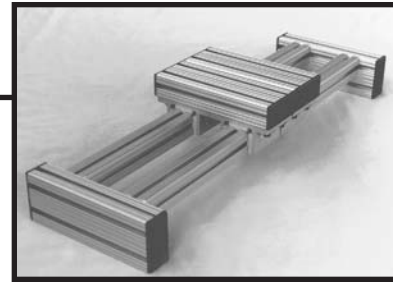
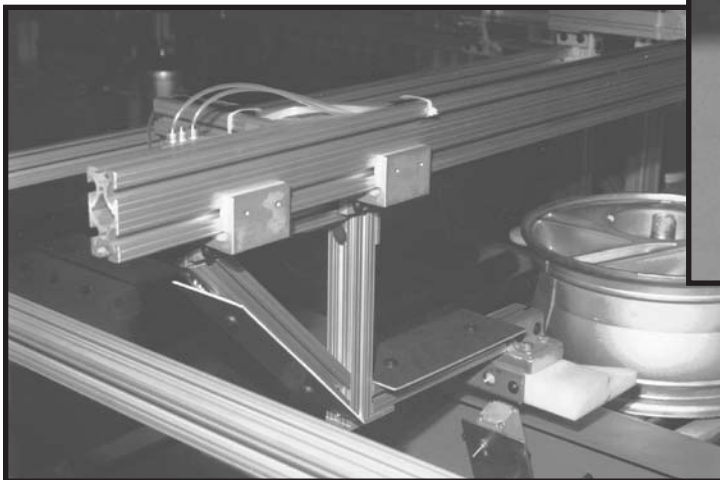
More HT Series™ starting on page 709

## Sample Applications and Common Uses for Linear Motion

### *Custom Linear Bearings with T-Handle Brakes*

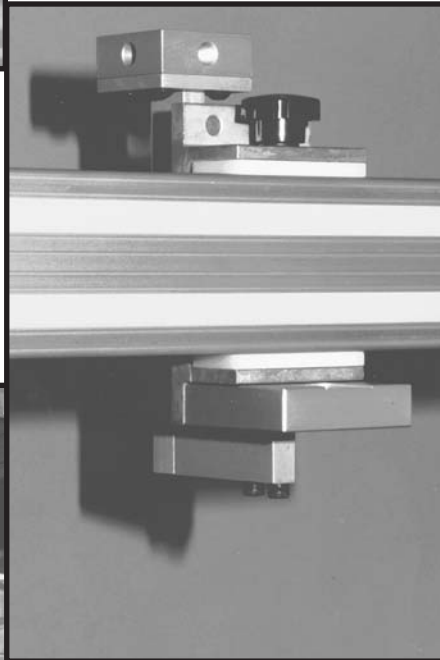


*Automated Assembly*



*Linear Slide*

*Locking Measurement Device with Star Handle Brake Kit*



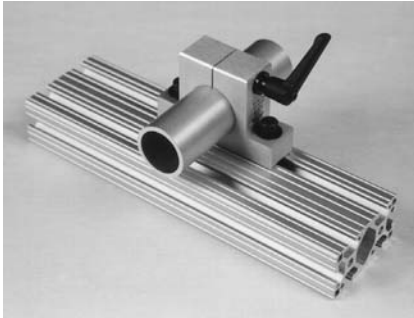
*Material Handling System*

**80/20 Inc.**

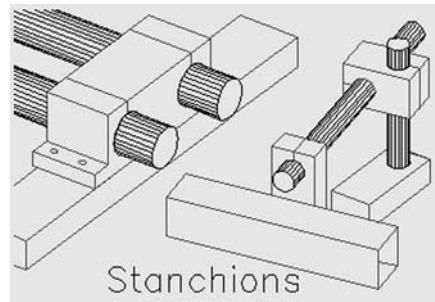
*The Industrial Erector Set®*

**Stanchions:  
for Modular Assembly Mounts - and More!**

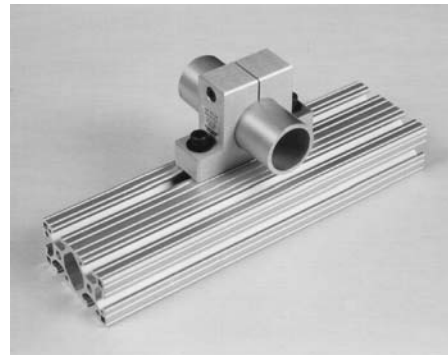
**Fractional**



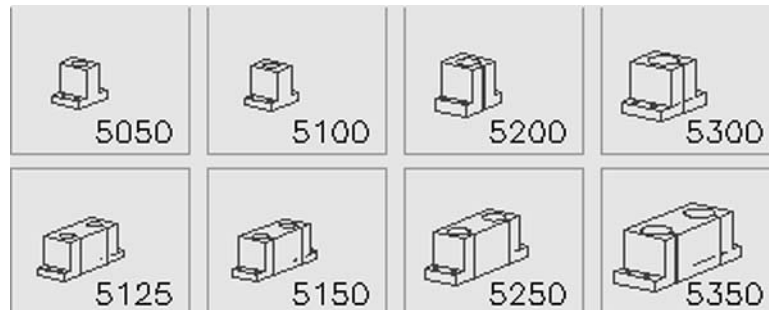
*Easy to use with  
AutoQuoterX™ p. 379*



- *Cross clamp adjustability*
- *End of arm tooling*
- *Quick change set ups*
- *Interface components with precision and accuracy*
- *Radial motion in horizontal and vertical planes*
- *Extremely precise, yet simple to use*
- *Reduce costly design, engineering, and machining time*



**9**



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