

EXTRUSIONBuilder News

New Bars & New Parts,
T-Nuts & Torque Specs

MAR 2018
NEWSLETTER

LETS BUILD!

New 80/20 Products for 2018
All About T-Nuts
Torque Specifications

*The Newsletter For
T-Slot Extrusion Builders*



**INDUSTRIAL
SOLUTIONS, INC.**

ExtrusionBuilder News is a free newsletter for people that build frames using T-slotted aluminum extrusions and components. It is designed to be both informative and helpful for both professional builders/assemblers and “do-it-yourselfers”.

ExtrusionBuilder News is published by F&L Industrial Solutions, Inc. - a designer and builder of professional industrial framing using T-slotted aluminum extrusion. F&L Industrial Solutions uses 80/20’s line of aluminum products, and is proud to be an authorized full-service, Tier-1 80/20 distributor. We feel 80/20 offers the largest, most complete line of T-slot components in the world, with the highest quality at the best price. So even though you may find references to 80/20 T-slot profiles and components throughout this newsletter, most information should be applicable - even if you use a different brand/line of T-slotted aluminum extrusion. Our goal is to publish a newsletter that is useful for everyone that builds using T-slotted aluminum extrusion. Thanks for reading and enjoy!

What’s Inside?

New Products For 2018 2 - 5
2° Drop-Lock Feature 6
T-Nut Torque 6
T-Nut Chart 7
Store Discount BC
Upcoming Events BC

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**INDUSTRIAL
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www.fandl8020.com

New Products From 80/20

80/20 Inc. recently released a whole slew of new products for 2018. They have actually published a 38 page supplement that you can see or download from our F&L website by clicking on the supplement picture to the right.

The new products include a lot of new metric bars and parts - so if you use metric - you may see a lot to like in this year’s new products. On the extrusion front, there are a lot of new black anodized 40mm bars that will now be stocked. In the past you had to wait for these items to go out for anodizing, but now they will be in inventory, substantially reducing lead times.

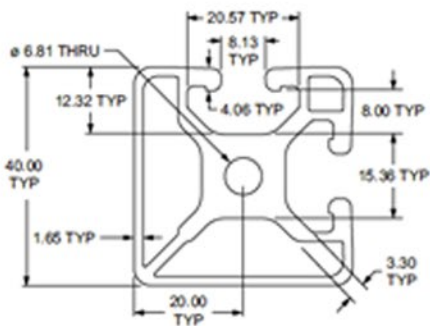
There are also numerous metric additions to joining plates, brackets, gussets, etc. Some of the more unique items include a handy roll-in mesh panel retainer that makes mounting mesh panels in the slot very easy. Other favorites of ours are the aluminum and nylon door stops, the rubber t-slot cover, and the 4-hole concealed hinge.

See all of these new products on the following pages.....

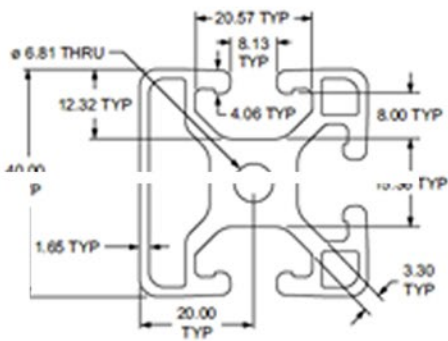


New Black Anodized 40mm Profiles

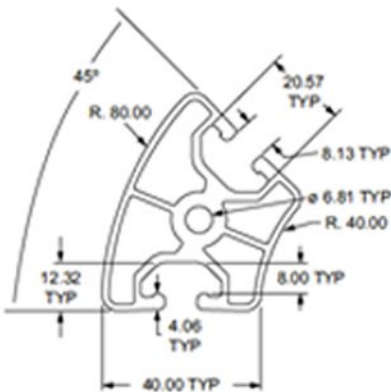
40-4002-Black



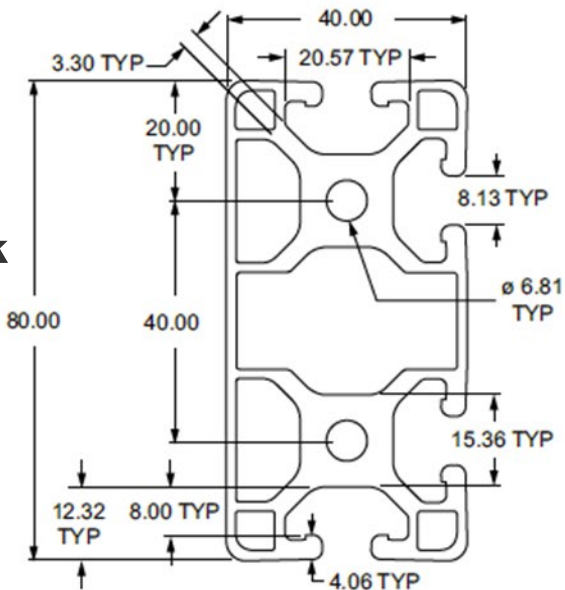
40-4003-Black



40-4094-Black



40-4084-Black



All of these 40mm profiles are available in clear, black (shown) and full black anodizing finishes.

New Products (cont.)



**2 Hole
Flat Plate**
20mm



**3 Hole
Flat Plate**
20mm



**4 Hole
Flat Plate**
20mm
30mm
45mm



**4 Hole
Square Flat Plate**
20mm
30mm
45mm



**6 Hole
Rectangular
Flat Plate**
20mm
30mm
45mm



**5 Hole L
Flat Plate**
20mm
30mm
40mm
45mm



**Std. End
Fastener**
30mm



**5 Hole T
Flat Plate**
20mm
30mm
40mm
45mm



**8 Hole
Rectangular
Flat Plate**
20mm
30mm
45mm



**3 Hole
Inside Corner
Bracket**
20mm
30mm
45mm



**4 Hole
Wide Inside
Corner Bracket**
20mm
30mm
45mm



**4 Hole
Tall Inside
Corner Bracket**
45mm



**8 Hole
Inside Corner
Bracket**
45mm



**2 Hole
Inside Corner
Bracket**
20mm
30mm
45mm

See New Product Supplement Catalog for exact part numbers

New Products (cont.)



**2 Hole
Gusseted Inside
Corner Bracket**
30mm
45mm



**4 Hole
Tall Gusseted Inside
Corner Bracket**
30mm
45mm



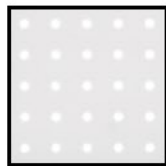
**4 Hole
Wide Gusseted
Inside Corner Bracket**
30mm
45mm



**8 Hole
Gusseted Inside
Corner Bracket**
30mm
45mm



**White HDPE Pegboard
with 1" Spacing**



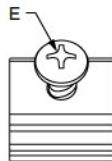
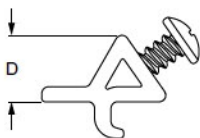
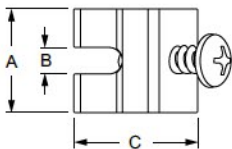
Hole Spacing
1.00" on center



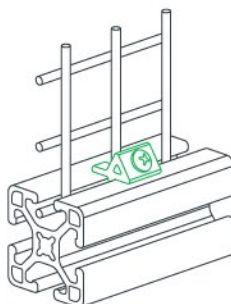
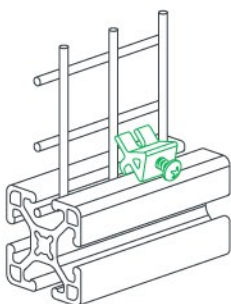
**4 Hole
Concealed Hinge**
10 & 15 Series
20,25,30,40,45mm



**Aluminum Door
Stop**
10 & 15 Series
25,30,40,45mm



**Roll-In Mesh
Panel
Retainer**
15 Series
40mm



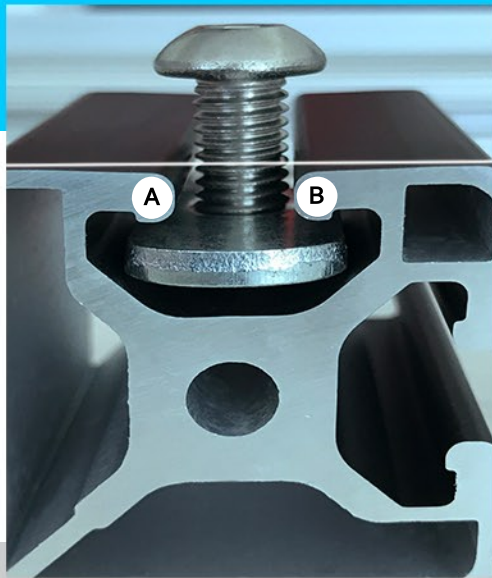
Nylon Door Stop
15 Series
40mm

See New Product Supplement Catalog for exact part numbers

T-Slots, T-Nuts & The 2° Drop-Lock

As the photograph below shows, the interaction between the extrusion “slot”, a t-Nut and a bolt are one of the most unique and useful features of any t-slot extrusion. While its hard to see, there is also an invisible partner called the 2 degree drop-lock feature. Look at the horizontal white line on top of the extrusion (above the A and B) - do you see the slight downward tilt of the A and B “arms”? The extrusion is not perfectly horizontal above the slot. Those extended arms are actually pointed down by 2 degrees. Why?

When the screw is turned, it will pull the t-nut located in the slot upwards until it hits the undersides of A & B. If it is the proper length for whatever is being mounted, it will pull the A and B arms of the slot up until they become straight - acting just like a locking washer. This 2 degree drop-lock feature, when engaged, basically gives you a built-in lock washer function that will keep your fastener tight - even when exposed to vibration. The key is having the right length screw (so it doesn't bottom out before securing the item being fastened to the extrusion). The other important thing is making sure you have tightened the screw properly.



To make sure you are tightening your screws and fasteners correctly, see the information below on Torque Specifications. Once you learn how to torque properly, it will be easy to replicate.

To see all of the different t-nuts available, which bars they are compatible with, and how much they cost, check out this useful chart...

T-NUT COMPARISION CHART

On Next Page

Torque Specifications

The tables below show the amount of torque in foot-lbs. and newton meters required to activate the 2 degree drop-lock feature for t-slotted profiles.

Fractional T-slotted Profiles




















Part Number	Fastener Description	Tested Profile	Minimum Torque Ft-lbs.	Maximum Torque Ft-lbs.
3320	5/16-18 x 11/16 Flanged BHSCS & Economy T-Nut	1515	10.00	15.00
3325	5/16-18 x 3/4 Economy T-Slot Stud, Washer & Hex Nut	1515	25.00	30.00
3360	15 Series Anchor Fastener Assembly	1515-Lite	10.00	20.00
3380	15 Series End Fastener Assembly	1515-Lite	10.00	22.00
3321	1/4-20 x 1/2 Flanged BHSCS & Economy T-Nut	1010	4.00	6.00
3395	10 Series Anchor Fastener Assembly	1010	3.00	17.00
3381	10 Series End Fastener Assembly	1010	4.00	17.00

Metric T-slotted Profiles

Part Number	Fastener Description	Tested Profile	Minimum Torque Newton Meters	Maximum Torque Newton Meters
75-3422	M8 x 16mm BHSCS & Economy T-Nut	40-4040	13	20
75-3500	M8 x 20mm Economy T-Slot Stud, Washer & Hex Nut	40-4040	40	54
40-3897	40 Series Anchor Fastener Assembly	40-4040-Lite	13	37
40-3891	40 Series End Fastener Assembly	40-4040-Lite	13	29
75-3404	M6 x 10mm BHSCS & Economy T-Nut	25-2525	5	8
25-3896	25 Series Anchor Fastener Assembly	25-2525	4	23
25-3895	25 Series End Fastener Assembly	25-2525	5	23

The estimated torque calculations in this chart are offered as a guide only. Use of this content by anyone is the sole responsibility of that person and they assume all risk. Due to many variables that affect the torque-tension relationship like human error, surface texture, and lubrication the only way to determine the correct torque is through experimentation under actual joint and assembly conditions.

80/20 T-NUT CHART

	Fastener Type	Thread Position	Price for 1" Bars	Price for 1.5" Bars	Price for 20mm Bars	Price for 25mm Bars	Price for 30mm Bars	Price for 40mm Bars	Price for 45mm Bars
SLIDE-IN BEFORE	 Slide-In Economy T-Nut - Style #1	Centered	n/a	\$0.21 3286	n/a	n/a	\$0.25 30-3789	\$0.21 40-3286	n/a
	 Slide-In Economy T-Nut - Style #2	Centered	\$0.16 3275	\$0.27 3836	n/a	\$0.21 25-3382	n/a	\$0.21 40-3286	n/a
	 Slide-In Economy T-Nut - Style #1	Offset	\$0.42 3676	\$0.27 3278	n/a	n/a	\$0.27 30-1961	\$0.32 40-1981	n/a
	 Slide-In Economy T-Nut - Style #1 with Holding Spring	Offset	n/a	\$0.34 3278 & 3010	n/a	n/a	n/a	\$0.39 40-1981 & 3010	n/a
	 Slide-In Economy T-Nut - Style #1	Offset	n/a	n/a	n/a	\$0.23 25-1941	n/a	n/a	n/a
	 Standard Slide-In T-Nut	Offset	\$0.79 3205	\$0.79 3201	n/a	\$1.00 25-3206	n/a	\$0.84 40-1964	n/a
	 Slide-In T-Nut with Ball Spring	Offset	n/a	\$1.90 13064	n/a	n/a	n/a	\$1.90 13064	n/a
	 Self-Aligning Slide-In T-Nut with Ball Spring	Offset	n/a	\$2.45 13050	n/a	n/a	n/a	\$2.45 13050	n/a
	 Self-Aligning Slide-In T-Nut	Centered	n/a	\$1.60 13022	n/a	n/a	\$1.60 13022	\$1.60 13022	\$2.55 13046
	 Slide-In Economy T-Nut Block	Centered	\$0.32 14124	\$0.32 14126	\$0.21 14159	\$0.32 14124	n/a	\$0.32 14126	\$0.32 14126
ROLL-IN AFTER	 Roll-In T-Nut with Flex Handle	Offset	\$1.70 3375	\$1.85 3284	n/a	\$1.75 25-1956	n/a	\$1.90 40-1966	n/a
	 Roll-In T-Nut with Set Screw	Offset	\$2.40 3312	\$2.40 3309	n/a	\$2.40 25-3312	n/a	\$2.55 40-1968	n/a
	 Roll-In T-Nut with Ball Spring	Offset	\$1.70 3919	\$1.60 3913	n/a	n/a	n/a	\$1.60 40-3913	n/a
	 Self-Aligning Roll-In T-Nut with Ball Spring	Offset	n/a	\$1.60 13027	\$1.20 13082	n/a	n/a	\$1.60 13027	n/a
	 Self-Aligning Roll-In T-Nut	Centered	n/a	\$1.40 13088	n/a	n/a	\$1.40 13088	\$1.40 13088	\$1.40 13058
	 Tall Self-Aligning Roll-In T-Nut with Spring Leaf	Centered	n/a	\$1.60 13030	n/a	n/a	n/a	\$1.60 13030	n/a
	 Short Self-Aligning Roll-In T-Nut with Spring Leaf	Centered	n/a	\$1.60 13089	n/a	n/a	n/a	\$1.60 13089	\$1.80 13059
	 Economy Drop-In T-Nut	Centered	n/a	\$1.05 13179	n/a	n/a	n/a	\$1.05 13179	n/a
	 Standard Drop-In T-Nut	Centered	\$0.68 14162	\$0.79 3930	n/a	\$0.68 14162	\$2.00 13118	\$0.79 3930	\$0.74 13123

Note: Part numbers and prices are only examples, and other versions may be available at different prices

F&L Industrial Solutions is an authorized distributor and manufacturer of 80/20® Inc.

New Products (continued from page 50)



Rubber T-Slot Cover
15 Series
40mm



Tread Strip
10 Series
25mm



**Tool Holder
Cup Holder**
10 & 15 Series
25,30,45mm

**Adjustable
Monitor Arm**
15 Series
30mm
40mm
45mm



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Profiles**

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12550 Stowe Dr., Poway, CA 92064
858-602-1500
www.fandl8020.com