

# 80/20 Mind

a product of 80/20 Inc.

## MAGAZINE

80/20



**Adding Safety Components**



p.5

**Standup vs. Sitdown Desks**



p.13

**Do-It-Yourself CNC Router**



p.16

# Think with a Modular Mind

Welcome to the first volume of Modular Mind! Throughout the years 80/20 has grown from an eight page black and white catalog consisting of 34 pieces to a current offering of over 8,000 parts and growing.

This expansion is the result of a lot of hard work, listening and acting upon customer suggestions and feedback, and through dedication to learning and improving. By publishing this magazine we hope to impart upon you some of the knowledge we've gained along the way, including tips and tricks for you and your next build, as well as general industry knowledge. Hopefully this will help you with your designs and projects or will spark a new idea.

If you have any questions regarding the magazine or would like to be a contributor in future editions, please contact 80/20 at [marketing@8020inc.com](mailto:marketing@8020inc.com).

If you would like assistance purchasing 80/20 products, information regarding the product or would like to begin a relationship with an 80/20 distributor please contact us at [info@8020inc.com](mailto:info@8020inc.com). Thanks for reading and enjoy!

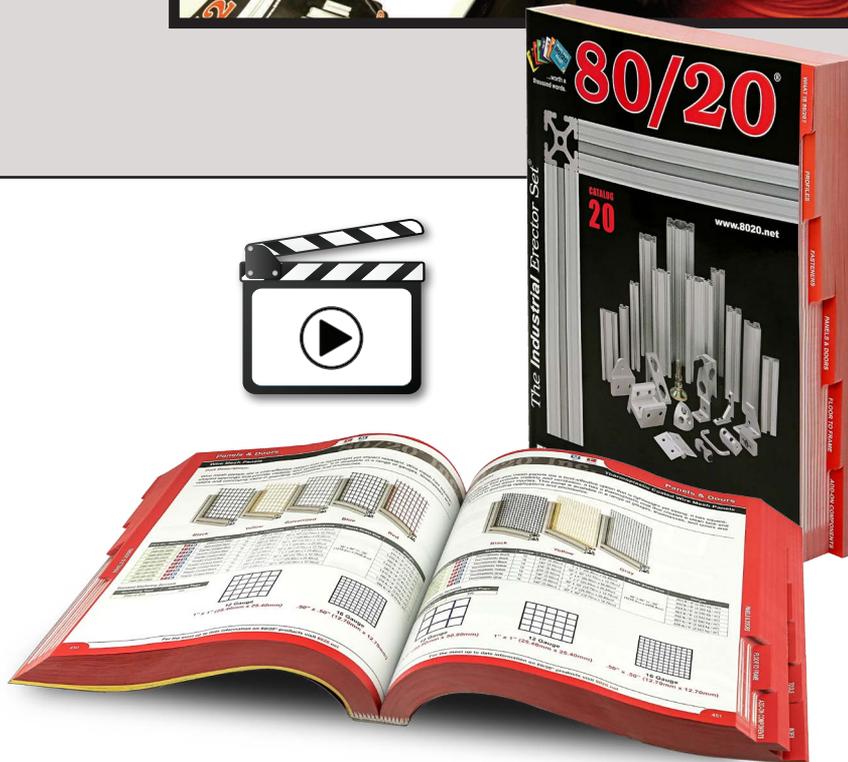
**DON WOOD**  
80/20 Inc.  
CEO/Owner

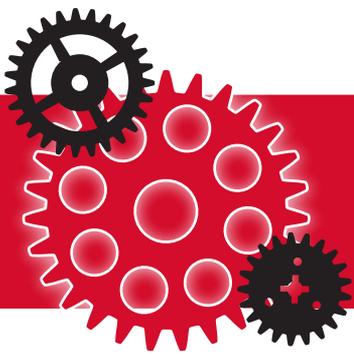


## 80/20® Inc.

*The Industrial Erector Set®*

80/20 Inc. is the originator and manufacturer of "The Industrial Erector Set®," a modular T-slot aluminum building system for every industry or application. From light to heavy-duty, 80/20 is a perfect solution for machine frames, guarding, enclosures, displays, workstations and the DIY home hobbyist. With a catalog of over 8,000 products to choose from, free design assistance and 80/20 Builds assembly support, 80/20 Inc. will ensure your project is completed to the highest standards.





# Point you **in the** *right* **direction**

## Machine Guarding



**2**  
pg

Find out how to make operations OSHA friendly and how T-slots can help you keep your workstation safe.

## **3** What Goes Into Guarding

**3**  
pg

From the panels to access doors find out the different components that go into guarding.

## **6** Panel & Mesh

**6**  
pg

Look over the options for panels and mesh wire when incorporating paneling in guarding.

## Workplace Ergonomics



**8**  
pg

See how ergonomics benefits every workspace with improved employee health and productivity.

## **14** What is 80/20?

**14**  
pg

From concept to design, learn how 80/20 can be used in everything around you.

## **16** DIY Testimonials

**16**  
pg

Hear from customers on how 80/20 made their designs come to life with T-slot aluminum.



**20**  
pg

## The T-Slot Concept

Understand the benefits of T-slot aluminum profiles and how it rivals steel and other materials. Get in-depth insight on the modularity T-slot profiles provide.

**22**  
pg

## T-Slot Fastening Methods

There is more than one way to bring a project together. Check out the different fastening options for connecting and completing your project.

**Reactive Guarding**



Unsafe Workplaces Result in over 90,000 State & Federal Inspections Annually

**OSHA Violations**



Good  
 Average  
 Poor

Average OSHA Citation Cost \$1,755 not including Corrective Action Cost

Serious Violations can also Result in Legal Claims

**Medical Expenses**



**EMERGENCY DEPARTMENT**

Personnel Injury may Equal Higher Insurance Premiums

Possible Disability Claims & Compensation Expenses

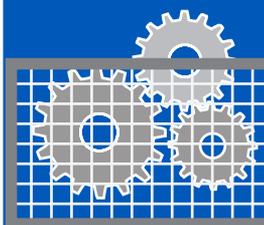
**Machine Shutdown**



Machine Shutdowns Restrict Normal Order Fulfillment

Injuries & Citations Result in a Loss of Production

**Proactive Guarding**



Proper Guarding Helps Ensure OSHA Compliance

Workers are Protected from Injury & Down Time

Equipment can Maintain Normal Operations

**D**id you know that frequently over 24 percent of OSHA's most commonly cited standards for the manufacturing industry dealt with machine guarding? In 2012 over 738 fatal events were due to contact with machine objects and equipment that could have been prevented by proper guarding. This same year there were 40,648 federal inspections and 52,056 state inspections administered by OSHA.

Penalties for more severe citations can reach upwards of \$127,000 per occurrence but even incidences considered non-severe carry a fine of \$12,700 and up. For machine guarding violations alone, there were over \$4 million worth of fines assessed to private-sector businesses within the year.



**IT PAYS TO BE COMPLIANT**



OSHA standards emphasize that machine guards are the preferable control method for reducing workplace hazards because they are physical barriers that enclose dangerous machine parts and also prevent employee contact with them.

## Take the First Step in Guarding

The first step in choosing proper guarding equipment: **PLAN!** Not all guarding equipment is the same; what is the purpose, location and required lifespan of the guard? These are just some of the questions you should ask yourself.

Longevity of materials should be a top priority when considering guarding equipment, along with modularity and flexibility to account for maintenance and redesign or expansion.

The standard 80/20 aluminum T-slot framing offers durability and strength comparable to steel but without the corrosive properties and heavy assembly and maintenance costs associated with non-aluminum products. A little bit of planning and using the right material from the beginning will save you considerable time, money, inefficiencies and frustration down the road.



**SOURCES USED:**  
[www.osha.gov](http://www.osha.gov)  
 Bureau of Labor Statistics.



See 80/20 guarding and more at [8020.net](http://8020.net)

# WHAT GOES INTO GUARDING

**1** Plastic panels are multi-functional. They create secure enclosures and prevent access to machinery while containing moving parts and fluids. In addition, they act as noise barriers. Noise control is often forgotten or overlooked but employers need to be aware of the hazards of exposure to high levels of noise, especially in a plant or factory setting. Keep in mind that occupational hearing loss is the most common work-related injury.

## TIP

If you want a clean, sleek look, try a solid black panel.

**2** In applications where you need to keep people away from equipment but visibility or air flow are concerns, use 80/20 mesh paneling. It is resistant to corrosion, lightweight yet strong, and a lower-cost option without compromising functionality. Customize it with an eco-friendly thermoplastic coating which is easy to clean and won't flake or chip. For an upgrade, consider an expanded metal panel which is a bit stronger than standard mesh.

**3** An added benefit of profiles and panels; they come in handy when you need to affix a cautionary or warning sign directly to the guard. Use a colored profile or panel to denote warning or hazard.

**4** This custom access door houses several unique and personalized features. For this machine a stop sensor was needed as an added safety precaution. The bi-fold door allows mounting of the sensor with minimal accessories so that when the door is open the sensor connection is broken and the machine is powered-down. The offset handles are made with one solid side to prevent finger pinching. All of the fixtures are made of corrosion-resistant, easy to clean materials.

**5** In order to maintain the integrity of the frame 80/20 Mighty Mounts were attached. The foot insulates vibration and shock through the non-skid elastomer pad to ensure stability of the guard. It comes standard in yellow to denote caution. If you have an uneven surface, pair the Mighty Mounts with leveling plates.



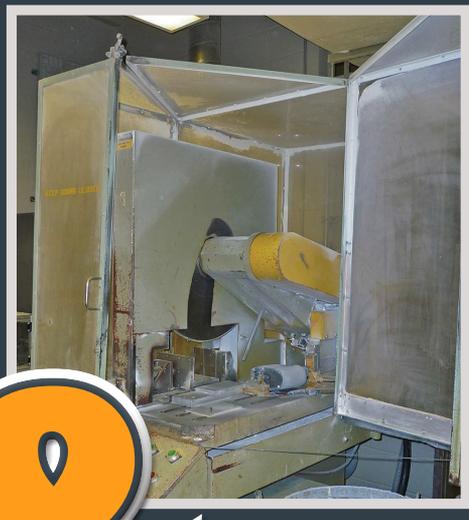
# Avoid the Limitations of Prefabrication with the Modularity of T-Slot Aluminum

See the before and after of T-slot aluminum guarding. This machine was originally enclosed using a prefabricated option. An initial review of the machine guard shows serious deficiencies. The operator also incorporated several custom solutions.

## BEFORE

The original guarding enclosure was not stable enough or durable for long-term use. It was a generic enclosure and not customized for the equipment or its location.

There were access points where they were not needed and the doors themselves did not latch. The wing span of the doors, especially when both were opened, took up too much area. The doors and panels quickly built up a film of dirt and dust and did not clean well. Tools and hoses had to be rigged to work around the guarding instead of allowing for mounting to it.



## AFTER



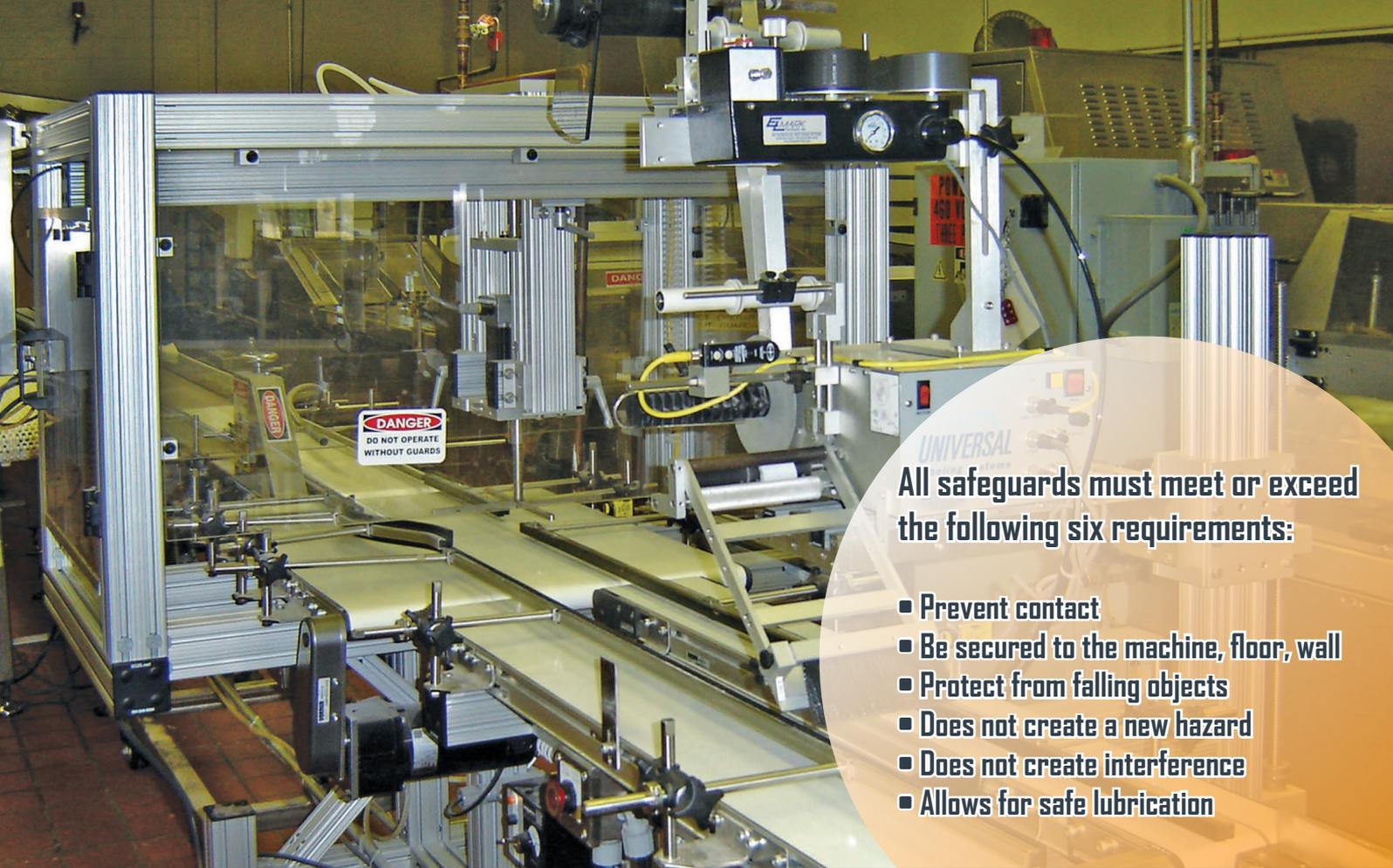
The upgraded enclosure uses clear plastic panels which can include a non-corrosive, abrasion and scratch-resistant coating. It offers both high impact resistance & good visual transparency while lending itself to easy cleaning and maintenance.

The enclosure uses fasteners, brackets and plates along with a T-slot aluminum profile to offer much more strength and stability while also being aesthetically appealing. The custom guarding is personalized to include tool hangers strategically located for ease of use and safety.

## OSHA Quick Tip:

Keep in mind that  
**BELTS** and **CHAINS**,  
running presses and machines  
will need to have guards.





All safeguards must meet or exceed the following six requirements:

- Prevent contact
- Be secured to the machine, floor, wall
- Protect from falling objects
- Does not create a new hazard
- Does not create interference
- Allows for safe lubrication

# Integrating Safety Components

**SAFETY DEVICES** - As always, safety should be a priority when designing machine guards. Use materials where you can easily mount safety devices such as light curtains, relays, control bars, foot switches, timers and push buttons directly to the guards.

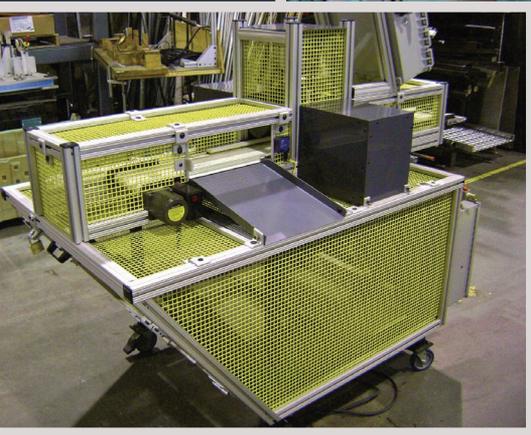


**A**n important feature of guarding equipment is the ability to mount other components to the guard. Examples of this can be found in several applications, commonly in factory automation. By using a custom T-slot frame, a robotic arm with wires and motor casing can be attached directly to a guard. This reduces safety hazards and increases productivity and space utilization.

**GUARDING SPOTLIGHT:**

# PANELS & WIRE MESH

**P**aneling is an important component of any machine guard system and can be used to protect and separate personnel, property and equipment. You'll find that you have several choices to consider when incorporating paneling into your guarding and enclosures. From there you'll want to make a thorough assessment of your needs.



Consider impact resistance; look at whether you need to keep things in or out or both and the requisite strength and stability the panel will need to provide. The following chart overviews 80/20 Inc.'s stock plastic panels and wire mesh physical properties:

	Acrylic	AP Polycarbonate	Polycarbonate	Recycled Polycarbonate	ABS Haircell	KYdex®	Expanded PVC	Alucobest	Alumalite®	Twin Wall Polycarbonate	6061-T6 Aluminum Plate	HDPE
<b>Standard Sheet Size</b>	48" x 96"	48" x 96"	48" x 96"	48" x 96"	54" x 103"	48" x 96"	48" x 96"	50" x 122"	48" x 96"	48" x 96"	48" x 144"	48" x 96"
<b>Standard Thickness</b>	.177" - .236"	.177" - .236"	.177" - .236"	.177" - .236"	.177" - .236"	.187" x .250"	.118" - .236"	.236"	.236"	.266"	.060" - .500"	.177" - .236"
<b>Optical Clarity</b>	High	Good	Good	Good	None	None	None	None	None	Good	None	None
<b>Weather Resistance</b>	High	Good	Good	Good	Average	Average	High	High	High	High	High	High
<b>Stable Max Temp</b>	180°F	240°F	240°F	240°F	180°F	160°F	140°F	175°F	120°F			
<b>Abrasion Resistance</b>	Low	High	Low	Low	Good	Good	Average	Average	Average	Low	Average	Average
<b>Impact Resistance</b>	Average	High	High	High	Good	High	Low	High	Good	Average	High	Good
<b>Chemical Resistance</b>	High	Average	Average	Average	Average	Average	Good	Good	Good	Average	High	High
<b>Machinability</b>	High	Good	High	High	High	Average	High	Good	Good	Average	Good	Average
<b>Finish</b>	Smooth	Smooth	Smooth	Smooth	Textured On One Side	Textured On One Side	Smooth	Smooth	Smooth	Smooth	Smooth	Textured On Both Sides



**N**ot all guarding and enclosures are used for heavy machinery or plant equipment. Guarding can be used to protect and display property such as in a tradeshow booth or to exhibit and showcase products. Use an acrylic panel to obtain the dual benefits of optical clarity and safe-guarding the product. The material is lighter than glass and easy to cut and drill while also maintaining resistance to the elements.

**TIP**

For an upgrade, try a polycarbonate panel which is a bit more durable than acrylic and has an abrasion-resistant coating.



**W**ire mesh panels offer a strong, impact resistant, non-corrosive and easy to clean option for perimeter guarding, inventory management and machine guarding for applications that do not require keeping fluids or particles enclosed. The mesh acts as a barricade while allowing for visibility and air flow. You can use colored mesh to denote hazards or caution.

EFFICIENCY  
RATE

TOTAL  
OUTPUT



# ERGONOMICS in the WORKPLACE

Companies that employ ergonomic solutions reap several benefits besides reductions in workers' compensation costs. They also realize improved productivity (up to 25% increase in output at computer workstations when using ergonomic furniture), fewer mistakes, less scrap, and improved efficiency due to decreased fatigue and increased strength and accuracy that are the results of ergonomics and user-friendly workstations.

## HIDDEN PRODUCTIVITY IN WORKSPACES

Workers' compensation cases involving musculoskeletal disorders (commonly known as ergonomic injuries) accounted for 32% of workplace injuries and illnesses in 2014. Costs pertaining to workplace injuries continue to rise; insurance premiums for workers' compensation are increasing along with the costs of medical services and pharmaceuticals. When you factor in that the typical worker misses 9 days of work due to an injury incurred on the job, it becomes apparent that employers, both for moral and financial reasons, need to make ergonomics in the workplace a priority.



One company found that by changing to ergonomic desks and furniture they enjoyed a decrease in absenteeism by 75%, error rates went down by 56%, and time on task went up 40%.

In order to be effective, workspaces must fit processes and personnel by minimizing injuries due to repetitive tasks, overuse of muscles, bad posture, and reaching or straining for objects or materials.

Source: Bureau of Labor Statistics

Consider "fit, form and function" when thinking about ergonomics in your workplace. Use the modularity of T-slot products to ensure desks, workstations and equipment simplify tasks and have the ability to be interchangeable for employees of different sizes and heights.

**FIT, FORM, FUNCTION**

ABSENTEE  
RATE

ERROR  
PERCENTAGE

**W**ith any ergonomic tool or workstation, the best alternative will allow for personalization, flexibility and change. While prefabricated products may have lower initial up-front costs, very rarely will you find everything you need customized to your specifications.

Another inherent problem with premade workstations is that you may not know what you will need to add, change or retrofit in the future and there are little options available to make these updates if you buy an off-the-rack option.

Do you need to move the workstation frequently? Adjust the height, length, and width? Add a computer or other electronics while maintaining mobility? Will you need any of these options in the future? The natural modularity of T-slot products make it a perfect fit for customization and personalization and allows for adjustments and changes to the overall design of the workspace for future applications.

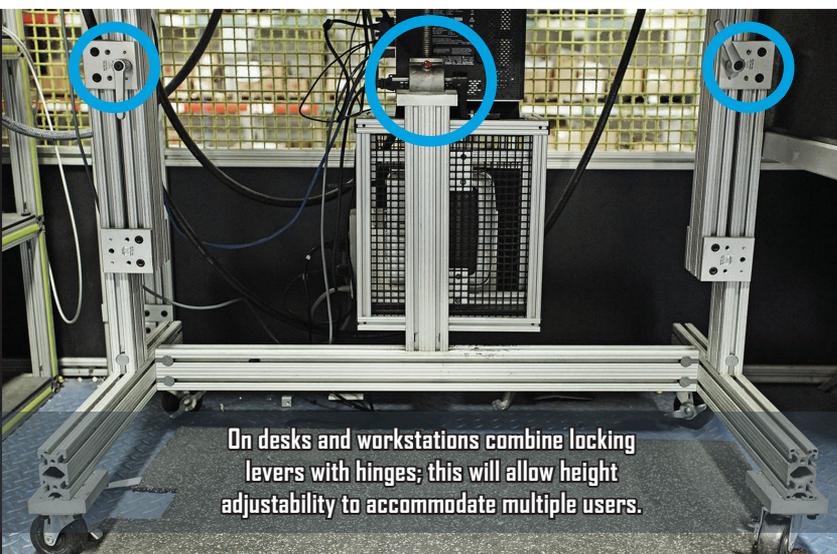
# ONE SIZE DOES NOT FIT ALL



Applying ergonomics helps prevent injuries from overreaching and improper posture. This leads to decreased risk of work-related injuries while productivity increases due to easier movement and less strenuous tasks.



T-slot aluminum can help make sure the equipment and workspaces meet the optimal size for all employees.



On desks and workstations combine locking levers with hinges; this will allow height adjustability to accommodate multiple users.

It's amazing how far ergonomic innovations have come in the workplace. Consider as recently as a few years ago when desks, workspaces and tools were static entities and employees were tasked with adjusting themselves to conform to the size of the work area.

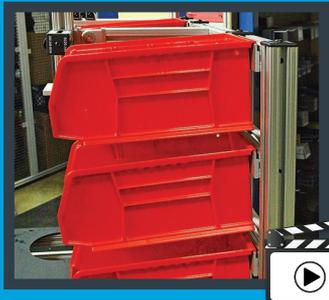
In today's world, both for safety and productivity, companies are proactively looking for better and more efficient processes and a solution has been found in ergonomics.

## ERGONOMIC SPOTLIGHT:

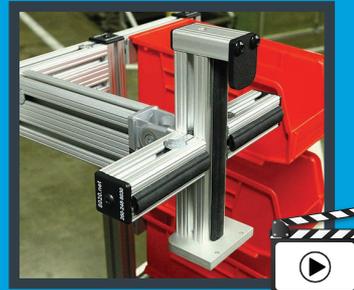
# MOBILE WORKSTATION



Customized workstations are perfect for many industries including medical, warehousing, retail, distribution centers, and manufacturing plants. Custom workstations promote personal safety, loss prevention and productivity.



1 Storage bins are perfect for a mobile workstation. They keep product within reach of the user while also providing color-coding for parts pulling and re-stocking tasks. They give you the freedom to personalize a storage system and conveniently mount to a T-slot profile.



3 Try pivot joints to enable flexibility of the computer monitor for different eye levels and desired viewing angles. Also secures monitor to station, adding working space in the process.

2 For easy mobility use a combination of rigid and swivel oil-resistant casters with a brake kit; if it will remain stationary try leveling feet for stabilization.



4 A handy feature for workstations is a retractable keyboard. For a T-slot frame use a linear bearing to accomplish this; the T-slot will serve as a rail for the bearing.



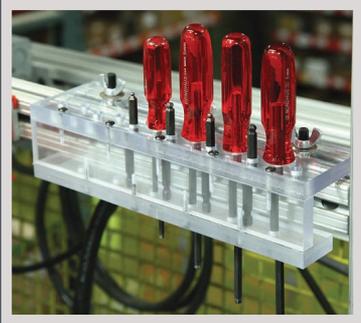
### Extrusion Tip: Tube Solution

The little things can make a big difference: plan for accessories such as tool hangers, hooks, document holders and wire ties. These features become indispensable for organizing computer stations, scanners, tools and cables.

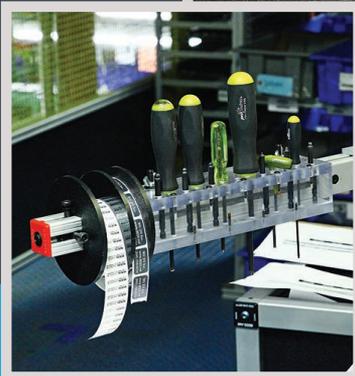
Tip: Use a Ready Tube series profile on your frame as a tool-holder.



Consider either a swing arm or drop down hanger for quick access to tools and overhead lighting; either can be mounted directly to the workstation.



Swing out drawers and Storage bins help organize and save workspace while still allowing for easy access.



Pressure manifold plates can be used with a T-slotted frame to allow the addition of pressurized tools within easy reach. These manifolds work well in several industries including pneumatics, assembly, food processing, medical and pharmaceutical.



# SPACE SAVINGS

## CREATE MORE WORKING AREA WITH EFFICIENCY

Customized workspaces using T-slot frames also have the added benefit of saving space. Use the mounting capabilities T-slots offer to move computers, accessories, compartments and tools off of the work area but within line of sight and easy reach. This enables the work area to take up less overall space while allowing more tabletop to complete work tasks. It also lends itself to creating customized cabinets and shelving for organization and storage.

See customizable accessories:  
visit [www.8020.net](http://www.8020.net)



# BUSINESS PROFESSIONAL MODULARITY



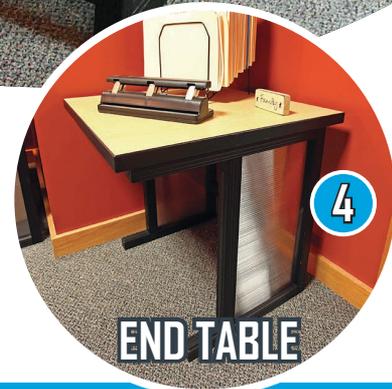
**TABLE**



**STAND**



**SHELF**



**END TABLE**



**DESK**



For easy mobility use a combination of rigid and swivel oil-resistant casters with a brake kit; if it will remain stationary try leveling feet for stabilization.

## OFFICE WORKSPACE

- 1** Black anodized frames look great in an office setting while maintaining functionality and matching existing furniture.
- 2** Use smooth T-slot profiles if the application involves fluids, oils, dust or other particles. The smooth surfaces will lend itself to time and money-saving advantages.
- 3** Shelving and cabinets are a great way to increase organization while saving space and keeping tools and materials readily accessible.
- 4** Give furniture a unique look with panel options like the twin wall polycarbonate.

# STANDING

## BENEFIT FROM A RAISED DESK

**S**tand up! Research compared people utilizing stand-up desks to those at traditional sit-down desks. The results concluded that after an hour or more of continual sitting the production of fat-burning enzymes declines by as much as 90 percent.

Sitting for extended periods also slows the body's metabolism of glucose and lowers levels of good cholesterol in the blood. Consider the following benefits of standing more while working:

- Movement burns more calories
- Increased blood flow lowers mental fatigue and increases productivity
- Fewer posture-related back problems
- More muscle use, decreasing neck strain
- Thinking is easier and more creative while standing



Integrate wood and other panel materials into T-slot profiles.

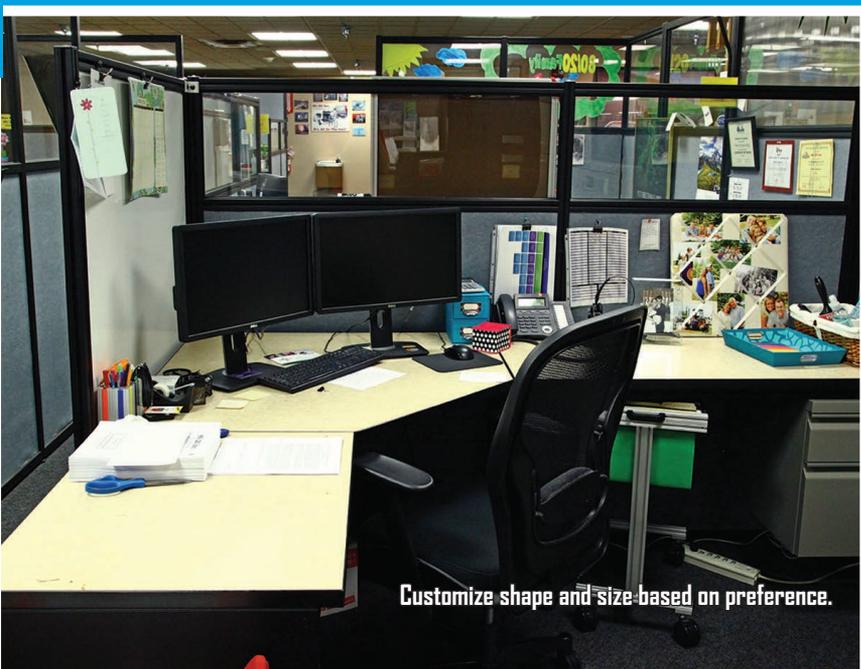


# SIT DOWN

## YOUR CHOICE OF DESKS

**U**se an ultra-lite T-slot profile to create a customized, reconfigurable desk perfect for standing while working. This material allows you to custom fit the desk height and can be made adjustable for a stand-up/sit-down combination.

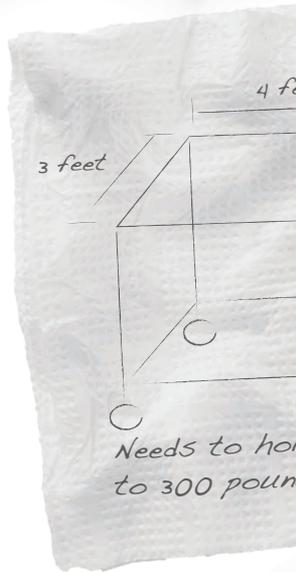
It is easily reconfigured for changes in office space or personnel. The T-slot frame lends itself to custom table-tops, keyboard slides, computer stands, shelving and many other accessories to round-out your ergonomic stand-up desk.



Customize shape and size-based on preference.

# WHAT IS

# *The Industrial*



*It all starts  
with an idea*

# 80/20<sup>®</sup>?

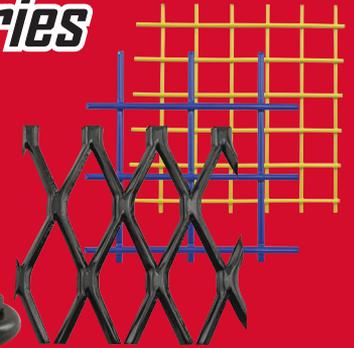


## Erector Set<sup>®</sup>

### Fasteners

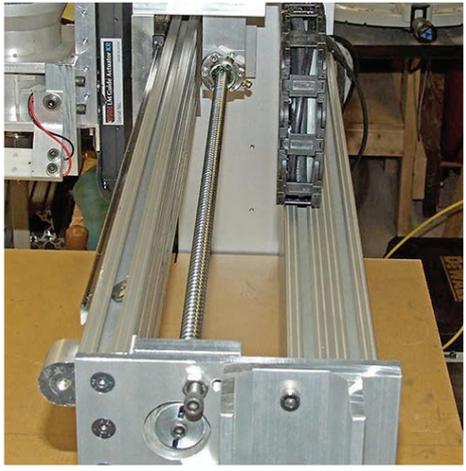


### Accessories



If you can dream it,  
you can build it with 80/20

# DO-IT-YOURSELF: CNC ROUTERS



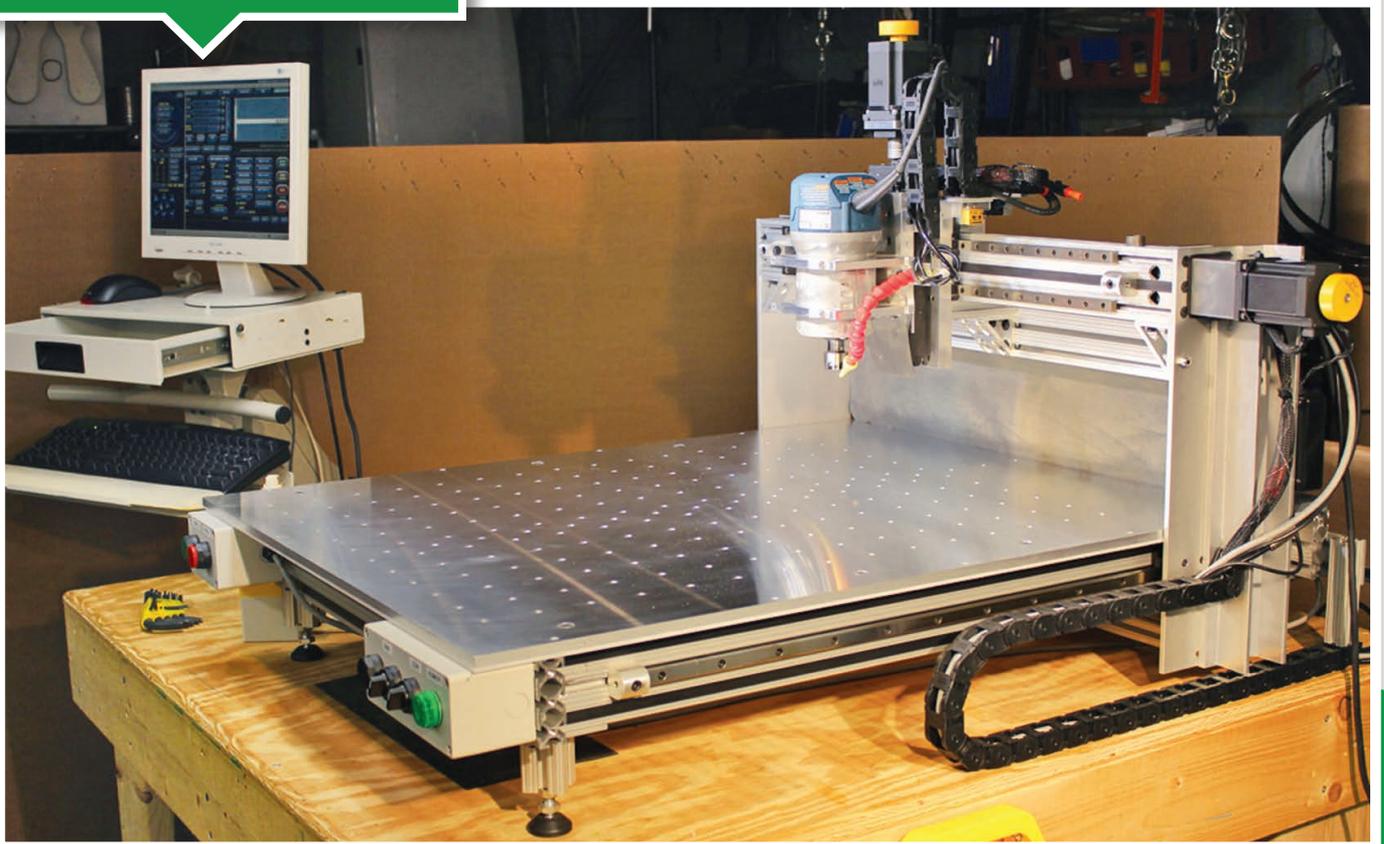
## TESTIMONIAL

**D**avid used 80/20 parts and profiles to build this custom CNC machine for his home workshop. David turned to 80/20 specifically because of how easy it is to use. He didn't have steel and welding resources or large machining tools; with 80/20 products he can "cut on my chop saw which opened up another door for me. I wasn't limited to finding a piece and making it fit. I didn't really need a lot of big tools to make 80/20 work for me."

**F**or building the CNC machine David knew he needed "something that was better and more stable...something industrial but adjustable which didn't require nails or shooting screws."

**T**his CNC router is comprised mainly of 10 series extrusions; even the legs are made of 80/20 profiles! The legs are 15 series and cut to about 2 to 3 inches and connected with a corner bracket that David custom drilled. Another benefit he enjoys by building with 80/20; the choices and options in fasteners and connecting methods. David notes that by utilizing 80/20 to build a CNC machine for his home he has "added the capacity to cut aluminum which has opened up a whole new world."

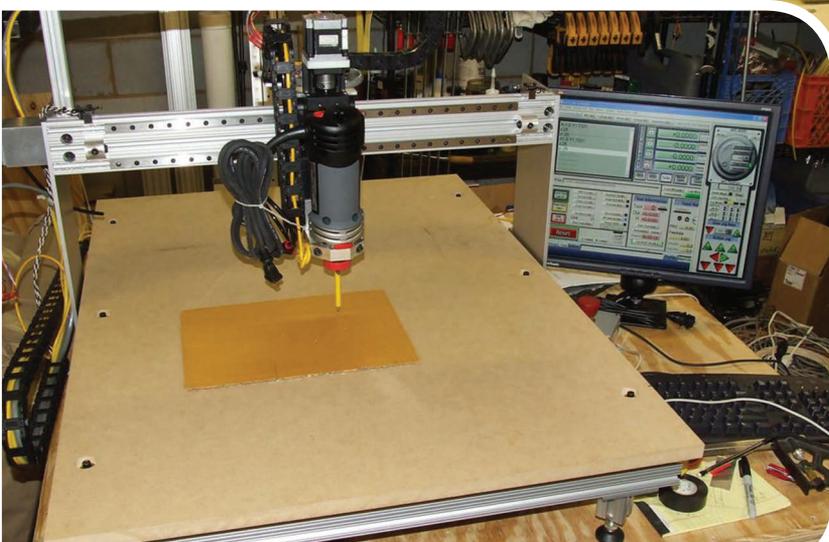
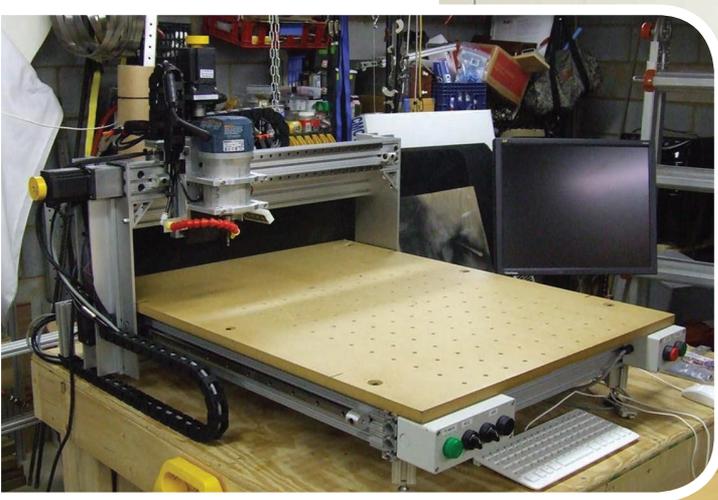
Visit [neo7cnc.com](http://neo7cnc.com) to see other DIY creations David made out of 80/20 products.



"I wasn't limited to finding a piece and making it fit. I didn't really need a lot of big tools to make 80/20 work for me."

Check out other 80/20

# CNC SOLUTIONS



Read more about this CNC router testimonial and more at [8020.net](http://8020.net)



**C**heck out this sturdy yet portable racing simulator Stephen made with 80/20 stuff! Stephen looked to 80/20 because "I could build exactly what I wanted with no compromise;" all the retail options he found involved having to give up either strength or mobility. He used a combination of 10 and 15 series profiles to keep the simulator light but solid without over-kill and notes that "structure-wise I realized I didn't need to go with the 15 series everywhere to get the rigidity I wanted."

**T**he versatility of 80/20 allowed Stephen to build a design with all of his specific requirements; look at the inverted pedals and custom steering wheel! Stephen also found the flexibility and modularity enabled by fastening plates to be crucial to his design; he wanted to be able to reconfigure and adjust his simulator to obtain optimum positioning and allow for new parts or accessories. With 80/20 Stephen says "I can have my cake and eat it too."

DO-IT-YOURSELF SPOTLIGHT:

# RACING SIMULATOR



TESTIMONIAL



**S**tephen wanted to get a feel for the product before and during his build so he visited a distributor and interacted with the profiles, parts, accessories and tools on the demo gurney. Stephen noted that "I couldn't have done what I did without having the hands-on." It is a great way to help in the design and decision-making process before investing resources. He also valued the fact that the distributor had stock profiles and parts, saving him money in shipping costs.

**"I could build exactly what I wanted with no compromise"**

Check out other 80/20

# SIMULATOR

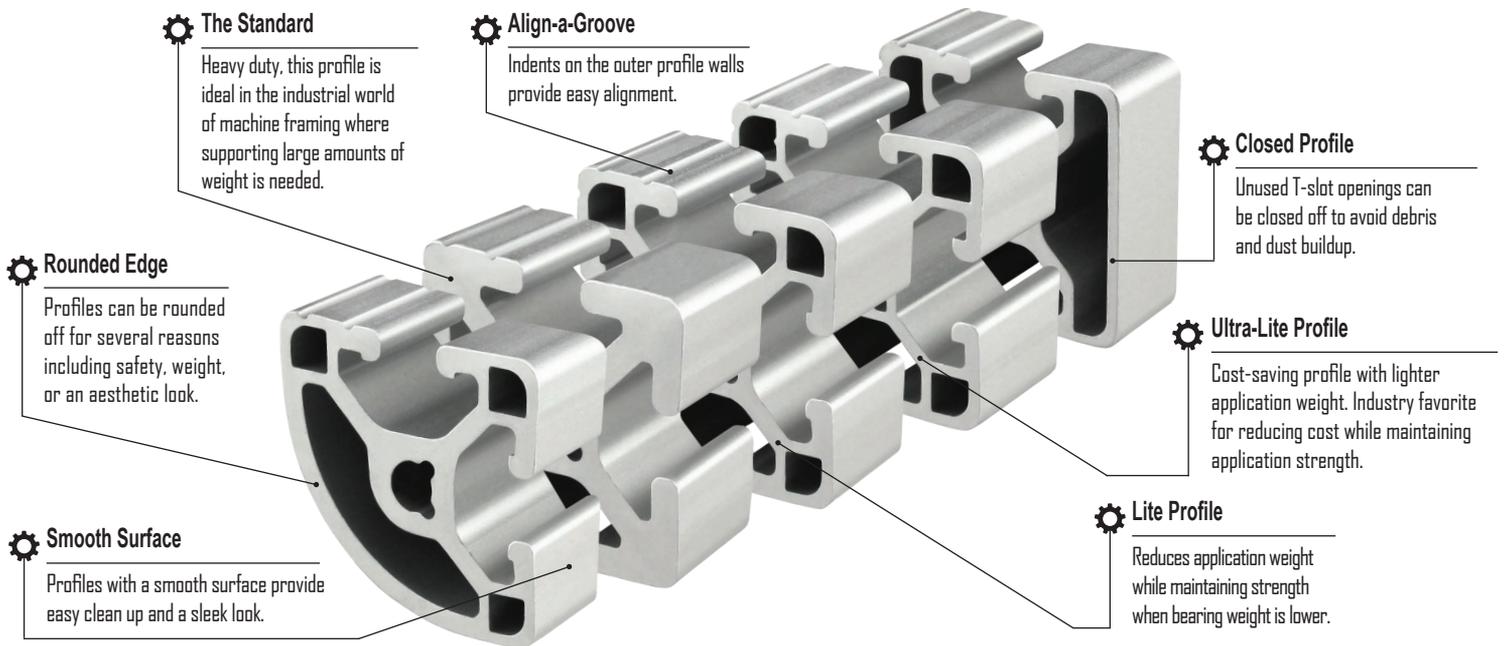


# SOLUTIONS

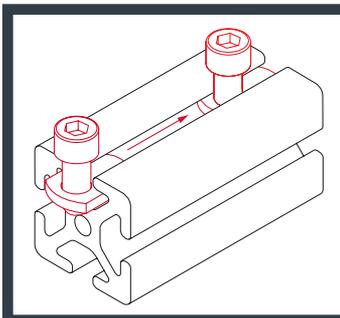


# THE T-SLOT CONCEPT BUILT IN MODULARITY

The aluminum T-slot profile has emerged as a viable alternative to steel and other tubular framing materials. The popularity of T-slotted framing is due, in large part, to its modularity which is unavailable through steel and other materials. Aluminum T-slot profiles are lightweight while maintaining strength and durability. Another advantage; choices abound with T-slot profiles. Choose from properties such as straight or rounded edges, smooth or grooved finishes, and ultra-light, light, or standard weight.



## HOW DOES IT WORK?

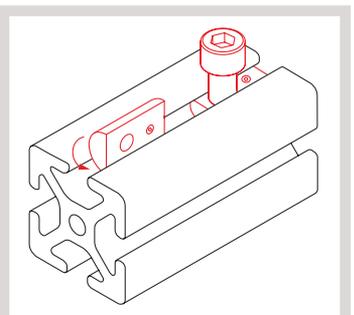


### Everything Slides Into Place

The shape of the T-slot creates modularity by allowing for an infinite number of mounting points along the profile, eliminating the limitations of incremental positioning and opening up opportunities and options in designs and projects.

### Dropping In

T-slot modularity can also be applied to captivated profiles as well. This means you no longer have to tear apart or rebuild frames for retrofits or changes. Instead, with the use of specialized T-nuts, you can add mounts and hardware to closed frames and easily make necessary updates by rolling or dropping in hardware.

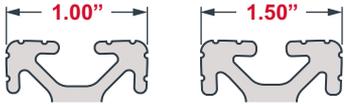


# 80/20<sup>®</sup> SETTING THE STANDARD

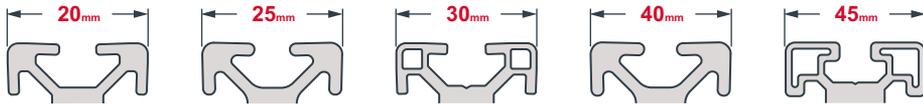
You will find that there are several benefits of 80/20 T-slot profiles. They are modular and customized, quick to assemble and reassemble, strong and resilient, lightweight and corrosion-resistant, and can be anodized to offer several color options, all the while being aesthetically appealing.

These 80/20 T-slot profiles are available in seven standard measurement series and offer both fractional (imperial) and metric options, allowing consistency throughout your projects. In addition, 80/20 has over one hundred profile shapes in stock opening up a world of possibilities; profile ranges allow for up to 12 open T-slots!

## FRACTIONAL | 1.0 inch • 1.5 inch



## METRIC | 20 mm • 25 mm • 30 mm 40 mm • 45 mm



\*Profiles are not shown to scale.



4 T-Slots



2 T-Slots Curved



2 T-Slots Angled



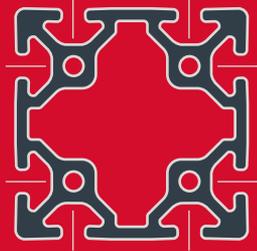
6 T-Slots Rectangle



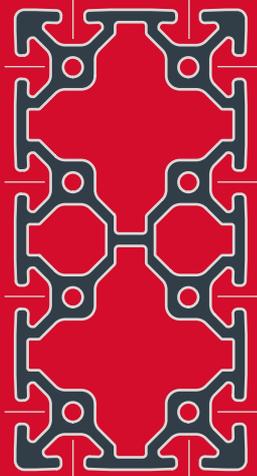
8 T-Slots Rectangle



8 T-Slots Square



12 T-Slots Rectangle

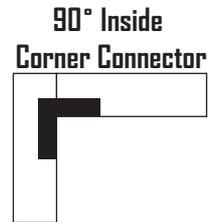
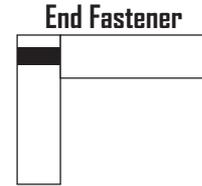
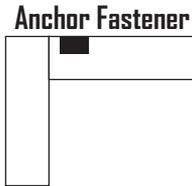


Common T-Slot Aluminum Profile Shapes

**T-SLOT PROFILE SPOTLIGHT:  
INTERNAL  
CONNECTIONS**

# FASTENER

Internal fasteners offer several design and application benefits. Machining of the T-slot profiles allow these fasteners to be hidden from view. Another plus, they don't affect the area of the design. Internal fasteners require less hardware compared to other fastening methods and are easy to assemble.



## ANCHOR FASTENER

These are perfect for making 90° connections in the center of a bar and are also easily adjustable.

- One of the strongest connection methods offered.
- Fits flush with profile exterior
- Utilizes a counterbore

## END FASTENER

Comprised of a button head socket cap screw and wing clip, they provide a clean, hidden method of connecting T-slot profiles.

- Prevents profile rotation
- Easy to assemble
- Utilizes an access hole and end tap

## INSIDE CORNER CONNECTOR

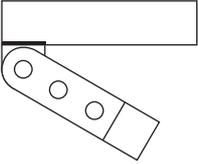
This fastening method provides a strong, 90° corner connection and requires no machining.

- Cost effective die cast
- Hidden connection
- Pre-loaded mounting hardware included in connector

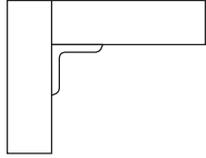
# METHODS

## T-SLOT PROFILE SPOTLIGHT: EXTERNAL CONNECTIONS

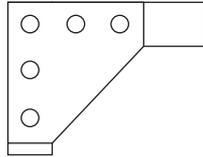
Structural Pivots



Brackets & Gussets



Plates



External fastening connections require no machining and are perfect for quickly connecting T-slot profiles. They can be used for strengthening connection points and they assemble with simple hardware such as bolts and T-nuts. External fastening connections can also be used to connect multiple T-slot profiles together.



## STRUCTURAL PIVOTS

This fastener allows for precise angles in T-slot connections ranging from 0° to 180° and is sold as an assembly.

- No machining required
- Easily reconfigured connection
- Includes all mounting hardware

## BRACKETS & GUSSETS

These connections offer extra strength and support and fasten anywhere on the T-slot profile for mounting other components.

- No machining required
- Sizes available for any profile
- Compatible with any T-nut or bolt type

## PLATES

80/20 can custom machine a joining plate to fit your design. It is also used to transition connections between different T-slot profile series and sizes.

- No machining required
- Wide variety of shapes and angles
- Compatible with black zinc, bright zinc or stainless steel bolts



**80/20<sup>®</sup> BUILDS**  
 YOU DREAM IT, WE BUILD IT



With the help of our 80/20 Builds frame fabrication services your project can be ready when it arrives at your door.

**PRELOADING**



**SERVICES OFFERED**

**SUBASSEMBLY**



**FULL ASSEMBLY**

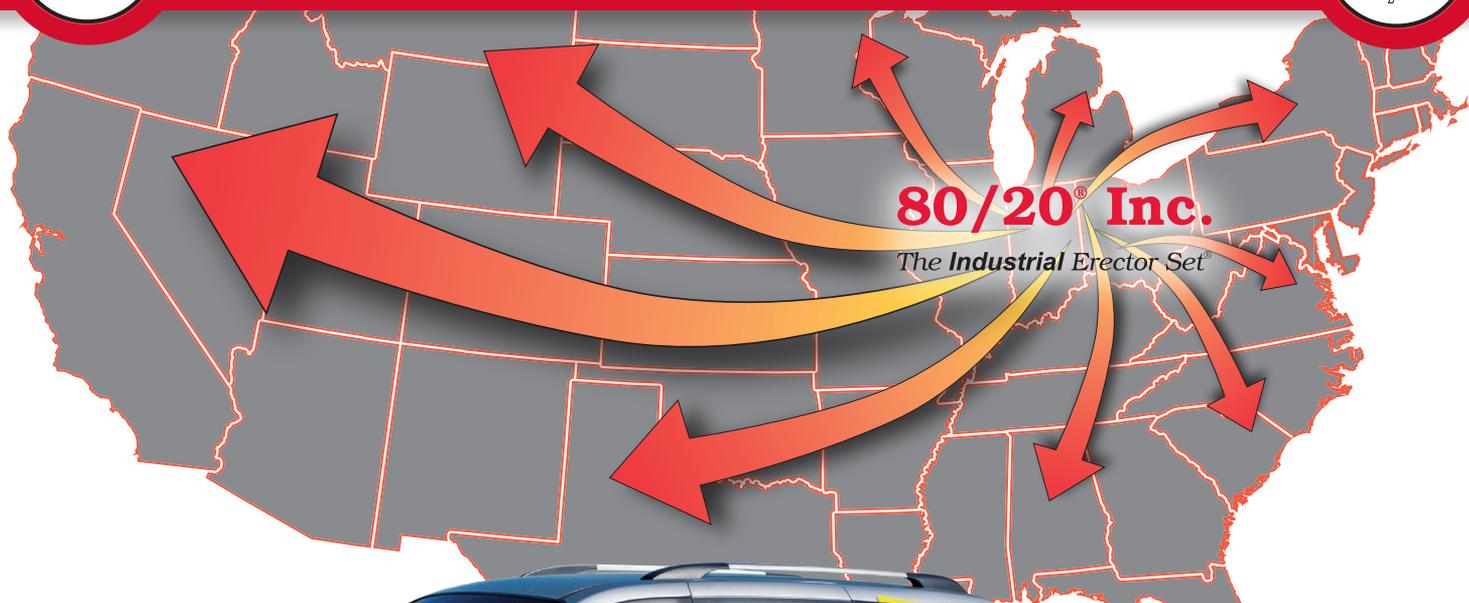


Get a free quote when you call 260-248-8030 and ask a representative about 80/20 Builds.

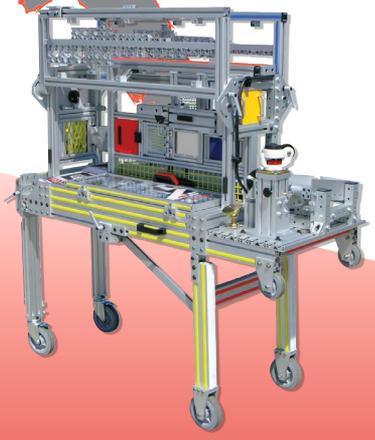




# On-Site Demonstrations



**80/20<sup>®</sup> Inc.**  
*The Industrial Erector Set<sup>®</sup>*



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**Have an 80/20 Inc. specialist  
come to your door for on-site  
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