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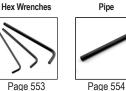
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This part is **10 Series compatible**



Design files for this part can be found on the 80/20® DVD (Design Software)



This part can use double economy T-nuts (see bolt kit table P on page 268)

This part can use triple economy T-nuts (see bolt kit table Q on page 268)

80/20[®] Inc. The Industrial Erector Set[®] THE STANDARD

Tools

11

Introduction to 80/20[®] Tools

Having the right tools to build your project will simplify your assembly job. In this section, we have all the tools you'll need to assemble everything in our catalog.

We also have counterbore cutters, access hole drills and jigs for those of you who prefer to machine our T-slotted profiles as you're building your project.

Along with the right tools, we also have the right attitude. Check out our **ATTITUDE** pins on page 558. Everybody needs one!

80/20 Tool Advantages

- Simple hand tools to assemble your project
- Fractional and metric tools with color-coded handles: yellow for fractional and red for metric
- Ball end wrenches for off-axis rotation

Fastener/Hex Tool Size Reference

This chart is a quick reference when looking for the correct size of hex wrench to use with 80/20 fasteners.

Thread Size	Fastener Head					
Thread Size	SHCS	BHSCS	FBHSCS	FHSCS		
8-32	_	3/32"	—	—		
10-32	5/32"	1/8"	—	_		
1/4-20	3/16"	5/32"	5/32"	5/32"		
5/16-18	1/4"	3/16"	3/16"	3/16"		
3/8-16	5/16"	—	—	7/32"		
M5	4mm	3mm	—	3mm		
M6	5mm	4mm	_	4mm		
M 8	6mm	5mm	—	5mm		
M10	8mm	6mm	_	6mm		

When ordering tools, be sure to verify their compatibility with your project. If more than one person is assembling, you may need more than one of each tool. Also keep in mind space constraints and on-site machining. To order, simply include part number, quantity, and tool description on your order, as shown in the example below.

				How To Order				
	Shipping Met	hod:		Ship To:				
		Customer:						
	Ordered	Ordered By: Address:						
		City / State:						
	Complete A	Address &	Shipping					
		uired N						
			0 F.O. DU	A lay				
	Part Number	Quantity	Length	Description / Machining	Price/ UOM	Ext. Price		
	1010	2	18.50"	7042 in A both ends	\$.23	\$8.51		
	1515-Lite-145	5	145.00"	Full length profile	\$65.25	\$326.25		
	3060	4	40.00"	7029 one end	\$2.95	\$472.00		
	3030	4	36.00"	7050 style G in W, X both ends	\$1.50	\$216.00		
2 -	CM01-051006	2		Custom bracket per drawing #1	\$23.00	\$46.00		
3 –	2611	1	5.25 sf.	1/4" bronze polycarb 1 @ 18" x 40" w/ 7311 per drawing	\$10.40	\$54.60		
	7150	1		Cut plastic panels all sides < -48"	\$10.50	\$10.50		
	7042	4		10 Series anchor fastener counterbore	\$2.25	\$9.00		
	7005	2		Cut-to-length for 1010	\$1.95	\$3.90		
	7023	4		Cut-to-length for 3060	\$2.90	\$11.60		
- 1	7030	4		Cut-to-length for 3030	\$2.60	\$10.40		
	7050	64		15 Series drill access hole	\$1.95	\$124.80		
	7029	4		5/16-18 tap service for 3060 Anchor fastener notch for 10 Series	\$15.20 \$0.53	\$60.80 \$1.06		
		Z			\$0.55	\$1.00		
	3380	32		15 Series 5/16-18 black zinc end fastener w/ screw	\$1.60	\$51.20		
	2114	16		Gray T-Slot covers for 10 Series	\$3.45	\$55.20		
	2050			End caps for 3030	\$1.85	\$14.80		
	3395	4		10 Series anchor fasteners	\$2.90	\$11.60		
~ –	3279	5		15 Series 5/16-18 black zinc double economy T-nut	\$0.79	\$3.95		
	4132	12		2 hole inside corner gusset bracket	\$3.95	\$47.40		
	3393	24		10 Series 1/4-20 BHSCS & economy T-nut	\$0.40	\$9.60		
	T			TOTAL		\$1549.17		
	Special Instru	ictions:_ <i>Mu</i> s	st be deliv		rices shown for illus rour distributor for a	tration use only. personalized quote		

4 - Machining Services = Pages 559-608 • 5 - Accessories & Tools = Pages 433-456 & 549-558



Fractional

Ball End Fold Out Combo Tool

- Ball end hex drive allows up to 25° angled tool engagement for hard to reach fasteners
- Ergonomic handle •
- Fractional or metric
- Compact no lost keys
- For easy identification, • fractional sizes have yellow case, metric have red case

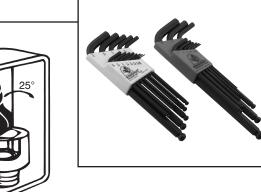
Ball End		Chamfe	red End
6086	6087	6088	6089
5mm	3/16	2mm	5/64
6mm	7/32	2.5mm	3/32
7mm	1/4	3mm	7/64
8mm	5/16	4mm	1/8
10mm	3/8	5mm	9/64
		6mm	5/32
		8mm	3/16
			7/32
			1/4

25°	C Gran
	C CONLINGUE
	1

	Part No.	Description	Lbs.
[6089	Hex Head Fold Out Combo Tool	.380
[6088 Metric Hex Head Fold Out Combo Tool		.380
[6087	Ball End Fold Out Combo Tool	.460
[6086	Metric Ball End Fold Out Combo Tool	.460

Ball Driver and "L" Wrench Set

- Ball end hex drive allows up to 25° angled tool engagement for hard to reach fasteners
- Fractional or metric
- For easy identification, fractional sizes have yellow case, metric have red case



- C		

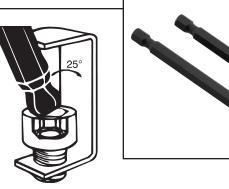
Part No.	Description Lbs.		Metrie	c (mm)	
6106	Metric Ball Driver & "L" Wrench Set .800		6	6106	
6111	Standard Ball Driver & "L" Wrench Set	.820	1.5	5	
			0	C	

Bondhus® is a registered trademark of the Bondhus Corp.

Metric	: (mm)	Standa	ard (in)
6106		61	11
1.5	5	.050	5/32
2	6	1/16	3/16
2.5	8	5/64	7/32
3	10	3/32	1/4
4		7/64	5/16
		1/8	3/8
		9/64	

Ball End Power Bits

- Allows for entry angle up to 25°
- 3" long with hex shank for power tools

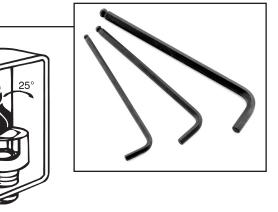


Part No.	Size	Description	Lbs.
6090	3/16"	Hex Ball End Power Bit	.042
6095	1/4"	Hex Ball End Power Bit	.043
6091	5mm	Hex Ball End Power Bit	.042
6092	6mm	Hex Ball End Power Bit	.043

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Ball End "L" Hex Wrenches

- Ball end for off-axis rotation
- Long arm for maximum torque
- Allows for entry angle up to 25°



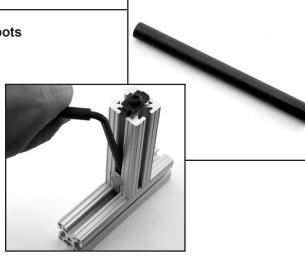
Part No.	Size	Description	Lbs.
6100	5/32"	Ball End "L" Hex Wrench	.030
6010	3/16"	Ball End "L" Hex Wrench	.046
6040	1/4"	Ball End "L" Hex Wrench	.096
6097	4mm	Ball End "L" Hex Wrench	.030
6098	5mm	Ball End "L" Hex Wrench	.046
6099	6mm	Ball End "L" Hex Wrench	.096

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Cheater Pipe

- Gives extra torque in hard-to-reach spots
- Use with a ball end "L" hex wrench
- Fits over "L" hex wrenches up to 1/4" (M6) size
- Steel tube, 5" long



Metric: **Red**-trimmed

Handle

Handle

Fractional:

Yellow-trimmed

Part No.	Description	Lbs.
6005	Cheater Pipe (up to 1/4")	.096

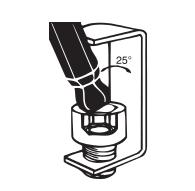


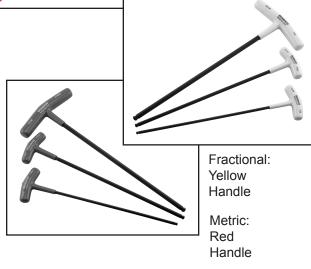
- Excellent choice for quick tightening by hand
- Accessibility in hard-to-reach areas
- Allows for entry angle up to 25°
- Ergonomic comfort handle



Part No.	Size	Description	Lbs.
6105	5/32"	Ball End Hex Driver	.091
6020	3/16"	Ball End Hex Driver	.145
6050	1/4"	Ball End Hex Driver	.213
6102	4mm	Ball End Hex Driver	.091
6103	5mm	Ball End Hex Driver	.145
6104	6mm	Ball End Hex Driver	.213

- Cushion grip for maximum torque
- 10" long arm for hard-to-reach areas
- Allows for entry angle up to 25°





	Part No.	Size	Description	Lbs.
[6000	3/16"	"T" Handle Hex Wrench	.159
[6030	1/4"	"T" Handle Hex Wrench	.380
[6110	5/32"	"T" Handle Hex Wrench	.130
[6107	4mm	"T" Handle Hex Wrench	.130
[6108	5mm	"T" Handle Hex Wrench	.159
[6109	6mm	"T" Handle Hex Wrench	.380

Combination Wrenches

- Used to tighten hex nuts when used with T-slot studs
- 7/16" fits 1/4-20 hex nuts
- 1/2" fits 5/16-18 hex nuts
- Forged and chrome-plated
- Made in the USA



Part No.	Size	Description	Lbs.
6065	7/16"	Combination Wrench	.120
6080	1/2"	Combination Wrench	.145

11

Fractional



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Six Lobe Tools

- "L" wrench provides higher torque
- Power bits for self-tapping screws
- "T" handle wrench speeds up assembly





Part No.	Description	Lbs.
6066	Six Lobe "L" Wrench - 40IP	.065
6067	Six Lobe "L" Wrench - 50IP	.134
6073	Six Lobe Power Bit - 40IP	.020
6069	Six Lobe "T" Handle Wrench - 40IP	.350

Ball End Sockets

- Speeds up assembly time
- Use with a 3/8" drive ratcheting or pneumatic socket wrench
- Tighten fasteners to specification with a torque wrench



Part No.	Size	Description	Lbs.
6001	3/16"	Ball End Hex Socket	.152
6002	1/4"	Ball End Hex Socket	.156
6003	5mm	Ball End Hex Socket	.145
6004	6mm	Ball End Hex Socket	.148



Access Hole Drills

- Drills through profile for access to end fasteners shown on pages 245-247
- Made in USA of highest quality high-speed steel
- Split point style



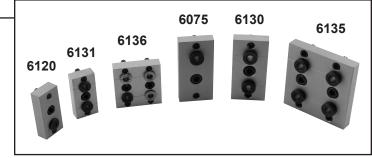
Fractional

Part No.	Size	Description	Lbs.
6115 🔀	.201 x 2.30"	10 Series Access Hole Drill	.024
6070	.281 x 2.68"	15 Series Access Hole Drill	.055

🔀 = 10 Series Compatible Part

Access Hole Drill Jigs





- Locates access holes precisely
- Hardened dowel pins prevent rotation
- Replaceable, hardened drill bushings
- Locator lines for accurate hole location
- Made of clear anodized 6061-T6 aluminum

6121 or 6076

Part No.	Size	Description	Lbs.
6120 🔀	.201"	Access Hole Drill Jig for 1010	.125
6131 🔀	.201"	Access Hole Drill Jig for 1020	.130
6136 🔀	.201"	Access Hole Drill Jig for 2020	.220
6121 🔀	.201"	Replacement Bushing for 10 Series	.049
6075	.281"	Access Hole Drill Jig for 1515	.385
6130	.281"	Access Hole Drill Jig for 1530	.390
6135	.281"	Access Hole Drill Jig for 3030	.785
6076	.281"	Replacement Bushing for 15 Series	.053

🔀 = 10 Series Compatible Part

11

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Anchor Fastener Counterbore Cutters

- Four flute-style single ends
- Made of high speed steel
- Specially ground for long life
- Made in the USA



Part No.	Size	Description	Lbs.
6160 🔀	9/16"	10 Series Counterbore Cutter	.173
6060	13/16"	15 Series Counterbore Cutter	.449

🔀 = 10 Series Compatible Part

Soft Face Mallet

- Won't scratch or mar aluminum
- Maximum controlled striking force without rebound
- Great for assembling Quick Frame or installing
 T-slot cover
- One-piece urethane construction
- Reinforced with solid steel rod no exposed metal
- Wraparound texture for secure grip
- Face diameter = 1.20"
- Made in the USA

Part No.	Description	Lbs.
6055	Soft Face Mallet	.730

ATTITUDE Lapel Pins

- Get your day and project started right with the **RIGHT ATTITUDE**
- A reminder to keep a good attitude in situations with your boss, banker, the IRS – any distraction that eats up your time and energy!



Part No.	Description	Lbs.
8020	Deluxe ATTITUDE Lapel Pin	.040
8030	Economy ATTITUDE Lapel Pin	.050



