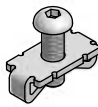
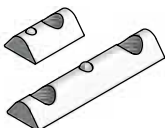
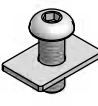
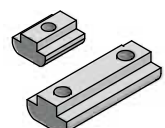
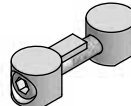
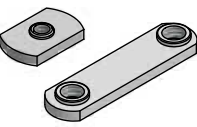
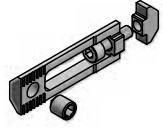
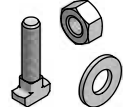
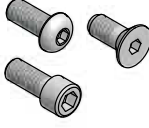
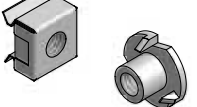
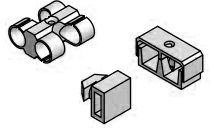
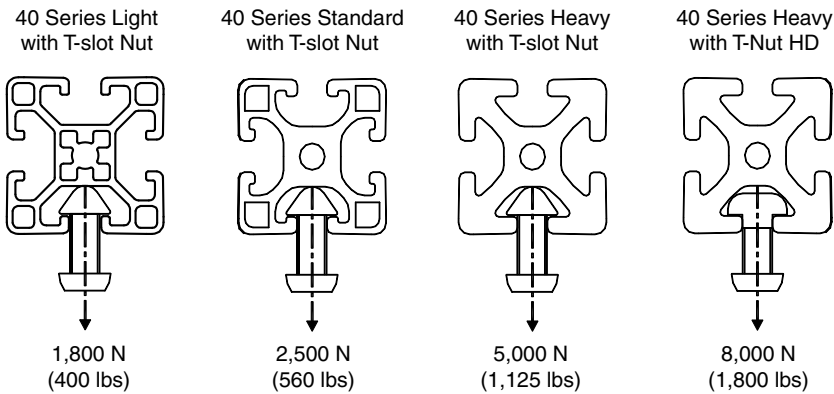


Section 2 Fasteners

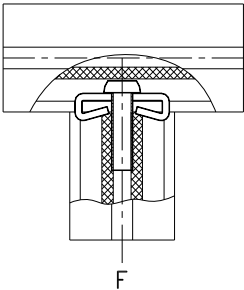
Standard Fasteners	76		T-Nuts	83	
			Double T-Nuts	84	
			Self-Aligning T-Nuts	84	
			T-Slot Bars	85	
Flat Plate Fasteners	77		Heavy Duty T-Nuts	85	
			Heavy Duty T-Slot Bars	85	
Butt-Fastening Sets	77		Economy T-Nuts	86	
			Drop-in Economy	87	
Universal Fasteners	78		T-Nut Zn	87	
Milling Connectors	79		Anodize Breaker	88	
Central Connector	79		T-Bolts	88	
			Nuts	89	
			Washers	89	
Self-Tapping	80		Metric Screws	90-91	
			Imperial Screws	92-93	
			Set Screws	94	
Profile-to-Wall	80		Clip Nuts	94	
			High Cycle Nut	94	
Miter Connectors	81		T-Clips	95	
			Cable Tie Holders	95	
			Cable/Hose Holders	96	

Safe Load



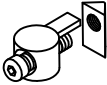
Pull Test

Two pieces of 40x40 Heavy profile were assembled to form a tee with a standard fastener and a button head screw. Force was applied until the tee started to separate. The profile failed before the fastener. The profiles were still held together at the end of the test. There were no catastrophic failures. Extra screw length beyond standard 18mm did not significantly change test results.



Screw	Engaged Length	Force (F)	
		N	Lbs
M8x18	10.8 mm	27,250	6,126
M8x20	12.8 mm	26,761	6,016
M8x25	17.8 mm	25,350	5,699
M8x30	22.8 mm	26,774	6,019

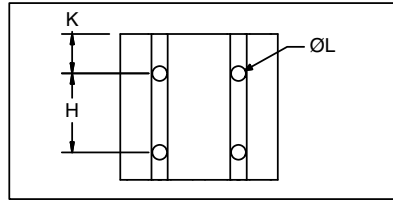
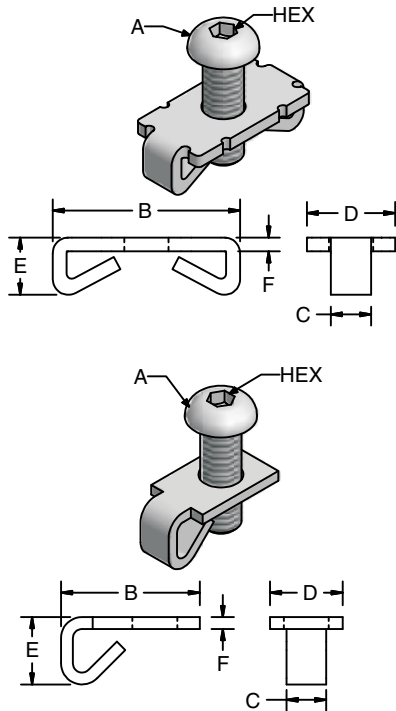
Fastener Quick Reference

Fastener Type	Hardware	40 Series	30 Series	28 Series	20 Series	1.5" Series	1" Series
Standard Fastener 	M5				20-021		
	M8	20-002	20-003	20-003		20-002	
	M8 SS	20-002SS	20-003SS	20-003SS		20-002SS	
	1/4-20						25-022
	5/16-18	25-003				25-003	
	5/16-18 SS	25-003SS				25-003SS	
Standard Fastener Single Tab	M8	20-144				20-144	
	5/16-18	25-014				25-014	
Universal Fastener 	M6		20-008	20-005			
	M8	20-004 ⁽¹⁾				20-004	
	1/4-20						25-023
	5/16-18	25-004				25-004	
Flat Plate 	M8x16	20-028				20-028	
	M8x10		20-028Z1	20-028Z1			
	5/16-18	25-028				25-028	
Butt Fastener 	M8x45	20-006 ⁽²⁾	20-012	20-012		20-006	
	1/4-20						25-017
	5/16-18	25-016				25-016	
Milling Connector	M5	28-004	28-005				
Central Connector	M6	20-704					
		20-705					
Profile-to-Wall	M8	20-015				20-015	
	5/16-18	25-015				25-015	
Self-Tapping		20-019					
Miter Connector	Variable HD	20-022				25-024	
	90° Fixed		20-128	20-128			25-026

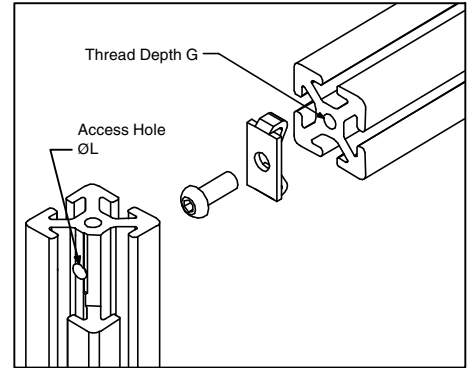
(1) Use 20-011 for 40 Series Pneumatic Applications

(2) Use 20-012 for 40 Series Pneumatic Applications

Standard



Series	G	H*	K	L
40	16	40	20	7
30	16	30	15	7
28	16	28	14	7
20	10	20	10	4.3
1.5"	0.75"	1.5"	0.75"	0.281"
1"	0.625"	1"	0.5"	0.219"



*All dimensions in mm unless otherwise noted.
H dimension is required when using multiple T-slot profiles.

Application

This is the primary fastening method used to join two pieces of profiles together.

The fastener couples with the taper in the T-Slots to create an extremely rigid joint. The tabs on the fastener align the profiles and provide anti-rotational support.

Technical Data

Plate

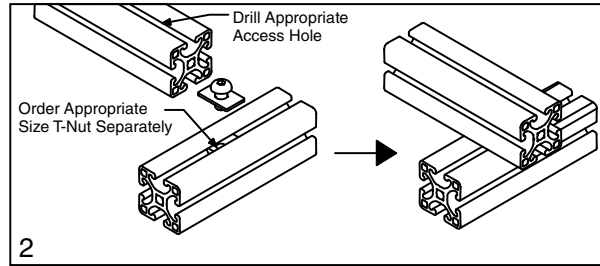
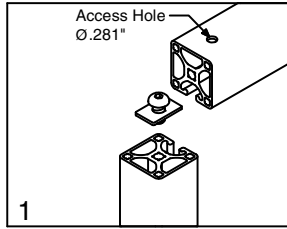
Std - Steel, Zinc Plated
SS - Stainless Steel
SAE - Steel, Zinc Plated
w/ SAE hardware

Note: You must use 20-028 Flat Standard Fastener or 20-144/25-014 Single Tab Standard Fastener set on closed face profiles.

Ordering Information

Profile Series	Type	Dimensions							Torque Nm (in-lb)	Weight (g)	Part #*
		A	Hex	B	C	D	E	F			
40	Std	M8x18*	5	36	7.8	17	11	2.9	25 (220)	25	20-002
	SS	M8x18*	5	36	7.8	17	11	2.9	20 (180)	21	20-002SS
	SAE	5/16-18 x 3/4"	3/16"	36	7.8	17	11	2.3	25 (220)	25	25-003
	SAE SS	5/16-18 x 3/4"	3/16"	36	7.8	17	11	2.3	25 (220)	25	25-003SS
	S End	5/16-18 x 3/4"	3/16"	27	7.6	14	13	2.3	25 (220)	21	25-014
	S End	M8x18	5	27	7.8	17	11	2.3	25 (220)	21	20-144
	Flat Std	M8x18	5	27	—	17	11	2	25 (220)	41	20-028
	SAE Flat	5/16-18 x 5/8"	3/16"	27	—	17	11	2	25 (220)	21	25-028
30/28	Std	M8x18	5	23.7	7.8	16	8.9	1.9	25 (220)	15	20-003
	SS	M8x18	5	23.7	7.8	16	8.9	1.9	20 (180)	14	20-003SS
	S End	M8x18	5	21	7.8	14	8.9	1.9	25 (220)	15	20-143
20	Std	M5x12	3	4.8	4.8	10	4.5	1.1	4.5 (40)	5	20-021
1.5"	Std	5/16-18 x 3/4"	3/16"	1.42"	0.307"	0.669"	0.433"	0.114"	25 (220)	25	25-003
	SS	5/16-18 x 3/4"	3/16"	1.42"	0.307"	0.669"	0.433"	0.114"	25 (220)	25	25-003SS
	S End	5/16-18 x 3/4"	3/16"	1.05"	0.300"	0.550"	0.510"	0.090"	25 (220)	21	25-014
	Flat	5/16-18 x 3/4"	3/16"	1.30"	0.307"	0.669"	0.433"	0.090"	25 (220)	21	25-028
1"	Std	1/4-20 x 5/8"	5/32"	0.795	0.250	0.520	0.300	0.060	20 (180)	13	25-022

*Fastening plates may be ordered without a screw by adding "Z1" to part number, i.e. 20-002Z1.



Application

This fastening set is suitable for connecting two profiles at 90° when a standard fastener cannot be used. It can also be used to connect two profiles where no end hole is available (see detail 2).

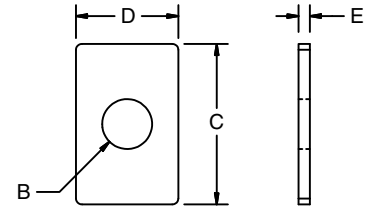
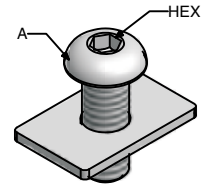
Ordering Information

Profile Series	A	HEX	B	C	D	E	Torque Nm (in-lb)	Wgt.	Part #
40	M8 x 18	5	8	27	17.5	2	25 (220)	13 g	20-028
1.5"	5/16-18 x 5/8"	3/16"	0.31"	1.06"	0.677"	0.075"	25 (220)	13 g	25-028

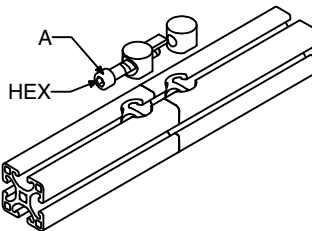
For 28 Series order:

Flat Plate Only **20-028Z1**
M8x10 BHCS Screw **24-110-8**

Flat Plate



20-028
25-028



* All fastener dimensions and servicing dimensions for butt-fasteners are the same as the corresponding universal fastener.

Application

For joining profiles end to end. Fastening dimensions and servicing are the same as corresponding universal fasteners.

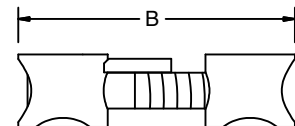
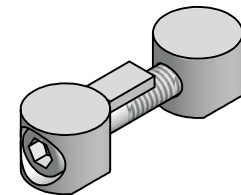
For 40 Series pneumatic applications use M6 fastener (20-012). See page 178.

Ordering Information

Profile Series	Dimensions (mm)			Torque, Nm (lb-in)	Weight	Part #
	A	HEX	B			
40	M8 x 45	6	60	25 (220)	59 g	20-006
30 & 28	M6 x 50 & M6 Nut	5	60	14 (125)	45 g	20-012
1.5"	5/16-18 x 1 3/4"	3/16"	2.41"	25 (220)	59 g	25-016
1"	1/4-20 x 7/8"	5/32"	1.55"	13.5 (120)	40 g	25-017

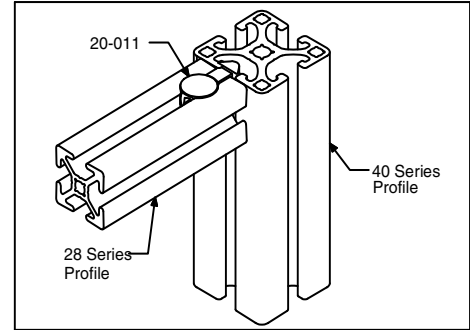
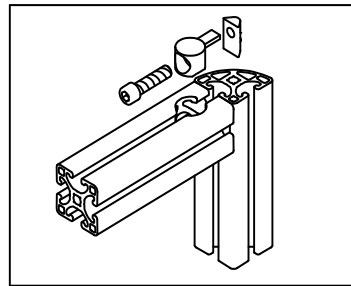
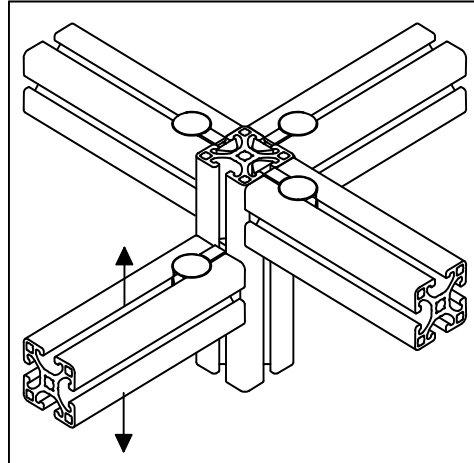
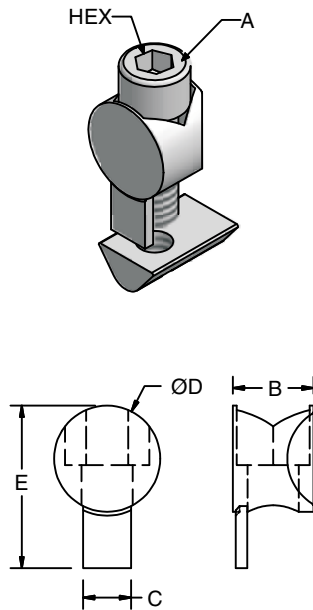
Technical Data

Plate: Zinc Cast, galvanized
Requires service part #19-015.



20-006
20-012
25-016
25-017

Universal



Series	F	G	H
40	20	20	16
30	20	20	11
28	20	20	11
1.5"	0.813"	0.813"	0.625"
1"	0.563"	0.500"	0.430"

Application

For adjustable 90° profile connections. Ideal for retrofits and additions to existing frames.

Fastening set 20-011 is used to connect 28 Series to 40 Series profiles and for pneumatic applications. See page 178.

Fastening set 25-015 is used for connecting 1.5" Series to other parts without T-slots. (See page 108 for corner element examples.)

Technical Data

Zinc Cast, galvanized

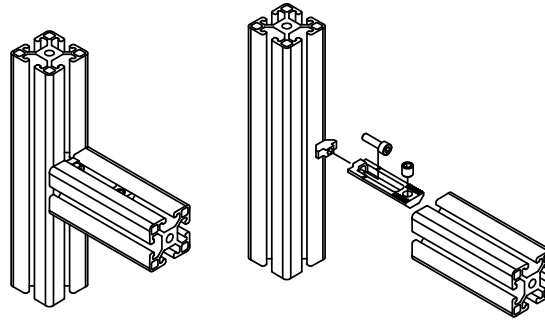
Includes screw and T-Nut

Requires service part #19-015.

Ordering Information

Series	A (SHCS)	Hex	B	C	D	E	Torque Nm (in-lb)	Wt. (g)	Part #
40,	M8x30	6	16	8	20	33.8	25 (220)	41	20-004
1.5"	5/16-18 x 1 1/4"	3/16"	16	8	20	33.8	25 (220)	41	25-004
28	M6x27	5	11	8	20	31.3	14 (125)	30	20-005
28 to 40	M6x30	5	11	8	20	33.5	14 (125)	36	20-011
30	M6x27	5	11	8	20	31.3	14 (125)	31	20-008
1"	1/4-20 x 3/4"	5/32"	10.7	6.4	14	21.5	13 (120)	25	25-023
Universal Zinc Casting 40 (40 Series without T-Nut or Screw)									20-004Z1
Universal Zinc Casting 28 (28 Series without T-Nut or Screw)									20-005Z1

* Fastening plates may be ordered without a screw by adding "Z1" to the part number, i.e. 20-004Z1



Milling Connector

Application

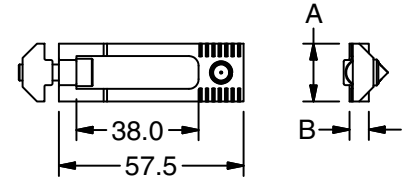
For adjustable 90° profile connections.
Milling Connectors allow the connection
of two profiles without additional machining.

Technical Data

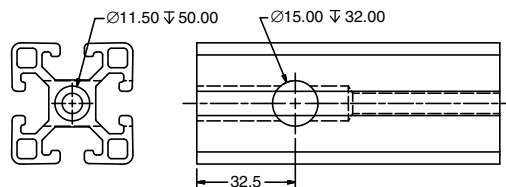
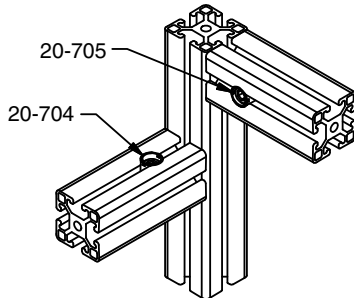
Plate: Steel, Zinc Plated
Includes screw and T-nut.

Ordering Information

Profile Series	A	B	Weight (g)	Part #
40, 1.5"	18	6.8	37.3	28-004
30	16	6.3	31.7	28-005



28-004
28-005



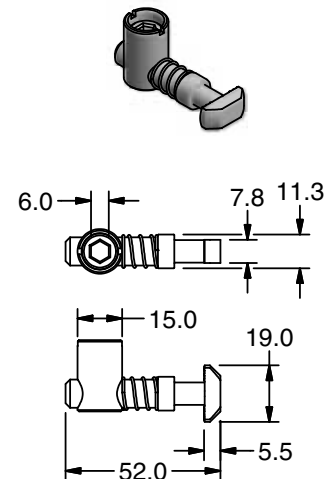
Central Connector

Application

For adjustable 90° profile connections.
Central Connectors allow the
connection of two profiles. A step drill
operation (19-015) is required to one
of the profiles in addition to an end drill
(19-014) to accommodate the barrel
and tightening screw.

Technical Data

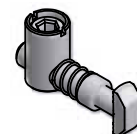
Plate: Steel, Zinc Plated
Requires services 19-014 and 19-015.
See detail above.



20-704

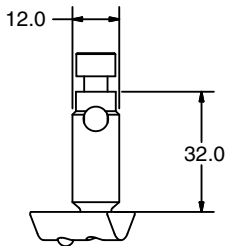
Ordering Information

Description	Unit	Weight	Part #
Hammer Perpendicular to Barrel	Each	49 g	20-704
Hammer Parallel to Barrel	Each	49 g	20-705

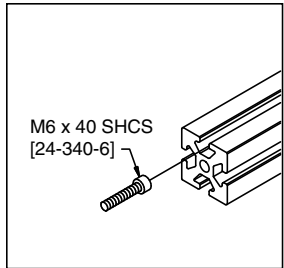


20-705

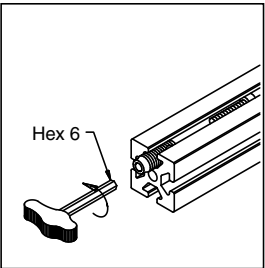
Self Tapping Connector



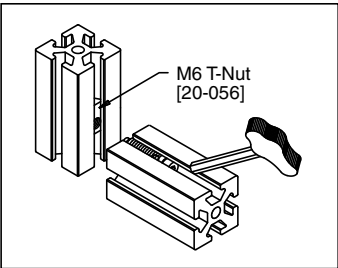
20-019



1 Insert screw into T-slot



2 Install fastener



3 Insert T-nut and attach connector

Application

For right angle attachment of 40 and 1.5" Series Profiles. No servicing is required making it ideal for retrofitting existing structures.

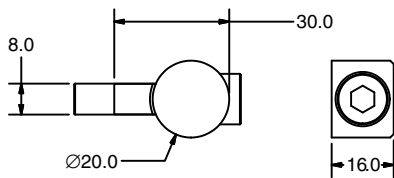
Ordering Information

Description	Unit	Weight	Part #
Self Tapping Connector 40/1.5"	1 Set	34 g	20-019

Technical Data

Steel
Torque: 14 Nm (125 in-lb)
Threads – Left Handed

Profile to Wall Fastening Set



20-015

Application

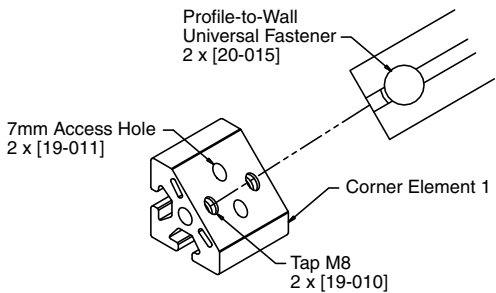
Designed for connecting 40 and 1.5" Series profiles to parts without T-Slots such as corner elements or reversing units.

Technical Data

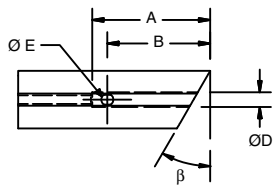
Plate: Steel, Zinc Plated
Requires service part #19-015.

Ordering Information

Profile Series	Dimensions						Torque	Weight	Part #
	A	HEX	B	C	D	E	Nm (in-lb)	(g)	
40	M8x30 SHCS	6	16	8	20	30	25 (220)	32	20-015
1.5"	5/16-18 x 1 1/4"	3/16"	0.630"	0.315"	0.787"	1.18"	20 (180)	32	25-015



Profile to wall casting without screw or washer **20-015Z1**



40 Series

$\beta = 90^\circ - \alpha/2$
 $A = 45 + C \tan \beta$
 $B = 35 + C \tan \beta$
 $D = 9.6$
 $E = 8$

28 Series

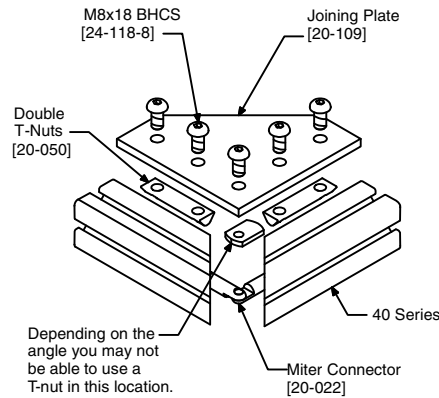
$\beta = 90^\circ - \alpha/2$
 $A = 38 + C \tan \beta$
 $B = 25.5 + C \tan \beta$
 $D = 6.8$
 $E = 6$

1.5" Series

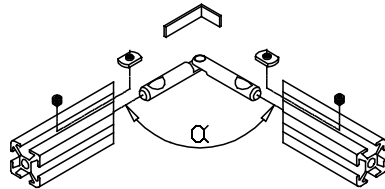
$\beta = 90^\circ - \alpha/2$
 $A = 1.77" + C \tan \beta$
 $B = 1.38" + C \tan \beta$
 $D = 0.386"$
 $E = 0.313"$

1" Series

$\beta = 90^\circ - \alpha/2$
 $A = 1.50" + C \tan \beta$
 $B = 1.00" + C \tan \beta$
 $D = 0.266"$
 $E = 0.250"$



Depending on the angle you may not be able to use a T-nut in this location.



Application

Variable angle connectors are available for 40 and 1.5" series profiles.

Fixed 90° connectors are available for 28, 30 and 1" Series Profiles.

Miter Bracket (20-127) prevents twisting.

Not for use as a structural fastener.
 Secure with joining plates as necessary.

Technical Data

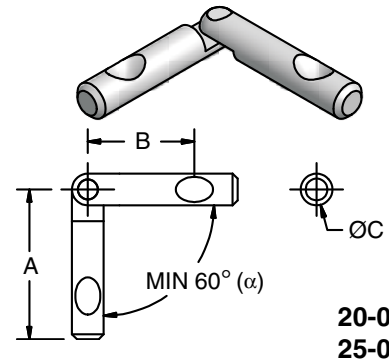
Connector: Steel, Zinc Plated

Miter Bracket: Aluminum, Anodized

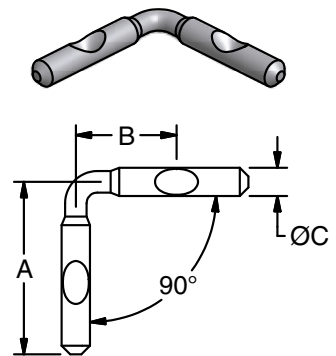
Sets include necessary T-nuts and cone point screws.

Loctite® Thread Locker No. 262 is recommended to secure set screws.

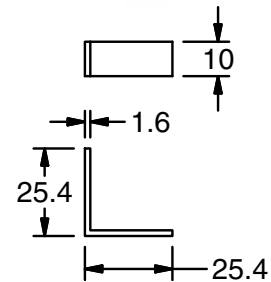
Miter Connectors



20-022
25-024



20-128
25-026



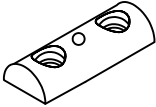
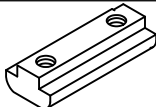
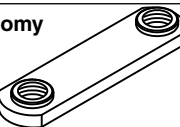
20-127

Ordering Information

Series	Description	A	B	C	Unit	Weight	Part #
40	Variable	45	32	9.53	1 Set	67 g	20-022
28,30	Fixed 90°	37	23.4	6.57	1 Set	31 g	20-128*
1.5"	Variable	1.77"	1.260"	0.375"	1 Set	67 g	25-024
1"	Fixed 90°	1.46"	0.92"	0.26"	1 Set	31 g	25-026
All	Miter Bracket	See drawing			1 Pc	4 g	20-127

*Fixed 90° Miter Connector only 1 Pc 20-128Z1

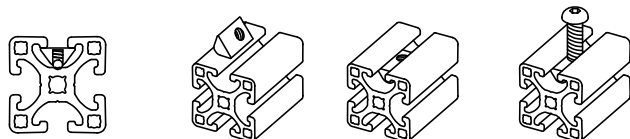
Quick Reference

Type	Thread Size	40 Series	30 Series	28 Series	20 Series	1.5" Series	1" Series
Standard T-Nut 	M4	20-051			20-044	20-051	
	M5	20-052	20-052		20-045	20-052	
	M6	20-056 (SS)	20-056 (SS)	20-055		20-056 (SS)	
	M8	20-058 (SS)	20-058 (SS)	20-057		20-058 (SS)	
	#10-32	25-009	25-009			25-009	25-030
	1/4-20	25-001	25-001	25-055		25-001	25-031
	5/16-18	25-002	25-002	25-057		25-002	
Double T-Nut Standard 	M8	20-049 ⁽¹⁾	20-049 ⁽¹⁾			20-049	
	M8	20-050 ⁽²⁾	20-050 ⁽²⁾			20-050	
	M8 HD	20-063 ⁽³⁾				20-063 ⁽³⁾	
	5/16-18	25-041				25-041	
Self Aligning T- Nut	M5	20-065	20-065 ⁽⁴⁾	20-065 ⁽⁴⁾		20-065	
	M6	20-066	20-066 ⁽⁴⁾	20-066 ⁽⁴⁾		20-066	
	M8	20-068	20-068 ⁽⁴⁾	20-068 ⁽⁴⁾		20-068	
Heavy Duty T-Nut  Ret. Spring 20-0614 ⁽³⁾	M5	20-067				20-067	
	M6	20-060 ⁽³⁾				20-060 ⁽³⁾	
	M8	20-064 ⁽³⁾				20-064 ⁽³⁾	
	1/4-20	25-050				25-050	
	5/16-18	25-051				25-051	
Double Heavy Duty T-Nut 	M8	20-063				20-063	
	1/4-20	25-052				25-052	
	5/16-18	25-053				25-053	
Economy Standard T-Nut 	M5				20-085		
	M6	20-080	20-090 (SS)	20-090 (SS)		20-080	
	M8	20-081	20-091	20-091		20-081	
	#10-32	20-088				20-088	20-088
	1/4-20	20-083	20-093	20-093		20-083	25-034
	5/16-18	20-082	20-092	20-092		20-082	
	#10-24				20-086		
Economy Offset T-Nut 	M6		20-190	20-190			
	M8	20-181					
	#8-32	25-045				25-045	25-045
	1/4-20	20-193	20-193	20-193		20-193	
	5/16-18	20-182				20-182	
Double Economy T-Nut 	1/4-20					25-048	
	5/16-18	25-046 ⁽⁵⁾ 25-047 ⁽⁶⁾				25-046 ⁽⁵⁾ 25-047 ⁽⁶⁾	
T-Slot Nut Zn 	M3	20-033	20-036	20-036		20-033	
	M4	20-034	20-037	20-037		20-034	
	M5	20-035	20-038	20-038		20-035	

(1) 24mm hole centerline spacing
(2) 40 mm hole centerline spacing

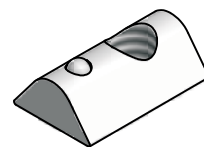
(3) 40/1.5" Series only, nut must be installed from profile end
(4) On 30 and 28 Series, nut must be installed from profile end

(5) 7/8" hole spacing
(6) 1" hole spacing



Standard T-nuts conveniently roll into profile T-slots at any location. The spring/ball locking feature keeps the T-nut in place in vertical applications.

T-Nuts St



Application

Standard mounting elements for profiles. The T-Nut can be inserted into profile T-Slots at any location to provide an instant threaded hole for mounting accessories or connectors.

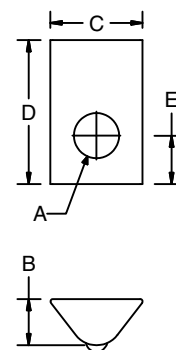
Technical Data

Steel, Black Zinc Plated or clear color varies.

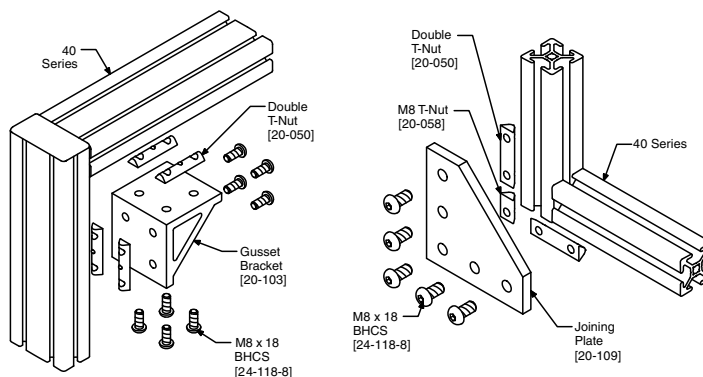
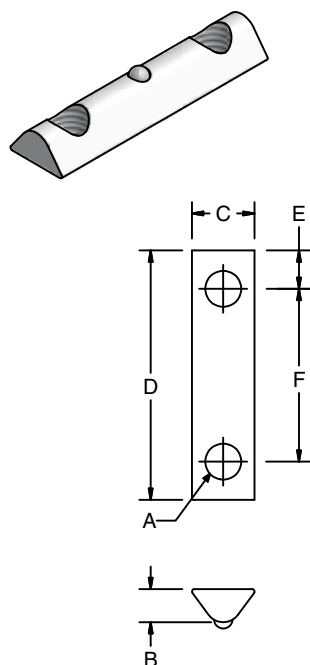
Parts designated with "SS" are stainless steel. Others may be available in stainless. Contact factory for availability.

Ordering Information

Profile Series	Dimensions (mm)					Weight (g)	Color	Part #
	A	B	C	D	E			
40, 30, 1.5"	M4	7.3	13.8	23	7.5	11	C	20-051
	M5	7.3	13.8	23	7.5	11	C	20-052
	M6	7.3	13.8	23	5.5	11	C	20-056
	M6 SS	7.3	13.8	23	6.5	11	C	20-056SS
	M8	7.3	13.8	23	7.5	10	C	20-058
	M8 SS	7.3	13.8	23	6.5	11	C	20-058SS
	1/4-20	7.3	13.8	23	7.5	10	B	25-001
	5/16"-18	7.3	13.8	23	7.5	9	C	25-002
28	#10-32	7.3	13.8	23	7.5	10	C	25-009
	M6	6	13.8	23	7	10	C	20-055
	M8	6	13.8	23	7	10	C	20-057
	1/4-20	6	12.9	23	7	10	B	25-055
20	5/16-18	6	12.9	23	7	10	B	25-057
	M4	4	8	23	4	1	C	20-044
1"	M5	4	8	11.5	4	1	C	20-045
	#10-32	0.200"	0.400"	0.625"	0.210"	0.21"	B	25-030
	1/4-20	0.200"	0.400"	0.625"	0.210"	0.21"	B	25-031



Double St



Application

Standard mounting element where fastening hardware requires two T-Nuts.

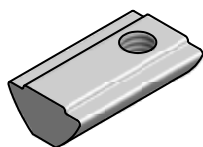
Technical Data

Metric T-Nuts: Steel, Clear Zinc Plated
Imperial T-Nuts: Steel, Black Zinc Plated

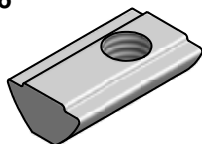
Ordering Information

Profile Series	Dimensions						Weight (g)	Part #
	A	B	C	D	E	F		
40, 30, 1.5"	M8	7.3	13.8	38	7	24	15	20-049
	M8	7.3	13.8	55	7.5	40	23	20-050
	5/16-18	0.287"	0.543"	2.165"	0.333"	1.50"	23	25-041

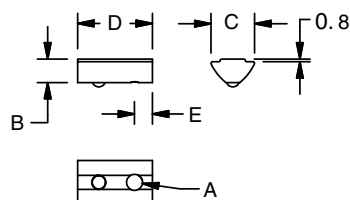
Self Aligning T-Nut



20-066



20-068



Application

Rolls into the T-Slot of 40 and 1.5" Series profiles at any location and held into position using a spring-loaded ball. The raised area fits into the T-Slot to prevent twisting. Should not be used where the raised area might interfere with other accessories such as tabs on universal fasteners, hinges, etc.

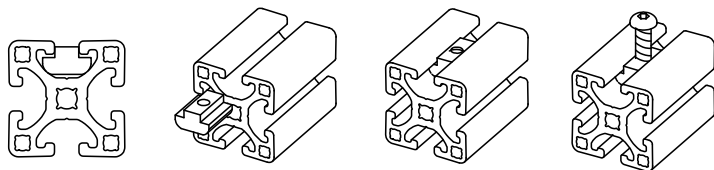
Technical Data

Steel, Zinc Plated
Fits 30 and 28 Series profiles but must be inserted from profile end.

Ordering Information

Profile Series	Dimensions (mm)					Weight (g)	Part #
	A	B	C	D	E		
40, 30*	M5	6.4	13.5	22	64	10	20-065
28* &	M6	6.4	13.5	22	6.4	10	20-066
1.5"	M8	6.4	13.5	22	6.4	10	20-068

*Fits 30 and 28 Series profiles but must be inserted from profile end.



Heavy duty T-nuts must be inserted from the ends and slid to the desired location.

Application

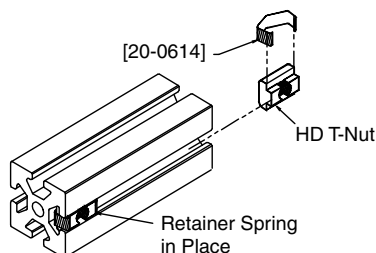
Heavy duty T-Slot Nut for 40 and 1.5" Series profiles. Recommended for mounting Roller Bearing Units.

Technical Data

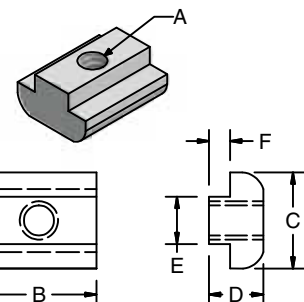
Steel Zinc Plated

Ordering Information

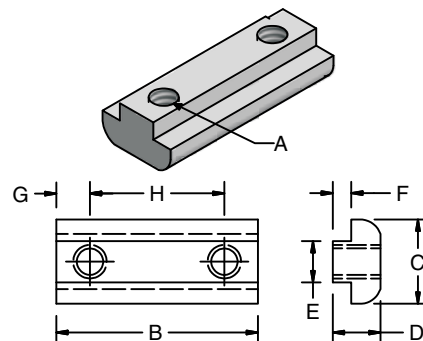
Style	Dimensions								Wt. (g)	Part #
	A	B	C	D	E	F	G	H		
Single	M5	22	16	8.8	7.9	3.5	—	—	13	20-067
	M6	20	16	8.8	7.9	3.5	—	—	13	20-060
	M8	20	16	8.8	7.9	3.5	—	—	13	20-064
	1/4-20	0.75"	0.63"	0.35"	0.31"	0.14"	—	—	14	25-050
	5/16-18	0.75"	0.63"	0.35"	0.31"	0.14"	—	—	13	25-051
Retainer Spring for HD Single T-Slot Nuts										20-0614
Double	M8	38	16	8.8	7.9	3.5	6	24	25	20-063
	1/4-20	1.50"	0.63"	0.35"	0.31"	0.14"	0.25"	1.00"	28	25-052
	5/16-18	2.00"	0.63"	0.35"	0.31"	0.14"	0.25"	1.50"	32	25-053



Single & Double HD



Single



Double

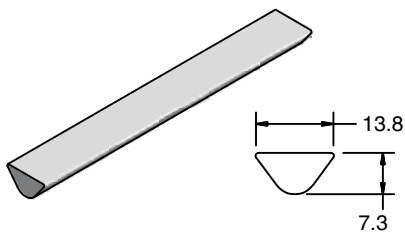
Application

Bar stock for custom length T-Nuts. Can be cut to length and tapped. Sold Each Length 500mm.

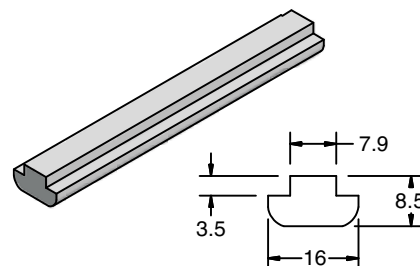
Technical Data

20-059 & 20-062

Steel - Max. tap hole: M8 (5/16")



20-059

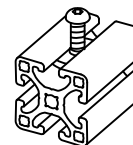
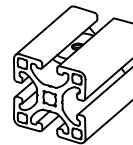
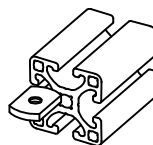
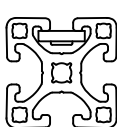


20-062

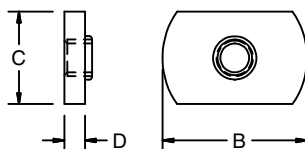
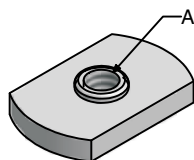
Ordering Information

Series	Description	Unit	Weight	Part #
40, 30	T-Slot Bar HD	Each	0.42 kg	20-062
and 1.5"	T-Slot Bar St	Each	0.26 kg	20-059

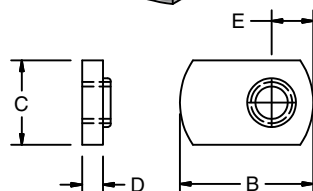
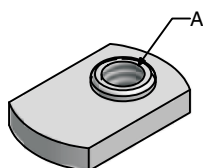
Economy



Economy T-nuts must be inserted from the ends of the profiles and slid to the desired location. A compression spring can be added to help keep the T-nut in location.



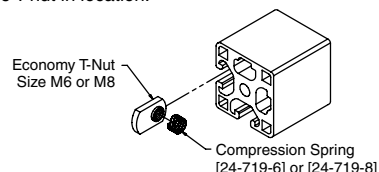
Standard



Offset

Application

Economical solution for fastening hardware or components to T-Slots. Economy T-Nuts slide into profile from the end to provide threaded hole for fastening. Available in standard or offset versions.



Technical Data

Metric T-Nuts: Steel, Clear Zinc Plated
Imperial T-Nuts: Steel, Black Zinc Plated

Parts designated with "SS" are stainless steel.

Ordering Information

	Profile Series	Dimensions (mm or inch)					Weight (g)	Part #
		A	B	C	D	E		
S t a n d a r d	40, 1.5"	M6	25	16	3.6	—	10	20-080
		M8	25	16	3.6	—	10	20-081
		#10-32	22.5	11	2.4	—	5	20-088
		1/4-20	25	16	3.6	—	10	20-083
		5/16-18	25	16	3.6	—	10	20-082
	30, 28	M6	20.5	13	3.2	—	5	20-090
		M6	20.5	13	3.2	—	5	20-090SS
		M8	20.5	13	3.2	—	5	20-091
		1/4-20	20.5	13	3.2	—	5	20-093
		5/16-18	20.5	13	3.2	—	5	20-092
	20	#10-24	16	9.6	2.4	—	5	20-086
		M5	16	9.6	2.4	—	5	20-085
	1"	#10-32	0.885"	0.440"	0.09"	—	5	20-088
		1/4-20	1.00"	0.440"	0.09"	—	5	20-034
O f f s e t	40, 1.5"	M8	25	16	3.6	7.1	10	20-181
		#8-32	16	11	2.4	4.8	5	25-045
		1/4-20	20.5	13	3.2	6.4	5	20-193
		5/16-18	25	16	3.6	7.1	10	20-182
	30, 28	M6	20.5	13	3.2	6.4	5	20-190
		1/4-20	20.5	13	3.2	6.4	5	20-193
	1"	#8-32	0.885"	0.440"	0.09"	0.19"	5	25-045

Description

Compression Spring for Economy T-Slot Nuts M6

Weight

4 g

Part

24-719-6*

Compression Spring for Economy T-Slot Nuts M8

4 g

24-719-8*

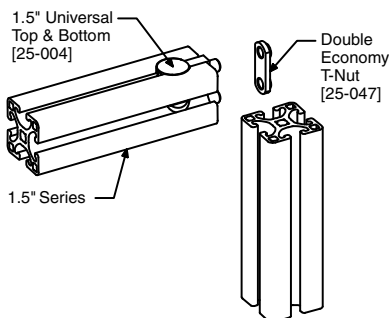
*Minimum order quantity = 100 pieces

Application

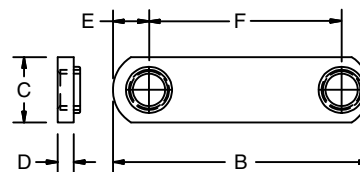
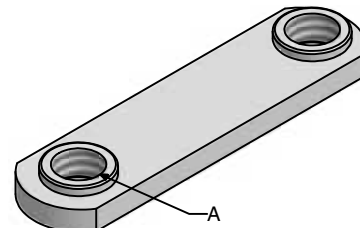
Double Economy T-Nuts are an economical solution for fastening accessories, double universal fasteners and the primary T-Nut to a cross connection.

Technical Data

Steel, Black Zinc Plated



Double Economy



25-046
25-047
25-048

Ordering Information

Profile Series	Dimensions						Weight	Part #
	A	B	C	D	E	F		
40, 1.5"	5/16-18	2.00"	0.51"	0.12"	0.22"	0.50"	20g	25-046
		1.38"	0.51"	0.12"	0.25"	0.88"	13 g	25-047
	1/4-20	1.50"	0.51"	0.12"	0.25"	1.00"	15g	25-048

Application

Universal mounting element that wedges into the profile when tightened. Can be inserted into the T-Slot at any position.

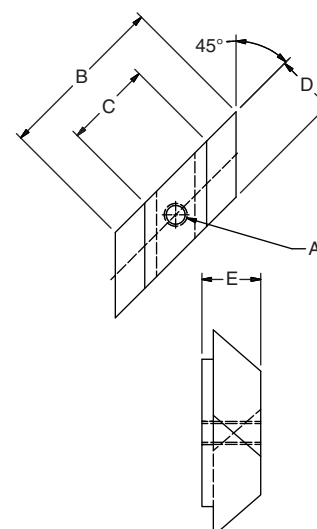
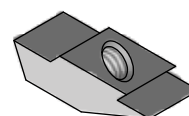
Technical Data

Zn Cast, Galvanized

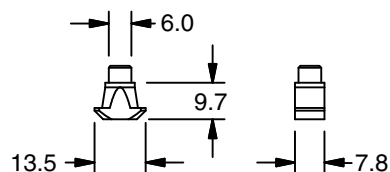
Ordering Information

Profile Series	Dimensions (mm)					Weight (g)	Part #
	A	B	C	D	E		
40/1.5"	M3	22	11	8	7.7	5	20-033
	M4	22	11	8	7.7	5	20-034
	M5	22	11	8	7.7	5	20-035
30, 28	M3	22	11	8	6	5	20-036
	M4	22	11	8	6	5	20-037
	M5	22	11	8	6	5	20-038

T-Nut Zn



Anodize Breaker



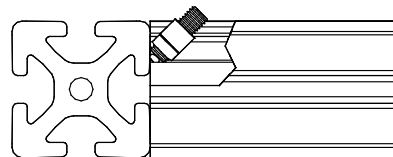
20-070

Application

Penetrates anodizing and provides ground continuity between 40, 30 and 1.5" Series profiles.

Technical Data

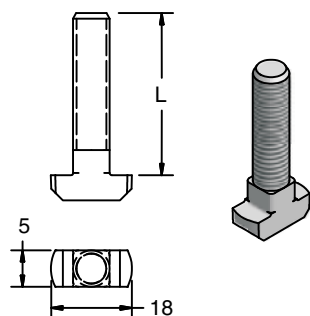
Steel, Galvanized
Dog point M6x12 set screw.



Ordering Information

Description	Unit	Weight	Part #
Anodize Breaker	Each	10 g	20-070

T-Bolt 40



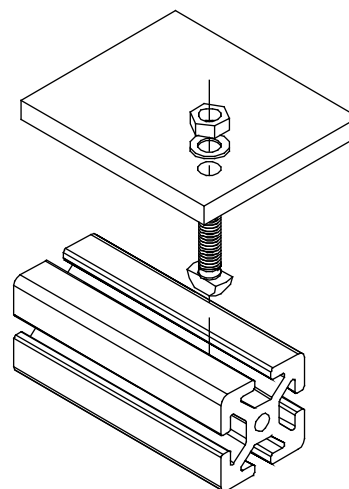
24-420-8
24-425-8
24-430-8
24-440-8

Application

Threaded stud with T-Slot head for insertion into T-Slot of 40 and 1.5" Series profiles. These will only fit in the standard profile.

Technical Data

Steel, Zinc Plated



Ordering Information

Description (Thread x L)	Unit	Weight	Part #
T-Bolt 40, M8x20	Each	1 g	24-420-8
T-Bolt 40, M8x25	Each	1 g	24-425-8
T-Bolt 40, M8x30	Each	2 g	24-430-8
T-Bolt 40, M8x40	Each	2 g	24-440-8

Application

All profiles.

Technical Data

Steel, Zinc Plated

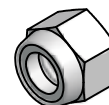
Nuts

Ordering Information

Description	Unit	Weight	Part #
M3 Hex Nut	Each	0.3 g	24-706-3
M4 Hex Nut	Each	0.5 g	24-706-4
M5 Hex Nut	Each	1 g	24-706-5
M6 Hex Nut	Each	2.5 g	24-706-6
M8 Hex Nut	Each	5 g	24-706-8
M10 Hex Nut	Each	11.6 g	24-706-10
M12 Hex Nut	Each	17.3 g	24-706-12
M14 Hex Nut	Each	25 g	24-706-14
M16 Hex Nut	Each	33 g	24-706-16
M6 Lock Nut	Each	3 g	24-716-6
M8 Lock Nut	Each	5 g	24-716-8
1/4-20 Hex Nut	Each	4.5 g	25-706-4
5/16-18 Hex Nut	Each	4.5 g	25-706-5
5/16-18 Lock Nut	Each	4.5 g	25-716-5
5/16-18 Flanged Serrated Nut	Each	4.5 g	25-726-5



Hex Nut



Lock Nut



Flanged
Serrated Nut

Application

All profiles.

Technical Data

Steel, Zinc Plated

Ordering Information

Description	Unit	Weight	Part #
M4 Flat Washer	Each	0.1 g	24-700-4
M5 Flat Washer	Each	0.3 g	24-700-5
M6 Flat Washer	Each	0.4 g	24-700-6
M8 Flat Washer	Each	1 g	24-700-8
M6 Lock Washer	Each	6 g	24-707-6
M8 Lock Washer	Each	9 g	24-707-8
M10 Lock Washer	Each	11 g	24-707-10
M8 Rib Spring Washer	Each	6 g	24-718-8
M8 Safety Spring Washer	Each	6 g	24-709-8
M8 Spring Washer	Each	3 g	24-708-8
M10 Spring Washer	Each	6 g	24-708-10
0' size M8/Flat Washer	Each	6 g	24-701-8
5/8" OD M6 Flat Washer	Each	2 g	24-711-6
#10-32 Flat Washer	Each	2.8 g	25-700-2
1/4" Flat Washer	Each	2.8 g	25-700-4
5/16" Flat Washer	Each	2.8 g	25-700-5
3/8" Flat Washer	Each	2.8 g	25-700-6
5/16" Lock Washer	Each	2.8 g	25-707-5



Flat Washer



Lock Washer



Rib Spring Washer



Safety Spring Washer



Spring Washer



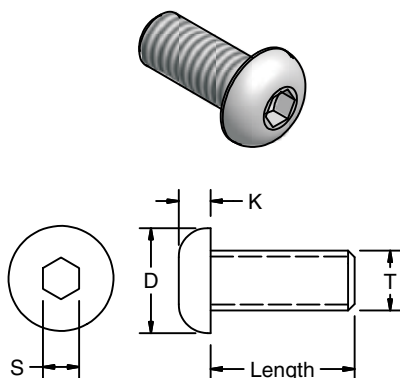
0' size M8/Flat Washer

Metric Screws

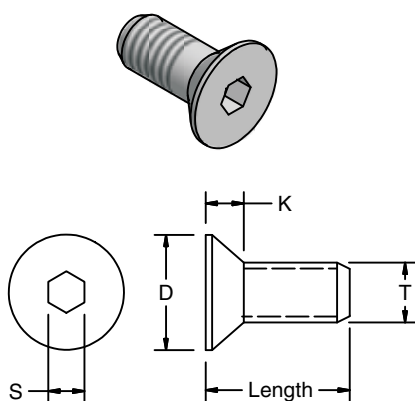
Part Number Example

Example would be a Button Head Screw M5x.08 at 20mm Long

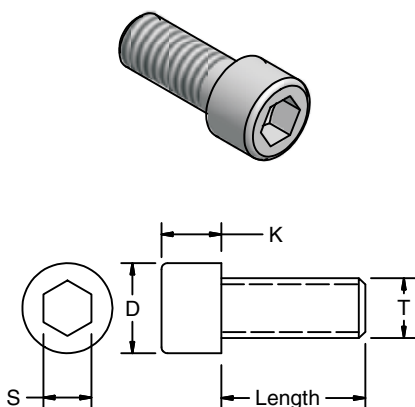
24 - 1 20 - 5



BUTTON HEAD



FLAT HEAD



SOCKET HEAD

Screw Type	Code
Button Head	1
Flat Head	2
Socket Head	3

Ordering Information

The chart on this page is to guide you in determining a part number from a specification. Verify that the part number created is a stocked item by using the chart on the next page or contacting your local representative.

Note: Only screw items listed by part number on the following pages are considered standard and are in stock. Non-stock items are special order with minimum quantity requirements.

Order Quantities:

Order quantities are per screw. Contact customer service for box quantity and high volume orders.

Length (mm)	Code
8	08
10	10
12	12
14	14
16	16
18	18
20	20
22	22
25	25
27	27
28	28
30	30
35	35
40	40
45	45
50	50
60	60
80	80
90	90
100	100
120	120

Thread Type	Code
M3x.05	3
M4x0.7	4
M5x0.8	5
M6x1.0	6
M8x1.25	8
M10x1.5	10

Technical Data

Finish will vary between Zinc plated or black oxide depending on style. Stainless Steel is available on selected styles. Check with your local Service Center or current Price List

METRIC SCREW DIMENSIONS (mm)

Thread	Button Head			Flat Head			Socket Head		
	D*	K*	S	D*	K	S	D*	K*	S
M3	5.7	1.65	2	6	1.7	2	5.5	3	2.5
M4	7.6	2.2	2.5	8	2.3	2.5	7	4	3
M5	9.5	2.75	3	10	2.8	3	8.5	5	4
M6	10.5	3.3	4	12	3.3	4	10	6	5
M8	14	4.4	5	16	4.4	5	13	8	6
M10	17.5	5.5	6	20	5.5	6	16	10	8

*MAX size listed.

Metric Screw Quick Reference

	Length	M3x.05	M4x0.7	M5x0.8	M6x1.0	M8x1.25	M10x1.5
Button Head Screws	8			24-108-5	24-108-6		
	10	24-110-3	24-110-4*	24-110-5 *	24-110-6 *	24-110-8 *	
	12			24-112-5 *	24-112-6 *	24-112-8 *	
	14			24-114-5	24-114-6	24-114-8	
	16			24-116-5*	24-116-6 *	24-116-8 *	
	18					24-118-8 *	
	20			24-120-5 *	24-120-6 *	24-120-8 *	24-120-10
	25			24-125-5 *	24-125-6 *	24-125-8 *	24-125-10
	28					24-128-8	
	30			24-130-5 *	24-130-6 *	24-130-8	24-130-10 *
	35			24-135-5	24-135-6 *	24-135-8	
	40				24-140-6	24-140-8 *	24-140-10
	45			24-145-5		24-145-8	
	50					24-150-8	
	60				24-160-6	24-160-8	
	80					24-180-8	
Flat Head Screws	8		24-208-4		24-208-6		
	10	24-210-3		24-210-5	24-210-6 *	24-210-8	
	12		24-212-4	24-212-5 *	24-212-6 *	24-212-8 *	
	14		24-214-4SS		24-214-6	24-214-8	
	16	24-216-3	24-216-4	24-216-5	24-216-6 *	24-216-8 *	
	18				24-218-6	24-218-8	
	20		24-220-4		24-220-6 *	24-220-8 *	
	25		24-225-4	24-225-5	24-225-6 *	24-225-8	
	30			24-230-5	24-230-6	24-230-8 *	
	35				24-235-6		
	45					24-245-8	
Socket Head Screws	8		24-308-4				
	10		24-310-4		24-310-6	24-310-8	
	12	24-312-3	24-312-4	24-312-5 * †	24-312-6	24-312-8 *	
	14		24-314-4		24-314-6		
	16		24-316-4 *		24-316-6	24-316-8 *	
	18				24-318-6		
	20		24-320-4	24-320-5	24-320-6 *	24-320-8 *	
	25				24-325-6 *	24-325-8 *	
	27				24-327-6		
	30				24-330-6	24-330-8 *	
	35				24-335-6	24-335-8	
	40				24-340-6	24-340-8	
	45				24-345-6	24-345-8 *	
	50				24-350-6	24-350-8	
	80				24-380-6	24-380-8	
	90				24-390-6		
	100					24-3100-8	
	120				24-3120-6		

* These items are available in Stainless Steel. Add "SS" to the end of the Part #.

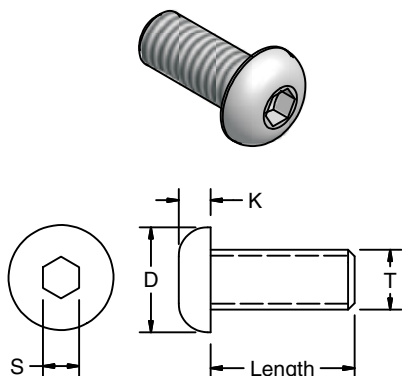
† Low head

Imperial Screws

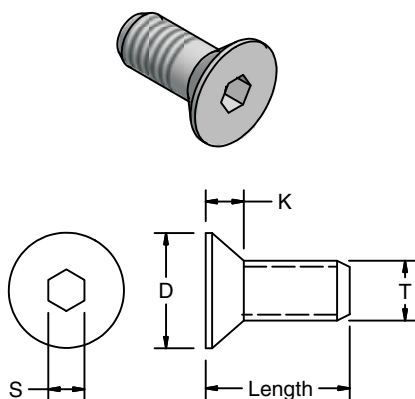
Part Number Example

Example would be a Button Head Cap Screw 5/16-18 x 3/4" long.

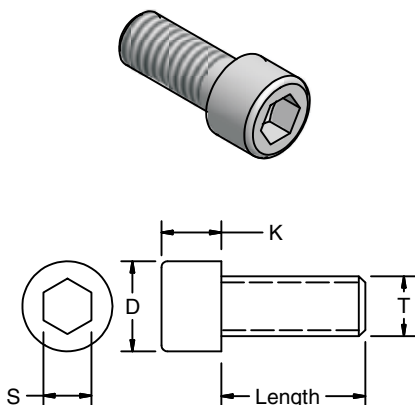
25-1 12-5



BUTTON HEAD



FLAT HEAD



SOCKET HEAD

Screw Type	Code
Button Head	1
Flat Head	2
Socket Head	3

Ordering Information

The charts on this page are to guide you in developing the appropriate part number to order the screw. Verify that the part number created is a stocked item by using the chart on the next page or contacting your local representative.

Note: Only screw items listed by part number on the following pages are considered standard and are in stock. Non-stock items are special order with minimum quantity requirements.

Order Quantities: Order quantities are per screw. Contact customer service for box quantity and high volume orders.

Length (in)	Code
1/8	02
3/16	03
1/4	04
5/16	05
3/8	06
7/16	07
1/2	08
9/16	09
5/8	10
11/16	11
3/4	12
13/16	13
7/8	14
15/16	15
1	16
1 1/8	18
1 1/4	20
1 3/8	22
1 1/2	24
1 3/4	28
2	32

Lengths shown in bold are industry standards for all threads.

Thread Type	Code
#8-32	1
#10-32	2
1/4-20	4
5/16-18	5
3/8-16	6
1/2-13	8

Technical Data

The standard finish on iSeries screws is Black Dicromate. Clear Zinc and stainless steel may be available on select styles.

ENGLISH SCREW DIMENSIONS (in)

Thread	Button Head			Flat Head			Socket Head		
	D*	K*	S	D*	K	S	D*	K*	S
#8-32	0.312	0.087	3/32	0.311	0.112	3/32	0.270	0.164	9/64
#10-32	0.361	0.101	1/8	0.359	0.127	1/8	0.312	0.190	5/32
1/4-20	0.437	0.132	5/32	0.480	0.161	5/32	0.375	0.250	3/16
5/16-18	0.547	0.166	3/16	0.600	0.198	3/16	0.469	0.312	1/4
3/8-16	0.656	0.199	7/32	0.720	0.234	7/32	0.562	0.375	5/16
1/2-13	0.875	0.265	5/16	0.872	0.251	5/16	0.750	0.500	3/8

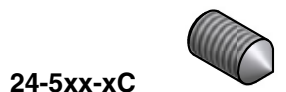
*MAX size listed.

Imperial Screw Quick Reference

Type	Length	#8-32	#10-32	1/4-20	5/16-18	3/8-16
Button Head Screws	3/8"	25-106-1	25-106-2	25-106-4	25-106-5	
	1/2"	25-108-1	25-108-2	25-108-4	25-108-5	
	5/8"	25-110-1	25-110-2	25-110-4	25-110-5	
	3/4"		25-112-2	25-112-4	25-112-5 *	
	7/8"			25-114-4	25-114-5	
	1"				25-116-5	
	1 1/8"				25-118-5	
	1 1/4"				25-120-5	25-120-6
	1 1/2"				25-124-5	
	1 3/4"				25-128-5	
Flat Head Screws	1/2"		25-208-2	25-208-4		
	5/8"			25-210-4	25-210-5	
	3/4"			25-212-4	25-212-5	
Socket Head Screws	1/2"	25-308-1			25-308-5	
	5/8"	25-310-1		25-310-4	25-310-5 *	
	3/4"			25-312-4	25-312-5	
	7/8"			25-314-4	25-314-5	
	1"			25-316-4	25-316-5	
	1 1/4"			25-320-4	25-320-5	
	1 3/4"				25-328-5	
	2"				25-332-5	

* These Items are available as both Black Dicromate Finish and Stainless Steel.
Add "SS" to the end of the part # for stainless steel.

Set Screws (Hexagon Socket)



24-5xx-xC



24-5xx-xD



24-5xx-xF



24-508-8U

Application

All profiles.

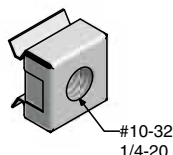
Technical Data

Steel, Black Oxide

Ordering Information

Type	Description	Unit	Part #
Cone Point	M5 x 6	Each	24-506-5C
	M6 x 8	Each	24-508-6C
	M6 x 10	Each	24-510-6C
	M6 x 12	Each	24-512-6C
	M8 x 10	Each	24-510-8C
	M8 x 16	Each	24-516-8C
	1/4-20 x 3/8"	Each	25-506-4C
	5/16-18 x 5/8"	Each	25-510-5C
Dog Point	M6 x 12	Each	24-512-6D
	M8 x 30	Each	24-530-8D
Flat Point	M5 x 6	Each	24-506-5F
	M5 x 16	Each	24-516-5F
	M6 x 6	Each	24-506-6F
	M6 x 12	Each	24-512-6F
	M6 x 16	Each	24-516-6F
	M8 x 10	Each	24-510-8F
	M10 x 25	Each	24-525-10F
Cup Point	M8 x 8	Each	24-508-8U
	1/4-20 x 5/8"	Each	25-510-4U

Clip Nuts



20-075
20-076
25-075
25-076

Application

Square nut with clip attachment for 19" Rack Angle. Nut snaps into square holes for attaching panels and accessories.

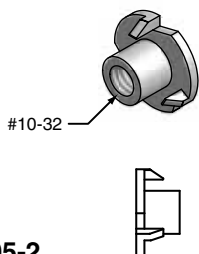
Technical Data

St., Zinc Plated
Weight 5g

Ordering Information

Description	Unit	Weight	Part #
Clip Nut M5	Each	4.5 g	20-075
Clip Nut M6	Each	4.5 g	20-076
Clip Nut #10-32	Each	4.5 g	25-075
Clip Nut 1/4-20	Each	4.5 g	25-076

High Cycle Nut



25-705-2

Application

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

Technical Data

Steel, Zinc Plated
Accepts #10-32 screw.

Ordering Information

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

T-Clips

Application

Mounting element with two separate channels for fast, easy securing and routing of open wiring or tubing.

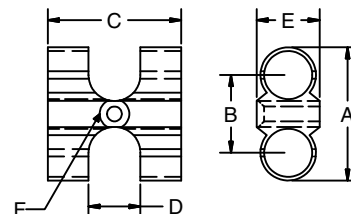
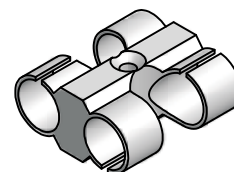
Technical Data

Glass Filled Nylon, Black

Complete with screw and T-nut for 40 Series mounting.

Ordering Information

Range (mm)	Dimensions (in)						Part #
	A	B	C	D	E	F	
6-8	20	12	20	8	9	3	22-206
8-10	25	15	24	10	12	4	22-208
10-13	31	18	28	12	12	4	22-210
13-16	35	21	36	14	17	4	22-212
16-19	44	25	43	17	20	5	22-215



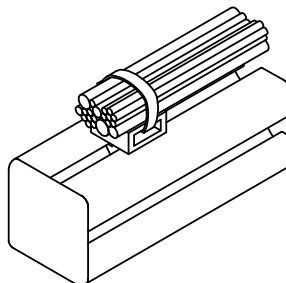
Application

Mounting element provides point for cable tie mounting. Suitable for use on 40, 30, 28, 1.5" and 1" Series profiles.

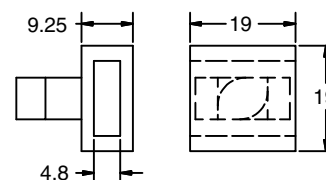
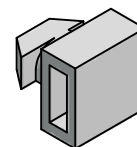
Technical Data

Glass Filled Nylon, Black

Insert into T-slot and twist 90°



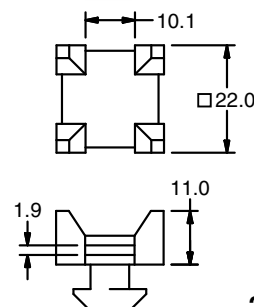
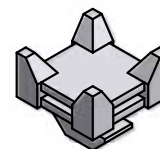
Cable Tie Holder



22-202
22-201

Ordering Information

Description	Unit	Weight	Part #
Cable Tie Holder, 40/1.5"	Each	4 g	22-202
Cable Tie Holder, 28/30	Each	4 g	22-201
Cross Cable Tie Holder, 40/1.5"	Each	4 g	27-202
Cross Cable Tie Holder, 1"	Each	4 g	27-203



27-202
27-203

Cable/Hose Holder

Application

Mounting element with two separate channels for routing open wiring or tubing along the profile surface

Technical Data

Glass Filled Nylon, Black
Includes screw and T-Nut
(12mm max dia.)

Ordering Information

Description

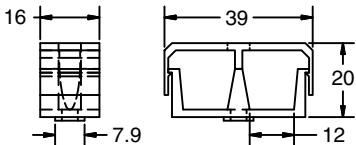
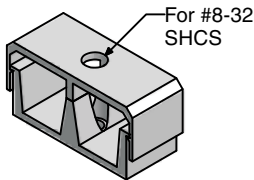
Cable/Hose Holder, 40 Series
Cable/Hose Holder, 1.5" Series
Cable/Hose Holder (Qtr. Turn Style)

Unit

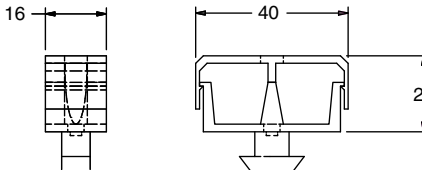
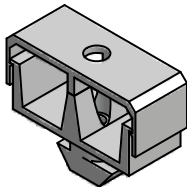
Weight

Part #

Set	8 g	22-200
Set	8 g	22-230
Set	9 g	22-203



22-200
22-230



22-203

