

frame® Aluminum T-Slotted Rail

10 Series Fractional T-Slotted Aluminum Rail

SureFrame™ T-slotted aluminum rails are extruded exclusively for AutomationDirect, with features, quality, and performance you expect. SureFrame T-slotted rails are compatible with other popular brands.

- Cut to length in 0.001 inch increments
- Minimum cut length: 6"
- Maximum cut length: 90"
- Cut accuracy: +/- 0.006"
- Corrosion and UV resistant



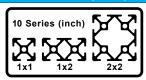
P	roperties
Material	Aluminum 6063-T6
Finish	Clear or Black Anodize
Hardness	Webster Model B 11-12
Straightness	0.0125 inch/ft [1.042 mm/m]
Twist	0.25°/ft [0.25°/305mm]



10 Series (inch)



Core Hole Ø 0.20"





T-Slot Drop Lock feature improves connection strength and vibration resistance

Part Number	Part Image	Price per inch	Profile Size	Weight Class	Weight lbs/ft [kg/m]	Moment of Inertia Lx (in ⁴ [cm ⁴])	Moment of Inertia Ly (in ⁴ [cm ⁴])	Drawing Link
1010C		\$0.24	1 x 1in		0.500.10.7071	0.045	0.045	PDF
<u>1010B</u>	THE SECOND SECON	\$0.49	1 X 1111		0.529 [0.787]	[1.872]	[1.872]	PDF
1020C		\$0.41	1 x 2in	Standard	0.952 [1.417]	0.084 [3.494]	0.308 [12.813]	PDF
1020B	7505	\$0.75						PDF
2020C		\$0.61	225		1.482 [2.205]	0.543 [22.589]	0.543 [22.589]	PDF
<u>2020B</u>	67 Kg	\$0.99	2 x 2in					PDF

Extruded T-slotted rails have a thru Core Hole feature that can be used to attach various components to the end of the profile using:

- Self-tapping / thread-forming screws (no tapping needed)
- · A tap to thread the core hole for a threaded fastener

Core Hole





Please Note: Prices on aluminum are closely tied to the market price. This allows us to offer the best savings possible if conditions are favorable; however, it also means that our prices may increase if market conditions warrant.

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frame® Aluminum T-Slotted Rail

Deflection Calculations

Using the calculations below, find your approximate deflection* for a specific extrusion. See table below for variations.

As always when calculating, use diligence and work only in either imperial or metric units at one time.

"E" = Modulus of Elasticity

"F" = Force

"I" = Moment of Inertia

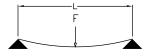
"L" = Length

"W" = Weight

*for reference only

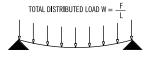
Supported Loads

CONCENTRATED LOAD AT CENTER (simply supported)



MAX DEFLECTION =
$$\frac{FL^3}{48 EI}$$

UNIFORMLY DISTRIBUTED LOAD (simply supported)



$$MAX DEFLECTION = \frac{5}{84} \frac{WL^4}{EI}$$

CONCENTRATED LOAD AT CENTER (between fixed supports)



MAX DEFLECTION =
$$\frac{FL^3}{192 EI}$$

UNIFORMLY DISTRIBUTED LOAD (between fixed supports)



MAX DEFLECTION =
$$\frac{WL^4}{384 EI}$$

Yield Strength 29,007 psi [200 MPa] Tensile Strength 33,359 psi [230 MPa] Modulus of Elasticity 10,000,000 psi [68.9 GPa]

Aluminum 6063-T6 Properties

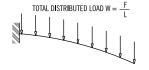
Cantilever Loads

CONCENTRATED LOAD AT CENTER (simply supported)



$$MAX DEFLECTION = \frac{FL^3}{3 EI}$$

UNIFORMLY DISTRIBUTED LOAD (simply supported)



MAX DEFLECTION =
$$\frac{WL^4}{8 EI}$$

T-Slot Nuts

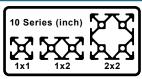
- Designed to fit into the T-slot cavity of extruded aluminum rails.
- Hammer nuts provide safe electrostatic discharging (ESD) connection.
- No machining required.
- Material: zinc plated steel

	T-8	Slot Nuts Selecti	ion		
Part Image	Nut Type	Installation	Holds Position Without Screw	ESD Connection	
00	Double Economy T-Nut			No	
0	Economy T-Nut			110	
	Hammer Nut		No	Yes	
	Slide-In Nut				
	Roll-In Nut with Leaf Spring		Voc	No	
	Roll-In Nut with Spring Loaded Ball		Yes		



10 Series T-Slot Nuts

Fits Slot Size



Part Number	Part Image	Price	Nut Type	Thread Size	Pack Quantity	Drawing Link
<u>161113</u>		\$13.00	Roll-In Nut	8-32 UNF		<u>PDF</u>
<u>161124</u>		\$9.50	Hammer Nut	0-32 UNI	10	<u>PDF</u>
<u>161112</u>		\$13.00	Roll-In Nut	10-32 UNF	10	<u>PDF</u>
<u>151038</u>		\$11.00	Hammer Nut	10-32 UNF		PDF
148804	0	\$4.00	Double Economy T-Nut		4	PDF
<u>151037</u>	0	\$5.50	Economy T-Nut	1/4-20 UNC		<u>PDF</u>
<u>151039</u>	THE REAL PROPERTY.	\$15.00	Roll-In Nut		10	<u>PDF</u>

Fasteners

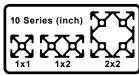
- Choose from 4 Head types in numerous lengths
- Hex socket head
- Select desired T-Slot nut style with corresponding thread size.
- Material: Black zinc plated or bright zinc plated steel, prevents corrosion better than typical black oxide coatings



10 Series Fasteners

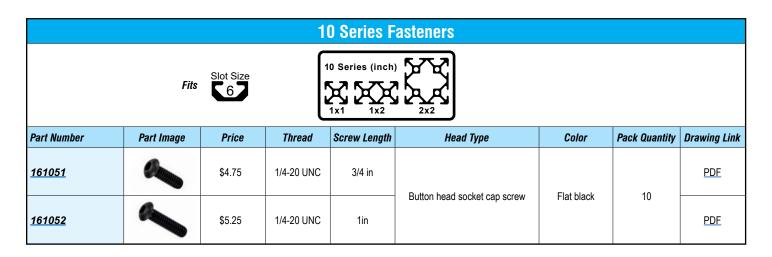
Fits

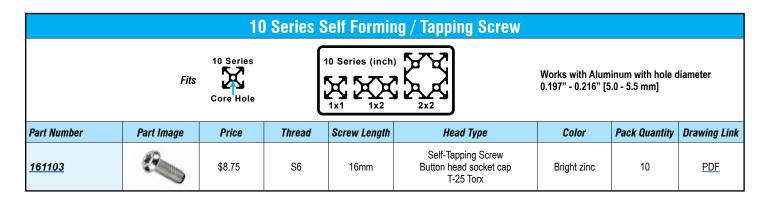


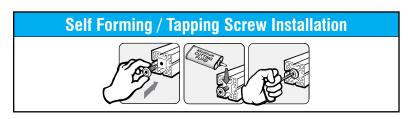


Part Number	Part Image	Price	Thread	Screw Length	Head Type	Color	Pack Quantity	Drawing Link
<u>162994</u>	8	\$8.00	#8-32 UNF	3/8 in	Button head socket cap screw			<u>PDF</u>
<u>161073</u>	Omm	\$7.75	#0 02 OIN	1/2 in	Flat head socket cap screw			<u>PDF</u>
<u>162993</u>	Game !	\$7.50		3/8 in	Button head socket cap screw			<u>PDF</u>
<u>162995</u>	-	\$7.75		1/2 in	Socket head cap screw		10	PDF
<u>161046</u>		\$4.75	#10-32 UNF	1/2 111		Flat black		<u>PDF</u>
<u>161047</u>	4	\$5.00		5/8 in	Button head socket cap screw			<u>PDF</u>
<u>161048</u>		\$5.75		3/4 in				<u>PDF</u>
<u>161074</u>	0	\$6.25			Flat head socket cap screw			<u>PDF</u>
<u>151040</u>	•	\$4.25		1/2 in	Button head socket cap screw			<u>PDF</u>
<u>151041</u>	0	\$5.25			Flanged button head socket cap screw	Gloss black		PDF
<u>161049</u>	0	\$4.50	1/4-20 UNC	9/16 in	Button head socket cap screw			<u>PDF</u>
<u>161075</u>		\$6.25			Flat head socket cap screw	Flat black		<u>PDF</u>
<u>161050</u>	4	\$4.75		5/8 in	Button head socket cap screw	гіац ріаск		<u>PDF</u>
<u>161087</u>		\$4.00			Socket head cap screw			<u>PDF</u>

Fasteners - Continued







Connecting Components

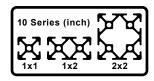
- Connects two or three T-slot rails together
- Recommended ADC Fastener based on part feature, slot depth and core hole
- Material: varies by part



10 Series Connecting Components

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			Description			(ADC P	ed Screw Fastener art Number)		
Part Number	Part Image	Price		Fits Profile	Material	Core Hole Attachment	*T-Slot Attachment	Pack Quantity	Drawing Link
<u>148953</u>	00	\$8.25	2d Cube		Die-cast aluminum	<u>161103</u>	Socket Head Cap		PDF
<u>166230</u>		\$10.00	Connector			Fasteners Included (161103)	Screw 1/4-20 x 7/16" **	1	PDF
<u>148956</u>	60	\$10.50	3d Cube	1 x 1in			n/a Fasteners Included (151040 & 151039)		<u>PDF</u>
<u>166231</u>		\$12.00	Connector	_		<u>161103</u>			PDF
<u>151042</u>	191	\$4.25				Fasteners Included (161103)			<u>PDF</u>
<u>166232</u>	101	\$4.75	Angle						PDF
<u>151043</u>	1.1.1	\$7.50	Connector	40:-		<u>161103</u>	<u>161103</u> <u>151040</u>		PDF
<u>166233</u>	15101	\$8.00		1 x 2in					PDF
<u>163007</u>	0	\$10.50	Screw Connector	1 x 1in	Zinc plated steel	Designer's choice	n/a	10	<u>PDF</u>

^{*}T-Slot Nut also required.

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^{**} Recommended fastener not available from AutomationDirect.com

Connecting Components - Continued

Connecting Comp	onents Installation								
Core Hole Installation	T-Slot Installation								
2D Cube Connector									
3D Cube Connector									
	n/a								
Angle Connector									
Screw Connector									
Screw Connector Control of the state of the									

Joining Plates

- Connects two or more T-slot rails together
- Recommended ADC Fastener based on plate thickness and slot depth
- Material: Anodized aluminum

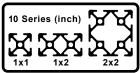




10 Series Joining Plates

Fits





151044 166234 151045 166235 151046 166236 151047	000	\$2.50 \$3.00 \$3.75				PDF
151045 166235 151046 166236	000					1
166235 151046 166236 151047		¢3.75	1			PDF
<u>151046</u> <u>166236</u> <u>151047</u>	_	φυ./ υ				PDF
<u>166236</u> <u>151047</u>	1	\$4.00				PDF
151047		\$4.50	Straight Flat Plate			PDF
	12.20	\$5.00		<u>151040</u> or <u>151041</u>		PDF
<u>166237</u>		\$4.25				PDF
		\$5.00			1	PDF
<u>151048</u>		\$6.50				PDF
166238	1	\$7.00				PDF
<u>151049</u>		\$5.50	Rectangular Flat Plate			PDF
166239		\$6.00				PDF
<u>151050</u>		\$6.25				PDF
166240		\$7.00	Flat Plate			PDF

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Joining Plates - Continued

			1x1 1x2 2x2						
Part Number	Part Image	Price	Description	Recommended Screw Fastener *T-Slot Attachment (ADC Part Number)	Pack Quantity	Drawing Link			
<u>151051</u>		\$6.50	Flat Plate			<u>PDF</u>			
<u>166241</u>		\$7.00	i lat Flate			PDF			
<u>151052</u>	•	\$6.50				PDF			
<u>166242</u>		\$7.00		<u>151040</u> or <u>151041</u>	1	<u>PDF</u>			
<u>151053</u>		\$7.25				PDF			
<u>166243</u>		\$8.00	T-Shaped Flat Plate			PDF			
<u>151054</u>		\$10.50				PDF			
<u>166244</u>		\$12.00				PDF			
<u>151055</u>		\$9.50	Cross Flat Plate			PDF			
<u>166245</u>		\$11.00	O1033 Flat Flate			PDF			
<u>151056</u>		\$8.00	L-Shaped Flat Plate			<u>PDF</u>			
<u>166246</u>	900	\$9.00	2 Onapod Flat Flate			<u>PDF</u>			
<u>151057</u>		\$10.50	T-Shaped Flat Plate			PDF			
<u>166247</u>	30	\$12.00	1-Shapeu Flat Flate			PDF			
*T-Slot Nut also requir	ed								

Brackets

- Connects two T-slot rails together at a 90° angle
- Recommended ADC Fastener based on part features and slot depth
- Material: varies by part

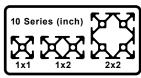






10 Series Brackets

Fits Slot Siz



				(ADC Part	Screw Fastener t Number)			
Part Number	Part Image	Price	Description	Core Hole Attachment	*T-Slot Attachment	Pack Quantity	Material	Drawing Link
<u>148915</u>	Ele:	\$1.50			40004		Die-cast	<u>PDF</u>
<u>166249</u>	1	\$1.50		Angle Bracket	<u>162994</u>		aluminum	PDF
<u>151059</u>		\$4.00	Angle Bracket		162993		Die-cast zinc	PDF
<u>166250</u>		\$4.00			102993	1		PDF
<u>151058</u>		\$2.50	Inside Corner Bracket	n/a			Anodized aluminum	PDF
<u>166248</u>		\$3.00						PDF
<u>151061</u>	1	\$4.75	Tall Inside Corner					PDF
<u>166252</u>		\$5.00	Bracket					PDF
<u>151060</u>		\$4.75	Wide Inside Corner		<u>151040</u>			PDF
<u>166251</u>		\$5.00	Bracket					PDF
<u>151062</u>	13:	\$6.75	Luide Our Don't					PDF
<u>166253</u>		\$8.00	Inside Corner Bracket					<u>PDF</u>

^{*}T-Slot Nut also required.

^{**} Recommended fastener not available from AutomationDirect.com

Brackets - Continued

10 Series Brackets - Cont'd Slot Size 10 Series (inch) 11 Series (inch) 12 2x2

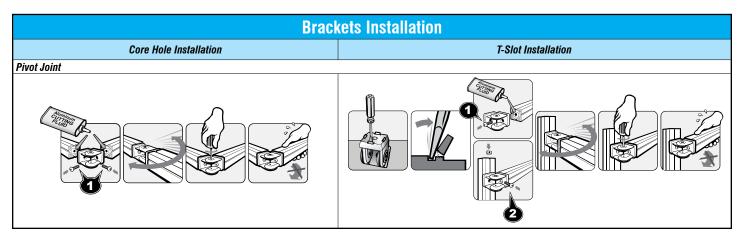
151063 166254 151064	Part Image	\$3.00 \$3.00 \$5.25	Description Gusseted Inside Corner Bracket	Core Hole Attachment	*T-Slot Attachment	Pack Quantity	Material	Drawing Link PDF		
166254		\$3.00	Gusseted Inside Corner Bracket					PDF		
			Corner Bracket							
<u>151064</u>	0 0	\$5.25						PDF		
			Tall Gusseted Inside					<u>PDF</u>		
<u>166255</u>	00	\$6.00	Corner Bracket					<u>PDF</u>		
<u>151065</u>	~	\$5.75	Wide Gusseted Inside Corner Bracket			n/a	<u>151040</u>		Anodized aluminum	PDF
<u>166256</u>	•	\$6.00						PDF		
<u>151066</u>	00	\$10.50				1		PDF		
<u>166257</u>	G. 64	\$12.00	Corner Bracket					<u>PDF</u>		
<u>151067</u>	0	\$30.50	Direct leint				Die-cast zinc	PDF		
166258		\$36.00	Pivot Joint					PDF		
148932		\$39.50	Pivot Joint With	<u>161103</u>	<u>161049</u>			PDF		
166259	C.	\$47.00	Locking Handle					PDF		

^{*}T-Slot Nut also required.

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^{**} Recommended fastener not available from AutomationDirect.com

Brackets - Continued



Bases

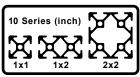
- Recommended ADC Fastener based on part features and extrusion core hole
- Material: varies by part





10 Series Bases





						Load	Recommended (ADC Part				
Part Number	Part Image	Price	Diameter	Description	Fits	Rating kg [lb]	Core Hole Attachment	T-Slot Attachment	Pack Quantity	Material	Drawing Link
<u>118356</u>	Can Can	\$16.00		1/4-20 UNC Transport/Base Plate	1 x 2in	n/a	161103 (2) included			Die-cast	PDF
<u>146399</u>	04.0	\$16.00	. n/a	3/8-16 UNC Transport/Base Plate	8-16 UNC ort/Base Plate UNC x 1-1/2in Foot Threaded ith 15 mm ball 118356	11/4	with kit			zinc	<u>PDF</u>
<u>151074</u>	01	\$7.25	1770	1/4-20 UNC x 1-1/2in Swivel Foot Threaded Rod with 15 mm ball		210 [463]*				Zinc plated steel	PDF
<u>151075</u>	0	\$4.50		3/8-16 UNC x 1-1/2in Swivel Foot Threaded Rod with 15 mm ball	Transport/ Base Plate 146399	470 [1036]*				Zinc plated steel	PDF
<u>151068</u>	•	\$4.00	1.57 in			900 [1984]	n/a n/a		Nylon	PDF	
<u>151071</u>		\$9.50	[39.0 mm]		Any 15mm ball Threaded	3000 [6614]		n/a	1	Die-cast zinc	PDF
<u>151072</u>		\$17.00									PDF
<u>151073</u>	000	\$17.00	3.11 in	Swivel Base With Anti-							PDF
<u>151069</u>		\$6.00	[79.0 mm]	Slip Plate	Rod	900 [1984]					PDF
<u>151070</u>		\$6.00				300 [1304]				Nylon	PDF
<u>151255</u>		\$10.00	3.90 in			900 [1984]				Nylon	PDF
<u>151256</u>		\$10.00	[99.0 mm]								PDF

*Based on installation with Transport / Base Plate

Load rating of a swivel foot assembly is based on the part with the lowest load rating, typically the threaded rod. Example:

Threaded rod load rating = 210kg [463lb]

Swivel base load rating = 3000kg [6614lb] Swivel foot assembly load rating = 210kg [463lb]

Bases - Continued

10 Series Bases - continued 10 Series (inch) 10 Series (inch) 11 Series (inch) 12 Series (inch) 13 Series (inch) 14 Series (inch) 15 Series (inch) 16 Series (inch) 17 Series (inch) 18 Series (inch) 18 Series (inch) 19 Series (inch) 10 Series (inch) 11 Series (inch) 11 Series (inch) 12 Series (inch) 13 Series (inch) 14 Series (inch) 15 Series (inch) 16 Series (inch) 17 Series (inch) 18 Series (inch) 1

	Part Image	Price	Diameter	Description	Fits	Load	Recommended Screw Fastener (ADC Part Number)				
Part Number						Rating kg [lb]	Core Hole Attachment	**T-Slot Attachment	Pack Quantity	Material	Drawing Link
<u>151257</u>		\$24.00	3.90 in [99.0 mm]	Swivel Base With Anti- Slip Plate	Any 15mm ball Threaded Rod	3500 [7716]	n/a	n/a	1	Die-cast zinc	PDF
<u>151258</u>		\$24.00									PDF
<u>162933</u>		\$12.50	See Drawing Link		Any 15mm ball Threaded Rod	1000 [2204]				Nylon	PDF
<u>162934</u>		\$27.00		Extended Swivel Base		3000 [6613]				Die-cast zinc	PDF
<u>162955</u>		\$10.00	n/a	Floor Bracket	1 x 1in, 1 x 2in, 2 x 2in	n/a		151040		Anodized aluminum	<u>PDF</u>

*Based on installation with Transport / Base Plate

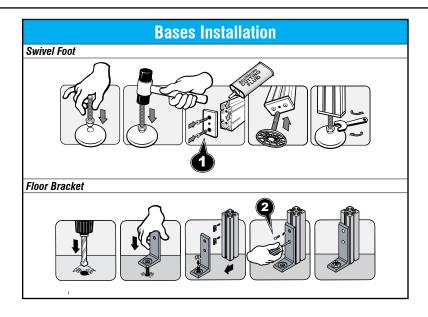
Load rating of a swivel foot assembly is based on the part with the lowest load rating, typically the threaded rod.

Example:

Threaded rod load rating = 210kg [463lb] Swivel base load rating = 3000kg [6614lb]

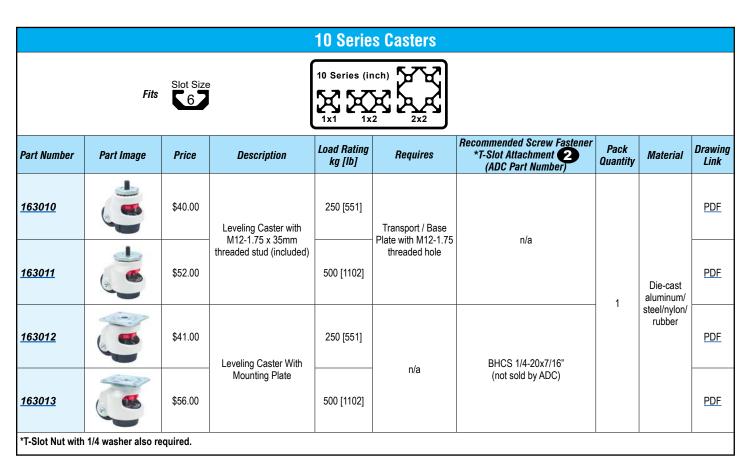
Swivel foot assembly load rating = 210kg [463lb]

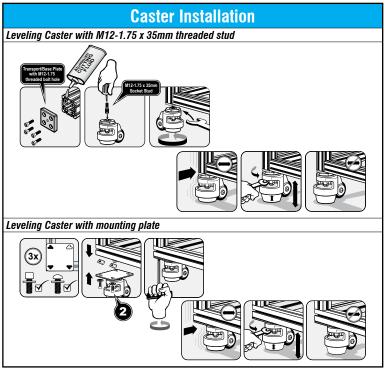
**T-Slot nut also required



Casters

- Recommended ADC Fastener based on part feature and attachment type
- Material: varies by part





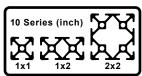
Hinges

- Recommended ADC Fastener based on part feature and slot depth
- Material: varies by part



10 Series Hinges

Fits 6



Part Number	Part Image	Price	Description	Recommended Screw Fastener *T-Slot Attachment (ADC Part Number)	Pack Quantity	Material	Drawing Link			
<u>151076</u>		\$6.00	Left-Hand Detachable Combination Hinge			Fiberglass reinforced plastic	PDF			
<u>151077</u>		\$6.00	Right-Hand Detachable Combination Hinge				PDF			
<u>151078</u>		\$6.00	Non-Detachable Combination Hinge				<u>PDF</u>			
<u>151079</u>		\$11.50	Non-Detachable Combination Hinge With Locking Lever	<u>161074</u>	1		<u>PDF</u>			
<u>151080</u>		\$17.00	Left-Hand Detachable Combination Hinge			Die-cast aluminum	<u>PDF</u>			
<u>151081</u>		\$17.00	Right-Hand Detachable Combination Hinge		1		<u>PDF</u>			
<u>151082</u>		\$17.00	Non-Detachable Combination Hinge				PDF			
*T-Slot Nut also requ	ired									

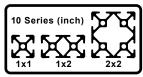
Panel and Door Elements

- Recommended ADC Fastener based on part feature and slot depth
- Material: varies by part



10 Series Panel and Door Elements

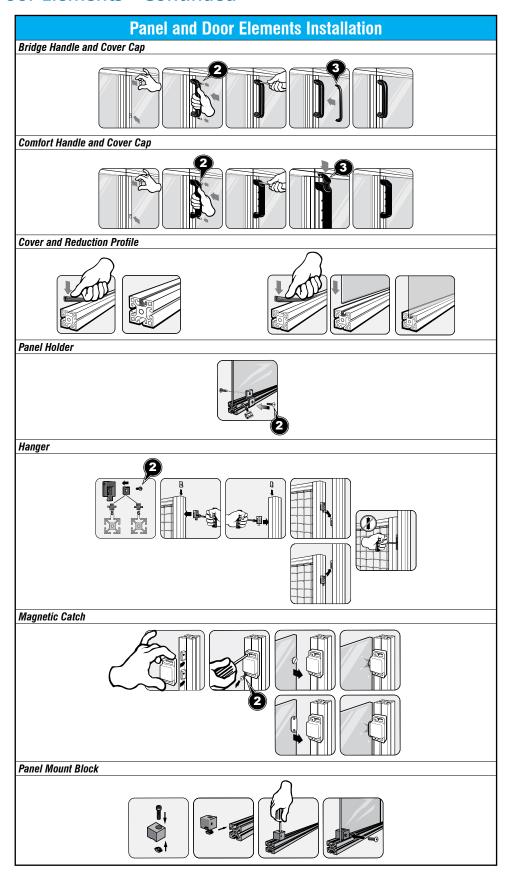




Part Number	Part Image	Price	Description	Recommended Screw Fastener *T-Slot Attachment (ADC Part Number)	Pack Quantity	Material	Drawing Link			
<u>151083</u>	し	\$4.25	Bridge Handle	<u>162995</u>			<u>PDF</u>			
<u>151084</u>	>	\$6.50	Cover Cap 3	n/a			PDF			
<u>151085</u>	~	\$4.50	Comfort Handle	<u>161087</u>		Fiberglass reinforced plastic	PDF			
<u>151086</u>	~~	\$4.00	Cover Cap 3	n/a			<u>PDF</u>			
<u>151149</u>		\$6.50	Comfort Handle	mfort Handle <u>151050</u>			<u>PDF</u>			
<u>162910</u>	,	\$3.00	- Panel Holder	<u>151040</u>	1	Anodized aluminum	<u>PDF</u>			
<u>162915</u>		\$5.25	Pariel Holder				PDF			
<u>162920</u>		\$5.25	Panel Mount Block	Fasteners included		Lacquered aluminum	<u>PDF</u>			
<u>162921</u>		\$5.25	Panel Wount Block			Powder-coated aluminum black	<u>PDF</u>			
<u>162963</u>		\$8.50	Magnetic Catch	<u>161047</u>		Nylon/steel	<u>PDF</u>			
162977	dd	\$8.50	Hanger	<u>151040</u>		Die-cast zinc	PDF			
<u>151087</u>		\$110.00	Cover And Reduction Profile, 2000mm long per piece	n/a	25	Polypropylene	PDF			
*T-Slot Nut also r	required				-					

www.automationdirect.com Aluminum T

Panel and Door Elements - Continued

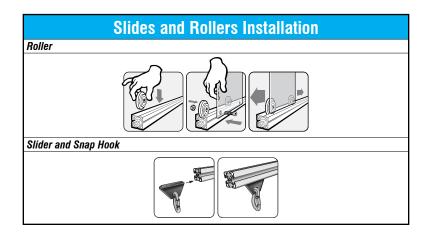


Slides and Rollers





			10 Series Slide	es and Rollers					
Fits Slot Size 10 Series (inch) 1x1 1x2 2x2									
Part Number	Part Image	Price	Description	Fits	Pack Quantity	Material	Drawing Link		
<u>151090</u>		\$7.25	Roller	All 10 Series		Glass-filled nylon	<u>PDF</u>		
<u>151088</u>		\$4.50	Slider	7.11 10 001100	1	Glass-filled nylon	PDF		
<u>151089</u>		\$4.50	Snap Hook	Slider <u>151088</u>		Zinc plated steel	PDF		



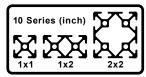
Monitor Mounts

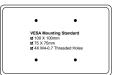


10 Series Monitor Mounts

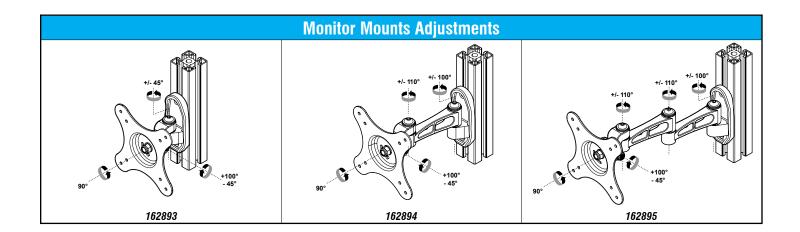
- Fits monitors with VESA mounting standard
- Durable steel construction
- Powder coat finish
- Mounting hardware included for several mounting locations







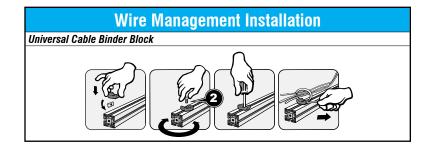
Part Number	Part Image	Price	Description	Load Rating kg [lb]	Pack Quantity	Installation Instructions Link	Drawing Link			
<u>162893</u>		\$42.00				PDF	<u>PDF</u>			
<u>162894</u>		\$50.00	Swivel Monitor Mount	15 [33.1]	1	PDF	<u>PDF</u>			
<u>162895</u>		\$58.00				PDF	<u>PDF</u>			



Wire Management



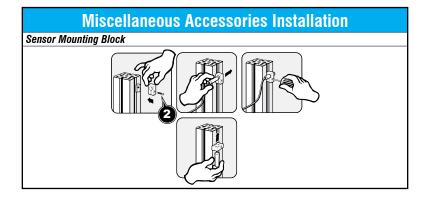
10 Series Wire Management Recommended Screw Fastener Pack *T-Slot Attachment (ADC Part Number) Part Number Part Image Price Description Material **Drawing Link** Quantity <u>151095</u> \$44.00 Clip Cable Binder With Hammer n/a Nylon/rubber <u>PDF</u> 10 \$7.50 Universal Cable Binder Block 162982 162993 Nylon PDF *T-Slot Nut also required



Miscellaneous Accessories



10 Series Miscellaneous Accessories Fits Recommended Screw Fastener Pack Drawing *T-Slot Attachment (2 (ADC Part Number) Part Number Part Image Price Description Fits Profile Material Quantity Link 151092 \$10.00 1 x 1in PDF 151093 \$14.50 End Cap 1 x 2in 10 Glass-filled nylon **PDF** n/a 151094 \$19.00 PDF 2 x 2in Sensor Mounting Block for \$3.25 8mm diameter proximity PDF 162973 sensor BHCS 8-32 x 3/4" All 10 Series 1 Nylon (not sold by ADC) Sensor Mounting Block for \$3.25 162974 12mm diameter proximity **PDF** sensor



*T-Slot Nut also required