



IBOCO® Wire Duct – Slotted

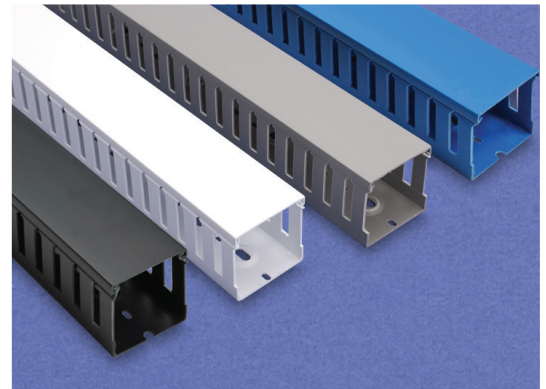
Rigid PVC - Open Slot - Wide Finger Wall T1 Series

Overview

Rugged wire duct is made of rigid PVC that carries a UL 94V-0 flammability rating for your wire containment needs. Our wire duct comes in 6.56 ft [2m] or 3.28 ft [1m] lengths, complete with cover. Replacement duct covers can be purchased separately.

Features

- Standard mounting holes
- Wide finger design provides greater rigidity and larger slot width
- Rounded, burr-free edges will not cut installers' hands or wiring insulation
- Non-slip cover included
- Flush cover design holds 10–12% more wires than traditional designs
- Restricted slot design for fast and easy wire installation/removals
- Temperature range -15 to 50°C [5 to 122°F]
- Available in 6.56 ft [2m] or 3.28 ft [1m] lengths
- Two predetermined break lines, one for breaking off and removing the sidewall finger segments only, and another for removing the sidewall finger and base segments
- Rivets R6 and R4 may be used to mount on panel
- Recess bosses in the base allow rapid mounting of wire retainers (CL series), inserts (ZP2) and separators (SEP series) inside the wire duct.
- Duct base perforation according to DIN 43659 and DIN VDE 0660 TEIL 506



UL Recognized file # E123572



Gray Open Slot T1 Series				
Part Number	Qty	Length ft [m]	Price	Drawing Link
T1-0506G-1	1	6.56 [2]	\$13.50	PDF
T1-0510G-1	1	6.56 [2]	\$15.00	PDF
T1-1010G-1	1	6.56 [2]	\$18.50	PDF
T1-1015G-1	1	6.56 [2]	\$22.50	PDF
T1-1022G-1	1	6.56 [2]	\$23.50	PDF
T1-1022G1-1	1	3.28 [1]	\$13.50	PDF
T1-1030G-1	1	6.56 [2]	\$28.50	PDF
T1-1030G1-1	1	3.28 [1]	\$16.50	PDF
T1-1040G-1	1	6.56 [2]	\$34.50	PDF
T1-1515G-1	1	6.56 [2]	\$24.50	PDF
T1-1522G-1	1	6.56 [2]	\$25.50	PDF
T1-1522G1-1	1	3.28 [1]	\$14.50	PDF
T1-1530G-1	1	6.56 [2]	\$31.00	PDF
T1-1530G1-1	1	3.28 [1]	\$17.50	PDF
T1-1540G-1	1	6.56 [2]	\$36.50	PDF
T1-2215G-1	1	6.56 [2]	\$25.50	PDF
T1-2222G-1	1	6.56 [2]	\$27.00	PDF
T1-2222G1-1	1	3.28 [1]	\$15.50	PDF

Cover included.

Gray Open Slot T1 Series				
Part Number	Qty	Length ft [m]	Price	Drawing Link
T1-2230G-1	1	6.56 [2]	\$34.50	PDF
T1-2230G1-1	1	3.28 [1]	\$19.50	PDF
T1-2240G-1	1	6.56 [2]	\$38.00	PDF
T1-2240G1-1	1	3.28 [1]	\$21.50	PDF
T1-3015G-1	1	6.56 [2]	\$34.50	PDF
T1-3022G-1	1	6.56 [2]	\$35.50	PDF
T1-3030G-1	1	6.56 [2]	\$41.50	PDF
T1-3030G1-1	1	3.28 [1]	\$22.50	PDF
T1-3040G-1	1	6.56 [2]	\$47.00	PDF
T1-3050G-1	1	6.56 [2]	\$62.00	PDF
T1-4015G-1	1	6.56 [2]	\$35.50	PDF
T1-4022G-1	1	6.56 [2]	\$39.50	PDF
T1-4030G-1	1	6.56 [2]	\$45.00	PDF
T1-4040G-1	1	6.56 [2]	\$54.00	PDF
T1-4040G1-1	1	3.28 [1]	\$29.50	PDF
T1-4050G-1	1	6.56 [2]	\$72.00	PDF
T1-6040G-1	1	6.56 [2]	\$86.00	PDF

Cover included.



IBOCO® Wire Duct – Slotted

Rigid PVC - Open Slot - Wide Finger Wall T1 Series (continued)

White Open Slot T1 Series				
Part Number	Qty	Length ft [m]	Price	Drawing Link
T1-1010W-1	1	6.56 [2]	\$18.50	PDF
T1-1015W-1	1		\$22.50	PDF
T1-1022W-1	1		\$23.50	PDF
T1-1030W-1	1		\$28.50	PDF
T1-1040W-1	1		\$34.50	PDF
T1-1515W-1	1		\$24.50	PDF
T1-1522W-1	1		\$25.50	PDF
T1-1530W-1	1		\$31.00	PDF
T1-1540W-1	1		\$36.50	PDF
T1-2222W-1	1		\$27.00	PDF
T1-2230W-1	1		\$34.50	PDF
T1-2240W-1	1		\$38.00	PDF
T1-3022W-1	1		\$35.50	PDF
T1-3030W-1	1		\$41.50	PDF
T1-3040W-1	1		\$47.00	PDF
T1-3050W-1	1		\$62.00	PDF
T1-4022W-1	1		\$39.50	PDF
T1-4030W-1	1		\$45.00	PDF
T1-4040W-1	1		\$54.00	PDF
T1-4050W-1	1		\$72.00	PDF
T1-6040W-1	1		\$86.00	PDF

Cover included.

Blue* Open Slot T1 Series				
Part Number	Qty	Length ft [m]	Price	Drawing Link
T1-1010B-1	1	6.56 [2]	\$20.50	PDF
T1-1022B-1	1		\$27.00	PDF
T1-1030B-1	1		\$34.50	PDF
T1-1515B-1	1		\$27.00	PDF
T1-1522B-1	1		\$30.00	PDF
T1-1530B-1	1		\$36.50	PDF
T1-2215B-1	1		\$31.00	PDF
T1-2222B-1	1		\$31.00	PDF
T1-2230B-1	1		\$39.50	PDF
T1-3030B-1	1		\$48.50	PDF
T1-4030B-1	1		\$52.00	PDF
T1-4040B-1	1		\$62.00	PDF

Cover included.

*Intrinsic Blue color per ISA-RD12.6 (Instrument Society of America).

Black* Open Slot T1 Series				
Part Number	Qty	Length ft [m]	Price	Drawing Link
T1-1040K-1	1	6.56 [2]	\$38.00	PDF
T1-1530K-1	1		\$35.50	PDF
T1-2222K-1	1		\$31.00	PDF
T1-2240K-1	1		\$44.00	PDF
T1-3030K-1	1		\$47.00	PDF
T1-3040K-1	1		\$53.00	PDF
T1-3050K-1	1		\$71.00	PDF
T1-4040K-1	1		\$61.00	PDF
T1-4050K-1	1		\$83.00	PDF

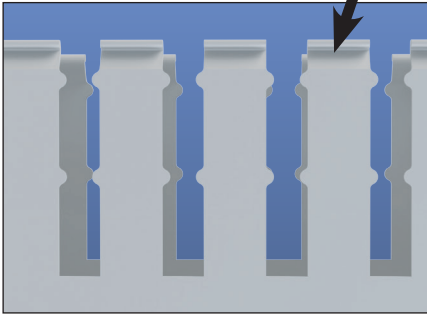
Cover included.

*Black color typically used to compliment the look of historically black telecommunications racks and hardware.

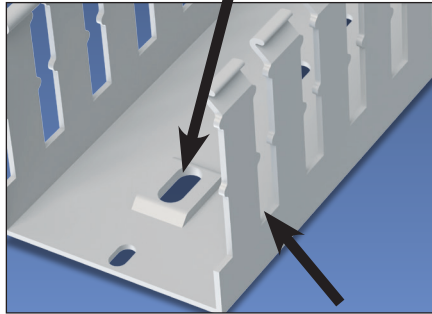

IBOCO®

Wire Duct – Slotted

Restricted slot opening
for wire retention

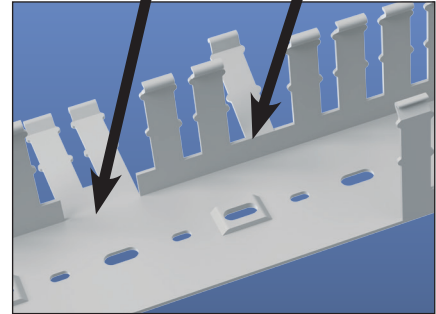


Recess boss for rapid
mounting of components



Burr-free edges

Two predetermined breaklines



Rigid PVC - Open Slot - Wide Finger Wall - T1 Series Dimensions

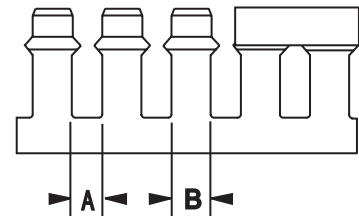
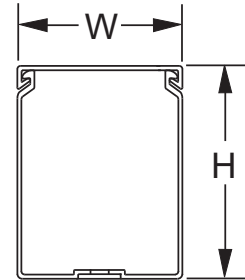
Part Number	Actual Size (WxH) inches [mm]	Dimension A inches [mm]	Dimension B inches [mm]
T1-0506*	0.60 x 0.70 [15 x 18]	0.20 [5.08]	0.30 [7.62]
T1-0510*	0.60 x 1.18 [15 x 30]		
T1-1010*	1.00 x 1.18 [25 x 30]		
T1-1015*	1.00 x 1.57 [25 x 40]	0.31 [7.87]	0.47 [11.94]
T1-1022*	1.00 x 2.36 [25 x 60]		
T1-1030*	1.00 x 3.15 [25 x 80]		
T1-1040*	1.00 x 3.94 [25 x 100]		
T1-1515*	1.57 x 1.57 [40 x 40]		
T1-1522*	1.57 x 2.36 [40 x 60]		
T1-1530*	1.57 x 3.15 [40 x 80]		
T1-1540*	1.57 x 3.94 [40 x 100]		
T1-2215*	2.36 x 1.57 [60 x 40]		
T1-2222*	2.36 x 2.36 [60 x 60]		
T1-2230*	2.36 x 3.15 [60 x 80]		
T1-2240*	2.36 x 3.94 [60 x 100]		
T1-3015*	3.15 x 1.57 [80 x 40]		
T1-3022*	3.15 x 2.36 [80 x 60]		
T1-3030*	3.15 x 3.15 [80 x 80]		
T1-3040*	3.15 x 3.94 [80 x 100]		
T1-3050*	3.15 x 4.92 [75 x 125]		
T1-4015*	3.94 x 1.57 [100 x 40]		
T1-4022*	3.94 x 2.36 [100 x 60]		
T1-4030*	3.94 x 3.15 [100 x 80]		
T1-4040*	3.94 x 3.94 [100 x 100]		
T1-4050*	3.94 x 4.92 [100 x 125]		
T1-6040*	5.91 x 3.94 [150 x 100]		

Note: Accessory bosses not present on 0.5 and 1.0 inch width duct.

*Color: *add suffix "G" for Light Gray, *add suffix "W" for White, *add suffix "B" for Blue, *add suffix "K" for Black

See previous pages for complete part numbers

Dimensions





IBOCO® Wire Duct – Slotted

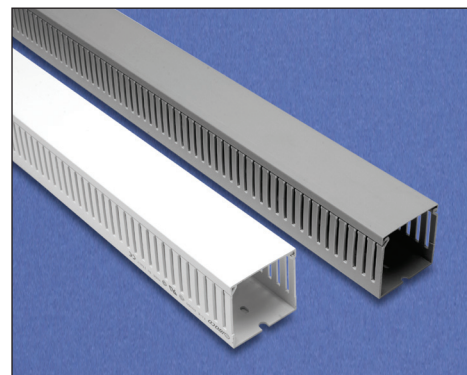
Rigid PVC - Open Slot - Narrow Finger Wall T1E Series

Overview

The T1E series of narrow-finger wire duct is made of rigid PVC that carries a UL 94V-0 flammability rating. Our wire duct comes in 6.56 ft [2m] or 3.28 ft [1m] lengths, complete with cover. Replacement duct covers can be purchased separately.

Features

- Standard mounting holes
- Narrow finger design for compact wiring configurations
- Rounded, burr-free edges will not cut installers' hands or wiring insulation
- Non-slip cover included
- Flush cover design holds 10–12% more wires than traditional designs
- Restricted slot design retains wires in slot for fast, easy wire installation or removal
- Temperature range -15 to 50°C [5 to 122°F]
- Available in 6.56 ft [2m] or 3.28 ft [1m] lengths
- Two predetermined break lines, one for breaking off and removing the sidewall finger segments only, and another for removing the sidewall finger and base segments
- Rivets R6 and R4 may be used to mount on panel
- Recess bosses in the base allow rapid mounting of wire retainers (CL series), inserts (ZP2) and separators (SEP series) inside the wire duct.
- Duct base perforation according to DIN 43659 and DIN VDE 0660 TEIL 506



UL Recognized file # E123572



Gray Open Slot T1E Series				
Part Number	Qty	Length ft [m]	Price	Drawing Link
T1E-1015G-1	1	6.56 [2]	\$22.50	PDF
T1E-1022G-1	1		\$23.50	PDF
T1E-1030G-1	1		\$28.50	PDF
T1E-1515G-1	1		\$24.50	PDF
T1E-1522G-1	1		\$25.50	PDF
T1E-1530G-1	1		\$31.00	PDF
T1E-1540G-1	1		\$36.50	PDF
T1E-2215G-1	1		\$25.50	PDF
T1E-2222G-1	1		\$27.00	PDF
T1E-2230G-1	1		\$34.50	PDF
T1E-2240G-1	1		\$38.00	PDF
T1E-3015G-1	1		\$34.50	PDF
T1E-3022G-1	1		\$35.50	PDF
T1E-3030G-1	1		\$41.50	PDF
T1E-3040G-1	1		\$47.00	PDF
T1E-4015G-1	1		\$33.50	PDF
T1E-4022G-1	1		\$39.50	PDF
T1E-4030G-1	1		\$45.00	PDF
T1E-4040G-1	1		\$54.00	PDF

Cover included.

Gray Open Slot T1E Series				
Part Number	Qty	Length ft [m]	Price	Drawing Link
T1E-1022G1-1	1	3.28 [1]	\$13.50	PDF
T1E-1030G1-1	1		\$16.50	PDF
T1E-1522G1-1	1		\$14.50	PDF
T1E-1530G1-1	1		\$17.50	PDF
T1E-2222G1-1	1		\$15.50	PDF
T1E-2230G1-1	1		\$19.50	PDF
T1E-2240G1-1	1		\$21.50	PDF
T1E-3030G1-1	1		\$22.50	PDF
T1E-4040G1-1	1		\$29.50	PDF

Cover included.

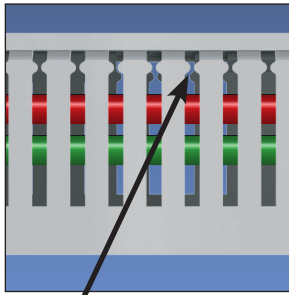
White Open Slot T1E Series				
Part Number	Qty	Length ft [m]	Price	Drawing Link
T1E-1015W-1	1	6.56 [2]	\$22.50	PDF
T1E-1022W-1	1		\$23.50	PDF
T1E-1030W-1	1		\$28.50	PDF
T1E-1515W-1	1		\$24.50	PDF
T1E-1522W-1	1		\$25.50	PDF
T1E-1530W-1	1		\$31.00	PDF
T1E-1540W-1	1		\$36.50	PDF
T1E-2222W-1	1		\$27.00	PDF
T1E-2230W-1	1		\$34.50	PDF
T1E-2240W-1	1		\$38.00	PDF
T1E-3022W-1	1		\$35.50	PDF
T1E-3030W-1	1		\$41.50	PDF
T1E-3040W-1	1		\$47.00	PDF
T1E-4030W-1	1		\$45.00	PDF
T1E-4040W-1	1		\$54.00	PDF

Cover included.

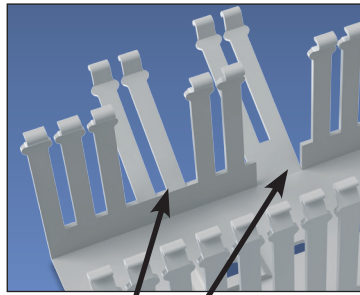


IBOCO® Wire Duct – Slotted

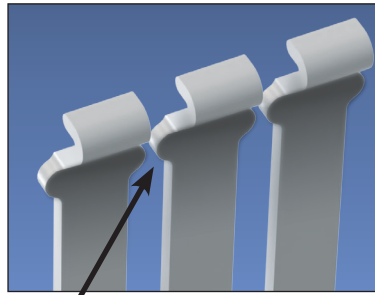
Rigid PVC - Open Slot - Narrow Finger Wall T1E Series



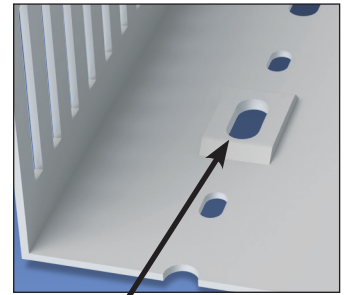
Restricted slot opening
for wire retaining



Two predetermined
breaklines



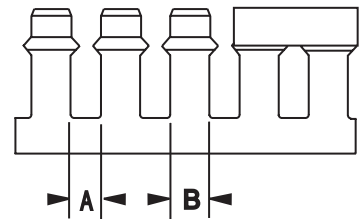
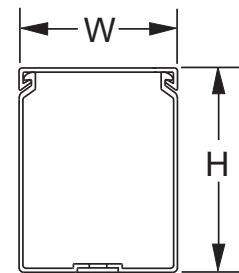
Burr-free edges



Recess boss for rapid mounting
of components

Dimensions

Rigid PVC - Open Slot - Narrow Finger Wall T1E Series Dimensions			
Part Number	Actual Size (WxH) inches [mm]	Dimension A inches [mm]	Dimension B inches [mm]
T1E-1015*	1.00 x 1.57 [25 x 40]	0.16 [4.06]	0.24 [6.10]
T1E-1022*	1.00 x 2.36 [25 x 60]		
T1E-1030*	1.00 x 3.15 [25 x 80]		
T1E-1515*	1.57 x 1.57 [40 x 40]		
T1E-1522*	1.57 x 2.36 [40 x 60]		
T1E-1530*	1.57 x 3.15 [40 x 80]		
T1E-1540*	1.57 x 3.94 [40 x 100]		
T1E-2215*	2.36 x 1.57 [60 x 40]		
T1E-2222*	2.36 x 2.36 [60 x 60]		
T1E-2230*	2.36 x 3.15 [60 x 80]		
T1E-2240*	2.36 x 3.94 [60 x 100]		
T1E-3015*	3.15 x 1.57 [80 x 40]		
T1E-3022*	3.15 x 2.36 [80 x 60]		
T1E-3030*	3.15 x 3.15 [80 x 80]		
T1E-3040*	3.15 x 3.94 [80 x 100]		
T1E-4015*	3.94 x 1.57 [100 x 40]		
T1E-4022*	3.94 x 2.36 [100 x 60]		
T1E-4030*	3.94 x 3.15 [100 x 80]		
T1E-4040*	3.94 x 3.94 [100 x 100]		



*Color: add suffix "G" for light Gray, add suffix "W" for White. (White only available in the 2m length.)
See previous page for complete part numbers.

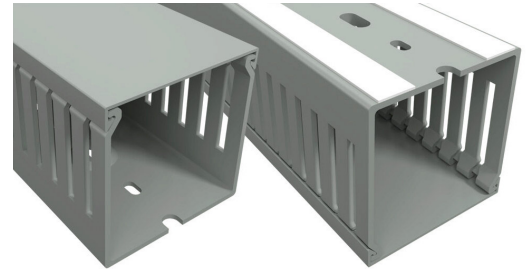


IBOCO® Wire Duct – Slotted

Rigid PVC - Open Slot - Narrow Finger Wall Self-Adhesive -T1E Series

Overview

The T1E series of narrow-finger wire duct is made of rigid PVC that carries a UL 94V-0 flammability rating. Foam adhesive on duct provides a means of temporary positioning before fasteners are installed. Our wire duct comes in 6.56 ft [2m] lengths, complete with cover. Replacement duct covers can be purchased separately.



Features

- Standard mounting holes
- Narrow finger design for compact wiring configurations
- Rounded, burr-free edges will not cut installers' hands or wiring insulation
- Non-slip cover included
- Flush cover design holds 10–12% more wires than traditional designs
- Restricted slot design retains wires in slot for fast, easy wire installation or removal
- Temperature range -15 to 50°C [5 to 122°F]
- Available in 6.56 ft [2m] length
- Adhesive decreases installation time by holding position while the installer secures the wiring duct with fasteners or rivets
- Foam adhesive also provides a means to reposition the wiring duct for precision and optimize final placement
- Two predetermined break lines, one for breaking off and removing the sidewall finger segments only, and another for removing the sidewall finger and base segments
- Recess bosses in the base allow rapid mounting of wire retainers (CL series), inserts (ZP2) and separators (SEP series) inside the wire duct.
- Duct base perforation according to DIN 43659 and DIN VDE 0660 TEIL 506

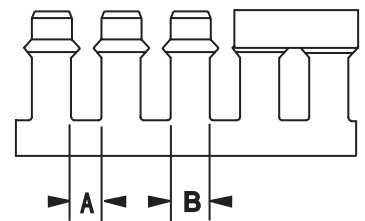
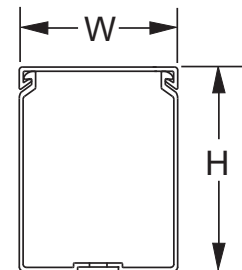
UL Recognized file # E123572



Gray Rigid PVC - Open Slot - Narrow Finger Wall Self-Adhesive - T1E Series							
Part Number	Qty	Price	Actual Size (WxH) inches [mm]	Dimension A inches [mm]	Dimension B inches [mm]	Length ft [m]	Drawing Link
T1E-1022GA-1	1	\$26.50	1.00 x 2.36 [25 x 60]	0.16 [4.06]	0.24 [6.10]	6.56 [2]	PDF
T1E-1030GA-1	1	\$33.50	1.00 x 3.15 [25 x 80]				PDF
T1E-1522GA-1	1	\$29.50	1.57 x 2.36 [40 x 60]				PDF
T1E-1530GA-1	1	\$36.00	1.57 x 3.15 [40 x 80]				PDF
T1E-2222GA-1	1	\$31.50	2.36 x 2.36 [60 x 60]				PDF
T1E-2230GA-1	1	\$39.00	2.36 x 3.15 [60 x 80]				PDF
T1E-2240GA-1	1	\$44.00	2.36 x 3.94 [60 x 100]				PDF
T1E-3030GA-1	1	\$47.00	3.15 x 3.15 [80 x 80]				PDF
T1E-4040GA-1	1	\$62.00	3.94 x 3.94 [100 x 100]				PDF

Cover included.

Dimensions



Adhesive-Backed Tape Specifications		
Material	Carrier	Crosslinked polyethylene
	Adhesive	Rubber based
	Release Liner	Silicone coated paper
Applicable Mounting Surfaces		Paper, cardboard, wood, glass, ceramics, metal, rubber, and many plastics
Application Temperature		65 to 100°F [18 to 38°C]
Service Temperature		-20 to 150°F [-28 to 65°C]
Thickness		0.031 in [0.787 mm]
Foam	Density (typical)	4.5-5.5 lb/ft³
	Test Method	ASTM D3575
Adhesive	180° Peel Adhesion	8.0 lb/in minimum (typical)
	Test Method	PSTC-101

Note: Make sure the surface is perfectly clean and dry before applying self-adhesive wire duct.

www.automationdirect.com

Wiring Solutions

tWIR-6



IBOCO® Wire Duct – Solid Wall

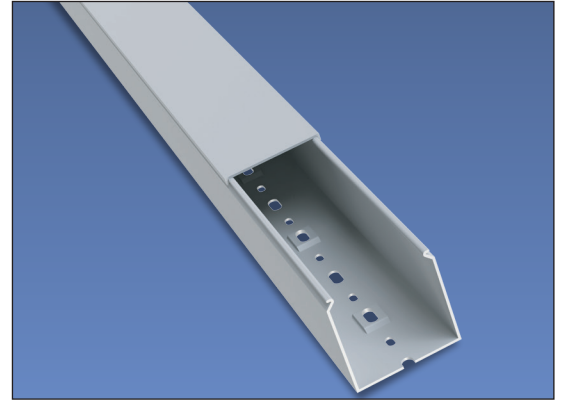
Rigid PVC - Solid Wall - TSH Series

Overview

With all the standard features of the T1 Series slotted wire duct, TSH series solid wall wire duct is made of rigid PVC that carries a UL 94V-0 flammability rating. It is available in 6.56 ft [2m] length and supplied complete with cover, and replacement covers can be purchased separately.

Features

- Standard mounting holes
- Non-slip cover
- Flush cover design holds 10–12% more wires than traditional designs
- Rivets R6 and R4 may be used to mount on panel
- Recess bosses in the base allow rapid mounting of wire retainers (CL series), inserts (ZP2) and separators (SEP series) inside the wire duct.
- Duct base perforation according to DIN 43659 and DIN VDE 0660 TEIL 506



UL file E123572

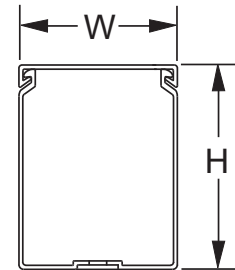


Gray Rigid PVC Solid Wall - TSH Series

Part Number	Qty	Price	Actual Size (WxH) inches [mm]	Length ft [m]	Drawing Link
TSH-0506G-1	1	\$17.00	0.60 x 0.71 [15 x 18]	6.56 [2]	PDF
TSH-1010G-1	1	\$21.00	1.00 x 1.18 [25 x 30]		PDF
TSH-1015G-1	1	\$26.00	1.00 x 1.57 [25 x 40]		PDF
TSH-1515G-1	1	\$28.50	1.57 x 1.57 [40 x 40]		PDF
TSH-2222G-1	1	\$32.00	2.36 x 2.36 [60 x 60]		PDF
TSH-2230G-1	1	\$39.50	2.36 x 3.15 [60 x 80]		PDF
TSH-3030G-1	1	\$50.00	3.15 x 3.15 [80 x 80]		PDF
TSH-4040G-1	1	\$63.00	3.94 x 3.94 [100 x 100]		PDF

Cover included.

Dimensions




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Wire Duct Wire Fill Capacity

Wire Fill Capacity

T1, T1E, TSH Series Wire Fill Capacity						
Nominal Duct Size (inches)	Wire Gauge					
	12AWG	14AWG	16AWG	18AWG	22AWG	
	Insulation Thickness					
	1/32	3/64	1/32	1/32	1/32	1/64
	OD-0.158	OD-0.165	OD-0.139	OD-0.125	OD-0.113	OD-0.065
Recommended Maximum Number of Wires per Wire Duct (based on 50% fill capacity)						
1/2 x 5/8	7	6	9	11	14	43
1/2 x 1	12	11	16	20	24	74
1 x 1	22	21	29	36	44	134
1 x 1 1/2	31	28	39	48	59	180
1 x 2 1/4	45	40	57	71	85	261
1 x 3	59	53	75	92	113	341
1 x 4	72	66	93	115	141	426
1 1/2 x 1 1/2	51	46	65	81	99	299
1 1/2 x 2 1/4	77	70	98	121	148	449
1 1/2 x 3	102	92	130	160	196	593
1 1/2 x 4	125	113	159	197	241	729
2 1/4 x 1 1/2	78	70	99	123	150	453
2 1/4 x 2 1/4	114	103	146	180	221	667
2 1/4 x 3	156	141	199	246	302	912
2 1/4 x 4	194	176	247	306	375	1132
3 x 1 1/2	105	95	134	165	203	612
3 x 2 1/4	159	144	203	251	307	928
3 x 3	214	193	272	337	412	1246
3 x 4	267	242	341	421	515	1558
3 x 5	309	283	399	493	604	1826
4 x 1 1/2	132	120	169	208	255	771
4 x 2 1/4	201	182	256	316	387	1171
4 x 3	270	244	344	425	520	1573
4 x 4	336	305	429	531	650	1963
4 x 5	415	381	536	663	812	2455
6 x 4	512	464	653	807	988	2987


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Wire Duct – Flexible

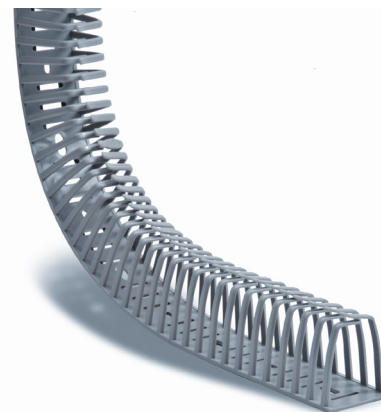
Polypropylene - Flexible - Self-Adhesive DN Series

Overview

Dinosaur self-adhesive flexible duct is ideal for transporting wiring to cabinet doors from control panel interiors (for that part of the cable run that leans against the side of the control cabinet) and for electronic equipment. It is resilient and can be bent and twisted without breaking. Manufactured from low-smoke, halogen-free polypropylene material that carries a UL 94V-0 flammability rating and CSA approval.

Features

- Easily add or remove individual wires from total wires within the duct
- Enclose and secure wiring or cables without requiring duct cover
- Convenient for applications requiring frequent access to wiring
- Easy addition or removal of wires after termination without special tools
- Use in extreme operating conditions (maximum temperature 176°F [80°C])
- Withstands mechanical stress when installed (i.e. earthquake, falling equipment)
- Cut to desired length using scissors or knife
- Rivet R4 may be used to mount on panel
- Duct base perforation according to DIN 43659 and DIN VDE 0660 TEIL 506



UL Recognized file # E123572



Gray Flexible Self-Adhesive DN Series

Part Number	Qty	Price	Width x Height inches [mm]	Length per piece inches [mm]	Total Actual Length ft [m]	Drawing Link
DN25AG	24	\$155.00	0.50 x 0.75 [12.7 x 19.05]	19.7 [500]	39.37 [12]	PDF
DN25AG-1	1	\$8.25			1.64 [0.5]	
DN35AG	24	\$218.00	1.00 x 1.38 [25.4 x 35.05]		39.37 [12]	PDF
DN35AG-1	1	\$11.00			1.64 [0.5]	
DN45AG	14	\$171.00	1.38 x 1.75 [35.05 x 44.45]		22.96 [7.0]	PDF
DN45AG-1	1	\$14.50			1.64 [0.5]	

Adhesive-Backed Tape Specifications

Material	Double coated PET film backing, modified acrylic adhesive
Applicable Mounting Surfaces	Paper, cardboard, wood, glass, ceramics, metal, rubber, and many plastics
Recommended Tape Application Temperature	65 to 95°F [18 to 35°C]
Thickness	0.2 mm

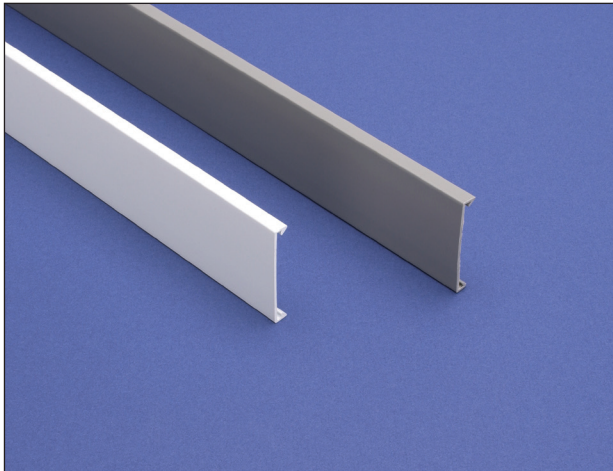
Note: Make sure the surface is perfectly clean and dry before applying self-adhesive wire duct.

Wire Fill Capacity

Nominal Duct Size (inches)	Wire Gauge					
	12AWG	14AWG	16AWG	18AWG	22AWG	
	Insulation Thickness [inches]					
	1/32	3/64	1/32	1/32	1/32	1/64
	OD-0.158	OD-0.165	OD-0.139	OD-0.125	OD-0.113	OD-0.065
	Recommended Maximum Number of Wires per Wire Duct (based on 50% fill capacity)					
1/2 x 1/2	6	5	7	9	11	33
3/4 x 3/4	13	12	6	20	25	75
1/2 x 3/4	8	8	11	13	16	50
1 x 1	23	21	29	36	44	133
1 x 1 3/8	31	28	40	50	61	183
1 1/2 x 1 1/2	51	46	65	81	99	299
1 3/8 x 1 3/4	54	50	70	87	106	321



IBOCO® Wire Duct – Covers



Duct Cover

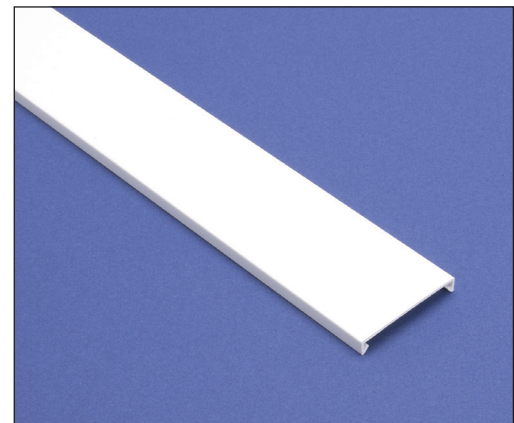
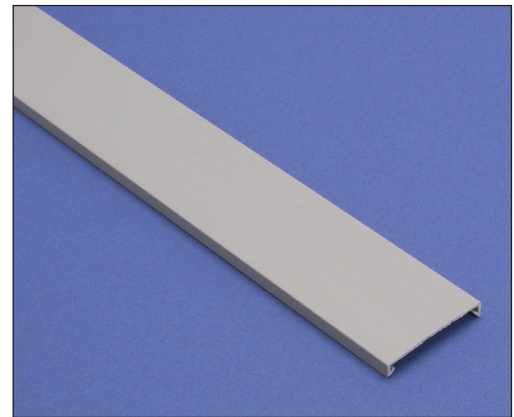
Our standard wire duct products are supplied complete with covers. These replacement covers are manufactured from the same rigid self-extinguishing PVC material.

UL Recognized file # E123572



Duct Cover Specifications

Part Number	Price	Description	Color	Qty	Actual Total Length ft [m]
<u>COV-05G-1</u>	\$5.25	Cover for 0.5" wide duct	Gray	1	6.56 [2]
<u>COV-10G-1</u>	\$5.25	Cover for 1.0" wide duct	Gray	1	
<u>COV-10W-1</u>	\$5.25	Cover for 1.0" wide duct	White	1	
<u>COV-15G-1</u>	\$6.75	Cover for 1.5" wide duct	Gray	1	
<u>COV-15W-1</u>	\$6.75	Cover for 1.5" wide duct	White	1	
<u>COV-22G-1</u>	\$8.50	Cover for 2.25" wide duct	Gray	1	
<u>COV-22W-1</u>	\$8.50	Cover for 2.25" wide duct	White	1	
<u>COV-30G-1</u>	\$12.50	Cover for 3.0" wide duct	Gray	1	
<u>COV-30W-1</u>	\$12.50	Cover for 3.0" wide duct	White	1	
<u>COV-40G-1</u>	\$15.00	Cover for 4.0" wide duct	Gray	1	
<u>COV-40W-1</u>	\$15.00	Cover for 4.0" wide duct	White	1	
<u>COV-60G-1</u>	\$28.50	Cover for 6.0" wide duct	Gray	1	
<u>COV-60W-1</u>	\$28.50	Cover for 6.0" wide duct	White	1	



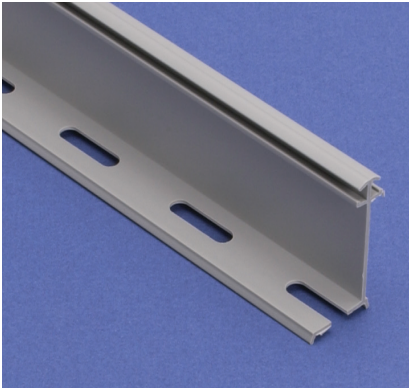
Note: Standard length of covers is 6.56 feet [2m] to fit T1, T1E, and TSH duct.


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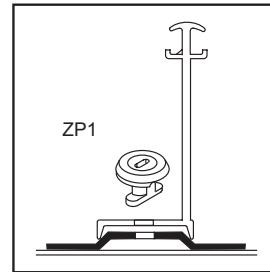
Wire Duct – Accessories

Duct Separators

Duct separators allow the physical separation of circuits within a single piece of duct. The various mounting arrangements allow alternate compartmentalization of duct and differing ratios of usable sections.



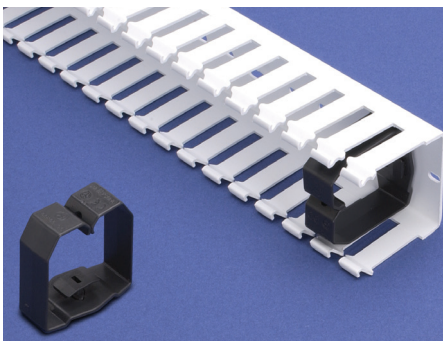
Duct Separators						
Part Number	Price	Description	Color	Qty	Length ft [m]	Drawing Link
<u>SEP-15E-1</u>	\$8.50	Separator for 1.5" high duct	Gray	1	6.56 [2]	<u>PDF</u>
<u>SEP-22E-1</u>	\$11.50	Separator for 2.25" high duct	Gray	1		<u>PDF</u>
<u>SEP-30E-1</u>	\$12.50	Separator for 3.0" high duct	Gray	1		<u>PDF</u>



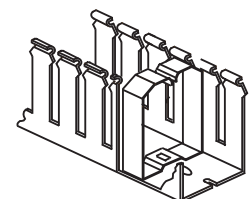
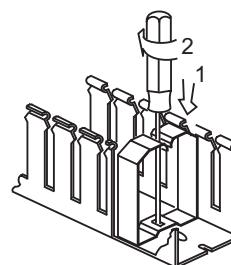
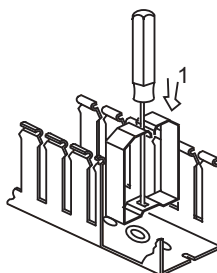
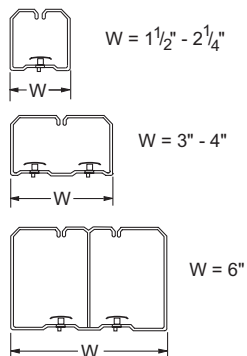
SEP-E Mounting Detail
Order **ZP1** mount separately

Wire Retainers

For holding wires during wiring operations, these retainers are essential. They allow easy access to the interior of the wire duct during maintenance or alterations, while assuring that wiring bundles will not fall out when the duct cover is removed. Installed with a simple rotating movement, they anchor firmly in the recess boss in the duct base.



Wire Retainers				
Part Number	Price	Description	Color	Qty
<u>CL-1515</u>	\$71.00	Wire retainer fastener for 1.5 x 1.5" duct	Black	40
<u>CL-1522</u>	\$75.00	Wire retainer fastener for 1.5 x 2.25" duct		40
<u>CL-1530</u>	\$43.00	Wire retainer fastener for 1.5 x 3.0" duct		20
<u>CL-2215</u>	\$82.00	Wire retainer fastener for 2.25 x 1.5" duct		40
<u>CL-2222</u>	\$46.00	Wire retainer fastener for 2.25 x 2.25" duct		20
<u>CL-2230</u>	\$47.00	Wire retainer fastener for 2.25 x 3.0" duct		20
<u>CL-2240</u>	\$52.00	Wire retainer fastener for 2.25 x 4.0" duct		20
<u>CL-3022</u>	\$28.50	Wire retainer fastener for 3.0 x 2.25" duct		10
<u>CL-3030</u>	\$32.00	Wire retainer fastener for 3.0 x 3.0" duct		10
<u>CL-3040</u>	\$32.00	Wire retainer fastener for 3.0 x 4.0" duct		10
<u>CL-4022</u>	\$35.50	Wire retainer fastener for 4.0 x 2.25" duct		10
<u>CL-4030</u>	\$32.00	Wire retainer fastener for 4.0 x 3.0" duct		10
<u>CL-4040</u>	\$22.00	Wire retainer fastener for 4.0 x 4.0" duct		5
<u>CL-6040</u>	\$27.00	Wire retainer fastener for 6.0 x 4.0" duct		5



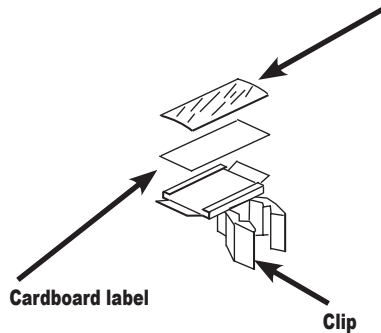

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Wire Duct – Accessories

Duct Marking Tags

Part Number	Price	Description	Qty
DM1	\$32.00	Single-width white cardboard identification label for wire duct. Supplied with black plastic mounting clip and transparent plastic cover slide	50

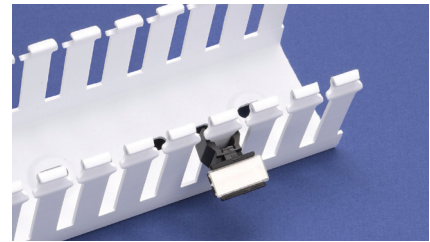
Note: **DM1** marking tags can only be used with T1 series wire duct.



Identification Tags

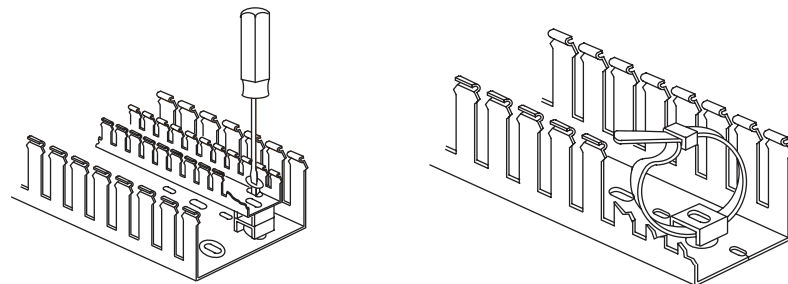
Allowing easy identification of control gear and switchgear, these tags are mounted by snapping the clip onto the sidewall finger segments of the duct. No gluing - no drilling! After installation, they need not be removed during maintenance or any work which involves the removal of the covers.

Note: Take care that clip is installed above the wires coming out to the sidewall slots.



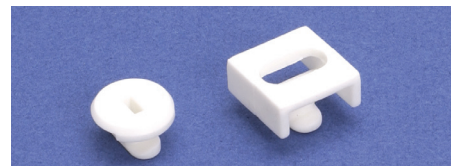
Mounting Devices

Part Number	Price	Description	Qty
ZP1	\$17.00	Round, white polyamide 'button' used to mount components and separators inside duct.	100
ZP2	\$20.50	Square white polyamide cable tie mount used to tighten a wire bundle inside duct.	50



Mounting Inserts

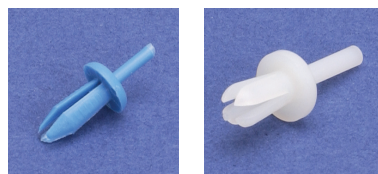
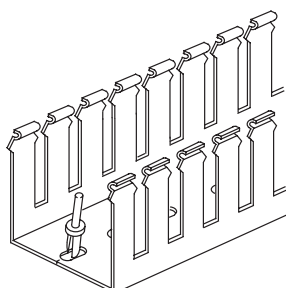
We carry mounts in two styles: ZP1 for mounting components and SEP-E separators inside duct, or for mounting small sizes of duct inside larger sizes (for separation of circuits with different functions); and ZP2, which is used with a cable tie to secure a wire bundle inside the duct.



Wire Duct Rivets and Rivet Tools

Part Number	Price	Description	Qty
R4*	\$19.50	Blue polyamide rivet used to install all types of wire duct with standard 4.5 mm [0.17 in] mounting holes.	250
B4	\$51.00	Red polyamide rivet tool used to install R4 rivets.	1
R6*	\$22.50	Natural polyamide rivet used to install all types of wire duct with standard 6.5 mm [0.26 in] mounting holes.	250
B6	\$51.00	Yellow polyamide rivet tool used to install R6 rivets.	1

* R4 drill hole size - 5/32" (4mm), R6 drill hole size - 7/32" [5.5 mm]
When using with Flexible wire duct, only the R4 rivet will currently work.



Rivets and Rivet Tools

Wire duct rivets install quickly and easily with the companion rivet tool, offering good temperature resistance and excellent mechanical properties. They can be used to install all types of wire duct with standard mounting holes.




IBOCO®

Wire Duct – Material Specifications

Material Specifications								
Materials	Test Standard	Unit of Measure	Rigid PVC	Polypropylene	PVC Molded Components	Polyamide 6	Polyethylene	Flame Retardant Polyethylene
Technical Characteristics								
Chemical/Physical Properties								
Specific Gravity	ASTM D792	g/cm³	1.55	1.01	1.32	1.14	0.92	0.97
H ₂ O 73.4°F Absorption	ISO 62	%	< 0.1	0.02	< 0.1	2.5	< 0.1	< 0.1
Formaldehyde	–	ppm	absent	absent	absent	absent	absent	absent
Cadmium	–	ppm	absent	absent	absent	absent	absent	absent
Mechanical Properties								
Tensile Stress at Break	ASTM D638	MPa	39	28	30	45	17	15
Traction Strength	ASTM D638	MPa	44	27	27	55	9.5	9
Elongation at Break	ASTM D638	%	130	200	97	250	400	600
Modulus of Elasticity at Traction	ASTM D638	MPa	4400	n/a	–	950	–	240
Modulus of Elasticity at Flexion	ASTM D790	MPa	3200	2100	–	1100	210	130
Thermal Properties								
Temperature VICAT	ASTM D1525	°C	84	95	70	198	89	–
HDT	ASTM D648	°C	72	60	60	185	–	–
Coefficient of Expansion	ASTM D696	K ⁻¹	6x10 ⁻⁵	10 ⁻⁵	8x10 ⁻⁵	8-10x10 ⁻⁵	22x10 ⁻⁵	10 ⁻⁵
Specific Heat	ASTM C351	kJ/kgK	0.94	n/a	1.24	1.7	–	–
Thermal Conductivity	ASTM C177	W/mK	0.14	0.21	0.14	0.29	0.32	0.32
Electrical Properties								
Dielectric Constant	ASTM D150	–	3.2 - 4.0	2.5	3.2	5.0	2.4	2.3
Dielectric Strength	IEC 243	kV/mm	70	25	60	35	90	90
Surface Resistance	IEC 93	Ω	10 ¹³	10 ¹³	10 ¹³	5x10 ¹¹	10 ¹³	10 ¹³
Self-Extinguishing								
Self-Extinguishing UL 94 1.6 mm	UL 94	–	V-0	V-0	V-0	V-2	HB	V-2
Self-Extinguishing UL 94 3.2 mm	UL 94	–	V-0	V-0	V-0	V-2	HB	V-2
Hot Wire Test (2 mm)	IEC 695-2-1	°C	960	960	960	650	650	850
Oxygen Number	ASTM D2863	%	43	30	34	25	–	25

Achieve™ Wire Duct - Slotted

Rigid PVC - Open Slot - Narrow Finger Wall WDN Series

Overview

Rugged wire duct is made of a rigid PVC that carries a UL 94 V-0 flammability rating for your wire containment needs. All WDN series wire duct come in lengths of 6.56 ft [2m], complete with cover.

Features

- Additional holes on the sidewalls to be used with cable tie
- Flame-retardant PVC material, self-extinguishing according to UL 94 V-0
- Upper and lower score lines for breaking off individual fingers
- Open slot narrow finger form factor
- Cover included
- Standard length: 6.56 ft [2m]
- Color option: RAL 7030 Stone Gray or RAL 9010 White
- Complies with RoHS regulations
- Complies with EN 50085-2-3 standards and UL 1565 and C22.2 No.18.5-02 standards
- Operating temperature range -5 to 50°C [23 to 122°F]

WDN-1530G-1



WDN-1530W-1

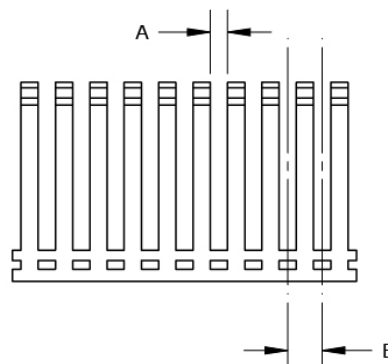
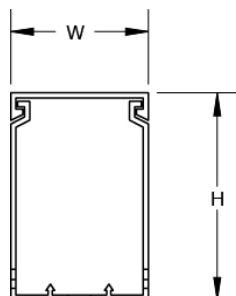


Rigid PVC - Open Slot - Narrow Finger Wall - WDN Series

Part Number	Price	Drawing Link	Color	Part Number	Price	Drawing Link	Color	Qty	Actual Size [W x H] inches [mm]	Dimension A inches [mm]	Dimension B inches [mm]
WDN-1015G-1	\$13.00	PDF	Gray	WDN-1015W-1	\$13.00	PDF	White	1	1.00 x 1.57 [25 x 40]	0.16 [4]	0.24 [6]
WDN-1022G-1	\$13.00	PDF	Gray	WDN-1022W-1	\$13.00	PDF	White	1	1.00 x 2.36 [25 x 60]		
WDN-1030G-1	\$16.50	PDF	Gray	WDN-1030W-1	\$16.50	PDF	White	1	1.00 x 3.15 [25 x 80]		
WDN-1515G-1	\$14.50	PDF	Gray	WDN-1515W-1	\$14.50	PDF	White	1	1.57 x 1.57 [40 x 40]		
WDN-1522G-1	\$15.50	PDF	Gray	WDN-1522W-1	\$15.50	PDF	White	1	1.57 x 2.36 [40 x 60]		
WDN-1530G-1	\$18.50	PDF	Gray	WDN-1530W-1	\$18.50	PDF	White	1	1.57 x 3.15 [40 x 80]		
WDN-1540G-1	\$22.00	PDF	Gray	WDN-1540W-1	\$22.00	PDF	White	1	1.57 x 3.94 [40 x 100]		
WDN-2215G-1	\$15.50	PDF	Gray	WDN-2215W-1	\$15.50	PDF	White	1	2.36 x 1.57 [60 x 40]		
WDN-2222G-1	\$15.50	PDF	Gray	WDN-2222W-1	\$15.50	PDF	White	1	2.36 x 2.36 [60 x 60]		
WDN-2230G-1	\$20.00	PDF	Gray	WDN-2230W-1	\$20.00	PDF	White	1	2.36 x 3.15 [60 x 80]		
WDN-2240G-1	\$22.00	PDF	Gray	WDN-2240W-1	\$22.00	PDF	White	1	2.36 x 3.94 [60 x 100]		
WDN-3015G-1	\$20.00	PDF	Gray	WDN-3015W-1	\$20.00	PDF	White	1	3.15 x 1.57 [80 x 40]		
WDN-3022G-1	\$21.00	PDF	Gray	WDN-3022W-1	\$21.00	PDF	White	1	3.15 x 2.36 [80 x 60]		
WDN-3030G-1	\$24.00	PDF	Gray	WDN-3030W-1	\$24.00	PDF	White	1	3.15 x 3.15 [80 x 80]		
WDN-3040G-1	\$26.50	PDF	Gray	WDN-3040W-1	\$26.50	PDF	White	1	3.15 x 3.94 [80 x 100]		
WDN-4022G-1	\$23.00	PDF	Gray	WDN-4022W-1	\$23.00	PDF	White	1	3.94 x 2.36 [100 x 60]		
WDN-4030G-1	\$26.50	PDF	Gray	WDN-4030W-1	\$26.50	PDF	White	1	3.94 x 3.15 [100 x 80]		
WDN-4040G-1	\$32.00	PDF	Gray	WDN-4040W-1	\$32.00	PDF	White	1	3.94 x 3.94 [100 x 100]		

Cover included with each wire duct.

Dimensions





Wire Duct - Slotted

Wire Fill Capacity

Rigid PVC - Open Slot - Narrow Finger Wall - WDN Series																			
Application	Electrical															Communication			
Conductor Size	8 AWG	10 AWG	12 AWG			14 AWG			16 AWG			18 AWG			22 AWG	23 AWG	23/24 AWG	24 AWG	Fiber Cable
Wire/Cable	0.22"	0.16"	0.13"	0.14"	0.15"	0.11"	0.12"	0.13"	0.10"	0.11"	0.12"	0.08"	0.10"	0.11"	0.08"	0.33"	0.25"	0.19"	0.12"
Insulation Type	THHN	THHN	THHN	MTW	MTW	THHN	MTW	MTW	TFFN	MTW	MTW	TFFN	MTW	MTW	MTW	Cat. 6A	Cat. 6	Cat. 5E	3.0 mm
Duct Size Inches [mm]	Recommended Maximum Number of Wires/Cables per Wire Duct (based on 50% fill capacity)																		
WDN-1015x-1 1.00 x 1.57 [25x40]	18	31	50	43	37	69	55	48	93	69	61	121	85	76	118	7	13	23	61
WDN-1022x-1 1.00 x 2.36 [25x60]	27	47	76	65	56	104	83	72	140	104	92	182	128	114	178	11	20	35	92
WDN-1030x-1 1.00 x 3.15 [25x80]	36	63	101	86	74	139	111	96	186	139	123	242	171	152	237	15	27	47	122
WDN-1515x-1 1.57 x 1.57 [40x40]	27	47	76	64	55	104	83	72	139	104	92	182	128	114	177	11	20	35	92
WDN-1522x-1 1.57 x 2.36 [40x60]	41	71	114	97	83	156	125	108	209	156	138	272	192	171	267	17	30	53	137
WDN-1530x-1 1.57 x 3.15 [40x80]	55	95	152	129	111	208	167	145	279	208	184	364	257	228	355	23	41	71	184
WDN-1540x-1 1.57 x 3.94 [40x100]	73	127	202	172	148	278	222	193	372	278	246	485	342	305	474	31	54	94	245
WDN-2215x-1 2.36 x 1.57 [60x40]	41	71	114	97	83	156	125	108	209	156	138	272	192	171	267	17	30	53	137
WDN-2222x-1 2.36 x 2.36 [60x60]	62	107	170	145	125	235	187	163	314	235	208	409	289	257	400	26	46	79	207
WDN-2230x-1 2.36 x 3.15 [60x80]	82	143	227	194	167	313	250	217	419	313	277	546	385	343	533	35	61	106	276
WDN-2240x-1 2.36 x 3.94 [60x10]	108	189	303	258	222	417	333	288	558	417	369	726	513	456	711	45	81	141	366
WDN-3015x-1 3.15 x 1.57 [80x40]	55	95	152	129	111	208	167	145	279	208	184	364	257	228	355	23	41	71	184
WDN-3022x-1 3.15 x 2.36 [80x60]	82	143	227	194	167	313	250	217	419	313	277	546	385	343	533	35	61	106	276
WDN-3030x-1 3.15 x 3.15 [80x80]	108	189	303	258	222	417	333	288	558	417	369	726	513	456	711	45	81	141	366
WDN-3040x-1 3.15 x 3.94 [80x100]	144	252	404	344	296	556	444	384	744	556	492	968	684	608	948	60	108	188	488
WDN-4022x-1 3.94 x 2.36 [100x60]	108	189	303	258	222	417	333	288	558	417	369	726	513	456	711	45	81	141	366
WDN-4030x-1 3.94 x 3.15 [100x80]	144	252	404	344	296	556	444	384	744	556	492	968	684	608	948	60	108	188	488
WDN-4040x-1 3.94 x 3.94 [100x100]	192	336	539	459	395	741	592	512	992	741	656	1291	912	811	1264	80	144	251	651

Cover included with each wire duct.

The x in the part number designates G for Gray or W for White.

Achieve™ Wire Duct - Slotted

Rigid PVC - Open Slot - Wide Finger Wall WDW Series

Overview

Rugged wire duct made of rigid PVC that carries a UL 94 V-0 flammability rating for your wire containment needs. All WDW series wire duct come in lengths of 6.56 ft [2m], complete with cover.

Features

- Additional holes on the side walls to be used with cable tie
- Flame-retardant PVC material, self-extinguishing according to UL 94 V-0
- Upper and lower score lines for breaking off individual fingers
- Open slot wide finger form factor
- Cover included
- Standard length: 2m [6.56 ft]
- Color option: RAL 7030 Stone Gray or RAL 9010 White
- Complies with RoHS regulations
- Complies with EN 50085-2-3 standards and UL 1565-C22.2No.18.5-02 standards
- Operating temperature range -5 to 50°C [23 to 122°F]

WDW-1530G-1

WDW-1530W-1

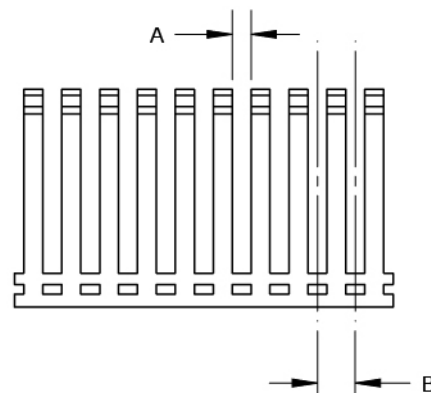
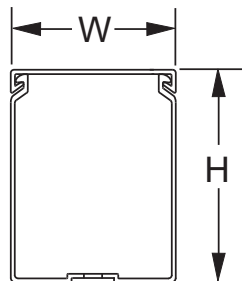


Rigid PVC - Open Slot - Wide Finger Wall - WDW Series

Part Number	Price	Drawing Link	Color	Part Number	Price	Drawing Link	Color	Qty	Actual Size [W x H] inches [mm]	Dimension A inches [mm]	Dimension B inches [mm]
WDW-1522G-1	\$16.50	PDF	Gray	WDW-1522W-1	\$15.50	PDF	White	1	1.57 x 2.36 [40 x 60]	0.315 [8.0]	0.787 [20.0]
WDW-1530G-1	\$20.00	PDF	Gray	WDW-1530W-1	\$18.50	PDF	White	1	1.57 x 3.15 [40 x 80]		
WDW-1540G-1	\$23.00	PDF	Gray	WDW-1540W-1	\$22.00	PDF	White	1	1.57 x 3.94 [40 x 100]		
WDW-2222G-1	\$16.50	PDF	Gray	WDW-2222W-1	\$15.50	PDF	White	1	2.36 x 2.36 [60 x 60]		
WDW-2230G-1	\$21.00	PDF	Gray	WDW-2230W-1	\$20.00	PDF	White	1	2.36 x 3.15 [60 x 80]		
WDW-2240G-1	\$23.00	PDF	Gray	WDW-2240W-1	\$22.00	PDF	White	1	2.36 x 3.94 [60 x 100]		
WDW-3022G-1	\$22.00	PDF	Gray	WDW-3022W-1	\$21.00	PDF	White	1	3.15 x 2.36 [80 x 60]		
WDW-3030G-1	\$25.50	PDF	Gray	WDW-3030W-1	\$24.00	PDF	White	1	3.15 x 3.15 [80 x 80]		
WDW-3040G-1	\$28.50	PDF	Gray	WDW-3040W-1	\$26.50	PDF	White	1	3.15 x 3.94 [80 x 100]		
WDW-4030G-1	\$28.50	PDF	Gray	WDW-4030W-1	\$26.50	PDF	White	1	3.94 x 3.15 [100 x 80]		
WDW-4040G-1	\$34.00	PDF	Gray	WDW-4040W-1	\$32.00	PDF	White	1	3.94 x 3.94 [100 x 100]		
WDW-6040G-1	\$46.00	PDF	Gray	WDW-6040W-1	\$45.00	PDF	White	1	5.91 x 3.94 [150 x 100]		

Cover included with each wire duct.

Dimensions



Achieve™ Wire Duct - Slotted

Wire Fill Capacity

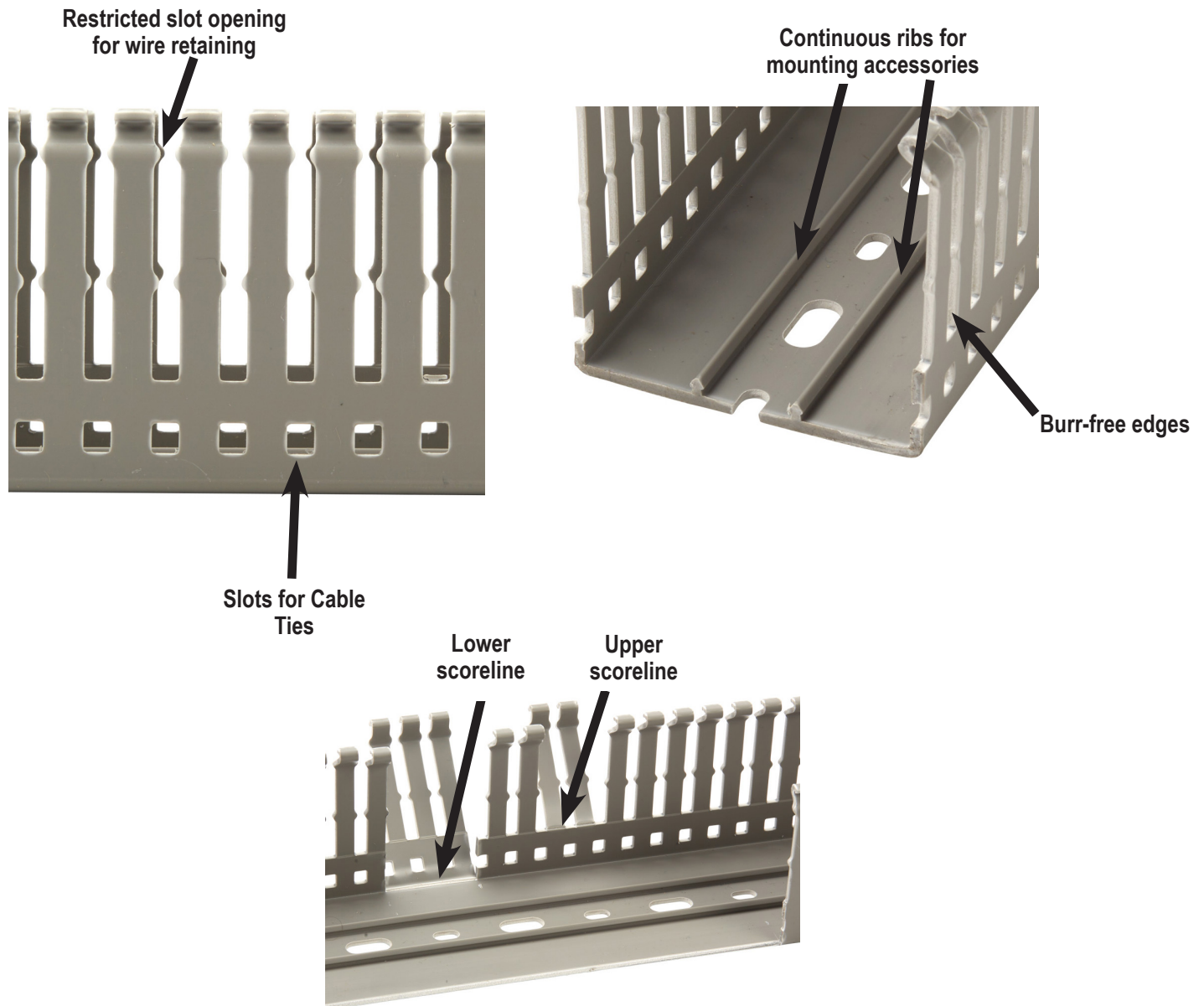
Rigid PVC - Open Slot - Wide Finger Wall - WDW Series																			
Application	Electrical															Communication			
Conductor Size	8 AWG	10 AWG	12 AWG			14 AWG			16 AWG			18 AWG			22 AWG	23 AWG	23/24 AWG	24 AWG	Fiber Cable
Wire/Cable	0.22"	0.16"	0.13"	0.14"	0.15"	0.11"	0.12"	0.13"	0.10"	0.11"	0.12"	0.08"	0.10"	0.11"	0.08"	0.33"	0.25"	0.19"	0.12"
Insulation Type	THHN	THHN	THHN	MTW	MTW	THHN	MTW	MTW	TFFN	MTW	MTW	TFFN	MTW	MTW	MTW	Cat. 6A	Cat. 6	Cat. 5E	3.0 mm
Duct Size Inches [mm]	Recommended Maximum Number of Wires/Cables per Wire Duct (based on 50% fill capacity)																		
WDW-1522x-1 1.57 x 2.36 [40x60]	41	71	114	97	83	156	125	108	209	156	138	272	192	171	267	17	30	53	137
WDW-1530x-1 1.57 x 3.15 [40x80]	55	95	152	129	111	208	167	145	279	208	184	364	257	228	355	23	41	71	184
WDW-1540x-1 1.57 x 3.94 [40x100]	73	127	202	172	148	278	222	193	372	278	246	485	342	305	474	31	54	94	245
WDW-2222x-1 2.36 x 2.36 [60x60]	62	107	170	145	125	235	187	163	314	235	208	409	289	257	400	26	46	79	207
WDW-2230x-1 2.36 x 3.15 [60x80]	82	143	227	194	167	313	250	217	419	313	277	546	385	343	533	35	61	106	276
WDW-2240x-1 2.36 x 3.94 [60x100]	108	189	303	258	222	417	333	288	558	417	369	726	513	456	711	45	81	141	366
WDW-3022x-1 3.15 x 2.36 [80x60]	82	143	227	194	167	313	250	217	419	313	277	546	385	343	533	35	61	106	276
WDW-3030x-1 3.15 x 3.15 [80x80]	108	189	303	258	222	417	333	288	558	417	369	726	513	456	711	45	81	141	366
WDW-3040x-1 3.15 x 3.94 [80x100]	144	252	404	344	296	556	444	384	744	556	492	968	684	608	948	60	108	188	488
WDN-4030x-1 3.94 x 3.15 [100x80]	144	252	404	344	296	556	444	384	744	556	492	968	684	608	948	60	108	188	488
WDW-4040x-1 3.94 x 3.94 [100x100]	192	336	539	459	395	741	592	512	992	741	656	1291	912	811	1264	80	144	251	651
WDW-6040x-1 5.91 x 3.94 [150x100]	288	504	808	688	592	1112	888	768	1488	1112	984	1936	1368	1216	1896	120	216	376	976

Cover included with each wire duct.

The x in the part number designates G for Gray or W for White.

Achieve™ Wire Duct - Slotted

Rigid PVC - Open Slot - Narrow Finger Wall WDN Series and
Wide Finger Wall WDW Series



AchieVe™ Wire Duct - Accessories

Cable Tie Attachment

Overview

The AchieVe cable tie attachment is for use along with a cable tie to group wires together inside the wire duct. The [WD-CTCLAMP](#) snaps onto either of the continuous ribs and can be easily repositioned once installed.

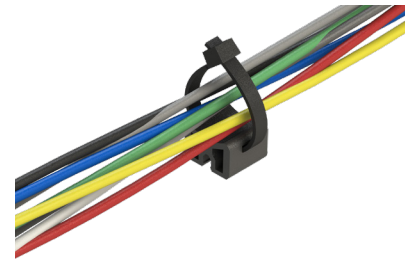
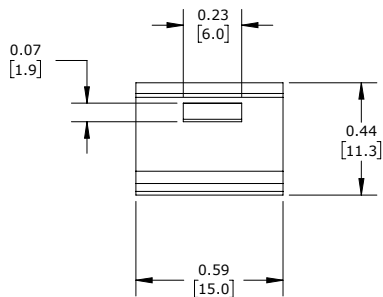
Features

- Material: Polyamid (PA), flammability rating of UL94 V-2
- Operating Temperature Range: -55 to 120°C [-67 to 248°F]
- CE



Cable Tie Attachment					
Part Number	Price	Description	Color	Qty	Drawing Link
WD-CTCLAMP	\$10.00	AchieVe cable tie attachment for use with AchieVe wire duct 1.5" width or larger.	Black	50	PDF

Dimensions inches [mm]



Wire Retainers

Overview

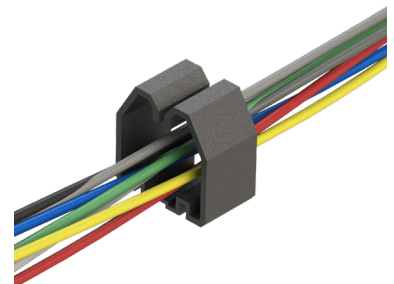
For holding wires during wiring operations, these retainers are essential. They allow easy access to the interior of the wire duct during maintenance or alterations, or for isolating specific wires/cables, while assuring that wiring bundles will not fall out when the duct cover is removed. Installed by snapping into the two continuous ribs on the inside bottom face of the wire duct.

Features

- Material: Polyamid (PA), flammability rating of UL94 V-2
- Operating Temperature Range: -40 to 120°C [-40 to 248°F]
- CE



Wire Retainers					
Part Number	Price	Description	Color	Qty	Drawing Link
WD-RET-1515	\$8.75	AchieVe wire retainer for use with AchieVe wire duct 1.5 x 1.5 in or larger.	Black	10	PDF
WD-RET-1522	\$10.00	AchieVe wire retainer for use with AchieVe wire duct 1.5 x 2.25 in or larger.	Black	10	PDF
WD-RET-2230	\$13.00	AchieVe wire retainer for use with AchieVe wire duct 2.25 x 3.0 in or larger.	Black	10	PDF



AchieVe™ Wire Duct - Accessories

Wire Separator

Overview

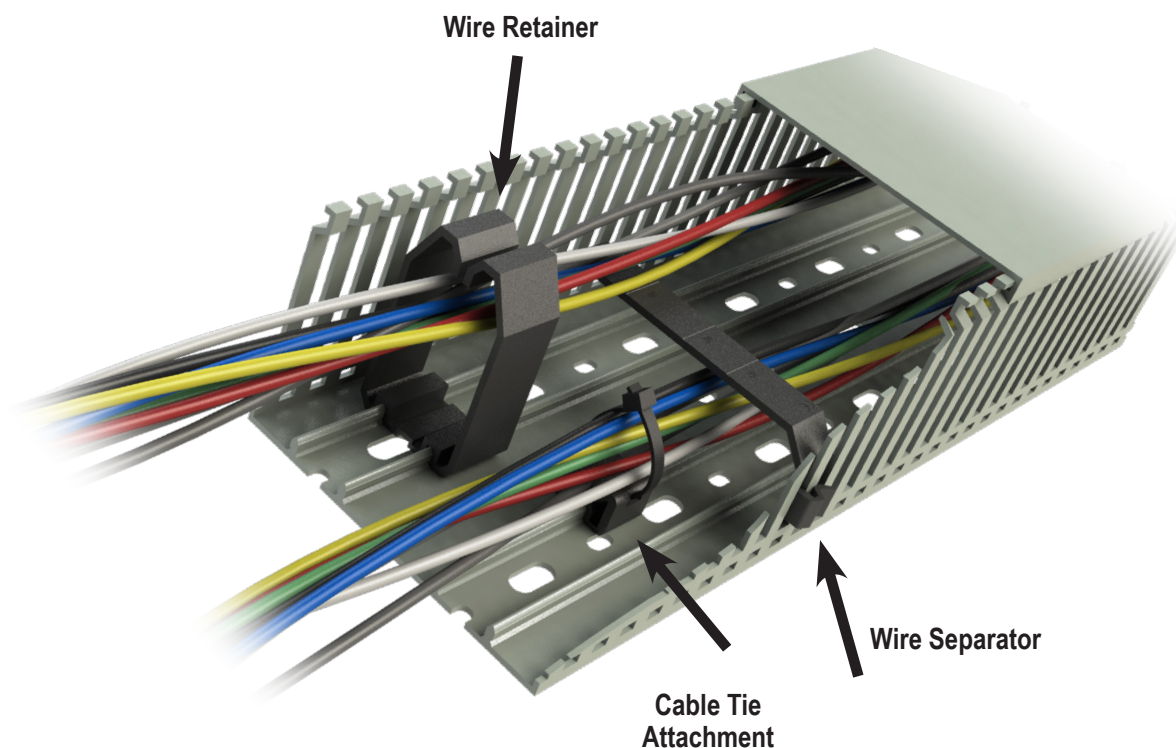
The AchieVe wire separator easily clips onto wire duct fingers and is used to separate wires within the duct. Score lines to break off for compatibility with multiple wire duct widths adjustable for 1.5" or larger width duct.

Features

- Material: Polyamid (PA), flammability rating of UL94 V-2
- Operating Temperature Range: -55 to 120°C [-67 to 248°F]
- CE



Wire Separator					
Part Number	Price	Description	Color	Qty	Drawing Link
WD-CHOLDER	\$4.50	AchieVe wire separator for use with AchieVe wire duct 1.5" width or larger.	Black	10	PDF



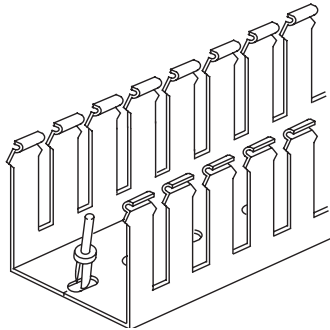
Wire Duct - Accessories

Rivets and Rivet Tools

Wire duct rivets install quickly and easily with the companion rivet tool, offering good temperature resistance and excellent mechanical properties. They can be used to install all types of wire duct with standard mounting holes.

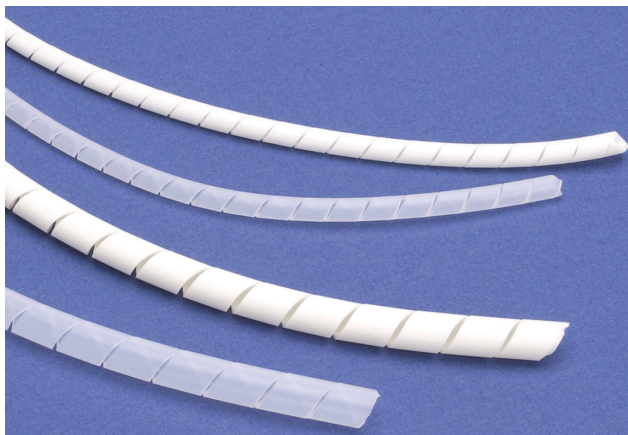
Wire Duct Rivets and Rivet Tools			
Part Number	Price	Description	Qty
<u>R4*</u>	\$19.50	Blue polyamide rivet used to install all types of wire duct with standard 4.5 mm [0.17 in] mounting holes.	250
<u>B4</u>	\$51.00	Red polyamide rivet tool used to install R4 rivets.	1
<u>R6*</u>	\$22.50	Natural polyamide rivet used to install all types of wire duct with standard 6.5 mm [0.26 in] mounting holes.	250
<u>B6</u>	\$51.00	Yellow polyamide rivet tool used to install R6 rivets.	1

* R4 drill hole size - 5/32" (4mm), R6 drill hole size - 7/32" [5.5 mm]

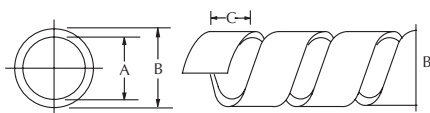



IBOCO®

Spiral Wrap / Braided Sleeve



Dimensions



Part Number		Dimensions in Inches			Wire Bundle Size in Inches	Feet per Carton
Polyethylene	Flame-Retardant Polyethylene	A	B	C		
P-1	PA1	0.06	0.12	0.20	1/16 to 1/2	160
P-2	PA2	0.16	0.24	0.31	1/4 to 2	80
P-3	PA3	0.31	0.39	0.47	3/8 to 3	80
P-4	PA4	0.35	0.47	0.47	1/2 to 4	65

Spiral Wrap

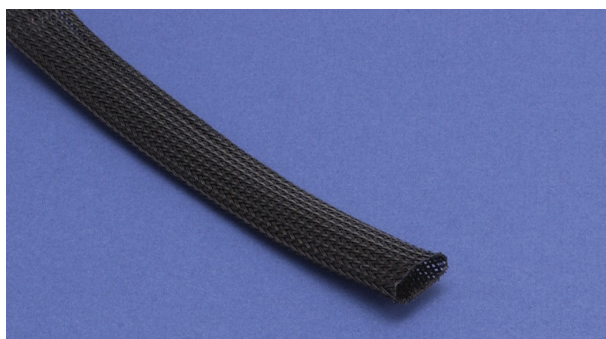
For neatly grouping wire bundles simply and economically, spiral wrap has no equal. Strong, yet easy to install, it protects the wire bundle, keeping it flexible though tightly contained. It is easily removed and reusable for temporary wiring.

SPIRALITE Spiral Wrap Selection Chart

Part Number	Price	Description	Color	Length
P-1	\$19.50	0.12" nominal o.d. Polyethylene spiral wrap used for wire bundles from 1/16 to 1/2 inch diameter.	Natural	160 ft./pack
PA1	\$27.00	0.12" nominal o.d. self-extinguishing Polyethylene spiral wrap used for wire bundles from 1/16 to 1/2 inch diameter.	White	160 ft./pack
P-2	\$20.50	0.25" nominal o.d. Polyethylene spiral wrap used for wire bundles from 1/4 to 2 inch diameter.	Natural	80 ft./pack
PA2	\$28.50	0.25" nominal o.d. self-extinguishing Polyethylene spiral wrap used for wire bundles from 1/4 to 2 inch diameter.	White	80 ft./pack
P-3	\$32.00	0.37" nominal o.d. Polyethylene spiral wrap used for wire bundles from 3/8 to 3 inch diameter.	Natural	80 ft./pack
PA3	\$51.00	0.37" nominal o.d. self-extinguishing Polyethylene spiral wrap used for wire bundles from 3/8 to 3 inch diameter.	White	80 ft./pack
P-4	\$44.00	0.5" nominal o.d. Polyethylene spiral wrap used for wire bundles from 1/2 to 4 inch diameter.	Natural	65 ft./pack
PA4	\$62.00	0.5" nominal o.d. self-extinguishing Polyethylene spiral wrap used for wire bundles from 1/2 to 4 inch diameter.	White	65 ft./pack

Braided Sleeve

This lightweight, expandable, self-extinguishing polyester sleeving has an open weave to allow maximum diameter expansion. It is super-flexible and easy to install, gripping objects of various shapes and sizes reliably. Abrasion-resistant, it provides extra protection against chemicals and flames.



Braided Sleeve Material Specifications

Operating Temp	-50 to +150°C [-58 to +302°F]
Physical Properties	Self-extinguishing for UL 94V-2
Maximum Elongation	42%
Diameter Expansion	100%
Other	Halogen-free

Braided Sleeve Selection Chart

Part Number	Price	Description	Color	Length
TY-5	\$131.00	Braided expandable polyester sleeving, 0.19 in [5mm] nominal i.d., 0.15 in [4mm] to 0.47 in [12mm] nominal range	Black	325 ft./pack
TY-10	\$242.00	Braided expandable polyester sleeving, 0.37 in [10mm] nominal i.d., 0.31 in [8mm] to 0.86 in [22mm] nominal range	Black	325 ft./pack
TY-20	\$208.00	Braided expandable polyester sleeving, 0.75 in [20mm] nominal i.d., 0.63 in [16mm] to 1.37 in [35mm] nominal range	Black	164 ft./pack
TY-30	\$298.00	Braided expandable polyester sleeving, 1.12 in [30mm] nominal i.d., 0.98 in [25mm] to 1.89 in [48mm] nominal range	Black	164 ft./pack
TY-50	\$430.00	Braided expandable polyester sleeving, 2.0 in [50mm] nominal i.d., 1.57 in [40mm] to 2.82 in [72mm] nominal range	Black	164 ft./pack

Non-Metallic Two-Piece Split Tubing EWT-PA Series

Overview

The EWT-PA series non-metallic two piece split tubing consists of two separate corrugated tubes, one inside the other, which allows the tubing to be opened and reassembled at any time. This tubing is perfect for working with terminated cabling, wires, and retrofitting applications where pulling cable through tubing is impossible to do. The dual-overlapping tubes increase mechanical protection and eliminate unintentional exposure of the cabling bundle inside.

Features

- Made of specially modified polyamide 6
- Facilitates mounting of pre-assembled cables
- Split version simplifies addition and removal of new cables/lines anytime
- Simplifies repairs to existing systems
- High crush resistance, per IEC EN 61386: >900N
- Halogen, phosphor, and cadmium-free.
- Flammability: HB per UL94
- Operating temperature: -40 to 248°F [-40 to 120°C]


831000

Non-Metallic Two-Piece Split Tubing - EWT-PA Series Selection Chart

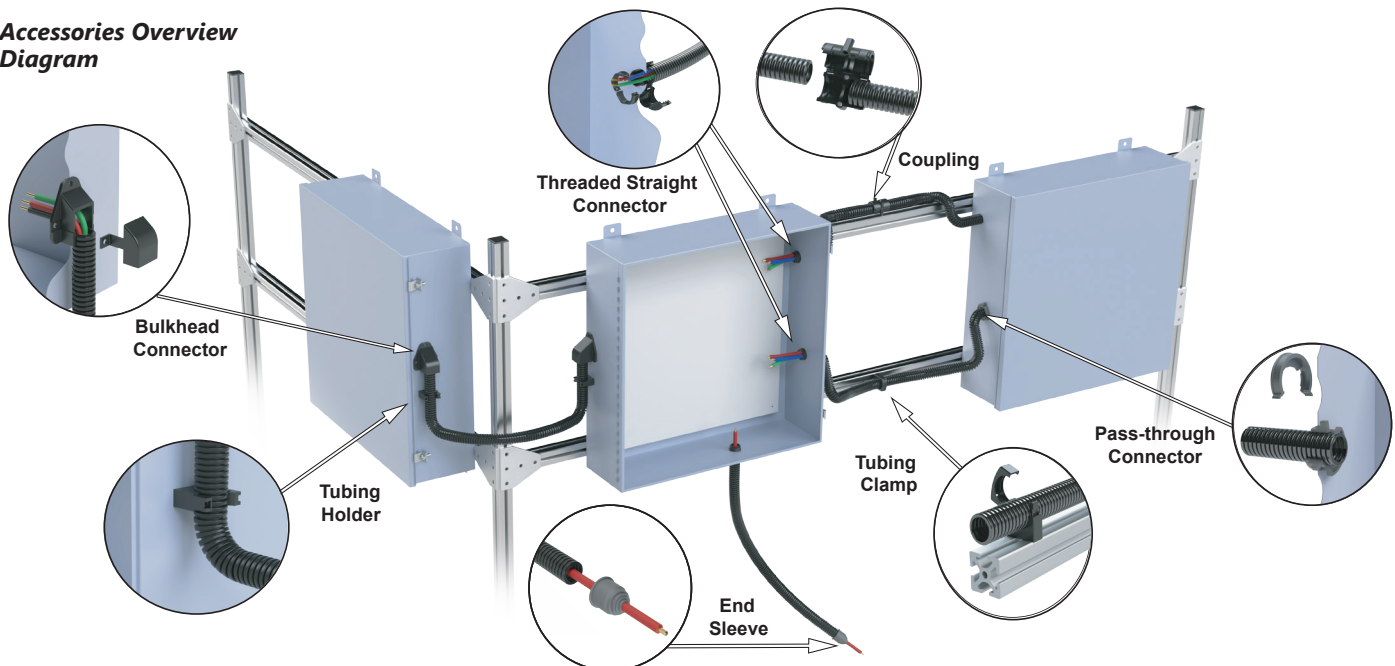
Part Number	Price	Quantity	Size	Coil Length m [ft]	Bend Radius mm [in]	Color	Material	Drawing Links
831000	\$65.00	1	M12/P09	10 [32.8]	75 [2.95]	Black	Modified polyamide 6	PDF
831002	\$145.00	1	M12/P09	25 [82]				PDF
831004	\$103.00	1	M16/P11	10 [32.8]	100 [3.94]			PDF
831006	\$239.00	1	M16/P11	25 [82]				PDF
831008	\$128.00	1	M20/P16	10 [32.8]	120 [4.72]			PDF
831010	\$301.00	1	M20/P16	25 [82]				PDF
832500	\$164.00	1	M25/P21	10 [32.8]	170 [6.69]			PDF
832502	\$389.00	1	M25/P21	25 [82]				PDF
832504	\$207.00	1	M32/P29	10 [32.8]	180 [7.09]			PDF
832506	\$497.00	1	M32/P29	25 [82]				PDF
832508	\$261.00	1	M40/P36	10 [32.8]	200 [7.87]			PDF
832510	\$633.00	1	M40/P36	25 [82]				PDF

Split Tubing Accessories Selection Chart

This chart provides an overview of the accessories available for use with the non-metallic two-piece split tubing.

Split Tubing Accessories Selection Chart									
Non-Metallic Two-Piece Split Tubing	Tubing Coupling	Threaded Straight Connector	Split Lock Nut	Bulkhead Connector	Pass-Through Connector	Tubing Holder	Tubing Clamp	End Sleeve	Wire Insertion Tool
EWT-PA M12/P09 831000, 831002	–	–	–	–	AT M20/P09 836401	UH M12/P09 836121	UHE M12/P09 836501	ET M12/P09 836601	KE 837001
EWT-PA M16/P11 831004, 831006	–	SVT M16x1.5/P11 836010	GMT M16x1.5 836101	KFW/D M16/P11 836301	AT M25/P11 836403	UH M16/P11 836123	UHE M16/P11 836503	ET M16/P11 836603	
		SVT M20x1.5/P11 836012	GMT M20x1.5 836103						
EWT-PA M20/P16 831008, 831010	–	SVT M20x1.5/P16 836014	GMT M20x1.5 836103	KFW/D M20/P16 836303	AT M32/P16 836405	UH M20/P16 836125	UHE M20/P16 836505	ET M20/P16 836605	
		SVT M25x1.5/P16 836016	GMT M25x1.5 836105						
EWT-PA M25/P21 832500, 832502	SVG M25/P21 837010	SVT M25x1.5/P21 836018	GMT M25x1.5 836105	KFW/D M25/P21 836305	AT M40/P21 836407	UH M25/P21 836127	UHE M25/P21 836507	ET M25/P21 836607	
		SVT M32x1.5/P21 836020	GMT M32x1.5 836107						
EWT-PA M32/P29 832504, 832506	SVG M32/P29 837012	SVT M32x1.5/P29 836022	GMT M32x1.5 836107	KFW/D M32/P29 836307	AT M50/P29 836409	UH M32/P29 836129	UHE M32/P29 836509	ET M32/P29 836609	
		SVT M40x1.5/P29 836026	GMT M40x1.5 836109						
EWT-PA M40/P36 832508, 832510	SVG M40/P36 837014	SVT M32x1.5/P36 836024	GMT M32x1.5 836107	KFD/W M40/P36 836309	AT M50/P36 836411	UH M40/P36 836131	UHE M40/P36 836511	ET M40/P36 836611	
		SVT M40x1.5/P36 836028	GMT M40x1.5 836109						

Accessories Overview Diagram



Couplings - SVG Series

Overview

The SVG series couplings are used to extend or repair an EWT-PA series tubing. The open latch design allows for easy assembly and superior holding strength. Mounting holes are also included for securing the tubing in place.

Features

- Easy assembly by snapping over two tubing ends
- Split version simplifies addition and removal of cables
- Mounting holes allow securing coupling to equipment
- Halogen-free
- V0 self-extinguishing per UL94
- IP42, IP54 bolted
- Operating temperature: -40 to 230°F [-40 to 110°C]


837010

Couplings - SVG Series Selection Chart

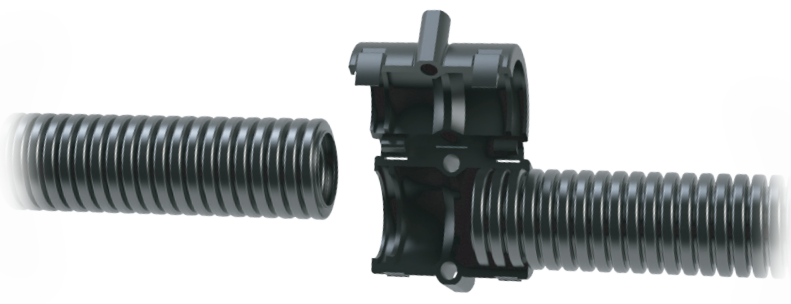
Part Number	Price	Quantity	Size	Works With EWT-PA Series Tubing Size	Hexagon Socket Head Cap Screw (ISO 4762)		Tightening Torque	Color	Material	Drawing Links
					Size	Length mm [in]				
<u>837010</u>	\$41.50	5	M25/P21	M25/P21	M5	45 [1.77]	0.4 N•m 3.54 lb•in	Black	Modified polyamide 6	<u>PDF</u>
<u>837012</u>	\$55.00	5	M32/P29	M32/P29		50 [1.97]				<u>PDF</u>
<u>837014</u>	\$69.00	5	M40/P36	M40/P36		60 [2.36]				<u>PDF</u>

Note: Mounting hardware not provided.

SVG Series Opening Diagram



Place under tab and push in



Threaded Straight Connectors - SVT Series

Overview

The SVT series threaded straight connectors are ideally suited to attach and secure the end of an EWT-PA series split tubing to electrical equipment.

Agency Approval

- cURus, File E148958



Features

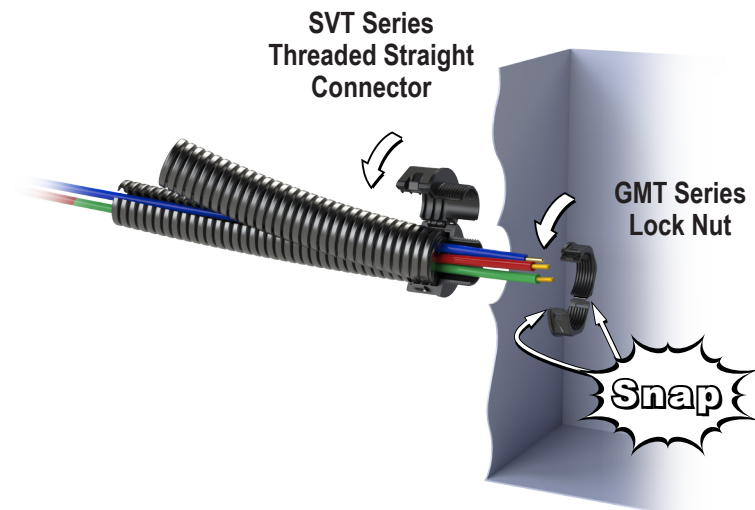
- Simplifies installations and/or repairs
- Use with the GMT series split lock nut
- Compact design
- Easy assembly and disassembly
- Halogen-free
- Flammability: V0 self-extinguishing per UL94
- IP50
- Operating temperature: -40 to 230°F [-40 to 110°C]



836010

Threaded Straight Connectors - SVT Series Selection Chart

Part Number	Price	Quantity	Size	Thread Size	Works With Split Lock Nut	Works With Tubing Size	Mounting Hole Cut-out mm [in]	Color	Material	Drawing Links
836010	\$40.00	5	M16x1.5/P11	M16x1.5	GMT M16x1.5 836101	M16/P11	17.5 [0.69]	Black	Modified polyamide 6	PDF
836012	\$40.00	5	M20x1.5/P11	M20x1.5	GMT M20x1.5 836103		M20/P16			22 [0.87]
836014	\$41.50	5	M20x1.5/P16			M25x1.5				
836016	\$41.50	5	M25x1.5/P16	M32x1.5	GMT M32x1.5 836107		M32/P29			35 [1.38]
836018	\$48.00	5	M25x1.5/P21			M40x1.5				
836020	\$48.00	5	M32x1.5/P21	M40/P36	M40/P36		43 [1.69]			PDF
836022	\$54.00	5	M32x1.5/P29			M40x1.5				M40/P36
836024	\$69.00	5	M32x1.5/P36	M40x1.5	M40/P36		43 [1.69]			
836026	\$56.00	5	M40x1.5/P29			M40x1.5				M40/P36
836028	\$74.00	5	M40x1.5/P36	M40x1.5	M40/P36		43 [1.69]			



The SVT Series Threaded Straight Connector and the GMT Series Lock Nut are sold separately.

Split Lock Nuts - GMT Series

Overview

The GMT series split lock nut is used in conjunction with the SVT series threaded straight connector to attach and secure an EWT-PA series tubing to electrical equipment.

Features

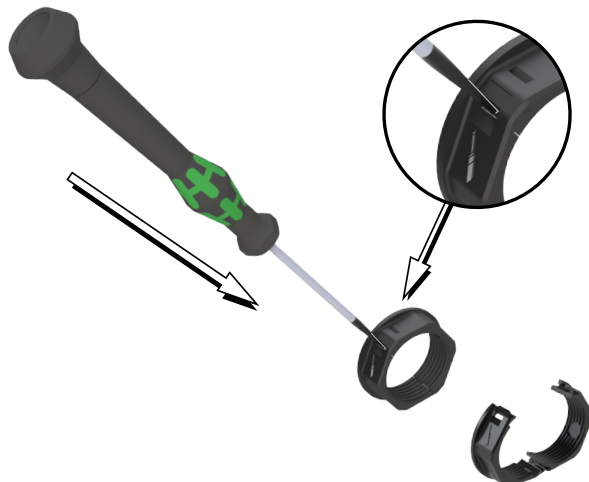
- Simplifies installation and/or repairs
- Use with the SVT series split connector
- Compact design
- Easy assembly and disassembly
- Halogen-free
- Flammability: V0 self-extinguishing per UL94
- Operating temperature: -30 to 212°F [-30 to 100°C]


836101

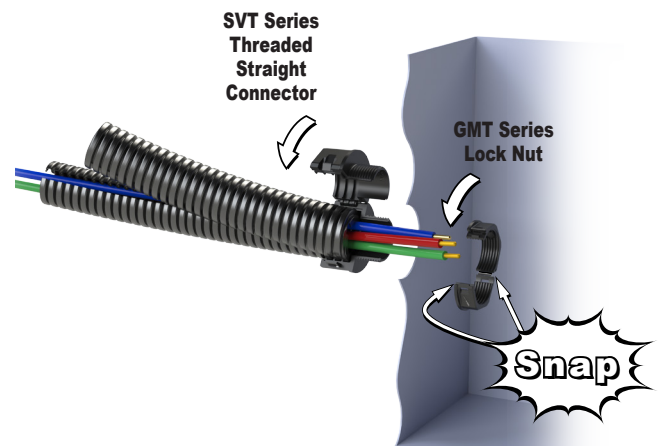
Split Lock Nuts - GMT Series Selection Chart

Part Number	Price	Quantity	Size	Thread Size	Works With Split Connector	Works with EWT-PA Series Tubing Size	Color	Material	Drawing Links
<u>836101</u>	\$25.50	5	M16x1.5	M16x1.5	SVT M16x1.5/P11 <u>836010</u>	M16/P11	Black	Modified polyamide 6	<u>PDF</u>
<u>836103</u>	\$26.50	5	M20x1.5	M20x1.5	SVT M20x1.5/P11 <u>836012</u>	M16/P11			<u>PDF</u>
					SVT M20x1.5/P16 <u>836014</u>	M20/P16			<u>PDF</u>
<u>836105</u>	\$26.50	5	M25x1.5	M25x1.5	SVT M25x1.5/P16 <u>836016</u>	M20/P16			<u>PDF</u>
					SVT M25x1.5/P21 <u>836018</u>	M25/P21			<u>PDF</u>
<u>836107</u>	\$27.50	5	M32x1.5	M32x1.5	SVT M32x1.5/P21 <u>836020</u>	M25/P21			<u>PDF</u>
					SVT M32x1.5/P29 <u>836022</u>	M32/P29			
					SVT M32x1.5/P36 <u>836024</u>	M40/P36			
<u>836109</u>	\$32.00	5	M40x1.5	M40x1.5	SVT M40x1.5/P29 <u>836026</u>	M32/P29			<u>PDF</u>
					SVT M40x1.5/P36 <u>836028</u>	M40/P36			

GMT Series Opening Diagram



GMT Series Installation Diagram



The SVT Series Threaded Straight Connector and the GMT Series Lock Nut are sold separately.

Bulkhead Connectors - KFW/D Series

Overview

The KFW/D series bulkhead connectors provide a 90-degree connection to equipment and machinery. With their removable upper piece and generous opening, these connectors are ideal for use when installing pre-assembled cables.

Agency Approval

• cURus, File E148958



Features

- System divided in two to allow for quick and easy installation of cables
- Gasket included
- No extra fittings/parts are required
- Halogen-free
- Flammability: V0 self-extinguishing per UL94
- IP54
- Operating temperature: -40 to 230°F [-40 to 110°C]

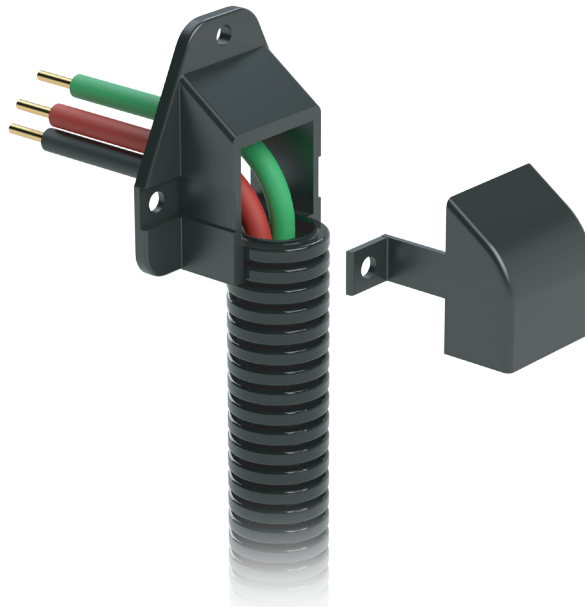


836301

Bulkhead Connectors - KFW/D Series Selection Chart

Part Number	Price	Quantity	Size	Works With EWT-PA Series Tubing Size	Hexagon Socket Head Cap Screw ISO 4762		Tightening Torque	Mounting Hole Cut-out mm [in]	Color	Material	Drawing Links
					Size	Length mm [in]					
836301	\$26.50	2	M16/P11	M16/P11	M4	10 [0.39]	0.4 N•m 3.54 lb•in	22.5 x 27 [0.89 x 1.06]	Black	Connector: Modified polyamide 6 Gasket (included): Neoprene (CR)	PDF
836303	\$18.00	2	M20/P16	M20/P16	M4	10 [0.39]		22.5 x 27 [0.89 x 1.06]			PDF
836305	\$22.00	2	M25/P21	M25/P21	M6	12 [0.47]		30 x 42.5 [1.18 x 1.67]			PDF
836307	\$32.00	2	M32/P29	M32/P29	M6	14 [0.55]		40 x 68 [1.57 x 2.68]			PDF
836309	\$49.00	2	M40/P36	M40/P36	M6	18 [0.71]		48.8 x 74.5 [1.92 x 2.93]			PDF

Note: Mounting hardware not provided.



Pass-Through Connectors - AT Series

Overview

The AT series of pass-through connectors holds the EWT-PA series split tubing together and secures it to equipment and machinery.

Agency Approval

- cURus, File E148958



Features

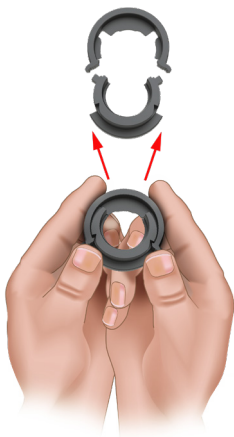
- Click system for quick, easy and tool-free assembly and disassembly
- Compact design
- Tubing can be rotated
- Pass-through openings are drilled in standard hole diameters
- Halogen-free
- Flammability: V0 self-extinguishing per UL94
- IP54
- Operating temperature: -40 to 230°F [-40 to 110°C]


836401

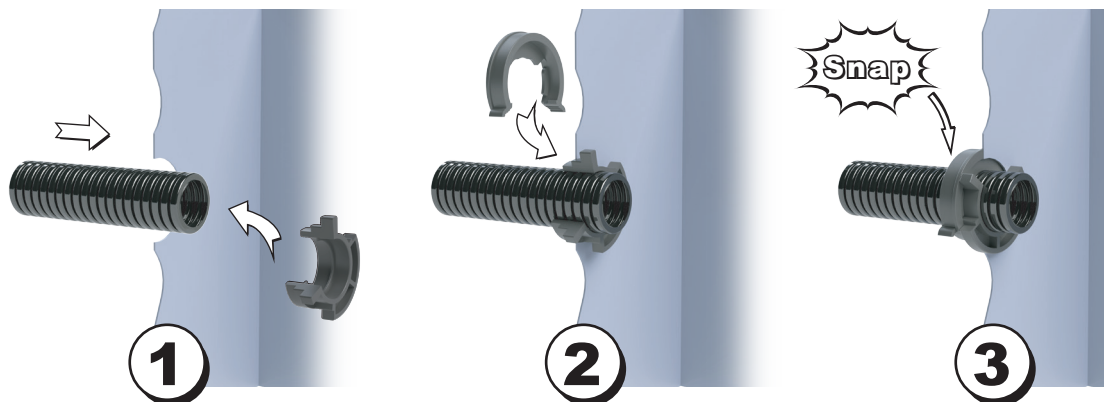
Pass-Through Connectors - AT Series Selection Chart

Pass-Through Connectors - AT Series Selection Chart									
Part Number	Price	Quantity	Size	Works With EWT-PA Series Tubing Size	Mounting Wall Thickness mm [in]	Mounting Hole Cut-out mm [in]	Color	Material	Drawing Links
836401	\$16.00	5	M20/P09	M12/P09	1.0 - 1.5 [0.04 - 0.06]	20.50 [0.81]	Black	Modified polyamide 6	PDF
836403	\$24.00	5	M25/P11	M16/P11		25.50 [1.00]			PDF
836405	\$26.50	5	M32/P16	M20/P16		32.50 [1.28]			PDF
836407	\$47.00	5	M40/P21	M25/P21		40.50 [1.59]			PDF
836409	\$49.00	5	M50/P29	M32/P29		50.50 [1.99]			PDF
836411	\$51.00	5	M50/P36	M40/P36					PDF

AT Series Release Diagram



AT Series Installation Diagram



Tubing Holders - UH Series

Overview

The UH series tubing holder is used to attach and secure EWT-PA series tubing to equipment and machinery.

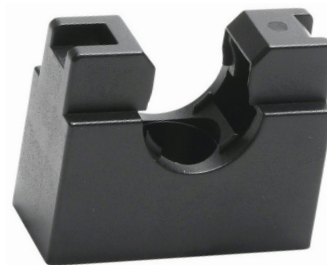
Agency Approval

- cURus, File E148958



Features

- EWT-PA series tubing is simply snapped into the holder allowing quick assembly
- Easy installation with a single-screw attachment
- Halogen-free
- Flammability: V0 self-extinguishing per UL94
- Operating temperature: -30 to 212°F [-30 to 100°C]


836121
Tubing Holders - UH Series Selection Chart

Part Number	Price	Quantity	Size	Works With EWT-PA Series Tubing Size	Hexagon Socket Head Cap Screw (ISO 4762)		Tightening Torque	Color	Material	Drawing Link
					Size	Length mm [in]				
836121	\$11.50	5	M12/P09	M12/P09	M5	10 [0.39]	0.8 N•m 7.08 lb•in	Black	Modified polyamide 6	PDF
836123	\$11.50	5	M16/P11	M16/P11						PDF
836125	\$11.50	5	M20/P16	M20/P16						PDF
836127	\$12.50	5	M25/P21	M25/P21	M6	12 [0.47]	1.8 N•m 15.93 lb•in			PDF
836129	\$25.50	5	M32/P29	M32/P29						PDF
836131	\$18.00	5	M40/P36	M40/P36						PDF

Note: Mounting hardware not provided.



Tubing Clamps - UHE Series

Overview

The UHE series tubing clamp is used to attach and secure EWT-PA series tubing to equipment and machinery.

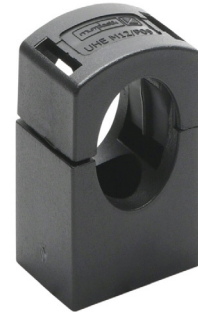
Agency Approval

- cURus, File E148958



Features

- EWT-PA series tubing is simply snapped into the holder allowing quick assembly
- Easy installation with a single-screw attachment
- Securing the tubing on all sides makes the tubing clamp excellent for overhead installations
- Highest degree of holding power
- Halogen-free
- Flammability: V0 self-extinguishing per UL94
- Operating temperature: -40 to 230°F [-40 to 110°]


836501

Tubing Clamps - UHE Series Selection Chart

Part Number	Price	Quantity	Size	Works With EWT-PA Series Tubing Size	Hexagon Socket Head Cap Screw (ISO 4762)		Tightening Torque	Color	Material	Drawing Links
					Size	Length mm [in]				
836501	\$11.50	5	M12/P09	M12/P09	M5	10 [0.39]	1N•m 8.85 lb•in	Black	Modified polyamide 6	PDF
836503	\$11.50	5	M16/P11	M16/P11						PDF
836505	\$17.00	5	M20/P16	M20/P16	M6	12 [0.47]	2N•m 17.7 lb•in			PDF
836507	\$14.00	5	M25/P21	M25/P21						PDF
836509	\$16.00	5	M32/P29	M32/P29						PDF
836511	\$17.00	5	M40/P36	M40/P36						PDF

Note: Mounting hardware not provided.

UHE Series Opening Diagram



Shown on Sureframe T-slotted rail, sold separately.

End Sleeves - ET Series

Overview

The ET series end sleeve is used to close off the open end of a tubing or as a centering device for exiting cables/lines.

Features

- End sleeve opening can be cut to fit different cable diameters
- Easy assembly, just push into the end of the tubing for a tight fit
- Halogen-free
- Flammability: HB per UL94
- IP67
- Operating temperature: -40 to 212°F [-40 to 100°C]


836601

End Sleeves - ET Series Selection Chart

Part Number	Price	Quantity	Size	Works With EWT-PA Series Tubing Size	Color	Material	Drawing Links
<u>836601</u>	\$25.50	5	M12/P09	M12/P09	Black	Thermoplastic elastomer (TPE)	<u>PDF</u>
<u>836603</u>	\$37.00	5	M16/P11	M16/P11			<u>PDF</u>
<u>836605</u>	\$33.00	5	M20/P16	M20/P16			<u>PDF</u>
<u>836607</u>	\$41.50	5	M25/P21	M25/P21			<u>PDF</u>
<u>836609</u>	\$52.00	5	M32/P29	M32/P29			<u>PDF</u>
<u>836611</u>	\$59.00	5	M40/P36	M40/P36			<u>PDF</u>

Wire Insertion Tool - KE Series

Overview

The KE series wire insertion tool facilitates the insertion of cables into split cable tubing.

Features

- Quick insertion of cables
- No unnecessary deformation of the tubing
- Halogen-free
- Flammability: HB per UL94
- IP67
- Operating temperature: -40 to 212°F [-40 to 100°C]


837001

Wire Insertion Tool - KE Series

Part Number	Price	Quantity	Max. Ø Cable mm [in]	Works With EWT-PA Series Tubing Size	Color	Material	Drawing Links
<u>837001</u>	\$27.50	1	22 [0.87]	All	Red	Modified polyamid 6	NA

Robot Dress Kits - FHS Series

Overview

The FHS series kits are specifically designed for cable routing on cobots and small robots. The robot kit UNI offers the possibility of professional cable routing on almost all models.



573525



573526

Features

- Low interference contour
- Tool-free installation
- Secure hold, even on conical surfaces
- Quick routing adjustment is possible during implementation
- 2,000,000 cycles @ 4.72 in bend radius [IEC 61386]
- Solid tubing is rated for 270lbs crush resistance [IEC 61386]

Robot Dress Kits - FHS Series			
Part Number	Price	Description	Drawing Link
573525	\$428.00	Murrplastik FHS-C-SET- UNI robot dress kit, solid, includes 13ft of 1in diameter solid corrugated tubing, (5) hook & loop mounts, (20) hook & loop straps, (2) end grommets.	PDF
573526	\$473.00	Murrplastik FHS-C-SET- UNI LS robot dress kit, split, includes 13ft of 1in diameter slit corrugated tubing, (5) hook & loop mounts, (20) hook & loop straps, (2) end grommets, (1) wire insertion tool.	PDF



**FHS installation onto robot,
kit contents listed in table above**



Cable / Hose Drag Chain MP18 Series

Cable / Hose Drag Chain MP18 Series

Overview

The MP18 series features hinge and latch crossbars to allow convenient access to the chain's channel after installation. This feature saves time by allowing cables and hoses to be added or replaced after chain installation and does not limit the installer to only pulling hose and cable through the chain.

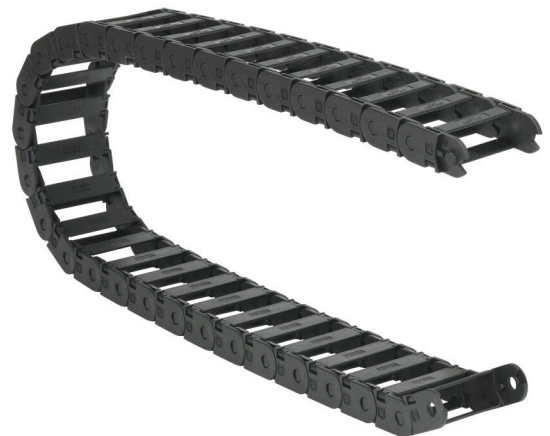
The MP18 series is constructed of rugged polyamide (PA) and will support and protect cables up to 15mm (0.59 in) in diameter. End brackets provide a secure mounting point for chains and have cable tie strain relief tabs for securing cables and hoses.

This series may be designed into systems requiring 3.7 m [10.4 ft] of unsupported spans and is capable of extending up to 20m [65.6 ft] in a gliding configuration. The MP18 chain is packaged in chain lengths of 1 meter (30 connected links) and may be shortened or extended by one or more links to fit the application.

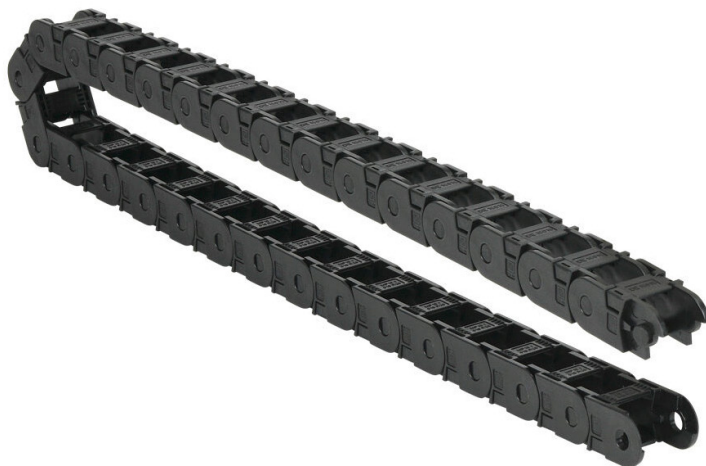
Separators may be added at any time to enable segregation of cables/hoses within the same chain.

Features

- Black PA (Polyamide)
- Chain length 1m [3.2 ft] or 30-links
- Link pitch 33mm [1.30 in]
- Gliding friction factor 0.3
- Static friction factor 0.45
- Material flammability rating of UL 94 HB
- Operating temperature -30 to 120°C [-22 to 248°F]
- Each package contains 30 chain links (brackets required sold separately)
- One or more links may be added/removed to extend/shorten the chain length



[CDC-0.7X2.0R3.1N](#)



[CDC-0.7X0.7R1.1T](#)

Cable / Hose Drag Chain MP18 Series

MP18 Design Guide

The following Design Guide section walks through 5 steps to select the correct part numbers and to optimize drag chain system design. Drag chain inside width requirement, bend radius, maximum unsupported length, and stroke length will be calculated. In step 4, generalized tables are provided for reference, the intention of this table is to provide conservative estimates of cable linear weight, the designer should consult manufacturer cable specification sheets to verify cable specifications.

Step 1 Part Number Selection: Inside Width

Verify cable outer diameter (OD) is less than 15mm [0.59 in]

Inside Width Calculation	
Cables with Equal Diameters	Cables with Different Diameters
Add all diameters	Add all diameters plus separator(s) width
Total Cable Width = OD1 + OD2 + OD3....	Total Cable Width = OD1 + OD2 + OD3.... Separator Width = Number of Separators x 0.18 in Total Width = Total Cable Width + Separators Width
Inside Width = Total Cable Width x 1.2	Inside Width = Total Width x 1.2



CDC-TR-14.18

Separators are installed by the user every 2-3 links to keep cables of different diameters from crossing and getting pinched. The separators are sold as an accessory in packages of 10.

Cable / Hose Drag Chain MP18 Series					
Part Number	Inside Width (B)		Bend Radius (C)		Opening Side
	mm	in	mm	in	
CDC-0.7X0.7R1.1T	18	0.709	28	1.102	OUT
CDC-0.7X1.0R1.1N	25	0.984	28	1.102	IN
CDC-0.7X1.5R1.1T	37	1.457	28	1.102	OUT
CDC-0.7X2.0R1.1N	50	1.969	28	1.102	IN
CDC-0.7X2.8R3.1T	70	2.756	78	3.071	OUT

Full part number selection chart available later in this section.

Step 2 Part Number Selection: Bend Radius

- Determine **minimum cable bend radius** located on the cable/hose supplier specification
- Select drag chain part number

Bend Radius (C) > minimum cable bend radius

Cable / Hose Drag Chain MP18 Series					
Part Number	Inside Width (B)		Bend Radius (C)		Opening Side
	mm	in	mm	in	
CDC-0.7X0.7R1.1T	18	0.709	28	1.102	OUT
CDC-0.7X1.0R1.1N	25	0.984	28	1.102	IN
CDC-0.7X1.5R1.1T	37	1.457	28	1.102	OUT
CDC-0.7X2.0R1.1N	50	1.969	28	1.102	IN
CDC-0.7X2.8R3.1T	70	2.756	78	3.071	OUT

Full part number selection chart available later in this section.

LUTZE
SYSTEMATIC TECHNOLOGY

LUTZE SUPERFLEX®
Control Cable

Unshielded High Flexing Control Cable Shielded High

	Traveling Distance	Flex Cycles		
		Bending Radius	Speed	Acceleration
A148 Series	< 185' / 56m	> 12 Ø	< 5m/s	< 5m/s²
	< 495' / 150m	> 10 Ø	< 5m/s	< 10m/s²
A149 Series	< 185' / 56m	> 15 Ø	< 5m/s	< 5m/s²
	< 495' / 150m	> 12 Ø	< 5m/s	< 10m/s²

conductor control cable has the versatility to meet a wide range of industrial applications. These flexible multi-conductor cables provide an economical way to organize and simplify control wiring in machines and facilities. Suitable for continuous flexing applications, these cables are ideal for both stationary and flexing applications with limited mechanical stress and free movement without any tensile stress, loads or forced movements.

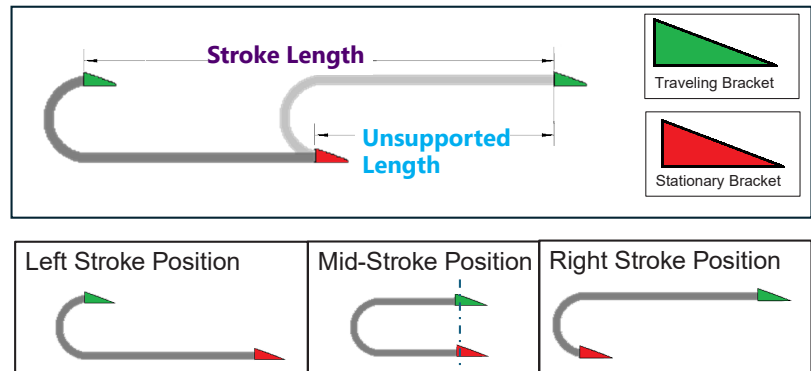
Available cut to length in 1 foot increments with a 20 foot minimum length.

- Cut to length in 1 foot or
- Low 20 foot minimum length
- Made in the USA

Cable / Hose Drag Chain MP18 Series

Step 3 Stroke Length: Unsupported

- Determine **Stroke Length**
- **Stroke Length** = 2 x **Unsupported Length**



Steps 3, 4, and 5 apply to Installation Options 1, 7, and 8 - see the Installation Options page.



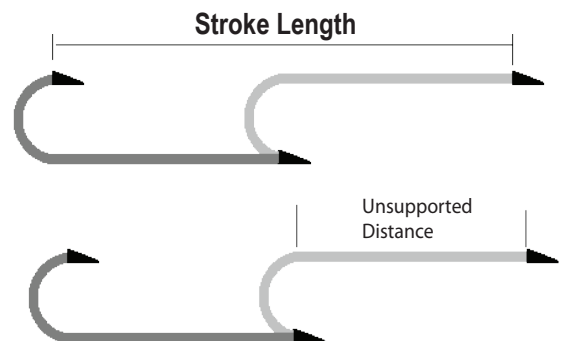
Vertically aligning the **Traveling Bracket** and **Stationary Bracket** at the mid stroke position will reduce the length of chain needed and may reduce system wear due to extra mass.

Step 4 Max Stroke Length: Unsupported

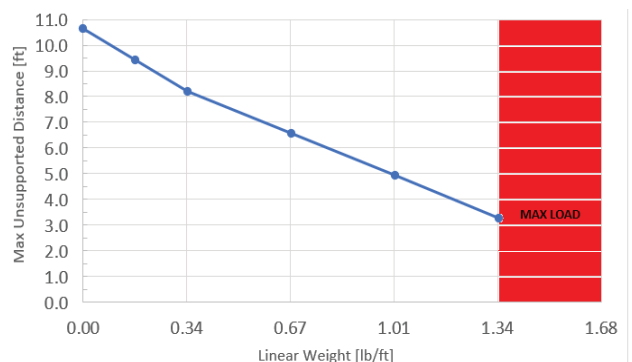
- Determine cable fill linear weight
 - Use cable spec sheets to add linear weights
 - Use table below for estimating linear weights
 - Verify the application stroke length does not exceed the MAX stroke length corresponding to the application weight/load conditions

Cable Drag Chain Max Stroke Length						
Cable Type	Outer Diameter (inch)	Linear Weight (lbs/ft)	MAX Stroke Length (ft)			
			Single Fill	Double Fill	Triple Fill	Quad Fill
Ethernet	< 0.25	< 0.034	10.4	10.2	9.9	9.7
	0.25 - 0.32	< 0.053	10.3	9.9	9.5	9.1
Control/VFD Cable	< 0.25	< 0.044	10.3	10.0	9.7	9.4
	0.25 - 0.32	< 0.074	10.1	9.6	9.0	8.5
	0.32 - 0.40	< 0.132	9.7	8.7	7.8	6.8
	0.40 - 0.45	< 0.180	9.3	8.0	6.7	6.3
	0.45 - 0.50	< 0.211	9.1	7.6	6.0	5.7
	0.50 - 0.55	< 0.271	8.7	6.7	5.9	4.6
	0.55 - 0.60	< 0.328	8.3	5.9	5.0	3.4

Note: For managing hoses, consult the hose manufacturer for diameter and weights.



Linear Weight vs Max Unsupported Distance



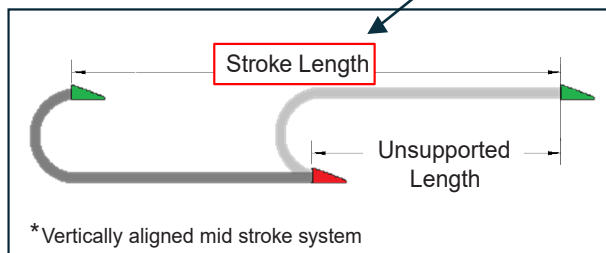
Verify the application stroke length does not exceed the cable chain max stroke length.

Cable / Hose Drag Chain MP18 Series

Step 5 Chain Length: Unsupported

- Each drag chain part number is 3.2 ft [1m] in length (30 links) and additional links may be added to extend the chain.

$$\text{Chain length} = \frac{1}{2} \text{ Stroke Length} + (3.14 \times \text{Bend Radius})$$

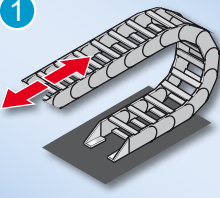
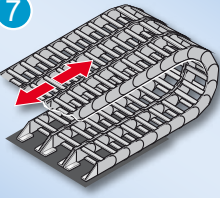
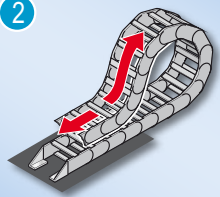

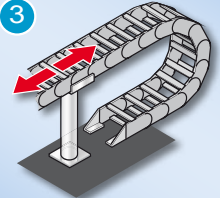

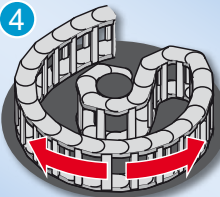

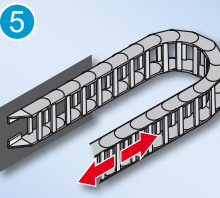

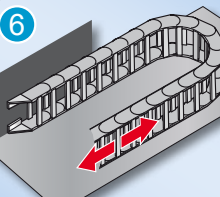
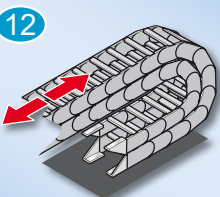


Cable / Hose Drag Chain MP18 Series					
Part Number	Inside Width (B)		Bend Radius (C)		Opening Side
	mm	in	mm	in	
<u>CDC-0.7X0.7R1.1T</u>	18	0.709	28	1.102	OUT
<u>CDC-0.7X1.0R1.1N</u>	25	0.984	28	1.102	IN
<u>CDC-0.7X1.5R1.1T</u>	37	1.457	28	1.102	OUT
<u>CDC-0.7X2.0R1.1N</u>	50	1.969	28	1.102	IN
<u>CDC-0.7X2.8R3.1T</u>	70	2.756	78	3.071	OUT

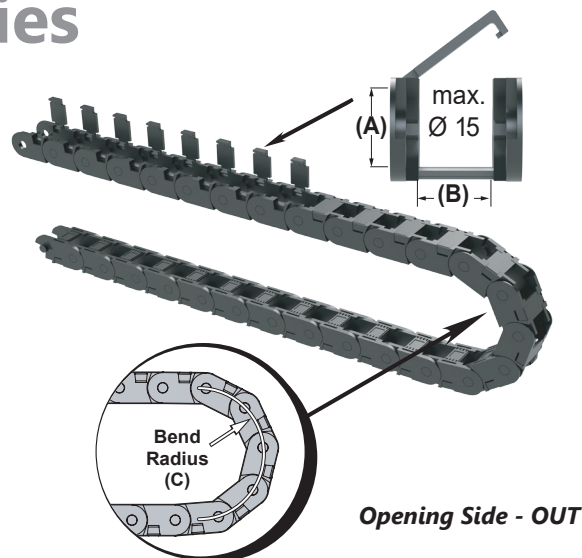
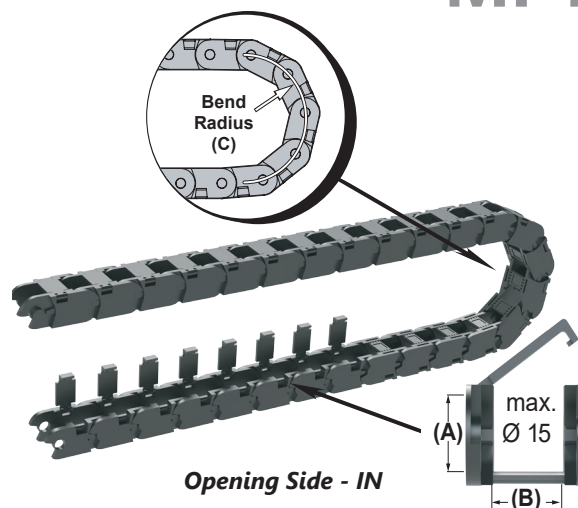
Full part number selection chart available later in this section.

Cable / Hose Drag Chain MP18 Series

Installation Options For Cable / Hose Drag Chains

	Installation option: Horizontal, self-supporting		Installation option: Horizontal, parallel
	Installation option: Horizontal, gliding		Installation option: Horizontal, opposed
	Installation option: Horizontal, self-supporting, overlap with support		Installation option: Vertical, standing
	Installation option: Horizontal, circular movement Design using rearward bending radius		Installation option: Vertical, hanging
	Installation option: Horizontal, side-mounted (rotated 90°)		Installation option: Horizontal/vertical, combined
	Installation option: Horizontal, side-mounted (rotated 90°), with support		Installation option: Horizontal, interlocked

Cable / Hose Drag Chain MP18 Series


Cable / Hose Drag Chain Selection Chart MP18 Series

Part Number	Price	Drawing Link	Inside Height (A)		Inside Width (B)		Bend Radius (C)		Opening Side	Requires Mounting Bracket (sold separately)
			mm	in	mm	in	mm	in		
CDC-0.7X0.7R1.1T	\$42.00	PDF	18	0.709	18	0.709	28	1.102	OUT	CDC-KAZ-0.7X0.7
CDC-0.7X0.7R1.1N	\$42.00	PDF	18	0.709	18	0.709	28	1.102	IN	CDC-KAZ-0.7X0.7
CDC-0.7X0.7R1.5N	\$42.00	PDF	18	0.709	18	0.709	38	1.496	IN	CDC-KAZ-0.7X0.7
CDC-0.7X0.7R1.5T	\$42.00	PDF	18	0.709	18	0.709	38	1.496	OUT	CDC-KAZ-0.7X0.7
CDC-0.7X0.7R1.9T	\$42.00	PDF	18	0.709	18	0.709	48	1.890	OUT	CDC-KAZ-0.7X0.7
CDC-0.7X0.7R1.9N	\$44.50	PDF	18	0.709	18	0.709	48	1.890	IN	CDC-KAZ-0.7X0.7
CDC-0.7X0.7R3.1N	\$44.50	PDF	18	0.709	18	0.709	78	3.071	IN	CDC-KAZ-0.7X0.7
CDC-0.7X0.7R3.1T	\$44.50	PDF	18	0.709	18	0.709	78	3.071	OUT	CDC-KAZ-0.7X0.7
CDC-0.7X1.0R1.1N	\$44.50	PDF	18	0.709	25	0.984	28	1.102	IN	CDC-KAZ-0.7X1.0
CDC-0.7X1.0R1.1T	\$44.50	PDF	18	0.709	25	0.984	28	1.102	OUT	CDC-KAZ-0.7X1.0
CDC-0.7X1.0R1.5N	\$44.50	PDF	18	0.709	25	0.984	38	1.496	IN	CDC-KAZ-0.7X1.0
CDC-0.7X1.0R1.5T	\$44.50	PDF	18	0.709	25	0.984	38	1.496	OUT	CDC-KAZ-0.7X1.0
CDC-0.7X1.0R1.9T	\$44.50	PDF	18	0.709	25	0.984	48	1.890	OUT	CDC-KAZ-0.7X1.0
CDC-0.7X1.0R1.9N	\$45.00	PDF	18	0.709	25	0.984	48	1.890	IN	CDC-KAZ-0.7X1.0
CDC-0.7X1.0R3.1N	\$45.00	PDF	18	0.709	25	0.984	78	3.071	IN	CDC-KAZ-0.7X1.0
CDC-0.7X1.0R3.1T	\$45.00	PDF	18	0.709	25	0.984	78	3.071	OUT	CDC-KAZ-0.7X1.0
CDC-0.7X1.5R1.1T	\$45.00	PDF	18	0.709	37	1.457	28	1.102	OUT	CDC-KAZ-0.7X1.5
CDC-0.7X1.5R1.1N	\$45.00	PDF	18	0.709	37	1.457	28	1.102	IN	CDC-KAZ-0.7X1.5
CDC-0.7X1.5R1.5T	\$45.00	PDF	18	0.709	37	1.457	38	1.496	OUT	CDC-KAZ-0.7X1.5
CDC-0.7X1.5R1.5N	\$45.00	PDF	18	0.709	37	1.457	38	1.496	IN	CDC-KAZ-0.7X1.5
CDC-0.7X1.5R1.9T	\$45.00	PDF	18	0.709	37	1.457	48	1.890	OUT	CDC-KAZ-0.7X1.5
CDC-0.7X1.5R1.9N	\$45.50	PDF	18	0.709	37	1.457	48	1.890	IN	CDC-KAZ-0.7X1.5
CDC-0.7X1.5R3.1T	\$45.50	PDF	18	0.709	37	1.457	78	3.071	OUT	CDC-KAZ-0.7X1.5
CDC-0.7X1.5R3.1N	\$45.50	PDF	18	0.709	37	1.457	78	3.071	IN	CDC-KAZ-0.7X1.5
CDC-0.7X2.0R1.1N	\$45.50	PDF	18	0.709	50	1.969	28	1.102	IN	CDC-KAZ-0.7X2.0
CDC-0.7X2.0R1.1T	\$45.50	PDF	18	0.709	50	1.969	28	1.102	OUT	CDC-KAZ-0.7X2.0
CDC-0.7X2.0R1.5T	\$45.50	PDF	18	0.709	50	1.969	38	1.496	OUT	CDC-KAZ-0.7X2.0
CDC-0.7X2.0R1.5N	\$45.50	PDF	18	0.709	50	1.969	38	1.496	IN	CDC-KAZ-0.7X2.0
CDC-0.7X2.0R1.9N	\$45.50	PDF	18	0.709	50	1.969	48	1.890	IN	CDC-KAZ-0.7X2.0
CDC-0.7X2.0R1.9T	\$49.00	PDF	18	0.709	50	1.969	48	1.890	OUT	CDC-KAZ-0.7X2.0
CDC-0.7X2.0R3.1T	\$49.00	PDF	18	0.709	50	1.969	78	3.071	OUT	CDC-KAZ-0.7X2.0
CDC-0.7X2.0R3.1N	\$45.50	PDF	18	0.709	50	1.969	78	3.071	IN	CDC-KAZ-0.7X2.0
CDC-0.7X2.8R3.1T	\$49.00	PDF	18	0.709	70	2.756	78	3.071	OUT	CDC-KAZ-0.7X2.8
CDC-0.7X2.8R3.1N	\$49.00	PDF	18	0.709	70	2.756	78	3.071	IN	CDC-KAZ-0.7X2.8

Each chain is 1m [3.2 ft]

Cable / Hose Drag Chain Accessories MP18 Series

Cable / Hose Drag Chain Brackets MP18 Series

Overview

The chain end brackets are made of black polyamide (PA). The end brackets are precisely adjusted to the respective chain width and only need to be snapped into each end of the chain. Please order one bracket kit that includes (1) male and (1) female end bracket for each chain system. The brackets should be fastened with M5 screws (not included). The cables or conduits may be fastened with cable ties on the integrated strain relief of the chain bracket.

Cable / Hose Drag Chain Brackets MP18 Series						
Part Number	Price	Inside Height		Inside Width		Drawing Link
		mm	in	mm	in	
CDC-KAZ-0.7X0.7	\$17.50	18	0.709	18	0.709	PDF
CDC-KAZ-0.7X1.0	\$18.00	18	0.709	25	0.984	PDF
CDC-KAZ-0.7X1.5	\$18.50	18	0.709	37	1.457	PDF
CDC-KAZ-0.7X2.0	\$18.50	18	0.709	50	1.969	PDF
CDC-KAZ-0.7X2.8	\$19.50	18	0.709	70	2.756	PDF

Mounting hardware not included.



[CDC-KAZ-0.7X0.7](#)

Cable / Hose Drag Chain Separator MP18 Series

Overview

The chain separators are black polyamide (PA). We recommend that separators be used if multiple round cables or hoses with differing diameters are to be installed. Separators are recommended to be used every 2 to 3 links depending on the loading, but may be placed on every link if necessary to prevent cable pinching.

Cable / Hose Drag Chain Separator MP18 Series					
Part Number	Price	Qty	Inside Height		Drawing Link
			mm	in	
CDC-TR-14.18	\$7.75	10	18	0.709	PDF

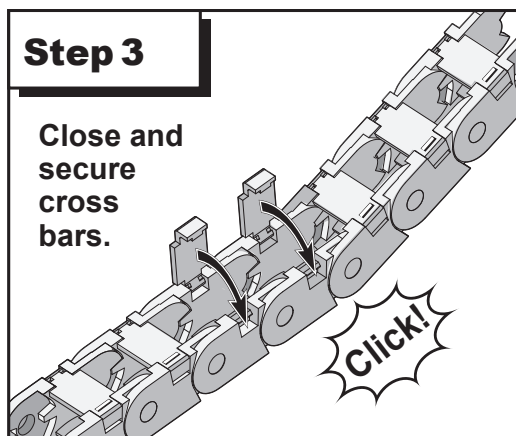
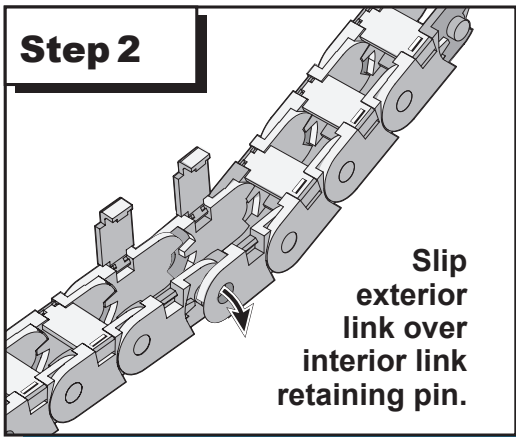
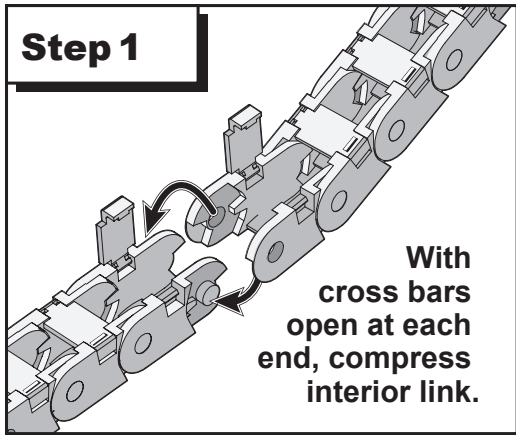


[CDC-TR-14.18](#)

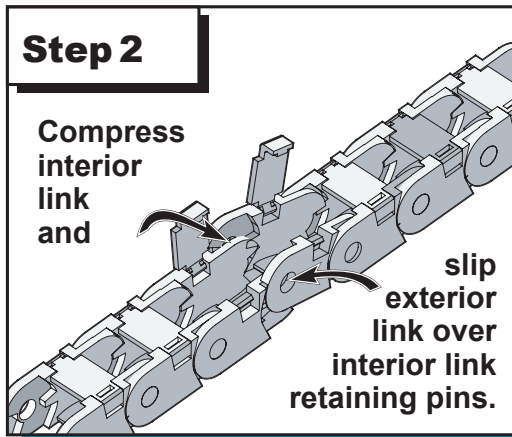
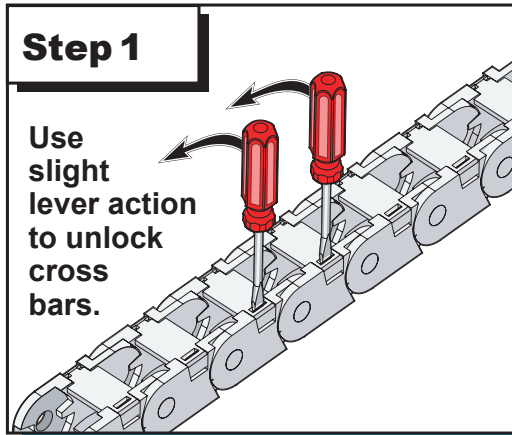
Cable / Hose Drag Chain Separator Usage MP18 Series	
Separator Usage	Separator per 1m Chain
Every Link	30
Every 2 Links	15
Every 3 Links	10

Cable / Hose Drag Chain MP18 Series

Assembly



Disassembly



Cable / Hose Drag Chain MP10 Series

Cable / Hose Drag Chain MP10 Series



Overview

The MP10 series features open slots to allow convenient access to the chain's channel after installation. This feature saves time by allowing cables and hoses to be added or replaced after chain installation and does not limit the installer to only pulling hose and cable through the chain.

The MP10 series is constructed of rugged polyamide (PA) and will support and protect cables up to 8mm [0.315in] in diameter. End brackets provide a secure mounting point for chains and have cable tie strain relief tabs for securing cables and hoses.

This series may be designed into systems requiring 0.62m [24.4in] of unsupported spans and is capable of extending up to 10m [32.8 ft] in a gliding configuration. The MP10 chain is packaged in chain lengths of .5m [1.6ft] (33 connected links) and may be shortened or extended by one or more links to fit the application. Parts are available with one, two, or three chambers to enable segregation of cables/hoses within the same chain.

Features

- Black PA (Polyamide)
- Chain length 0.5m [1.6ft]
- Link pitch 15mm [0.59in]
- Gliding friction factor 0.3
- Static friction factor 0.45
- Material flammability rating of UL 94 HB
- Operating temperature -30 – 120°C [-22 – 248°F]
- Each package contains 33 chain links (required brackets sold separately)
- One or more links may be added/removed to extend/shorten the chain length



One chamber
CDC-04X02R11T

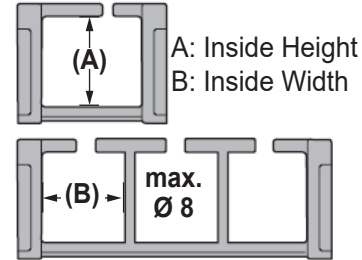
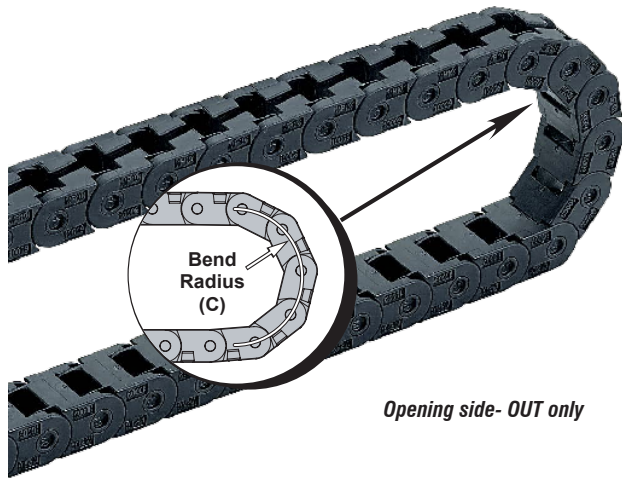


Two chambers
CDC-04X08R07T



Three chambers
CDC-04X12R07T

Cable / Hose Drag Chain MP10 Series



See chart below for number of chambers
by part number.

Cable / Hose Drag Chain Selection Chart MP10 Series

Part Number	Price	Drawing Link	Inside Height (A)		Number of Chambers	Inside Chamber Width (B)		Bend Radius (C)		Requires Mounting Bracket (sold separately)
			mm	in		mm	in	mm	in	
CDC-04X02R07T	\$34.00	PDF	10mm	0.39in	1	6.0mm	0.24in	18mm	0.71in	CDC-KAZ-04X02
CDC-04X02R11T	\$34.00	PDF	10mm	0.39in	1	6.0mm	0.24in	28mm	1.1in	CDC-KAZ-04X02
CDC-04X04R07T	\$36.50	PDF	10mm	0.39in	1	9.0mm	0.35in	18mm	0.71in	CDC-KAZ-04X04
CDC-04X04R11T	\$36.50	PDF	10mm	0.39in	1	9.0mm	0.35in	28mm	1.1in	CDC-KAZ-04X04
CDC-04X04R19T	\$36.50	PDF	10mm	0.39in	1	9.0mm	0.35in	48mm	1.89in	CDC-KAZ-04X04
CDC-04X06R07T	\$36.50	PDF	10mm	0.39in	1	15.0mm	0.59in	18mm	0.71in	CDC-KAZ-04X06
CDC-04X06R11T	\$36.50	PDF	10mm	0.39in	1	15.0mm	0.59in	28mm	1.1in	CDC-KAZ-04X06
CDC-04X08R07T	\$39.50	PDF	10mm	0.39in	2	9.5mm	0.37in	18mm	0.71in	CDC-KAZ-04X08
CDC-04X12R07T	\$41.50	PDF	10mm	0.39in	3	9.5mm	0.37in	18mm	0.71in	CDC-KAZ-04X12
CDC-04X12R15T	\$41.50	PDF	10mm	0.39in	3	9.5mm	0.37in	38mm	1.5in	CDC-KAZ-04X12

Note: Each chain is .5m [1.6 ft]

Cable / Hose Drag Chain Accessories MP10 Series

Cable / Hose Drag Chain Brackets MP10 Series

Overview

The chain end brackets are made of black polyamide (PA). The end brackets are precisely adjusted to the respective chain width and only need to be snapped into each end of the chain. Please order one bracket kit that includes (1) male and (1) female end bracket for each chain system. The brackets should be fastened with M3 screws (not included). The cables or conduits may be fastened with cable ties on the integrated strain relief of the chain bracket.

Cable / Hose Drag Chain Brackets MP10 Series						
Part Number	Price	Inside Height		Inside Width		Drawing Link
		mm	in	mm	in	
CDC-KAZ-04X02	\$6.00	10mm	0.39in	6mm	0.24in	PDF
CDC-KAZ-04X04	\$7.00	10mm	0.39in	9mm	0.35in	PDF
CDC-KAZ-04X06	\$7.75	10mm	0.39in	15mm	0.59in	PDF
CDC-KAZ-04X08	\$8.50	10mm	0.39in	21mm	0.83in	PDF
CDC-KAZ-04X12	\$9.25	10mm	0.39in	31mm	1.22in	PDF

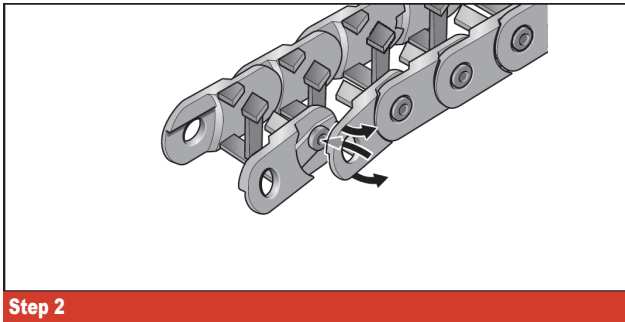
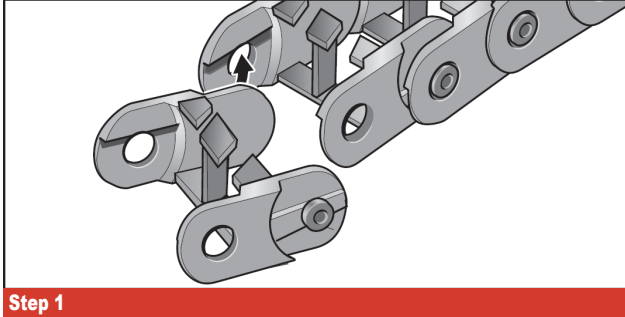
Note: Mounting hardware not included.



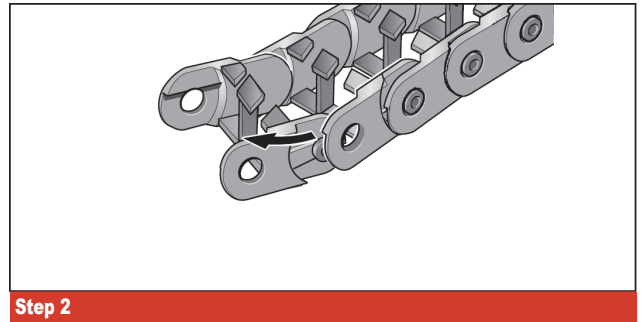
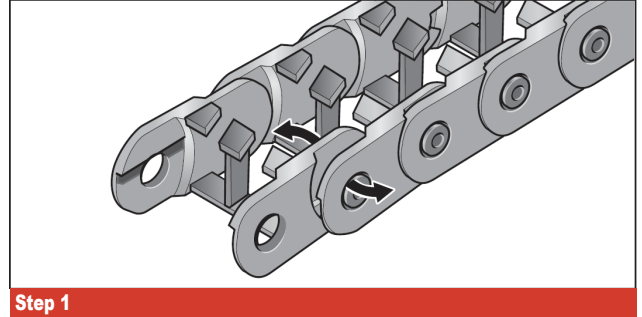
[CDC-KAZ-04X06](#)

Cable / Hose Drag Chain MP10 Series

Assembly



Disassembly



Cable / Hose Drag Chain MP10 Series

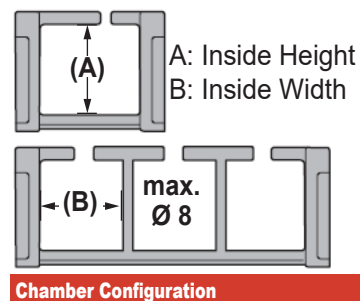
MP10 Design Guide

The following Design Guide section walks through 6 steps to select the correct part numbers and to optimize drag chain system design. Drag chain inside width requirement, bend radius, maximum unsupported length, and stroke length will be calculated. In step 4, generalized tables are provided for reference. The intention of these tables is to provide conservative estimates of cable linear weight; the designer should consult manufacturer cable specification sheets to verify cable specifications.

Step 1: Part Number Selection – Inside Width

- MP10 has one, two, or three cables depending on size
- Verify cable outer diameter (OD) is less than 8mm [0.315in]

Cable / Hose Drag Chain Selection Chart MP10 Series							
Part Number	Inside Height (A)		Number of Chambers	Inside Chamber Width (B)		Bend Radius (C)	
	mm	in		mm	in	mm	in
CDC-04X02R07T	10mm	0.39in	1	6.0mm	0.24in	18mm	0.71in
CDC-04X02R11T	10mm	0.39in	1	6.0mm	0.24in	28mm	1.1in
CDC-04X04R07T	10mm	0.39in	1	9.0mm	0.35in	18mm	0.71in
CDC-04X04R11T	10mm	0.39in	1	9.0mm	0.35in	28mm	1.1in
CDC-04X04R19T	10mm	0.39in	1	9.0mm	0.35in	48mm	1.89in
CDC-04X06R07T	10mm	0.39in	1	15.0mm	0.59in	18mm	0.71in
CDC-04X06R11T	10mm	0.39in	1	15.0mm	0.59in	28mm	1.1in
CDC-04X08R07T	10mm	0.39in	2	9.5mm	0.37in	18mm	0.71in
CDC-04X12R07T	10mm	0.39in	3	9.5mm	0.37in	18mm	0.71in
CDC-04X12R15T	10mm	0.39in	3	9.5mm	0.37in	38mm	1.5in



Step 2: Part Number Selection – Bend Radius

- Determine the **minimum cable bend radius**
 - Located on the cable/hose supplier specification
- Determine the **drag chain bend radius**
 - Located in the [technical specification](#)
- Select drag chain part number
 - Drag Chain bend radius (C) > Minimum cable bend radius

Bending Radius
> 12 Ø
> 10 Ø
> 15 Ø
> 12 Ø

LUTZE SYSTEMATIC TECHNOLOGY

LUTZE SUPERFLEX® Control Cable

Unshielded High Flexing Control Cable Shielded High

	Traveling Distance	Bending Radius	Speed	Acceleration	Cycles
A148 Series	< 16ft / 5m	> 12 Ø	< 5m/s	< 5m/s²	10,000,000
	< 49ft / 15m	> 10 Ø	< 3m/s	< 10m/s²	5,000,000
A149 Series	< 16ft / 5m	> 15 Ø	< 3m/s	< 5m/s²	10,000,000
	< 49ft / 15m	> 12 Ø	< 5m/s	< 10m/s²	5,000,000

conductor control cable has the versatility to meet a wide range of industrial applications. These flexible multi-conductor cables provide an economical way to organize and simplify control wiring in machines and

- Cut to length in 1 foot w
- Low 20 foot minimum le
- Made in the USA

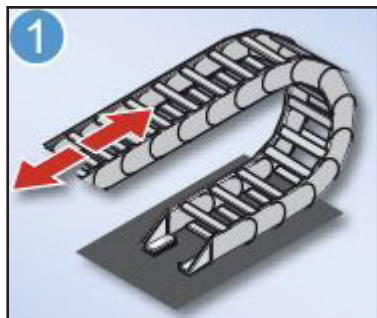
Cable / Hose Drag Chain Selection Chart MP10 Series							
Part Number	Inside Height (A)		Number of Chambers	Inside Chamber Width (B)		Bend Radius (C)	
	mm	in		mm	in	mm	in
CDC-04X02R07T	10mm	0.39in	1	6.0mm	0.24in	18mm	0.71in
CDC-04X02R11T	10mm	0.39in	1	6.0mm	0.24in	28mm	1.1in
CDC-04X04R07T	10mm	0.39in	1	9.0mm	0.35in	18mm	0.71in
CDC-04X04R11T	10mm	0.39in	1	9.0mm	0.35in	28mm	1.1in
CDC-04X04R19T	10mm	0.39in	1	9.0mm	0.35in	48mm	1.89in
CDC-04X06R07T	10mm	0.39in	1	15.0mm	0.59in	18mm	0.71in
CDC-04X06R11T	10mm	0.39in	1	15.0mm	0.59in	28mm	1.1in
CDC-04X08R07T	10mm	0.39in	2	9.5mm	0.37in	18mm	0.71in
CDC-04X12R07T	10mm	0.39in	3	9.5mm	0.37in	18mm	0.71in
CDC-04X12R15T	10mm	0.39in	3	9.5mm	0.37in	38mm	1.5in

Cable / Hose Drag Chain MP10 Series

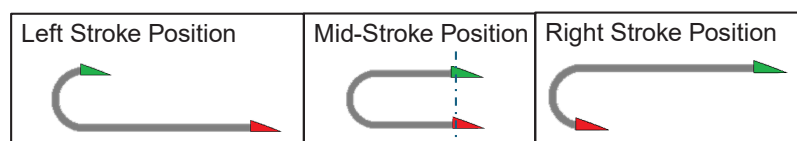
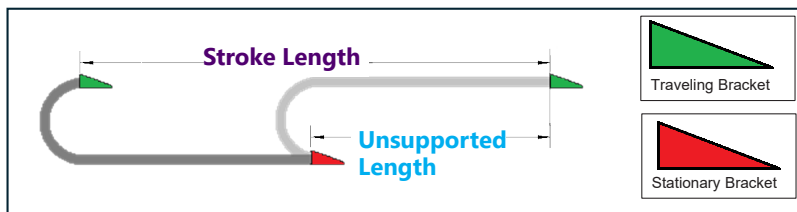
Step 3: Stroke Length – Unsupported

Determine **Stroke Length (L_s)**

- **Stroke Length** = 2 x **Unsupported Length**



Steps 3, 4, and 5 apply to Installation Options 1, 7, and 8 - see the Installation Options page below.



TIP Vertically aligning the **Traveling Bracket** and **Stationary Bracket** at the mid stroke position will reduce the length of chain needed and may reduce system wear due to extra mass.

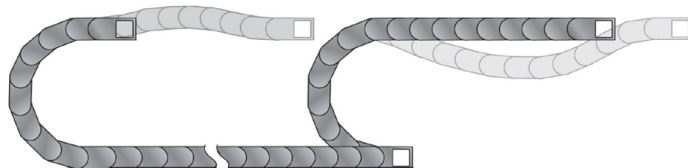
Step 4: Max Stroke Length – Unsupported

4a: Determine cable fill linear weight

- Use cable spec sheets to add linear weights
- Use table below for estimating linear weights
- Verify the application stroke length does not exceed the MAX stroke length corresponding to the application weight/load conditions

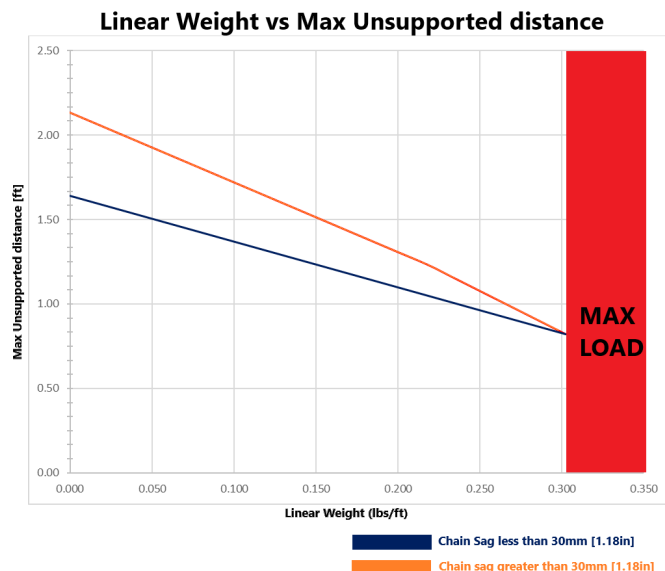
4b: Determine linear weight vs max unsupported distance

- Unsupported chains will experience less wear if chain sag is less than 30mm [1.18in]
- Sag will increase as unsupported length and/or weight are increased
- Refer to the chart to determine maximum conditions



Cable Drag Chain Max Stroke Length						
Cable Type	Outer Diameter (inch)	Linear Weight (lbs/ft)	MAX Stroke Length [ft] (2x max unsupported distance)			
			Single Fill	Double Fill	Triple Fill	Quad Fill
Ethernet	< 0.25in	< 0.034	1.57	1.45	1.43	1.32
	0.25 - 0.315in	< 0.053	1.50	1.42	1.25	n/a
Control/VFD Cable	< 0.25 in	< 0.044	1.53	1.39	1.35	1.19
	0.25 - 0.315in	< 0.074	1.42	1.28	1.04	n/a

Note: For managing hoses, consult the hose manufacturer for diameter and weights.

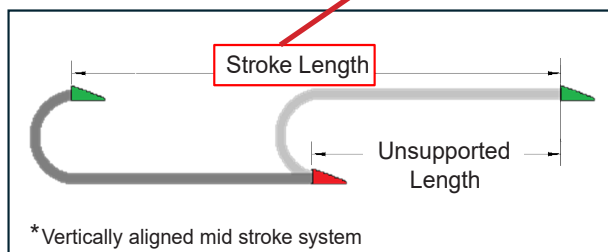


Cable / Hose Drag Chain MP10 Series

Step 5: Chain Length – Unsupported

Each drag chain part number is 1.6 ft [.5m] in length (33 links) and additional links may be added to extend the chain.

$$\text{Chain length} = \frac{1}{2} \text{ Stroke Length} + (3.14 \times \text{Bend Radius})$$



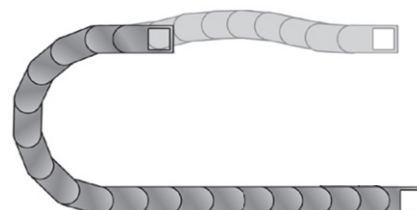
Cable / Hose Drag Chain Selection Chart MP10 Series					
Part Number	Number of Chambers	Inside Chamber Width (B)		Bend Radius (C)	
		mm	in	mm	in
CDC-04X02R07T	1	6.0mm	0.24in	18mm	0.71in
CDC-04X02R11T	1	6.0mm	0.24in	28mm	1.1in
CDC-04X04R07T	1	9.0mm	0.35in	18mm	0.71in
CDC-04X04R11T	1	9.0mm	0.35in	28mm	1.1in
CDC-04X04R19T	1	9.0mm	0.35in	48mm	1.89in
CDC-04X06R07T	1	15.0mm	0.59in	18mm	0.71in
CDC-04X06R11T	1	15.0mm	0.59in	28mm	1.1in
CDC-04X08R07T	2	9.5mm	0.37in	18mm	0.71in
CDC-04X12R07T	3	9.5mm	0.37in	18mm	0.71in
CDC-04X12R15T	3	9.5mm	0.37in	38mm	1.5in

Step 6: Drag Chain Mounting

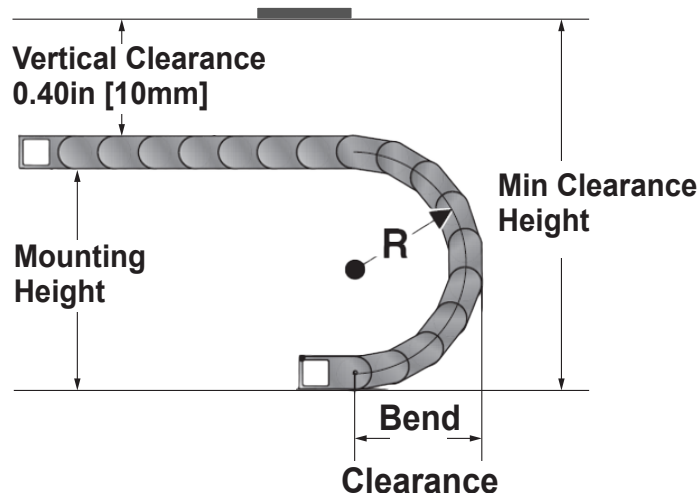
Mounting height of traveling bracket is specified for each chain bend radius.

Vertical clearance must be maintained to account for chains bowing height of unloaded chains.

See the following page for installation options

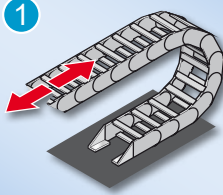
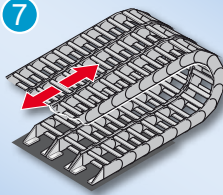
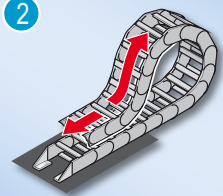
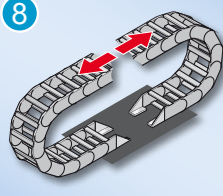
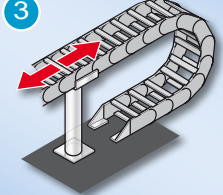

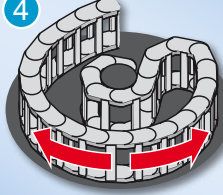
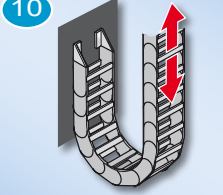
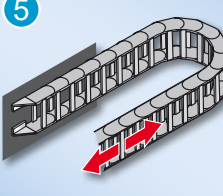

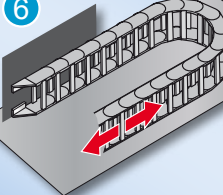
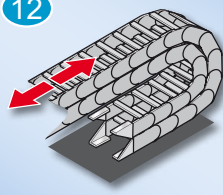


Drag Chain Mounting Selection Chart							
Radius R		Mounting Height		Min. Clearance Height		Bend Clearance	
mm	in	mm	in	mm	in	mm	in
18mm	0.71in	36mm	1.42in	60mm	2.36in	40mm	1.57in
28mm	1.10in	59mm	2.20in	80mm	3.15in	50mm	1.97in
38mm	1.50in	76mm	2.99in	100mm	3.94in	60mm	2.36in
48mm	1.89in	96mm	3.78in	120mm	4.72in	70mm	2.76in
58mm	2.28in	116mm	4.57in	140mm	5.51in	80mm	3.15in



Cable / Hose Drag Chain MP10 Series

Installation Options For Cable / Hose Drag Chains

	<p>Installation option: Horizontal, self-supporting</p>		<p>Installation option: Horizontal, parallel</p>
	<p>Installation option: Horizontal, gliding</p>		<p>Installation option: Horizontal, opposed</p>
	<p>Installation option: Horizontal, self-supporting, overlap with support</p>		<p>Installation option: Vertical, standing</p>
	<p>Installation option: Horizontal, circular movement Design using rearward bending radius</p>		<p>Installation option: Vertical, hanging</p>
	<p>Installation option: Horizontal, side-mounted (rotated 90°)</p>		<p>Installation option: Horizontal/vertical, combined</p>
	<p>Installation option: Horizontal, side-mounted (rotated 90°), with support</p>		<p>Installation option: Horizontal, interlocked</p>



Igus® 2500 Cable / Hose Drag Chain

Cable / Hose Drag Chain 2500 Series



Overview

The igus 2500 series features a snap-open mechanism along the chain's outer radius to allow convenient access to the chain's channel after installation. The hinged crossbar can be swiveled by more than 180° on both sides. This feature allows for lightning-fast closure by hand and a secure fit without additional locking devices. This saves time by allowing cables and hoses to be added or replaced after chain installation and does not limit the installer to only pulling hose and cable through the chain.

The 2500 series is constructed of rugged igumid® G and will support and protect cables up to 23mm [0.91in] in diameter. End brackets provide a secure mounting point for chains and have cable tie strain relief tabs for securing cables and hoses. This series may be designed into systems requiring 2.25m [7.4ft] of unsupported spans and is capable of extending up to 100m [328ft] in a gliding configuration. The chain is packaged in chain lengths of 1m [3.2ft] (22 connected links) and may be shortened or extended by one or more links to fit the application.

Features

- igumid® G material
- Chain length 1.0m [3.2ft]
- Pitch per link: 46mm [1.81in]
- Links per meter [foot]: 22 [6.71]
- V max. unsupported: 20 m/s [66 ft/s]
- V max. gliding: 10 m/s [33 ft/s]
- Material flammability rating of UL 94 HB
- Operating temperature -40° to 120°C [-40° to 248°F]
- Each package contains 22 chain links (required brackets sold separately)
- One or more links may be added/removed to extend/shorten the chain length



2500-03-055



2500-05-075



Snap-open mechanism opens left or right more than 180°



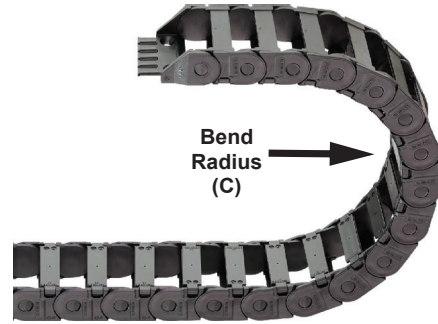
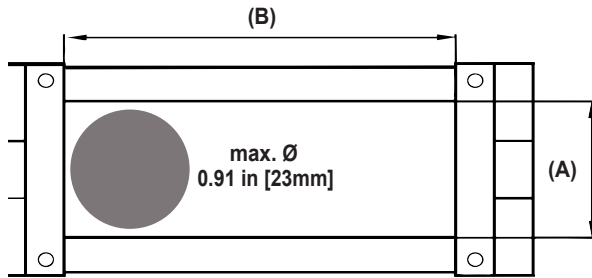
2500-07-100



2500-10-125



Igus® 2500 Cable / Hose Drag Chain



Opening side - OUT only

Cable / Hose Drag Chain Selection Chart 2500 Series

Part Number	Price	Drawing Link	Inside Height (A)		Inside Width (B)		Bend Radius (C)		Requires Mounting Bracket (sold separately)
			mm	in	mm	in	mm	in	
2500-03-055	\$59.00	PDF	25mm	0.98in	38mm	1.5in	55mm	2.16in	2030-34PZB or 2030-12PZB
2500-03-075	\$59.00	PDF	25mm	0.98in	38mm	1.5in	75mm	2.95in	2030-34PZB or 2030-12PZB
2500-03-100	\$59.00	PDF	25mm	0.98in	38mm	1.5in	100mm	3.94in	2030-34PZB or 2030-12PZB
2500-03-125	\$59.00	PDF	25mm	0.98in	38mm	1.5in	125mm	4.92in	2030-34PZB or 2030-12PZB
2500-05-055	\$64.00	PDF	25mm	0.98in	57mm	2.24in	55mm	2.16in	2050-34PZB or 2050-12PZB
2500-05-075	\$64.00	PDF	25mm	0.98in	57mm	2.24in	75mm	2.95in	2050-34PZB or 2050-12PZB
2500-05-100	\$64.00	PDF	25mm	0.98in	57mm	2.24in	100mm	3.94in	2050-34PZB or 2050-12PZB
2500-05-125	\$64.00	PDF	25mm	0.98in	57mm	2.24in	125mm	4.92in	2050-34PZB or 2050-12PZB
2500-07-055	\$69.00	PDF	25mm	0.98in	77mm	3.03in	55mm	2.16in	2070-34PZB or 2070-12PZB
2500-07-075	\$69.00	PDF	25mm	0.98in	77mm	3.03in	75mm	2.95in	2070-34PZB or 2070-12PZB
2500-07-100	\$69.00	PDF	25mm	0.98in	77mm	3.03in	100mm	3.94in	2070-34PZB or 2070-12PZB
2500-07-125	\$69.00	PDF	25mm	0.98in	77mm	3.03in	125mm	4.92in	2070-34PZB or 2070-12PZB
2500-10-055	\$74.00	PDF	25mm	0.98in	103mm	4.06in	55mm	2.16in	2100-34PZB or 2100-12PZB
2500-10-075	\$74.00	PDF	25mm	0.98in	103mm	4.06in	75mm	2.95in	2100-34PZB or 2100-12PZB
2500-10-100	\$74.00	PDF	25mm	0.98in	103mm	4.06in	100mm	3.94in	2100-34PZB or 2100-12PZB
2500-10-125	\$74.00	PDF	25mm	0.98in	103mm	4.06in	125mm	4.92in	2100-34PZB or 2100-12PZB

Note: Each chain is 1.0 m [3.2 ft]



Igus® 2500 Cable / Hose Drag Chain

Cable / Hose Drag Chain Brackets 2500 Series

Overview

The chain end brackets are made of black polyamide (PA). The end brackets are precisely adjusted to the respective chain width and only need to be snapped into each end of the chain. Please order one bracket kit that includes (1) male and (1) female end bracket for each chain system. The brackets should be fastened with M6 screws (not included). Both pivoting and locking brackets are built for locking connections with tie-wrap plates. Pivoting brackets are great for unsupported and gliding applications. Non-pivoting (locking) brackets are excellent for vertical hanging/standing installations, restricted installation spaces, and extreme accelerations.

2500 Series Locking Brackets						
Part Number	Price	Inside Height		Inside Width		Drawing Link
		mm	in	mm	in	
2030-12PZB	\$20.00	25mm	0.98in	38mm	1.5in	PDF
2050-12PZB	\$22.00	25mm	0.98in	57mm	2.24in	PDF
2070-12PZB	\$23.00	25mm	0.98in	77mm	3.03in	PDF
2100-12PZB	\$25.00	25mm	0.98in	103mm	4.06in	PDF

Note: Mounting hardware not included.

2500 Series Pivoting Brackets						
Part Number	Price	Inside Height		Inside Width		Drawing Link
		mm	in	mm	in	
2030-34PZB	\$20.00	25mm	0.98in	38mm	1.5in	PDF
2050-34PZB	\$22.00	25mm	0.98in	57mm	2.24in	PDF
2070-34PZB	\$23.00	25mm	0.98in	77mm	3.03in	PDF
2100-34PZB	\$25.00	25mm	0.98in	103mm	4.06in	PDF

Note: Mounting hardware not included.



Locks at 0° or 90°

[2030-12PZB](#)



Pivots 48° to 90°

*See design guide for details

[2030-34PZB](#)

Cable / Hose Drag Chain Separators 2500 Series

Overview

Made from black polyamide (PA), these separators are commonly used with the Igus 2500 E-chain to keep cables and hoses organized, prevent wear, and extend their lifespan. They are particularly useful in dynamic and side-mounted applications. A general design guideline is to install a separator in every other E-chain link.

2500 Series Separators					
Part Number	Price	Inside Height		Quantity	Drawing Link
		mm	in		
25.1-12	\$7.00	25mm	0.98in	12	PDF

Note: For a standard configuration where cable segregation is needed, separators are assembled every other e-chain link.



[25.1-12](#)



Igus® 2500 Cable / Hose Drag Chain

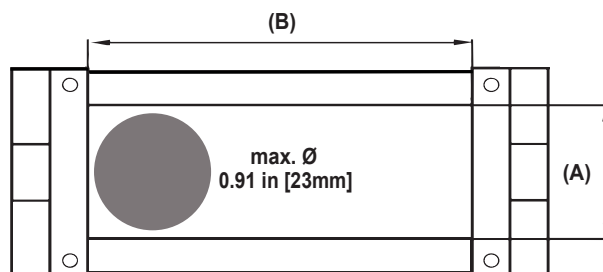
2500 Series Design Guide

The following Design Guide section walks through 7 steps to select the correct part numbers and to optimize drag chain system design. Drag chain inside width requirement, bend radius, maximum unsupported length, and stroke length will be calculated. In step 4, generalized tables are provided for reference. The intention of these tables is to provide conservative estimates of cable linear weight; the designer should consult manufacturer cable specification sheets to verify cable specifications.

Step 1: Part Number Selection – Inside Width

- Verify cable outer diameter (OD) is less than 0.91in [23mm]

Cable / Hose Drag Chain Selection Chart 2500 Series						
Part Number	Inside Height (A)		Inside Width (B)		Bend Radius (C)	
	mm	in	mm	in	mm	in
2500-03-055	25mm	0.98in	38mm	1.5in	55mm	2.16in
2500-03-075	25mm	0.98in	38mm	1.5in	75mm	2.95in
2500-03-100	25mm	0.98in	38mm	1.5in	100mm	3.94in
2500-03-125	25mm	0.98in	38mm	1.5in	125mm	4.92in
2500-05-055	25mm	0.98in	57mm	2.24in	55mm	2.16in
2500-05-075	25mm	0.98in	57mm	2.24in	75mm	2.95in
2500-05-100	25mm	0.98in	57mm	2.24in	100mm	3.94in
2500-05-125	25mm	0.98in	57mm	2.24in	125mm	4.92in



A: Inside Height
B: Inside Width

Step 2: Part Number Selection – Bend Radius

- Determine the **minimum cable bend radius**
 - Located on the cable/hose supplier specification
- Determine the **drag chain bend radius**
 - Located in the [technical specification](#)
- Select drag chain part number
 - Drag Chain bend radius (C) > Minimum cable bend radius

Conductor & Stranding	0.5 mm ² (20AWG) 16/32 bare copper
Voltage Ratings	600V per UL Tested to 2000V
Min. Bend Radius	e-Chain®, 6.8 x diameter Flexible*, 5.0 x diameter Fixed, 4.0 x diameter
Temperature Ratings	e-Chain, +41°F to +158°F (5°C to +70°C) Flexible*, +23°F to +158°F (-5°C to +70°C) Fixed, +5°F to +158°F (-15°C to +70°C)

1-800-633-0405

0.5 mm² (20AWG) Flexible Cable CF5 Series Uns

0.5 mm ² (20AWG) Multi-Conductor Flexing Control Cable Specifications			
Conductors Gauge & Stranding	0.5 mm ² (20AWG) 16/32 bare copper	Conductor Insulation	
Voltage Ratings	600V per UL Tested to 2000V	Conductor Markings	
Min. Bend Radius	e-Chain®, 6.8 x diameter Flexible*, 5.0 x diameter Fixed, 4.0 x diameter	Outer Jacket	
Temperature Ratings	e-Chain, +41°F to +158°F (5°C to +70°C) Flexible*, +23°F to +158°F (-5°C to +70°C) Fixed, +5°F to +158°F (-15°C to +70°C)	UV Resistance	
Max. Velocity	Sliding, 33 ft/s (10 m/s) Giding, 16 ft/s (5 m/s)	Oil Resistance	
Max. Acceleration	262.5 ft/s ² (80 m/s ²)	Flame Retardant	
Length of Travel	Unsupported travel distances and for sliding applications up to 328 ft (100m)	Approvals	
Version	10' relation with 3.281 ft (1m) of cable length	Sample Print Legend	

* Per EN 60911-504 standard

e-Chain® is a trademarked flexible cable carrier by Igus®. Igus® cable can be used in any suitable cable carrier.

0.5 mm ² (20AWG) Multi-Conductor Flexing Control Cable			
Part Number	Number of Conductors (includes ground)	AWG	Strand

Cable / Hose Drag Chain Selection Chart 2500 Series						
Part Number	Inside Height (A)		Inside Width (B)		Bend Radius (C)	
	mm	in	mm	in	mm	in
2500-07-055	25mm	0.98in	77mm	3.03in	55mm	2.16in
2500-07-075	25mm	0.98in	77mm	3.03in	75mm	2.95in
2500-07-100	25mm	0.98in	77mm	3.03in	100mm	3.94in
2500-07-125	25mm	0.98in	77mm	3.03in	125mm	4.92in
2500-10-055	25mm	0.98in	103mm	4.06in	55mm	2.16in
2500-10-075	25mm	0.98in	103mm	4.06in	75mm	2.95in
2500-10-100	25mm	0.98in	103mm	4.06in	100mm	3.94in
2500-10-125	25mm	0.98in	103mm	4.06in	125mm	4.92in

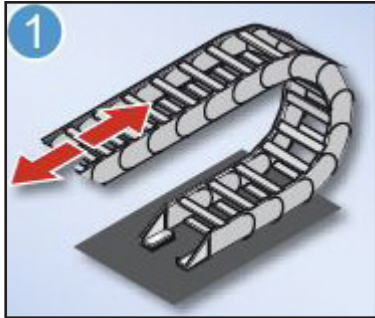


Igus® 2500 Cable / Hose Drag Chain

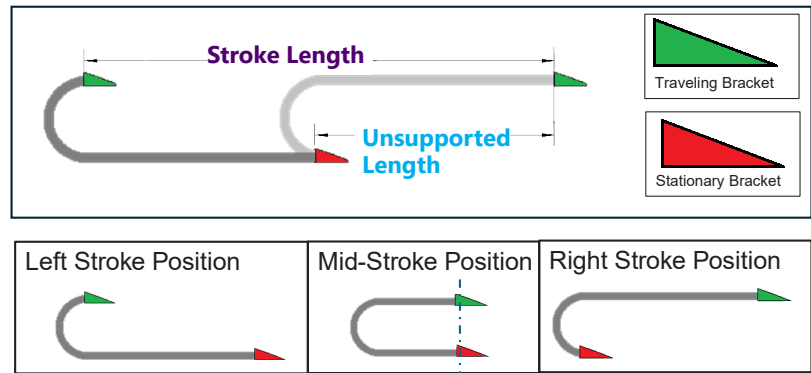
Step 3: Stroke Length – Unsupported

Determine **Stroke Length (L_s)**

- **Stroke Length** = 2 x **Unsupported Length**



Steps 3, 4, and 5 apply to Installation Options 1, 7, and 8 - see the Installation Options page below.



Vertically aligning the **Traveling Bracket** and **Stationary Bracket** at the mid stroke position will reduce the length of chain needed and may reduce system wear due to extra mass.

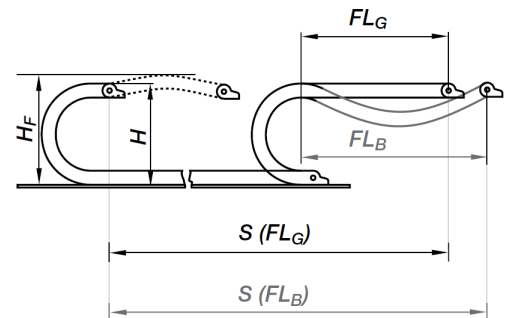
Step 4: Max Stroke Length – Unsupported

4a: Determine cable fill linear weight

- Use cable spec sheets to add linear weights
- Use table below for estimating linear weights

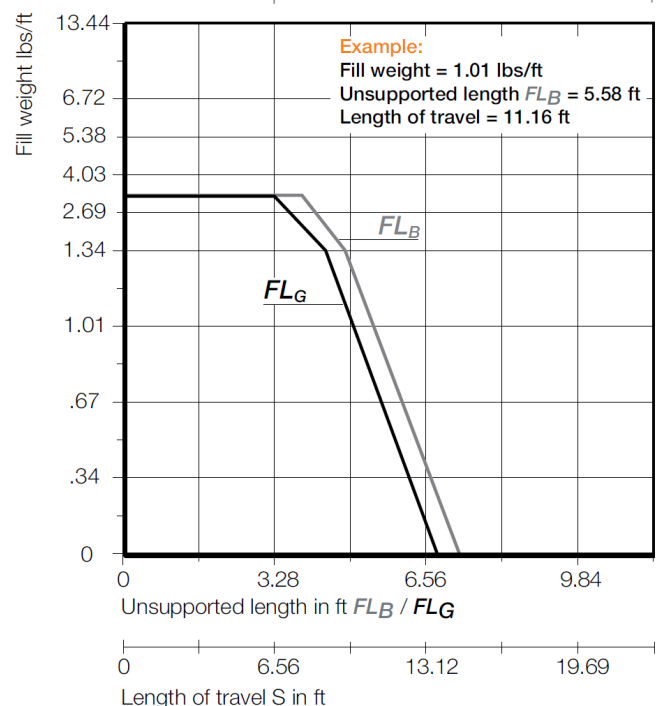
4b: Determine linear weight vs max unsupported distance

- Unsupported chains will experience less wear if chain sag is less than 17.5mm [0.69in]
- Sag will increase as unsupported length and/or weight are increased
- Refer to the chart to determine maximum conditions



Cable Drag Chain Max Stroke Length						
Cable Type	Outer Diameter (inch)	Linear Weight (lbs/ft)	MAX Stroke Length [ft] (2x max unsupported distance)			
			Single Fill	Double Fill	Triple Fill	Quad Fill
Ethernet	< 0.25	< 0.034	13.3	13.2	13.1	13.0
	0.25 - 0.315	< 0.053	13.3	13.1	12.9	12.7
Control/VFD Cable	< 0.25	< 0.044	13.3	13.2	13.0	12.8
	0.25 - 0.32	< 0.074	13.2	12.9	12.7	12.4
	0.32 - 0.40	< 0.132	13.0	12.5	12.1	11.6
	0.40 - 0.45	< 0.180	12.8	12.2	11.6	10.9
	0.45 - 0.50	< 0.211	12.7	12.0	11.2	10.5
	0.50 - 0.55	< 0.271	12.5	11.6	10.6	9.6
	0.55 - 0.59	< 0.328	12.3	11.2	10.0	8.8
	0.60 - 0.69	< 0.392	12.1	10.7	9.3	7.9
	.70 - .79	< 0.42	12.0	10.5	9.0	7.5

Note: For managing hoses, consult the hose manufacturer for diameter and weights.



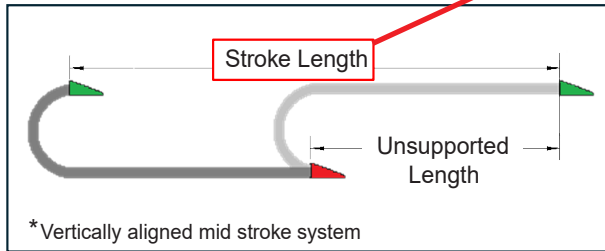


Igus® 2500 Cable / Hose Drag Chain

Step 5: Chain Length – Unsupported

Each drag chain part number is 3.2 ft [1m] in length (22 links) and additional links may be added to extend the chain.

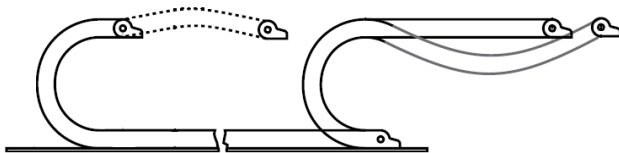
$$\text{Chain length} = \frac{1}{2} \text{ Stroke Length} + (3.14 \times \text{Bend Radius})$$



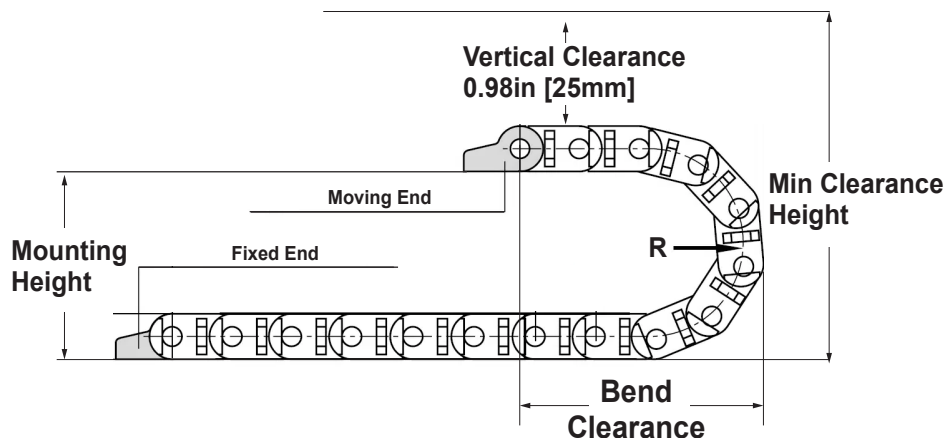
Cable / Hose Drag Chain Selection Chart 2500 Series						
Part Number	Inside Height (A)		Inside Width (B)		Bend Radius (C)	
	mm	in	mm	in	mm	in
2500-03-055	25mm	0.98in	38mm	1.5in	55mm	2.16in
2500-03-075	25mm	0.98in	38mm	1.5in	75mm	2.95in
2500-03-100	25mm	0.98in	38mm	1.5in	100mm	3.94in
2500-03-125	25mm	0.98in	38mm	1.5in	125mm	4.92in
2500-05-055	25mm	0.98in	57mm	2.24in	55mm	2.16in
2500-05-075	25mm	0.98in	57mm	2.24in	75mm	2.95in
2500-05-100	25mm	0.98in	57mm	2.24in	100mm	3.94in
2500-05-125	25mm	0.98in	57mm	2.24in	125mm	4.92in
2500-07-055	25mm	0.98in	77mm	3.03in	55mm	2.16in
2500-07-075	25mm	0.98in	77mm	3.03in	75mm	2.95in
2500-07-100	25mm	0.98in	77mm	3.03in	100mm	3.94in
2500-07-125	25mm	0.98in	77mm	3.03in	125mm	4.92in
2500-10-055	25mm	0.98in	103mm	4.06in	55mm	2.16in
2500-10-075	25mm	0.98in	103mm	4.06in	75mm	2.95in
2500-10-100	25mm	0.98in	103mm	4.06in	100mm	3.94in
2500-10-125	25mm	0.98in	103mm	4.06in	125mm	4.92in

Step 6: Drag Chain Mounting

- Mounting height of traveling bracket is specified for each chain bend radius
- Vertical clearance must be maintained to account for chains bowing height of unloaded chains
- See the following page for installation options



Drag Chain Mounting Selection Chart							
Radius R		Mounting Height		Min. Clearance Height		Bend Clearance	
mm	in	mm	in	mm	in	mm	in
55	2.16	36	1.42	60	2.36	40	1.57
75	1.10	56	2.20	80	3.15	50	1.97
38	1.50	76	2.99	100	3.94	60	2.36
48	1.89	96	3.78	120	4.72	70	2.76
58	2.28	116	4.57	140	5.51	80	3.15

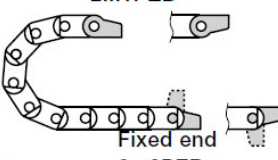
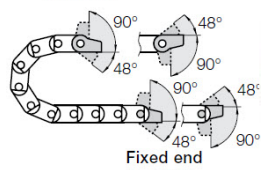


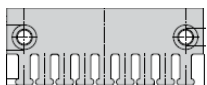

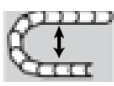
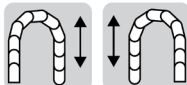




Igus® 2500 Cable / Hose Drag Chain

Step 7: Brackets

- Mounting height of traveling bracket is specified for each chain bend radius
- Vertical clearance must be maintained to account for chains bowing height of unloaded chains

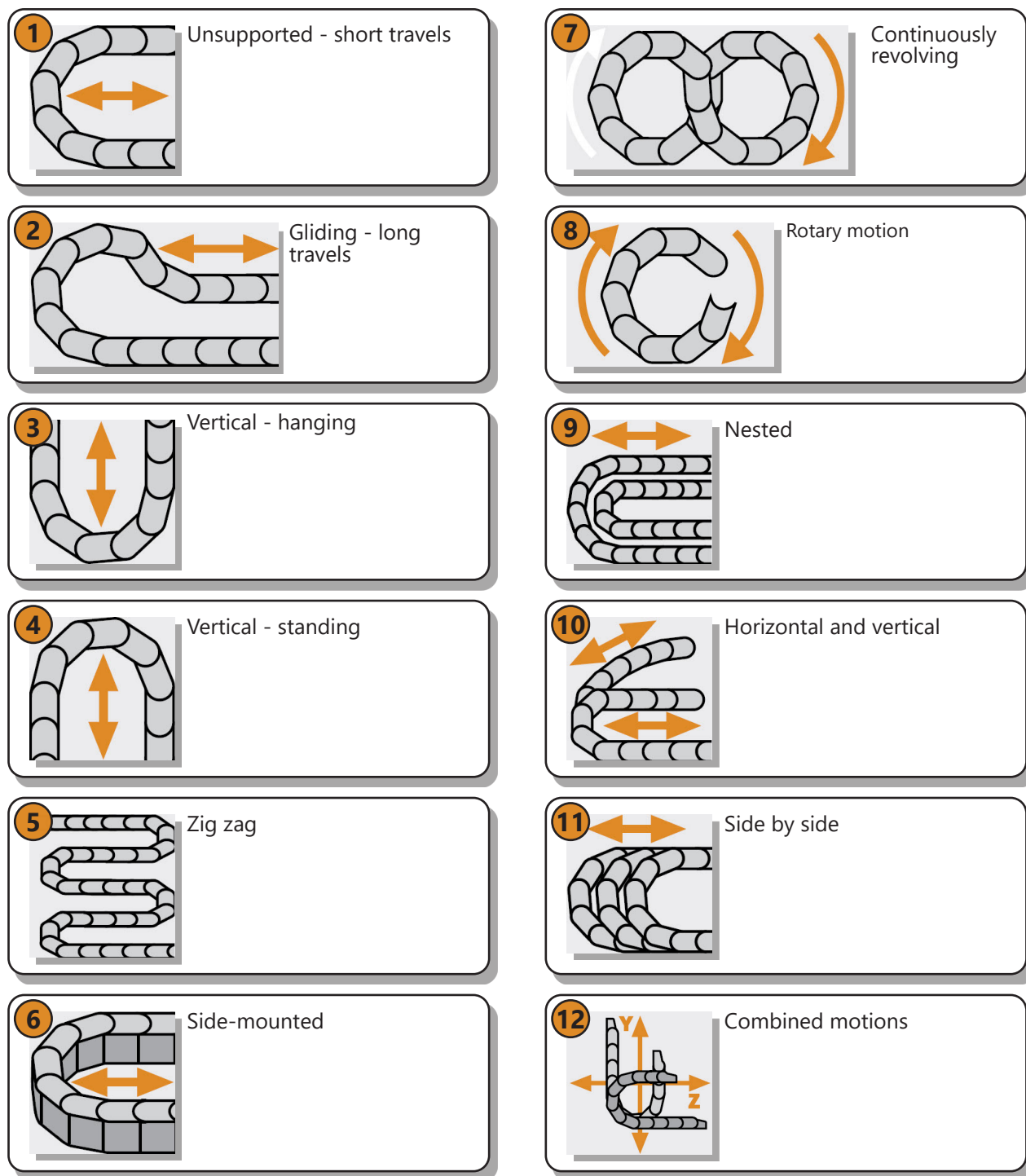
Bracket Design Guide			
Applications and Features		Pivoting Bracket	Locking Bracket
		<p>Moving end 2...1PZB</p>  <p>Fixed end 2...2PZB</p>	<p>Moving end 2...3PZB</p>  <p>Fixed end 2...4PZB</p>
Horizontal Unsupported		+	+
Horizontal Gliding		+	+
Detachable Strain Relief Cable Tie Plate		Included	Included
Speed and Acceleration		+	++
Low Profile Height		+	++
Vertical Installation		+	++

Key: + = Good; ++ = Better



Igus® 2500 Cable / Hose Drag Chain

Installation Options For Cable / Hose Drag Chains



DIN Rail Mount EMC Shield Cable Clips SCF-EMV / MSCF-EMV Series

Overview

The SCF-EMV / MSCF-EMV series EMC shield cable clips easily snap on to 35mm DIN rail. The spring action provides uninterrupted contact pressure with the shield enabling a conductive path to discharge EMI (electromagnetic interference).

Features

- The spring action provides uninterrupted contact pressure with the shield
- Excellent discharge of high-frequency noise current
- Easy installation (no tools required)
- Zinc plated spring steel
- 35mm DIN rail mount

DIN Rail Mount EMC Shield Cable Clips SCF-EMV / MSCF-EMV Series				
Part Number	Price	Description	Shield Diameter	Drawing Link
571052	\$28.50	Murrplastik SCF-EMV series EMC shield cable clip, accepts 0.06-0.12in diameter cable, 35mm DIN rail mount, zinc plated spring steel. Package of 5.	0.06–0.12in	PDF
571054	\$29.50	Murrplastik SCF-EMV series EMC shield cable clip, accepts 0.12-0.24in diameter cable, 35mm DIN rail mount, zinc plated spring steel. Package of 5.	0.12–0.24in	PDF
571056	\$29.50	Murrplastik SCF-EMV series EMC shield cable clip, accepts 0.24-0.31in diameter cable, 35mm DIN rail mount, zinc plated spring steel. Package of 5.	0.24–0.31in	PDF
571058	\$29.50	Murrplastik SCF-EMV series EMC shield cable clip, accepts 0.31-0.43in diameter cable, 35mm DIN rail mount, zinc plated spring steel. Package of 5.	0.31–0.43in	PDF
571060	\$34.00	Murrplastik SCF-EMV series EMC shield cable clip, accepts 0.43-0.63in diameter cable, 35mm DIN rail mount, zinc plated spring steel. Package of 5.	0.43–0.63in	PDF
571064	\$37.00	Murrplastik SCF-EMV series EMC shield cable clip, accepts 0.67-1.18in diameter cable, 35mm DIN rail mount, zinc plated spring steel. Package of 5.	0.67–1.18in	PDF
571066	\$40.00	Murrplastik SCF-EMV series EMC shield cable clip, accepts 1.18-1.46in diameter cable, 35mm DIN rail mount, zinc plated spring steel. Package of 5.	1.18–1.46in	PDF
571070	\$37.00	Murrplastik MSCF-EMV series EMC shield cable clip, accepts 0.12-0.47in diameter cable, 35mm DIN rail mount, zinc plated spring steel. Package of 5.	0.12–0.47in	PDF
571072	\$42.50	Murrplastik MSCF-EMV series EMC shield cable clip, accepts 0.28-0.71in diameter cable, 35mm DIN rail mount, zinc plated spring steel. Package of 5.	0.28–0.71in	PDF



**SCF-EMV / MSCF-EMV installation
shown with shielded cable**

DIN Rail Mount EMC Shield Cable Clips With Strain Relief SCFZ-EMV / MSCFZ-EMV Series

Overview

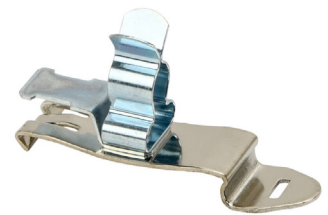
The SCFZ-EMV / MSCFZ-EMV series EMC shield cable clips with strain relief easily snap on to 35mm DIN rail. The spring action provides uninterrupted contact pressure with the shield enabling a conductive path to discharge EMI (electromagnetic interference). The strain relief tab protects the cable when using with any standard cable tie.

Features

- The spring action provides uninterrupted contact pressure with the shield.
- Excellent discharge of high-frequency noise current
- High stability
- Easy installation (no tools required)
- Zinc plated spring steel
- 35mm DIN rail mount

DIN Rail Mount EMC Shield Cable Clips With Strain Relief SCFZ-EMV / MSCFZ-EMV Series

Part Number	Price	Description	Shield Diameter	Drawing Link
571074	\$33.00	Murrplastik SCFZ-EMV series EMC shield cable clip, accepts 0.06-0.12in diameter cable, 35mm DIN rail mount, with strain relief, zinc plated spring steel. Package of 5.	0.06–0.12in	PDF
571075	\$34.00	Murrplastik SCFZ-EMV series EMC shield cable clip, accepts 0.12-0.24in diameter cable, 35mm DIN rail mount, with strain relief, zinc plated spring steel. Package of 5.	0.12–0.24in	PDF
571076	\$34.00	Murrplastik SCFZ-EMV series EMC shield cable clip, accepts 0.24-0.31in diameter cable, 35mm DIN rail mount, with strain relief, zinc plated spring steel. Package of 5.	0.24–0.31in	PDF
571077	\$35.00	Murrplastik SCFZ-EMV series EMC shield cable clip, accepts 0.31-0.43in diameter cable, 35mm DIN rail mount, with strain relief, zinc plated spring steel. Package of 5.	0.31–0.43in	PDF
571078	\$41.50	Murrplastik SCFZ-EMV series EMC shield cable clip, accepts 0.43-0.63in diameter cable, 35mm DIN rail mount, with strain relief, zinc plated spring steel. Package of 5.	0.43–0.63in	PDF
571079	\$42.50	Murrplastik SCFZ-EMV series EMC shield cable clip, accepts 0.67-0.87in diameter cable, 35mm DIN rail mount, with strain relief, zinc plated spring steel. Package of 5.	0.67–0.87in	PDF
571071	\$40.00	Murrplastik MSCFZ-EMV series EMC shield cable clip, accepts 0.12-0.47in diameter cable, 35mm DIN rail mount, with strain relief, zinc plated spring steel. Package of 5.	0.12–0.47in	PDF
571073	\$45.50	Murrplastik MSCFZ-EMV series EMC shield cable clip, accepts 0.28-0.71in diameter cable, 35mm DIN rail mount, with strain relief, zinc plated spring steel. Package of 5.	0.28–0.71in	PDF



[571077](#)



[571071](#)



SCFZ-EMV / MSCFZ-EMV installation shown with cable tie securing cable to strain relief tab



Flexible Metal Conduits – Alflex™



Overview

Alflex™ Type RWA (Reduced Wall Aluminum) is manufactured with a lightweight, high-strength aluminum alloy. The metal strip is helically formed into a continuously interlocked flexible metal conduit that can withstand impact and crushing forces.

Features

- Cuts 80% faster than steel
- Smooth interior for easy wire pulling
- High-strength aluminum alloy construction
- Superior corrosion resistance
- Built-in flexibility for simplified positioning
- 66% lighter than steel

Standards and References

Alflex Type RWA Flexible Metal Conduit meets or exceeds the following requirements:

- UL Listed per UL-1, Standard for Safety for Flexible Metal Conduit, ANSI/UL-1
- Meets federal specification WW-C-566c
- NEC Type Designation - Article 348, Type FMC (flexible metal conduit)
- UL Product Category- DXUZ
- REACH/RoHS-2 (Chemical Limit) Compliant

Applications

- Environmental air-handling spaces per NEC 300.22(C)
- Power and lighting branch circuit conductors and cables for connecting receptacles, luminaires equipment, office partitions, etc.
- Metal raceway for wires and cables per NEC 348
- Motor feeder, branch, and control circuit conductors and cables
- Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuit conductors and cables
- Fire alarm system conductors and cables in power-limited or non-power-limited fire alarm circuits
- Voice, data, communications and video cables including CATV and optical fiber cables
- Concealed or exposed installations per NEC 348 and the applicable NEC provisions
- Elevators, hoistways, and escalators per NEC 620.21
- As a grounding conductor for lengths up to 6 feet (20A max) as per NEC 250.118(5)
- Electric signs and outline lighting per NEC 600.7, 600.31 (1000V or less), and 600.32 (>1000V)
- Listed wired fixtures per NEC 410.77(C)
- Raised floors for connection of information technology per NEC 645.5(D)(2) and 645.5(D)
- Places of assembly and theaters per NEC 518 and 520
- Cranes and hoists per NEC 610.11(C)
- Hazardous location, Class 1, Div. 2, for flexible connectors only per NEC 501.10(B)(2) & 501.30(B)
- UL 1, 2, & 3 Hour Through-Penetration Firestop Systems: C-AJ-1462, C-AJ-1463, C-AJ-1464, W-L-1308, and W-L-1309



Alflex Flexible Metal Conduits								
Part Number	Price	Trade Size [in]	Length	Minimum Bend Radius	Ø (in [mm])		Weight (lb / 100 ft)	Material
					Inside Min/Max	Outside Min/Max		
55082003	\$58.00	3/8in	100ft/30.4m	2in	0.38/0.39 [9.5/9.9]	0.56/0.61 [14.2/15.5]	7	Reduced wall aluminum
55082021	\$22.00		25ft/7.6m		0.63/0.65 [15.9/16.4]	0.86/0.92 [21.8/23.4]		
55082103	\$85.00	1/2in	100ft/30.4m	3in	0.81/0.84 [20.6/21.2]	1.05/1.11 [26.5/28.0]	9	
55082121	\$24.50		25ft/7.6m		1.25/1.3 [31.7/33.0]	1.55/1.63 [39.4/41.4]		
55082303	\$98.00	3/4in	100ft/30.4m	4in	1.5/1.58 [38.1/40.0]	1.85/1.95 [46.9/49.5]	13	
55082321	\$32.00		25ft/7.6m		2.0/2.1 [50.8/52.8]	2.35/2.45 [59.7/62.2]		
55092501	\$96.00	1in	50ft/15.2m	5in			20	
55092601	\$134.00	1-1/4in	50ft/15.2m	6.25in			24	
55092701	\$97.00	1-1/2in	25ft/7.6m	7.5in			31	
55092801	\$130.00	2in	25ft/7.6m	10in			40	



Flexible Metal Conduits – Galflex™



Overview

Galflex™ Type RWS (Reduced Wall Steel) is manufactured with a galvanized, corrosion resistant, high-strength steel alloy. The metal strip is helically formed into a continuously interlocked flexible metal conduit that can withstand impact and crushing forces.

Features

- Provides mechanical protection for conductors and cable
- For use with listed connectors intended for NEC Type FMC (Flexible Metal Conduit)
- Smooth interior for easy wire pulling
- High-strength steel construction
- Hot-dipped for a heavy zinc, rust/corrosion resistant coating
- Superior crush-proof qualities
- Built-in flexibility for simplified positioning

Standards and References

Galflex Type RWS Reduced Wall Steel Metal Conduit meets or exceeds the following requirements:

- UL Listed per UL-1, Standard for Safety for Flexible Metal Conduit, ANSI/UL-1 for 3/8in through 3in
- CSA Certified per CSA 22.2 No. 56 per Canadian Electrical Code C22.1 Section 12-1000 for 3/8 in trade sizes only
- Meets federal specification WW-C-566c
- NFPA 70 (National Electrical Code), Article 348, Type FMC (flexible metal conduit)
- REACH/RoHS-2 (Chemical Limit) Compliant

Applications

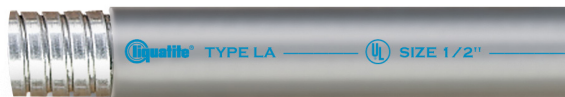
- Environmental air-handling spaces per NEC 300.22(C)
- Power and lighting branch circuit conductors and cables for connecting receptacles, luminaires, equipment, office partitions, etc.
- Metal raceway for wires and cables per NEC 348
- Motor feeder, branch, and control circuit conductors and cables
- Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuit conductors and cables
- Fire alarm system conductors and cables of power-limited or non-power-limited fire alarm circuits
- Voice, data, communications and video cables including CATV and optical fiber cables
- Concealed or exposed installations per NEC 348 and the applicable NEC provisions
- Elevators, hoistways, and escalators per NEC 620.21
- As a grounding conductor for lengths up to 6 feet (20A max) as per NEC 250.118(5)
- Electric signs and outline lighting per NEC 600.7, 600.31 (1000V or less), and 600.32 (>1000V)
- Listed wired fixtures per NEC 410.77(C)
- Raised floors for connection of information technology per NEC 645.5(D)(2) and 645.5(D)
- Places of assembly and theaters per NEC 518 and 520
- Cranes and hoists per NEC 610.11(C)
- Hazardous location, Class 1, Div. 2, for flexible connectors only per NEC 501.10(B)(2) & 501.30(B)
- UL 1, 2, & 3 Hour Through-Penetration Firestop Systems: C-AJ-1462, C-AJ-1463, C-AJ-1464, W-L-1308, and W-L-1309



Galflex Flexible Metal Conduits								
Part Number	Price	Trade Size [in]	Length	Minimum Bend Radius	Ø (in [mm])		Weight (lb / 100 ft)	Material
					Inside Min/Max	Outside Min/Max		
55081702	\$68.00	3/8in	100ft/30.4m	2in	0.38/0.39	0.56/0.61	19	Reduced wall steel
55081711	\$25.50		25ft/7.6m		[9.5/9.9]	[14.2/15.5]		
55081802	\$93.00	1/2in	100ft/30.4m	3in	0.63/0.65	0.86/0.92	27	
55081806	\$26.50		25ft/7.6m		[15.9/16.4]	[21.8/23.4]		
55081902	\$114.00	3/4in	100ft/30.4m	4in	0.81/0.84	1.05/1.11	35	
55081921	\$47.50		25ft/7.6m		[20.6/21.2]	[26.5/28.0]		
55091601	\$135.00	1in	50ft/15.2m	5in	1.0/1.04	1.3/1.38	57	
55091701	\$180.00	1-1/4in	50ft/15.2m	6.25in	1.25/1.3	1.55/1.63	65	
55091801	\$129.00	1-1/2in	25ft/7.6m	7.5in	1.5/1.58	1.85/1.95	78	
55091901	\$183.00	2in	25ft/7.6m	10in	2.0/2.1	2.35/2.45	133	
					[50.8/52.8]	[59.7/62.2]		



Jacketed Liquid-tight Flexible Metallic Conduits – Type LA



This flexible steel conduit offers outstanding protection against wet, oily conditions and is designed for use in exposed or concealed locations. The flexible inner core is made from a spiral-wound strip of heavy-gauge, corrosion-resistant, hot-dipped galvanized steel. The 3/8" through 1-1/4" models are square-lock formed and include an integral bonding strip of copper that is enclosed within the convolutions through their entire length. The 1-1/2" and 2" models are designed with a fully interlocked strip. Suitable for the following working temperatures ranges:

Dry: -30 to 80°C [-22 to 176°F]

Wet: -30 to 60°C [-22 to 140°F]

Oil: -30 to 70°C [-22 to 158°F]

Square-locked design – Sizes 3/8" to 1-1/4"



Interlocked design – Sizes 1-1/2" and 2"



Applications

- Listed and marked for direct burial and in poured concrete
- For containment of 1000V and lower potential circuits
- Suitable as a grounding conductor when used for circuits rated up to 20A for the 3/8" and 1/2" trade sizes and 60A for the 3/4" through 1-1/4" trade sizes in lengths six feet or less per NEC Article 250.118(7).
- Installations in hazardous (classified) locations:
 - Class I Div. 2: Article 501.10(B)(2) & 501.30(B)
 - Class II Div. 1: Article 502.10(A)(2) & 502.30(B) Div 2: 502.10(B)(2)
 - Class III Div. 1: Article 503.10(A)(2) & 503.30(B) Div. 2: 503.10(A)(2)
- Installed under raised floors in data processing areas. Articles 645.5(E)(2).
- Electric signs and outline lighting over 1000V. Articles 600.7/600.32(A)(1).
- Permitted for service entrance wiring to 6ft. Article 230.43.
- Used as feeders and services at marinas and boatyards. Article 553.7(B).
- Wiring on buildings. Article 225.10.
- Conductor enclosures adjacent to motors over 600V. Article 430.223.
- Underground service, feeder, branch circuit and recreational vehicle site feeder circuit conductors. Article 551.80.
- Elevators and hoistways. Article 620.21.
- Pools and fountains. Article 680.
- Bodies of water. Article 682.
- Fire pumps. Article 695.

Approvals

- UL File E29278. Conforms to UL standard ANSI/UL-360 for Liquid-tight Flexible Steel conduit.
- RoHS2 and WEEE Compliant
- CSA certified File #LL18858



Type LA Jacketed Liquid-tight Flexible Metallic Conduits								
Part Number	Price	Trade Size [in]	Length ft [m]	Bend Ø in [mm]	Ø in [mm]		Weight [lb]	Color
					Inside Min/Max	Outside Min/Max		
LA-10-25	\$56.00	3/8	25 [7.62]	2.0 [50.8]	0.484/0.504 [12.3/12.8]	0.690/0.710 [17.5/18.0]	7.25	Machine Tool Gray
LA-10-100	\$187.00		100 [30.48]				29.0	
LA-11-25	\$64.00	1/2	25 [7.62]	3.0 [76.2]	0.622/0.642 [15.8/16.3]	0.820/0.840 [20.8/21.3]	8.0	
LA-11-100	\$216.00		100 [30.48]				32.0	
LA-12-25	\$89.00	3/4	25 [7.62]	4.2 [106.7]	0.820/0.840 [20.8/21.3]	1.030/1.050 [26.2/26.7]	13.25	
LA-12-100	\$294.00		100 [30.48]				53.0	
LA-13-25	\$130.00	1	25 [7.62]	5.5 [139.7]	1.041/1.066 [26.4/27.1]	1.290/1.315 [32.8/33.4]	20.5	
LA-13-100	\$464.00		100 [30.48]				82.0	
LA-14-50	\$306.00	1-1/4	50 [15.24]	7.0 [177.8]	1.380/1.410 [35.1/35.8]	1.630/1.660 [41.4/42.2]	51.0	
LA-15-50	\$342.00	1-1/2	50 [15.24]	4.5 [114.3]	1.575/1.600 [40.0/40.6]	1.865/1.900 [47.4/48.3]	62.0	
LA-16-50	\$421.00	2	50 [15.24]	6.0 [152.4]	2.020/2.045 [51.3/51.9]	2.340/2.375 [59.4/60.3]	72.5	



Jacketed Liquid-tight Flexible Metallic Conduits – Type ATLA



This flexible steel conduit is designed specifically for extreme hot or cold environments. The PVC jacket remains flexible at low temperature, flame retardant, and resists aging at elevated temperatures. The flexible inner core is constructed from a spiral-wound strip of heavy gauge, hot-dipped galvanized steel. The 3/8" through 1-1/4" trade sizes contain an integral bonding strip of copper. The 1-1/2" and 2" versions are designed with a fully interlocked strip. Suitable for the following working temperatures ranges:

UL – Air: -55 to 105°C [-67 to 221°F]
 Wet: -55 to 60°C [-67 to 140°F]
 Oil: -55 to 70°C [-67 to 158°F]

CSA – Dry: -50 to 105°C [-58 to 221°F]
 Oil: -50 to 75°C [-58 to 167°F]

Square-locked design – Sizes 3/8" to 1-1/4"



Interlocked design – Sizes 1-1/2" and 2"



Applications

- High temperature machine tool wiring, outdoor installations in cold climates.
- Permitted for use in exposed or concealed locations.
- Installations under raised floors in data processing areas. Article 645.5(E)(2).
- Listed and marked for direct burial and in poured concrete.
- For containment of 1000V and lower-potential circuits.
- Permitted for service entrance wiring to 6 ft. Article 230.43.
- Suitable as a grounding conductor when used for circuits rated up to 20A for the 3/8" and 1/2" trade sizes and 60A for the 3/4" through 1-1/4" trade sizes in lengths six feet or less per NEC Article 250.118(6).
- Installations in hazardous (classified) locations:
 - Class I Div. 2: Article 501.10(B)(2) & 501.30(B)
 - Class II Div. 1: Article 502.10(A)(2) & 502.30(B) Div 2: 502.10(B)(2)
 - Class III Div. 1: Article 503.10(A)(2) & 503.30(B) Div 2: 503.10(A)(2)
- Use as feeders and services at marinas and boat yards. Article 553.7(B.)
- Wiring on buildings. Article 225.10.
- Conductor enclosures adjacent to motors over 600V. Article 430.223
- Underground service, feeder, branch circuit and recreational vehicle site feeder circuit conductors. Article 551.80.
- Elevators and hoistways. Article 620.21.
- Pools and fountains. Article 680.
- Bodies of water. Article 682.
- Fire pumps. Article 695.

Approvals

- UL File E29278. Conforms to UL standard ANSI/UL-360 for Liquid-tight Flexible Steel Conduit.
- RoHS2 and WEEE compliant
- CSA certified File #LL18858



Type ATLA Jacketed Liquid-tight Flexible Metallic Conduits								
Part Number	Price	Trade Size [in]	Length ft [m]	Inside Bend Ø in [mm]	Ø in [mm]		Weight [lb]	Color
					Inside Min/Max	Outside Min/Max		
ATLA-11-100	\$249.00	1/2	100 [30.48]	3.0 [76.2]	0.622/0.642 [15.8/16.3]	0.820/0.840 [20.8/21.3]	32.0	Machine Tool Gray
ATLA-12-100	\$391.00	3/4	100 [30.48]	4.2 [106.68]	0.820/0.840 [20.8/21.3]	1.030/1.050 [26.2/26.7]	53.0	
ATLA-13-100	\$504.00	1	100 [30.48]	5.5 [139.7]	1.041/1.066 [26.4/27.1]	1.290/1.315 [32.8/33.4]	82.0	
ATLA-14-50	\$348.00	1-1/4	50 [15.24]	7.0 [177.8]	1.380/1.410 [34.1/35.8]	1.630/1.660 [41.4/42.2]	51.0	
ATLA-15-50	\$384.00	1-1/2	50 [15.24]	4.5 [114.3]	1.575/1.600 [40.0/40.6]	1.865/1.900 [47.4/48.3]	62.0	
ATLA-16-50	\$446.00	2	50 [15.24]	6.0 [152.4]	2.020/2.045 [51.3/51.9]	2.340/2.375 [59.4/60.3]	72.5	



Shielded Liquid-tight Flexible Metallic Conduits – Type SLA



This flexible shielded liquid-tight conduit is designed for wiring applications requiring protection of sensitive electronic circuits used in communications, radar and data transmission from electromagnetic and radio frequency interference. Suitable for the following working temperatures ranges:

Dry: -30 to 80°C [-22 to 176°F]

Wet: -30 to 60°C [-22 to 140°F]

Oil: -30 to 70°C [-22 to 158°F]

Square-locked design – Sizes 3/8" to 1-1/4"



Interlocked design – Sizes 1-1/2" and 2"



Applications

- Intended for installation in accordance with Article 350 of the NEC (ANSI / NFPA-70).
- Suitable as an equipment grounding conductor per Article 250.118(7).
- Suitable for use in hazardous locations: Class I, Div. 2 and Classes II and III.
- Air handling equipment (HVAC)
- Test & measurement equipment
- Data centers
- Variable speed drives
- Radio broadband/antenna
- Solar/wind energy
- Accepts standard metallic liquid-tight fittings.
- Ship building
- Medical diagnostics equipment
- Wireless communications

Approvals

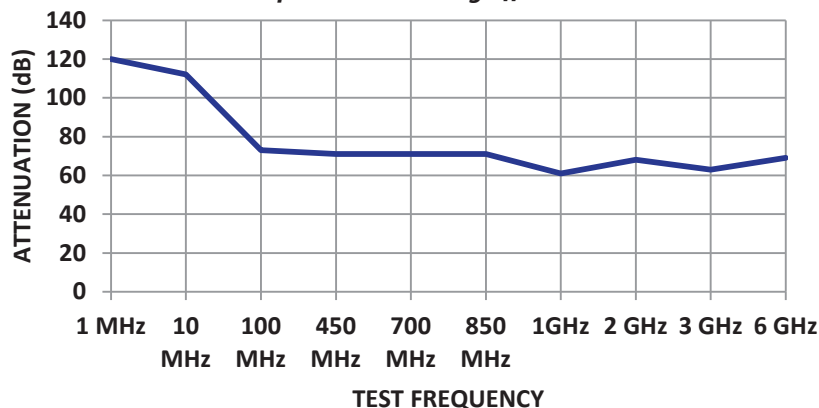
- UL File E29278. Conforms to UL standard ANSI/UL-360 for liquid-tight flexible steel conduit.
- RoHS2 and WEEE compliant



Type SLA Shielded Jacketed Liquid-tight Flexible Metallic Conduits

Part Number	Price	Trade Size [in]	Length ft [m]	Inside Bend Ø in [mm]	Ø in [mm]		Weight [lb]	Color
					Inside Min/Max	Outside Min/Max		
SLA-10-100	\$749.00	3/8	100 [30.48]	2.0 [50.8]	0.484/0.504 [12.3/12.8]	0.690/0.710 [17.5/18.0]	29.0	Black
SLA-11-100	\$831.00	1/2	100 [30.48]	3.0 [76.2]	0.622/0.642 [15.8/16.3]	0.820/0.840 [20.8/21.3]	32.0	
SLA-12-100	\$1,335.00	3/4	100 [30.48]	4.2 [106.68]	0.820/0.840 [20.8/21.3]	1.030/1.050 [26.2/26.7]	53.0	
SLA-13-100	\$1,996.00	1	100 [30.48]	5.5 [139.7]	1.041/1.066 [26.4/27.1]	1.290/1.315 [32.8/33.4]	82.0	

Comparative Shielding Effectiveness



Note: The spectrum of test frequency is from 1MHz to 10MHz Electric Field, to 100MHz to 1GHz Planewave Field and 2GHz to 6GHz Microwave Field. Tests were performed per MIL-STD-285 on 1" trade size conduit using standard liquid-tight fittings. Results are based on controlled laboratory conditions and may vary in actual field installed conditions.



Liquid-tight Flexible Non-Metallic Conduits -Type NM



This is a general purpose, non-metallic liquid-tight conduit that offers excellent protection to wiring from abrasion, sunlight, mild acids, alkaline, and oils. Helically wound integral Type B construction containing a spiral of rigid PVC reinforcement embedded within the PVC wall. Suitable for the following working temperatures ranges:

Dry: -20 to 80°C [-4 to 176°F]

Wet: -20 to 60°C [-4 to 140°F]

Oil: -20 to 70°C [-4 to 158°F]

Applications

- Intended for installation in accordance with Article 356 of the NEC (ANSI / NFPA-70) for flexible liquid-tight non-metallic conduit (LFNC-B or FNMC-B).
- For containment of 1000V and lower potential circuits.
- Listed and marked for outdoor use.
- Listed and marked for direct burial and in poured concrete.
- Installations in hazardous (classified) locations:
 - Class I Div. 2 Article 501
 - Class II Div. 1 & 2 Article 502
 - Class III Div. 1 & 2 Article 503
- Electric signs and outdoor lighting over 1000V. Article 600.32(A).
- Wiring methods for pools and spas. Article 680.
- Conforms to the requirements of section 14.5.5 of the Electrical Standard for Industrial Machinery NFPA-79.
- Suitable for use with standard metal liquid-tight fittings or non-metallic fittings marked for FNMC-B or LFNC-B for liquid-tight flexible non-metallic conduit Type B.

Approvals

- UL File E79308. Conforms to UL standard ANSI/UL 1660 type B.
- RoHS2 and WEEE compliant
- CSA certified File #LL230485



Type NM Liquid-tight Flexible Non-Metallic Conduits								
Part Number	Price	Trade Size [in]	Length ft [m]	Bend Ø in [mm]	Ø in [mm]		Weight [lb]	Color
					Inside Min/Max	Outside Min/Max		
NM-10-50	\$71.00	3/8	50 [15.24]	2.0 [50.8]	0.484/0.504 [12.3/12.8]	0.690/0.710 [17.5/18.0]	5.0	Machine Tool Gray
NM-10-100	\$108.00		100 [30.48]				10.0	
NM-11-50	\$71.00	1/2	50 [15.24]	3.25 [82.55]	0.622/0.642 [15.8/16.3]	0.820/0.840 [20.8/21.3]	5.5	
NM-11-100	\$108.00		100 [30.48]				11.0	
NM-12-50	\$90.00	3/4	50 [15.24]	4.25 [107.95]	0.820/0.840 [20.8/21.3]	1.030/1.050 [26.2/26.7]	7.5	
NM-12-100	\$132.00		100 [30.48]				15.0	
NM-13-50	\$139.00	1	50 [15.24]	6.5 [165.1]	1.041/1.066 [26.4/27.1]	1.290/1.315 [32.8/33.4]	12.5	
NM-13-100	\$219.00		100 [30.48]				25.0	
NM-14-100	\$342.00	1-1/4	100 [30.48]	8.0 [203.2]	1.380/1.410 [35.1/35.8]	1.630/1.660 [41.4/42.2]	34.0	
NM-15-50	\$229.00	1-1/2	50 [15.24]	9.0 [228.6]	1.575/1.600 [40.0/40.6]	1.865/1.900 [47.4/48.3]	21.0	
NM-16-50	\$278.00	2	50 [15.24]	11.0 [279.4]	2.020/2.045 [51.3/51.9]	2.340/2.375 [59.4/60.3]	30.0	

I-Flex Flexible Liquid-Tight PVC Tubing

Overview

This leak-proof, flexible tubing provides electrical wire protection during routing applications. I-Flex can be used in extremely tight quarters, thanks to its flexibility. It is just right for basic applications where fast installation and maximum flexibility are a must, and is the solution in areas where movement, vibration, or flexing can be a problem. This tubing provides excellent tensile strength and the smooth interior wall protects wiring. All models are available in light gray or black.



Applications

- Where water corrosion or ultraviolet light is a problem
- Protection of fiber optic cable
- Installing instrumentation or control cable
- Wire harness protection
- Packaging equipment
- Marine applications

Features

- UL recognized File E311916
- CE certified
- IP65 rated for watertight applications
- Operating temperature: -4 to 140°F [-20 to 60°C]



IBOCO Gray I-Flex Tubing								Use With This Straight Connector		Use With This 90° Connector	
Part Number	Price	Trade Size in	Actual ID mm [in]	Actual OD mm [in]	Min. Bend Rad. mm [in]	Weight lb/98 ft	Coil Length m [ft]	Part Number	Price	Part Number	Price
GSI-12G	\$39.50	3/8	11.94 [0.47]	16.51 [0.65]	12.45 [0.49]	6.1	30 [98]	RPS-12G	\$29.00	CUR-12G	\$61.00
GSI-16G	\$53.00	1/2	16.00 [0.63]	20.57 [0.81]	16.00 [0.63]	7.1	30 [98]	RPS-16G	\$34.50	CUR-16G	\$73.00
GSI-20G	\$61.00	3/4	20.07 [0.79]	24.64 [0.97]	21.08 [0.83]	9.6	30 [98]	RPS-20G	\$41.00	CUR-20G	\$50.00
GSI-25G	\$109.00	1	24.89 [0.98]	30.48 [1.2]	27.94 [1.10]	13.4	30 [98]	RPS-25G	\$31.00	CUR-25G	\$23.50
GSI-32G	\$151.00	1-¼	31.75 [1.25]	38.10 [1.5]	35.56 [1.40]	17.7	30 [98]	RPS-32G	\$62.00	CUR-32G	\$60.00
GSI-40G	\$191.00	1-½	39.88 [1.57]	46.48 [1.83]	40.39 [1.59]	23.6	30 [98]	RPS-40G	\$46.00	N/A	
GSI-50G	\$247.00	2	50.04 [1.97]	56.90 [2.24]	51.82 [2.04]	31.2	30 [98]	RPS-50G	\$91.00	N/A	

IBOCO Black I-Flex Tubing								Use With This Straight Connector		Use With This 90° Connector	
Part Number	Price	Trade Size in	Actual ID mm [in]	Actual OD mm [in]	Min. Bend Rad. mm [in]	Weight lbs/98 ft	Coil Length m [ft]	Part Number	Price	Part Number	Price
GSI-12K	\$39.50	3/8	11.94 [0.47]	16.51 [0.65]	12.45 [0.49]	6.1	30 [98]	RPS-12K	\$29.00	CUR-12K	\$61.00
GSI-16K	\$53.00	1/2	16.00 [0.63]	20.57 [0.81]	16.00 [0.63]	7.1	30 [98]	RPS-16K	\$34.50	CUR-16K	\$73.00
GSI-20K	\$61.00	3/4	20.07 [0.79]	24.64 [0.97]	21.08 [0.83]	9.6	30 [98]	RPS-20K	\$41.00	CUR-20K	\$50.00
GSI-25K	\$109.00	1	24.89 [0.98]	30.48 [1.2]	27.94 [1.10]	13.4	30 [98]	RPS-25K	\$31.00	CUR-25K	\$23.50
GSI-32K	\$151.00	1-¼	31.75 [1.25]	38.10 [1.5]	35.56 [1.40]	17.7	30 [98]	RPS-32K	\$62.00	CUR-32K	\$60.00
GSI-40K	\$191.00	1-½	39.88 [1.57]	46.48 [1.83]	40.39 [1.59]	23.6	30 [98]	RPS-40K	\$46.00	N/A	
GSI-50K	\$247.00	2	50.04 [1.97]	56.90 [2.24]	51.82 [2.04]	31.2	30 [98]	RPS-50K	\$91.00	N/A	

Straight and Right-Angle Connectors for I-Flex Flexible Liquid-Tight PVC Tubing

Overview

These straight and right angle (90°) non-metallic connectors are made to fit our line of flexible liquid-tight PVC tubing. Used together, they ensure leak-proof integrity on motors, processing equipment, pumps, etc. Available in light gray or black.

Choose these liquid-tight connectors for:

- IP65 ingress protection rating
- Quick re-entry for cable repair or rerouting features
- Seal gaskets included with each pack of connectors
- Material: Polypropylene
- Suitable for indoor and outdoor applications
- Corrosion resistant
- Adjustable collar
- Constructed of fire-resistant Polypropylene
- Operating temperature: -4 to 140°F [-20 to 60°C]
- UL recognized File E311916
- CE certified



IBOCO Gray I-Flex Tubing Straight Connectors

Part Number	Price	Trade Size in	Thread Dimensions		Package Quantity
			Actual ID mm [in]	Actual OD mm [in]	
RPS-12G	\$29.00	3/8	11.7 [0.46]	16.4 [0.65]	20
RPS-16G	\$34.50	1/2	15.6 [0.62]	20.7 [0.81]	20
RPS-20G	\$41.00	3/4	19.6 [0.77]	26.2 [1.03]	20
RPS-25G	\$31.00	1	24.8 [0.98]	33.0 [1.30]	10
RPS-32G	\$62.00	1-1/4	31.9 [1.26]	41.5 [1.64]	10
RPS-40G	\$46.00	1-1/2	39.9 [1.57]	47.5 [1.87]	5
RPS-50G	\$91.00	2	49.6 [1.95]	59.2 [2.33]	5

Note: European gas thread

IBOCO Gray I-Flex Tubing 90° Connectors

Part Number	Price	Trade Size in	Thread Dimensions		Package Quantity
			Actual ID mm [in]	Actual OD mm [in]	
CUR-12G	\$61.00	3/8	11.7 [0.46]	16.4 [0.65]	25
CUR-16G	\$73.00	1/2	15.6 [0.62]	20.7 [0.81]	25
CUR-20G	\$50.00	3/4	19.6 [0.77]	26.2 [1.03]	15
CUR-25G	\$23.50	1	24.8 [0.98]	33.0 [1.30]	5
CUR-32G	\$60.00	1-1/4	31.9 [1.26]	41.5 [1.64]	5

Note: European gas thread

IBOCO Black I-Flex Tubing Straight Connectors

Part Number	Price	Trade Size in	Thread Dimensions		Package Quantity
			Actual ID mm [in]	Actual OD mm [in]	
RPS-12K	\$29.00	3/8	11.7 [0.46]	16.4 [0.65]	20
RPS-16K	\$34.50	1/2	15.6 [0.62]	20.7 [0.81]	20
RPS-20K	\$41.00	3/4	19.6 [0.77]	26.2 [1.03]	20
RPS-25K	\$31.00	1	24.8 [0.98]	33.0 [1.30]	10
RPS-32K	\$62.00	1-1/4	31.9 [1.26]	41.5 [1.64]	10
RPS-40K	\$46.00	1-1/2	39.9 [1.57]	47.5 [1.87]	5
RPS-50K	\$91.00	2	49.6 [1.95]	59.2 [2.33]	5

Note: European gas thread

IBOCO Black I-Flex Tubing 90° Connectors

Part Number	Price	Trade Size in	Thread Dimensions		Package Quantity
			Actual ID mm [in]	Actual OD mm [in]	
CUR-12K	\$61.00	3/8	11.7 [0.46]	16.4 [0.65]	25
CUR-16K	\$73.00	1/2	15.6 [0.62]	20.7 [0.81]	25
CUR-20K	\$50.00	3/4	19.6 [0.77]	26.2 [1.03]	15
CUR-25K	\$23.50	1	24.8 [0.98]	33.0 [1.30]	5
CUR-32K	\$60.00	1-1/4	31.9 [1.26]	41.5 [1.64]	5

Note: European gas thread

RACO® Liquid-Tight Connectors

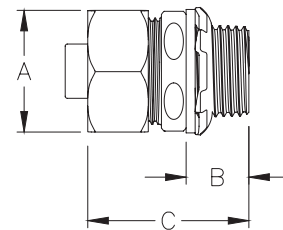
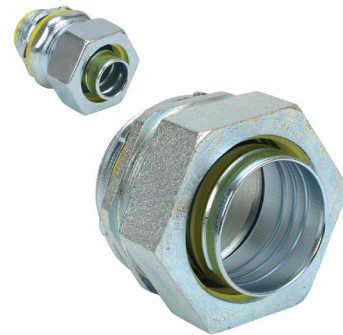
Straight Connectors

Applications

- For use in outdoor or indoor locations on flexible metallic liquid-tight conduit and Type B flexible non-metallic liquid-tight conduit
- Use to positively bond the conduit to a box or enclosure
- RACO® liquid-tight connectors are suitable for use in Class I, Div 2; Class II, Div 1 & 2; and Class III, Div 1 & 2 hazardous locations

Features

- Patented split gland-ring is designed to slip onto the conduit quickly and to rip the jacket of the conduit, speeding installation, assuring a perfect seal, and preventing pullouts
- All components are reusable. RACO® liquid-tight connectors may be easily disassembled and reused after years of service
- Included sealing washer provides a liquid-tight seal when terminating the connector in a threadless opening
- Heavy duty locknut included with every RACO® liquid-tight connector assures continuity of ground
- All steel/iron components are zinc-electroplated for added corrosion protection
- Dry Temperature -55 to 105°C [-67 to 221°F]



Approvals

- Standard 514B, UL Listed E195969
- CSA Certificate 1456072

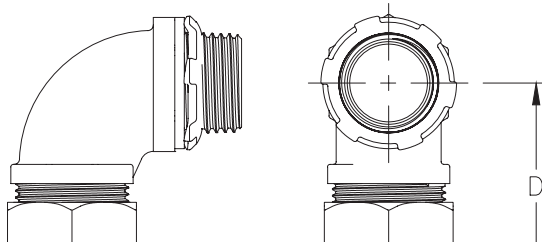
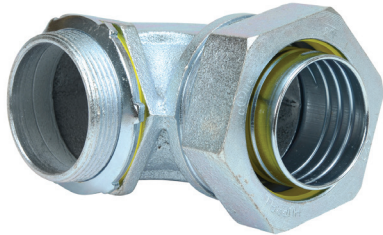
Please see our website www.AutomationDirect.com for complete engineering drawings.

RACO Liquid-tight Straight Connectors									
Part Number	Trade Size (in)	Insulated	Qty	Price	Dimensions – Inches [mm]				Compression Nut & Body Material
					A	B	C	Thread	
3401-8	3/8	N	1	\$2.25	1.06 [26.92]	0.55 [13.97]	1.41 [35.81]	½ in – 14 NPT	Zinc electroplated steel nut and body
3401		N	50	\$107.00					
3511RAC		Y	25	\$61.00					
3402-8	1/2	N	1	\$2.25	1.17 [29.72]	0.54 [13.72]	1.56 [39.62]	½ in – 14 NPT	
3402		N	50	\$107.00					
3512-8		Y	1	\$2.75					
3512RAC		Y	50	\$121.00					
3403-8	3/4	N	1	\$3.00	1.40 [35.56]	0.58 [14.73]	1.47 [37.34]	¾ in – 14 NPT	
3403		N	25	\$81.00					
3513-8		Y	1	\$3.75					
3513RAC		Y	25	\$88.00					
3404-8	1	N	1	\$5.50	1.71 [43.43]	0.65 [16.51]	1.79 [45.47]	1in – 11-½ NPT	
3404		N	10	\$48.00					
3514-8		Y	1	\$6.00					
3514RAC		Y	10	\$54.00					
3405-8	1-1/4	N	1	\$10.50	2.17 [55.12]	0.69 [17.53]	1.89 [48.01]	1¼ in – 11-½ NPT	
3405		N	10	\$94.00					
3515RAC		Y	10	\$109.00					
3406-8	1-1/2	N	1	\$14.50	2.40 [60.96]	0.71 [18.03]	2.08 [52.83]	1½ in – 11-½ NPT	Zinc electroplated malleable iron nut and body
3408-8	2	N	1	\$22.50	3.00 [76.20]	0.75 [19.05]	2.28 [57.91]	2in – 11-½ NPT	

Note: Heavy-duty locknut on all models is zinc-plated steel

RACO® Liquid-Tight Connectors

90° Connectors



Please see our website www.AutomationDirect.com for complete engineering drawings.

Applications

- For use in outdoor or indoor locations on flexible metallic liquid-tight conduit and Type B flexible non-metallic liquid-tight conduit
- Use to positively bond the conduit to a box or enclosure
- RACO® liquid-tight connectors are suitable for use in Class I, Div 2; Class II, Div 1 & 2; and Class III, Div 1 & 2 hazardous locations

Features

- Patented split gland-ring is designed to slip onto the conduit quickly and to grip the jacket of the conduit, speeding installation, assuring a perfect seal, and preventing pullouts
- All components are reusable - RACO® liquid-tight connectors may be easily disassembled and reused after years of service
- Included sealing washer provides a liquid-tight seal when terminating the connector in a threadless opening
- Heavy duty locknut included with every RACO® liquid-tight connector assures continuity of ground
- All steel/iron components are zinc-electroplated for added corrosion protection
- Dry Temperature -55 to 105°C [-67 to 221°F]

Approvals

- Standard 514B, UL Listed E195969
- CSA Certificate 1456072

RACO Liquid-tight 90° Connectors										
Part Number	Trade Size (in)	Insulated	Qty	Price	Dimensions – Inches [mm]					Compression Nut & Body Material
					A	B	C	D	Thread	
3421-8	3/8	N	1	\$4.00	1.06 [26.92]	0.55 [13.97]	1.40 [35.56]	1.70 [43.18]	½ in – 14 NPT	Zinc electroplated steel nut and malleable iron body
3421		N	25	\$81.00						
3541RAC		Y	25	\$109.00						
3422-8	1/2	N	1	\$4.00	1.09 [27.69]	0.55 [13.97]	1.41 [35.81]	1.73 [43.94]	½ in – 14 NPT	
3422		N	25	\$81.00						
3542-8		Y	1	\$4.75						
3542		Y	25	\$109.00						
3423-8	3/4	N	1	\$6.00	1.30 [33.02]	0.59 [14.99]	1.61 [40.89]	2.02 [51.31]	¾ in – 14 NPT	
3423		N	25	\$132.00						
3543-8		Y	1	\$7.25						
3543		Y	25	\$161.00						
3424-8	1	N	1	\$12.50	1.58 [40.13]	0.65 [16.51]	1.92 [48.77]	2.31 [58.67]	1in – 11-½ NPT	
3424		N	10	\$115.00						
3544-8		Y	1	\$12.50						
3544		Y	10	\$121.00						
3425-8	1-1/4	N	1	\$21.00	1.97 [50.04]	0.69 [17.53]	2.02 [51.31]	2.67 [67.82]	1-¼ in – 11-½ NPT	
3425		N	10	\$189.00						
3545		Y	10	\$204.00						
3426-8	1-1/2	N	1	\$23.50	2.22 [56.39]	0.71 [18.03]	2.25 [57.15]	3.05 [77.47]	1-½ in – 11-½ NPT	Zinc electroplated malleable iron nut and body
3428-8	2	N	1	\$35.00	3.00 [76.20]	0.75 [19.05]	2.47 [62.74]	3.30 [83.82]	2 in – 11-½ NPT	

Note: Heavy-duty locknut on all models is zinc-plated steel