### (B) **IBOCO**<sup>®</sup> Wire Duct – Slotted

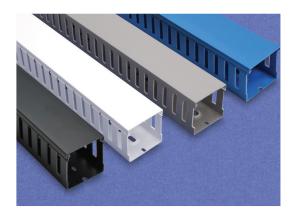
#### Rigid PVC - Open Slot - Wide Finger Wall T1 Series

#### **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		
<u>T1-0506G-1</u>	1	6.56 [2]	\$08v?:	PDF		
<u>T1-0510G-1</u>	1	6.56 [2]	\$08x0:	PDF		
<u>T1-1010G-1</u>	1	6.56 [2]	\$08x2:	PDF		
<u>T1-1015G-1</u>	1	6.56 [2]	\$08x4:	PDF		
<u>T1-1022G-1</u>	1	6.56 [2]	\$08x6:	PDF		
<u>T1-1022G1-1</u>	1	3.28 [1]	\$;-5,aj:	PDF		
<u>T1-1030G-1</u>	1	6.56 [2]	\$08x8:	PDF		
<u>T1-1030G1-1</u>	1	3.28 [1]	\$;5,ak:	PDF		
<u>T1-1040G-1</u>	1	6.56 [2]	\$08xa:	PDF		
<u>T1-1515G-1</u>	1	6.56 [2]	\$08xc:	PDF		
<u>T1-1522G-1</u>	1	6.56 [2]	\$08xe:	PDF		
<u>T1-1522G1-1</u>	1	3.28 [1]	\$;-5,al:	PDF		
<u>T1-1530G-1</u>	1	6.56 [2]	\$08xg:	PDF		
<u>T1-1530G1-1</u>	1	3.28 [1]	\$;5,an:	PDF		
<u>T1-1540G-1</u>	1	6.56 [2]	\$-08xi:	PDF		
<u>T1-2215G-1</u>	1	6.56 [2]	\$08xk:	PDF		
<u>T1-2222G-1</u>	1	6.56 [2]	\$08xn:	PDF		
<u>T1-2222G1-1</u>	1	3.28 [1]	\$;5,ao:	PDF		

Gray Open Slot T1 Series						
Part Number	Qty	Length ft [m]	Price	Drawing Link		
<u>T1-2230G-1</u>	1	6.56 [2]	\$08xp:	PDF		
<u>T1-2230G1-1</u>	1	3.28 [1]	\$;5,ae:	PDF		
<u>T1-2240G-1</u>	1	6.56 [2]	\$08xs:	PDF		
<u>T1-2240G1-1</u>	1	3.28 [1]	\$;;5,af:	PDF		
<u>T1-3015G-1</u>	1	6.56 [2]	\$08xu:	PDF		
<u>T1-3022G-1</u>	1	6.56 [2]	\$08xx:	PDF		
<u>T1-3030G-1</u>	1	6.56 [2]	\$08xz:	PDF		
<u>T1-3030G1-1</u>	1	3.28 [1]	\$;5,ag:	PDF		
T1-3040G-1	1	6.56 [2]	\$;08x[:	PDF		
T1-3050G-1	1	6.56 [2]	\$08x#:	PDF		
<u>T1-4015G-1</u>	1	6.56 [2]	\$08x?:	PDF		
<u>T1-4022G-1</u>	1	6.56 [2]	\$08y0:	PDF		
<u>T1-4030G-1</u>	1	6.56 [2]	\$08y2:	PDF		
<u>T1-4040G-1</u>	1	6.56 [2]	\$08y4:	PDF		
<u>T1-4040G1-1</u>	1	3.28 [1]	\$;5,ah:	PDF		
T1-4050G-1	1	6.56 [2]	\$08y6:	PDF		
<u>T1-6040G-1</u>	1	6.56 [2]	\$08y8:	PDF		
Cover included.						

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
<u>T1-1010W-1</u>	1		\$;080,:	PDF
<u>T1-1015W-1</u>	1		\$08p1:	PDF
<u>T1-1022W-1</u>	1		\$08p3:	PDF
<u>T1-1030W-1</u>	1		\$08p5:	PDF
<u>T1-1040W-1</u>	1		\$08p7:	PDF
<u>T1-1515W-1</u>	1		\$08p9:	PDF
<u>T1-1522W-1</u>	1		\$08pb:	PDF
<u>T1-1530W-1</u>	1		\$08pd:	PDF
<u>T1-1540W-1</u>	1		\$;08pf:	PDF
<u>T1-2222W-1</u>	1		\$08ph:	PDF
<u>T1-2230W-1</u>	1	6.56 [2]	\$-08pj:	PDF
<u>T1-2240W-1</u>	1		\$-08pl:	PDF
<u>T1-3022W-1</u>	1		\$08po:	PDF
<u>T1-3030W-1</u>	1		\$08pq:	PDF
<u>T1-3040W-1</u>	1		\$;08pt:	PDF
<u>T1-3050W-1</u>	1		\$08pv:	PDF
<u>T1-4022W-1</u>	1		\$08py:	PDF
<u>T1-4030W-1</u>	1		\$;08p]:	PDF
<u>T1-4040W-1</u>	1		\$08p_:	PDF
<u>T1-4050W-1</u>	1		\$;08p!:	PDF
<u>T1-6040W-1</u>	1		\$;08p,:	PDF
Cover included.				

Blue* Open Slot T1 Series						
Part Number	Qty	Length ft [m]	Price	Drawing Link		
<u>T1-1010B-1</u>	1		\$;08of:	PDF		
<u>T1-1022B-1</u>	1		\$08oh:	PDF		
<u>T1-1030B-1</u>	1		\$-08oj:	PDF		
<u>T1-1515B-1</u>	1		\$-08ol:	PDF		
<u>T1-1522B-1</u>	1		\$0800:	PDF		
<u>T1-1530B-1</u>	1	6 56 [2]	\$08oq:	PDF		
<u>T1-2215B-1</u>	1	6.56 [2]	\$;08ot:	PDF		
<u>T1-2222B-1</u>	1		\$08ov:	PDF		
<u>T1-2230B-1</u>	1		\$08oy:	PDF		
<u>T1-3030B-1</u>	1		\$;080]:	PDF		
<u>T1-4030B-1</u>	1		\$08o_:	PDF		
<u>T1-4040B-1</u>	1		\$;08o!:	PDF		

Black* Open Slot T1 Series						
Part Number	Qty	Length ft [m	Price	Drawing Link		
<u>T1-1040K-1</u>	1		\$;08n!:	PDF		
<u>T1-1530K-1</u>	1		\$;08n,:	PDF		
<u>T1-2222K-1</u>	1		\$08o1:	PDF		
<u>T1-2240K-1</u>	1		\$08o3:	PDF		
<u>T1-3030K-1</u>	1	6.56 [2]	\$08o5:	PDF		
<u>T1-3040K-1</u>	1		\$08o7:	PDF		
<u>T1-3050K-1</u>	1		\$08o9:	PDF		
<u>T1-4040K-1</u>	1	]	\$08ob:	PDF		
<u>T1-4050K-1</u>	1		\$08od:	PDF		

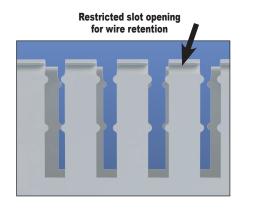
Cover included.

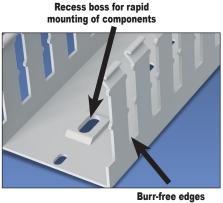
\*Black color typically used to compliment the look of historically black telecommunications racks and hardware.

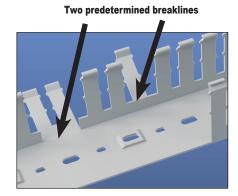
Cover included.

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

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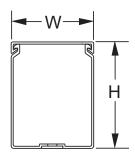


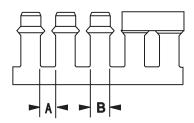




Rigid PVC - Open Slot - Wide Finger Wall - T1 Series							
	Dimension						
Part Number	Actual Size (WxH) inches [mm]	Dimension A inches [mm]	Dimension B inches [mm]				
T1-0506*	0.60 x 0.70 [15 x 18]						
T1-0510*	0.60 x 1.18 [15 x 30]	0.20 [5.08]	0.30 [7.62]				
T1-1010*	1.00 x 1.18 [25 x 30]						
T1-1015*	1.00 x 1.57 [25 x 40]						
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 00]						
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]	0.31 [7.87]	0.47 [11.94]				
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]						

#### Dimensions





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

### **IBOCO**<sup>®</sup> Wire Duct – Slotted

#### **Rigid PVC - Open Slot - Narrow Finger Wall T1F** 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.

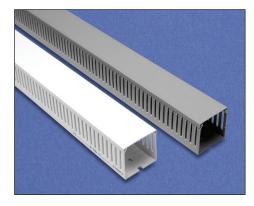
#### **Features**

- · 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]

Grav Open Slot T1E Series

• 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 **FL** (F) ( F

				100
Part Number	Qty	Length ft [m]	Price	Drawing Link
<u>T1E-1015G-1</u>	1		\$-08ls:	PDF
<u>T1E-1022G-1</u>	1		\$-08lu:	PDF
<u>T1E-1030G-1</u>	1		\$-08lx:	PDF
<u>T1E-1515G-1</u>	1		\$-08lz:	PDF
<u>T1E-1522G-1</u>	1		\$;-08l[:	PDF
<u>T1E-1530G-1</u>	1		\$-08l#:	PDF
<u>T1E-1540G-1</u>	1		\$-081?:	PDF
<u>T1E-2215G-1</u>	1		\$08n0:	PDF
<u>T1E-2222G-1</u>	1		\$08n2:	PDF
<u>T1E-2230G-1</u>	1	6.56 [2]	\$08n4:	PDF
<u>T1E-2240G-1</u>	1		\$08n6:	PDF
<u>T1E-3015G-1</u>	1		\$08n8:	PDF
<u>T1E-3022G-1</u>	1		\$08na:	PDF
<u>T1E-3030G-1</u>	1		\$08nc:	PDF
<u>T1E-3040G-1</u>	1		\$08ne:	PDF
<u>T1E-4015G-1</u>	1		\$08ng:	PDF
<u>T1E-4022G-1</u>	1		\$-08ni:	PDF
<u>T1E-4030G-1</u>	1		\$08nk:	PDF
<u>T1E-4040G-1</u>	1		\$08nn:	PDF
Cover included.				

#### Gray Open Slot T1E Series Drawing Length Part Number Qty Price ft [m] Link T1E-1022G1-1 PDF 1 \$;-5,ai: T1E-1030G1-1 1 PDF \$;5,ap: T1E-1522G1-1 1 \$;5,aq: PDF T1E-1530G1-1 1 \$;5,as: PDF T1E-2222G1-1 1 3.28 [1] \$;;5,at: PDF T1E-2230G1-1 \$;5,au: 1 PDF T1E-2240G1-1 1 \$;5.av: PDF T1E-3030G1-1 1 \$;5,ax: PDF

1

\$;5,ay:

PDF

T1E-4040G1-1

Cover included.

#### White Open Slot T1E Series

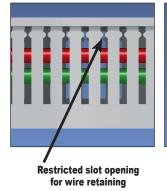
Part Number	Qty	Length ft [m]	Price	Drawing Link		
<u>T1E-1015W-1</u>	1		\$;08fo:	PDF		
<u>T1E-1022W-1</u>	1		\$;08fq:	PDF		
<u>T1E-1030W-1</u>	1		\$;;08ft:	PDF		
<u>T1E-1515W-1</u>	1		\$;08fv:	PDF		
<u>T1E-1522W-1</u>	1		\$;08fy:	PDF		
<u>T1E-1530W-1</u>	1		\$08ka:	PDF		
<u>T1E-1540W-1</u>	1		\$08kc:	PDF		
<u>T1E-2222W-1</u>	1	6.56 [2]	\$08ke:	PDF		
<u>T1E-2230W-1</u>	1		\$08kg:	PDF		
<u>T1E-2240W-1</u>	1		\$-08ki:	PDF		
<u>T1E-3022W-1</u>	1		\$08kk:	PDF		
<u>T1E-3030W-1</u>	1		\$08kn:	PDF		
<u>T1E-3040W-1</u>	1		\$08kp:	PDF		
<u>T1E-4030W-1</u>	1		\$08ks:	PDF		
<u>T1E-4040W-1</u>	1		\$08ku:	PDF		

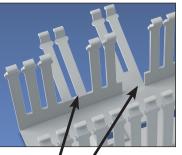
Cover included.

Cover included.

# (B) **IBOCO**<sup>®</sup> Wire Duct – Slotted

#### Rigid PVC - Open Slot - Narrow Finger Wall T1E Series

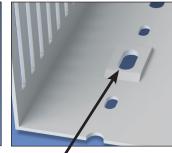




Two predetermined breaklines

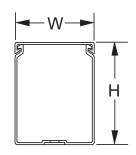


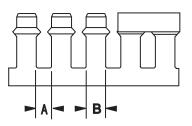
Burr-free edges



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]					
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]	0.16 [4.06]	0.24 [6.10]			
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.

# (B) **IBOCO**<sup>®</sup> 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**

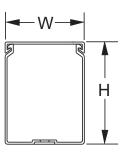
- Standard mounting holes
- Narrow finger design for compact wiring configurations
- Rounded, burr-free edges will not cut installers' hands or wiring insulation
- Non-slip cover included
- Flush cover design holds 10–12% more wires than traditional designs
- Restricted slot design retains wires in slot for fast, easy wire installation or removal
- Temperature range -15 to 50°C [5 to 122°F]
- Available in 6.56 ft [2m] length

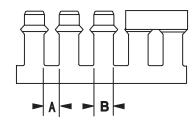
- Adhesive decreases installation time by holding position while the installer secures the wiring duct with fasteners or rivets
- Foam adhesive also provides a means to reposition the wiring duct for precision and optimize final placement
- Two predetermined break lines, one for breaking off and removing 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

#### Dimensions





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

	- I LE Series							
Part Number	Qty	Price	Actual Size (WxH) inches [mm]	Dimension A inches [mm]	Dimension B inches [mm]	Length ft [m]	Drawing Link	
<u>T1E-1022GA-1</u>	1	\$;5,az:	1.00 x 2.36 [25 x 60]				PDF	
<u>T1E-1030GA-1</u>	1	\$;;5,a]:	1.00 x 3.15 [25 x 80]				PDF	
<u>T1E-1522GA-1</u>	1	\$;;5,a[:	1.57 x 2.36 [40 x 60]				PDF	
<u>T1E-1530GA-1</u>	1	\$;5,a_:	1.57 x 3.15 [40 x 80]				PDF	
<u>T1E-2222GA-1</u>	1	\$;5,a#:	2.36 x 2.36 [60 x 60]	0.16 [4.06]	0.24 [6.10]	6.56 [2]	PDF	
<u>T1E-2230GA-1</u>	1	\$;;5,a!:	2.36 x 3.15 [60 x 80]				PDF	
<u>T1E-2240GA-1</u>	1	\$;5,a?:	2.36 x 3.94 [60 x 100]				PDF	
<u>T1E-3030GA-1</u>	1	\$;;5,a,:	3.15 x 3.15 [80 x 80]				PDF	
<u>T1E-4040GA-1</u>	1	\$;5,b0:	3.94 x 3.94 [100 x 100]				PDF	

Cover included.

Adhesive-Backed Tape Specifications				
Carrier		Crosslinked polyethylene		
Material	Adhesive	Rubber based		
	Release Liner	Silicone coated paper		
Applicable Mounting Surfaces		Paper, cardboard, wood, glass, ceramics, metal, rubber, and many plastics		
Applicatio	n Temperature	65 to 100°F [18 to 38°C]		
Service Te	mperature	-20 to 150°F [-28 to 65°C]		
Thickness		0.031 in [0.787 mm]		
Foam	Density (typical)	4.5-5.5 lb/ft <sup>3</sup>		
ruain	Test Method	ASTM D3575		
Adhesive		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

### (B) **IBOCO**<sup>®</sup> 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

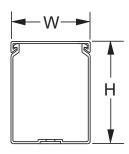


UL file E123572



Gray Rigid PVC Solid Wall - TSH Series							
Part Number	Qty	Price	Actual Size (WxH) inches [mm]	Length ft [m]	Drawing Link		
<u>TSH-0506G-1</u>	1	\$08ez:	0.60 x 0.71 [15 x 18]		PDF		
<u>TSH-1010G-1</u>	1	\$;08e[:	1.00 x 1.18 [25 x 30]	0.5010	PDF		
<u>TSH-1015G-1</u>	1	\$08e#:	1.00 x 1.57 [25 x 40]		PDF		
<u>TSH-1515G-1</u>	1	\$08e?:	1.57 x 1.57 [40 x 40]		PDF		
<u>TSH-2222G-1</u>	1	\$;08f0:	2.36 x 2.36 [60 x 60]	6.56 [2]	PDF		
<u>TSH-2230G-1</u>	1	\$;08f2:	2.36 x 3.15 [60 x 80]	-	PDF		
<u>TSH-3030G-1</u>	1	\$;08f4:	3.15 x 3.15 [80 x 80]		PDF		
<u>TSH-4040G-1</u>	1	\$;08f6:	3.94 x 3.94 [100 x 100]		PDF		

Dimensions



Cover included.

# (B) **IBOCO**<sup>®</sup> Wire Duct Wire Fill Capacity

#### Wire Fill Capacity

Т	1, T1E, T	SH Seri	es Wire F	ill Capaci	ty				
	Wire Gauge								
	12AWG	14AWG		16AWG	18AWG	22AWG			
Naminal Duat Oine	Insulation Thickness								
Nominal Duct Size (inches)	1/32	3/64	1/32	1/32	1/32	1/64			
	OD-0.158	0D-0.165	0D-0.139	OD-0.125	OD-0.113	OD-0.065			
	R	ecommende	d Maximum Nu	mber of Wires	per Wire Duct				
			(based on 50%	6 fill capacity)		1			
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			

# **IBOCO**<sup>®</sup> 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, halogenfree 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	\$;008k!:	0.50 x 0.75		39.37 [12]	DDE					
DN25AG-1	1	\$8k?:	[12.7 x 19.05]		1.64 [0.5]	PDF					
DN35AG	24	\$;008k,:	1.00 x 1.38	10 7 (500)	39.37 [12]	DDE					
DN35AG-1	1	\$-0810:	[25.4 x 35.05]	19.7 [500]	1.64 [0.5]	PDF					
DN45AG	14	\$-00812:	1.38 x 1.75		22.96 [7.0]	DDE					
DN45AG-1	1	\$-0813:	[35.05 x 44.45]		1.64 [0.5]	<u>PDF</u>					

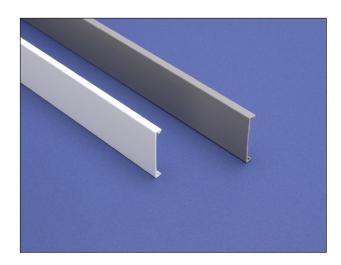
Address Designed	T 0	161 11
Adhesive-Backed	lape Sp	ecifications

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								
			Wire	Gauge				
	12AWG	14A	WG	16AWG	18AWG	22AWG		
Nominal Duct		Ins	ulation Thio	kness [inch	nes]			
Size	1/32	3/64	1/32	1/32	1/32	1/64		
(inches)	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		

## **BOCO**<sup>®</sup> Wire Duct – Covers



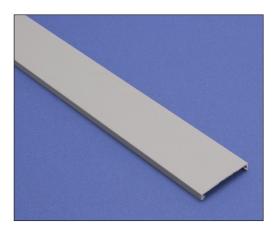
#### **Duct Cover**

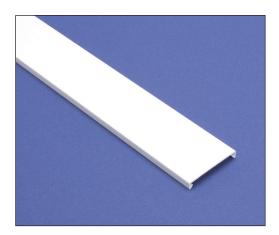
Our standard wire duct products are supplied complete with covers. These replacement covers are manufactured from the same rigid self-extinguishing PVC material.

UL Recognized file # E123572

	Duct Cover Specifications								
Part Number	Price	Description	Color	Qty	Actual Total Length ft [m]				
<u>COV-05G-1</u>	\$8no:	Cover for 0.5" wide duct	Gray	1					
<u>COV-10G-1</u>	\$8nq:	Cover for 1.0" wide duct	Gray	1					
<u>COV-10W-1</u>	\$-8le:	Cover for 1.0" wide duct	White	1					
<u>COV-15G-1</u>	\$;8nt:	Cover for 1.5" wide duct	Gray	1					
<u>COV-15W-1</u>	\$-8lg:	Cover for 1.5" wide duct	White	1					
<u>COV-22G-1</u>	\$8nv:	Cover for 2.25" wide duct	Gray	1					
<u>COV-22W-1</u>	\$8li:	Cover for 2.25" wide duct	White	1	6.56 [2]				
<u>COV-30G-1</u>	\$08ny:	Cover for 3.0" wide duct	Gray	1					
<u>COV-30W-1</u>	\$-08lk:	Cover for 3.0" wide duct	White	1					
COV-40G-1	\$;08n]:	Cover for 4.0" wide duct	Gray	1					
<u>COV-40W-1</u>	\$-08ln:	Cover for 4.0" wide duct	White	1					
<u>COV-60G-1</u>	\$08n_:	Cover for 6.0" wide duct	Gray	1					
<u>COV-60W-1</u>	\$-08lp:	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.



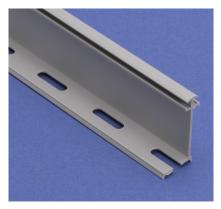


#### For the latest prices, please check AutomationDirect.com.

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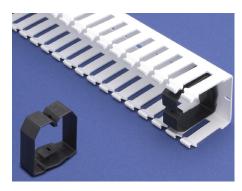
#### **Duct Separators**

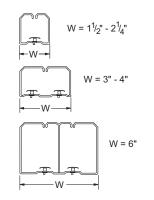
Duct separators allow the physical separation of circuits within a single piece of duct. The various mounting arrangements allow alternate compartmentalization of duct and differing ratios of usable sections.



#### 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.



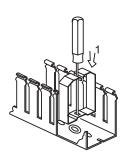


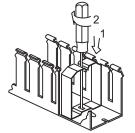
Duct Separators								
Part Number	Price	Description	Color	Qty	Length ft [m]	Drawing Link		
<u>SEP-15E-1</u>	\$5se:	Separator for 1.5" high duct	Gray	1		PDF		
<u>SEP-22E-1</u>	\$05sg:	Separator for 2.25" high duct	Gray	1	6.56 [2]	PDF		
<u>SEP-30E-1</u>	\$-05si:	Separator for 3.0" high duct	Gray	1		<u>PDF</u>		

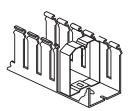


SEP-E Mounting Detail Order <u>ZP1</u> mount separately

Wire Retainers							
Part Number	Price	Description	Color	Qty			
<u>CL-1515</u>	\$05u9:	Wire retainer fastener for 1.5 x 1.5" duct		40			
CL-1522	\$05ua:	Wire retainer fastener for 1.5 x 2.25" duct		40			
CL-1530	\$05ub:	Wire retainer fastener for 1.5 x 3.0" duct		20			
CL-2215	\$05uc:	Wire retainer fastener for 2.25 x 1.5" duct		40			
CL-2222	\$05ud:	Wire retainer fastener for 2.25 x 2.25" duct		20			
CL-2230	\$05ue:	Wire retainer fastener for 2.25 x 3.0" duct		20			
CL-2240	\$;05uf:	Wire retainer fastener for 2.25 x 4.0" duct		20			
CL-3022	\$05ug:	Wire retainer fastener for 3.0 x 2.25" duct	Black	10			
CL-3030	\$05uh:	Wire retainer fastener for 3.0 x 3.0" duct		10			
<u>CL-3040</u>	\$-05ui:	Wire retainer fastener for 3.0 x 4.0" duct		10			
CL-4022	\$05uk:	Wire retainer fastener for 4.0 x 2.25" duct		10			
CL-4030	\$-05ul:	Wire retainer fastener for 4.0 x 3.0" duct		10			
CL-4040	\$05un:	Wire retainer fastener for 4.0 x 4.0" duct		5			
<u>CL-6040</u>	\$05uo:	Wire retainer fastener for 6.0 x 4.0" duct		5			



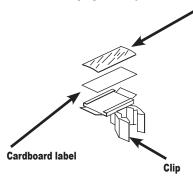




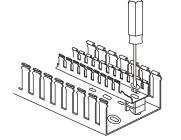
### **BOCO**<sup>•</sup> Wire Duct – Accessories

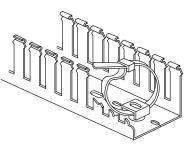
Duct Marking Tags						
Part Number	Price	Description	Qty			
<u>DM1</u>	\$;0ecf:	Single-width white cardboard identification label for wire duct. Supplied with black plastic mounting clip and transparent plastic cover slide	50			

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



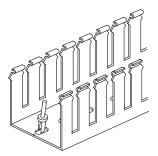
Mounting Devices						
Part Number	Price	Description	Qty			
<u>ZP1</u>	\$;06pf:	Round, white polyamide 'button' used to mount components and separators inside duct.	100			
<u>ZP2</u>	\$;04[_:	Square white polyamide cable tie mount used to tighten a wire bundle inside duct.	50			





Wire Duct Rivets and Rivet Tools							
Part Number	Price	Description	Qty				
<u>R4*</u>	\$0ek9:	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>	\$;04,v:	Red polyamide rivet tool used to install R4 rivets.	1				
<u>R6*</u>	\$0eka:	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>	\$;04,x:	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.





www.automationdirect.com

#### **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 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.



#### **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.



# BOCO Wire Duct – Material Specifications

	Material Specifications									
Materials Technical Characteristics	Test Standard	Unit of Measure	Rigid PVC	Polypropylene	PVC Molded Components	Polyamide 6	Polyethylene	Flame Retardant		
								Polyethylene		
Chemical/Physical Properties			1							
Specific Gravity	ASTM D792	g/cm <sup>3</sup>	1.55	1.01	1.32	1.14	0.92	0.97		
H <sub>2</sub> 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			1		1		1	1		
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 <sup>-5</sup>	8x10⁻⁵	8-10x10 <sup>-5</sup>	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 <sup>13</sup>	10 <sup>13</sup>	10 <sup>13</sup>	5x10 <sup>11</sup>	10 <sup>13</sup>	10 <sup>13</sup>		
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		

#### 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]

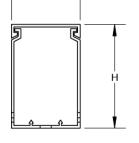




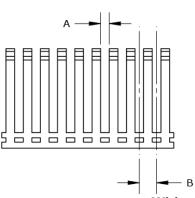
		Ri	gid PV	C - Open Slot	- Narro	ow Fing	er Wal	I - WD	N Series		
Part Number	Price	Drawing Link	Color	Part Number	Price	Drawing Link	Color	Qty	Actual Size [W x H] inches [mm]	Dimension A inches [mm]	Dimension B inches [mm]
WDN-1015G-1	\$;5[aa:	PDF	Gray	<u>WDN-1015W-1</u>	\$-67pj:	PDF	White	1	1.00 x 1.57 [25 x 40]		
WDN-1022G-1	\$;5[ag:	PDF	Gray	WDN-1022W-1	\$67pk:	PDF	White	1	1.00 x 2.36 [25 x 60]	]	
WDN-1030G-1	\$;5[ah:	PDF	Gray	WDN-1030W-1	\$-67pl:	PDF	White	1	1.00 x 3.15 [25 x 80]		
WDN-1515G-1	\$;5[ao:	PDF	Gray	WDN-1515W-1	\$67pn:	PDF	White	1	1.57 x 1.57 [40 x 40]		
<u>WDN-1522G-1</u>	\$;5[ap:	PDF	Gray	<u>WDN-1522W-1</u>	\$67po:	PDF	White	1	1.57 x 2.36 [40 x 60]		
WDN-1530G-1	\$;5[a5:	PDF	Gray	WDN-1530W-1	\$67pp:	PDF	White	1	1.57 x 3.15 [40 x 80]		
WDN-1540G-1	\$;5[a6:	PDF	Gray	WDN-1540W-1	\$67pq:	PDF	White	1	1.57 x 3.94 [40 x 100]		
WDN-2215G-1	\$;5[a7:	PDF	Gray	<u>WDN-2215W-1</u>	\$67ps:	PDF	White	1	2.36 x 1.57 [60 x 40]		
WDN-2222G-1	\$;5[a8:	PDF	Gray	<u>WDN-2222W-1</u>	\$;67pt:	PDF	White	1	2.36 x 2.36 [60 x 60]	0.46 (4)	0.04.[6]
WDN-2230G-1	\$;5[a9:	PDF	Gray	WDN-2230W-1	\$67pu:	PDF	White	1	2.36 x 3.15 [60 x 80]	0.16 [4]	0.24 [6]
WDN-2240G-1	\$;5[ab:	PDF	Gray	WDN-2240W-1	\$67pv:	PDF	White	1	2.36 x 3.94 [60 x 100]		
WDN-3015G-1	\$;5[ac:	PDF	Gray	WDN-3015W-1	\$67px:	PDF	White	1	3.15 x 1.57 [80 x 40]		
WDN-3022G-1	\$;5[ad:	PDF	Gray	WDN-3022W-1	\$67py:	PDF	White	1	3.15 x 2.36 [80 x 60]		
WDN-3030G-1	\$;5[ae:	PDF	Gray	WDN-3030W-1	\$67pz:	PDF	White	1	3.15 x 3.15 [80 x 80]		
WDN-3040G-1	\$;;5[af:	PDF	Gray	WDN-3040W-1	\$;67p]:	PDF	White	1	3.15 x 3.94 [80 x 100]	1	
WDN-4022G-1	\$;-5[aj:	PDF	Gray	WDN-4022W-1	\$;67p[:	PDF	White	1	3.94 x 2.36 [100 x 60]	]	
WDN-4030G-1	\$;5[ak:	PDF	Gray	WDN-4030W-1	\$67p_:	PDF	White	1	3.94 x 3.15 [100 x 80]		
WDN-4040G-1	\$;-5[al:	PDF	Gray	<u>WDN-4040W-1</u>	\$67p#:	PDF	White	1	3.94 x 3.94 [100 x 100]		

Cover included with each wire duct.

#### Dimensions



w



#### Wire Fill Capacity

		R	ligid	PVC -	Ope	n Slo	ot - N	arrov	w Fin	ger \	Wall	- WD	N Se	ries					
Application							E	lectrica	1								Commu	nication	,
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"	<i>0.12"</i>	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]				Reco	mmende	ed Maxii	num Nu	ımber o	f Wires,	Cables	per Wii	e Duct (	(based (	on 50%	fill capa	acity)			
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.

#### 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]

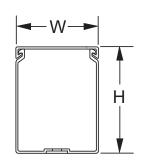


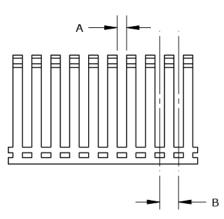


		R	igid P	VC - Open Slo	ot - Wi	de Fing	er Wall	- WD	W Series		
Part Number	Price	Drawing Link	Color	Part Number	Price	Drawing Link	Color	Qty	Actual Size [W x H] inches [mm]	Dimension A inches [mm]	Dimension B inches [mm]
WDW-1522G-1	\$;5,a1:	PDF	Gray	WDW-1522W-1	\$;67p!:	PDF	White	1	1.57 x 2.36 [40 x 60]		
<u>WDW-1530G-1</u>	\$;5,a2:	PDF	Gray	WDW-1530W-1	\$67p?:	PDF	White	1	1.57 x 3.15 [40 x 80]		
<u>WDW-1540G-1</u>	\$;5,a3:	PDF	Gray	<u>WDW-1540W-1</u>	\$;67p,:	PDF	White	1	1.57 x 3.94 [40 x 100]		
<u>WDW-2222G-1</u>	\$;5,a4:	PDF	Gray	<u>WDW-2222W-1</u>	\$67q0:	PDF	White	1	2.36 x 2.36 [60 x 60]		
WDW-2230G-1	\$;5,a5:	PDF	Gray	WDW-2230W-1	\$67q1:	PDF	White	1	2.36 x 3.15 [60 x 80]		
WDW-2240G-1	\$;5,a6:	PDF	Gray	WDW-2240W-1	\$67q2:	PDF	White	1	2.36 x 3.94 [60 x 100]	0.045 (0.0)	0 707 100 01
WDW-3022G-1	\$;5,a7:	PDF	Gray	WDW-3022W-1	\$67q3:	PDF	White	1	3.15 x 2.36 [80 x 60]	0.315 [8.0]	0.787 [20.0]
WDW-3030G-1	\$;5,a8:	PDF	Gray	WDW-3030W-1	\$67q4:	PDF	White	1	3.15 x 3.15 [80 x 80]		
WDW-3040G-1	\$;5,a9:	PDF	Gray	WDW-3040W-1	\$67q5:	PDF	White	1	3.15 x 3.94 [80 x 100]		
WDW-4030G-1	\$;5,aa:	PDF	Gray	WDW-4030W-1	\$67q6:	PDF	White	1	3.94 x 3.15 [100 x 80]	1	
WDW-4040G-1	\$;5,ab:	PDF	Gray	WDW-4040W-1	\$67q7:	PDF	White	1	3.94 x 3.94 [100 x 100]	1	
<u>WDW-6040G-1</u>	\$;;5,t0:	PDF	Gray	<u>WDW-6040W-1</u>	\$67q8:	PDF	White	1	5.91 x 3.94 [150 x 100]	1	

Cover included with each wire duct.

#### Dimensions





#### Wire Fill Capacity

		F	Rigid	PVC	- Op	en Sl	ot - \	Wide	Fing	er W	all -	WDW	/ Ser	'ies					
Application							E	ectrica	nl								Commu	nication	1
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	мтw	MTW	THHN	MTW	MTW	TFFN	MTW	MTW	TFFN	MTW	MTW	мтw	Cat. 6A	Cat. 6	Cat. 5E	3.0 mm
Duct Size Inches [mm]				Reco	mmend	ed Maxi	mum Ni	umber o	of Wires	Cables/	per Wii	re Duct	(based	on 50%	fill capa	acity)			
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

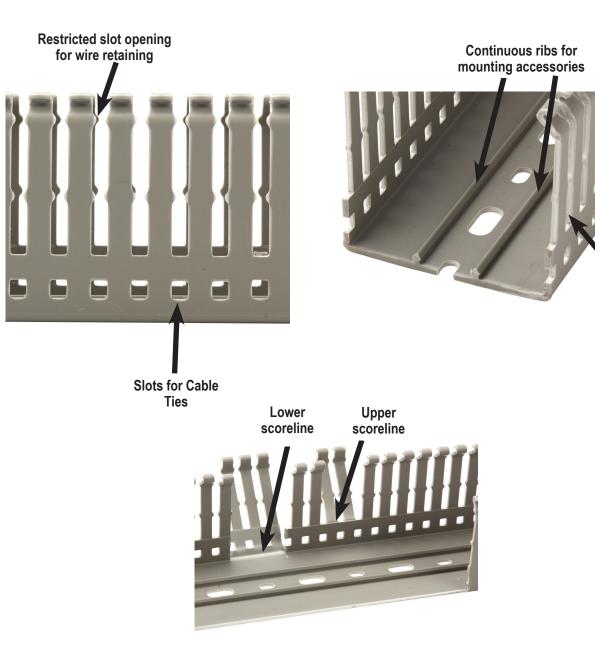
Cover included with each wire duct.

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

Burr-free edges



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



# **Achie**∀e<sup>™</sup> 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 <u>WD-CTCLAMP</u> snaps onto either of the continuous ribs and can be easily repositioned once installed.

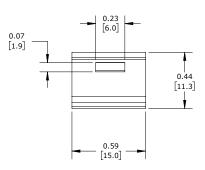
#### **Features**

- 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	\$;5[an:	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		
<u>WD-RET-1515</u>	\$;-5[ai:	AchieVe wire retainer for use with AchieVe wire duct 1.5 x 1.5 in or larger.	Black	10	PDF		
WD-RET-1522	\$;5[aq:	AchieVe wire retainer for use with AchieVe wire duct 1.5 x 2.25 in or larger.	Black	10	PDF		
WD-RET-2230	\$;5[as:	AchieVe wire retainer for use with AchieVe wire duct 2.25 x 3.0 in or larger.	Black	10	PDF		







CE

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# **Achie**∀e<sup>™</sup> Wire Duct - Accessories

CE

#### Wire Separator

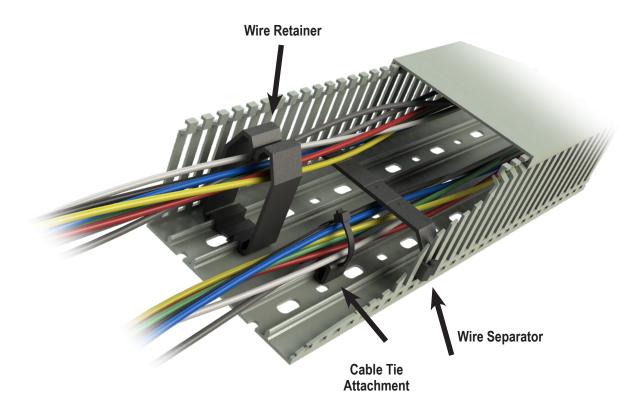
#### **Overview**

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	<u>\$;;5[at:</u>	AchieVe wire separator for use with AchieVe wire duct 1.5" width or larger.	Black	10	<u>PDF</u>				



#### 1-800-633-0405 Wire Duct - Accessories

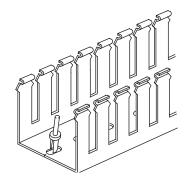
#### **Rivets and Rivet Tools**

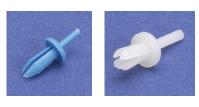
Wire duct rivets install quickly and easily with the companion rivet tool, offering good temperature resistance and excellent mechanical properties. They can be used to install all types of wire duct with standard mounting holes.

	Wire Duct Rivets and Rivet Tools									
Part Number	Price	Description	Qty							
<u>R4*</u>	\$0ek9:	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>	\$;04,v:	Red polyamide rivet tool used to install R4 rivets.	1							
<u>R6*</u>	\$0eka:	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>	\$;04,x:	Yellow polyamide rivet tool used to install R6 rivets.	1							

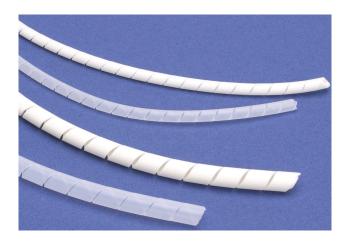


\* R4 drill hole size - 5/32" (4mm), R6 drill hole size - 7/32" [5.5 mm]

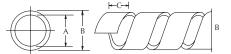




### BIBOCO<sup>®</sup> Spiral Wrap / Braided Sleeve



#### Dimensions

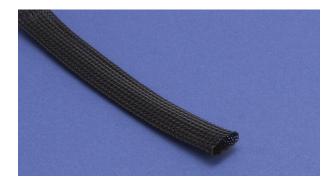


Part Number				s in	Wire	Footpor
Polyethylene	Flame- Retardant Polyethylene	A	В	C	Bundle Size in Inches	Feet per Carton
<u>P-1</u>	<u>PA1</u>	0.06	0.12	0.20	1/16 to 1/2	160
<u>P-2</u>	<u>PA2</u>	0.16	0.24	0.31	1/4 to 2	80
<u>P-3</u>	<u>PA3</u>	0.31	0.39	0.47	3/8 to 3	80
<u>P-4</u>	<u>PA4</u>	0.35	0.47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

S	<b>SPIRA</b>	LITE Spiral Wrap Select	tion Ch	art
Part Number	Price	Description	Color	Length
<u>P-1</u>	\$-0814:	0.12" nominal o.d. Polyethylene spiral wrap used for wire bundles from 1/16 to 1/2 inch diameter.	Natural	160 ft./pack
<u>PA1</u>	\$-0818:	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
<u>P-2</u>	\$-0815:	0.25" nominal o.d. Polyethylene spiral wrap used for wire bundles from 1/4 to 2 inch diameter.	Natural	80 ft./pack
<u>PA2</u>	\$-0819:	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
<u>P-3</u>	\$-0816:	0.37" nominal o.d. Polyethylene spiral wrap used for wire bundles from 3/8 to 3 inch diameter.	Natural	80 ft./pack
<u>PA3</u>	\$-08la:	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
<u>P-4</u>	\$-0817:	0.5" nominal o.d. Polyethylene spiral wrap used for wire bundles from 1/2 to 4 inch diameter.	Natural	65 ft./pack
<u>PA4</u>	\$-08lb:	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 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**

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.

	Br	aided Sleeve Selection Cha	art	
Part Number	Price	Description	Color	Length
<u>TY-5</u>	\$008kz:	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
<u>TY-10</u>	\$008kv:	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
<u>TY-20</u>	\$008kx:	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
<u>TY-30</u>	\$008ky:	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
<u>TY-50</u>	\$;008k]:	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

#### murrplastik<sup>®</sup> Simply Smart Systems

### **Flex Split Tubing**



#### 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 dualoverlapping 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 cablesSplit 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]



	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						
<u>831000</u>	\$;;5!]_:	1	M12/P09	10 [32.8]	75 (0.05)			<u>PDF</u>						
<u>831002</u>	\$;;05!]#:	1	M12/P09	25 [82]	75 [2.95]			<u>PDF</u>						
<u>831004</u>	\$;;;05!]!:	1	M16/P11	10 [32.8]	400 [2 04]			<u>PDF</u>						
<u>831006</u>	\$;;05!]?:	1	M16/P11	25 [82]	100 [3.94]			PDF						
<u>831008</u>	\$;;;05!],:	1	M20/P16	10 [32.8]	400 (4 70)		Modified polyamide 6	<u>PDF</u>						
<u>831010</u>	\$;;05!]x:	1	M20/P16	25 [82]	120 [4.72]	Disci		<u>PDF</u>						
<u>832500</u>	\$;;05!]y:	1	M25/P21	10 [32.8]	470 (0 00)	Black		PDF						
<u>832502</u>	\$;;05!]z:	1	M25/P21	25 [82]	170 [6.69]			PDF						
<u>832504</u>	\$;;;05!]]:	1	M32/P29	10 [32.8]	400 [7 00]			PDF						
<u>832506</u>	\$;;;05!][:	1	M32/P29	25 [82]	180 [7.09]			PDF						
<u>832508</u>	\$;;05![0:	1	M40/P36	10 [32.8]	000 17 071			PDF						
<u>832510</u>	\$;;05![1:	1	M40/P36	25 [82]	200 [7.87]			PDF						

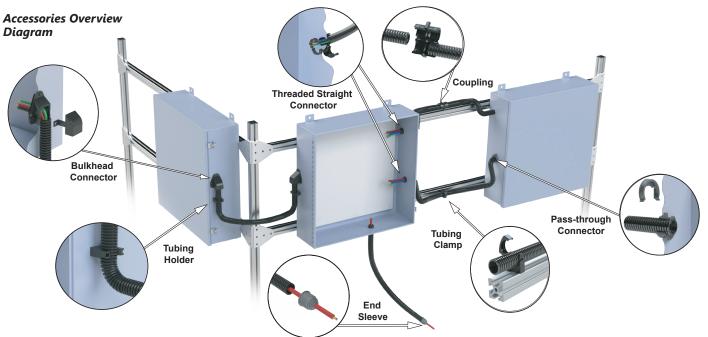


# murrplastik Simply Smart Systems Flex Split Tubing

#### **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 Aco	essories	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 <u>831000</u> , <u>831002</u>	-	-	-	_	AT M20/P09 <u>836401</u>	UH M12/P09 <u>836121</u>	UHE M12/P09 <u>836501</u>	ET M12/P09 <u>836601</u>	
EWT-PA M16/P11	_	SVT M16x1.5/P11 <u>836010</u>	GMT M16x1.5 <u>836101</u>	KFW/D - M16/P11	AT M25/P11	UH M16/P11	UHE M16/P11	ET M16/P11	
<u>831004, 831006</u>		SVT M20x1.5/P11 <u>836012</u>	GMT M20x1.5 <u>836103</u>	<u>836301</u>	<u>836403</u>	<u>836123</u>	<u>836503</u>	<u>836603</u>	
EWT-PA M20/P16		SVT M20x1.5/P16 <u>836014</u>	GMT M20x1.5 <u>836103</u>	KFW/D - M20/P16	AT M32/P16	UH M20/P16	UHE M20/P16	ET M20/P16	
<u>831008, 831010</u>	_	SVT M25x1.5/P16 <u>836016</u>	GMT M25x1.5 <u>836105</u>	836303	836405	836125	836505	836605	
EWT-PA M25/P21	SVG M25/P21	SVT M25x1.5/P21 <u>836018</u>	GMT M25x1.5 <u>836105</u>	KFW/D - M25/P21	AT M40/P21	UH M25/P21	UHE M25/P21	ET M25/P21	KE <u>837001</u>
<u>832500, 832502</u>	<u>837010</u>	SVT M32x1.5/P21 <u>836020</u>	GMT M32x1.5 <u>836107</u>	836305	836407	836127	836507	836607	
EWT-PA M32/P29	SVG M32/P29	SVT M32x1.5/P29 <u>836022</u>	GMT M32x1.5 <u>836107</u>	KFW/D	AT	UH	UHE	ET	
<u>832504, 832506</u>	<u>837012</u>	SVT M40x1.5/P29 <u>836026</u>	GMT M40x1.5 <u>836109</u>	- M32/P29 <u>836307</u>	M50/P29 <u>836409</u>	M32/P29 <u>836129</u>	M32/P29 <u>836509</u>	M32/P29 <u>836609</u>	
EWT-PA M40/P36	SVG M40/P36	SVT M32x1.5/P36 <u>836024</u>	GMT M32x1.5 <u>836107</u>	KFD/W - M40/P36	AT M50/P36	UH M40/P36	UHE M40/P36	ET M40/P36	
EWT-PA M40/P36 S <sup>3</sup> 832508, <u>832510</u>	<u>837014</u>	SVT M40x1.5/P36 <u>836028</u>	GMT M40x1.5 <u>836109</u>	836309	M50/P36 <u>836411</u>	M40/P36 <u>836131</u>	836511 836511	M40/P36 <u>836611</u>	





#### **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.

### **Flex Split Tubing**



#### **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]



For the latest prices, please check AutomationDirect.com.

<sup>&</sup>lt;u>837010</u>

	Couplings - SVG Series Selection Chart													
Part Number	Price Qua	Quantity	Size	Works With EWT- PA Series Tubing	(100 (100))		Tightening	Color	Material	Drawing				
		,		Size	Size	Length mm [in]	Torque			Links				
<u>837010</u>	\$;;5![2:	5	M25/P21	M25/P21		45 [1.77]				PDF				
<u>837012</u>	\$;;5![3:	5	M32/P29	M32/P29	M5	50 [1.97]	0.4 N•m 3.54 lb•in	Black	Modified polyamide 6	PDF				
<u>837014</u>	\$;;5![4:	5	M40/P36	M40/P36		60 [2.36]				PDF				

Note: Mounting hardware not provided.

#### SVG Series Opening Diagram





### murrplastik Flex Split Tubing



#### **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.

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#### **Agency Approval**

• cURus, File E148958



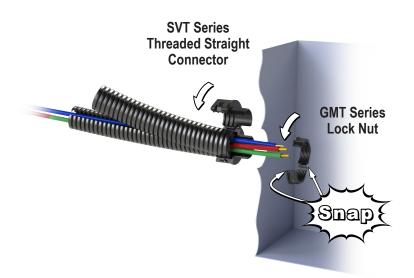
#### Features

- 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]



<u>836010</u>

		-	Threaded	Straight	t Connector	s - SVT Sei	ries Selectio	on 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
<u>836010</u>	\$;;5![5:	5	M16x1.5/P11	M16x1.5	GMT M16x1.5 <u>836101</u>	M16/P11	17.5 [0.69]			<u>PDF</u>
<u>836012</u>	\$;;5![6:	5	M20x1.5/P11	M001 F	GMT		00 10 071			PDF
<u>836014</u>	\$;;5![7:	5	M20x1.5/P16	M20x1.5	M20x1.5 836103		22 [0.87]		-	PDF
<u>836016</u>	\$;;5![8:	5	M25x1.5/P16		GMT M20/P16		07 [4 00]			PDF
<u>836018</u>	\$;;5![9:	5	M25x1.5/P21	M25x1.5	M25x1.5 <u>836105</u>	M05/D04	27 [1.06]	Black	Modified polyamide 6	PDF
<u>836020</u>	\$;;5![a:	5	M32x1.5/P21		ONT	M25/P21				PDF
<u>836022</u>	\$;;5![b:	5	M32x1.5/P29	M32x1.5	GMT M32x1.5	M32/P29	35 [1.38]			PDF
<u>836024</u>	\$;;5![c:	5	M32x1.5/P36		<u>836107</u>	M40/P36				PDF
<u>836026</u>	\$;;5![d:	5	M40x1.5/P29	M40.4 F	GMT	M32/P29	42 [4 00]			<u>PDF</u>
<u>836028</u>	\$;;5![e:	5	M40x1.5/P36	M40x1.5	M40x1.5 <u>836109</u>	M40/P36	43 [1.69]			<u>PDF</u>



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

### murrplastik Flex Split Tubing



#### **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.

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#### **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]



For the latest prices, please check AutomationDirect.com.

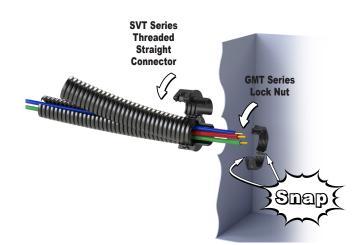
836101

			Split	Lock Nuts - G	MT Series Sel	ection Char	t								
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>	\$;;5![g:	5	M16x1.5	M16x1.5	SVT M16x1.5/P11 <u>836010</u>	M16/P11			<u>PDF</u>						
926402	¢Ellb.	5	M20x1.5	M20x1.5	SVT M20x1.5/P11 <u>836012</u>	M16/P11			DDE						
<u>836103</u>	\$;;5![h:	5	WIZUX I.O	IVI20X1.5	SVT M20x1.5/P16 <u>836014</u>	M20/P16			<u>PDF</u>						
020405	<b>ф., с</b> и:,	5	M25x1.5 M25x1.			DDE									
<u>836105</u>	\$;;-5![i:	5	M25X1.5	M25x1.5	SVT M25x1.5/P21 <u>836018</u>	M25/P21	- Black	Modified polyamide 6	<u>PDF</u>						
					SVT M32x1.5/P21 <u>836020</u>	M25/P21	Black								
<u>836107</u>	\$;;-5![j:	5	M32x1.5	M32x1.5	M32x1.5	M32x1.5	M32x1.5	M32x1.5	M32x1.5	M32x1.5	SVT M32x1.5/P29 <u>836022</u>	M32/P29			<u>PDF</u>
					SVT M32x1.5/P36 <u>836024</u>	M40/P36									
000400	¢	-	M40-4 F		SVT M40x1.5/P29 <u>836026</u>	M32/P29			DDE						
<u>836109</u>	\$;;5![k:	5	M40x1.5	M40x1.5	SVT M40x1.5/P36 <u>836028</u>	M40/P36			<u>PDF</u>						

**GMT Series Opening Diagram** 

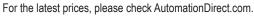


**GMT Series Installation Diagram** 



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

### **Flex Split Tubing**





**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.

murrplastik<sup>®</sup> Simply Smart Systems

#### **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]



	Bulkhead Connectors - KFW/D Series Selection Chart														
Part Number	Price	Quantity	Size	Works With EWT-PA Series	Head Ca	n Socket ap Screw 4762	Tightening	Mounting Hole Cut-out	Color	Material	Drawing				
				Tubing Size	Size	Length mm [in]	Torque	mm [in]			Links				
<u>836301</u>	\$;;;5![t:	2	M16/P11	M16/P11	M4	10 [0.39]		22.5 x 27 [0.89 x 1.06]			PDF				
<u>836303</u>	\$;;5![u:	2	M20/P16	M20/P16	M4	10 [0.39]		22.5 x 27 [0.89 x 1.06]		Connector: Modified	PDF				
<u>836305</u>	\$;;5![v:	2	M25/P21	M25/P21	M6	12 [0.47]	0.4 N•m 3.54 lb•in	30 x 42.5 [1.18 x 1.67]	Black	polyamide 6	PDF				
<u>836307</u>	\$;;5![x:	2	M32/P29	M32/P29	M6	14 [0.55]	1	40 x 68 [1.57 x 2.68]		Gasket (included): Neoprene (CR)	PDF				
<u>836309</u>	\$;;5![y:	2	M40/P36	M40/P36	M6	18 [0.71]	1	48.8 x 74.5 [1.92 x 2.93]	1		PDF				

Note: Mounting hardware not provided.



### murrplastik Flex Split Tubing



**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.

Simply Smart Systems

#### 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]



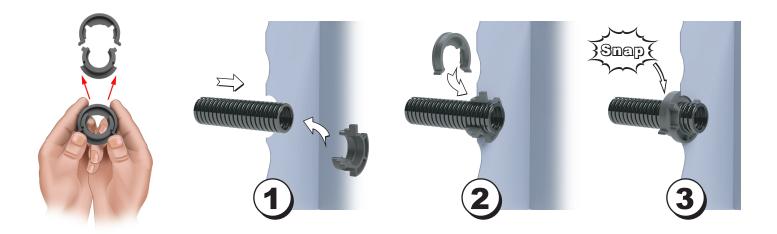
For the latest prices, please check AutomationDirect.com.

836401

	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					
<u>836401</u>	\$;;5![z:	5	M20/P09	M12/P09		20.50 [0.81]			PDF					
<u>836403</u>	\$;;;5![]:	5	M25/P11	M16/P11		25.50 [1.00]	-	Modified	<u>PDF</u>					
<u>836405</u>	\$;;;5![[:	5	M32/P16	M20/P16	1.0 - 1.5	32.50 [1.28]			PDF					
<u>836407</u>	\$;;5![_:	5	M40/P21	M25/P21	1 [0.04 - 0.06] 40.50 [1.59] 9 50.50 [1.99]	.04 - 0.06] 40.50	Black	polyamide 6	PDF					
<u>836409</u>	\$;;5![#:	5	M50/P29	M32/P29		50.50			PDF					
<u>836411</u>	\$;;;5![!:	5	M50/P36	M40/P36					PDF					

#### AT Series Release Diagram

#### AT Series Installation Diagram





### **Flex Split Tubing**



#### **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

#### c SN us

#### 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]



For the latest prices, please check AutomationDirect.com.

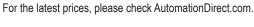
<u>836121</u>

	Tubing Holders - UH Series Selection Chart													
Dent Number	Dation	Quantita	0 in a	Works With EWT-		t Head Cap Screw 4762)	Tightening	Oslar	Matarial	Drawing				
Part Number	Price	Quantity	Size	PA Series Tubing Size	Size	Length mm [in]	Torque	Color	Material	Link				
<u>836121</u>	\$;;-5![I:	5	M12/P09	M12/P09						<u>PDF</u>				
<u>836123</u>	\$;;5![n:	5	M16/P11	M16/P11	M5	10 [0.39]	0.8 N•m 7.08 lb•in		Modified polyamide 6	<u>PDF</u>				
<u>836125</u>	\$;;5![o:	5	M20/P16	M20/P16						<u>PDF</u>				
<u>836127</u>	\$;;5![p:	5	M25/P21	M25/P21				Black		PDF				
<u>836129</u>	\$;;5![q:	5	M32/P29	M32/P29	M6	12 [0.47]	1.8 N•m 15.93 lb•in			<u>PDF</u>				
<u>836131</u>	\$;;5![s:	5	M40/P36	M40/P36						<u>PDF</u>				

Note: Mounting hardware not provided.



### murrplastik Flex Split Tubing





#### **Tubing Clamps - UHE Series**

Simply Smart Systems

#### 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

#### c**FL**us

#### 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°]



<u>836501</u>

	Tubing Clamps - UHE Series Selection Chart													
	D.i.e.	0	0.	Works With		Hexagon Socket Head Cap Screw (ISO 4762)		Outer	88-1-1-1	Drawing				
Part Number	Price	Quantity	Size	EWT-PA Series Tubing Size	Size	Length mm [in]	Tightening Torque	Color	Material	Links				
<u>836501</u>	\$;;5![?:	5	M12/P09	M12/P09	ME	40 [0 20]	1N•m			PDF				
<u>836503</u>	\$;;;5![,:	5	M16/P11	M16/P11	M5	10 [0.39]	8.85 lb•in	Black	Modified polyamide 6	PDF				
<u>836505</u>	\$;5!_0:	5	M20/P16	M20/P16			2N•m			PDF				
<u>836507</u>	\$;5!_1:	5	M25/P21	M25/P21		40 10 171				PDF				
<u>836509</u>	\$;5!_2:	5	M32/P29	M32/P29	M6	12 [0.47]	17.7 lb•in			PDF				
<u>836511</u>	\$;5!_3:	5	M40/P36	M40/P36						PDF				

Note: Mounting hardware not provided.

#### **UHE Series Opening Diagram**





Shown on Sureframe T-slotted rail, sold separately.

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#### **End Sleeves - ET Series**

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#### **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]



For the latest prices, please check AutomationDirect.com.

<u>836601</u>

	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>	\$;5!_4:	5	M12/P09	M12/P09			<u>PDF</u>							
<u>836603</u>	\$;5!_5:	5	M16/P11	M16/P11			<u>PDF</u>							
<u>836605</u>	\$;5!_6:	5	M20/P16	M20/P16	Disala	Thermoplastic	<u>PDF</u>							
<u>836607</u>	\$;5!_7:	5	M25/P21	M25/P21	Black	elastomer (TPE)	<u>PDF</u>							
<u>836609</u>	\$;5!_8:	5	M32/P29	M32/P29			<u>PDF</u>							
<u>836611</u>	\$;5!_9:	5	M40/P36	M40/P36			PDF							

#### 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]

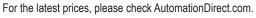


<u>837001</u>

		Wire I	nsertion T	īool - KE Se	eries			
Part Number	Price	Quantity	Max. Ø Cable mm [in] Works With EWT-PA Series Col Tubing Size			Color Material		
<u>837001</u>	\$;5!_a:	1	22 [0.87]	All	Red	Modified polyamid 6	NA	



### **Robot Dress Kits**





#### **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



<u>573526</u>

Features
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- 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]

k

• Solid tubing is rated for 270lbs crush resistance [IEC 61386]

	Robot Dress Kits - FHS Series								
Part Number	Price	Description							
<u>573525</u>	\$06210:	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.	<u>PDF</u>						
<u>573526</u>	\$0621p:	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						





murrplastik 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.

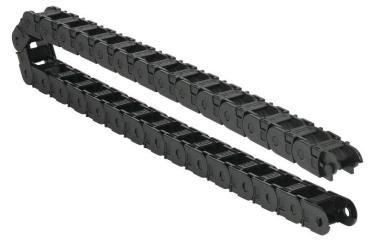
Separators may be added at any time to enable segregation of cables/hoses within the same chain.

#### 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

For the latest prices, please check AutomationDirect.com.



### 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 Equa	Cables with Equal Diameters				Cables with Different Diameters			
Add all dian	Add all diameters plus separator(s) width							
Total Cable Width = OD	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 C	Inside Width = Total Cable Width x 1.2				Inside Width = Total Width x 1.2			
Cable / Nose Drag Chain MP18 Series								
Part Number	Inside Width (B)		Bend Radius (C)		Opening			
	mm	in	mm	in	Side			
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			

2.756

78

3.071

OUT



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.

70 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

CDC-0.7X2.8R3.1T

Bend Radius (C) > minimum cable bend radius

Cable / Hose Drag Chain MP18 Series							
Part Number	Inside W	lidth (B)	Bend Ra	Opening			
rait Nullivel	mm	in	mm	in	Side		
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							

Full part number selection chart available later in this section.



For the latest prices, please check AutomationDirect.com.



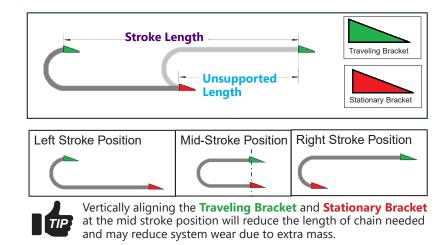
### Cable / Hose Drag Chain MP18 Series

#### 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.

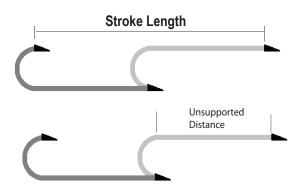


#### Step 4 Max Stroke Length: Unsupported

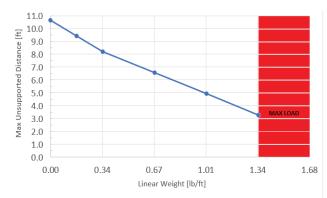
- Determine cable fill linear weight
  - Use cable spec sheets to add linear weights
  - Use table below for estimating linear weights
  - Verify the application stroke length does not exceed the MAX stroke length corresponding to the application weight/load conditions

Ca	ble Drag	Chain	Max	Stroke	Length		
			MAX Stroke Length (ft)				
Cable Type	Outer Diameter (inch)	Linear Weight (Ibs/ft)	Single Fill	Double Fill	Triple Fill	Quad Fill	
Ethormot	< 0.25	< 0.034	10.4	10.2	9.9	9.7	
Ethernet	0.25 - 0.32	< 0.053	10.3	9.9	9.5	9.1	
	< 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	
Control/VFD Cable	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.

For the latest prices, please check AutomationDirect.com.

Openina

Side

OUT

IN

OUT

IN

OUT

in

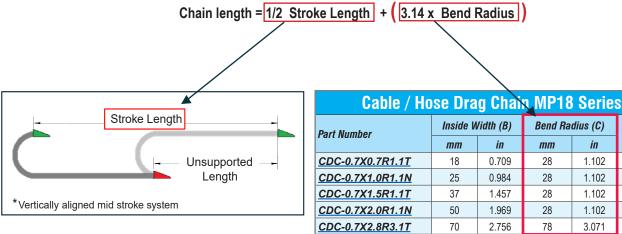


### Cable / Hose Drag Chain **MP18 Series**

Full part number selection chart available later in this section.

#### Step 5 Chain Length: Unsupported

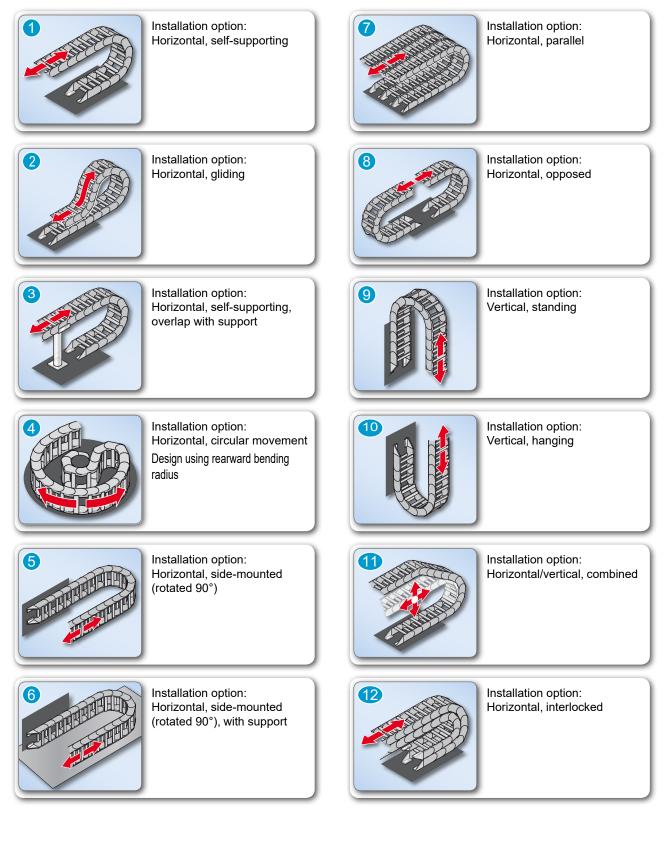
• Each drag chain part number is 3.2 ft [1m] in length (30 links) and additional links may be added to extend the chain.





murrplastik<sup>®</sup> Cable / Hose Drag Chain **MP18 Series** 

#### Installation Options For Cable / Hose Drag Chains



For the latest prices, please check AutomationDirect.com.

Cable / Hose Drag Chain murrplastik Simply Smart Systems **MP18** Series 0 a max. here Ø 15  $(\mathbf{A})$ Bend Radius (C) (B) oÓ max. Bend Radius (Å) Ø 15 (C) **Opening Side - OUT Opening Side - IN** 0)= ----(B) ---Hose Drag Chain Selection Chart MP18 Series Cable **Requires** Inside Height (A) Inside Width (B) Bend Radius (C) Drawing Openina Part Number Price Mounting Bracket Link Side mm in тт in mm in (sold separately) CDC-0.7X0.7R1.1T \$66p3: PDF 18 0.709 18 0.709 28 1.102 OUT CDC-KAZ-0.7X0.7 CDC-0.7X0.7R1.1N \$66p4: PDF 18 0.709 18 0.709 28 1.102 IN CDC-KAZ-0.7X0.7 0.709 0.709 38 1.496 IN PDF 18 18 CDC-KAZ-0.7X0.7 CDC-0.7X0.7R1.5N \$66p5: CDC-0.7X0.7R1.5T \$66p6: PDF 18 0.709 18 0.709 38 1.496 OUT CDC-KAZ-0.7X0.7 0.709 48 OUT CDC-0.7X0.7R1.9T \$66p7: PDF 18 0.709 18 1.890 CDC-KAZ-0.7X0.7 PDF 18 0.709 0.709 48 1.890 \$660?: 18 IN CDC-0.7X0.7R1.9N CDC-KAZ-0.7X0.7 0.709 IN CDC-0.7X0.7R3.1N \$:660.: PDF 18 0.709 18 78 3.071 CDC-KAZ-0.7X0.7 OUT CDC-0.7X0.7R3.1T \$66p0: PDF 18 0.709 18 0.709 78 3.071 CDC-KAZ-0.7X0.7 0.984 CDC-0.7X1.0R1.1N \$66p1: PDF 18 0.709 25 28 1.102 IN CDC-KAZ-0.7X1.0 18 0.709 25 0.984 28 1.102 OUT CDC-0.7X1.0R1.1T \$66p2: PDF CDC-KAZ-0.7X1.0 CDC-0.7X1.0R1.5N \$66p8: PDF 18 0.709 25 0.984 38 1.496 IN CDC-KAZ-0.7X1.0 18 0.709 25 0.984 38 1.496 OUT CDC-0.7X1.0R1.5T \$66p9: PDF CDC-KAZ-0.7X1.0 CDC-0.7X1.0R1.9T \$66pa: PDF 18 0.709 25 0.984 48 1.890 OUT CDC-KAZ-0.7X1.0 25 18 0.984 48 1.890 IN CDC-0.7X1.0R1.9N \$66pb: PDF 0.709 CDC-KAZ-0.7X1.0 0.709 25 0.984 78 3.071 IN PDF 18 CDC-0.7X1.0R3.1N \$66pc: CDC-KAZ-0.7X1.0 CDC-0.7X1.0R3.1T \$66pd: PDF 18 0.709 25 0.984 78 3.071 OUT CDC-KAZ-0.7X1.0 37 1.457 28 OUT CDC-0.7X1.5R1.1T \$66pe: PDF 18 0.709 1.102 CDC-KAZ-0.7X1.5 PDF 18 0.709 37 1.457 28 1.102 IN CDC-0.7X1.5R1.1N \$;66pf: CDC-KAZ-0.7X1.5 18 0.709 37 1.457 38 1.496 OUT CDC-0.7X1.5R1.5T \$66pg: PDF CDC-KAZ-0.7X1.5 PDF 18 0.709 37 1.457 38 1.496 IN CDC-0.7X1.5R1.5N \$66ph: CDC-KAZ-0.7X1.5 CDC-0.7X1.5R1.9T PDF 18 0.709 37 1.457 48 1.890 OUT \$-66pi: CDC-KAZ-0.7X1.5 18 0.709 37 1.457 48 1.890 IN CDC-0.7X1.5R1.9N \$-66pj: PDF CDC-KAZ-0.7X1.5 37 1.457 78 OUT CDC-0.7X1.5R3.1T \$66pk: PDF 18 0.709 3.071 CDC-KAZ-0.7X1.5 18 0.709 37 1.457 78 3.071 IN CDC-0.7X1.5R3.1N \$-66pl: PDF CDC-KAZ-0.7X1.5 CDC-0.7X2.0R1.1N \$66pn: PDF 18 0.709 50 1.969 28 1.102 IN CDC-KAZ-0.7X2.0 50 18 1.969 28 1.102 OUT CDC-0.7X2.0R1.1T \$66po: PDF 0.709 CDC-KAZ-0.7X2.0 PDF 18 0.709 50 1.969 38 1.496 OUT <u>CDC-0.7X2.0R1.5T</u> \$66pp: CDC-KAZ-0.7X2.0 PDF 18 0.709 50 1.969 38 1.496 IN CDC-KAZ-0.7X2.0 CDC-0.7X2.0R1.5N \$66pg: CDC-0.7X2.0R1.9N \$66ps: PDF 18 0.709 50 1.969 48 1.890 IN CDC-KAZ-0.7X2.0

Each chain is 1m [3.2 ft] www.automationdirect.com

CDC-0.7X2.0R1.9T

CDC-0.7X2.0R3.1T

CDC-0.7X2.0R3.1N

CDC-0.7X2.8R3.1T

CDC-0.7X2.8R3.1N

PDF

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\$;66pt:

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\$66pu:

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0.709

50

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50

70

70

1.969

1.969

1.969

2.756

2.756

48

78

78

78

78

1.890

3.071

3.071

3 071

3.071

OUT

OUT

IN

OUT

IN

1-800-633-0405

CDC-KAZ-0.7X2.0

CDC-KAZ-0.7X2.0

CDC-KAZ-0.7X2.0

CDC-KAZ-0.7X2.8

CDC-KAZ-0.7X2.8



### murrplastik 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 / Ho	se Drag	Chain	Brack	ets MP	18 Ser	ies
Part Number	Price	Inside	Height	Inside	Drawing	
	Price	mm	in	mm	in	Link
<u>CDC-KAZ-0.7X0.7</u>	\$;66p]:	18	0.709	18	0.709	PDF
<u>CDC-KAZ-0.7X1.0</u>	\$;66p[:	18	0.709	25	0.984	PDF
<u>CDC-KAZ-0.7X1.5</u>	\$66p_:	18	0.709	37	1.457	PDF
<u>CDC-KAZ-0.7X2.0</u>	\$66p#:	18	0.709	50	1.969	PDF
<u>CDC-KAZ-0.7X2.8</u>	\$;66p!:	18	0.709	70	2.756	PDF



Mounting hardware not included.

#### 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	Qtv	Drawing						
	11100	,	mm	in	Link				
<u>CDC-TR-14.18</u>	\$66pv:	10	18	0.709	PDF				

#### Cable / Hose Drag Chain Separator Usage MP18 Series

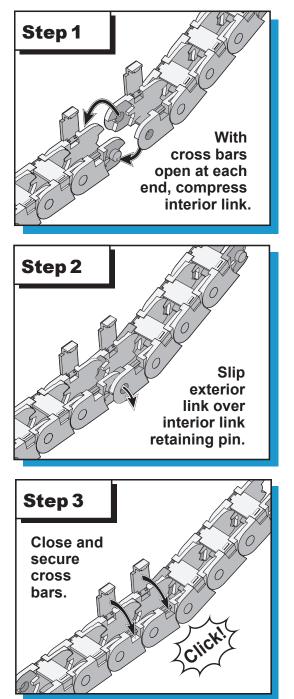
Separator Usage	Separator per 1m Chain					
Every Link	30					
Every 2 Links	15					
Every 3 Links	10					



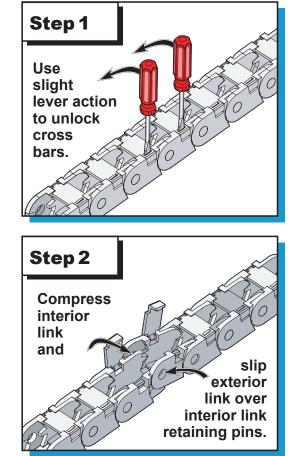


### Cable / Hose Drag Chain MP18 Series

### Assembly



#### Disassembly



### 1-800-633-0405 murrplastik Cable / Hose Drag Chain

Simply Smart Systems

#### 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.

**MP10 Series** 

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







Two chambers CDC-04X08R07T

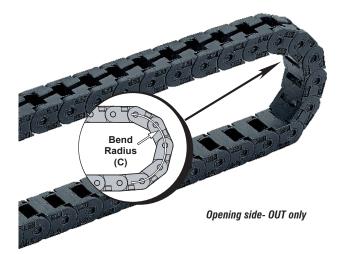


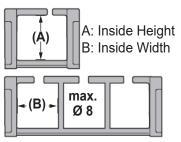
**Three chambers** CDC-04X12R07T

For the latest prices, please check AutomationDirect.com.



Cable / Hose Drag Chain MP10 Series





See chart below for number of chambers by part number.

	Ca	able / H	ose Dra	g Chai	n Select	ion Cha	art MP1	0 Serie	S		
Part Number	Price	Drawing	Inside Height (A)		Number of	Middle (D)		Bend Radius (C)		Requires Mounting Bracket	
		Link	тт	in	Chambers	тт	in	mm	in	(sold separately)	
CDC-04X02R07T	\$;6fhs:	PDF	10mm	0.39in	1	6.0mm	0.24in	18mm	0.71in	CDC-KAZ-04X02	
CDC-04X02R11T	\$;;6fht:	PDF	10mm	0.39in	1	6.0mm	0.24in	28mm	1.1in	CDC-KAZ-04X02	
<u>CDC-04X04R07T</u>	\$;6fhu:	PDF	10mm	0.39in	1	9.0mm	0.35in	18mm	0.71in	CDC-KAZ-04X04	
<u>CDC-04X04R11T</u>	\$;6fhv:	PDF	10mm	0.39in	1	9.0mm	0.35in	28mm	1.1in	CDC-KAZ-04X04	
CDC-04X04R19T	\$;6fhx:	PDF	10mm	0.39in	1	9.0mm	0.35in	48mm	1.89in	CDC-KAZ-04X04	
CDC-04X06R07T	\$;6fhy:	PDF	10mm	0.39in	1	15.0mm	0.59in	18mm	0.71in	CDC-KAZ-04X06	
CDC-04X06R11T	\$;;6fh!:	PDF	10mm	0.39in	1	15.0mm	0.59in	28mm	1.1in	CDC-KAZ-04X06	
<u>CDC-04X08R07T</u>	\$;6fh?:	PDF	10mm	0.39in	2	9.5mm	0.37in	18mm	0.71in	CDC-KAZ-04X08	
CDC-04X12R07T	\$;;6fh,:	PDF	10mm	0.39in	3	9.5mm	0.37in	18mm	0.71in	CDC-KAZ-04X12	
<u>CDC-04X12R15T</u>	\$;-6fi0:	PDF	10mm	0.39in	3	9.5mm	0.37in	38mm	1.5in	CDC-KAZ-04X12	

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



### murrplastik<sup>®</sup> 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 / Ho	se Drag	Chain Brackets MP10 Series					
Part Number	Price	Inside	Height	Inside	Drawing		
	FIICE	mm	in	mm	in	Link	
<u>CDC-KAZ-04X02</u>	\$;6fhz:	10mm	0.39in	6mm	0.24in	PDF	
CDC-KAZ-04X04	\$;;6fh]:	10mm	0.39in	9mm	0.35in	PDF	
CDC-KAZ-04X06	\$;;6fh[:	10mm	0.39in	15mm	0.59in	PDF	
<u>CDC-KAZ-04X08</u>	\$;6fh_:	10mm	0.39in	21mm	0.83in	PDF	
CDC-KAZ-04X12	\$;6fh#:	10mm	0.39in	31mm	1.22in	PDF	



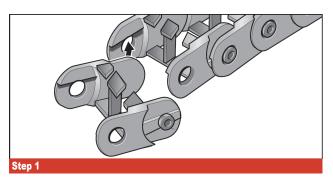
CDC-KAZ-04X06

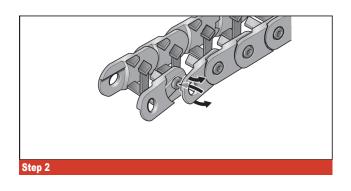
Note: Mounting hardware not included.



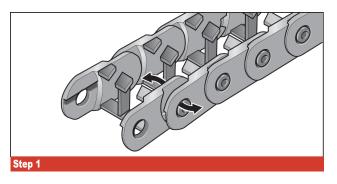
Cable / Hose Drag Chain MP10 Series

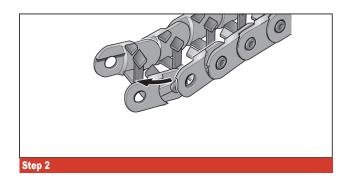
#### Assembly





#### Disassembly







### Cable / Hose Drag Chain **MP10 Series**

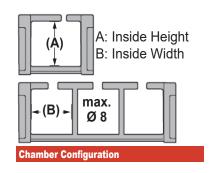
#### **MP10 Design Guide**

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 / H	Cable / Hose Drag Chain Selection Chart MP10 Series											
Part Number	Inside Height (A)		Number of	Inside C Widt		Bend Radius (C)						
	тт	in	Chambers	тт	in	mm	in					
<u>CDC-04X02R07T</u>	10mm	0.39in	1	6.0mm	0.24in	18mm	0.71in					
<u>CDC-04X02R11T</u>	10mm	0.39in	1	6.0mm	0.24in	28mm	1.1in					
<u>CDC-04X04R07T</u>	10mm	0.39in	1	9.0mm	0.35in	18mm	0.71in					
<u>CDC-04X04R11T</u>	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



Cable / H	lose Dra	ag Chai	n Selec	tion Ch	art MR <sup>-</sup>	10 Serie	es	
Part Number	Inside Height (A)		Number of	Inside C Widt		Bend Radius (C)		
	тт	in	Chambers	тт	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	
<u>CDC-04X04R07T</u>	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	

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### murrplastik<sup>®</sup> Cable / Hose Drag Chain **MP10 Series**

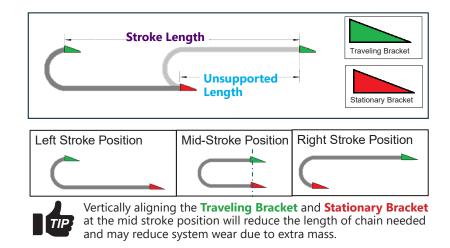
#### Step 3: Stroke Length – Unsupported

#### Determine Stroke Length (Ls)

• 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.



#### 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

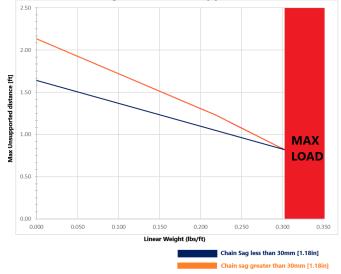
- Unsupported chains will experience less wear if chain sag is less than 30mm [1.18in]
- · Sag will increase as unsupported length and/or weight are increased
- · Refer to the chart to determine maximum conditions

Ca	Cable Drag Chain Max Stroke Length											
	Outor		MAX Stroke Length [ft] (2x max unsupported distance)									
Cable Type	Outer Diameter (inch)	Linear Weight (Ibs/ft)	Single Fill	Double Fill	Triple Fill	Quad Fill						
			•	••	•••	••••						
Ethernet	< 0.25in	< 0.034	1.57	1.45	1.43	1.32						
Elliernet	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.



#### Linear Weight vs Max Unsupported distance

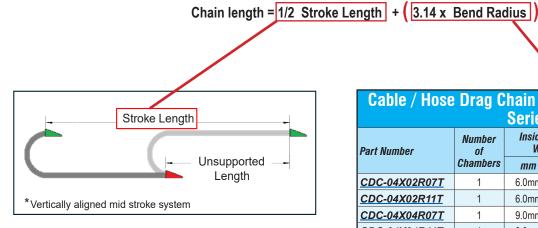




### Cable / Hose Drag Chain MP10 Series

### 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.



Cable / Hose Drag Chain Selection Chart MP10 Series										
Part Number	Number of	Inside C Widt	hamber h (B)	Bend Radius (C)						
	Chambers	тт	in	тт	in					
<u>CDC-04X02R07T</u>	1	6.0mm	0.24in	18mm	0.71in					
<u>CDC-04X02R11T</u>	1	6.0mm	0.24in	28mm	1.1in					
<u>CDC-04X04R07T</u>	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					
<u>CDC-04X06R11T</u>	1	15.0mm	0.59in	28mm	1.1in					
<u>CDC-04X08R07T</u>	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					

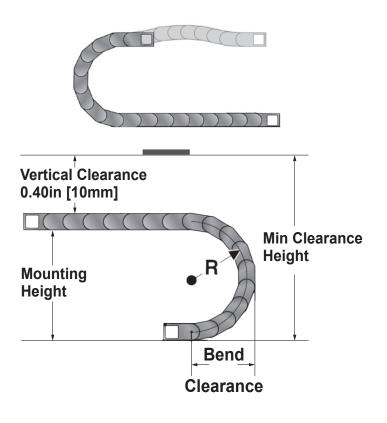
### Step 6: Drag Chain Mounting

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

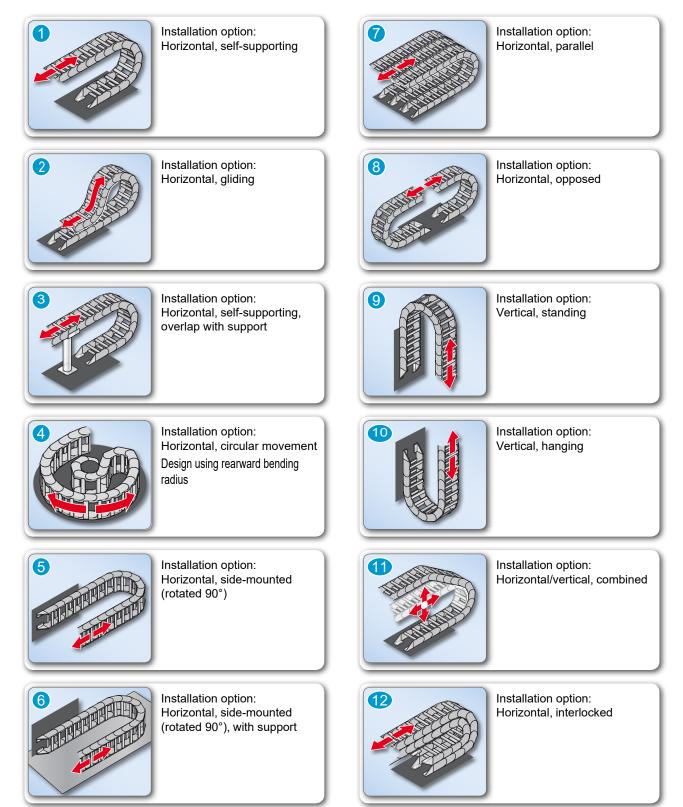
Drag Chain Mounting Selection Chart											
Radius R I		Mountin	g Height	Min. Cle Hei		Bend Clearance					
mm	in	тт	in	тт	in	mm	in				
18mm	<u>0.71in</u>	36mm	1.42in	60mm	2.36in	40mm	1.57in				
28mm	1.10in	59mm	2.20in	80mm	3.15in	50mm	1.97in				
38mm	1.50in	76mm	2.99in	100mm	3.94in	60mm	2.36in			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





# murrplastik Simply Smart Systems Cable / Hose Drag Chain MP10 Series

#### Installation Options For Cable / Hose Drag Chains



#### 1-800-633-0405



# 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<sup>®</sup> 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° to120°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



<u>2500-03-055</u>



<u>2500-05-075</u>



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

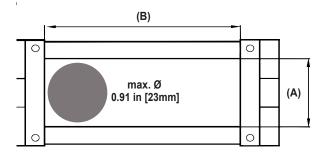


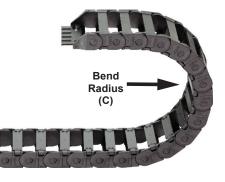
2500-07-100



<u>2500-10-125</u>







**Opening side - OUT only** 

		Cab	le / Hose	e Drag C	hain Sel	ection C	hart 250	)0 Serie	S
Part Number	Price	Drawing	Inside H	eight (A)	Inside V	Vidth (B)	Bend Radius (C)		Requires Mounting Bracket
	FIICE	Link	тт	in	mm	in	тт	in	(sold separately)
<u>2500-03-055</u>	\$6gsu:	PDF	25mm	0.98in	38mm	1.5in	55mm	2.16in	2030-34PZB or 2030-12PZB
<u>2500-03-075</u>	\$6gsv:	PDF	25mm	0.98in	38mm	1.5in	75mm	2.95in	2030-34PZB or 2030-12PZB
<u>2500-03-100</u>	\$6gsx:	PDF	25mm	0.98in	38mm	1.5in	100mm	3.94in	2030-34PZB or 2030-12PZB
<u>2500-03-125</u>	\$6gsy:	PDF	25mm	0.98in	38mm	1.5in	125mm	4.92in	2030-34PZB or 2030-12PZB
<u>2500-05-055</u>	\$6gsz:	PDF	25mm	0.98in	57mm	2.24in	55mm	2.16in	2050-34PZB or 2050-12PZB
2500-05-075	\$;6gs]:	PDF	25mm	0.98in	57mm	2.24in	75mm	2.95in	2050-34PZB or 2050-12PZB
<u>2500-05-100</u>	\$;6gs[:	PDF	25mm	0.98in	57mm	2.24in	100mm	3.94in	2050-34PZB or 2050-12PZB
<u>2500-05-125</u>	\$6gs_:	PDF	25mm	0.98in	57mm	2.24in	125mm	4.92in	2050-34PZB or 2050-12PZB
2500-07-055	\$6gs#:	PDF	25mm	0.98in	77mm	3.03in	55mm	2.16in	2070-34PZB or 2070-12PZB
<u>2500-07-075</u>	\$;6gs!:	PDF	25mm	0.98in	77mm	3.03in	75mm	2.95in	2070-34PZB or 2070-12PZB
<u>2500-07-100</u>	\$6gs?:	PDF	25mm	0.98in	77mm	3.03in	100mm	3.94in	2070-34PZB or 2070-12PZB
<u>2500-07-125</u>	\$;6gs,:	PDF	25mm	0.98in	77mm	3.03in	125mm	4.92in	2070-34PZB or 2070-12PZB
<u>2500-10-055</u>	\$;6gt0:	PDF	25mm	0.98in	103mm	4.06in	55mm	2.16in	2100-34PZB or 2100-12PZB
<u>2500-10-075</u>	\$;6gt1:	PDF	25mm	0.98in	103mm	4.06in	75mm	2.95in	2100-34PZB or 2100-12PZB
<u>2500-10-100</u>	\$;6gt2:	PDF	25mm	0.98in	103mm	4.06in	100mm	3.94in	2100-34PZB or 2100-12PZB
<u>2500-10-125</u>	\$;6gt3:	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]



### 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 tiewrap 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	Drawing						
	Price	mm	in	mm	in	Link					
<u>2030-12PZB</u>	\$;6gt8:	25mm	0.98in	38mm	1.5in	<u>PDF</u>					
<u>2050-12PZB</u>	\$;6gt9:	25mm	0.98in	57mm	2.24in	PDF					
<u>2070-12PZB</u>	\$;6gta:	25mm	0.98in	77mm	3.03in	PDF					
<u>2100-12PZB</u>	\$;6gtb:	25mm	0.98in	103mm	4.06in	PDF					

Note: Mounting hardware not included.

25	2500 Series Pivoting Brackets									
Dart Number	Drice	Inside	Height	Inside	Width	Drawing				
Part Number	Price	mm	in	тт	in	Link				
<u>2030-34PZB</u>	\$;6gt4:	25mm	0.98in	38mm	1.5in	PDF				
<u>2050-34PZB</u>	\$;6gt5:	25mm	0.98in	57mm	2.24in	<u>PDF</u>				
<u>2070-34PZB</u>	\$;6gt6:	25mm	0.98in	77mm	3.03in	PDF				
<u>2100-34PZB</u>	\$;6gt7:	25mm	0.98in	103mm	4.06in	PDF				

Note: Mounting hardware not included.

#### 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				
Part Number	Price	mm	in	uuannny	Link				
<u>25.1-12</u>	\$;6gtc:	25mm	0.98in	12	<u>PDF</u>				

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



Locks at 0° or 90° 2030-12PZB







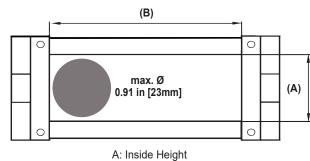
### 2500 Series Design Guide

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 H	eight (A)	Inside V	lidth (B)	Bend Ra	l Radius (C)			
	тт	in	mm	in	mm	in			
<u>2500-03-055</u>	25mm	0.98in	38mm	1.5in	55mm	2.16in			
2500-03-075	25mm	0.98in	38mm	1.5in	75mm	2.95in			
<u>2500-03-100</u>	25mm	0.98in	38mm	1.5in	100mm	3.94in			
<u>2500-03-125</u>	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	mm 1.5in 125mm   mm 2.24in 55mm   mm 2.24in 75mm   mm 2.24in 100mm		3.94in			
<u>2500-05-125</u>	25mm	0.98in	57mm	2.24in	125mm	in   2.16in   2.95in   3.94in   4.92in   2.16in   2.95in			



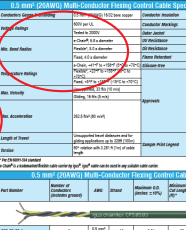


#### Step 2: Part Number Selection – Bend Radius

- 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 adius







#### Cable / Hose Drag Chain Selection Chart 2500 Series

Part Number	Inside H	Inside Height (A)		lidth (B)	Bend Ra	dius (C)
Tart Number	тт	in	тт	in	mm	in
<u>2500-07-055</u>	25mm	0.98in	77mm	3.03in	55mm	2.16in
<u>2500-07-075</u>	25mm	0.98in	77mm	3.03in	75mm	2.95in
2500-07-100	25mm	0.98in	77mm	3.03in	100mm	3.94in
<u>2500-07-125</u>	25mm	0.98in	77mm	3.03in	125mm	4.92in
2500-10-055	25mm	0.98in	103mm	4.06in	55mm	2.16in
<u>2500-10-075</u>	25mm	0.98in	103mm	4.06in	75mm	2.95in
<u>2500-10-100</u>	25mm	0.98in	103mm	4.06in	100mm	3.94in
<u>2500-10-125</u>	25mm	0.98in	103mm	4.06in	125mm	4.92in

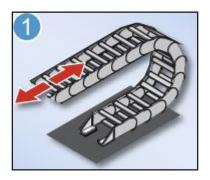


## Igus<sup>®</sup> 2500 Cable / Hose Drag Chain

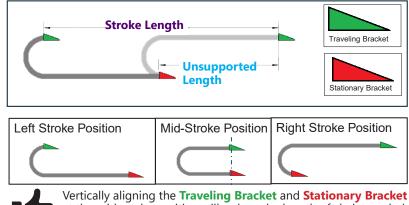
### Step 3: Stroke Length – Unsupported

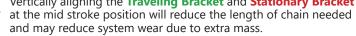
#### Determine Stroke Length (Ls)

• 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.





#### Step 4: Max Stroke Length – Unsupported

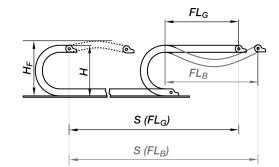
TIP

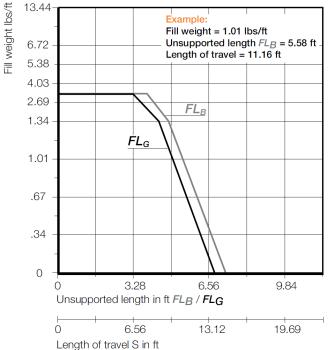
4a: Determine cable fill linear weight

- 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

Ca	Cable Drag Chain Max Stroke Length									
			MA		.ength [ft] (i rted distanc					
Cable Type	Outer Diameter (inch)	Linear Weight (Ibs/ft)	Single Fill	Double Fill	Triple Fill	Quad Fill				
				••						
Ethernet	< 0.25	< 0.034	13.3	13.2	13.1	13.0				
Luternet	0.25 - 0.315	< 0.053	13.3	13.1	12.9	12.7				
	< 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				
Control/VFD Cable	0.45 - 0.50	< 0.211	12.7	12.0	11.2	10.5				
Cable	0.50 - 0.55	< 0.271	12.5	11.6	10.6	9.6				
	0.55 - 059	< 0.328	12.3	11.2	10.0	8.8				
	0.60 - 0.69	< 0.392	12.1	10.7	9.3	7.9				
	.7079	< 0.42	12.0	10.5	9.0	7.5				

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



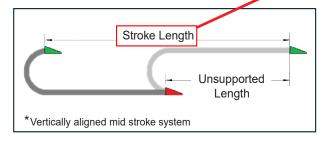




#### Step 5: Chain Length – Unsupported

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

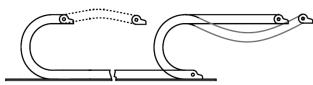
#### Chain length = 1/2 Stroke Length + (3.14 x Bend Radius)



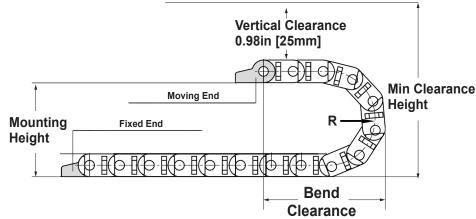
Cable / Hos	e Drag	Chain S	Selectio	n Chari	2500	Series
Part Number	Inside H	eight (A)	Inside V	lidth (B)	Bend Ra	dius (C)
	тт	in	тт	in	mm	in
<u>2500-03-055</u>	25mm	0.98in	38mm	1.5in	55mm	2.16in
<u>2500-03-075</u>	25mm	0.98in	in mm in mm   0.98in 38mm 1.5in 55mm   0.98in 38mm 1.5in 75mm   0.98in 38mm 1.5in 100mm   0.98in 38mm 1.5in 100mm   0.98in 38mm 1.5in 125mm   0.98in 57mm 2.24in 55mm   0.98in 57mm 2.24in 100mm   0.98in 57mm 2.24in 100mm   0.98in 57mm 2.24in 100mm   0.98in 57mm 2.24in 125mm   0.98in 57mm 3.03in 55mm   0.98in 77mm 3.03in 55mm   0.98in 77mm 3.03in 100mm   0.98in 77mm 3.03in 100mm   0.98in 77mm 3.03in 125mm		2.95in	
<u>2500-03-100</u>	25mm	0.98in	38mm	1.5in	100mm	3.94in
<u>2500-03-125</u>	25mm	0.98in	38mm	1.5in	125mm	4.92in
<u>2500-05-055</u>	25mm	0.98in	57mm	2.24in	55mm	2.16in
<u>2500-05-075</u>	25mm	0.98in	57mm	2.24in	75mm	2.95in
<u>2500-05-100</u>	25mm	0.98in	57mm	2.24in	100mm	3.94in
<u>2500-05-125</u>	25mm	0.98in	57mm	2.24in	2.24in 125mm	
<u>2500-07-055</u>	25mm	0.98in	77mm	3.03in	55mm	2.16in
<u>2500-07-075</u>	25mm	0.98in	77mm	3.03in	75mm	2.95in
<u>2500-07-100</u>	25mm	0.98in	77mm	3.03in	100mm	3.94in
<u>2500-07-125</u>	25mm	0.98in	77mm	3.03in	125mm	4.92in
<u>2500-10-055</u>	25mm	0.98in	103mm	mm 3.03in 75mm mm 3.03in 100mm mm 3.03in 125mm		2.16in
<u>2500-10-075</u>	25mm	0.98in	103mm	4.06in	75mm	2.95in
<u>2500-10-100</u>	25mm	0.98in	103mm	4.06in	100mm	3.94in
<u>2500-10-125</u>	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										
Rad	ius R	Mountin	g Height	Min. Cle Hei	earance ight	Bend Cl	earance			
тт	in	mm	in	тт	in	тт	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			



1-800-633-0405

For the latest prices, please check AutomationDirect.com.



### lgus® 2500 Cable / Hose Drag Chain

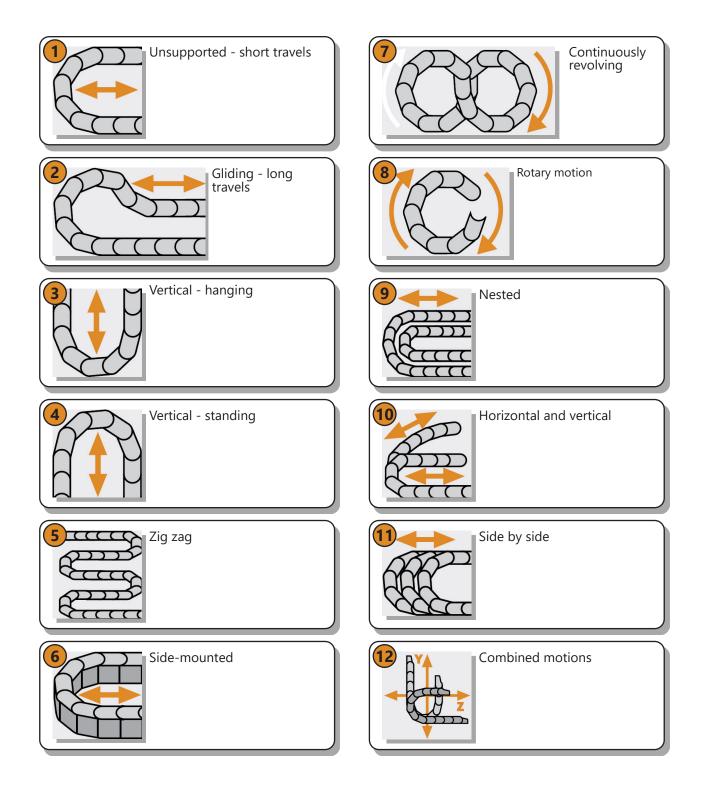
- Mounting height of traveling bracket is specified for each chain bend radius
- Vertical clearance must be maintained to account for chains bowing height of unloaded chains

	Bracket D	esign Guide	
		Pivoting Bracket	Locking Bracket
Applications and Features		Moving end 21PZB	Moving end 23PZB 90° (148°) 90° (148°) 90°
		Fixed end 22PZB	90° 90° 48° 90° Fixed end 24PZB
Horizontal Unsupported		+	+
Horizontal Gliding		+	+
Detachable Strain Relief Cable Tie Plate		Included	Included
Speed and Acceleration		+	++
Low Profile Height		+	++
Vertical Installation		+	++

Key: + = Good; ++ = Better



#### Installation Options For Cable / Hose Drag Chains



### murrplastik<sup>®</sup> EMC Shield Cable Clips Simply Smart Systems



#### 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

DII	N Rail	Mount EMC Shield Cable Clips SCF-EMV / MSCF-	EMV Ser	ies
Part Number	Price	Description	Shield Diameter	Drawing Link
<u>571052</u>	\$621k:	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
<u>571054</u>	\$-6211:	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
<u>571056</u>	\$621n:	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
<u>571058</u>	\$;621f:	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
<u>571060</u>	\$621g:	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	<u>PDF</u>
<u>571064</u>	\$621h:	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	<u>PDF</u>
<u>571066</u>	\$-621i:	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
<u>571070</u>	\$-621j:	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	<u>PDF</u>
<u>571072</u>	\$621q:	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	<u>PDF</u>







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

# Simply Smart Systems

### murrplastik F EMC Shield Cable Clips



#### **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

	SCZF-EMV / MSCFZ-EMV Series										
Part Number	Price	Description	Shield Diameter	Drawing Link							
<u>571074</u>	\$621s:	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	<u>PDF</u>							
<u>571075</u>	\$;621t:	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							
<u>571076</u>	\$621u:	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							
<u>571077</u>	\$621v:	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							
<u>571078</u>	\$621y:	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							
<u>571079</u>	\$621z:	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							
<u>571071</u>	\$;621]:	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							
<u>571073</u>	\$;621[:	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							

### **DIN Bail Mount EMC Shield Cable Cline With Strain Belief**



571077



571071





### Flexible Metal Conduits – Alflex™



#### **Overview**

Alflex<sup>™</sup> 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											
		Trade Size		Minimum	Ø (in	Ø (in [mm])						
Part Number	Price	[in]	Length	Bend Radius	Inside Min/Max	Outside Min/Max	Weight (lb / 100 ft)	Material				
<u>55082003</u>	\$;6gbt:	3/8in	100ft/30.4m	2in	0.38/0.39	0.56/0.61	7					
<u>55082021</u>	\$6gbs:	3/011	25ft/7.6m	2111	[9.5/9.9]	[14.2/15.5]	1					
<u>55082103</u>	\$6gbv:	1/2in	100ft/30.4m	- 3in	0.63/0.65	0.86/0.92	9					
<u>55082121</u>	\$6gbu:		25ft/7.6m	511	[15.9/16.4]	[21.8/23.4]	9					
<u>55082303</u>	\$6gby:	3/4in	100ft/30.4m	- 4in	0.81/0.84	1.05/1.11	13					
<u>55082321</u>	\$6gbx:	5/411	25ft/7.6m	4111	[20.6/21.2]	[26.5/28.0]	15					
<u>55092501</u>	\$6gbz:	1in	50ft/15.2m	5in	1.0/1.04 [25.4/26.4]	1.3/1.38 [33.0/35.0]	20	Reduced wall aluminum				
<u>55092601</u>	\$;06gb]:	1-1/4in	50ft/15.2m	6.25in	1.25/1.3 [31.7/33.0]	1.55/1.63 [39.4/41.4]	24					
<u>55092701</u>	\$;6gb[:	1-1/2in	25ft/7.6m	7.5in	1.5/1.58 [38.1/40.0]	1.85/1.95 [46.9/49.5]	31					
<u>55092801</u>	\$06gb_:	2in	25ft/7.6m	10in	2.0/2.1 [50.8/52.8]	2.35/2.45 [59.7/62.2]	40					



### Flexible Metal Conduits – Galflex™



#### **Overview**

Galflex<sup>™</sup> 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 Flex	ible Met	al Conduit	S		
		Trade Size		Minimum	Ø (in	[mm])	Weight	
Part Number	Price	[in]	Length	Bend Radius	Inside Min/Max	Outside Min/Max	( <i>Ib</i> / 100 ft)	Material
<u>55081702</u>	\$;6gb!:	3/8in	100ft/30.4m	2in	0.38/0.39	0.56/0.61	19	
<u>55081711</u>	\$6gb#:	3/011	25ft/7.6m	2111	[9.5/9.9]	[14.2/15.5]	19	
<u>55081802</u>	\$;6gb,:	1/2in	100ft/30.4m	- 3in	0.63/0.65	0.86/0.92	27	
<u>55081806</u>	\$6gb?:		25ft/7.6m	311	[15.9/16.4]	[21.8/23.4]	21	
<u>55081902</u>	\$06gc1:	2/4:-	100ft/30.4m	41-	0.81/0.84	1.05/1.11	35	
<u>55081921</u>	\$6gc0:	3/4in	25ft/7.6m	- 4in	[20.6/21.2]	[26.5/28.0]		
<u>55091601</u>	\$06gc2:	1in	50ft/15.2m	5in	1.0/1.04 [25.4/26.4]	1.3/1.38 [33.0/35.0]	57	Reduced wall steel
<u>55091701</u>	\$06gc3:	1-1/4in	50ft/15.2m	6.25in	1.25/1.3 [31.7/33.0]	1.55/1.63 [39.4/41.4]	65	
<u>55091801</u>	\$06gc4:	1-1/2in	25ft/7.6m	7.5in	1.5/1.58 [38.1/40.0]	1.85/1.95 [46.9/49.5]	78	
<u>55091901</u>	\$06gc5:	2in	25ft/7.6m	10in	2.0/2.1 [50.8/52.8]	2.35/2.45 [59.7/62.2]	133	

## **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 heavygauge, corrosion-resistant, hot-dipped galvanized steel. The 3/8" through 1-1/4" models are squarelock 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"

#### 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	Jackete	ed Liqu	id-tight	Flexible	Metallic	Conduits	
		Trade Size	Length	Bend Ø	Øin	[mm]	Weight	
Part Number	Price	[in]	ft [m]	in [mm]	Inside Min/Max	Outside Min/Max	[lb]	Color
<u>LA-10-25</u>	\$113e:		25 [7.62]	2.0	0.484/0.504	0.690/0.710	7.25	
<u>LA-10-100</u>	\$;0113f:	3/8	100 [30.48]	[50.8]	[12.3/12.8]	[17.5/18.0]	29.0	
<u>LA-11-25</u>	\$113g:		25 [7.62]	3.0	0.622/0.642	0.820/0.840	8.0	
<u>LA-11-100</u>	\$0113h:	1/2	100 [30.48]	[76.2]	[15.8/16.3]	[20.8/21.3]	32.0	
<u>LA-12-25</u>	\$-113i:		25 [7.62]	4.2	0.820/0.840	1.030/1.050	13.25	
<u>LA-12-100</u>	<b>\$-0113</b> j:	3/4	100 [30.48]	[106.7]	[20.8/21.3]	[26.2/26.7]	53.0	Machine Tool
<u>LA-13-25</u>	\$0113k:		25 [7.62]	55	1.041/1.066	1.290/1.315	20.5	Gray
<u>LA-13-100</u>	<b>\$-0113I</b> :	1	100 [30.48]	[139.7]	[26.4/27.1]	[32.8/33.4]	82.0	
<u>LA-14-50</u>	\$0113n:	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	
<u>LA-15-50</u>	\$0113o:	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	
<u>LA-16-50</u>	\$0113p:	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	

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# **Uatife** 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"

#### 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)
- ${\mbox{ \bullet}}$  Use as feeders and services at marinas and boat yards. Article 553.7(B.)
- Wiring on buildings. Article 225.10.
- Conductor enclosers 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											
		Trade Size	Length	Inside	Øin	[mm]	Weight					
Part Number	Price	[in]	ft [m]	Bend Ø in [mm]	Inside Min/Max	Outside Min/Max	[lb]	Color				
<u>ATLA-11-100</u>	\$0113s:	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					
<u>ATLA-12-100</u>	\$;0113t:	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	\$0113u:	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	Machine Tool				
ATLA-14-50	\$0113v:	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	Gray				
<u>ATLA-15-50</u>	\$0113x:	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					
<u>ATLA-16-50</u>	\$0113y:	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]





#### **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

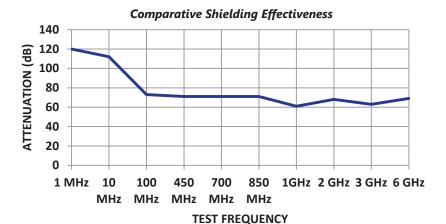
#### **Approvals**

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





Туре	Type SLA Shielded Jacketed Liquid-tight Flexible Metallic Conduits											
		Trade Size	Length	Inside	Ø in	[mm]	Weight					
Part Number	Price	[in]	ft [m]		Inside Min/Max	Outside Min/Max	[lb]	Color				
<u>SLA-10-100</u>	\$01143:	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					
<u>SLA-11-100</u>	\$01144:	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	Black				
<u>SLA-12-100</u>	\$;001145:	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	BIACK				
<u>SLA-13-100</u>	\$;001146:	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					



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.

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Wiring Solutions tWIR-64

1-800-633-0405

### **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





	Туре	NM Liqu	id-tigh	t Flexib	le Non-M	etallic Co	onduits	
		Trade Size	Length	Bend Ø	Øin	[mm]	Weight	
Part Number	Price	[in]	ft [m]	in [mm]	Inside Min/Max	Outside Min/Max	[lb]	Color
<u>NM-10-50</u>	\$113z:	3/8	50 [15.24]	2.0	0.484/0.504	0.690/0.710	5.0	
<u>NM-10-100</u>	\$;0113]:	3/0	100 [30.48]	[50.8]	[12.3/12.8]	[17.5/18.0]	10.0	
<u>NM-11-50</u>	\$;113[:	1/2	50 [15.24]	3.25	0.622/0.642	0.820/0.840	5.5	
<u>NM-11-100</u>	\$0113_:	1/2	100 [30.48]	[82.55]	[15.8/16.3]	[20.8/21.3]	11.0	
<u>NM-12-50</u>	\$113#:	3/4	50 [15.24]	4.25	0.820/0.840 [20.8/21.3]	1.030/1.050	7.5	
<u>NM-12-100</u>	\$;0113!:	3/4	100 [30.48]	[107.95]		[26.2/26.7]	15.0	Machine Tool Gray
<u>NM-13-50</u>	\$0113?:	1	50 [15.24]	6.5	1.041/1.066	1.290/1.315	12.5	City
<u>NM-13-100</u>	\$;0113,:	I	100 [30.48]	[165.1]	[26.4/27.1]	[32.8/33.4]	25.0	
<u>NM-14-100</u>	\$01140:	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	
<u>NM-15-50</u>	\$01141:	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	
<u>NM-16-50</u>	\$01142:	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	

#### For the latest prices, please check AutomationDirect.com.

# I-Fiex 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]



		I	BOCO G	ray I-Fle		Stra	ith This light lector	Use Wi 90° Con			
Part Number	Price	Trade Size in	Actual ID mm [in]	Actual OD mm [in]	Min. Bend Rad. mm [in]	Weight Ib/98 ft	Coil Length m [ft]	Part Number	Price	Part Number	Price
<u>GSI-12G</u>	\$08ds:	3/8	11.94 [0.47]	16.51 [0.65]	12.45 [0.49]	6.1	30 [98]	<u>RPS-12G</u>	\$08eh:	<u>CUR-12G</u>	\$08e4:
<u>GSI-16G</u>	\$08du:	1/2	16.00 [0.63]	20.57 [0.81]	16.00 [0.63]	7.1	30 [98]	<u>RPS-16G</u>	\$-08ej:	<u>CUR-16G</u>	\$08e6:
<u>GSI-20G</u>	\$08dx:	3/4	20.07 [0.79]	24.64 [0.97]	21.08 [0.83]	9.6	30 [98]	<u>RPS-20G</u>	\$-08el:	<u>CUR-20G</u>	\$08e8:
<u>GSI-25G</u>	\$008dz:	1	24.89 [0.98]	30.48 [1.2]	27.94 [1.10]	13.4	30 [98]	<u>RPS-25G</u>	\$08eo:	<u>CUR-25G</u>	\$08ea:
<u>GSI-32G</u>	\$;008d[:	1-1⁄4	31.75 [1.25]	38.10 [1.5]	35.56 [1.40]	17.7	30 [98]	<u>RPS-32G</u>	\$08eq:	<u>CUR-32G</u>	\$08ec:
<u>GSI-40G</u>	\$008d#:	1-1/2	39.88 [1.57]	46.48 [1.83]	40.39 [1.59]	23.6	30 [98]	RPS-40G	\$;08et:	N/A	
<u>GSI-50G</u>	\$008d?:	2	50.04 [1.97]	56.90 [2.24]	51.82 [2.04]	31.2	30 [98]	<u>RPS-50G</u>	\$08ev:	N/A	

		II	BOCO BI	ack I-Fle		Stra	ith This light ector	Use Wi 90° Coi			
Part Number	Price	Trade Size in	Actual ID mm [in]	Actual OD mm [in]	Min. Bend Rad. mm [in]	Weight Ibs/98 ft	Coil Length m [ft]	Part Number	Price	Part Number	Price
<u>GSI-12K</u>	\$;08dt:	3/8	11.94 [0.47]	16.51 [0.65]	12.45 [0.49]	6.1	30 [98]	<u>RPS-12K</u>	\$-08ei:	<u>CUR-12K</u>	\$08e5:
<u>GSI-16K</u>	\$08dv:	1/2	16.00 [0.63]	20.57 [0.81]	16.00 [0.63]	7.1	30 [98]	<u>RPS-16K</u>	\$08ek:	<u>CUR-16K</u>	\$08e7:
<u>GSI-20K</u>	\$08dy:	3/4	20.07 [0.79]	24.64 [0.97]	21.08 [0.83]	9.6	30 [98]	<u>RPS-20K</u>	\$08en:	<u>CUR-20K</u>	\$08e9:
<u>GSI-25K</u>	\$;008d]:	1	24.89 [0.98]	30.48 [1.2]	27.94 [1.10]	13.4	30 [98]	<u>RPS-25K</u>	\$08ep:	<u>CUR-25K</u>	\$08eb:
<u>GSI-32K</u>	\$008d_:	1-1⁄4	31.75 [1.25]	38.10 [1.5]	35.56 [1.40]	17.7	30 [98]	<u>RPS-32K</u>	\$08es:	<u>CUR-32K</u>	\$08ed:
<u>GSI-40K</u>	\$;008d!:	1-1/2	39.88 [1.57]	46.48 [1.83]	40.39 [1.59]	23.6	30 [98]	<u>RPS-40K</u>	\$08eu:	N/A	
<u>GSI-50K</u>	\$;008d,:	2	50.04 [1.97]	56.90 [2.24]	51.82 [2.04]	31.2	30 [98]	<u>RPS-50K</u>	\$08ex:	N/A	

### 1-800-633-0405 **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

<b>IBOCO Gray I-Flex Tubing Straight Connectors</b>										
Dort		Trade Size	Thread L	Dimensions	Dookono					
Part Number	Price	in	Actual ID mm [in]	Actual OD mm [in]	Package Quantity					
<u>RPS-12G</u>	\$08eh:	3/8	11.7 [0.46]	16.4 [0.65]	20					
<u>RPS-16G</u>	\$-08ej:	1/2	15.6 [0.62]	20.7 [0.81]	20					
<u>RPS-20G</u>	\$-08el:	3/4	19.6 [0.77]	26.2 [1.03]	20					
<u>RPS-25G</u>	\$08eo:	1	24.8 [0.98]	33.0 [1.30]	10					
<u>RPS-32G</u>	\$08eq:	1-1⁄4	31.9 [1.26]	41.5 [1.64]	10					
<u>RPS-40G</u>	\$;08et:	1-1⁄2	39.9 [1.57]	47.5 [1.87]	5					
RPS-50G	\$08ev:	2	49.6 [1.95]	59.2 [2.33]	5					

Note: European gas thread

<b>IBOCO Black I-Flex Tubing Straight Connectors</b>										
Part		Trade Size	Thread L	Dimensions	Package					
Number	Price	in in	Actual ID mm [in]	Actual OD mm [in]	Quantity					
<u>RPS-12K</u>	\$-08ei:	3/8	11.7 [0.46]	16.4 [0.65]	20					
<u>RPS-16K</u>	\$08ek:	1/2	15.6 [0.62]	20.7 [0.81]	20					
RPS-20K	\$08en:	3/4	19.6 [0.77]	26.2 [1.03]	20					
<u>RPS-25K</u>	\$08ep:	1	24.8 [0.98]	33.0 [1.30]	10					
<u>RPS-32K</u>	\$08es:	1-1/4	31.9 [1.26]	41.5 [1.64]	10					
<u>RPS-40K</u>	\$08eu:	1-1⁄2	39.9 [1.57]	47.5 [1.87]	5					
<u>RPS-50K</u>	\$08ex:	2	49.6 [1.95]	59.2 [2.33]	5					

Note: European gas thread

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#### **IBOCO Grav I-Flex Tubing 90° Connectors**

Part		Trade Size	Thread L	Dimensions	Dookogo
Number	Price	in in	Actual ID mm [in]	Actual OD mm [in]	Package Quantity
<u>CUR-12G</u>	\$08e4:	3/8	11.7 [0.46]	16.4 [0.65]	25
<u>CUR-16G</u>	\$08e6:	1/2	15.6 [0.62]	20.7 [0.81]	25
<u>CUR-20G</u>	\$08e8:	3/4	19.6 [0.77]	26.2 [1.03]	15
<u>CUR-25G</u>	\$08ea:	1	24.8 [0.98]	33.0 [1.30]	5
<u>CUR-32G</u>	\$08ec:	1-1⁄4	31.9 [1.26]	41.5 [1.64]	5

Note: European gas thread

IBOCO	IBOCO Black I-Flex Tubing 90° Connectors										
Part		Trade Size	Thread L	Dimensions	Package						
Number	Price	in in	Actual ID mm [in]	Actual OD mm [in]	Quantity						
<u>CUR-12K</u>	\$08e5:	3/8	11.7 [0.46]	16.4 [0.65]	25						
<u>CUR-16K</u>	\$08e7:	1/2	15.6 [0.62]	20.7 [0.81]	25						
<u>CUR-20K</u>	\$08e9:	3/4	19.6 [0.77]	26.2 [1.03]	15						
<u>CUR-25K</u>	\$08eb:	1	24.8 [0.98]	33.0 [1.30]	5						
<u>CUR-32K</u>	\$08ed:	1-1⁄4	31.9 [1.26]	41.5 [1.64]	5						

Note: European gas thread

1-800-633-0405

# **RACO<sup>®</sup>** 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  $^{\otimes}$  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

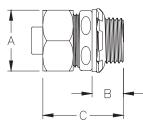
#### **Features**

- 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  $^{\textcircled{B}}$  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
- 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 <u>www.AutomationDirect.com</u> for complete engineering drawings.

			RACO I	.iquid-tig	ht Straigh	t Connect	ors		
	Trade Size					Dimensions	– Inches [mm]		Compression Nut
Part Number	(in)	Insulated	Qty	Price	A	В	С	Thread	& Body Material
<u>3401-8</u>		Ν	1	\$;,x6:					
<u>3401</u>	3/8	Ν	50	\$;01ot5:	1.06 [26.92]	0.55 [13.97]	1.41 [35.81]	½ in – 14 NPT	
<u>3511RAC</u>		Y	25	\$;1ot0:					
<u>3402-8</u>		Ν	1	\$;,x8:					
3402	4/0	Ν	50	\$;01otb:		0 54 740 701	4 50 500 001		
<u>3512-8</u>	1/2	Y	1	\$;,x7:	1.17 [29.72]	0.54 [13.72]	0.54 [13.72] 1.56 [39.62]	½ in – 14 NPT	
<u>3512RAC</u>		Y	50	\$;01ot1:					Zinc electroplated
<u>3403-8</u>		Ν	1	\$;,xa:	1.40 [35.56]				steel nut and
<u>3403</u>	2/4	Ν	25	\$;1otc:		0 50 64 4 701	4 47 107 0 41		body
<u>3513-8</u>	3/4	Y	1	\$;,x9:		0.58 [14.73]	1.47 [37.34]	3¼ in – 14 NPT	
<u>3513RAC</u>		Y	25	\$;1ot2:					
<u>3404-8</u>		Ν	1	\$;,xc:					
<u>3404</u>	4	Ν	10	\$;-1oti:	4 74 (40 40)		4 70 [45 47]	4:- 44.1/ NDT	
<u>3514-8</u>	1	Y	1	\$;,xb:	1.71 [43.43]	0.65 [16.51]	1.79 [45.47]	1in – 11-½ NPT	
<u>3514RAC</u>		Y	10	\$;1ot3:					
<u>3405-8</u>		Ν	1	\$;0,xd:					
<u>3405</u>	1-1/4	Ν	10	\$;-1otj:	2.17 [55.12]	0.69 [17.53]	1.89 [48.01]	1¼ in – 11-½ NPT	Zinc electroplated
<u>3515RAC</u>		Y	10	\$;01ot4:					malleable iron nut
<u>3406-8</u>	1-1/2	Ν	1	\$;0,xe:	2.40 [60.96]	0.71 [18.03]	2.08 [52.83]	1½ in – 11-½ NPT	and body
<u>3408-8</u>	2	Ν	1	\$;;0,xf:	3.00 [76.20]	0.75 [19.05]	2.28 [57.91]	2in – 11-1/2 NPT	

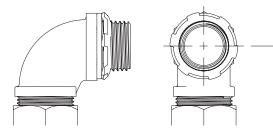
Note: Heavy-duty locknut on all models is zinc-plated steel

# **RACO<sup>®</sup>** Liquid-Tight Connectors

#### 90° Connectors







Please see our website <u>www.AutomationDirect.com</u> 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 <sup>®</sup> 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  $\mathsf{RACO}^\circledast$  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

			RAC	CO Liquid	-tight 9	0° Conn	ectors									
	Trade Size					Din	nensions – li	nches [mm]		Compression Nut						
Part Number	(in)	Insulated	Qty	Price	A	В	С	D	Thread	& Body Material						
<u>3421-8</u>		Ν	1	\$;,xg:												
<u>3421</u>	3/8	Ν	25	\$;1ot6:	1.06 [26.92]	0.55 [13.97]	1.40 [35.56]	1.70 [43.18]	½ in – 14 NPT							
<u>3541RAC</u>		Y	25	\$;01otd:	[20:02]	[10.07]	[00.00]	[10.10]								
<u>3422-8</u>		Ν	1	\$;-,xi:												
<u>3422</u>	1/2	Ν	25	\$;1ot7:	1.09	0.55	1.41	1.73	½ in – 14 NPT							
<u>3542-8</u>	1/2	Y	1	\$;,xh:	[27.69]	[13.97]	[35.81]	[43.94]	/2 111 - 14 INF I							
<u>3542</u>		Y	25	\$;01ote:												
<u>3423-8</u>		N	1	\$;,xk:	1.30 [33.02]					steel nut and malleable iron						
<u>3423</u>	3/4	Ν	25	\$;01ot8:		0.59	1.61	2.02	3/ := 14 NDT	body						
<u>3543-8</u>		Y	1	\$;-,xj:		[14.99]	[40.89]	[51.31]	3¼ in – 14 NPT							
<u>3543</u>		Y	25	\$;;01otf:												
<u>3424-8</u>		Ν	1	\$;0,xn:												
<u>3424</u>	- 1	Ν	10	\$;01ot9:	1.58	0.65	1.92	2.31	1in – 11-½ NPT							
<u>3544-8</u>		Y	1	\$;-0,xl:	[40.13]	[16.51]	[48.77]	[58.67]	1111 - 11-72 INF 1							
<u>3544</u>		Y	10	\$;01otg:												
<u>3425-8</u>		Ν	1	\$;0,xo:	4.07	0.00		0.07								
<u>3425</u>	1-1/4	Ν	10	\$;01ota:	1.97	0.69 [17.53]	2.02 [51.31]	2.67 [67.82]	1-¼ in – 11-½ NPT							
<u>3545</u>		Y	10	\$;01oth:	[]	]	[]	[: :]		Zinc electroplated						
<u>3426-8</u>	1-1/2	Ν	1	\$;0,xp:	2.22 [56.39]	0.71 [18.03]	2.25 [57.15]	3.05 [77.47]	1-1/2 in - 11-1/2 NPT	malleable iron nu and body						
<u>3428-8</u>	2	Ν	1	\$;0,xq:	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