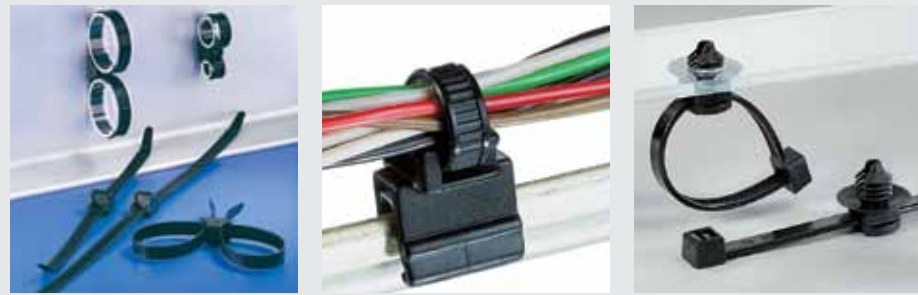


NYLON CABLE TIES • SERRE-FILS EN NYLON • CINTILLO DE NYLON

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Protect critical wire and cable systems in your vehicle. Reduce downtime and maintenance costs with Grote's Support and Protective products.

- Made of general purpose (PA66) Polyamide 6.6 nylon material
- UL flame rating 94V-2
- Provides flexible bundling and mounting options for wire, cable and multiple size hoses
- Absorbs vibration, insulates cables and provides abrasion protection
- Black ties are U.V. coated and provide superior protection from drying out and cracking
- Continuous operating temperature -40°C (-40°F) to 85°C (185°F)
- Use Grote's ergonomic and mechanical cable tie tools for an easy effective application (83-6527, 83-6528) on page 74
- Made in North America



FEDERAL ASTM SPECIFICATIONS: D-4066PA0111 | FDA SPECIFICATIONS: CFR177.1500

Light Duty Ties

Pack of 25	Pack of 100	Pack of 1000	Length	Width	Bundle Diameter	Strength	Color
83-6000	83-6000-3		4.10" (104mm)	.10" (2.5mm)	0.75" (19mm)	18 lbs	White
83-6001	83-6001-3		4.10" (104mm)	.10" (2.5mm)	0.75" (19mm)	18 lbs	Black
83-6004	83-6004-3		8.10" (205mm)	.10" (2.5mm)	2.00" (51mm)	18 lbs	White
83-6005	83-6005-3		8.10" (205mm)	.10" (2.5mm)	2.00" (51mm)	18 lbs	Black

Standard Ties

Pack of 25	Pack of 100	Pack of 1000	Length	Width	Bundle Diameter	Strength	Color
83-6006	83-6006-3		5.80" (147mm)	.14" (3.5mm)	1.25" (32mm)	40 lbs	White
83-6007	83-6007-3		5.80" (147mm)	.14" (3.5mm)	1.25" (32mm)	40 lbs	Black
85-6018	83-6018	83-6018-3	7.60" (193mm)	.14" (3.5mm)	2.00" (51mm)	50 lbs	White
85-6019	83-6019	83-6019-3	7.60" (193mm)	.14" (3.5mm)	2.00" (51mm)	50 lbs	Black
85-6020	83-6020	83-6020-3	11.10" (282mm)	.14" (3.5mm)	3.00" (76mm)	50 lbs	White
85-6021	83-6021	83-6021-3	11.10" (282mm)	.14" (3.5mm)	3.00" (76mm)	50 lbs	Black
85-6026	83-6026	83-6026-3	14.60" (371mm)	.14" (3.5mm)	4.00" (101mm)	50 lbs	White
85-6025	83-6025	83-6025-3	14.60" (371mm)	.14" (3.5mm)	4.00" (101mm)	50 lbs	Black

Heavy Ties

Pack of 25	Pack of 100	Pack of 1000	Length	Width	Bundle Diameter	Strength	Color
83-6017	83-6017-3		9.00" (228mm)	.30" (7.6mm)	2.50" (63mm)	120 lbs	White
83-6016	83-6016-3		9.00" (228mm)	.30" (7.6mm)	2.50" (63mm)	120 lbs	Black
85-6028	83-6028	83-6028-3	15.00" (381mm)	.30" (7.6mm)	4.00" (101mm)	120 lbs	White
85-6029	83-6029	83-6029-3	15.00" (381mm)	.30" (7.6mm)	4.00" (101mm)	120 lbs	Black

Extra Heavy Ties

Pack of 25	Pack of 50	Length	Width	Bundle Diameter	Strength	Color
	83-6121 NEW	24.60" (625mm)	.33" (8.4mm)	7.20" (183mm)	175 lbs	White
85-6120		24.60" (625mm)	.33" (8.4mm)	7.20" (183mm)	175 lbs	Black
	83-6118 NEW	36.00" (914mm)	.33" (8.4mm)	11.00" (279mm)	175 lbs	White
	83-6119 NEW	36.00" (914mm)	.33" (8.4mm)	11.00" (279mm)	175 lbs	Black
	83-6122 NEW	48.00" (1,219mm)	.33" (8.4mm)	15.00" (381mm)	175 lbs	White
85-6118		52.17" (1,325mm)	.33" (8.4mm)	15.00" (381mm)	175 lbs	White



85-6120

Nylon Cable Tie Assortment

- Made of general purpose (PA66) Polyamide 6.6 nylon material
- Contains an assortment of the most popular cable ties available
- Compact and attractive polybag packaging with a clear view of all the products inside
- Available in white, U.V. resistant black and assorted colors

Part No.	Pack of	Features / Strength / Color
83-6506	125	25 x 4" and 8", 18 lb, White 25 x 8", 11" and 15", 50 lb, White
83-6507	125	25 x 4" and 8", 18 lb, Black 25 x 8", 11" and 15", 50 lb, Black



83-6506

83-6507

83-6514

Part No.	Pack of	Length	Width	Bundle Diameter	Strength
83-6514	50	8" (205mm)	.18" (4.6mm)	1 3/4" (44mm)	50 lbs

Includes 10 x Blue, Yellow, Green, Orange and Red

Cable Tie Assortment Canister NEW

- Assortment of light to standard duty nylon cable ties
- 10 different cable ties ranging from 4" to 12" and in various colors
- 100 of each of the cable ties (total 1,000 pieces)
- Convenient storage canister
- Ideal use; at home, the garage or workshop

Part No.	Pack of	Lengths	Strength	Colors
83-6600	1,000	4", 6", 8", 12"	18lb - 50lb	Yellow, Blue, Red, Green, White



83-6600

Color Ties

- Color Ties help to ease wire identification

Pack of 25	Pack of 1000	Length	Width	Bundle Diameter	Strength	Color
85-6030	83-6030-3	7.6" (193mm)	.14" (3.5mm)	2.0" (51mm)	50 lbs	Red
85-6031	83-6031-3	7.6" (193mm)	.14" (3.5mm)	2.0" (51mm)	50 lbs	Orange
85-6032	83-6032-3	7.6" (193mm)	.14" (3.5mm)	2.0" (51mm)	50 lbs	Blue
85-6033	83-6033-3	7.6" (193mm)	.14" (3.5mm)	2.0" (51mm)	50 lbs	Yellow
85-6034	83-6034-3	7.6" (193mm)	.14" (3.5mm)	2.0" (51mm)	50 lbs	Green
85-6035	83-6035-3	7.6" (193mm)	.14" (3.5mm)	2.0" (51mm)	50 lbs	Purple
85-6036	83-6036-3	7.6" (193mm)	.14" (3.5mm)	2.0" (51mm)	50 lbs	Gray



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Screw Mount Ties



83-6104

Pack of 25	Pack of 50	Pack of 100	Length	Width	Bundle Diameter	Strength	Mounting Hole	Color
85-6104	83-6104		7.60" (193mm)	.18" (4.5mm)	1.90" (48mm)	50 lbs	#10	White
			7.60" (193mm)	.18" (4.5mm)	1.90" (48mm)	50 lbs	#10	Black
			12.20" (310mm)	.18" (4.5mm)	3.00" (76mm)	50 lbs	#10	Black
			15.60" (396mm)	.18" (4.5mm)	4.00" (101mm)	50 lbs	#10	White
	83-6108		15.60" (396mm)	.18" (4.5mm)	4.00" (101mm)	50 lbs	#10	Black
83-6037	83-6116		16.20" (411mm)	.30" (7.6mm)	4.00" (101mm)	120 lbs	.250"	White
83-6117			16.20" (411mm)	.30" (7.6mm)	4.00" (101mm)	120 lbs	.250"	Black

Cable Tie Tension and Cutter "Gun Style" Tool

- Cable tie tension and cut-off tools reduce operator fatigue and speed assembly
- Ergonomic design ideally fits the operators hand
- Cushion grip for comfort
- Quick tension adjustability for a flush "cut-off"
- Equipped with a hook for easy hanging

MILITARY

MILITARY SPECIFICATIONS: MS90387-1 (83-6527), MS90387-2 (83-6528)

83-6527 For 18-50 lb Ties

83-6528 For 18-250 lb Ties

Cable Tie Tension and Cutter "Twister" Tool

- Compact tensioning tool enables cinching and cutting
- For cable ties ranging from 18lbs-50lbs tensile strength
- Twisting action leaves a clean edge to prevent chaffing of wires
- Lightweight ergonomic design
- 7" long

83-6509



83-6509

Releasable Ties



83-6023

Pack of 25	Pack of 100	Pack of 1000	Length	Width	Bundle Diameter	Strength	Color
	83-6012		7.60" (193mm)	.18" (4.5mm)	1.90" (48mm)	50 lbs	White
	83-6013		7.60" (193mm)	.18" (4.5mm)	1.90" (48mm)	50 lbs	Black
	83-6022		14.60" (371mm)	.18" (4.5mm)	4.00" (101mm)	50 lbs	White
85-6023	83-6023		14.60" (371mm)	.18" (4.5mm)	4.00" (101mm)	50 lbs	Black
85-6163	83-6163		22.40" (569mm)	.49" (12.5mm)	5.90" (150mm)	250 lbs	Black



Releasable Dual Clamp Ties

- Made of general purpose (PA66HIR) Polyamide 6.6 high impact nylon material
- UL flame rating 94-HB, good UV resistance
- Unique one piece design with the 1/4" mounting head centered on the strap
- Can reduce the need to carry numerous clamps and other mounting devises
- Is releasable and extremely flexible for tough to reach areas
- Continuous operating temperature -40°C (-40°F) to 110°C (230°F)

FEDERAL ASTM SPECIFICATIONS: D-4066PA0151

Pack of 10	Pack of 50	Length	Width	Bundle Dia. (each side)	Strength	Mounting Hole	Color
85-6040	83-6040	13.0" (331mm)	.50" (12.7mm)	1.3" (33.02mm)	150 lbs	.250" (6.35mm)	Black
85-6041	83-6041	19.2" (489mm)	.50" (12.7mm)	2.3" (58.42mm)	150 lbs	.250" (6.35mm)	Black



83-6040

Wide Strap Cable Tie

- Made of general purpose (PA66HIRHS) Polyamide 6.6 high impact, heat-stabilized nylon material
- UL flame rating 94-HB, excellent UV resistance
- Continuous operating temperature -40°C (-40°F) to 110°C (230°F)



- The wide strap tie minimizes pinching on soft bundles
- Features a low profile head to provide compact bundling
- Flexible strap with a bent tip for quick insertion into mounts
- Accommodates a large bundle diameter range .375" (9.5mm) – 4.125" (104.7mm)



FEDERAL ASTM SPECIFICATIONS: D-4066PA0161

Pack of 25	Pack of 100	Length	Width	Bundle Diameter	Strength	Color
85-6042	83-6042	9.1" (231mm)	.5" (12.7mm)	2.25" (57mm)	120 lbs	Black
85-6043	83-6043	15.1" (244mm)	.5" (12.7mm)	4.12" (104mm)	120 lbs	Black



83-6042

Edge Clip & Cable Tie Assemblies

- Made of general purpose (PA66HIRHS) Polyamide 6.6 high impact, heat stabilized nylon material
- UL flame rating 94V-2 cable tie; 94-HB mount – excellent UV resistance
- Continuous operating temperature -40°C (-40°F) to 110°C (230°F)

- The edge clip is designed to route bundles by securing to the edge of plastic or metal rails without the need for a mounting hole
- The clips are easy to secure and are extremely economical
- Comes complete with cable tie and edge clip
- Panel thickness range: .039"-.117" (1mm-3mm)



FEDERAL ASTM SPECIFICATIONS: D-4066PA0161

Pack of 25	Pack of 100	Length	Bundle Diameter	Strength	Mount Style	Color
85-6063	83-6063	7.9" (200mm)	1.80" (45mm)	50 lbs	Top	Black
85-6064	83-6064	7.9" (200mm)	1.80" (45mm)	50 lbs	Side	Black



85-6063

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MOUNTING BASES & CLAMPS • SOCLES ET BRIDES • BASES Y ABRAZADERAS DE MONTAJE



Fir Tree Mount & Cable Tie Assemblies

- Made of general purpose (PA66HS) Polyamide 6.6 nylon heat-stabilized material
- UL flame rating 94V-2 cable tie; 94-HB mount – excellent UV resistance
- Provides low insertion force and high extraction force
- Continuous operating temperature -40°C (-40°F) to 105°C (221°F) cable tie; -40°C (-40°F) to 110°C (230°F) mount



FEDERAL ASTM SPECIFICATIONS: D-4066PA0121



Push Mount

- Fir tree design grips to inside of a hole for materials like sheet metal, wood and cast iron
- Panel thickness range: .052"-.280" (1.32mm-7.0mm)

Pack of 100	Length	Width	Bundle Diameter	Strength	Color
83-6045	8.27" (210mm)	.18" (4.57mm)	1.90" (48mm)	50 lbs	Black



Domed Fir Tree Mount and Cable Tie Assembly

- The domed head tie provides a tight rattle-free installation and outside serrated strap has ribs designed for convoluted tubing. Dome also keeps out dust and liquids
- Panel thickness range: .250"-.280" (6.3mm-7.0mm)

Pack of 100	Length	Width	Bundle Diameter	Strength	Color
83-6048	6.69" (170mm)	.20" (5.1mm)	1.22" (31mm)	45 lbs	Black



Fir Tree Mount and Cable Tie Assembly

- Cable mount can slide along the cable tie for easy assembly. Fir tree design grips to inside of a hole for materials like sheet metal, wood, and cast iron.
- Popular on trailer manufacturing
- Panel thickness range: .028"-.193" (.75mm-3.0mm)

Pack of 100	Length	Width	Bundle Diameter	Strength	Color
83-6046	8.00" (203mm)	.18" (4.6mm)	1.75" (44.5mm)	50 lbs	Black

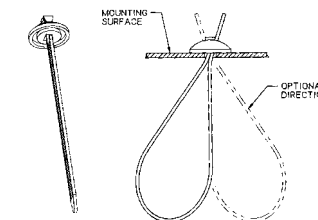


Button Head Cable Tie

- Made of general purpose (PA66HIRHS) Polyamide 6.6 high impact, heat stabilized nylon material
 - UL flame rating 94-HB, excellent UV resistance
 - Continuous operating temperature -40°C (-40°F) to 110°C (230°F)
- The buttons tie provides parallel entry and exit through the button head.
- With teeth on both sides of the strap it can be installed through bi-directional looping clockwise or counter-clockwise.
- Standoff tabs prevent tie head from seating into the button head
- Pilot bushings protect strap from abrasion
- Popular OEM product – reducing part numbers and labor time

FEDERAL ASTM SPECIFICATIONS: D-4066PA0161

Pack of 50	Length	Width	Bundle Diameter	Strength	Color
83-6049	9.63" (244mm)	.22" (5.6mm)	2.62" (66.7mm)	105 lbs	Black
83-6052	15.00" (578mm)	.30" (7.6mm)	4.33" (110mm)	130 lbs	Black



Heavy Duty Mounts

- Made of general purpose (PA66HIRHS) Polyamide 6.6 high impact, heat stabilized nylon material; UL flame rating 94-HB, excellent UV resistance
- Continuous operating temperature -40°C (-40°F) to 110°C (230°F)

- When used with a cable tie, eliminates the need to carry multiple sizes of clamps
- Provides quick and easy service in the field; replace the cable tie only
- Has an excellent heat ratio and commonly used near an engine block
- Can accommodate up to .5" wide cable ties
- Contains a small tab inside the mounting hole that allows you to pre-install the mount on a stud before securing with a washer and a nut
- Additional sizes available upon request



FEDERAL ASTM SPECIFICATIONS: D-4066PA0161

Pack of 25	Pack of 100	Mounting Hole	Length	Width	Max Torque	Color
85-6060	83-6060	.187" (4.8mm)	.76" (19.3mm)	2.25" (57mm)	115 lb - in.	Black
85-6061	83-6061	.250" (6.4mm)	.76" (19.3mm)	2.25" (57mm)	115 lb - in.	Black
85-6062	83-6062	.312" (8.0mm)	.76" (19.3mm)	2.25" (57mm)	115 lb - in.	Black



83-6062

Cable Tie Mounting Bases

- Made of general purpose (PA66) Polyamide 6.6 nylon material; rubber-based adhesive
- UL flame rating 94V-2; Continuous operating temperature -40°C (-40°F) to 85°C (185°F)
- Accommodates 18-50 lb cable ties

FEDERAL ASTM SPECIFICATIONS: D-4066PA0111 | FDA SPECIFICATIONS: CFR177.1500

Part No.	Length	Width	Mounting Style/Hole	Pack of	Color
83-6030	1.11" (28.3mm)	1.11" (28.3mm)	2-Way with adhesive, #6	50	White
83-6032	1.11" (28.3mm)	1.11" (28.3mm)	2-Way with adhesive, #6	50	Black
83-6031	1.11" (28.3mm)	1.11" (28.3mm)	4-Way with adhesive, #8	50	White
83-6033	1.00" (25.4mm)	1.11" (25.4mm)	4-Way with adhesive, #10	50	Black



Hose Hanger Clamps

- High quality material for low temperature and impact resistance
- Versatile design for diverse applications
- Ultra-Violet Resistant

I.D. Size	Pack	Color	Part No.
3/8" x 3/8"	25	Black	83-7015
1/2" x 1/2"	25	Black	83-7016
1/2" x 3/8"	25	Black	83-7017



83-7016

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Non Metallic Loom

- Used to protect wire harnesses, fuel lines, battery cables, control rods, vacuum lines and anywhere extreme heat or harsh chemicals are present
- Made of lightweight, non-metallic flexible conduit
- Constructed with the highest grade PET (Polyethylene Terephthalate) yarn and filled with PET monofilament
- Asphalt coating resists oil and fuel, water and other harsh chemicals
- Provides superior abrasion protection and crush resistance
- Extremely flexible and excellent for shock and noise reduction
- Continuous operating temperature -60°C (-76°F) to 163°C (325°F)
- Made in North America
- Custom lengths and split options available by request

MILITARY

INDUSTRY SPECS: FORD: ESB-M3L38-A, ESF-M3L45-A, ESB-M99H96-A | GENERAL MOTORS: GM-675M, GM-676M, GM-677M, GM-678M | CHRYSLER: MS-542, MS-JZ9-31 | MILITARY: HH-T-791 A,B,C SAE J562A

Part No.	Size	Color	Length
87-1000	1/4"	Black	100' (30.5m)
87-1008	5/16"	Black	100' (30.5m)
87-1001	3/8"	Black	100' (30.5m)
87-1002	1/2"	Black	100' (30.5m)
87-1007	3/4"	Black	100' (30.5m)

Spiral Wrap – Spooled

- Made of lightweight Polyethylene material
- Black spiral wrap is U.V. resistant
- Provides wire and cables from abrasion and allows flexible routing options
- Continuous operating temperature: -60°C (-76°F) to 88°C (190°F)

MILITARY

MILITARY SPECS: MIL I-631D, MIL P-21922A (BLACK ONLY) | FED SPEC: LP390 (BLACK AND NATURAL)

Size	Min/Max Bundle Diameter	Length (Ft)	Black	Natural
1/4"	.187" (4.75mm) – 2" (50.8mm)	100	83-9008	83-9003
3/8"	.312" (7.92mm) – 3" (76.2mm)	100	83-9009	83-9000
1/2"	.375" (9.52mm) – 4" (102mm)	100	83-9007	83-9001
3/4"	.750" (19.1mm) – 5" (127mm)	100	83-9010	83-9002
1"	1.00" (25.4mm) – 7" (178mm)	100	83-9011	83-9004



Split Flex Convuluted Tubing

- Provides excellent chemical protection. Allows flexible routing of wire, cable, hoses
- Protects hoses, wire and cables from extreme heat and abrasion
- Helps reduce noise and protects wires from stones and other harmful debris
- Slit opening allows for easy installation of wires
- The slit snaps closed after installation to maintain its protective properties
- Applications: Automotive, Truck, Bus, Trailer, Marine, R.V., OE harness manufacturing

Nylon Split Loom

- Made of lightweight, black nylon material, with grey striping
- Continuous operating temperature -40°C (-40°F) to 149°C (300°F)
- FMVSS 302 Flame Rating

PRODUCT SPECS: FORD: WSS-M4D933-A1, ES-XU5T-14A099-AA
 CHRYSLER: MS-DB41 CPN 4059 | ASTM: D4066PA283

Size	Length	Part No.	Size	Length	Part No.
1/4"	50' (15.2m)	83-8030	5/8"	500' (152m)	83-8033-3
1/4"	500' (152m)	83-8030-3	3/4"	50' (15.2m)	83-8034
3/8"	50' (15.2m)	83-8031	3/4"	500' (152m)	83-8034-3
3/8"	500' (152m)	83-8031-3	1"	50' (15.2m)	83-8035
1/2"	50' (15.2m)	83-8032	1"	300' (91.4m)	83-8035-3
1/2"	500' (152m)	83-8032-3	1 1/2"	150' (45.7m)	83-8036-3
5/8"	50' (15.2m)	83-8033	2"	100' (30.4m)	83-8037-3

Polyethylene Split Loom

- Made of lightweight, black polyethylene (PE) material
- Continuous operating temperature -40°C (-40°F) to 93°C (200°F)

Size	Length	Part No.	Size	Length	Part No.
1/4"	10' (3.0m)	83-6999	1/2"	50' (15.2m)	83-8001
1/4"	25' (7.6m)	83-8013	1/2"	500' (152m)	83-8001-3
1/4"	50' (15.2m)	83-8003	5/8"	50' (15.2m)	83-8007
1/4"	500' (152m)	83-8003-3	5/8"	500' (152m)	83-8007-3
3/8"	8' (2.43m)	83-7000	3/4"	5' (1.52m)	83-7002
3/8"	25' (7.6m)	83-8010	3/4"	50' (15.2m)	83-8002
3/8"	50' (15.2m)	83-8000	3/4"	500' (152m)	83-8002-3
3/8"	500' (152m)	83-8000-3	1"	5' (1.52m)	83-6998
7/16"	12' (3.6m)	83-8018	1"	50' (15.2m)	83-8004
7/16"	50' (15.2m)	83-8014	1"	300' (91.4m)	83-8004-3
7/16"	500' (152m)	83-8014-3	1 1/2"	150' (45.7m)	83-8005-3
1/2"	7' (2.13m)	83-7001	2"	100' (30.4m)	83-8009-3
1/2"	25' (7.6m)	83-8011			

Split Loom Installation Tool NEW

- Loom tool allows for easy insertion of singular or multiple wires to split loom
- Ergonomic design
- Saves valuable time

- 83-6990 1/4" – 7/16" Size Range
- 83-6991 1/2" – 5/8" Size Range
- 83-6992 3/4" – 7/8" Size Range
- 83-6993 1" – 1 1/2" Size Range



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CLIPS AND GROMMETS • ATTACHES ET PASSE-FILS • CLIP Y PASACABLES

Rubber Insulated Steel Clamps

- Black EPDM extruded material reduces vibration and has excellent heat resistance
- G-60 galvanized steel is resistant to acids, oxidizing, chemicals and weathering
- Ideal for securing wire loom, cables and hydraulic hoses
- Maximum temperature rating -40°C (-40°F) to 148°C (300°F)
- Made in North America; additional bulk sizes available

FEDERAL ASTM SPECIFICATIONS: D2000 M3 BA710 A14 B13 C12 F17 Z1

I.D. Size	Width	Mounting Hole	Pack of 10	Pack of 100
1/4" (6.4mm)	5/8" (15.8mm)	3/8" (9.52mm)	84-8000	83-8100
3/8" (9.5mm)	5/8" (15.8mm)	3/8" (9.52mm)	84-8001	83-8101
1/2" (12.7mm)	5/8" (15.8mm)	3/8" (9.52mm)	84-8002	83-8102
5/8" (15.9mm)	5/8" (15.8mm)	3/8" (9.52mm)	84-8003	83-8103
3/4" (19.1mm)	5/8" (15.8mm)	3/8" (9.52mm)	84-8004	83-8104
7/8" (22.2mm)	5/8" (15.8mm)	3/8" (9.52mm)	84-8005	83-8105
1" (25.4mm)	5/8" (15.8mm)	3/8" (9.52mm)	84-8006	83-8106
1 1/4" (31.7mm)	5/8" (15.8mm)	3/8" (9.52mm)	84-8007	83-8107
2" (50.8mm)	5/8" (15.8mm)	3/8" (9.52mm)	84-8008	83-8108

Vinyl Insulated Clamps

- Black Plastisol (PVC) dip coating provides excellent resistance to acids, salts & moisture
- Self extinguishing & excellent resistance to impact, vibration and abrasion
- G-60 galvanized steel is resistant to acids, oxidizing, chemicals and weathering
- Ideal for securing wire loom, split flex tubing, cables and hydraulic hoses
- Maximum temperature rating -40°C (-40°F) to 93°C (200°F)
- Made in North America; additional bulk sizes available

I.D. Size	Width	Mounting Hole	Pack of 5	Pack of 10	Pack of 15	Pack of 100
1/4" (6.4mm)	1/2" (12.7mm)	1/4" (6.35mm)			84-7007	83-7007
3/8" (9.5mm)	1/2" (12.7mm)	1/4" (6.35mm)			84-7010	83-7010
1/2" (12.7mm)	1/2" (12.7mm)	1/4" (6.35mm)			84-7008	83-7008
5/8" (15.9mm)	1/2" (12.7mm)	1/4" (6.35mm)			84-7018	83-7018
3/4" (19.1mm)	1/2" (12.7mm)	1/4" (6.35mm)			84-7009	83-7009
7/8" (22.2mm)	1/2" (12.7mm)	1/4" (6.35mm)			84-7019	83-7019
1" (25.4mm)	1/2" (12.7mm)	1/4" (6.35mm)		84-7020		83-7036
1 1/4" (31.7mm)	1/2" (12.7mm)	1/4" (6.35mm)		84-7021		83-7037
1 1/2" (38.1mm)	1/2" (12.7mm)	1/4" (6.35mm)		84-7022		83-7038
2" (50.8mm)	1/2" (12.7mm)	1/4" (6.35mm)		84-7023		83-7039

Nylon Clamps

- Made of general purpose (PA66) Polyamide 6.6 nylon material
- Ideal for securing wire, cable and hydraulic hoses
- Continuous operating temperature -40°C (-40°F) to 85°C (185°F)

I.D. Size	Width	Mounting Hole	Pack of 10	Pack of 100
1/4" (6.4mm)	1/2" (12.7mm)	.203" (5.2mm)	84-7003	83-7003
5/16" (8.0mm)	1/2" (12.7mm)	.203" (5.2mm)	84-7014	83-7014
3/8" (9.5mm)	1/2" (12.7mm)	.203" (5.2mm)	84-7011	83-7011
1/2" (12.7mm)	1/2" (12.7mm)	.203" (5.2mm)	84-7004	83-7004
5/8" (15.9mm)	1/2" (12.7mm)	.203" (5.2mm)	84-7012	83-7012
3/4" (19.1mm)	1/2" (12.7mm)	.203" (5.2mm)	84-7005	83-7005



Chassis Clips

- Made of heat treated spring steel with black corrosion resistant finish
- Clamps snap in place and securely hold wires, cables and hoses

I.D. Size	Dimensions	Pack of 15
3/16"	1/2" wide x 1 1/4" long x 3/16" deep	84-7033
1/4"	1/2" wide x 1 1/2" long x 1/4" deep	84-7034
3/8"	1/2" wide x 1 1/2" long x 1/2" deep	84-7035

Nylon Bushings NEW

- Easy snap in style nylon bushings
- Protects wire and cables from chaffing and vibration
- Lightweight and easy to install; 1/8" thickness

I.D. Size	Mounting Hole	Pack Size	Part No.
3/8"	1/2"	10	84-8050
5/8"	3/4"	100	83-8051
5/8"	3/4"	10	84-8051
3/4"	1"	10	84-8052

Rubber Grommets

- Protect wires from chafing against drilled holes
- Also available in bulk sizes

Inside dia. Size (A)	Groove Width (B)	Overall Width (C)	Overall Thickness (D)	Groove Diameter (E)	Pack Size	Part No.
1/8" (3.1mm)	1/16" (1.5mm)	11/32" (8.7mm)	3/16" (4.7mm)	1/4" (6.4mm)	30	83-7020
3/16" (4.7mm)	1/16" (1.5mm)	7/16" (11.1mm)	7/32" (5.5mm)	5/16" (7.9mm)	30	83-7021
1/4" (6.4mm)	1/16" (1.5mm)	9/16" (14.2mm)	1/4" (6.4mm)	3/8" (9.5mm)	30	83-7022
5/16" (7.9mm)	1/16" (1.5mm)	5/8" (15.9mm)	1/4" (6.4mm)	7/16" (11.1mm)	30	83-7023
3/8" (9.5mm)	1/16" (1.5mm)	5/8" (15.9mm)	1/4" (6.4mm)	1/2" (12.7mm)	30	83-7024
25/64" (9.9mm)	1/8" (3.1mm)	27/32" (21.4mm)	3/8" (9.5mm)	21/32" (16.6mm)	30	83-7025
1/2" (12.7mm)	1/16" (1.5mm)	3/4" (19.2mm)	9/32" (5.2mm)	5/8" (15.9mm)	30	83-7026
5/8" (15.9mm)	1/16" (1.5mm)	1 1/8" (28.5mm)	9/32" (5.2mm)	7/8" (22.2mm)	30	83-7027
11/16" (17.4mm)	1/16" (1.5mm)	1 5/16" (33.3mm)	3/8" (9.5mm)	1" (25.4mm)	30	83-7028

Rubber Grommet Assortment

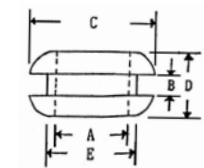
- 30 assorted grommets
- 10 each (1/4", 1/8" & 3/8")

83-7006

Electrical Tape

- General purpose vinyl insulating tape
- Excellent resistance to abrasion, moisture and other weather conditions
- 3/4" x 60' black
- Maximum temperature rating -10°C (14°F) to 80°C (176°F)
- CSA 22.2

83-7029 1 Pack
 83-7029-3 10 Pack

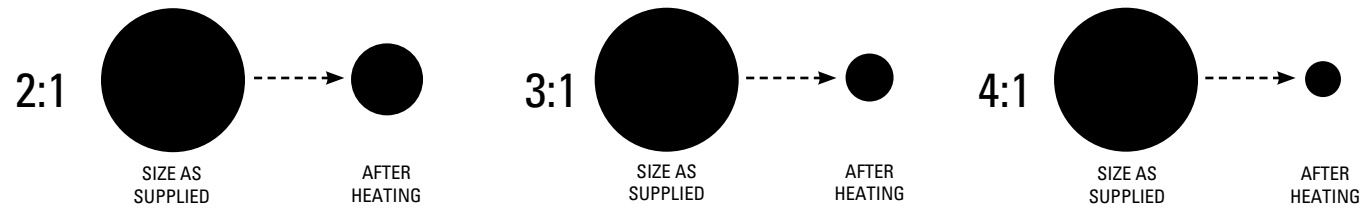


HEAT SHRINK TUBING • TUBE THERMORÉTRÉCISSABLE • TUBO TERMO CONTRÁCTIL

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Shrink Ratio:



POLYOLEFIN HEAT SHRINKABLE TUBING

Product Line	SWT	SWT-Clear	DWT	DWT-Clear	DWA	DWA-Clear	FDWA	HWA
Type	Single Wall	Single Wall	Dual Wall	Dual Wall	Dual Wall	Dual Wall	Dual Wall	Dual Wall
Outer Wall Construction	Thin/Flexible	Thin/Flexible	Semi-Rigid	Semi-Rigid	Semi-Rigid	Semi-Rigid	Flexible	Rigid
Inner Wall Construction	N/A	N/A	Encapsulant Lined	Adhesive Lining	Adhesive Lining	Adhesive Lining	Adhesive Lining	Adhesive Lining
Shrink Ratio	2 to 1	2 to 1	3 to 1	3 to 1	4 to 1	4 to 1	3 to 1	3 to 1
Minimum Shrink Temp.	70°C (158°F)	95°C (203°F)	125°C (257°F)	125°C (257°F)	110°C (230°F)	110°C (230°F)	80°C (176°F)	110°C (230°F)
Moisture Resistance	Low	Low	Medium	High	High	High	High	High
Flame Retardancy	Good	Poor	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Abrasion Protection	Good	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Strain Relief & Insulation	Good	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

* Custom lengths and additional materials available upon request

Dual Wall – Adhesive Lined “Hot Melt” Heat Shrink Tubing

4:1 Shrink Ratio

Dual Wall is designed to meet automotive industry requirements for environmental sealing and electrical insulation. It has a dual wall construction. The outer jacket is semi-rigid, radiation cross-linked polyolefin that is flame retardant and provides strain relief and abrasion protection. The inner layer is a unique hot-melt adhesive designed to adhere to all major automotive wire and terminal insulations. The adhesive forms an effective barrier against fluids and moisture; protects harnesses from corrosion and water wicking and covers a wide temperature range. This product is an OEM approved product.

SPECS / APPROVALS: UL E85381, 600 V, 125° C



Size	Length	Pack	Wire Size	Part No.
1/16" - 3/16" (.225")	6"	6	22-12 GA	84-5006
1/16" - 3/16" (.225")	6"	20	22-12 GA	84-5006-3
1/16" - 3/16" (.225")	48"	6	22-12 GA	84-5006-48
3/16" - 1/4" (.293")	6"	6	20-10 GA	84-5007
3/16" - 1/4" (.293")	6"	20	20-10 GA	84-5007-3
3/16" - 1/4" (.293")	48"	6	20-10 GA	84-5007-48
1/4" - 3/8" (.427")	6"	6	16-8 GA	84-5008
1/4" - 3/8" (.427")	6"	20	16-8 GA	84-5008-3
1/4" - 3/8" (.427")	48"	6	16-8 GA	84-5008-48
1/2" - 5/8" (.700")	6"	6	8-1/0 GA	84-5009
1/2" - 5/8" (.700")	6"	10	8-1/0 GA	84-5009-3
1/2" - 5/8" (.700")	48"	6	8-1/0 GA	84-5009-48

Dual Wall – Adhesive Lined “Hot Melt” Heat Shrink Tubing Kit

4:1 Shrink Ratio

- 40, 6", Black Dual Wall Heat Shrink pieces
- 6 compartment re-closable box
- Re-order chart on inside cover

Part No.	Features	Size	Quantity
83-6535	84-5006	1/16" - 3/16"	12
	84-5007	3/16" - 1/4"	12
	84-5008	1/4" - 3/8"	10
	84-5009	1/2" - 5/8"	6



Minimum shrink temperature:
110°C (230°F)
 Minimum full recovery temperature:
135°C (275°F)
 Operating temperature range:
-40°C to 130°C (-40°F to 266°F)



83-6535



Dual Wall – Flexible, Adhesive Lined Heat Shrink Tubing

3:1 Shrink Ratio

Flexible Dual Wall is an encapsulant-lined heat shrink tubing that provides moisture resistance, strain relief and electrical insulation for splices, terminations, breakouts and mechanical connections. The outer wall is semi-rigid, cross-linked polyolefin, while the inner wall is a meltable polyolefin that flows with the application of heat. This moisture resistant tubing provides flexibility to insulate and protect irregular shape products. It also provides rugged protection from chemicals, abrasion, vibration and flexing.

SPECS / APPROVALS: UL E35586, 600 V, 125°C | CSA LR31929, 600 V, 125°C

Size	Length	Pack	Wire Size	Part No.
1/8"	6"	6	22-18 GA	84-4015
1/8"	6"	20	22-18 GA	84-4015-3
1/8"	48"	6	22-18 GA	84-4015-48
3/16"	6"	6	20-12 GA	84-4016
3/16"	6"	20	20-12 GA	84-4016-3
3/16"	48"	6	20-12 GA	84-4016-48
1/4"	6"	6	16-10 GA	84-4017
1/4"	6"	20	16-10 GA	84-4017-3
1/4"	48"	6	16-10 GA	84-4017-48
3/8"	6"	6	12-8 GA	84-4018
3/8"	6"	20	12-8 GA	84-4018-3
3/8"	48"	6	12-8 GA	84-4018-48
1/2"	6"	6	8-4 GA	84-4019
1/2"	6"	20	8-4 GA	84-4019-3
1/2"	48"	6	8-4 GA	84-4019-48
3/4"	6"	6	4-2/0 GA	84-4020
3/4"	6"	10	4-2/0 GA	84-4020-3
3/4"	48"	6	4-2/0 GA	84-4020-48
1"	6"	6	1-4/0 GA	84-4021
1"	6"	10	1-4/0 GA	84-4021-3
1"	48"	6	1-4/0 GA	84-4021-48

Dual Wall – Flexible, Adhesive Lined Heat Shrink Tubing Kit

3:1 Shrink Ratio

- 50, 6", Black Flexible Dual Wall Heat Shrink pieces
- 6-compartment re-closable box
- Re-order chart on inside cover

Part No.	Features	Size	Quantity
83-6537	84-4015	1/8"	12
	84-4016	3/16"	12
	84-4017	1/4"	12
	84-4018	3/8"	6
	84-4019	1/2"	6
	84-4020	3/4"	2



83-6537

Dual Wall – Heat Shrink Tubing

3:1 Shrink Ratio

Dual Wall is an encapsulant-lined heat shrink tubing that provides moisture resistance, strain relief and electrical insulation for splices, terminations, breakouts and mechanical connections. The outer wall is semi-rigid, cross-linked polyolefin, while the inner wall is a meltable polyolefin that flows with the application of heat. This moisture resistant tubing provides rugged protection from chemicals, abrasion, vibration and flexing.

MILITARY

SPECS / APPROVALS: UL E85381, 600 V, 125°C | MILITARY AMS-DTL-23053/4 CLASS 1

Size	Length Per Piece	Pack	Wire Size	Black Part No.	Red Part No.	Clear Part No.
1/8"	6"	6	22-18 GA	84-4006	84-6106	84-5029
1/8"	6"	20	22-18 GA	84-4006-3	84-6106-3	
1/8"	48"	6	22-18 GA	84-4006-48	84-6106-48	
1/8"	48"	50	22-18 GA	88-4006		
3/16"	6"	6	20-12 GA	84-4005	84-6105	84-5030
3/16"	6"	20	20-12 GA	84-4005-3	84-6105-3	
3/16"	48"	6	20-12 GA	84-4005-48	84-6105-48	
3/16"	48"	50	20-12 GA	88-4005		
1/4"	6"	6	16-10 GA	84-4000	84-6100	84-5031
1/4"	6"	20	16-10 GA	84-4000-3	84-6100-3	
1/4"	48"	6	16-10 GA	84-4000-48	84-6100-48	
1/4"	48"	50	16-10 GA	88-4000		
3/8"	6"	6	12-8 GA	84-4001	84-6101	84-5032
3/8"	6"	20	12-8 GA	84-4001-3	84-6101-3	
3/8"	48"	6	12-8 GA	84-4001-48	84-6101-48	
3/8"	48"	50	12-8 GA	88-4001		
1/2"	6"	6	8-4 GA	84-4002	84-6107	84-5033
1/2"	6"	20	8-4 GA	84-4002-3	84-6107-3	
1/2"	48"	6	8-4 GA	84-4002-48	84-6107-48	
1/2"	48"	50	8-4 GA	88-4002		
3/4"	6"	6	4-2/0 GA	84-4003	84-6103	84-5034
3/4"	6"	10	4-2/0 GA	84-4003-3	84-6103-3	
3/4"	48"	6	4-2/0 GA	84-4003-48	84-6103-48	
3/4"	48"	30	4-2/0 GA	88-4003		
1"	6"	6	1-4/0 GA	84-4004	84-6104	84-5035
1"	6"	10	1-4/0 GA	84-4004-3	84-6104-3	
1"	48"	6	1-4/0 GA	84-4004-48	84-6104-48	
1"	8"	20	1-4/0 GA	88-4004		



Minimum shrink temperature:
125°C (257°F)
 Minimum full recovery temperature:
135°C (275°F)
 Operating temperature range:
-55°C to 110°C (-67°F to 230°F)



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Dual Wall, Heat Shrinkable Tubing Kits

3:1 Shrink Ratio

- 50, 6", Dual Wall Heat Shrink Pieces
- 6-compartment re-closable plastic box
- Re-order chart on inside cover

Part No.	Features	Quantity
83-6502	Black Tubing	50
83-6505	Red and Black Tubing	50

Heavy Wall – Adhesive Lined Heat Shrink Tubing

3:1 Shrink Ratio

Dual Wall is designed for insulating, protecting and sealing electrical connections and low voltage cables. It provides insulation thickness equal to or greater than standard wire insulation. Heavy wall shrink tubing provides an environmental seal and is highly resistant to impact and abrasion. Longer lengths and sizes available upon request.

SPECS / APPROVALS: UL E1 15664

Pre Heat	Inside Diameter		Length Per Piece	Pack	Part No.
	Post Heat				
.750" (19mm)	.220" (5.6mm)		48"	1	84-4030
1.100" (28mm)	.375" (9.5mm)		48"	1	84-4031
1.500" (38mm)	.500" (12mm)		48"	1	84-4032

Dual Wall – Heat Shrink Tubing

3:1 Shrink Ratio

Dual Wall is an encapsulant-lined heat shrink tubing that provides moisture resistance, strain relief and electrical insulation for splices, terminations, breakouts and mechanical connections. The outer wall is semi-rigid, cross-linked polyolefin, while the inner wall is a meltable polyolefin that flows with the application of heat. This moisture resistant tubing provides rugged protection from chemicals, abrasion, vibration and flexing. Meets UL #486D requirements.

MILITARY

SPECS / APPROVALS: CSA C22.2 | UL 486D | MILITARY DTL-23053/15, CLASS 2

Size	Length Per Piece	Pack	Wire Size	Black Part No.	Red Part No.
1/2"	1.5"	10	6-2 GA	84-9561	84-9562
3/4"	1.5"	10	4-1/0 GA	84-9563	84-9564
1 1/8"	1.5"	10	2/0-250mcm	84-9565	84-9566

Minimum shrink temperature:
90°C (195°F)
 Minimum full recovery temperature:
121°C (250°F)
 Operating temperature range:
-55°C to 90°C (-67°F to 194°F)



Minimum shrink temperature:
90°C (195°F)
 Minimum full recovery temperature:
121°C (250°F)
 Operating temperature range:
-55°C to 110°C (-67°F to 230°F)

Single Wall – Heat Shrink Tubing

2:1 Shrink Ratio

Single Wall is cost effective tubing that insulates and protects electrical connections. It also provides a flexible option for wire bundling. It is made of cross-linked polyolefin and provides good protection from abrasion and moisture. Meets UL VW-1 and CSA OFT flame-retardancy.

MILITARY

SPECS / APPROVALS: CSA LR31929 VW-1, 600 V, 125°C
 UL E35586 VW-1, 600 V, 125°C | MILITARY AMS-DTL-23053/5, CLASSES 1 AND 3

Size	Length Per Piece	Pack	Black Part No.	Red Part No.	Blue Part No.	Yellow Part No.
1/8"	6"	6	84-5010	84-4013		
1/8"	100'	Spool	83-4999			
3/16"	6"	6	84-5011	84-4007	84-5020	
3/16"	100'	Spool	83-5000			
1/4"	6"	6	84-5012	84-4008	84-5019	84-5025
1/4"	100'	Spool	83-5001			
3/8"	6"	6	84-5013	84-4009	84-5022	84-5024
3/8"	100'	Spool	83-5002			
1/2"	6"	6	84-5014	84-4011	84-5021	
1/2"	100'	Spool	83-5003			
3/4"	6"	6	84-5015	84-4010	84-5023	
3/4"	100'	Spool	83-5004			
1"	6"	6	84-5016			

* Custom lengths and colors available upon request

Single Wall, Black, Heat Shrinkable Tubing Kit

2:1 Shrink Ratio

- 50, 6", Black Single Wall Heat Shrink Pieces
- 6-compartment re-closable plastic box
- Re-order chart on inside cover

Part No.	Features	Size	Quantity
83-6545	84-5010	1/8"	12
	84-5011	3/16"	12
	84-5012	1/4"	8
	84-5013	3/8"	6
	84-5014	1/2"	6
	84-5015	3/4"	6

Single Wall – Heat Shrink Tubing Assortment

Part No.	Features	Size	Quantity
83-6533	Black	1/4" x 6"	3
		3/8" x 6"	2
		1/2" x 6"	2



Minimum shrink temperature:
70°C (158°F)
 Minimum full recovery temperature:
90°C (194°F)
 Operating temperature range:
-55°C to 135°C (-67°F to 275°F)





83-6508

Flameless Heat Gun

- Portable, self igniting, multi function heat tool; 7 1/2" long
- Cordless & flameless; OEM approved
- Comes with an attachable heat deflector, cooling tray and replacement orifice
- The wide nozzle has a high output long life catalyst
- Ready to use in 15 seconds; adjustable heat settings
- Gas container capacity: 20 ml
- Recommended butane: Triple Refined
- Continuous Operating Temperature: 250°C to 500°C (480°F to 930°F)
- Maximum Temperature Rating: 750°C (1400°F)

83-6508



83-6501

Heat Gun

- Two heat settings; 120 Volt, 10 AMP
- Lightweight (1 lb)
- 3-wire ground cord set
- UL and cUL listed
- Thermoplastic casing
- Minimum Temperature Rating: 260°C (500°F)
- Maximum Temperature Rating: 538°C (1000°F)

83-6501



83-6525

Hands-Free Heat Tool

- Hands-free slide lock for continuous use and instant operation
- Ergonomic handle design ensures a non-slip grip
- Removable base for table-top or hand-held use
- 60 minute continuous run time with full charge
- Gas adjustment wheel provides adjustable, long blue torch flame
- Unique shutter lever to easily extinguish ignition flame
- Instant off safety switch
- 1300°C (2500°F)

83-6525



83-6500

Butane Powered Micro Torch

- Compact palm size is perfect for tool kits and field service kits
- Produces an adjustable, wind resistant flame with temperatures up to 1300°C /2500°F, perfect for many microtorch applications
- Built in safety lock with improved easy to use self-ignition system
- Meets consumer products safety commission (CPSC) child safety requirements
- Powered by refillable "fuel cell" (included) with flame adjustment lever
- Built in fuel level viewing window
- Use with Master Ultratane butane for best performance
- Pinpoint flame is perfect for soldering, desoldering, heating shrinking and terminating heating lighting and many other applications
- Patent pending

83-6500