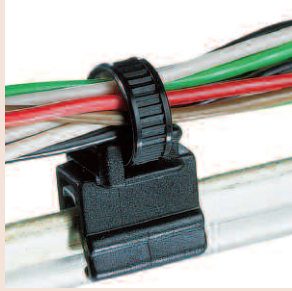


SUPPORT AND PROTECTIVE PRODUCTS

PRODUITS DE FIXATION ET DE PROTECTION • PRODUCTOS DE SOPORTE Y PROTECCIÓN

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



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)
- Federal ASTM and FDA Specifications (ASTM: D-4066PA0111); (FDA: CFR177.1500)
- 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



Light Duty Ties



83-6004

Pack of 25	Pack of 100	Pack of 1000	Length	Width	Bundle Diameter	Strength	Color
	83-6000	83-6000-3	4" (100mm)	.10" (2.5mm)	.87" (22mm)	18 lbs	White
	83-6001	83-6001-3	4" (100mm)	.10" (2.5mm)	.87" (22mm)	18 lbs	Black
	83-6004	83-6004-3	8" (205mm)	.10" (2.5mm)	2.17" (55mm)	18 lbs	White
	83-6005	83-6005-3	8" (205mm)	.10" (2.5mm)	2.17" (55mm)	18 lbs	Black

Standard Ties



83-6019

Pack of 25	Pack of 100	Pack of 1000	Length	Width	Bundle Diameter	Strength	Color
	83-6006	83-6006-3	5.9" (150mm)	.14" (3.5mm)	1.38" (35mm)	30 lbs	White
	83-6007	83-6007-3	5.9" (150mm)	.14" (3.5mm)	1.38" (35mm)	30 lbs	Black
85-6010	83-6010	83-6010-3	11.42" (290mm)	.16" (4.0mm)	3.15" (80mm)	40 lbs	White
85-6011	83-6011	83-6011-3	11.42" (290mm)	.16" (4.0mm)	3.15" (80mm)	40 lbs	Black
85-6018	83-6018	83-6018-3	7.9" (200mm)	.18" (4.6mm)	1.97" (50mm)	50 lbs	White
85-6019	83-6019	83-6019-3	7.9" (200mm)	.18" (4.6mm)	1.97" (50mm)	50 lbs	Black
85-6020	83-6020	83-6020-3	11.8" (300mm)	.18" (4.6mm)	3.35" (85mm)	50 lbs	White
85-6021	83-6021	83-6021-3	11.8" (300mm)	.18" (4.6mm)	3.35" (85mm)	50 lbs	Black
85-6026	83-6026	83-6026-3	15.35" (390mm)	.18" (4.6mm)	4.33" (110mm)	50 lbs	White
85-6025	83-6025	83-6025-3	15.35" (390mm)	.18" (4.6mm)	4.33" (110mm)	50 lbs	Black

Heavy Ties



83-6029

Pack of 25	Pack of 100	Pack of 1000	Length	Width	Bundle Diameter	Strength	Color
	83-6017	83-6017-3	8.85" (225mm)	.30" (7.6mm)	2.17" (55mm)	120 lbs	White
	83-6016	83-6016-3	8.85" (225mm)	.30" (7.6mm)	2.17" (55mm)	120 lbs	Black
85-6028	83-6028	83-6028-3	15.24" (387mm)	.30" (7.6mm)	4.13" (105mm)	120 lbs	White
85-6029	83-6029	83-6029-3	15.24" (387mm)	.30" (7.6mm)	4.13" (105mm)	120 lbs	Black

Extra Heavy Ties

Pack of 25	Pack of 100	Pack of 1000	Length	Width	Bundle Diameter	Strength	Color
85-6120	NEW		25.20" (640mm)	.35" (8.9mm)	7.00" (177mm)	175 lbs	Black
85-6118			52.17" (1325mm)	.35" (8.9mm)	15.95" (405mm)	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"	18 lb	White
		25 x 8"	18 lb	White
		25 x 8"	50 lb	White
		25 x 11 1/2"	40 lb	White
		25 x 15 1/2"	50 lb	White



83-6506



83-6507

Part No.	Pack of	Features	Strength	Color
83-6507	125	25 x 4"	18 lb	Black
		25 x 8"	18 lb	Black
		25 x 8"	50 lb	Black
		25 x 11 1/2"	40 lb	Black
		25 x 15 1/2"	50 lb	Black

Part No	Pack of	Length	Width	Bundle Diameter	Strength	Color
83-6514	50	8" (205mm)	.18" (4.6mm)	1 3/4" (44mm)	50 lbs	10 x Blue, Yellow, Green, Orange, Red



83-6514

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	7.9" (200mm)	.18" (4.6mm)	1.97" (50mm)	50 lbs	Red
85-6031	83-6031-3	7.9" (200mm)	.18" (4.6mm)	1.97" (50mm)	50 lbs	Orange
85-6032	83-6032-3	7.9" (200mm)	.18" (4.6mm)	1.97" (50mm)	50 lbs	Blue
85-6033	83-6033-3	7.9" (200mm)	.18" (4.6mm)	1.97" (50mm)	50 lbs	Yellow
85-6034	83-6034-3	7.9" (200mm)	.18" (4.6mm)	1.97" (50mm)	50 lbs	Green
85-6035	83-6035-3	7.9" (200mm)	.18" (4.6mm)	1.97" (50mm)	50 lbs	Purple
85-6036	83-6036-3	7.9" (200mm)	.18" (4.6mm)	1.97" (50mm)	50 lbs	Gray



SUPPORT AND PROTECTIVE PRODUCTS

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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	8.46" (215mm)	.18" (4.6mm)	1.77" (45mm)	50 lbs	#10	White
		83-6105	8.46" (215mm)	.18" (4.6mm)	1.77" (45mm)	50 lbs	#10	Black
		83-6107	12.40" (315mm)	.19" (4.7mm)	3.35" (85mm)	50 lbs	#10	Black
		83-6027	15.35" (390mm)	.18" (4.6mm)	4.00" (100mm)	50 lbs	#10	White
		83-6108	15.35" (390mm)	.18" (4.6mm)	4.00" (100mm)	50 lbs	#10	Black
	83-6037	83-6116	15.55" (395mm)	.30" (7.6mm)	4.02" (102mm)	120 lbs	.250"	White
	83-6117		15.55" (395mm)	.30" (7.6mm)	4.02" (102mm)	120 lbs	.250"	Black

Cable Tie Tension and Cutter "Gun Style" Tool



83-6527

- 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
- Meets Military Specification 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



83-6509

- 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

Releasable Ties



83-6023

Pack of 25	Pack of 100	Pack of 1000	Length	Width	Bundle Diameter	Strength	Color
		83-6012	8.46" (215mm)	.16" (4.0mm)	2.00" (51mm)	40 lbs	White
		83-6013 NEW	8.46" (215mm)	.16" (4.0mm)	2.00" (51mm)	40 lbs	Black
		83-6022	15.0" (380mm)	.18" (4.6mm)	3.98" (101mm)	50 lbs	White
		83-6023	15.0" (380mm)	.18" (4.6mm)	3.98" (101mm)	50 lbs	Black
85-6163	83-6163		22.4" (1115mm)	.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
- Federal ASTM (ASTM: D-4066PA0151)
- Continuous operating temperature -40°C (-40°F) to 110°C (230°F)

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

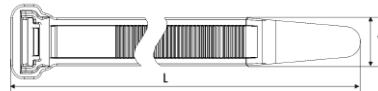


83-6040

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)
- Federal ASTM Specifications (ASTM: D-4066PA0161)

- 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)



83-6042

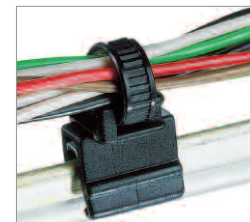
Pack of 25	Pack of 100	Length	Width	Bundle Diameter	Strength	Color
85-6042	83-6042	9.1" (231mm)	.5" (12.7mm)	2.25" (57mm)	120 lbs	Black
85-6043	83-6043	15.1" (244mm)	.5" (12.7mm)	4.12" (104mm)	120 lbs	Black

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)
- Federal ASTM Specifications (ASTM: D-4066PA0161)

- 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)

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

SUPPORT AND PROTECTIVE PRODUCTS

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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 (ASTM: 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)	.19" (4.7mm)	1.97" (50mm)	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)

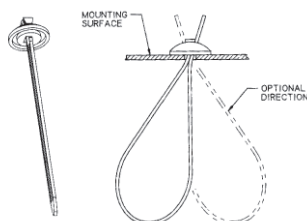


Pack of 100	Length	Width	Bundle Diameter	Strength	Color
83-6046	8.00" (203mm)	.18" (4.6mm)	1.75" (44.5mm)	50 lbs	Black

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)
- Federal ASTM Specifications (ASTM: D-4066PA0161)

- 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



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)
- Federal ASTM Specifications (ASTM: D-4066PA0161)

- * 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

Pack of 25	Pack of 100	Mounting Hole	Length	Width	Max Torque	Color
85-6060	83-6060	.1875" (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	.3125" (8mm)	.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 and FDA Specifications (ASTM: D-4066PA0111); (FDA: CFR177.1500)

Part No.	Length	Width	Mounting Style/Hole	Pack of	Color
83-6030	1.11" (28.32mm)	1.11" (28.32mm)	2-Way with adhesive, #6	50	White
83-6032	1.11" (28.32mm)	1.11" (28.32mm)	2-Way with adhesive, #6	50	Black
83-6031	1.11" (28.32mm)	1.11" (28.32mm)	4-Way with adhesive, #8	50	White
83-6033	1.11" (28.32mm)	1.11" (28.32mm)	4-Way with adhesive, #8	50	Black



Adhesive Back Wiring 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 65° C (150° F)
- Adhesive bonds to clean, smooth surfaces; Additional bulk sizes available

I.D. Size	Pack of 10	Pack of 50
1/4"	84-7030	83-7030
3/8"	84-7031	83-7031
1/2"	84-7032	83-7032



83-7030

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

SUPPORT AND PROTECTIVE PRODUCTS

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CLAMPS • BRIDES • ABRAZADERAS

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)
- Federal ASTM (D2000 M3 BA710 A14 B13 C12 F17 Z1)
- Made in North America; additional bulk sizes available



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

Split Flex Convuluted Tubing

- Provides excellent chemical protection and allows flexible routing of wire, cable and 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 include: Automotive, Truck, Bus, Trailer, Marine, R.V. and 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 Specifications Ford: WSS-M4D933-A1, ES-XU5T-14A099-AA
Chrysler: MS-DB41 CPN 4059
ASTM: D4066PA283



83-8031

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

Polyethethylene 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			



83-8010

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



84-7035

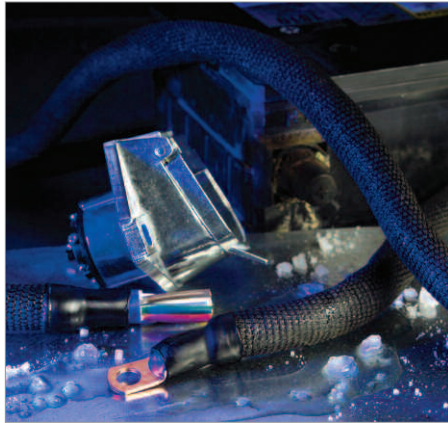
84-7034

84-7033

SUPPORT AND PROTECTIVE PRODUCTS

PRODUITS DE FIXATION ET DE PROTECTION • PRODUCTOS DE SOPORTE Y PROTECCIÓN

TUBE AND LOOM • TUBES ET GAINES • TUBERIA DE AISLAMIENTO



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
- Industry Specifications:

Ford ESB-M3I38-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)	
83-8021	1/4"	Black	15' (4.57m)	NEW
87-1008	5/16"	Black	100' (30.5m)	
83-8022	5/16"	Black	15' (4.57m)	NEW
87-1001	3/8"	Black	100' (30.5m)	
83-8023	3/8"	Black	12' (3.65m)	NEW
88-1002	1/2"	Black	1000' (305m)	
87-1002	1/2"	Black	100' (30.5m)	
83-8024	1/2"	Black	8' (2.44m)	NEW
87-1003	5/8"	Black	100' (30.5m)	
83-8025	5/8"	Black	8' (2.44m)	NEW
87-1007	3/4"	Black	100' (30.5m)	
83-8026	3/4"	Black	6' (1.82m)	NEW



Clear Vinyl Tubing

NEW

- Excellent general purpose flexible tubing used for bundling and protecting wire harnesses
- Electrical insulation of wire splices, terminals and connectors
- Protects against salt, oil, acid and other harmful chemicals
- Abrasion and heat resistant
- Continuous operating temperature -20° C (-4° F) to 105° C (221° F)
- Industry Specifications:

UL subject 224 VW-1; 600V

CSA OFT flame retardancy

MILITARY AMS 3631

ASTM D 922; MIL-1-631D Grade C QPL Approved



Part No.	Size	Color	Length
83-8040	.250" (6.35mm)	Clear	50' (15.2m)
83-8041	.375" (9.53mm)	Clear	50' (15.2m)
83-8042	.500" (12.7mm)	Clear	50' (15.2m)

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 spec: MIL I-631D, MIL P-21922A (black only)
- Fed spec: LP390 (black and natural)

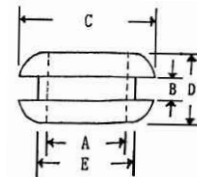


Size	Min/Max Bundle Diameter	Length (Ft)	Black	Natural
1/4"	.187" (4.75mm) – 2" (50.8mm)	100	83-9008	83-9003
3/8"	.312" (7.92mm) – 3" (76.2mm)	100	83-9009	83-9000
1/2"	.375" (9.52mm) – 4" (102mm)	100	83-9007	83-9001
3/4"	.750" (19.1mm) – 5" (127mm)	100	83-9010	83-9002
1"	1.00" (25.4mm) – 7" (178mm)	100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



Rubber Grommets

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



Inside Diam. 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



83-7027



83-7024



83-7020

Rubber Grommet Assortment

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

83-7006



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

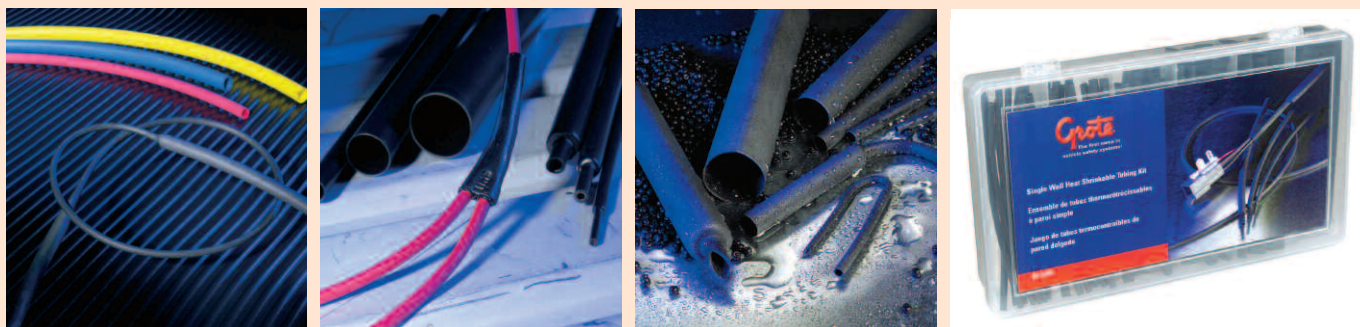


83-7029

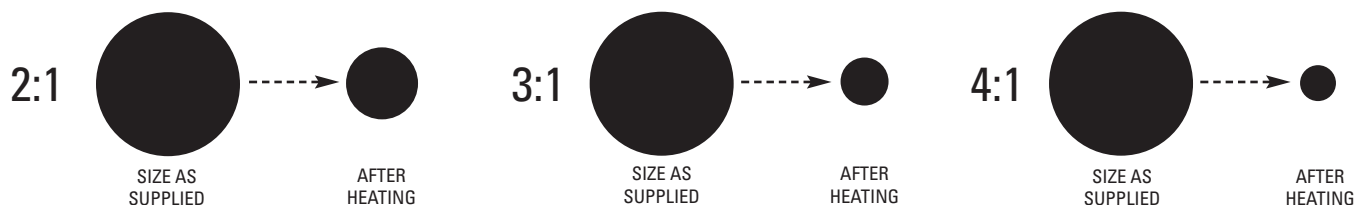
SUPPORT AND PROTECTIVE PRODUCTS

PRODUITS DE FIXATION ET DE PROTECTION • PRODUCTOS DE SOPORTE Y PROTECCIÓN

HEAT SHRINK TUBING • TUBE THERMORÉTRÉCISSABLE • TUBERIA DE AISLAMIENTO TERMOCONTRACTIL



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.

Specifications/Approvals: **Series** 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



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)



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



83-6535

SUPPORT AND PROTECTIVE PRODUCTS

PRODUITS DE FIXATION ET DE PROTECTION • PRODUCTOS DE SOPORTE Y PROTECCIÓN

HEAT SHRINK TUBING • TUBE THERMORÉTRÉCISSABLE • TUBERIA DE AISLAMIENTO TERMOCONTRACTIL



Minimum shrink temperature:
80°C (176°F)

Minimum full recovery temperature:
125°C (257°F)

Operating temperature range:
-40°C to 110°C (-40°F to 230°F)



* Remains semi-flexible post-heat



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.

Specifications/Approvals:	Series	UL	CSA
		E35586	LR31929
		600 V, 125° C	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 *

*** NEW**

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, Black, Heat Shrinkable Tubing Kit

3:1 Shrink Ratio

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

Part No.	Features	Size	Quantity
83-6502	84-4006	1/8"	12
	84-4005	3/16"	12
	84-4000	1/4"	12
	84-4001	3/8"	6
	84-4002	1/2"	6
	84-4003	3/4"	2



83-6502

Dual Wall, Red/Black, Heat Shrinkable Tubing Kit

3:1 Shrink Ratio

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

Part No.	Features	Size	Quantity	Color
83-6505	84-4006	1/8"	6	Black
	84-6106	1/8"	6	Red
	84-4005	3/16"	6	Black
	84-6105	3/16"	6	Red
	84-4000	1/4"	6	Black
	84-6100	1/4"	6	Red
	84-4001	3/8"	3	Black
	84-6101	3/8"	3	Red
	84-4002	1/2"	3	Black
	84-6107	1/2"	3	Red
	84-4003	3/4"	1	Black
	84-6103	3/4"	1	Red



83-6505

Heavy Wall – Adhesive Lined Heat Shrink Tubing **NEW**

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.

Specifications/Approvals: Series UL
E1 15664



Inside Diameter		Length Per Piece	Pack	Part No.
Pre Heat	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



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)

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.

Specifications/Approvals: CSA UL Military
C22.2 486D 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



84-9564

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)

SUPPORT AND PROTECTIVE PRODUCTS

PRODUITS DE FIXATION ET DE PROTECTION • PRODUCTOS DE SOPORTE Y PROTECCIÓN

HEAT SHRINK TUBING • TUBE THERMORÉTRÉCISSABLE • TUBERIA DE AISLAMIENTO TERMOCONTRACTIL



Dual Wall - Heat Shrink Caps

Heat shrink, semi-rigid, encapsulant-lined caps provide an inexpensive solution to encapsulate a crimped electrical connection. The encapsulant lining flows to fill in surface irregularities while providing protection against abrasion. The vibration proof caps are used to insulate dead-end electrical cables and connectors with ease. The clear “adhesive-lined” caps allow for see through inspection. They also provide superior moisture protection and extreme temperature resistance.

Dual Wall

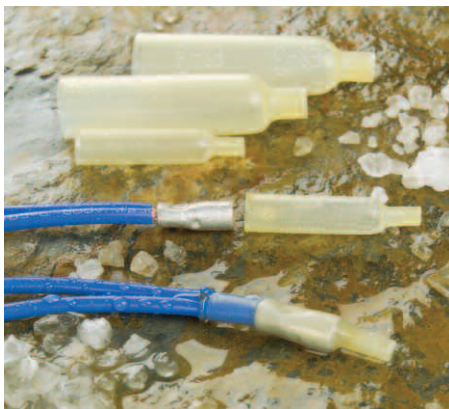
3:1 Shrink Ratio

Size	Color	Pack	Part No.
1/8"	Black	10	84-5040
3/16"	Black	10	84-5041
1/4"	Black	10	84-5042
3/8"	Black	5	84-5043
1/2"	Black	5	84-5044



84-5040

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)



Dual Wall – Adhesive Lined

4:1 Shrink Ratio

Size	Color	Pack	Part No.
.225"	Clear	10	84-5045
.293"	Clear	10	84-5046
.427"	Clear	5	84-5047

Minimum shrink temperature: 100°C (212°F)
Minimum full recovery temperature: 135°C (275°F)
Operating temperature range: -40°C to 105°C (-40°F to 221°F)






84-5047

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.

Specifications/Approvals:

Series	CSA	UL	Military
	LR31929 VW-1 600 V, 125°C	E35586 VW-1 600 V, 125°C	AMS-DTL-23053/5 Classes 1 and 3
			



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)

Size	Length Per Piece	Pack	Black Part No.	Red Part No.	Blue Part No.	Yellow Part No.
1/8"	6"	6	84-5010			
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



83-6545

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



83-6533

SUPPORT AND PROTECTIVE PRODUCTS

PRODUITS DE FIXATION ET DE PROTECTION • PRODUCTOS DE SOPORTE Y PROTECCIÓN

HEAT GUNS AND TORCHES • PISTOLETS THERMIQUES ET TORCHES • PISTOLA DE AIRE CALIENTE Y ANTORCHAS



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

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