DANIELS MANUFACTURING CORPORATION®

LACELOK®

The Smarter Option for Secondary Wire Harness Support

DMC® is an ISO9001:2015 and AS9100D Registered Company.
Scan the QR to learn more about our commitment to quality.

LIMITED WARRANTY: DMC warrants each new product sold by it to be free from defects in material and workmanship under normal use and service. DMC's obligation under this warranty is limited to the free correction or, at DMC's option, the refund of the purchase price of any such product which proves defective in normal service within ninety (90) days after delivery to the first user, provided that the product is returned to DMC with all transportation charges prepaid and which shall appear to DMC's satisfaction, after DMC's inspection, to have been defective in material or workmanship, it being understood that DMC products are not consumer products. This warranty shall not cover any damage to any product which, in the opinion of DMC, was caused by normal wear, misuse, improper operation, tampering, neglect, or accident. This warranty is in lieu of all other warranties express or implied. No warranty, express or implied, is made or authorized to be made or assumed with respect to products of Daniels Manufacturing Corporation other than those herein set forth.

LL-BK Rev C

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SUPERIOR SECONDARY WIRE HARNESS SUPPORT

LaceLok® Cable Lacing Fasteners were designed to replace cable ties and hand-tied lacing tape for secondary support of wire harnesses. The LaceLok system is ergonomic and provides consistent support with unrivaled strength and superior performance.

Made of aerospace-grade materials, LaceLok features a small, rounded fastener and meta-aramid fiber lace. This combination of materials provides superior resistance to fuel, chemicals, abrasion, and extreme operating temperatures.

LaceLok offers multiple installation configurations and multiple tool configurations, making it suitable for a variety of applications. Single, double, or triple wraps allow for increased tensile strength and accommodate pressure sensitive components such as coaxial and fiber optic cables.

LaceLok shown alongside traditional methods of secondary wire harness support

LEARN MORE ABOUT LACELOK

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INDUSTRY CHANGING DESIGN

SAFER & MORE ERGONOMIC

- Reduces repetitive motion and abrasion injuries
- Reduces operator fatigue

MORE CONSISTENT

- Delivers consistent loop force that is controlled by the fastener, not the user
- Activates the locking pin of the buckle at 17-22lb consistently

SUPERIOR PERFORMANCE

- Rated for operation in extreme temperatures -65°C to 260°C
- Hydraulic fluid, lubricating oil, and fuel resistant
- Made of abrasion resistant meta-aramid fiber lace
- 40% lighter than large cable ties

FASTER

- Installs up to 3x faster than most hand-tied lace

STANDARDS AND CLASSIFICATIONS

SAE INTERNATIONAL

LaceLok (CLF) is approved for use as a secondary wiring support device for aerospace vehicles under **AS50881H.** This SAE specification is available online at https://www.sae.org/.

GLOBAL ELECTRONICS ASSOCIATION

LaceLok® is designed to perform as a Cable Lacing Fastener in line with the securing methods described in IPC/WHMA-A-620 rev F. The IPC standard defines the acceptance criteria for cable lacing and harness securing, and when applied according to proper workmanship practices, LaceLok aligns with the criteria defined by the standard. This statement does not imply endorsement or approval by IPC

U.S. MILITARY

The U.S. military maintains and distributes the procurement and detail specifications that control the design, packaging, and performance requirements of LaceLok. U.S. military specifications for LaceLok include the following:

DESIGN & PERFORMANCE SPECIFICATIONS

- **MIL-DTL-32554** Straps, Tie-Down, Adjustable, Non-Metallic, Cable Bundling, General Specification
- **MIL-DTL-32555** Tool, Installation, for Adjustable Tie-Down Straps, General Specification

APPLICATION & APPROVAL SPECIFICATIONS

- **NAVAIR 01-1A-505-1** Technical Manual - Installation Practices for Aircraft Electric and Electronic Wiring
- **TO 1-1A-14** Technical Manual (Air Force)
- **TM 1-1500-323-24-1** Technical Manual (Army)
- **MIL-HDBK-522** Guidelines for Inspection of Aircraft Electrical Wiring Interconnect Systems

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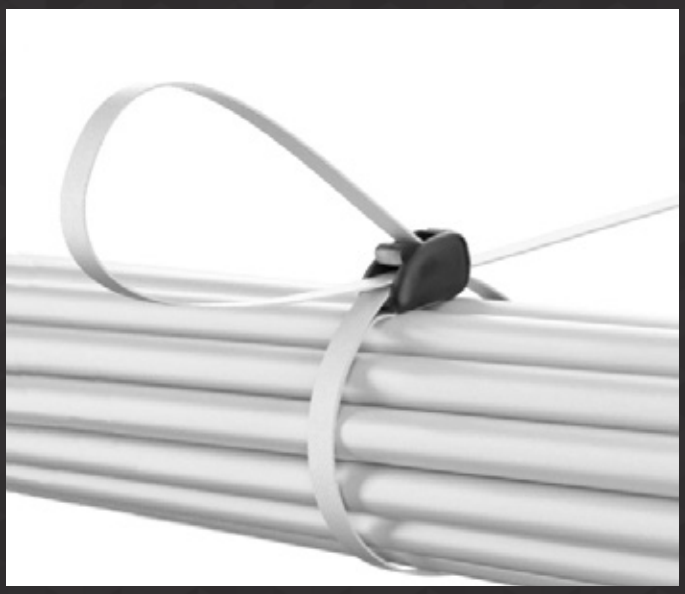
INSTALLING LACELOK IS SIMPLE

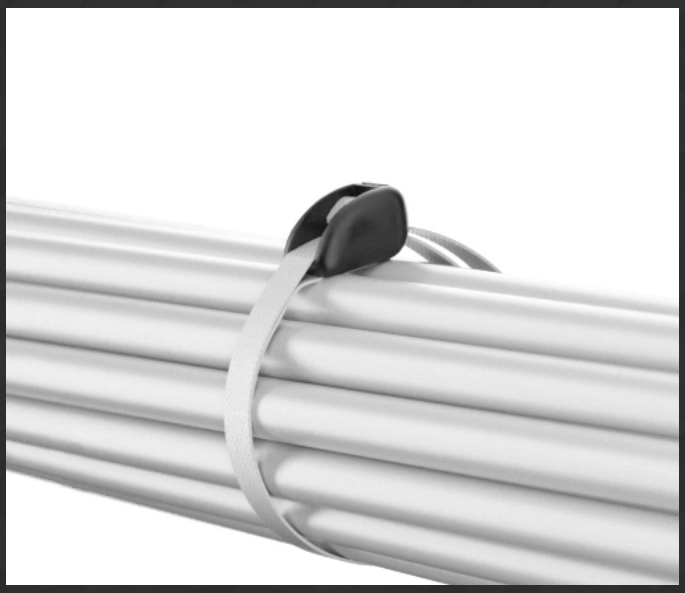
1 WRAP
Wrap the wire harness 1 to 3 times and feed the end of the lace through the fastener. Cinch tightly.

2 LOOP
Loop the end of the lace over the locking pin and back through the opening. Cinch tightly.



3 NEST
Side-load the lace into the capstan and ensure that the fastener is nested in the tool.

4 TERMINATE
Squeeze tool trigger 2 to 3 times to seamlessly tighten, lock, and cut excess lace.



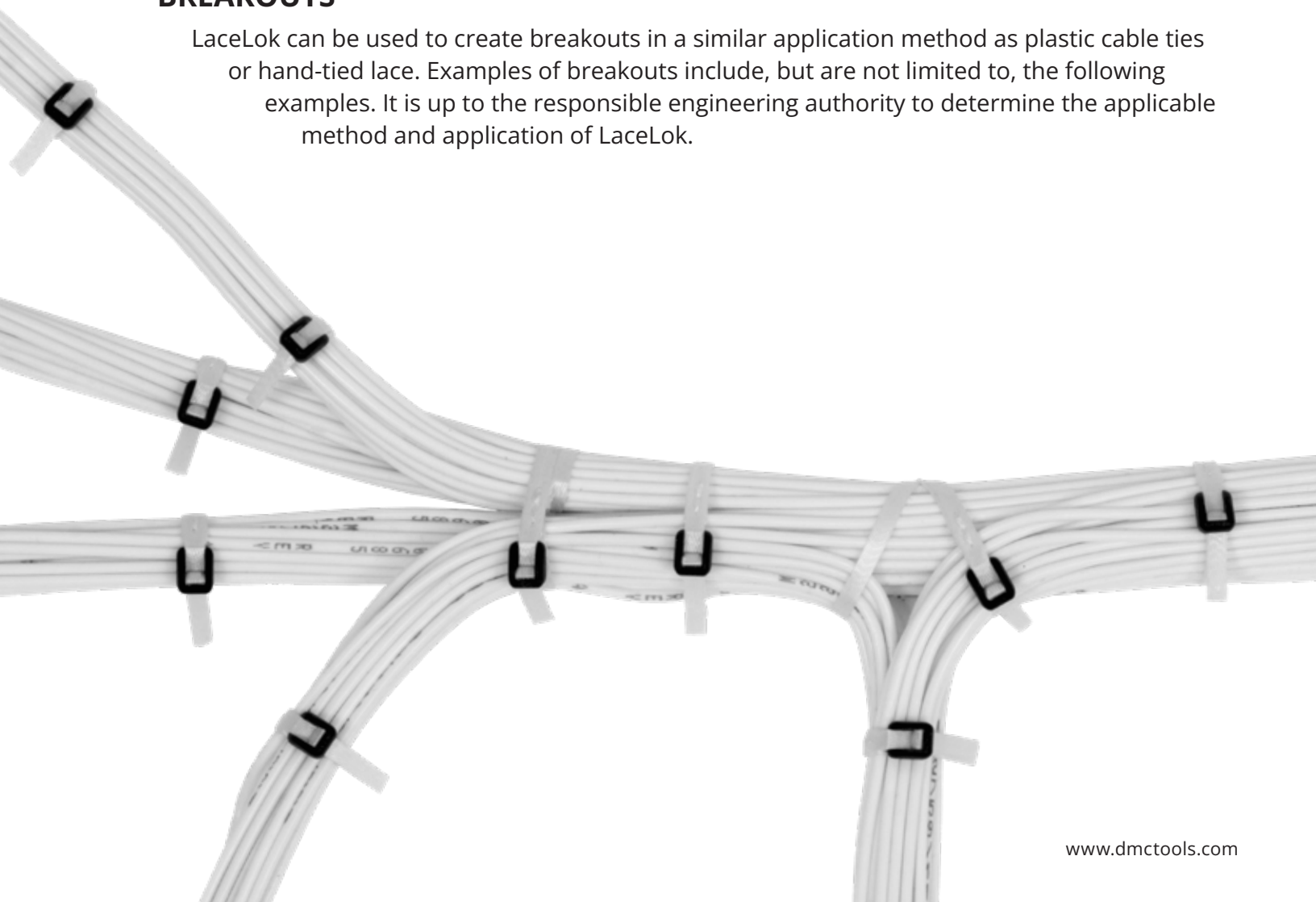
INSTALLATION PRACTICES

LaceLok is exceptionally strong with a single wrap. Additional strength can be achieved by simply applying a second or third wrap around the wire harness prior to activation. Multiple wrap installations should be used where increased tensile strength or additional resistance to radial motion is needed. Double and triple wrap configurations are ideal for pressure sensitive components such as coaxial and fiber optic cables.

Number of Wraps	Application	Minimum Tensile Strength
Single	1/4” to 1” (.6 cm to 2.5 cm) diameter cable bundles	55 lbs. (240 N)
Double	<1/4” and 1” to 3” (< .6 cm and 2.5 cm to 7.5 cm) diameter cable bundles	110 lbs. (490 N)
Triple	>3” (> 7.5 cm) diameter cable bundles or Exposure to JP-8 jet fuel	165 lbs. (730 N)

BREAKOUTS

LaceLok can be used to create breakouts in a similar application method as plastic cable ties or hand-tied lace. Examples of breakouts include, but are not limited to, the following examples. It is up to the responsible engineering authority to determine the applicable method and application of LaceLok.



LACELOK MATERIALS AND PACKAGING

MATERIALS

LaceLok is comprised of three components: the lacing tape, the fastener, and the thread. All components are made of materials that are resistant to chemicals and can withstand an extreme temperature range.

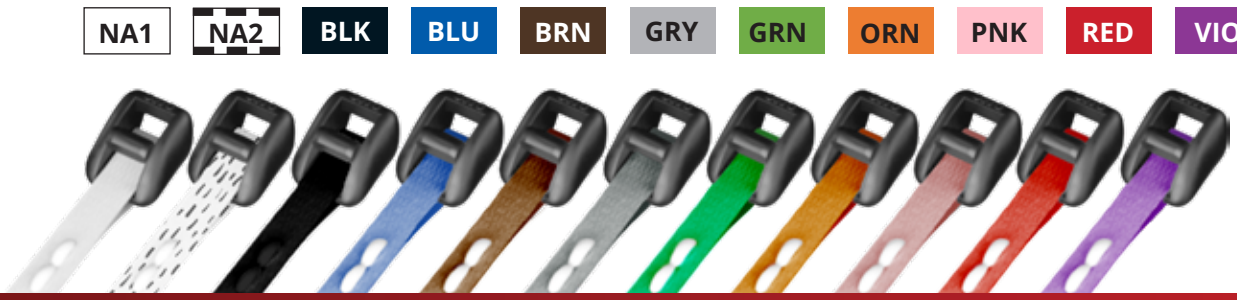
The lacing tape used in LaceLok is constructed of the same material as typical hand-tied lace, meta-aramid fiber A-A-52084 finish C. This material offers excellent heat and flame resistance, outstanding strength, and is non-conductive. Finish C lace features a synthetic rubber elastomer coating which improves its ability to maintain tension when locked and terminated in the fastener.

The fastener is made of engineered thermoplastic PEEK (polyetheretherketone) material, ideal for aerospace applications. It offers a very high strength to weight ratio while maintaining resistance to heat, flame, and chemicals including JP-8 jet fuel, hydraulic fluids, lubricating oil, and isopropyl alcohol.

The thread is manufactured to MIL-C-572 Type PAA Form Y.

PACKAGING

LaceLok is sold in packages of 100 and is available in multiple colors and lengths.



DMC PART NUMBERING SYSTEM

LF2-XXCCC

LENGTH
06 = 6″ (15 cm)
10 = 10″ (25 cm)
18 = 18″ (45 cm)
24 = 24″ (61 cm)

COLOR
NA1 = Natural (White)
NA2 = Natural w/Dark Tracer
BLK = Black
BLU = Blue
BRN= Brown
GRY = Gray
GRN = Green
ORN = Orange
PNK = Pink
RED = Red
VIO = Violet

MILITARY PART NUMBERING SYSTEM

M32554-XX-1-XXX

LENGTH
06 = 6″ (15 cm)
10 = 10″ (25 cm)
18 = 18″ (45 cm)
24 = 24″ (61 cm)

COLOR
NA1 = Natural (White)
NA2 = Natural w/Dark Tracer
BLK = Black
BLU = Blue
BRN= Brown
GRY = Gray
GRN = Green
ORN = Orange
PNK = Pink
RED = Red
VIO = Violet

LACELOK ORDERING INFORMATION

LaceLok is sold in packages of 100. When selecting a LaceLok length, allow for approximately 2.5 in of additional length to engage the installation tool.

COLOR	LENGTH	DMC PART #	MILITARY PART #	NSN
NA1 (White)	6″	LF2-06NA1	M32554-06-1-NA1	5975-01-718-7002
	10″	LF2-10NA1	M32554-10-1-NA1	5975-01-718-6969
	18″	LF2-18NA1	M32554-18-1-NA1	5975-01-718-8486
	24″	LF2-24NA1	M32554-24-1-NA1	5975-01-718-6985
NA2 (White w/ Dark Tracer)	6″	LF2-06NA2	M32554-06-1-NA2	NSN Pending
	10″	LF2-10NA2	M32554-10-1-NA2	NSN Pending
	18″	LF2-18NA2	M32554-18-1-NA2	NSN Pending
	24″	LF2-24NA2	M32554-24-1-NA2	NSN Pending
Black	6″	LF2-06BLK	M32554-06-1-BLK	5975-01-718-6919
	10″	LF2-10BLK	M32554-10-1-BLK	5975-01-718-6973
	18″	LF2-18BLK	M32554-18-1-BLK	5975-01-718-6977
	24″	LF2-24BLK	M32554-24-1-BLK	5975-01-718-6996
Blue	6″	LF2-06BLU	M32554-06-1-BLU	NSN Pending
	10″	LF2-10BLU	M32554-10-1-BLU	NSN Pending
	18″	LF2-18BLU	M32554-18-1-BLU	NSN Pending
	24″	LF2-24BLU	M32554-24-1-BLU	NSN Pending
Brown	6″	LF2-06BRN	M32554-06-1-BRN	NSN Pending
	10″	LF2-10BRN	M32554-10-1-BRN	NSN Pending
	18″	LF2-18BRN	M32554-18-1-BRN	NSN Pending
	24″	LF2-24BRN	M32554-24-1-BRN	NSN Pending

**An outgassed version of LaceLok is also available. Order using the above part numbers preceded with "S" (ex. SLF2-06NA1). Outgassed LaceLok is approved for commercial use and meets the requirements for ASTM E595-15(2021) and NASA Technical Standard MSFC-SPEC-1443.*

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COLOR	LENGTH	DMC PART #	MILITARY PART #	NSN
Gray	6″	LF2-06GRY	M32554-06-1-GRY	NSN Pending
	10″	LF2-10GRY	M32554-10-1-GRY	NSN Pending
	18″	LF2-18GRY	M32554-18-1-GRY	NSN Pending
	24″	LF2-24GRY	M32554-24-1-GRY	NSN Pending
Green	6″	LF2-06GRN	M32554-06-1-GRN	NSN Pending
	10″	LF2-10GRN	M32554-10-1-GRN	NSN Pending
	18″	LF2-18GRN	M32554-18-1-GRN	NSN Pending
	24″	LF2-24GRN	M32554-24-1-GRN	NSN Pending
Orange	6″	LF2-06ORN	M32554-06-1-ORN	NSN Pending
	10″	LF2-10ORN	M32554-10-1-ORN	NSN Pending
	18″	LF2-18ORN	M32554-18-1-ORN	NSN Pending
	24″	LF2-24ORN	M32554-24-1-ORN	NSN Pending
Pink	6″	LF2-06PNK	M32554-06-1-PNK	NSN Pending
	10″	LF2-10PNK	M32554-10-1-PNK	NSN Pending
	18″	LF2-18PNK	M32554-18-1-PNK	NSN Pending
	24″	LF2-24PNK	M32554-24-1-PNK	NSN Pending
Red	6″	LF2-06RED	M32554-06-1-RED	NSN Pending
	10″	LF2-10RED	M32554-10-1-RED	NSN Pending
	18″	LF2-18RED	M32554-18-1-RED	NSN Pending
	24″	LF2-24RED	M32554-24-1-RED	NSN Pending
Violet	6″	LF2-06VIO	M32554-06-1-VIO	NSN Pending
	10″	LF2-10VIO	M32554-10-1-VIO	NSN Pending
	18″	LF2-18VIO	M32554-18-1-VIO	NSN Pending
	24″	LF2-24VIO	M32554-24-1-VIO	NSN Pending

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TOOL AND TOOL KITS

DLT-1100

ERGONOMIC DESIGN

CONSISTENT TENSION

LIGHTWEIGHT & DURABLE

LaceLok installation tools feature a durable steel cutting blade tested to withstand thousands of termination cycles. The tools apply consistent tension to tighten the lace and activates the locking pin of the buckle at 17-22lb consistently. Both application tools are lightweight, durable, and easy to operate. The original DLT-1100 is ideal for wire board assembly and confined spaces, while the DLT-1100L Extended LaceLok Tool provides improved access for on-wing applications and hard-to-reach wire bundles.

- **No Calibration Required**
- **Minimal Maintenance Needed**
- **Repeatable Results**

DLT-1100L
M32555/01-03
NSN: Pending
(Extended installation tool)

DLT-1100
M32555/01-01
NSN: 5120-01-720-6605
(Installation tool only)

REPLACEMENT PARTS AND ACCESSORIES

DLT-1100-SA5
(M32555/01-02)
Cutting Blade

MG-1300
Guarded Cutter

DLT-1100-33
Cutting Blade Cover

1-1025 (Not Pictured)
Cutting Blade Cover Screw

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DMC2300

DMC2300-10NA1 Pictured

LaceLok kits include an installation tool, guarded cutters, a replacement blade, and 100 pieces of LaceLok.

- Designated storage space reduces FOD risk
- Rugged case and foam inserts protect tooling

Additional kits are available with various colors of LaceLok including blue, brown, gray, green, orange, pink, red, and violet. Contact DMC for part numbers.

COLOR	LENGTH	TOOL KIT PART #	NSN
NA1 (White)	6″	DMC2300-06NA1	NSN PENDING
	10″	DMC2300-10NA1	5120-01-733-2604
	18″	DMC2300-18NA1	NSN PENDING
	24″	DMC2300-24NA1	NSN PENDING
NA2 (White w/ Dark Tracer)	6″	DMC2300-06NA2	NSN PENDING
	10″	DMC2300-10NA2	NSN PENDING
	18″	DMC2300-18NA2	NSN PENDING
	24″	DMC2300-24NA2	NSN PENDING
Black	6″	DMC2300-06BLK	NSN PENDING
	10″	DMC2300-10BLK	NSN PENDING
	18″	DMC2300-18BLK	NSN PENDING
	24″	DMC2300-24BLK	NSN PENDING

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BEST PRACTICES

LaceLok is used to support wire bundles, not gather the bundle. Before installing LaceLok, it may be helpful to bundle the wire with a clamp or other bundling device. If a clamp is not available, operators may hold the bundle together with their non-dominant hand (Fig 1).

To ensure the bundle is secured properly, it is important that the lacing tape is not twisted during installation.

Remember the lace is not fed through the nose of the tool, but rather side-loaded through the capstan.

To achieve the best termination, remember to align the tool to the fastener so that it is nested in the nose of the tool (Fig 2). Do not position the tool in front, to the side, or perpendicular to the fastener. Failure to correctly align the tool can result in a faulty installation.

When performing a multiple wrap installation, be sure to wrap the lace around the bundle multiple times, but only through the fastener once on the final pass around the bundle. Do not thread the lace through the fastener multiple times (Fig. 3).

A lockstitch method can be used for larger bundles, bundles of multi-conductor cables, or bundles where additional resistance to lateral movement is needed. A lockstitch is completed by looping the lace around one component and then completing the wraps and termination as normal (Fig. 4).

Fig. 1

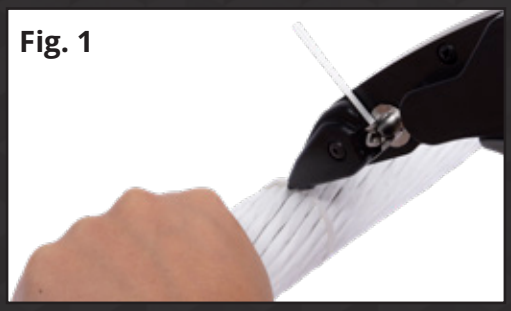

Fig. 2

Fig. 3

INCORRECT

Fig. 4

Visit our website for more application/installation information at: https://qrco.de/lacelok or scan the QR code.

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