LaceLok®

Cable Lacing Fasteners

The smarter alternative to cable ties and hand tied lace for secondary support of cable and wire bundling

U.S. Patent 9,334,091; 9,682,806
Other patents pending

DMC DANIELS MANUFACTURING CORPORATION®

LaceLok® Cable Lacing Fasteners

DMC's LaceLok® Cable Lacing Fasteners are used as secondary support for cable and wire bundling. Developed to replace cable ties and hand tied lacing tape, LaceLok® provides an ergonomic solution for consistent bundling with unrivaled strength and superior performance.

Made of aerospace-grade materials, LaceLok® Cable Lacing Fasteners feature a small rounded fastener head and Nomex® aramid fiber lace. This combination of materials provides superior resistance to fuel, chemicals, abrasion, and extreme operating temperatures.

LaceLok® offers multiple installation 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®
Hand Installation Tool
M32555/1-01
(DLT-1100*)

Features & Benefits

Safer

- The LaceLok® Hand Installation Tool removes the risk of repetitive motion and abrasion injuries typically associated with hand tied lace and cable ties.

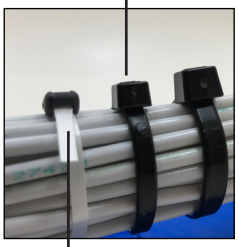
Consistent

- The LaceLok® system delivers consistent tension that is applied by the tool and controlled by the fastener.
- LaceLok® installs faster and produces repeatable results.

Superior Performance

- Rated for operation in extreme temperature range from -65° C to 260° C per MIL-DTL-32554A.
- Tested for submersion in JP-8 Jet Fuel, Hydraulic Fluid, Lubricating Oil, and Isopropyl Alcohol per MIL-DTL-32554A.
- Made of abrasion resistant Nomex® aramid fiber lace per A-A52084, Size 2, finish C.
- LaceLok® Cable Lacing Fasteners weigh 40% less than average cable ties and contribute to fuel efficiency in weight-critical applications.

Traditional Cable Ties



LaceLok® Cable Lacing Fastener

Nomex® is a registered trademark of E. I. du Pont de Nemours and Company
**QPL status pending*

Configurations

LaceLok® Cable Lacing Fasteners are exceptionally strong with a single wrap. Additional strength can be achieved by simply applying a second or third wrap around the bundle prior to termination. Double and triple wrap configurations allow for a safe bundling option for pressure critical components such as coaxial and fiber optic Cables.

Wraps Around Bundle	Minimum Tensile Strength
1 (Single)	55 lbs. (244N)
2 (Double)	110 lbs. (489N)
3 (Triple)	165 lbs. (733N)

Applications

Number of Wraps	Application
One	1/4” to 1” diameter cable bundles
Two	<1/4” and 1”-3” diameter cable bundles
Three	>3” diameter cable bundle
Three	Exposure to turbine jet fuel
Two or Three	Bundles containing coaxial or fiber optic

*Number of wraps should be evaluated for each specific application.

Specifications & Approvals

MIL-DTL-32554A
MIL-DTL-32555A
NAVAIR 01-1A-505-1

Description

Fastener Physical Dimensions

Length (A)	0.28 in. (7.1mm)
Width (B)	0.23 in. (5.8mm)
Height (C)	0.18 in. (4.6mm)
Overall Length	6 - 24 in. (152-610mm)
Construction	
Fastener Head	Ultra high temperature thermoplastic
Lacing Tape	NOMEX® White or Black (A-A52084 Size 2 Finish C)
Environmental	
Operating Temperature	-76°F to 500°F (-65°C to 260°C)
Chemical Resistance	Hydraulic fluid, jet fuel, lubricating oil, isopropyl alcohol

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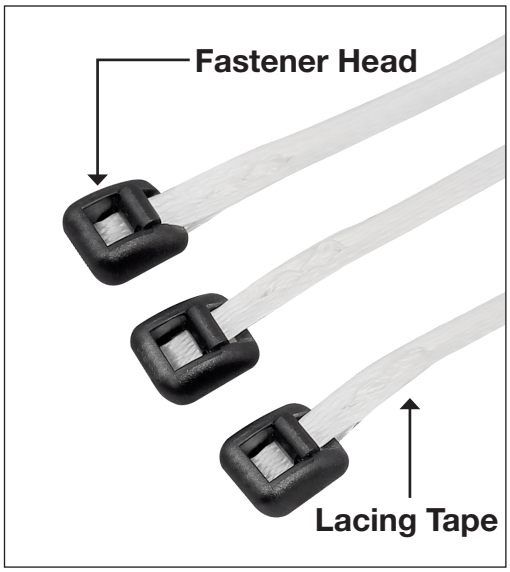
*QPL status pending

LaceLok® System Detail

Hand Installation Tool:

LaceLok® Cable Lacing Fasteners



LaceLok®
Cable Lacing Fastener (CLF)

LaceLok®
Fastener Head Detail

Installation Instructions

1. Select desired LaceLok® Cable Lacing Fastener (CLF) length based off size of bundle and application. Multiple wraps should be used where increased bundle strength or extreme resistance to lateral or radial motion is needed. Bundles containing pressure sensitive cables such as coax or fiber optic should also utilize multiple wraps.

2. Pass LaceLok® CLF around the cable bundle one to three times (Fig. 1). Feed lacing tape end through fastener head under locking pin. Cinch tight around bundle (Fig. 2).

3. Loop end of lace over locking pin and back through opening (Fig. 3). Ensure lace is not twisted around bundle or in head. Cinch around bundle (Fig. 4).

4. Hold end of lace creating a vertical portion (Fig. 5). Pull tool trigger to position capstan with a vertical slot. Slide lace through slot of capstan (Fig. 6). Pull lace through capstan until the LaceLok® CLF head is positioned into the molded nest of the tool (Fig. 7).

   Ensure LaceLok® tool is tangent to wire bundle diameter and directly in line with LaceLok® CLF head. The tool shall not be in front or perpendicular to the fastener head (Fig. 8). The tool nose should nest with and partially surround the fastener head (Fig. 7). Failure to correctly align the tool can result in a faulty LaceLok® CLF installation.

5. Squeeze installation tool trigger repeatedly to rotate capstan and take up slack, tighten, lock and terminate the LaceLok® CLF. Excess lacing tape is retained in the tool for proper FOD disposal. The operator will be able to hear and visually observe locking and termination (Fig. 9).

Number of Wraps	Application
One	1/4 to 1 in. diameter cable bundles
Two	<1/4 in. and 1 to 3 in. diameter cable bundles
Three	>3 in. diameter cable bundles
Three	Exposure to turbine jet fuel
Two or Three	Bundles containing COAX or Fiber Optic

*Number of wraps should be evaluated for each specific application.

Fig. 1

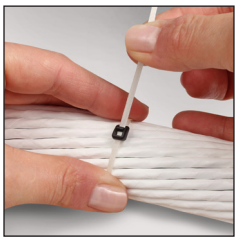


Fig. 2

Fig. 3

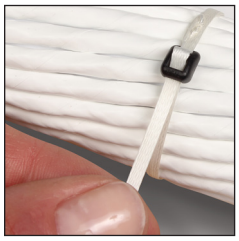


Fig. 4

Fig. 5

Fig. 6

Fig. 7

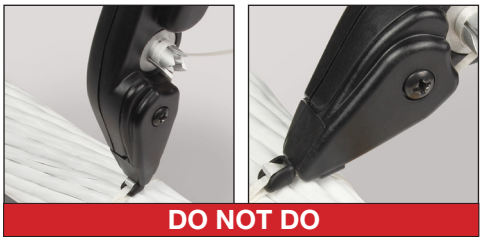


Fig. 8

Fig. 9

LaceLok® Cable Lacing Fasteners

Inspection

A. Confirm LaceLok® CLF Locking Pin is “Activated,” locked. Locking Pin should move from its unlocked (Fig. 10a) to locked position (Fig. 10b).
B. Locking pin should be angled away from the cut end of lace (Fig.11).
C. Ensure LaceLok® CLF is adequately tight around bundle. The lace should not be able to move around the locking pin.
D. Ensure lacing tape is not twisted in the head or around the bundle.
E. Cable Lacing tape should be cut cleanly; 0.5 in. +/- 0.25 in. (12,7mm +/- 6,4mm).

Fig. 10a

Fig. 10b

If cut end of lace or position on locking pin is not as intended, replace the cutting blade per maintenance instructions below.

*Installation of LaceLok® CLF should only be performed with use of LaceLok® Installation Tool. For additional information, please visit www.dmctools.com.

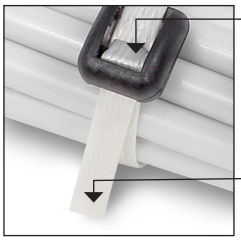
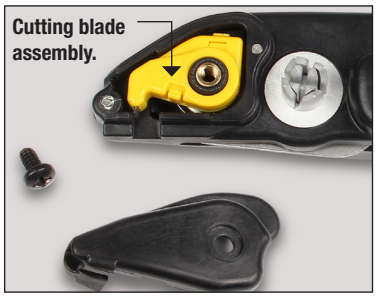


Fig. 11

Maintenance

Cutting Blade and Nose Replacement

- Unscrew cutting blade cover screw.
- Remove the cutting blade cover.
- Carefully remove used cutting blade (yellow assembly).
- Replace cutting blade with new blade assembly.
- Reinstall cutting blade cover.



Maintenance & Repair

The installation tool was designed to be maintenance-free. The tool should be kept clean and away from debris which may affect the function of the tool. Repair work, other than changing the blade, including opening the tool, must only be conducted by DMC or those authorized by the manufacturer. If there is visible damage to the nose, contact DMC for a replacement nose.

⚠ CAUTION

The blade is sharp and could cause injury.

Warnings

- Do not disassemble housing halves or injury may occur due to spring loaded components.
- Disassembly of housing will void warranty.

⚠ CAUTION

Never use on or near live electrical circuits. **Cut Hazard:** Use care when handling cutting blade.

Part Number System

DMC Part Number

LF2 - XX CCC

Length
06 = 6” (15cm)
10 = 10” (25cm)
18 = 18” (45cm)
24 = 24” (61cm)

Color
NA1 = Natural (White)
BLK = Black

MIL-DTL-32254 Part Number

M 32554-XX-1-XXX

Length
06 = 6” (15cm)
10 = 10” (25cm)
18 = 18” (45cm)
24 = 24” (61cm)

Color
NA1 = Natural (White)
BLK = Black

Ordering Information

Cable Lacing Fastener Description	Lace Color	Qty.	Part No.	MIL-DTL Part No.
6 in. (15 cm) LaceLok® Cable Lacing Fastener	White	100/Bag	**LF2-06NA1**	M32554-06-1-NA1
10 in. (25 cm) LaceLok® Cable Lacing Fastener			**LF2-10NA1**	M32554-10-1-NA1
18 in. (45 cm) LaceLok® Cable Lacing Fastener			**LF2-18NA1**	M32554-18-1-NA1
24 in. (61 cm) LaceLok® Cable Lacing Fastener			**LF2-24NA1**	M32554-24-1-NA1
6 in. (15 cm) LaceLok® Cable Lacing Fastener	Black		**LF2-06BLK**	M32554-6-1-BLK
10 in. (25 cm) LaceLok® Cable Lacing Fastener			**LF2-10BLK**	M32554-10-1-BLK
18 in. (45 cm) LaceLok® Cable Lacing Fastener			**LF2-18BLK**	M32554-18-1-BLK
24 in. (61 cm) LaceLok® Cable Lacing Fastener			**LF2-24BLK**	M32554-24-1-BLK

*All LaceLok® Cable Lacing Fasteners must be installed using DMC Installation Tool.

Cable Lacing Fastener Tooling	Part No.	MIL-DTL Part No.
LaceLok® Installation Tool	**DLT-1100**	M32555/01-1

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