

SCTE32XXC-DS SAFE-T-CABLE® APPLICATION TOOL



DATASHEET

SEE PAGE 18 FOR IMPORTANT INFORMATION CONCERNING LIMITED WARRANTY, AND LIMITATION OF LIABILITY

INTRODUCTION:

The Daniels SCTE32XXC series battery powered Safe-T-Cable® application tool is designed to terminate ferrules to Ø.032 Safe-T-Cable® in accordance with SAE specification AS4536*. The application tool installs Safe-T-Cable® kits identified in SAE specifications AS3509* , AS3510* , & AS3511*.

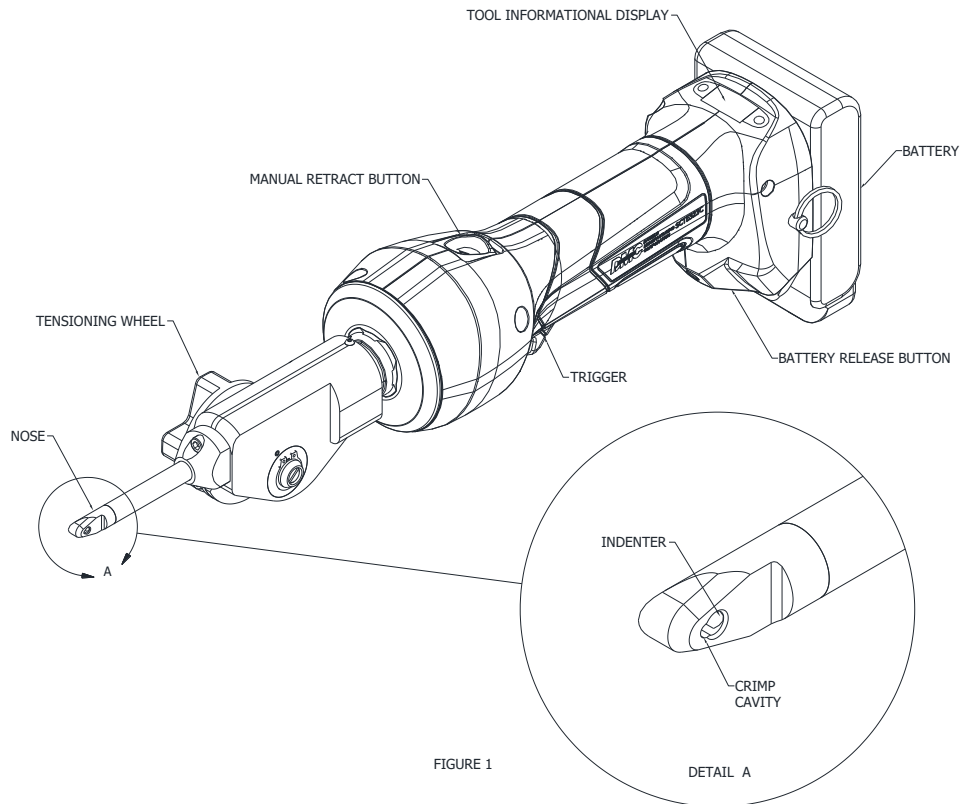
*SAE Publications are available from:
SAE International
400 Commonwealth Drive
Warrendale, PA 15096-001

For service and support of this tool, contact Daniels Manufacturing Corporation at:

Phone: 407-855-6161

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Email: dmc@dmctools.com



The following steps are critical to assure proper Safe-T-Cable® applications:

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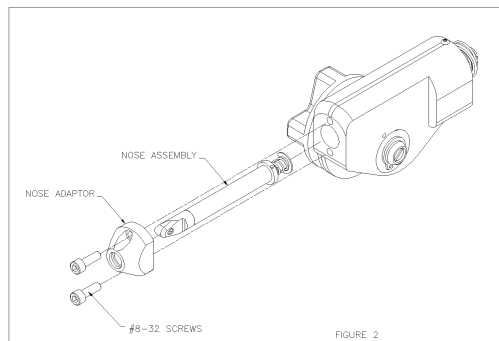
DO NOT remove head or operate without tool head installed

1. TOOL VERIFICATION AND MAINTENANCE

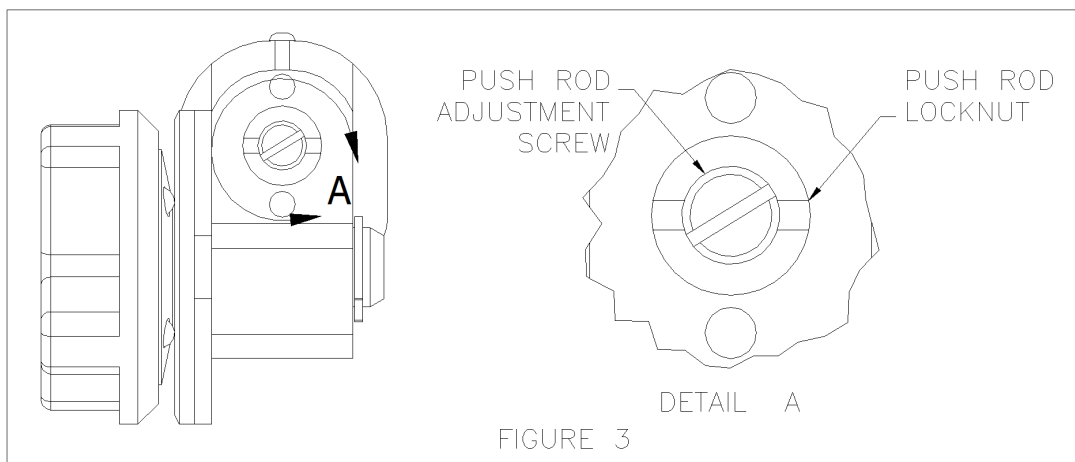
1.1. ADJUSTING INDENTER POSITION

1.1.1. Indenter Adjustment (See Figure 2)

- 1.1.1.1. To remove the nose assembly from the tool, verify that there are no ferrules in the crimp cavity of the nose, and the ram of the tool is retracted. Remove the two #8-32 socket head cap screws in the nose adaptor. Slide the adaptor off the nose assembly. Remove the complete nose assembly from the tool.



- 1.1.1.2. Unlock the pushrod locknut using the supplied SCT32084 spanner tool, and adjust the pushrod adjustment screw using a 1/4" straight edge screwdriver (See Figure 3). Turn the pushrod adjustment screw clockwise to loosen the crimp (enlarge the gaging dimension). Turn the adjustment screw counter clockwise to tighten the crimp (reduce the gaging dimension). After each adjustment securely tighten the pushrod locknut using SCT32084 spanner tool (while holding the adjustment screw stationary with the screwdriver) prior to the re-installation of the nose assembly.



- 1.1.1.3. Replace the nose assembly and the two #8-32 socket head cap screws. Prevent binding by alternately turning each screw a small amount until tight.
- 1.1.1.4. Check settings as described in section 1.2

CAUTION: DO NOT adjust the pushrod more than a quarter of a turn at a time. Severe adjustments may damage the tool.

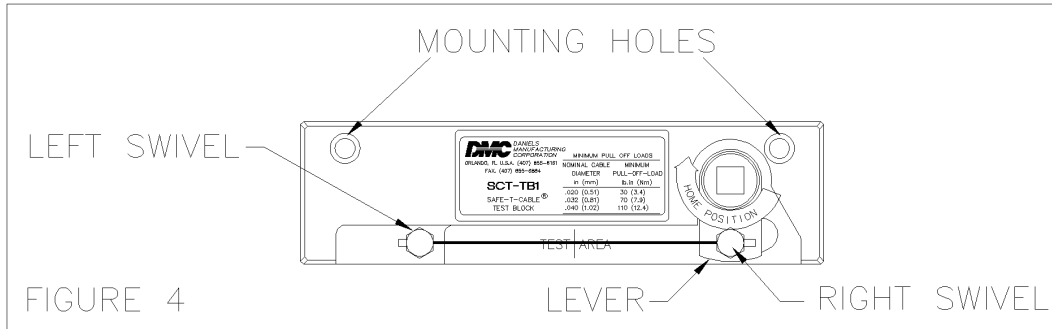
1.2. CHECKING INDENTER POSITION WITH SCT-TB1 TORQUE VERIFICATION BLOCK

1.2.1. Verifying Proper Tool Adjustment (See Figure 4)

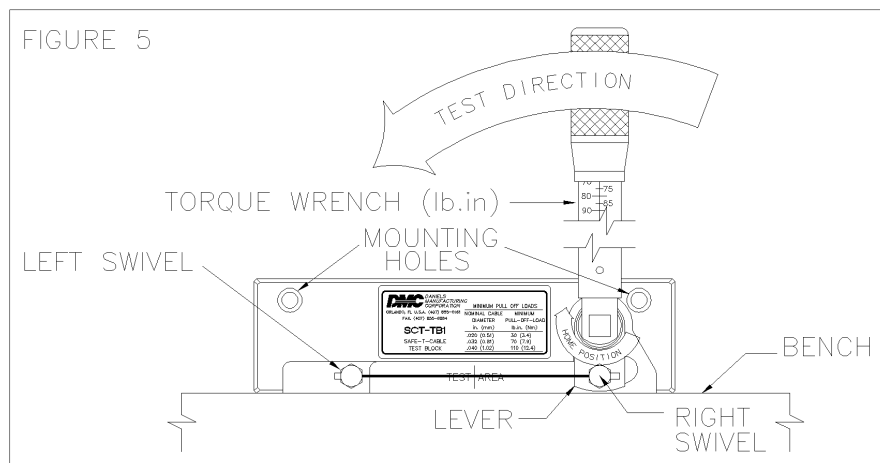
CAUTION: The cable will separate prior to full crimp deformation. DO NOT stop activating the tool when the cable is cut. Continue until the crimp pressure is achieved and the ram retracts.

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- 1.2.1.1. Thread the cable into the right swivel and through the left swivel, holding the lever in the home position as shown in Figure 4. If the lever is not kept in the home position the results may be adversely affected. Terminate the cable per sections 2. and 3., making sure the tool has fully cycled.
- 1.2.1.2. Apply approximately 2lb force to the cable with your finger, or DMC P/N SCTD013, at the line marked "TEST AREA". If the cable touches either the side or bottom surface of the test area, remove the cable from the verification block and adjust the tension per Section 1.4. Terminate another cable as described above then re-test with 2lb force. Repeat this procedure until the cable does not touch either the side or the bottom surface of the test area.



1.2.1.3. Now that proper cable assembly tension has been verified, place a 3/8 inch drive torque wrench into the square drive hole. Orient the verification block on a flat surface as shown in Figure 5, or have the block securely mounted using the mounting holes provided. Apply the proper pull-off load as shown in Table 2. Release torque when minimum pull-off load is achieved. DO NOT apply additional tension to the cable.

CAUTION: DO NOT apply excessive torque. The verification block/torque wrench system is intended to ensure that minimum pull-off load per Table 2 is met. Other equipment should be used for destructive testing (Consult DMC).

- 1.2.1.4. If the cable did not break or pull out of the ferrule after applying the proper torque, remove the torque wrench, and apply approximately 2lb force to the cable with your finger, or DMC P/N SCTD013, at the line marked "TEST AREA". If the cable does not touch the side or bottom surface of the test area, the crimp is acceptable.
- 1.2.1.5. If the cable breaks, or pulls out of the ferrule, then the crimp is unacceptable and the tool indenter should be adjusted per Section 1.1. If the cable touches either the side or bottom surface of the test area, then the crimp is unacceptable, and the indenter should be adjusted per Section 1.1. Also, check for proper tension adjustment per Section 1.4.

1.3. MAINTENANCE OF THE CRIMP CAVITY

1.3.1. Cleaning and Lubricating the Crimp Cavity

- 1.3.1.1. Debris can accumulate in the crimp cavity during use. This debris must be removed, and the crimp cavity oiled periodically depending upon use and environment. Ferrules can "stick" in the crimp cavity if this procedure is not followed.
- 1.3.1.2. Remove debris by gently scraping, or brushing the crimp cavity. Blow any remaining debris from the cavity with compressed air.
- 1.3.1.3. Coat the crimp cavity with a light film of any lightweight synthetic, or petroleum based oil, after the cavity has been thoroughly cleaned.

1.4. ADJUSTING CABLE TENSION

1.4.1. Adjusting the Amount of Cable Tension Applied Before Crimping

- 1.4.1.1. Adjust the cable tension using a 1/4" straight edge screwdriver.
- 1.4.1.2. The tension adjustment screw is located in the tension wheel axle assembly, and is accessible on the side of the tool opposite the tension wheel. Turn the screw clockwise to increase the cable tension, or counter clockwise to decrease cable tension. See Table 1 for allowable flex limits. DO NOT adjust tension tighter than necessary.

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1.5. LED LIGHTS

LED Work Light (White)

This LED automatically turns on when the trigger is pulled. It remains on for 10 seconds after the trigger is released.

LED Indicator (Red)

As well as the Tool Information Display, this tool is equipped with a special circuit board incorporating several important features to inform the user about the current status of the unit. The Red LED on the side of the tool signals in the following cases:

What Happens...	Signal	What it Means...
Red service LED illuminates constant for 20 seconds after a tool cycle	————	Battery charge is low, Charge Battery
Red service LED flashes for 20 seconds at rate of 2Hz after a tool cycle	Return tool to DMC for Maintenance Service
Red service LED flashes for 20 seconds at rate of 5Hz after a tool cycle	Unit is too hot, let cool for 15min and try again
Red service light illuminates, White work light illuminates and an audible tone is heard	————	Full tool pressure was not achieved, because the operator interrupted the crimp cycle
Red service light flashes 3 times, White work light flashes 3 times and an audible tone is heard	Full tool pressure not achieved due to internal error, Return tool to DMC for Repair Service

1.6. BATTERY CHARGER OPERATING INSTRUCTIONS

1.6.1. Operating Environment

1.6.1.1. The charger is designed for use in dry areas. All ventilation slots must be kept free of debris. Keep away from heat sources, and if possible, out of direct sunlight. As ambient temperatures in excess of 95°F (35°C) may increase charging times significantly.

1.6.2. AC Connection

1.6.2.1. Before connecting the charger, check that the AC supply voltage is the same as what is indicated on the charger.

1.6.3. Specifications

Frequency = 50Hz – 60Hz

Output Voltage = 7.2 – 18VDC

Weight = 2.2lb (1.0kg)

1.6.4. Safety Instructions

1.6.4.1. The charger is designed only for Li-ion and Ni-MH batteries with voltages ranging from 9.6-18VDC, and capacities from 1.7 – 3.0Ah.

- Before you use the charger, check the power cord, and connectors for any signs of damage or aging.
- DO NOT open up the batteries, or the charger.
- DO NOT puncture, or expose to heat as there is RISK OF EXPLOSION.
- Only store in dry areas. Protect from moisture and dampness.
- Do not use if charger is defective, and never insert defective batteries.
- Observe the symbols on the charger's nameplate.
- DO NOT throw old batteries into a fire, or dispose of as domestic waste.
- Keep metal objects that could cause shorts away from the charger.
- DO NOT dismantle the charger, or batteries.

1.6.5. Battery Charger Operation

1.6.5.1. **Green L.E.D.** – If the charger is connected to AC line, the green L.E.D. will flash repeatedly until a battery is installed for charging.

1.6.5.2. **Charging a Battery** – When battery is inserted on to the charger, the red L.E.D. will illuminate, and stay on while charging occurs. The green L.E.D will turn off while the battery is less than 80% charged. Both green and red L.E.D.'s will illuminate when the battery is greater than 80% charged, but not fully charged. When charging is complete, the red L.E.D. will turn off, and the green L.E.D. will stay on. If you leave the battery on the charger after it is charged, the charger will switch to its trickle charge mode for 24 hours.

1.6.5.3. **Yellow L.E.D.** – Flashing indicates trouble with the cooling system. Ensure that all cooling vents, and the battery connections are free of dust, or debris. If flashing continues, return the unit to DMC for repair. Continuous illumination indicates that a conditioning charge is occurring. This happens when the battery being charged is at either a very low, or very high temperature. This can also occur if you attempt to charge a fully charged battery. These conditions will increase charging times.

1.6.5.4. **Other Possible Conditions Displayed** – Flashing red with green off indicates the charger is overheated. Unplug the charger, and allow it to cool down. Flashing red with flashing green indicates a defective battery.

1.7. CHANGING THE TOOL NOSE ASSEMBLY

1.7.1. Removing Old Nose and Installing a New One (See Figure 2)

- 1.7.1.1. Verify there are no ferrules in the crimp cavity of the nose, and the ram of the tool is retracted by depressing the manual retract button.
- 1.7.1.2. Remove the two #8-32 socket head cap screws in the nose adaptor.
- 1.7.1.3. Slide the nose adaptor off the nose assembly.
- 1.7.1.4. Slide the complete old nose assembly out of the tool.
- 1.7.1.5. Install the new nose assembly by sliding it into the tool.
- 1.7.1.6. Slide the nose adaptor onto the new nose assembly.
- 1.7.1.7. Re-install the two #8-32 socket head cap screws. Prevent binding by alternately turning each screw a small amount until tight.
- 1.7.1.8. Adjust the indenter as described in Section 1.1.1.

1.8. BLUETOOTH CONNECTIVITY

- 1.8.1. This tool features Bluetooth connectivity for tool monitoring via Klauke i-press software or the Klauke i-press app. Features include:

Tool Link features include:

- Exporting all tool data to check the tool status.
- Providing proof of quality in the form of a project record.
- Free downloading

Tool Link app:

- Made easy - Your Next Generation tool connects to the Tool Link app via Bluetooth - you can now use the comprehensive range of functions.
- Everything under control - You can, for example, display the last service date, the last five pressure values, the device temperature, or the number of crimps you can still make with the connected tool.
- Record, verify and archive - Once the project is complete, you will receive an overview containing all information and pressure values as an attachment. Very clearly arranged and revamped as a PDF for printing and submitting.

The desktop software can be downloaded at:

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<https://www.klauke.com/gb/en/klauke-software#dvTables>

The mobile App can be downloaded at:

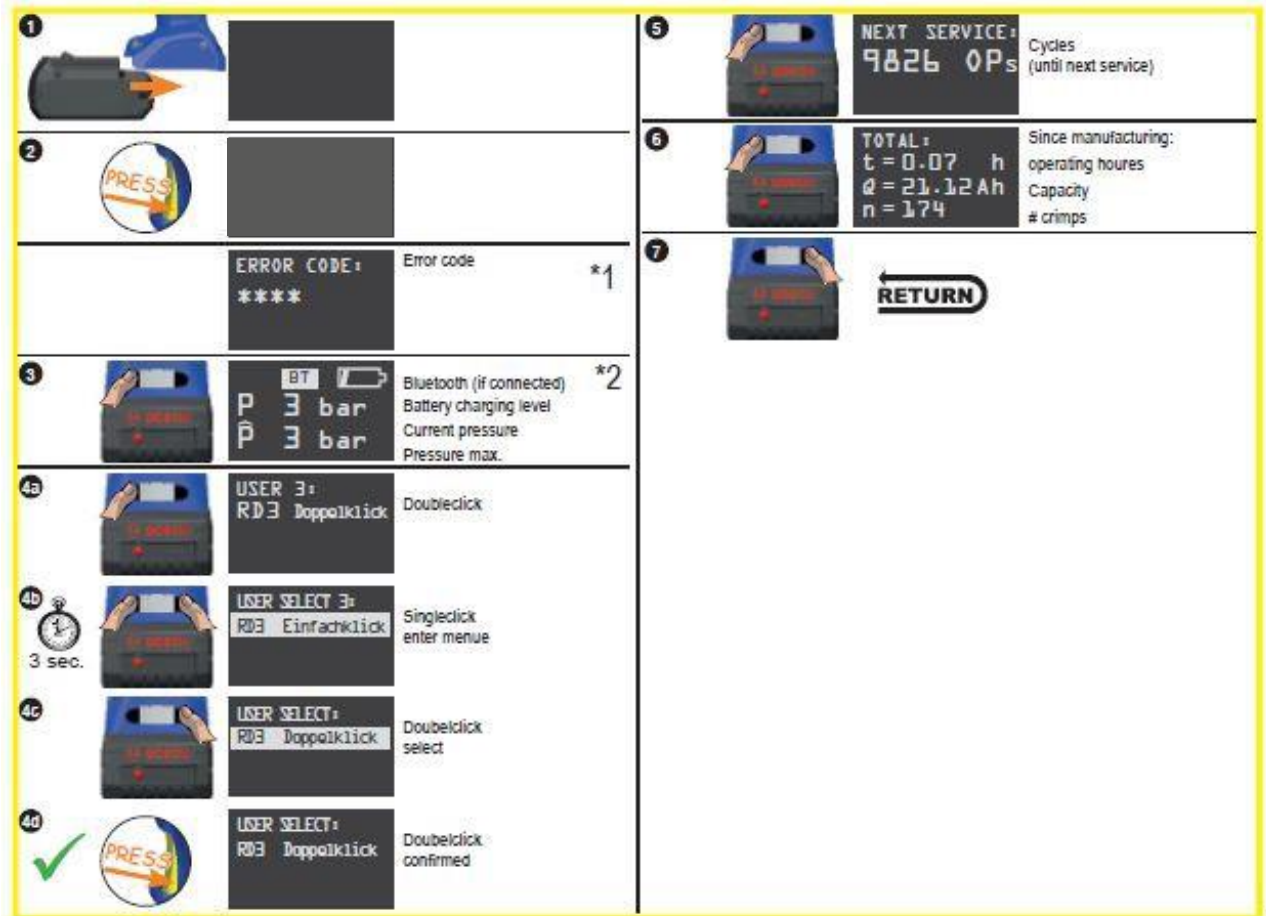
<https://www.klauke.com/gb/en/klauke-link-connectivity>

or at:



1.9. TOOL INFORMATIONAL DISPLAY

1.9.1. When a battery is installed onto the tool, the following information can be accessed.



Install a charged battery onto the tool.

1. Press the tool trigger to activate the display. Any applicable error codes will be display. The 17 possible error codes are listed below. If an error code is displayed, the tool's red LED will also flash.
2. The first screen will display whether tool is connected via bluetooth, the battery charge level, current pressure & max pressure.
3. Pressing the left button once will display the firmware version, and tool serial number.
 - a. Pressing the left button again displays the current user.
 - b. Pressing and holding both button lets you select a current user.

- c. Use the right button to select the desired user.
- d. Press the tool trigger to confirm selection and return.
5. Pressing the left button once again will display the number of cycles and days until the next service interval.
6. Pressing the left button once again will display the total operating hours, total Amp Hours (Ah) and the total number cycles.
7. Press the right button will allow you to go back to the previous screen.

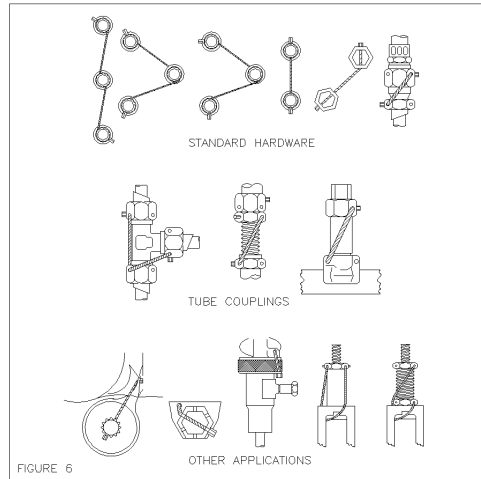
Error Codes

- | | |
|--|---------------------------------|
| 1. Overcurrent Fuse | 10. RTC Battery Low |
| 2. Overcurrent Comparator | 11. Tool Deactivated |
| 3. Overheat Board | 12. Service Necessary |
| 4. Overheat Battery | 13. RTC not Found |
| 5. Battery Empty, Operation Stop | 14. BT Unit not found |
| 6. Faulty Crimp with Motor in Operation | 15. |
| 7. Faulty Crimp without Motor in Operation | 16. Pressure Sensor not Found |
| 8. Low Battery | 17. Burst Pressure Exceeded |
| 9. Battery Empty | 18. Battery Temperature Too Low |

2. PROPER CABLE INSTALLATION

2.1. Accessibility and Installation Examples

- 2.1.1. The tool has a 360° rotating nose for easy accessibility, and insertion of cable in confined working areas.
- 2.1.2. Various examples of Safe-T-Cable® installation are shown in Figure 6. Although all possible combinations are not shown, three basic rules apply:



- 2.1.2.1. **Rule 1** – It is recommended that Safe-T-Cable® be installed in such a manner that any tendency for a fastener to loosen will be counteracted by an additional tension on the cable. Sharp turns in excess of 90° should be avoided. Installed Safe-T-Cable® should produce a positive, or neutral pull on the fastener.
- 2.1.2.2. **Rule 2** - Safe-T-Cable® should be installed in two or three bolt patterns. Two bolt patterns being preferred when cable is applied to an even number of fasteners.
- 2.1.2.3. **Rule 3** – Maximum span of Safe-T-Cable® shall be six inches from end to end unless otherwise specified (See Figure 10).

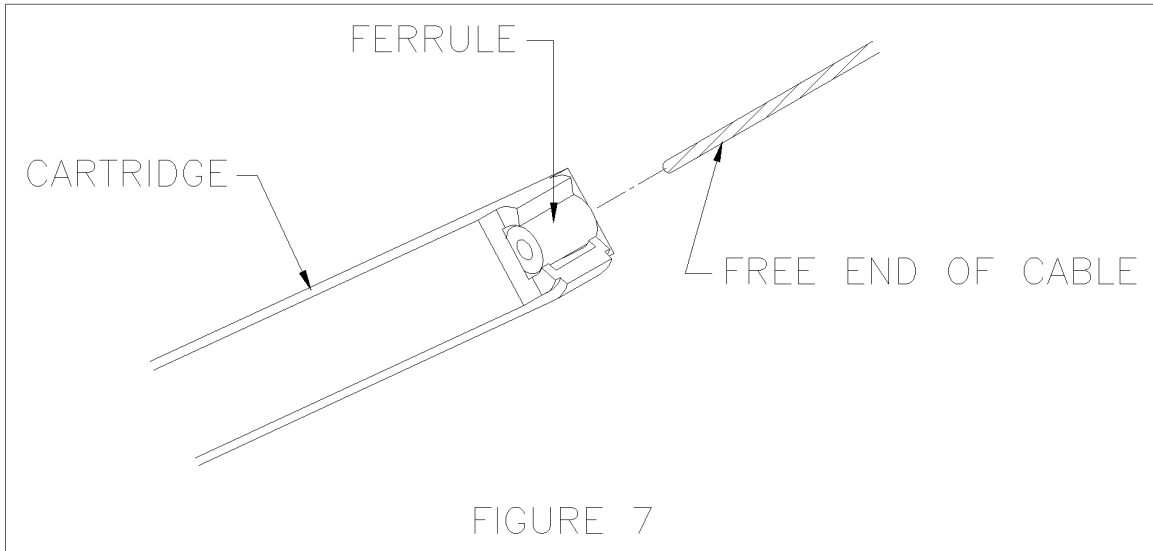
3. PROPER LOADING AND USE OF THE APPLICATION TOOL

3.1. Operation of the Tool

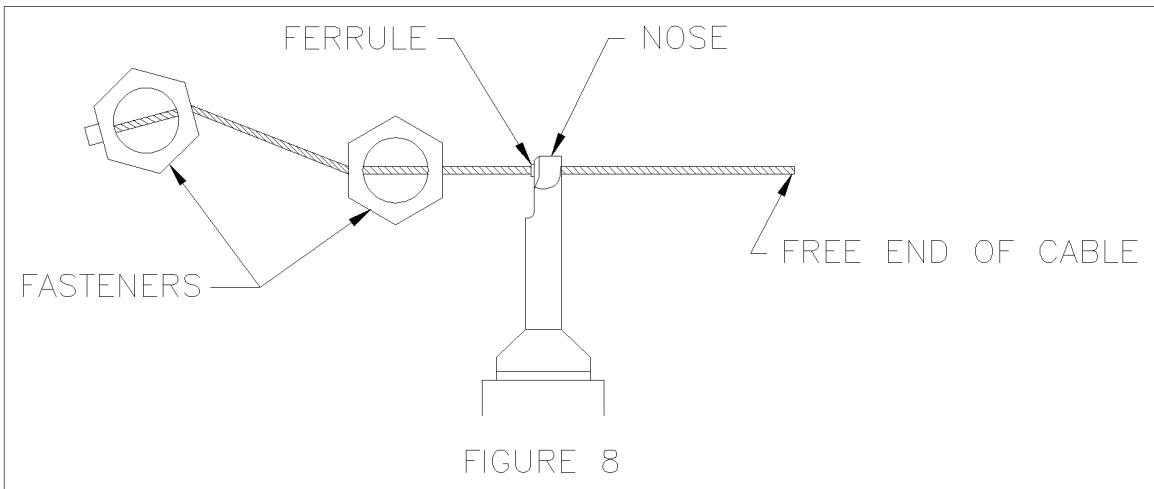
- 3.1.1. Select the proper length of Ø.032 Safe-T-Cable®.

CAUTION: DO NOT release the free end of the cable until it has been inserted through the nose.

- 3.1.2. Install the cable through the fasteners as described in Section 2.0, or other specifications.
- 3.1.3. The nose can rotate to any position which is convenient to cable entry and termination. Rotate the nose to the desired position.
- 3.1.4. Insert the free end of the cable through the last ferrule in the cartridge as shown in Figure 7. Remove the ferrule by pulling the cable away from the end of the cartridge.

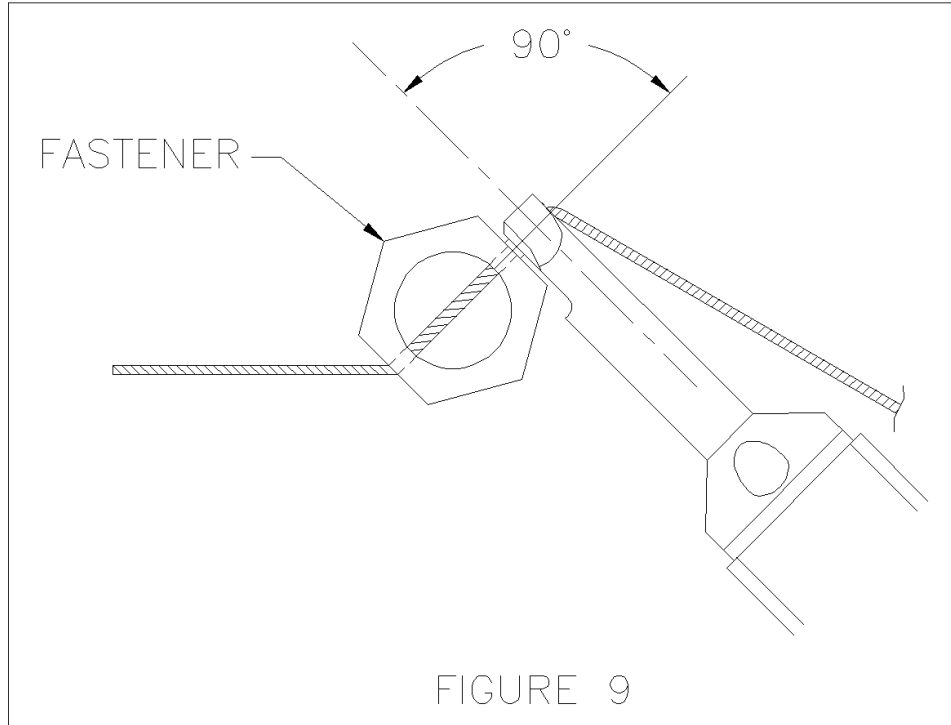


3.1.5. Insert the free end of the cable through the nose as shown in Figure 8. Slide the tool along the cable to the desired position. Make certain that the ferrule is fully seated in the nose cavity.



3.1.6. Hold the tool perpendicular to the fastener as you wrap the cable into the tension wheel **CLOCKWISE**. Wrap the cable one full revolution around the tension wheel making sure that the cable is held in place by the wheel. Tension the cable by rotating the tension wheel until several distinct clicks are heard and felt. The clicks indicate that proper tension has been achieved.

3.1.7. Press and hold the trigger.



3.1.8. After crimping and cutting, the tool push rod will retract. Release the trigger and slide the tool off the crimped ferrule.

3.1.9. Pull the excess cable from the tool.

4. VERIFICATION OF INSTALLATION

4.1. Flex Limits

4.1.1. Verify proper tension of the cable per Section 1.2.1.4. Refer to Table 1, and Figure 10 for Safe-T-Cable® flex limits.

4.2. Positive or Neutral Pull/Proper Pattern

4.2.1. Verify that the cable was installed through the bolts in accordance with Section 2. and 3., or an overriding standard.

4.3. Flush Cable Cut Off

4.3.1. Verify that the cable was cut flush at the end of the ferrule with no strand extending more than 1/32" from the end of the ferrule.

4.4. Overall Visual Inspection

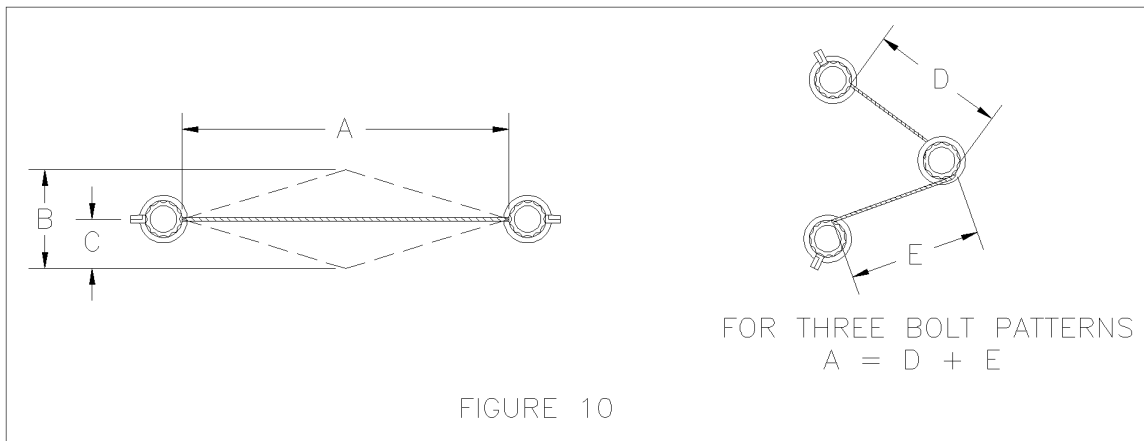
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4.4.1. Visually inspect the cable for any nicks, or other damage that may have occurred during installation.

TABLE 1 – FLEX LIMITS, DIMENSIONS

A inch (mm)	B inch (mm)	C inch (mm)
.5 (12.7)	.125 (3.18)	.062 (1.59)
1.0 (25.4)	.250 (6.35)	.125 (3.18)
2.0 (50.8)	.375 (9.52)	.188 (4.76)
3.0 (76.2)	.375 (9.52)	.188 (4.76)
4.0 (101.6)	.500 (12.70)	.250 (6.35)
5.0 (127.0)	.500 (12.70)	.250 (6.35)
6.0 (152.4)	.625 (15.88)	.312 (7.94)



5. Safe-T-Cable® SYSTEM PART NUMBERS

5.1. Accessory Part Numbers

CALIBRATION TOOLS AND ACCESSORIES	
TOOL PART NUMBER	DESCRIPTION
SCT-TB1	TORQUE VERIFICATION BLOCK
SCTD0001	TORQUE WRENCH (20-150lb-in)
45-6N	DIAGONAL CUTTERS
SCTD012	RETAINING RING PLIERS
MPT-250C-SC	MOTORIZED PULL TESTER

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SCTD013	RETENTION TESTER
4-1501	9/64" BALL END HEX WRENCH

5.2. Application Tool Part Numbers

APPLICATION TOOLS (COMPLETE)		
TOOL PART NUMBER	NOMINAL CABLE Ø	NOSE LENGTH
SCTE323C	.032	3 INCHES
SCTE325C	.032	5 INCHES
SCTE327C	.032	7 INCHES
SCTE329C	.032	9 INCHES

INTERCHANGEABLE NOSE ASSEMBLIES		
ASSEMBLY PART NUMBER	NOMINAL CABLE Ø	NOSE LENGTH
SCTN32-3	.032	3 INCHES
SCTN32-5	.032	5 INCHES
SCTN32-7	.032	7 INCHES
SCTN32-9	.032	9 INCHES

5.3. Safe-T-Cable® Kit (Safety Cable & Ferrule) Part Numbers

TABLE 2 – Ø.020 NOMINAL DIAMETER CABLE KITS				MINIMUM PULL OFF LOAD – lbf(Nm) or TORQUE - lb-in
KIT PART NUMBER	(D) CABLE DIAMETER	COMPONENT MATERIAL	(L) LENGTH (INCHES)	
C10-206	.032-.038 (3 X 7 CABLE)	UNS S32100 CORROSION AND HEAT RESISTANT ALLOY (AMS5689)	6	70 (7.9)
C10-209			9	
C10-212			12	
C10-215			15	
C10-218			18	
C10-221			21	
C10-224			24	

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5.4. Safe-T-Cable® Assembly (Safety Cable Only) Part Numbers

TABLE 3 – Ø.020 NOMINAL DIAMETER CABLE ASSEMBLIES				MINIMUM PULL-OFF LOAD- lbf(Nm) or TORQUE lb-in
KIT PART NUMBER	(D) CABLE DIAMETER	COMPONENT MATERIAL	(L) LENGTH (INCHES)	
A10-206	.032-.038 (3 X 7 CABLE)	UNS S32100 CORROSION AND HEAT RESISTANT ALLOY (AMS5689)	6	70 (7.9)
A10-209			9	
A10-212			12	
A10-215			15	
A10-218			18	
A10-221			21	
A10-224			24	

5.5. Safe-T-Cable® Ferrule Part Numbers

TABLE 4 – FERRULES			
FERRULE PART NUMBER	FOR NOMINAL CABLE DIAMETER	DESCRIPTION	MATERIAL
F10-2	.032	STANDARD	UNS S32100
F10-04		ELONGATED	

DMC offers complete refurbishing and recalibration services.

DMC specially engineers and manufactures complete tool kits to satisfy individual customer requirements, such as total aircraft support general shop maintenance or production, on board ship and vehicle service, etc.

Limitation of Liability

DANIELS MANUFACTURING CORPORATION IS NOT LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY NATURE OR KIND RESULTING FROM THE USE, OR MISUSE, OF ANY OF ITS PRODUCTS. OWNERS AND USERS OF DMC PRODUCTS ASSUME FULL RESPONSIBILITY FOR INSTRUCTING THEIR EMPLOYEES IN THE PROPER AND SAFE USE OF SUCH PRODUCTS.

Limited Warranty

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DMC (Daniels Manufacturing Corporation) 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 and 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.