

SCTE62XXC SERIES BATTERY POWERED SAFE-T-CABLE[®] TOOL

DMC DANIELS
MANUFACTURING
CORPORATION
DATASHEET

SEE PAGE 16 FOR IMPORTANT INFORMATION CONCERNING
LIMITED WARRANTY, AND LIMITATION OF LIABILITY.

INTRODUCTION

The Daniels SCTE62XXC Series Battery Powered Safe-T-Cable[®] application tool is designed to crimp ferrules, and tension/cut the cable in accordance with the performance requirements of SAE specification AS4536*. The application tool installs Safe-T-Cable[®] kits identified in SAE specifications AS3509*, AS3510* and AS3511*.

The following steps are important:

1. Proper tool settings (section 1.0)
2. Proper cable installation (section 2.0)
3. Proper loading and use of the applicaiton tool (section 3.0)
4. Verification of proper application (section 4.0)

* SAE publications are available from:

SAE, International
400 Commonwealth Drive
Warrendale, PA 15096-0001 U.S.A.

DO NOT REMOVE TOOL HEAD OR OPERATE TOOL WITHOUT HEAD INSTALLED

1.0 TOOL MAINTENANCE AND VERIFICATION OF TOOL SETTINGS

1.1 INDENTER ADJUSTMENT

TO ENSURE THAT THE TOOL INDENTER IS AT ITS SHORTEST LENGTH, THREAD JAM NUT & ADJUSTMENT CAP FULLY ONTO THE INDENTER BEFORE MAKING ANY ADJUSTMENTS (SEE FIGURE 2)

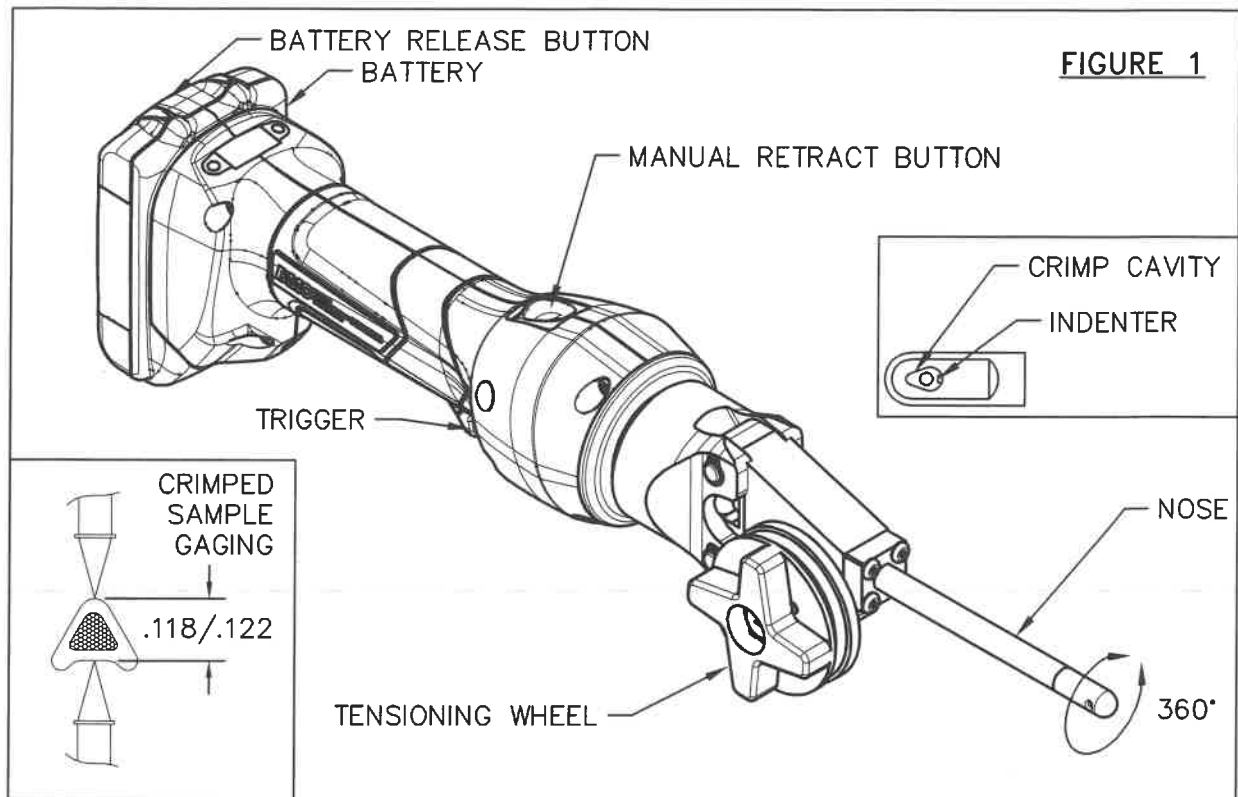
1.1.1 Checking Indenter Position (See Figure 1):

Load a piece of cable onto the torque verification block as shown in Fig. 3 on page 4. Slide a ferrule onto the cable, and terminate it. The cable should fully cut during the crimping process. If the cable does not cut, indenter adjustment is necessary.

1.1.2 Indenter Adjustment (See Figure 2):

NOTE: Tool settings should be checked frequently by use of the Torque Verification Block/torque wrench or the electronic pull tester.

(a) Remove the nose assembly. 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. Remove the four 8-32 socket head cap screws in the nose retaining block. Slide the retaining block off the tool nose assembly. Slide the complete tool nose assembly (nose, extension, indenter, spring and adjustment cap) out of the tool. (See figure 2)



(b) Hold the nose of the tool with a pair of pliers or bench vise, and turn the jam nut CW (looking at the adjustment cap end of the nose assembly) with a 7/16 wrench. Tighten the nut fully until it stops.

(c) Turn the indenter adjustment cap CW with a 3/32 inch dia. pin punch (p/n 565B). Tighten the cap fully until it stops. If there is a gap between the jam nut and cap, turn the jam nut CCW until it backs up against the cap. This sets the indenter at the loosest setting.

CAUTION: DO NOT ADJUST THE PUSHROD MORE THAN A QUARTER OF A TURN AT A TIME. SEVERE ADJUSTMENT MAY DAMAGE THE TOOL.

(d) The indenter now needs to be adjusted outward (toward the ferrule for a tighter crimp), turn the adjustment cap CCW (looking at the adjustment cap end of the nose assembly) one quarter turn.

(e) Re-tighten the jam nut and reassemble the nose assembly into the tool. Then recheck the indenter position as described in section 1.1.1. If the cable does not cut completely repeat step (d), turning another quarter turn. Then reassemble and check the indenter position again. Repeat these steps until the cable does cut completely. DO NOT over adjust the indenter. Use a point to point type micrometer to measure crimp height. Do not adjust tighter than .118/.122, as shown in Figure 3.

Once the tool cuts & crimps properly, verify the function of the tool on the verification block as described in section 1.1.

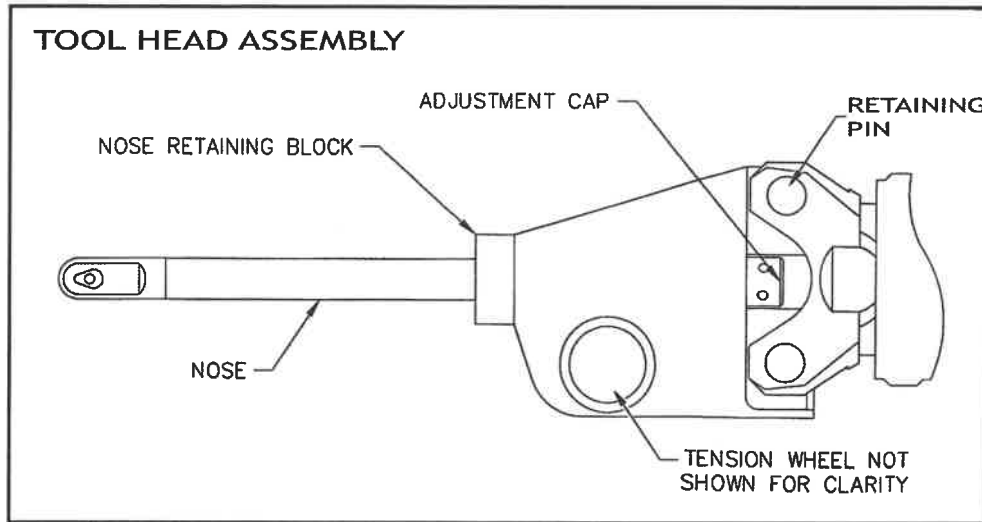
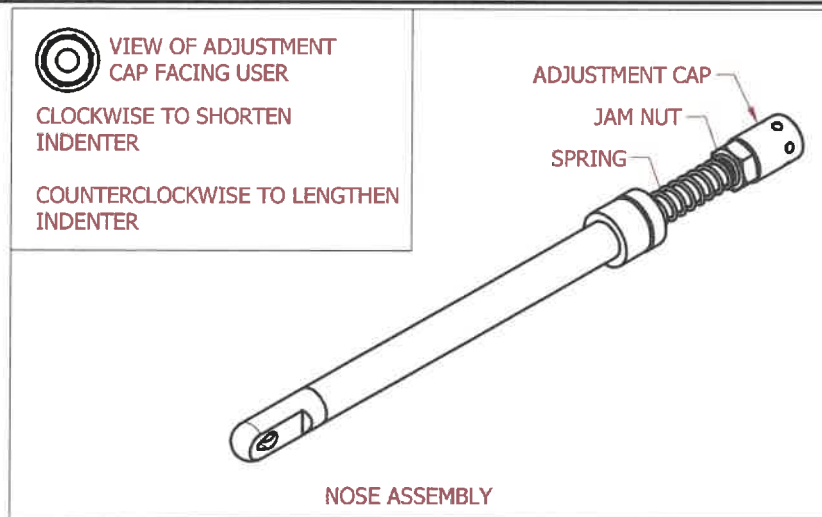


FIG. 2



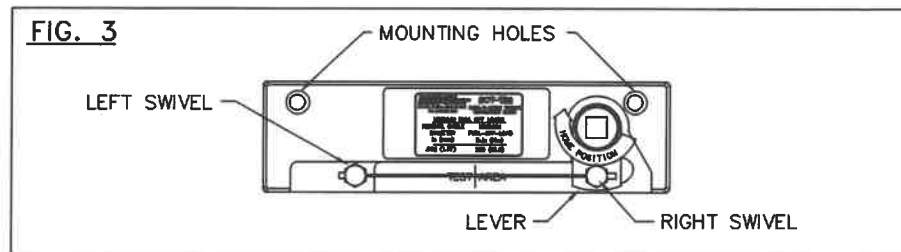
1.2 CHECKING INDENTER SETTING WITH THE DANIELS SCT-TB2 TEST FIXTURE

- 1.2.1 Indenter setting should be checked periodically and must be checked after the nose assembly has been removed or changed.
- 1.2.2 Thread the cable into the left swivel and through the right swivel, holding the lever in the home position as shown in FIG. 1. If the lever is not kept in the home position the results may be adversely affected. Terminate the cable per section 3.0.
- 1.2.3 Apply approximately 2 lb. force to the cable with your finger (or use the Daniels SCTD013 Retention Tester) at the line marked "TEST AREA" on the Torque Verification Block. If the cable touches either the side or bottom surface of the test area then remove the cable from the Torque Verification Block and terminate another cable as described above, taking care to hold the tool perpendicular to the cable.

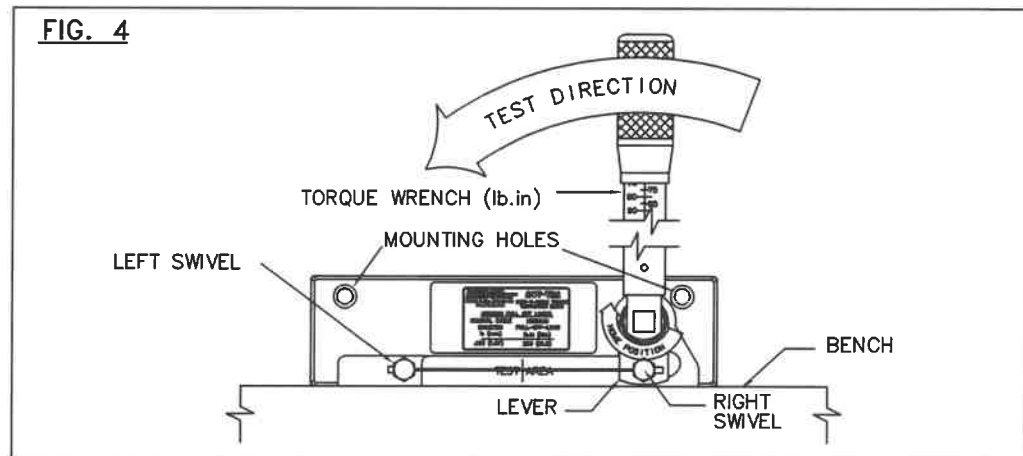
- 1.2.4 Place a calibrated 3/8" drive, inch–pound torque wrench (Daniels SCTD0001) into the square drive hole of the lever, orienting the Torque Verification Block and torque wrench on a flat surface as shown in FIG. 4. Apply the proper pull–off load as shown on the label.

CAUTION

RELEASE TORQUE WHEN MINIMUM PULL–OFF LOAD IS ACHIEVED. DO NOT APPLY ADDITIONAL TENSION TO THE CABLE.



- 1.2.5 If the cable did not break or pull out of the ferrule after applying proper torque, remove the torque wrench and apply approximately 2 lb. force to the cable with your finger (or Daniels SCTD013) at the line marked "TEST AREA".
- 1.2.6 If the cable breaks or pulls out of the ferrule, or it touches either the side or bottom surface of the test area, then the crimp is unacceptable and the tool indenter should be adjusted per section 1.1.



1.3 MAINTENANCE OF THE CRIMP CAVITY

- 1.3.1 Debris can accumulate in the crimp cavity during use. This debris must be removed and the cavity oiled periodically depending upon use and environment. **Ferrule sticking can occur if this procedure is not followed.**
- 1.3.2 Remove debris by gently scraping or brushing the crimp cavity. Blow any remaining debris from the cavity with air.

1.3.3 Coat the cavity with a light film of any lightweight synthetic or petroleum based oil after the cavity has been thoroughly cleaned.

1.4 LED/Pressure Sensor

Tool LED Lights

The tool is equipped with two LED lights, one white and one red.

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 Service Light (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

1.5 Battery Charger Operating Instructions

1.5.1 Operating environment

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

1.5.2 AC Connection

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

1.5.2 Specifications

Frequency = 50Hz – 60Hz

Output Voltage = 7.2 – 18VDC

Weight = 2.2lb (1.0kg)

1.5.2 Safety instructions

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.

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

1.5.3 Operation

Green LED

If the charger is connected to the AC line the green LED will flash repeatedly until a battery is installed for charging.

Charging a Battery

1. When a battery is inserted on to the charger the red LED will illuminate and stay on while charging occurs.
2. The green LED will turn off while the battery is less than 80% charged.
3. Both green and red LED's will illuminate when the battery is greater than 80% charged, but not yet fully charged.
4. When charging is complete, the red LED will turn off, and the green LED will stay on.
5. If you leave the battery on the charger after it is charged, the charger will switch to its trickle charge mode for 24 hours.

The following are the possible conditions shown by the right hand yellow LED.

1. Flashing indicates trouble with the cooling fan 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.
2. 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.

Other conditions indicated by the chargers LED's

1. Flashing Red with Green off – Charger is overheated. Unplug the charger, and allow it to cool down.
2. Flashing Red with Flashing Green – This indicates a defective battery.

1.6

BLUETOOTH CONNECTIVITY

This tool features Bluetooth connectivity for tool monitoring via the Klauke Tool Link app.

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:

<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:



1.6.1 Tool Information Display

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

Tool Informational Display

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

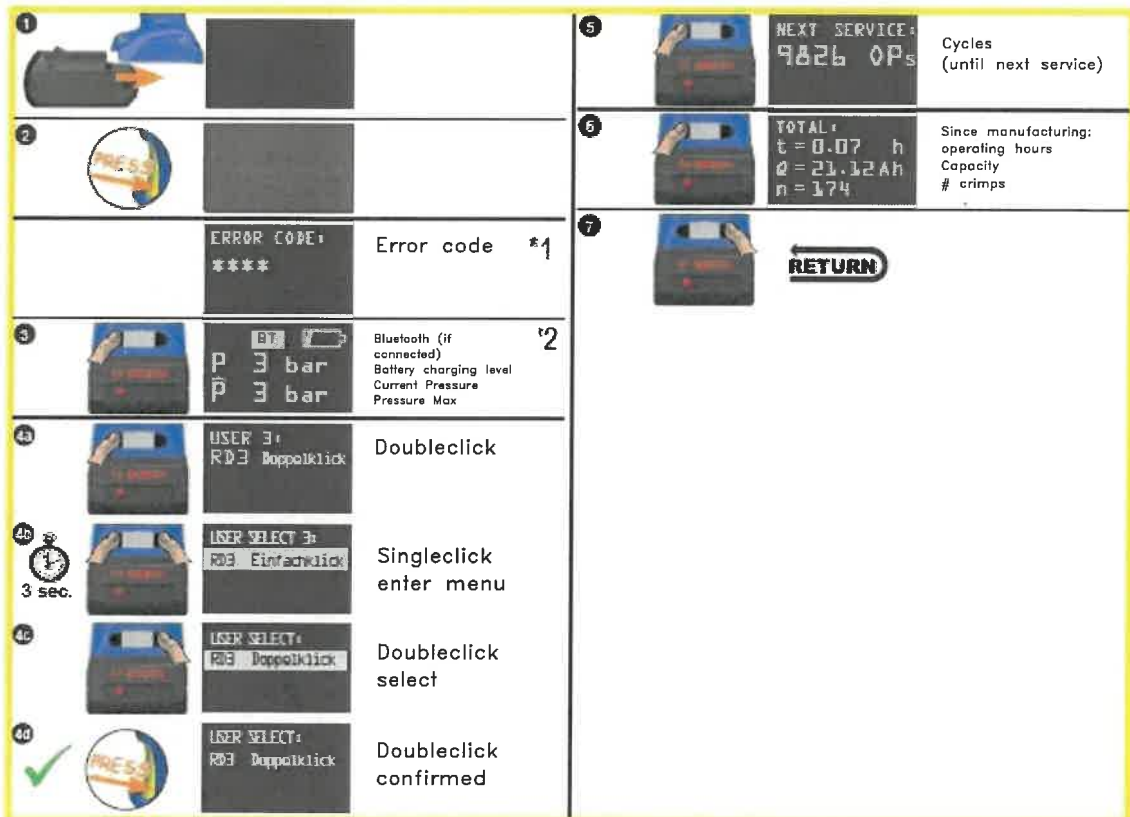


FIGURE 5

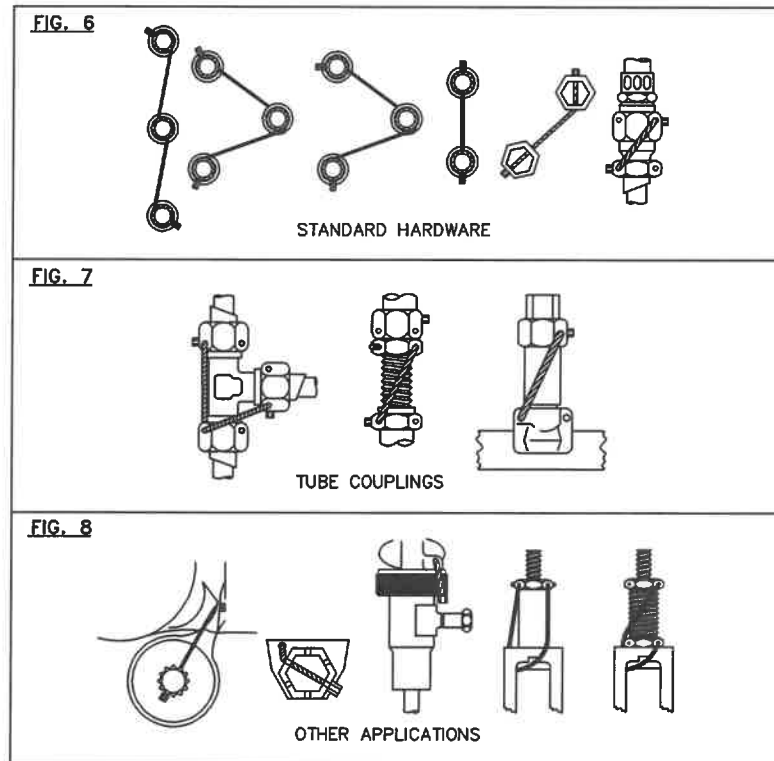
1. Install a charged battery onto the tool.
2. Press the tool trigger to activate the display. Any applicable error codes will be display. The 17 possible error codes are listed below. If an error code is displayed, the tool's red LED will also flash.
3. The first screen will display whether tool is connected via bluetooth, the battery charge level, current pressure & max pressure.
4. 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 |

2.0 PROPER CABLE INSTALLATION

- 2.1 Various examples of Safe-T-Cable[®] installation are shown in Figs. 6 thru 8. Although all possible combinations are not shown, three basic rules apply.
- 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 135° should be avoided. Installed Safe-T-Cable[®] should produce a positive or neutral pull on the fastener.
 - Safe-T-Cable[®] should be installed in two or three bolt patterns. Two bolt patterns being preferred when Safe-T-Cable[®] is applied to an even number of fasteners.
 - Maximum span of Safe-T-Cable[®] shall be six inches from end to end.



3.0 PROPER LOADING AND USE OF THE APPLICATION TOOL

- Install the Safe-T-Cable[®] through the fasteners as described in section 2.0.
- The nose of the tool can be rotated to any position (see Fig. 9). Rotate the nose to the desired position.
- Insert the free end of the cable through the last ferrule in the cartridge as shown in Fig. 10. Remove the ferrule by pulling the cable away from the end of the cartridge.

CAUTION: DO NOT RELEASE THE FREE END OF THE CABLE UNTIL IT HAS BEEN INSERTED THROUGH THE NOSE.

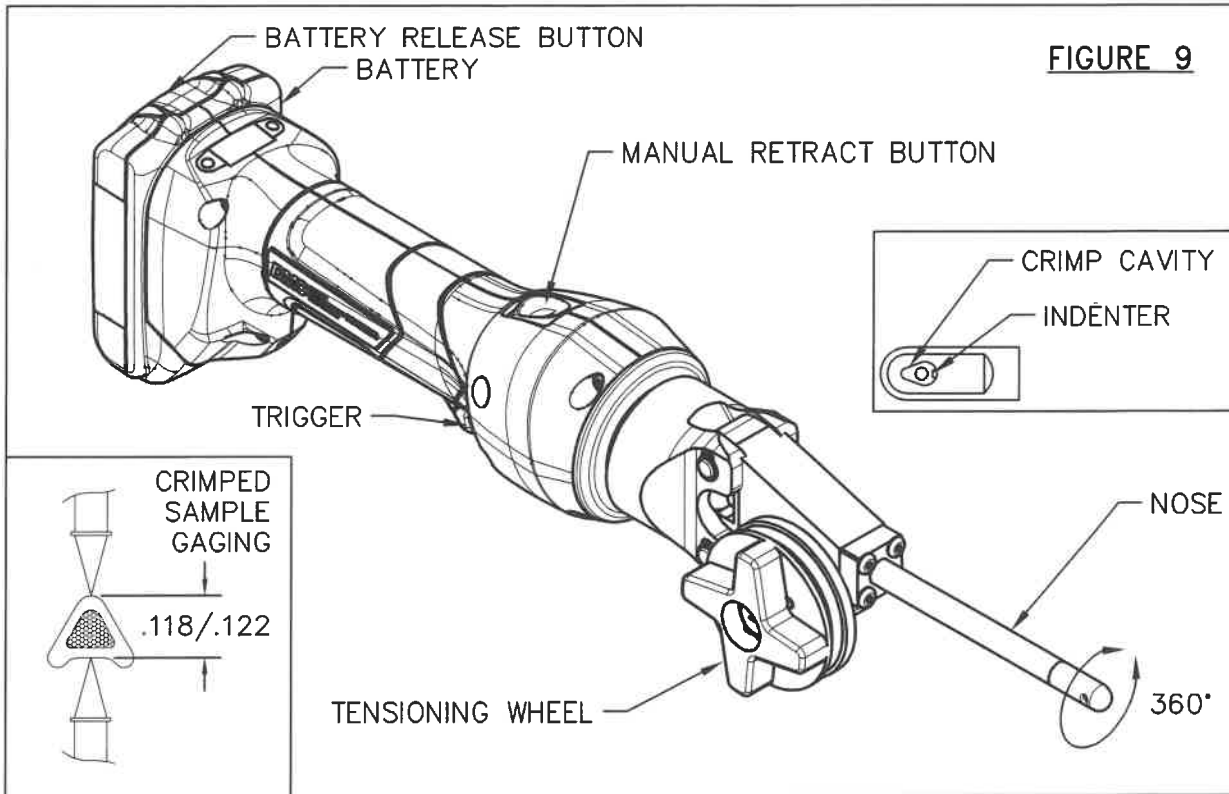
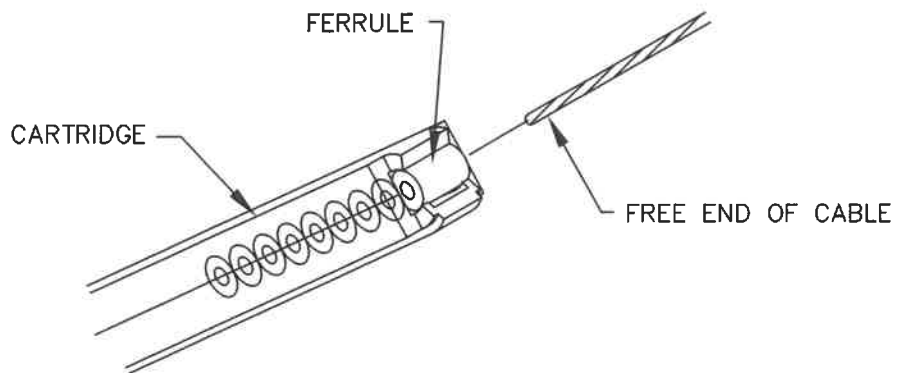
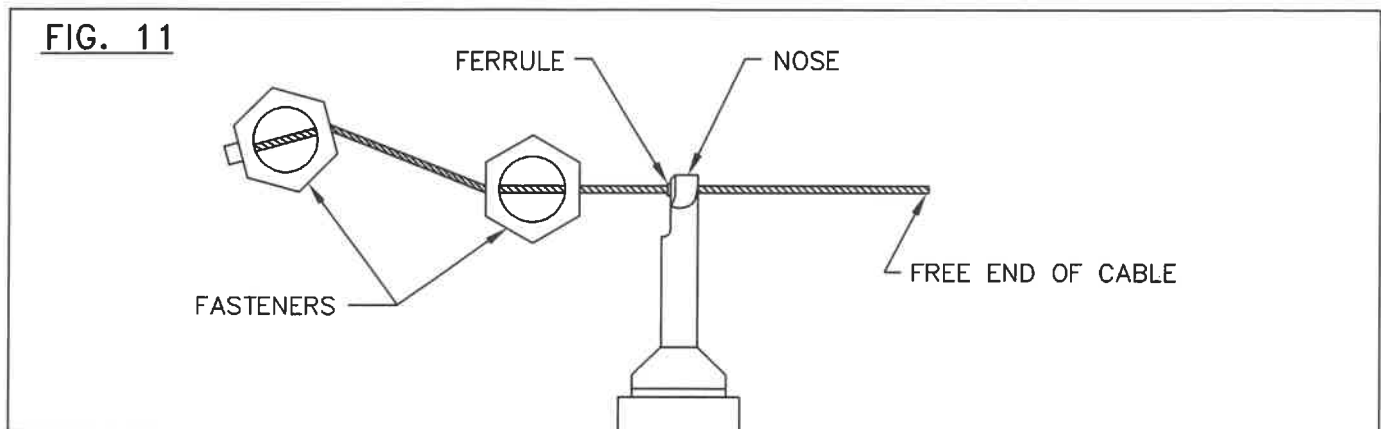


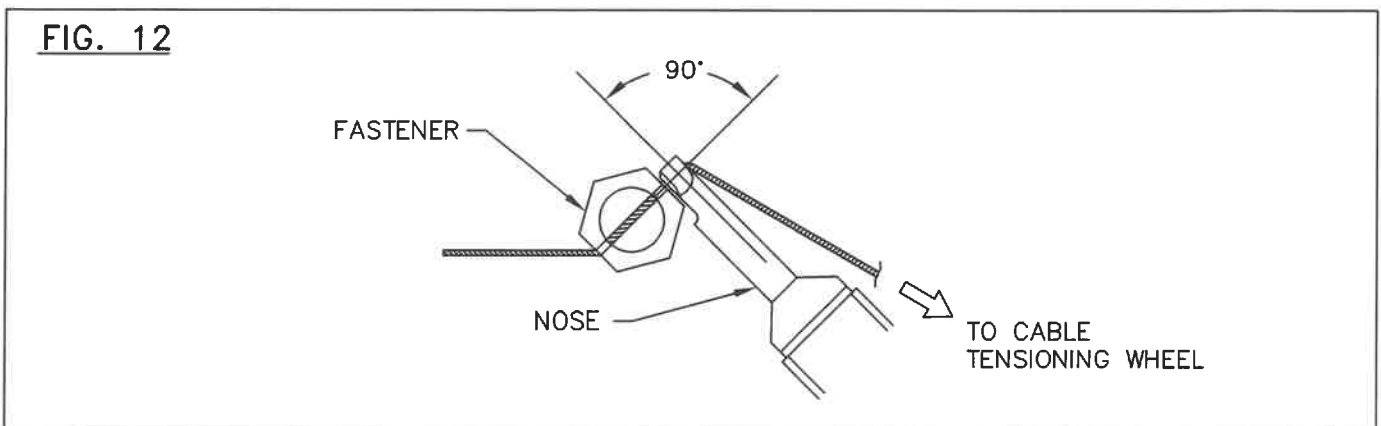
FIG. 10



- 3.4 Insert the free end of the cable through the nose as shown in Fig. 11. Slide the tool along the cable to the desired position.

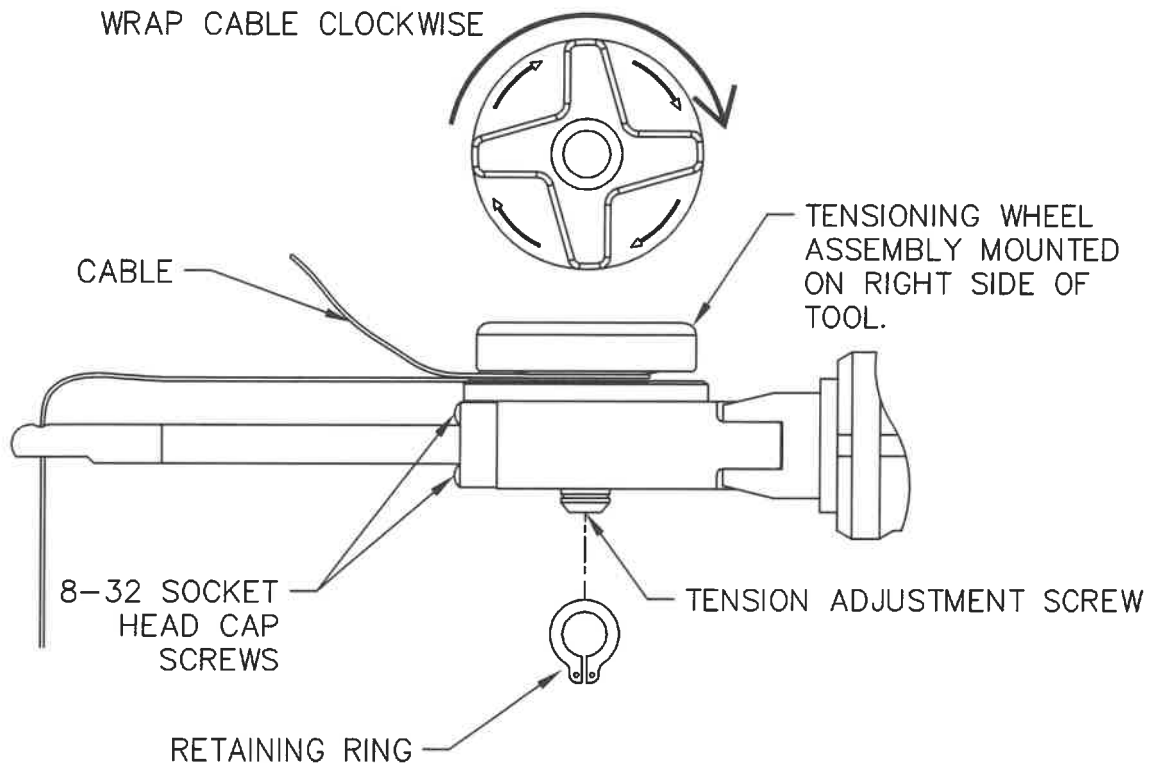


- 3.5 Position the cable tensioning wheel with the cable entry slot as shown in Fig. 12. Position the nose such that the ferrule is pressed squarely against the fastener. Make certain that the ferrule is fully seated in the nose cavity.



- 3.6 Insert the free end of the cable into the cable entry slot of the cable tensioning wheel. Wrap the free end of the cable around the tensioning wheel in the direction shown by the arrow in Fig. 13. Turn the wheel by hand in the direction of the arrow on the wheel until you hear the clutch click.

FIG. 13



3.7 Press the trigger and hold.

CAUTION: IT IS IMPORTANT TO HOLD THE TOOL STEADY AND PERPENDICULAR TO THE CABLE DURING THE CRIMPING CYCLE TO MAINTAIN CONSISTENT TENSION (SEE FIG. 12).

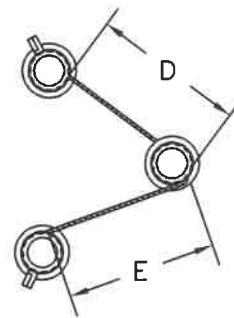
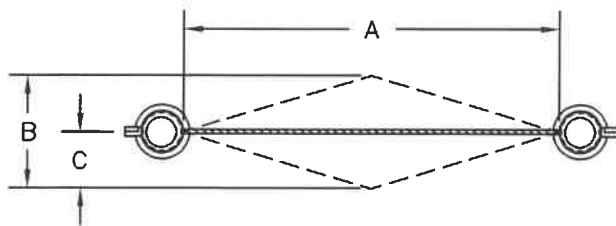
3.8 After crimping and cutting the tool push rod will retract. Release the trigger and slide the tool off the crimped ferrule. Pull the excess cable from the tool.

4.0 VERIFICATION OF INSTALLATION

- 4.1 Verify proper tension of the cable. Refer to table 1, Fig. 14 for Safe-T-Cable[®] flex limits.
- 4.2 Verify that the cable was installed through the fasteners in accordance with section 2.0.
- 4.3 Verify that the cable was cut flush at the end of the ferrule with no strand extending more than 1/32 inch from the end of the ferrule.
- 4.4 Visually inspect the cable for any nicks or other damage that may have occurred during installation.

TABLE 1 FLEX LIMITS, DIMENSIONS		
A IN. (mm)	B IN. (mm)	C IN. (mm)
0.5 (12.7)	0.125 (3.18)	0.062 (1.59)
1.0 (25.4)	0.250 (6.35)	0.125 (3.18)
2.0 (50.8)	0.375 (9.52)	0.188 (4.76)
3.0 (76.2)	0.375 (9.52)	0.188 (4.76)
4.0 (101.6)	0.500 (12.70)	0.250 (6.35)
5.0 (127.0)	0.500 (12.70)	0.250 (6.35)
6.0 (152.4)	0.625 (15.88)	0.312 (7.94)

FIG. 14



FOR THREE BOLT PATTERNS
 $A = D + E$

5.0 SAFE-T-CABLE[®] SYSTEM PART NUMBERS

5.1 Tool/Accessory part numbers

OTHER SAFE-T-CABLE [®] APPLICATION TOOLS	
SCTR SERIES	ADJUSTABLE TENSION TOOL
SCTH SERIES	HYDRAULIC ADJUSTABLE TENSION TOOL
SCTE SERIES	BATTERY ADJUSTABLE TENSION TOOL
SCT SERIES	PRE SET TENSION TOOL
SCTP SERIES	PNEUMATIC PRE SET TENSION TOOL
SCTPR SERIES	PNEUMATIC ADJUSTABLE TENSION TOOL

SCT ACCESSORY PART NUMBERS		Spare Battery Parts	
PART NUMBER	DESCRIPTION	PART NUMBER	DESCRIPTION
SCT-TB2	TORQUE VERIFICATION BLOCK	HDE-LI-120C	120 VAC Charger
SCTD011	TORQUE WRENCH (100-750 IN-LB)	HDE-LI-230C	230 VAC Charger
SCTD015	DIAGONAL CUTTERS	HDE-LI-B	18V Battery
SCTD012	RETAINING RING PLIERS	HDE-120AC-A	120VAC ADAPTER
SCTD013	RETENTION TESTER	HDE-230AC-A	230VAC ADAPTER
4-1501	9/64" HEX WRENCH		

5.2 DANIELS SAFE-T-CABLE[®] KIT PART NUMBERS

KIT PART NUMBER	CABLE DIAMETER IN. (mm)	COMPONENT MATERIAL	LENGTH IN. (mm)	MINIMUM PULL-OFF LOAD LB. (Nm)
C10-906	.062/.072 (1.57/1.83) (7 X 19 STRAND)	UNS S32100 CORROSION AND HEAT RESISTANT ALLOY (AMS5689)	6 (152)	280 (31.6)
C10-909			9 (229)	
C10-912			12 (305)	
C10-915			15 (381)	
C10-918			18 (457)	
C10-921			21 (533)	
C10-924			24 (610)	

A Safe-T-Cable[®] kit includes cable with an end fitting attached and a ferrule. Kits are sold and packaged in groups of 50. Consult the factory for information on INCONEL[®] 600 and INCONEL 625 Safe-T-Cable[®] kits.

5.4 DANIELS SAFE-T-CABLE[®] FERRULE PART NUMBERS

FERRULE PART NUMBER	FOR NOMINAL CABLE DIAMETER	MATERIAL	TYPE
F10-09	.062 (1.57)	UNS S32100	STANDARD
F10-10	.062 (1.57)	UNS S32100	ELONGATED

Daniels Safe-T-Cable[®] ferrules are sold in groups of 50 and are packaged in a cartridge. Consult the factory for information concerning low profile installations.

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.

INVALIDATION OF LIMITED WARRANTY

THIS MANUAL IS PROVIDED TO THOSE OWNERS OF DANIELS MANUFACTURING CORPORATION (DMC) PRODUCTS WHO HAVE ELECTED TO CONDUCT IN-HOUSE REPAIRS OF SUCH PRODUCTS AND WHO THEREBY CONSENT TO WAIVE ANY RIGHTS WHICH THEY OTHERWISE MIGHT HAVE HAD UNDER THE DMC LIMITED WARRANTY APPLICABLE TO SUCH PRODUCTS.

DMC PROVIDES COMPLETE REPAIR AND MAINTENANCE SERVICE FOR ALL OF ITS PRODUCTS. OWNERS OF DMC PRODUCTS ARE WARNED THAT ANY TAMPERING, INCLUDING PARTIAL OR COMPLETE DISASSEMBLY OF THE PRODUCT OR ATTEMPTED REPAIRS OF THE PRODUCT WILL INVALIDATE THE LIMITED WARRANTY APPLICABLE TO SAID PRODUCT.

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LIMITED WARRANTY

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 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.