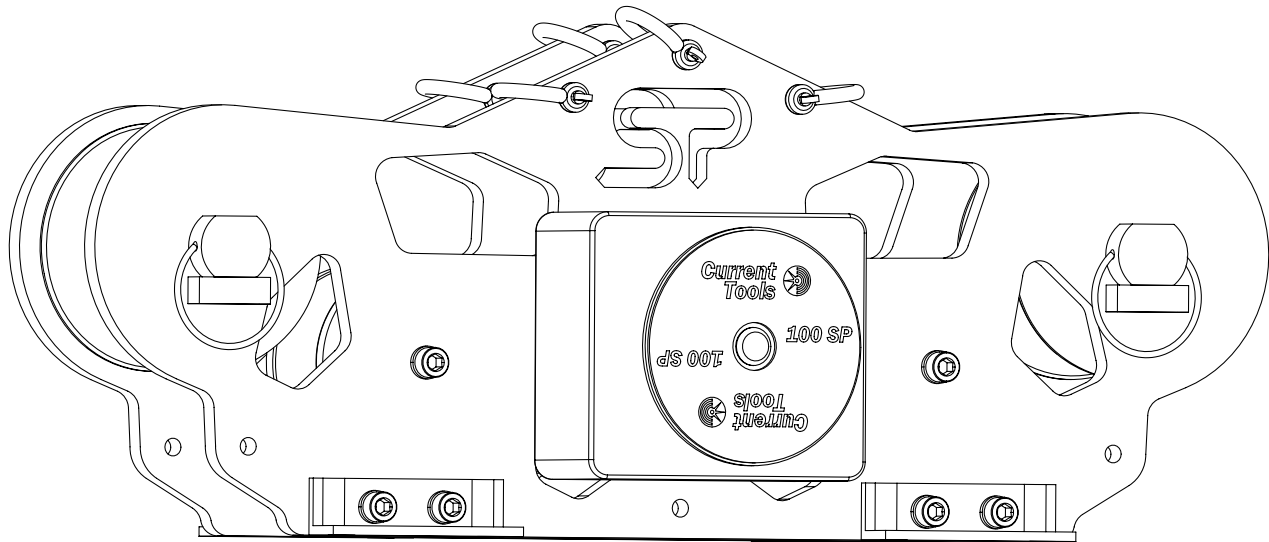




# **Current Tools**

**FOR THE PROFESSIONAL ELECTRICIAN**

## **Current Tools™ Model #100SP Sure Pull™ Cable Tension Meter**



## **Operating, Maintenance, Safety and Parts Manual**

5/2024



**Read and understand this material before operating or servicing the Cable Tension Meter. Failure to understand how to safely operate and service the unit may result in serious injury or death.**

This manual is free of charge. All personnel who operate the Cable Tension Meter should have a copy of this manual and read and understand its contents. To request a copy of this manual or replacement safety decals, or for technical assistance, call, write to the address below or visit our website. All information, specifications and product designs may change due to design improvements or updates and are subject to change without notice. Current Tools does not assume any liability for damages resulting from misuse or incorrect application of its products.

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## Safety Alert Symbol

THIS SAFETY SYMBOL is used to call your attention to instructions that concern your personal safety. It means: ATTENTION! BE AWARE! THIS IS AN IMPORTANT SAFETY INSTRUCTION!

Read, understand, and follow these safety instructions. Failure to follow these safety instructions may result in injury or death.



### **DANGER**

Immediate hazards which, if not avoided, WILL result in serious personal injury or death.



### **WARNING**

Hazards or unsafe practices which, if not avoided, COULD result in serious personal injury or death.



### **CAUTION**

Hazards or unsafe practices which, if not avoided, COULD result in minor personal injury or property damage.



### **CAUTION**

Calibration of the Model #100SP is valid for one year after the date of purchase. Re-Calibration is recommended yearly after this date to ensure meter accuracy and proper operation.

## RETAIN SAFETY INFORMATION



This manual should be read and understood by all personnel who operate or service this Cable Tension Meter. Failure to understand how to safely operate and service this unit could result in serious injury or death. This unit should only be operated and serviced by qualified personnel.



### IMPORTANT SAFETY INFORMATION

#### **⚠ DANGER**

DO NOT operate the tension meter in wet or damp locations. DO NOT expose to rain.

#### **⚠ DANGER**

DO NOT operate in an explosive atmosphere.

#### **⚠ DANGER**

DO NOT wrap rope around any body parts. DO NOT wrap rope around wrists.

#### **⚠ WARNING**

DO NOT exceed load rating of the tension meter, cable puller, rope, or accessories.

#### **⚠ WARNING**

ALWAYS inspect the tension meter before use, making sure there are no cracks, deformations, or visible wear.

#### **⚠ WARNING**

ALWAYS ensure all rollers turn freely and are not loose. Movement of the rollers on the axles should be checked and be less than 1 mm.

#### **⚠ WARNING**

SECURELY mount the tension meter to Cable Puller Boom Tubes as outlined in this manual. DO NOT mount to any other surface or structure.

#### **⚠ WARNING**

Pulling rope should be the only thing to contact the rollers on the tension meter. NEVER let swivels, grips, etc. come in contact with the rollers.

#### **⚠ WARNING**

Rope must ALWAYS be pulled over a rotating roller. If a roller does not rotate, turn cable puller off immediately and correct the problem before continuing the pull.

#### **⚠ WARNING**

Keep all body parts, hair, loose clothing, etc. away from rotating parts and pinch points.

#### **⚠ WARNING**

MINIMUM rated rope diameter is 3/8". MAXIMUM rated rope diameter is 1-3/16". DO NOT use rope outside the rated range.

#### **⚠ WARNING**

The model #8288 Puller Package must use 3/4" diameter double-braided composite pulling rope, or a pulling rope with a minimum average breaking strength of 26,000 LBS.

#### **⚠ WARNING**

The model #100 Puller Package must use 7/8" diameter double-braided composite pulling rope, or a pulling rope with a minimum average breaking strength of 32,000 LBS.

#### **⚠ CAUTION**

ALWAYS monitor the cable tension meter while in use.

#### **⚠ CAUTION**

DO NOT alter this cable tension meter. Doing so will void the warranty. Guards and safety features are provided for your protection.

#### **⚠ CAUTION**

Wear appropriate personal protective equipment at all time, including eye protection.

#### **⚠ CAUTION**

Calibration of the Model #100SP is valid for one year after the date of purchase. Re-calibration is recommended yearly after this date to ensure meter accuracy and proper operation.

## SPECIFICATIONS – MODEL 100SP TENSION METER

<b>Model no.</b>	<b>100SP</b>
<b>length</b>	<b>16.50"</b>
<b>width</b>	<b>5.10" (including monitoring box)</b>
<b>height</b>	<b>6.75"</b>
<b>weight</b>	<b>18 lbs.</b>
<b>rope size</b>	<b>3/8" diameter minimum 1-3/16" diameter maximum</b>
<b>tension capacity</b>	<b>22,000 lbs. maximum</b>

**NOTE:** The model #8288 Puller Package must use 3/4" diameter double-braided composite pulling rope, or a pulling rope with a minimum average breaking strength of 26,000 LBS.

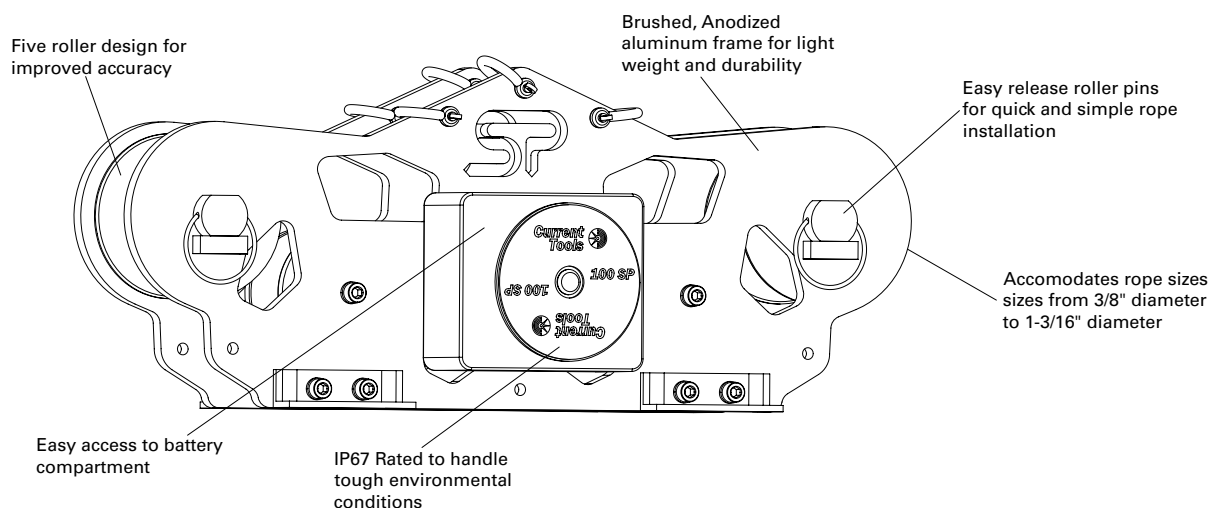
**NOTE:** The model #100 Puller Package must use 7/8" diameter double-braided composite pulling rope, or a pulling rope with a minimum average breaking strength of 32,000 LBS.

## FEATURES

- Durable, lightweight anodized aluminum frame
- Compatible for use with 3/8" to 1-3/16" rope
- Remote monitoring up to 300 feet using smart phone via Bluetooth®
- IP67 rated for protection against the elements
- Five roller design for improved tension monitoring accuracy
- Accuracy rated to +/- 2% F.S.

**NOTE:** Although the model # 100SP Cable Tension Meter is calibrated when sold from the factory, CurrentTools does not assume any liability due to inaccurate readings during use. Calibration is valid for one year after the date of purchase. Re-calibration is recommended yearly after this date to ensure meter accuracy and proper operation.

- Wide operating temperature range of 14° F to 122° F
- Rollers have maintenance free roller bearings for long life
- Easy release roller pins allow for quick and simple setup



Bluetooth® is a registered trademark of Bluetooth SIG.

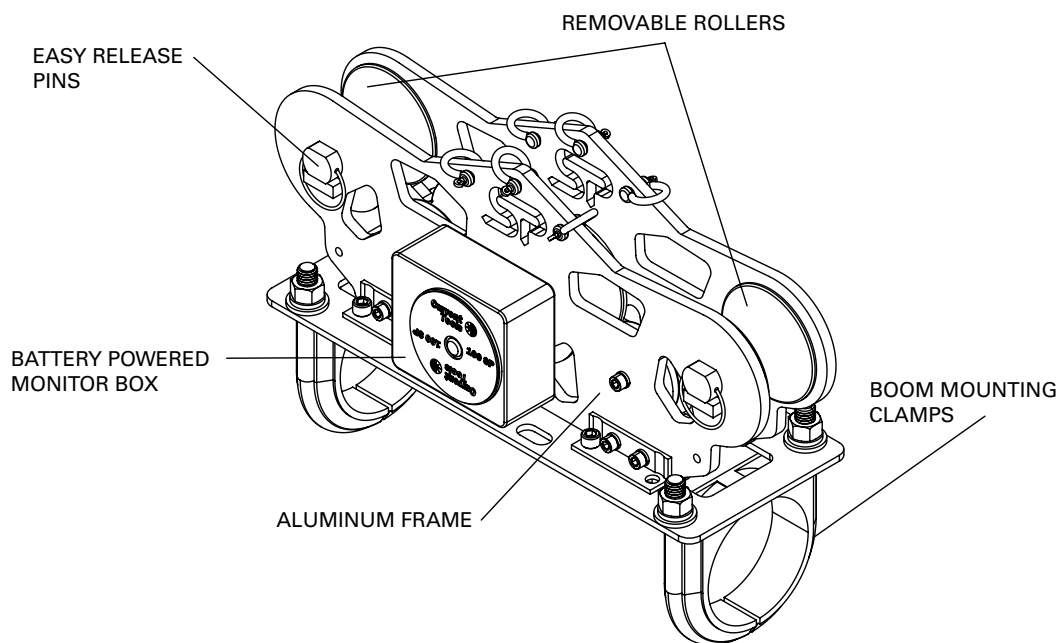
## GENERAL OPERATING PRINCIPLES

The Current Tools Model# 100SP Sure Pull Cable Tension Meter monitors rope tension in real time during a pull and calculates the pulling force based on that tension reading. The design of the tension meter allows for a pulling force calculation accuracy of  $\pm 2\%$  F.S.

Tension is measured using a five-roller system. The two outer rollers are removed to allow the rope to be inserted. Once the two outer rollers are reassembled, the lower middle roller uses a deflection type load cell to measure tension on the rope and convert that tension to pulling force.

The tension meter allows the operator to monitor a cable pull in real time, with a high degree of accuracy, using a smart handheld device via a Bluetooth® connection. Pulling force data is transmitted up to 300 feet, so the pull can be monitored remotely if needed and is stored on the app for documentation and downloading.

## MAJOR COMPONENTS LIST



## MOUNTING INSTRUCTIONS

**NOTE:** The Model #100SP Cable Tension Meter is designed to mount to 3" Rigid Conduit or Schedule 40 Pipe as used as a boom tube in a Cable Pulling setup. DO NOT attempt to mount to any other structure or object.

**NOTE:** If you are not able to mount the tension meter to either the Model #100 boom tube, or the Model #8288 Boom Tube, consult with your company's safety department for additional mounting options.

1. Refer to the operator's manual for either the Current Tools model #100 Cable Puller or the model #8288 Cable Puller and begin set up of puller. Once the first boom tube section is installed, follow the instructions below to mount the Cable Tension Meter to the boom.

2. Ensure that the mounting plate is securely fastened to the base of the Tension Meter (See Figure 7A).

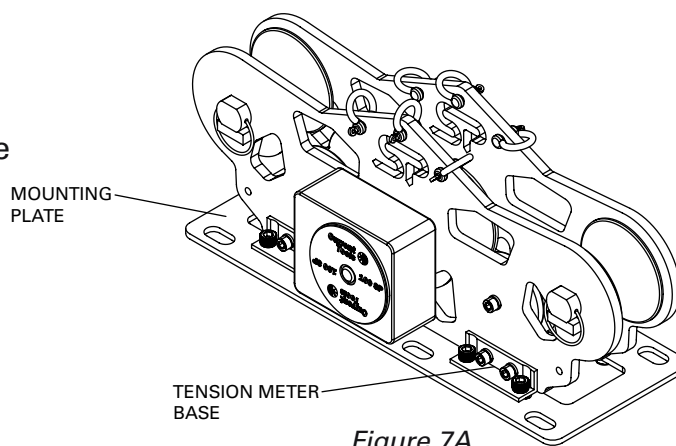


Figure 7A

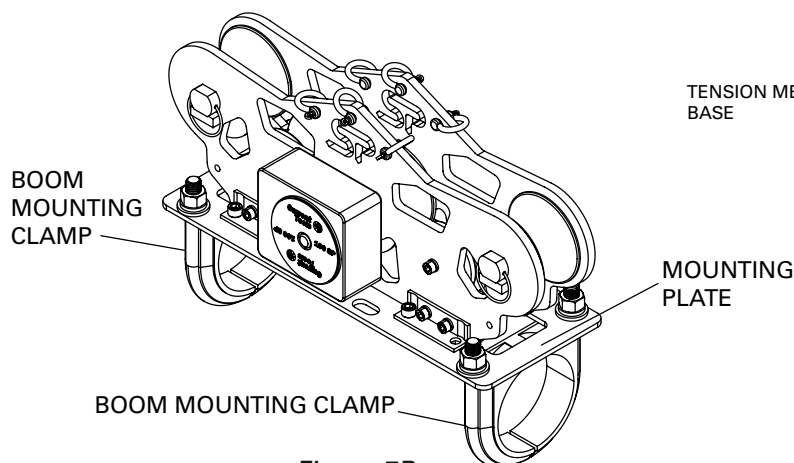


Figure 7B

3. Loosely attach both of the boom mounting clamps to the mounting plate (See Figure 7B).

4. Slide the assembled Tension Meter onto the boom tube and adjust so that it is centered on the boom tube. (See Figure 7C).

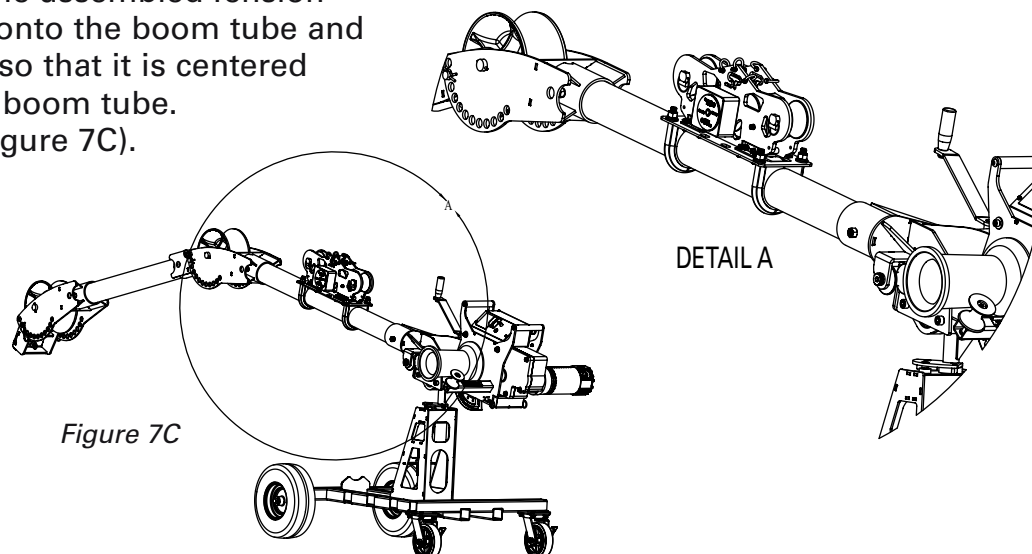


Figure 7C

## MOUNTING INSTRUCTIONS — CONTINUED

5. Line up the tension meter with the Capstan on the puller and tighten all four nuts on the mounting clamps. (See Figure 8A).

**NOTE:** These instructions show the installations for an “up pull.” For a “down pull,” rotate the tension meter such that it aligns with the redirect roller of your puller.

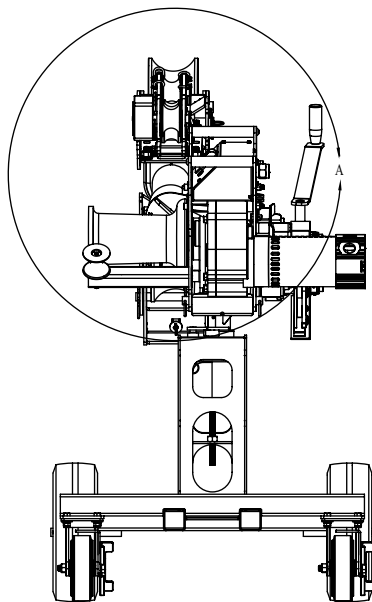
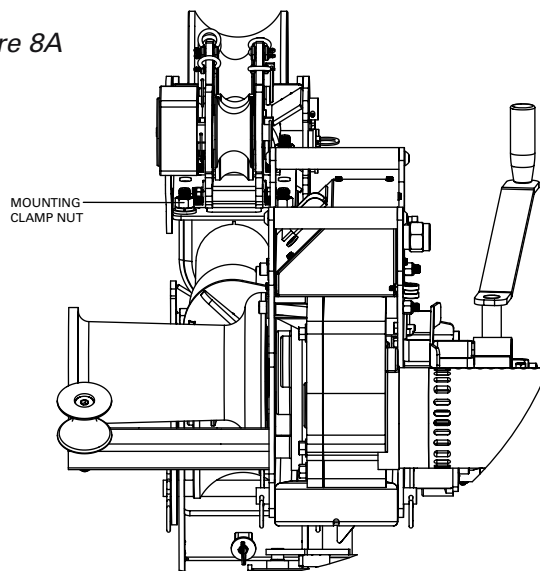
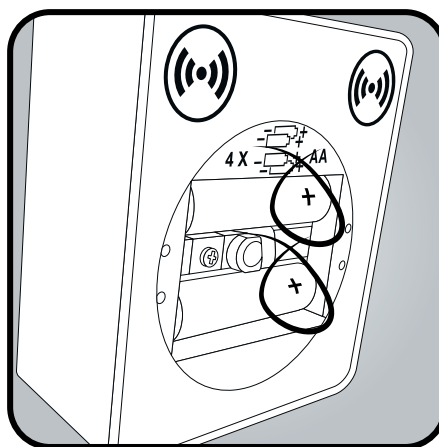
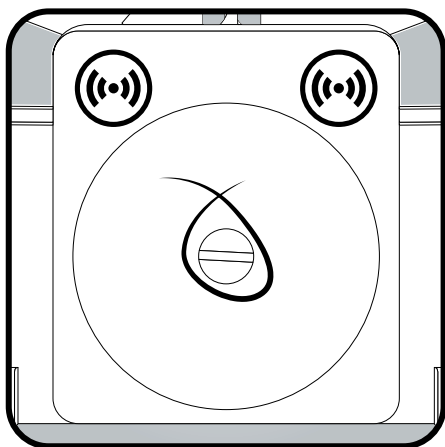


Figure 8A



6. Remove the cover of the tension monitor box with a flat blade screwdriver and install four double A batteries in the correct orientation. Replace the cover and tighten cover screw.

**NOTE:** Remove batteries when not in use.



7. Complete the setup of the puller according to the operator's manual for the model # of the puller you are using.



## OPERATING INSTRUCTIONS

**NOTE:** The pulling rope must not be under tension when loading into the tension meter. Ensure the rope is in a slack condition while loading.

1. Remove both outer rollers by lifting the linch pin out of the roller axle pin (Figure 9A) and removing the axle pin (Figure 9B). Take care to hold the roller during removal.

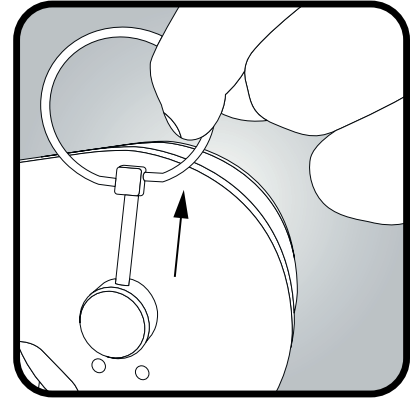


Figure 9A

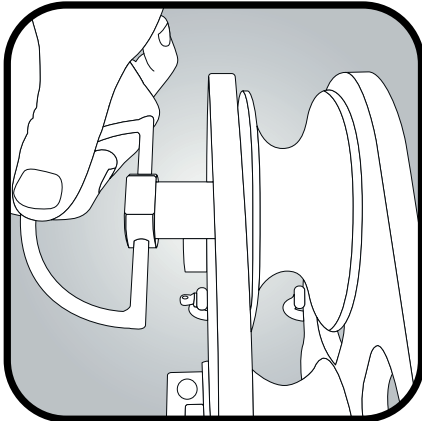


Figure 9B

2. Lay the pulling rope across the three lower rollers, making sure the rope is sitting completely in the grooves of the rollers (See Figure 9C)

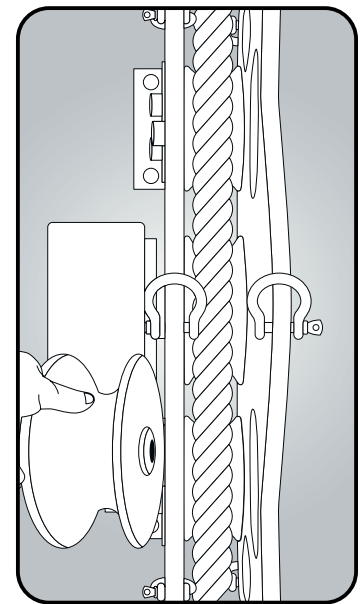


Figure 9C

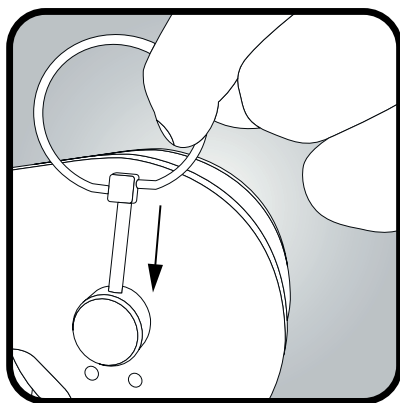


Figure 9D

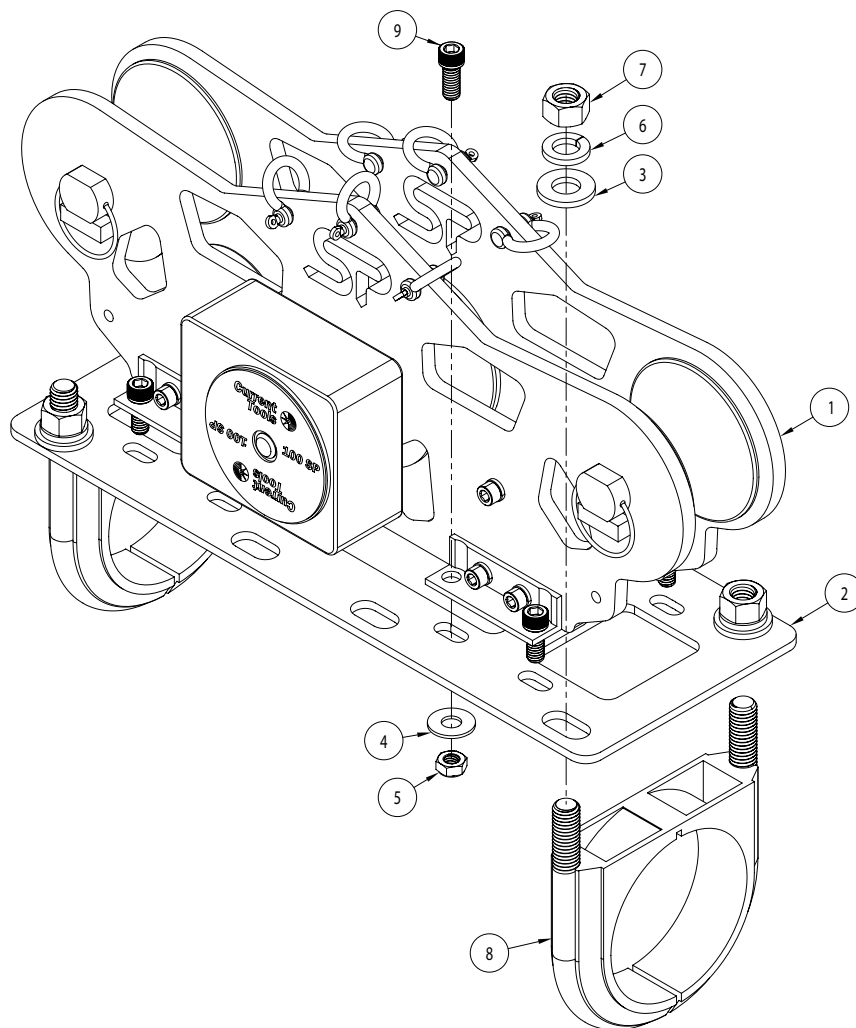
3. Replace the two outer rollers by placing them on top of the rope and inserting the roller axle pin through the rollers. (See Figure 9B). Secure the roller axle pins with the Linch Pins (See Figure 9D).

4. To monitor and record loads during a pull, scan the QR code for your specific device and download the CurrentTools Sure Pull monitoring App. Instructions are provided in the App and on pages 11 thru 14 of this manual.

**NOTE:** For Android devices, location services must be enabled to allow discovery of bluetooth devices in the app.



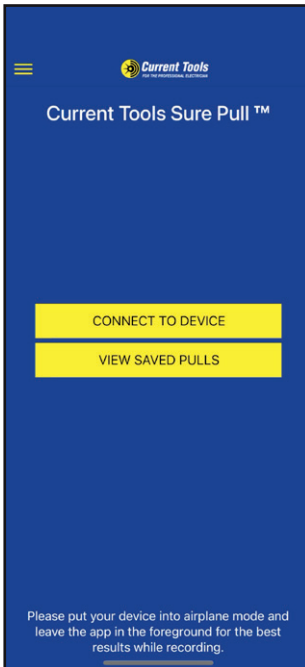
## EXPLODED VIEW – 100SP MOUNTING COMPONENTS



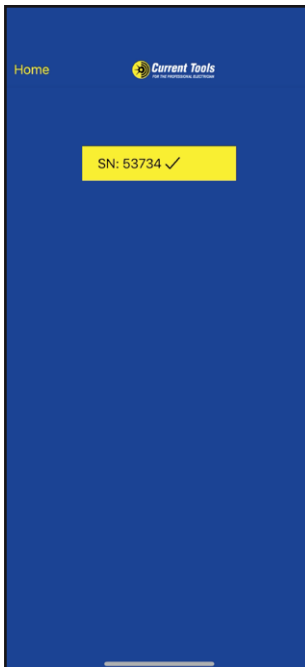
## PARTS LIST – 100SP MOUNTING COMPONENTS

ITEM #	PART #	DESCRIPTION	QTY.
1	100SP-001	TENSIOMETER	1
2	100SP-101	MOUNT PLATE – BOOM	1
3	77-017A	WASHER – FLAT SAE ZINC (1/2)	4
4	9544-21	WASHER – FLAT 5/16" USS ZINC	8
5	752-121	NUT – HEX HYLON INSERT THIN (5/16-18)	8
6	281-2C	WASHER – LOCK 1/2" ZINC	4
7	280-2G	NUT – HEX ZINC (1/2-13)	4
8	100SP-004	COUPLER – 1.75"	2
9	100SP-003	SCREW – SOCKET HEAD CAP (5/16-18 x 3/4")	8

# APP INSTRUCTIONS – 100SP



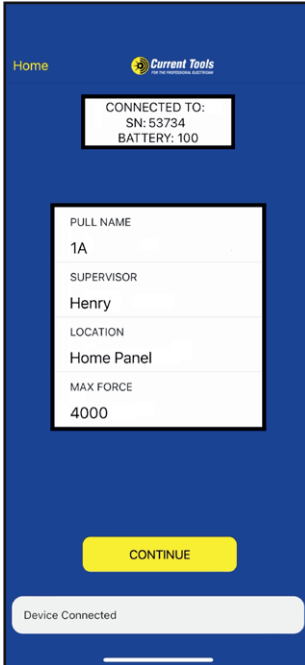
1. ON THE HOME SCREEN, PRESS “CONNECT TO DEVICE”.




2. THE APP WILL BEGIN SEARCHING FOR NEARBY DEVICES. SELECT THE SERIAL NUMBER OF YOUR DEVICE

NOTE: IF NO DEVICES APPEAR, CHECK PHONE SETTINGS AND ENSURE BLUETOOTH IS ENABLED AND THAT THE APP HAS PERMISSION TO DISCOVER BLUETOOTH DEVICES. ANDROID DEVICES MAY HAVE TO ENABLE LOCATION SERVICES TO CONNECT TO BLUETOOTH DEVICES.

# APP INSTRUCTIONS – 100SP



Home 

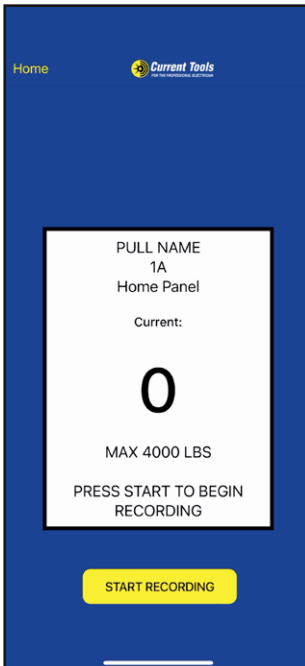
CONNECTED TO:  
SN: 53734  
BATTERY: 100


PULL NAME  
1A  
SUPERVISOR  
Henry  
LOCATION  
Home Panel  
MAX FORCE  
4000

CONTINUE

Device Connected

3. INPUT PULL INFORMATION AND PRESS “CONTINUE”.



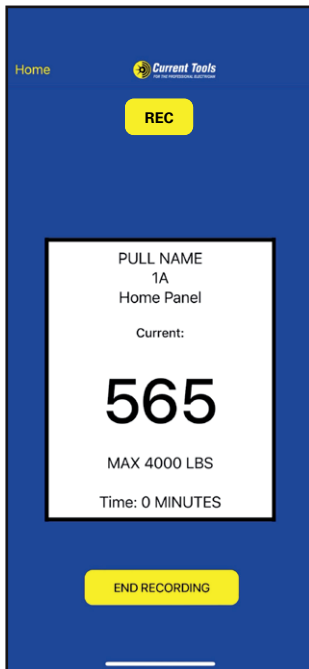
Home 

PULL NAME  
1A  
Home Panel  
Current:  
0  
MAX 4000 LBS  
PRESS START TO BEGIN  
RECORDING

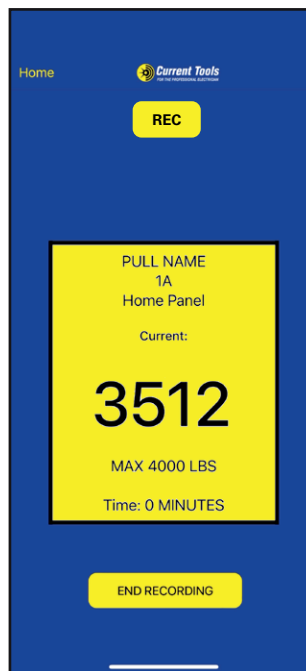
START RECORDING

4. WHEN READY TO BEGIN, PRESS “START RECORDING”.

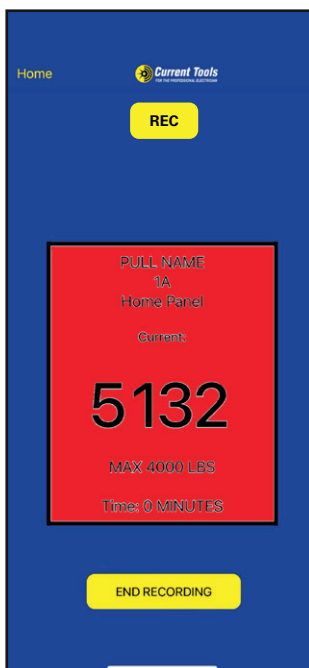
## APP INSTRUCTIONS – 100SP



5. REC WILL APPEAR ONSCREEN TO INDICATE RECORDING IS ACTIVE. PRESS “END RECORDING” WHEN PULL IS COMPLETE.

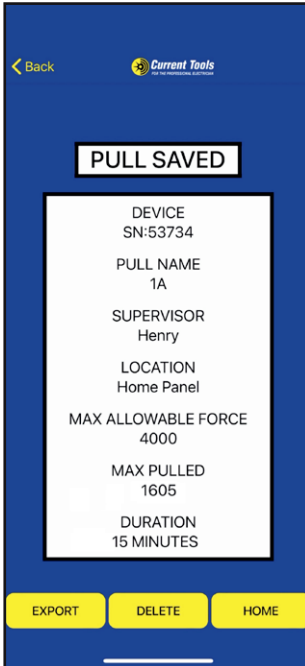



THE SCREEN WILL FLASH YELLOW WHEN THE PULL EXCEEDS 80% OF THE MAX FORCE GIVEN.



THE SCREEN WILL FLASH RED IF THE PULL EXCEEDS THE MAX FORCE GIVEN.

## APP INSTRUCTIONS – 100SP



< Back 

**PULL SAVED**

DEVICE  
SN:53734

PULL NAME  
1A

SUPERVISOR  
Henry

LOCATION  
Home Panel

MAX ALLOWABLE FORCE  
4000


MAX PULLED  
1605

DURATION  
15 MINUTES

EXPORT DELETE HOME

6. THE PULL DATA IS AUTOMATICALLY SAVED IN THE APP AND CAN BE ACCESSED ANYTIME FROM THE HOME MENU.



< Back 

EMAIL

SHARE

SAVE TO DEVICE

START OVER

7. TO EXPORT THE DATA AS A CSV FILE, PRESS THE “EXPORT” BUTTON AND SELECT THE DESIRED METHOD OF EXPORT.