



User Manual

Wireless Cable Tension Meter

Model: Gripper CTR-GAWL-150



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Introduction

Thank you for buying the finest Wireless Cable Tensiometer made today. This manual contains the SPRAGUE Gripper CTR-GAWL-150 specifications and operating instructions.

Overview

This Tensiometer is a wireless cable tension measuring instrument. It uses Bluetooth technology to communicate between the sensor and display. The display unit shows tension in the cable as measured by the sensor unit.

The system consists of 2 Parts -

- Display unit
- Sensor unit

In the Box

- Display Unit
- Sensor unit
- Batteries – (pre-installed in the Display and Sensor units)
- 5V Adapter with two cables
- User Manual

System Description

Display Unit

1. Temperature at the sensor unit
2. Cable tension
3. Power ON/OFF Button
4. Cable Size/Up Navigation Button
5. Tension Unit Selection/ Left Navigation
6. Settings/Down Navigation
7. Charging Port
8. Charge Indication
9. Zero Set/Right Navigation
10. OK Button
11. Display Backlight ON/OFF
12. Tension Units
13. Sensor Signal Strength
14. Cable Size Selected
15. Temperature Units



Sensor Unit



Sensor Top View

1. Power Button
2. Connectivity Indication
3. Charge Indication



Sensor Bottom View

Specifications

Property	Details
Scale Range	10 to 150 Pounds
Scale Resolution	.1 Pound
Scale Tolerance	+/- 2% of Full scale
Unit of Measurement	Metric – Kg, °C Imperial – lbs , °F
Calibration Steps	5
Supported Cables Sizes	1/16, 3/32, 1/8, 5/32, 3/16 inches
Temperature Units	Selectable - °C and °F
Operating Temp Range	14 to 100 F (-10 to 40 C)
Storage Temperature	-4 to 122 F (-20 to 50 C)
Operating Modes	Measurement / Calibration / Firmware Update
Humidity	5 to 95 %
Communication	BLE 4.2 (Between Display & Sensor Units)
Bluetooth Range	10 meters
Display Unit	
Display	160 x 128 Dot Matrix LCD
	Back light ON/OFF option
Charging	5V DC / Charge status Indicator
	1900mAH – Li Po Rechargeable Battery
	~10000 Readings/charge with back light OFF
	~3000 Readings/charge with back light ON
Auto shut down	30 Minutes of inactivity
Dimensions	164x80x29mm
Weight	160gm(approx.)
Housing	ABS

Sensor Unit	
Charging Voltage	5VDC
Power	500mAH – Li Po Rechargeable Battery
	~4000 Readings/Charge
	Auto shut down at 30 minutes
Dimension	105x40x27mm
Weight	240gm(approx.)
Housing	6061 Aluminum

Operation

Display Units Buttons

Buttons	Naming	Functions
	Power ON/OFF Switch	<ul style="list-style-type: none"> • ON - Press • OFF - Hold 3 Secs
	Tension Unit Selection/Left Navigation	<ul style="list-style-type: none"> • Toggle - units for Tension and Temperature (lbs/Metric) • Back Button / Navigate Left
	Display Backlight ON/OFF	<ul style="list-style-type: none"> • Turns display backlight ON/OFF
	Zero/Right Navigation	<ul style="list-style-type: none"> • Set Zero load offset • Navigate Right
	Cable Size/Up Navigation	<ul style="list-style-type: none"> • Select Cable Size (1/16, 3/32, 1/8, 5/32, 3/16 inches) • Navigate Upward
	Settings/Down Navigation	<ul style="list-style-type: none"> • Go to Settings • Navigate downward
	OK/Confirm	<ul style="list-style-type: none"> • Confirmation - user action/setting

Battery Charging

The Meter and Sensor units are charged with the 5V adapter. A splitter cable is included to charge both units at the same time.

Charge Status LEDs (Display & Sensor)

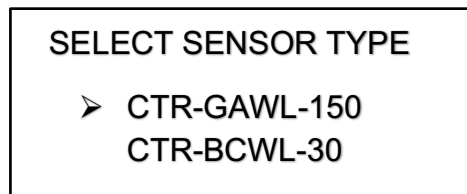
Charge is shown by dual color LEDs - .

State	LED
Charge in Progress	Blue
Charge Complete	Green

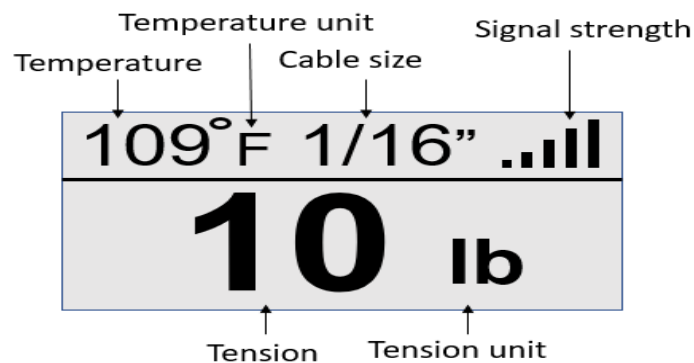
Operation

Press the Power ON buttons on the Display and Sensor units. "Select Sensor Type" will pop up. (LCD backlight will be ON by default. It can be turned OFF by pressing Backlight ON/OFF button.)

Select the sensor type using the up/down arrows and the OK button..



Selecting OK will put the unit in operating mode -

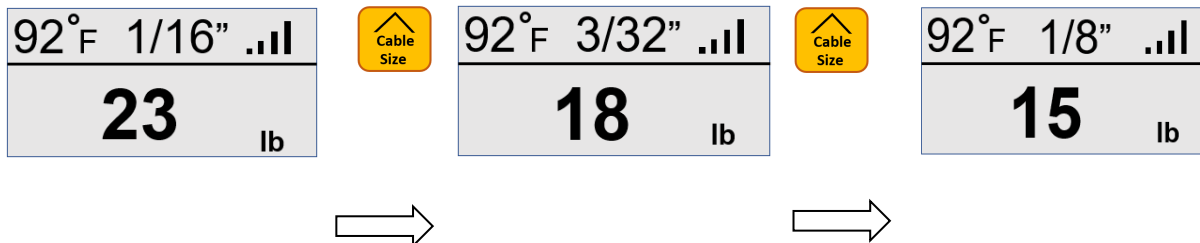


Sensor Unit Power ON

- Press the red power button on the bottom of the unit.
- The Green led will come on and the unit will start transmitting data.
- The sensor unit will auto shut off after 30 minutes.

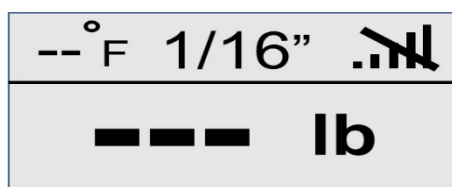
Cable Size Selection

- Pressing the cable size button will step through available cable sizes.
- Supported diameter are 1/16, 3/32, 1/8, 5/32, 3/16 inches.
- Calibration for each cable size must be done independently prior to first use.



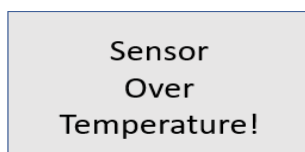
Sensor Out of Range

- If the sensor is too far away or turned OFF, you'll see the following display -

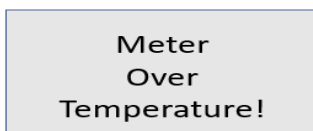


Over Temperature Shutdown

- If the sensor temperature reaches 53° C/ 127° F, the display will show a temperature message with warning buzzer. Pressing any button will silence the buzzer.



- If the sensor reaches 55° C/ 131° F , the sensor unit will shut down.
- When the sensor is removed from the high temperature area and cools, cycling the power button will restore operation.
- If the Display unit temperature reaches 63° C/ 145° F, the unit will display an over temperature message with warning buzzer. Pressing any button will silence the buzzer..



- If the unit reaches 65° C/ 149° F , the Display unit will shut down.
- Once the Display unit cools, cycling power will restore operation.

Selecting Tension/Temperature Units

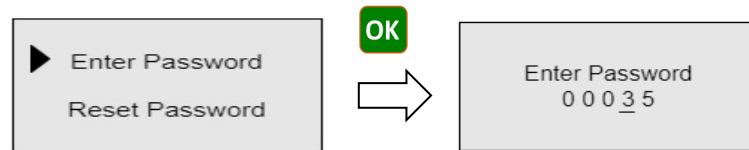
- The tensiometer supports Imperial and Metric Units - either lbs - °F, or Kg - °C.
- Pressing the Kg/lb button will toggle Kgs to lbs.

Zero Setting

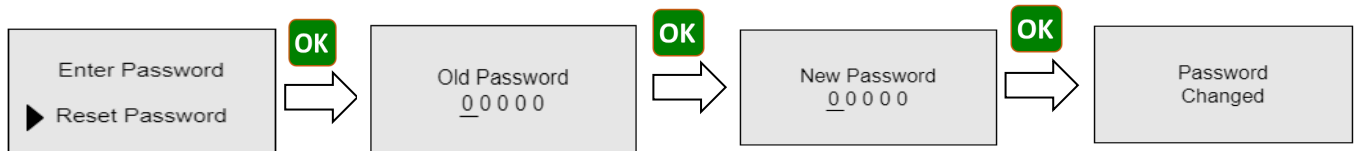
Press the Zero button to zero the display.

Password Protection

- The Sensor Id and Calibrate settings are password protected. The password is initially set to the 5 digit unit serial number and can be changed.

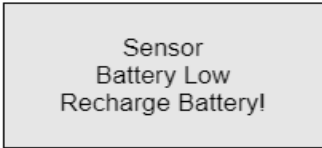


- Use the Up/Down arrows for navigation: Use the Up/Down and Left/Right arrows to change the numbers and then press Ok.
- To change the password, select “Reset Password”.
- If the password is lost/forgotten, please call Sprague for a reset.



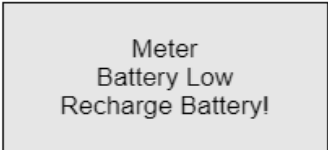
Low Battery Indication

- When battery reaches 20% capacity, the low battery message will display. It will display again for each 5% decrease.
- Low battery messages are –



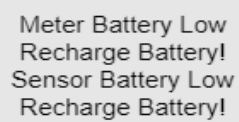
Sensor
Battery Low
Recharge Battery!

Display unit, low battery:



Meter
Battery Low
Recharge Battery!

Both units low:



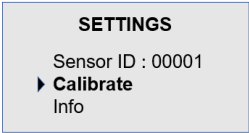
Meter Battery Low
Recharge Battery!
Sensor Battery Low
Recharge Battery!

Settings Menu

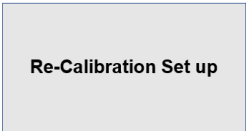
Calibration

The tensiometer requires calibration for each cable size at 5 incremental weights before use. Follow these procedures to calibrate.

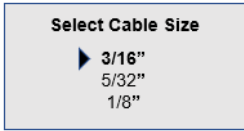
- Press SETTINGS button. The display will show these options -



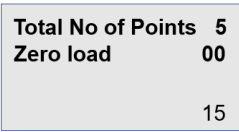
- Select **Calibrate** with the UP/Down buttons.
- Press OK and enter the password (see Password section above).
- When the password is entered correctly, the display will show this for 2sec –



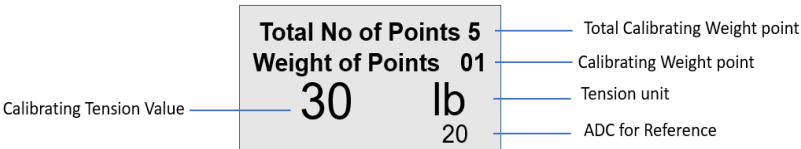
- Select desired cable size using the UP/Down buttons. For example -



- The display will show -



- Press the OK button to start calibration for a 30lb weight. The display will show -



- Add a 30lb load to the cable. When the ADC reference value is stable, press OK. This will confirm the 30lb load. The weight point will change to 2 which corresponds to 60bs. Add a 60lb weight for calibration -

Total No of Points 5
Weight of Points 02
60 lb
27

- When the ADC value stabilizes, press OK. This will complete calibration for 60lbs and the weight point will change to 3. Add weight for 90lbs and press Ok.
- Continue this process to weight point 5 (150lb).

Total No of Points 5
Weight of Points 05
150 lb
240

- When calibration is complete at 150lbs, press OK to check measurements or choose the left navigation button to go back to the settings menu.

Calibration finished
Press <- to Settings
Press OK to Meter
Reading

- Pressing the Ok button completes calibration.
- To calibrate other cable sizes, repeat these procedures starting calibration at 0 and ending at 150lbs.

Device Info

From the settings menu, navigate downward to “Info” and press OK. Cable Tension meter model number, battery status, and firmware versions will display.

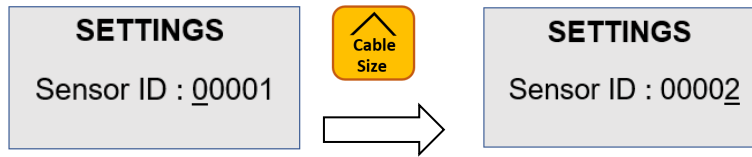
INFO
Sensor Batt : 98%
Meter Batt : 75%
Sensor FW : v1.0
Meter FW : v1.0

Setting Sensor ID

- The Sensor ID can be set from the Settings menu. Navigate to the Sensor ID option from the Settings menu. Press OK.

SETTINGS
▶ Sensor ID : 00001
Calibrate
Info

- Use the Left/Right Navigation keys to point to the digit to be set. The selected digit will be underlined.
- Use the Up/Down key to set the desired value for the digit selected.



- Press OK and the respective Id will set with an acknowledgement pop-up message -



- The Set ID will display as shown –

