DILLON®

Quick Balance
Tension Meter

User Instructions

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1 General information and warnings

1.1 About this manual

This manual is divided into chapters by the chapter number and the large text at the top of a page. Subsections are labeled as shown by the 1 and 1.1 headings shown above. The names of the chapter and the next subsection level appear at the top of alternating pages of the manual to remind you of where you are in the manual. The manual name and page numbers appear at the bottom of the pages.

1.1.1 Text conventions

Key names are shown in **bold** and reflect the case of the key being described. This applies to hard keys and onscreen or softkeys.

Displayed messages appear in *bold italic* type and reflect the case of the displayed message.

1.1.2 Special messages

Examples of special messages you will see in this manual are defined below. The signal words have specific meanings to alert you to additional information or the relative level of hazard.

ELECTRICAL WARNING!
THIS IS AN ELECTRICAL WARNING SYMBOL.
ELECTRICAL WARNINGS MEAN THAT FAILURE TO FOLLOW
SPECIFIC PRACTICES OR PROCEDURES MAY RESULT IN
ELECTROCUTION, ARC BURNS, EXPLOSIONS OR OTHER HAZARDS
THAT MAY CAUSE INJURY OR DEATH.

CAUTION!
This is a Caution symbol.
Cautions give information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.

NOTE: This is a Note symbol. Notes give additional and important information, hints and tips that help you to use your product.

1.2   Installation

DANGER: RISK OF ELECTRICAL SHOCK. NO USER SERVICEABLE PARTS. REFER TO QUALIFIED SERVICE PERSONNEL FOR SERVICE.

1.2.1   Safe handling of equipment with batteries

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

ATTENTION: Il y a danger d'explosion s'il y a remplacement incorrect de la batterie, remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

1.3   Routine maintenance

IMPORTANT: This equipment must be routinely checked for proper operation and calibration.
Application and usage will determine the frequency of calibration required for safe operation.

Always turn off the machine and remove batteries before starting any routine maintenance.

1.4 Cleaning the machine

Table 1.1 Cleaning DOs and DON'Ts

DO	DO NOT
Wipe down the outside of standard products with a clean cloth, moistened with water and a small amount of mild detergent	Attempt to clean the inside of the machine
	Use harsh abrasives, solvents, scouring cleaners or alkaline cleaning solutions
Spray the cloth when using a proprietary cleaning fluid	Spray any liquid directly on to the display windows

1.5 Training

Do not attempt to operate or complete any procedure on a machine unless you have received the appropriate training or read the instruction books.

1.6 Sharp objects

Do not use sharp objects such as screwdrivers or long fingernails to operate the keys.

1.7 FCC and EMC declarations of compliance

United States

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe A prescrites dans le Règlement sur le brouillage radioélectrique edicté par le ministère des Communications du Canada.

European Countries

WARNING: This is a Class A product. In a domestic environment, this product may cause radio interference in which the user may be required to take adequate measures.

2   Introduction

This manual covers the setup and operation of the Quick Balance Tension Meter from Dillon. The Quick Balance is a simple, accurate strand dynamometer. It can be clamped onto a cable, accurately determine the wire tension and be removed in seconds.

The Quick Balance can handle multiple wire diameters, it can display live tension, dual live/peak tension, average tension captured from several tests, dual tension/temperature display and a check-tensioning graphical display.

With its battery-powered electronic interface, setup and operation is made simple with on-screen prompts.

2.1   Unpacking

When you receive your Quick Balance, unpack it and inspect the container and the instrument for any damage. Report any problems to the shipping company immediately and save the packing materials.

Insert 2 'C' batteries into the battery compartment, shown in Figure 2.1. Your Quick Balance probably comes from the factory with the proper sheave size installed and calibrated for your application. If not, follow the setup directions in *Configuration Mode on page 18* and *Changing Sheaves on page 21*.

2.2   Description

The Quick Balance is shown in Figure 1 with the parts labeled.
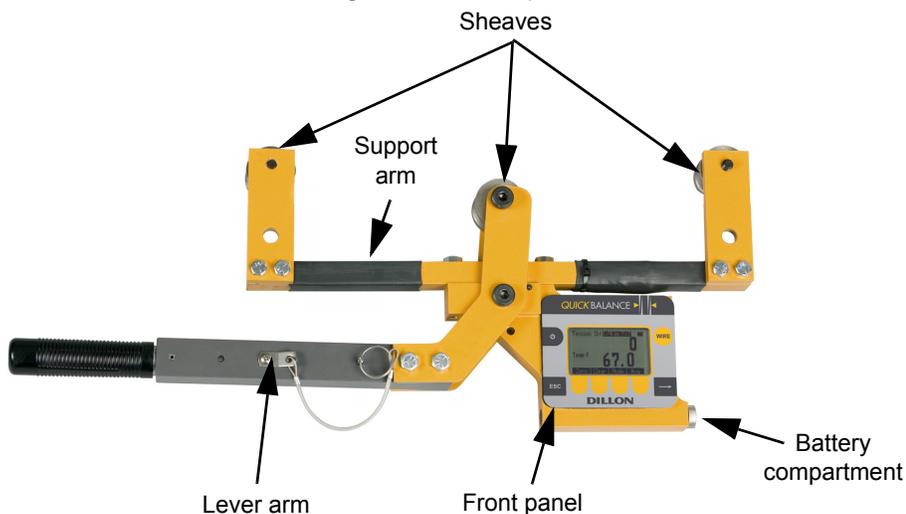
Figure 2.1 Front Panel and Keys

The front panel of the Quick Balance is shown in Figure 2.2.
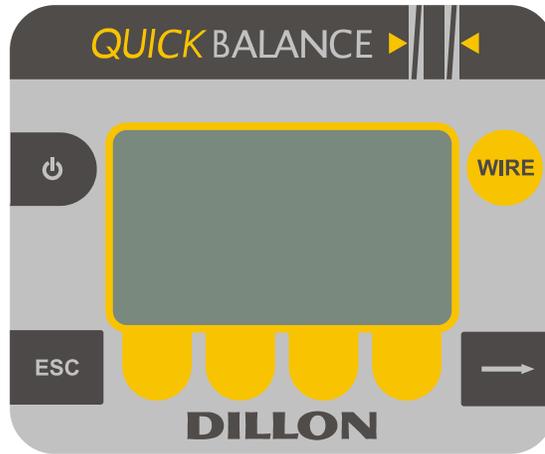
Figure 2.2 Quick Balance front panel

Following are descriptions of the keys and their functions:

(power icon)	**ON/OFF** key. Press this key to power up and turn off the Quick Balance.
ESC	**ESC** key. Press this key to escape an area of the menu or to clear the field when in data entry mode.
WIRE	**WIRE** key. Press this key to change the wire diameter you are testing with the Quick Balance. Choose from the listed selection and when the desired size is highlighted, press the ENTER softkey. Three standard sizes included: 1/2" 8 x 19 9/16" 8 x 19 5/8" 8 x 19 Five additional sizes may be added.
(softkey icon)	**Softkey**. Softkey function changes as needed for different tasks. The softkey labels appear above the keys themselves. You will use these for operation and configuration.
→	**Arrow** key. Press this key to reveal more softkeys in a group of softkeys.

2.3   Important features

Quick to use   Attaches and removes from tensioned line in seconds. Quick readout for ultra fast line tensioning.

Direct tension readings   No more complicated lookup charts! Save time and improve accuracy.

Portable & rugged   Designed for outdoor use.

Accurate   Employs Weigh Bar® technology used for precise weighing.

Multiple wire size storage   Three standard sizes included:
   1/2" 8 x 19
   9/16" 8 x 19
   5/8" 8 x 19
   Five additional sizes may be added.

3   Operation

Typical operation of the Quick Balance is covered below, followed by explanations of the various display modes, how to change wire size, how to change the unit of measure, etc.

3.1   Typical Operation

Take readings at three different places along the cable, moving the tension meter at least four inches for each reading. Take the average of the readings. The built-in average function is ideal for this task.

The handle quick release pin should be used when the Quick Balance is attached to a cable that will be de-tensioned and retensioned. The pin prevents the handle from opening once the tension falls to a small level. The pin should also be used if the Quick Balance will be installed for a prolonged period.

To perform a typical tension measurement, see the note above and follow these steps:

1.   Turn the unit on by pressing the **ON/OFF** key…

The display shows **DILLON** briefly, then, in this example, the screen shows the following:
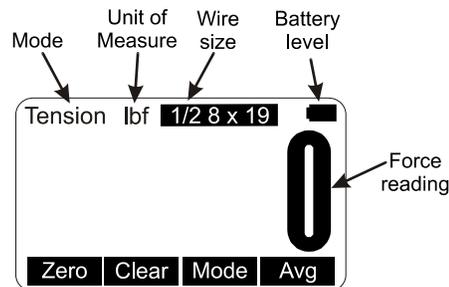
Figure 3.1   Sample display

*Press the **WIRE** key to list the stored calibrations.*

2.   This example shows the wire is a 1/2", 8 X 19 stranded cable and the unit of measure is lbf. Place the Quick Balance so the two outside sheaves hang on the wire. Insure that the wire rope is riding in the groove of all three sheaves. See Figure 3.2. Press the **Zero** softkey to zero the display.

0 should be displayed.

3.   Raise the lever arm until it locks in the upright position to apply tension to the wire. Read the line tension on the display.

4. Release the lever arm and you are ready to perform another measurement.

Figure 3.2 Quick Balance attached to cable

3.2   Measurement Practices

For best measurement, install the Quick Balance at least 2 feet (0.6 m) from terminations, clamps or other hardware. Do not install over the top of wire wrappings.

Take readings at three different places along the cable, moving the tension meter at least four inches for each reading. Take the average of the readings. The built-in average function is ideal for this task.

Do not apply tension greater than rated capacity of the instrument or overload damage to the sensor may result.

Do not use the Quick Balance with cable larger than indicated on the sheaves. Overload and damage to the instrument may result.

Do not mix sheave sizes. This will result in inaccurate measurement and possible overload.

Do not use the Quick Balance to measure tension for wires if both of the following are true:

1. No wire calibrations are stored of the same diameter as the wire you are looking to measure, and

2. You do not have sheaves of the same diameter.

If both of these conditions exist, contact your Dillon distributor.

Contact your Dillon distributor to improve accuracy for a specific wire type by calibrating to it.

Insure that the wire rope is riding in the groove of all three sheaves.

Insure sheaves installed agree with sheaves noted in the Wire calibration. Exception: Sheaves match the wire diameter of the cable to be measured and alternate calibration is selected as per section *Calibration to Specific Wire Type on page 22*.

The Quick Balance has an internal temperature sensor inside the electronics cavity. Dramatic temperature changes (such as moving from a warm vehicle to cooler outdoors) requires time for the sensor to reach the same temperature. Direct sunlight will heat the electronics cavity and cause higher readings than actual ambient temperature. In these cases, use a seperate thermometer to determine temperature. Be certain to enter this temperature into the Quick Balance if using the quick-tensioning mode with the temperature dependent acceptance window.

For best tension accuracy, use the exact temperature of the wire. This may be widely different from the ambient temperature if the cable has been sitting in direct sunlight.

3.3   Softkey Functions

Now that you've seen a simple operation, we'll explain the softkey functions. Figure 3.3 shows the softkeys available during normal operation.
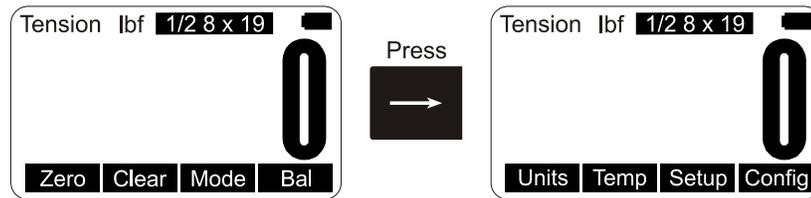
Figure 3.3 Normal mode softkeys

3.3.1   Top level softkeys

Zero   Press this softkey to zero the force display. Press this at the beginning of a series of tension tests. You do not need to do it for every test unless there is some zero drift.

Clear   Press this softkey and you are prompted to clear the Peak reading or the Average. Make your choice by pressing the appropriate softkey and that value is cleared from memory.

Mode   Press the **Mode** key to scroll through the five display modes. These are explained below:

Live Tension Mode: This is the default mode and it displays the live tension.

Peak Mode: While in this mode, *Peak* is displayed on the screen. The display shows the live tension on the top display and the peak force achieved on the bottom display. To clear the peak remove any force on the Quick Balance, press the **Clear** softkey and follow the prompts.

Balance Mode: While in this mode, *Bal* is displayed on the screen. This mode allows you to capture the tension on two through 16 cables and compare the readings.

Temperature Mode: This mode shows the live tension in the top display and the current temperature in the bottom display. Also shown is whether the reading is in Fahrenheit or Centigrade and if the temp is one that was ***Entrd*** (entered) manually.

You can enter the temperature in one of two ways; let the Quick Balance determine the ambient temperature automatically or key in a temperature manually. Instructions for entering the temperature are under the **Temp** softkey description.

Upper and lower thresholds for the Check-tensioning mode, discussed below, are set in the Configuration WIRE menu.

Check-tensioning Mode: Check-tensioning mode permits quick & easy graphical view of the applied tension versus the desired tension. This mode works well when you are repeatedly tensioning to the same tension range. This mode displays a bar graph representation of the tension being applied. See Figure 3.4. The black bar represents the range of the wire, from zero to ultimate wire rating. The wide white band is the tolerance window based on upper and lower thresholds you can enter. The live force is represented by the arrow and the white line on the black bar. When the force gets within ±5% of the acceptance window, a close-up of the acceptance window is displayed. See bottom example in Figure 3.4.

The Quick Balance has automatic tension targeting with temperature. Points may be entered from a linear Tension-Temperature supplied table for a wire cable. If entered, the check-tensioning window will automatically float according to the active temperature (manual or automatic). Use the bottom and top entries from the table. Patent is pending on this feature.

Display when tension is below the dotted, target box.

Tension lbf 1/2 8 x 19
1960
UNDER

Display when tension falls within the dotted, target box.

Tension lbf 1/2 8 x 19
5700
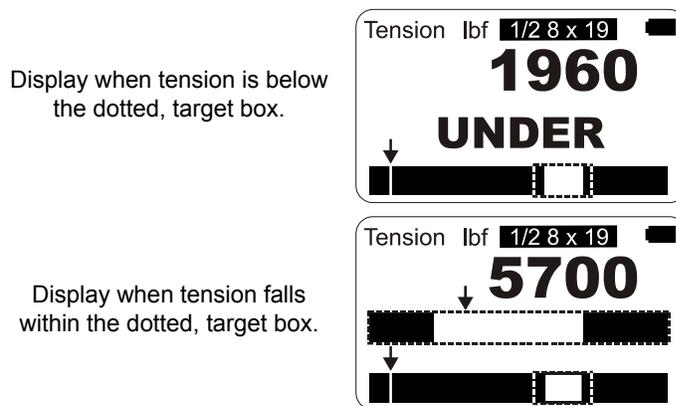
Figure 3.4 Check-tension display

To exit the check-tension mode, press any softkey to display the softkey labels, then press the Mode softkey to scroll to the next mode. The next mode is the first mode that was described, live tension mode.

Bal   Press the **Bal** softkey to add a displayed tension to the average of other entered readings. Follow the onscreen prompts.

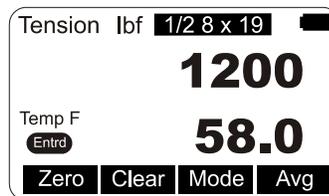*Press the **Right Arrow** key to move to the next set of softkeys:*

Units   Press this key to set the Quick Balance for displaying:

- Force in lbf, kgf or N
- Size of wire in inches or millimeters
- Temperature in Fahrenheit or Centigrade

Temp   Press this softkey to choose the source of the temperature reading, the Quick Balance itself (Meter), outside input (Input) or None. If you choose Input, you are prompted to enter the temperature. When finished, press the **Enter** softkey to accept this value.

Next you are prompted to choose Fahrenheit or Centigrade as the temperature unit. When your choice is highlighted, press the **Enter** softkey.

An annunciator shows when temperature has been manually entered. See example below:

```
┌─────────────────────────────┐
│ Tension  lbf  1/2 8 x 19   ▄ │
│                             │
│                  1200       │
│  Temp F                     │
│  ⟨Entrd⟩         58.0       │
│ ┌────┬─────┬──────┬─────┐   │
│ │Zero│Clear│ Mode │ Avg │   │
│ └────┴─────┴──────┴─────┘   │
└─────────────────────────────┘
```

Temperature Display Mode

Setup   Press the **Setup** softkey and you will see these choices; **Bal**, **Off**, **About**, **Misc** and **Test**. These are described below:

Auto-off can preserve battery life.

Bal   Press this softkey to perform a cable balance operation. You will be prompted for information regarding the load such as the total system weight and the number of cables being used to suspend it.

Off   Press this softkey to enable or disable the auto-shutdown function. If you choose Yes, you are asked to set a period of time in minutes. Next, press the **Enter** softkey to accept this value. You are then asked to set the shutdown type; Fixed, No Load, or No Change. These are described below;

Fixed -   The unit will shutdown after the set number of minutes no matter what happens.

No Load -   The unit will shutdown after the set number of minutes only if there is no load on the unit. This prevents shutdown in the middle of a test.

No Change -   The unit will shutdown if there has been no keypad activity or change in tension after the set number of minutes.

About   Press this softkey to see the following information:

Device -   Press this softkey to show a list of information about the Quick Balance, such as -- serial number, capacity rating, hardware and software revision levels. Press any key to return to the previous softkey set.

Calib -   Press this softkey to show Calibration Points and the calibration information for the current wire size. Follow the on-screen prompts.

O. Load -   Press this softkey to show an audit count of the number of times the unit has been overloaded beyond 125% of capacity. Press any key to return to the previous softkey set.

Zero -   Press this softkey to show the deadload anaylsis of the Quick Balance. Press any key to return to the previous softkey set.

Misc   Press this softkey to set the following:

Flash -   Enables or disables the momentary blinking of the display to acknowledge a key press.

Zero -   Enables the use of the **Zero** softkey to clear a peak tension value.

Contr -   Press this key to adjust the contrast of the LCD display. Press the **Up** softkey to lighten the contrast. Press the **Down** softkey to darken the contrast.

There is a keypad shortcut for increasing and decreasing contrast. While in normal display mode press and hold the **Arrow** key, then press and hold the 2nd softkey simultaneously to increase contrast. Press and hold the **Arrow** key, then press and hold the 1st softkey simultaneously to decrease contrast.

Blite -   Choose **Blite** to change the backlight operation. You can increase or decrease the intensity (*Inten*) or choose to turn the backlight on or off (*Mode*).

Test   Press this softkey and the following softkeys appear:

Batt -   Press this softkey to test the battery level.

A-D -   Press this softkey to display the A to D counts.

Disp. -   Press this softkey to perform a test of the display pixels.

Keys -   Press this softkey to test the keypad.

Config This is a password protected menu. See *Configuration Mode on page 18*.

Press the **ESC** key to return to the normal operating mode. If you made changes to the configuration of the unit, you are prompted to save them or abort the changes. Do so and the unit returns to normal operation mode.

4   Configuration Mode

4.1   Accessing the Configuration Mode

You need to access the Configuration mode to perform certain tasks. Access to some of these tasks may be restricted by a supervisor password.

*The **Num** keys increment and decrement the displayed numbers. The **Adv** key moves the cursor to the next digit position.*

Default Configuration password is 0. If a new password is lost or forgotten, contact your Dillon distributor.

To access Configuration mode:

1.   From normal operating mode, press the **Right Arrow** softkey…

   A new softkey set, shown below, appears:

   Tension lbf 1/2 8 x 19

   0

   | Units | Temp | Setup | Config |
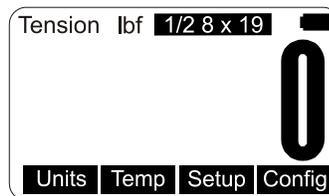
2.   Press the **Config** softkey…

   The following is displayed:

   Password: 0_

   | Num ↑ | Num ↓ | Adv → | Enter |
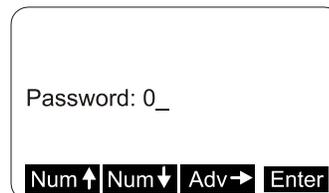
3.   Use the **Num** and **Adv** keys to enter the Config password. Default is 0. After the number is displayed, press the **Enter** key…

   The following is displayed:

   Config

   | Wire | Setup | Reso | |

4. The unit is now in the Configuration mode. To see the rest of the softkeys available in this mode, press the **Right Arrow** key. All the Config softkeys are shown below.

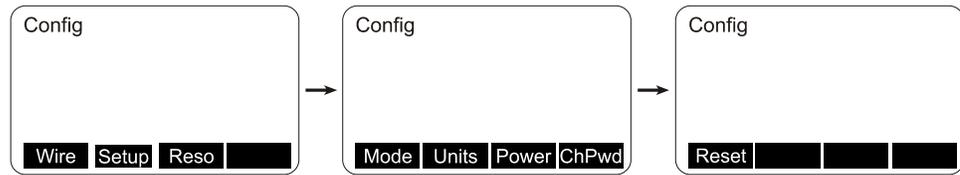| Config		Config		Config
Wire Setup Reso	→	Mode Units Power ChPwd	→	Reset

The softkeys in the Configuration mode are **Wire**, **Setup**, **Reso**, **Mode**, **Units**, **Power**, **ChPwd**, and **Reset**. These are described below:

Wire   Press this softkey and the wire selection screen is displayed. Choose an existing wire to change its defining characteristics.

You are given a choice of changing the **Range**, which is used to set the check-tensioning function, or the **Rating**, which is the maximum rating of the cable.

Range -   Press the **Range** softkey to set the range parameters for the check tensioning display and follow the prompts to set the following:

Low Temperature	This is the lowest temperature at which the device is accurate.
High Temperature	This is the hioghest temperature at which the device is accurate.
Units	Set temperature scale (F or C)
Tension at Low	This is the lowest acceptable force
Tension at High	This is the highest acceptable force
Units	Unit of measure used in defining the tension limit (lbf, N, or kgf)
+/- Tolerance -	Set the tolerance value.
Units -	Set the unit of measure for the tolerance value (lbf, N, or kgf)

Rating -   Press this softkey and you are prompted to set the ultimate rating for the cable being used and the unit of measure for that rating (lbf, N, or kgf).

Setup   Press the **Setup** softkey to view the Setup softkeys. This is the same as the **Setup** softkey described in *Top level softkeys* .

Reso   Press the **Reso** softkey and you are prompted to enter a display, or count-by, resolution. Choose from *Low*, *Medium* or *High*. Medium is the default value.

Low resolution provides the best stability and makes the display easiest to read. High resolution provides the finest graduations, but sees greater drift from wire creep and non-repeatability. If the reading is decreasing over time or differing between measurements on the same line, lowering the resolution will reduce these effects.

Mode   Press this softkey to set the display mode on power up. Choices are *Force*, *Last*, *Temp*, *Check*, *Bal*, and *Peak*. Use the **Sel** keys to scroll through the choices and press **Enter** to accept the displayed choice.

Units   Press this softkey to set the following:

- Unit of measure on power up. Choices are *Last**, *C2*, *C1*, *N*, *kgf*, and *lbf*. Use the **Sel** keys to display your choice and press **Enter** to accept it. C2 and C1 are custom units. If you choose to have custom units, you are prompted to enter the number of pounds in each custom unit. The Quick Balance will then automatically calculate correct display for the applied force.

Custom units of measure are handy when working with multi-part lines.

- Enable lbf - Enable or disable the pound-force unit of measure.
- Enable kgf - Enable or disable the kilogram-force unit of measure.
- Enable N - Enable or disable the N unit of measure.
- Enable CUST1 - Enable or disable the Cust1 unit of measure.
- Enable CUST2 - Enable or disable the Cust2 unit of measure.
- Enable C - Enable or disable Centigrade temperature.
- Enable F - Enable or disable Fahrenheit temperature.

Power   Press this softkey to enable or disable the auto-shutdown. If you enable this function you are prompted to set a period of time in minutes. Next, press the **Enter** softkey to accept this value. You are then asked to set the shutdown type; *Fixed*, *No Load*, or *No Change*. These are described below;

    Fixed -   The unit will shutdown after the set number of minutes no matter what happens.

    No Load -   The unit will shutdown after the set number of minutes only if there is no load on the unit. This prevents shutdown in the middle of line tensioning.

    No Change - The unit will shutdown if there has been no keypad activity or change in tension after the set number of minutes.

ChPwd   Press this key and you are prompted to enter a new password to access the configuration menus. Use the softkeys to scroll in a new password and press the **Enter** softkey to accept it.

Reset   Press this key and you are asked if you wish to reset the system. Press the **Yes** softkey only if you want to reset the unit to factory default configuration. Press the **No** softkey to abort this and return to the previous screen.

Default password is 0. If a new password is lost or forgotten, contact your Dillon distributor.

5   Changing Sheaves

Do not use the Quick Balance with cable larger than indicated on the sheaves. Overload and damage to the instrument may result.

Do not mix sheave sizes. This will result in inaccurate measurement and possible overload.

As you use the Quick Balance on different diameter cables you must change to the correct sheave size. To change sheaves, remove the hex head screws pointed out in Figure 5.1 below. Replace the sheaves with the correct letter sheave and reinsert the screws and tighten.

Insure sheaves installed agree with sheaves noted in the Wire calibration. Exception: Sheaves match the wire diameter of the cable to be measured and alternate calibration is selected as per the instructions in *Calibration to Specific Wire Type on page 22*.

Insure that the wire rope is riding in the groove of all three sheaves.
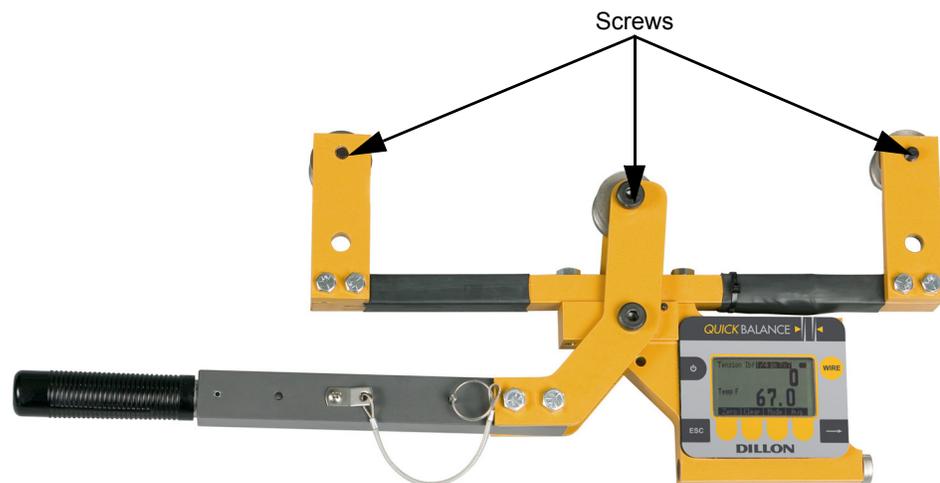

Figure 5.1 Changing sheaves

6   Achieving Best Accuracy

6.1   Accuracy

The Quick Balance is an instrument designed to give accuracy that typically exceeds normal requirements for wire tensioning. You should have an understanding of what factors affect tension measurement accuracy.

6.2   Calibration to Specific Wire Type

While it is best to have the instrument calibrated to the specific wire size(s) and type(s) used, the Quick Balance can often work adequately in other situations. If the best tension accuracy is required, Dillon recommends that a calibration be performed for that specific wire size and type.

Contact your Dillon distributor for any additional calibrations you may need.

6.2.1   What Calibration Choice and Sheaves Should I Use?

Situation	Wire calibration selection	Sheave selection	Accuracy
Exact wire size and type is shown in wire list	Description of exact match	Sheaves noted in list	Best
Wire size is same, but type is not identical	Description of same wire diameter	Sheaves noted for that wire size	Good
Wire size is not the same	Closest diameter	Sheaves matching the wire size being measured	Fair

Do not use the Quick Balance to measure tension for wires if both of the following are true:

1. No wire calibrations are stored of the same diameter as the wire you are looking to measure, and

2. You do not have sheaves of the same diameter.

If both of these conditions exist, contact your Dillon distributor.

Contact your Dillon distributor to improve accuracy for a specific wire type by calibrating to it.

6.3   Loading Error

A tensiometer works by deflecting the cable, which makes the cable path longer than when a tensiometer is not installed. When the tensiometer is removed, the wire tension decreases as the cable length is restored. This effect is known as loading error. The Quick Balance design elongates the cable by a mere 0.08 inch (2 mm), making loading errors extremely small.

6.4   Non-repeatability

The Quick Balance's sheave with bearing design provides the best mechanical performance. It is also superior at detecting tension that is being added or removed.

6.5   Non-linearity

Most three-point tension meters employ only linear characterization and have large errors at the midpoints (up to 15%). The Quick check uses multi-point segmenting to correct for non-linearity, reducing it to less than 0.2%.

6.6   Wire Characteristics

Creep   Every material including steel exhibits creep under load. It will neck down over time, quite quickly over the first few seconds and much slower as time progresses. A wire cable also sees creep from the wire spacing and wind. This effect is seen as a display that drifts lower after it has been clamped in line.

Variations Material that varies in diameter or shape will have different output at the same tension

Strands   The best cable assembly is one that is perfectly round, as it will not change contact geometry with the wire twist. The closer the wire cable cross section appears to be round, the better the measurement performance will be.

7   Troubleshooting

Problem	Possible Cause	Solution
Powers on momentarily and turns off	Low battery	Replace with high quality alkaline batteries
Does not power on	Low battery	Replace with high quality alkaline batteries
	Batteries installed backwards or no spring contact	Insure that positive terminals of both batteries (nub) face inward – towards the black cap. Check that spring is attached to the battery cap.
	Software reset	Remove battery cap & reinstall after one minute. Attempt to turn power on again.
	Display contrast too light	Hold the Right Arrow key down while pressing the F2 key several times to increase the display contrast. If nothing occurs, release both keys. Press the power button and try again.
Display is completely dark	Display contrast too dark	Hold the Arrow key down while pressing the F1 key several times to decrease the display contrast.
Display drifts downward once installed	Wire material is creeping and internal friction between wires is relieved.	This is normal behavior of wire. Lower display resolution to mask this effect.
Temperature not accurate	Instrument changed temperature environments	Allow instrument to remain in environment until temp stabilizes or enter temp manually
	Instrument exposed to sun	Enter temp manually

DILLON®

**Overload Protection and
Overhead Weighing Equipment**

AUTHORIZED DISTRIBUTORS

Ask the experts. Dillon distributors offer complete service capabilities from application assistance to sales and product support. Their experienced representatives are the most knowledgeable experts that you will find in the force measurement industry. We recommend that you consult these capable specialists for all of your measuring needs.

Fairmont, Minnesota U.S.A.

Toll-Free: (800) 368-2031
Phone: (507) 238-4461
Fax: (507) 238-8258
www.dillon-force.com