



## Instructions for use of T5 Cable Tensiometer

### General Information

The removable Risers are to accommodate different sizes of cable. It is through the use of Risers of different height that one instrument is able to measure tensions of various cable sizes (depending on the model). **The correct Riser must be used for the size cable under test, otherwise false readings or damage to the instrument will result.** Consult Calibration Card for tension range, cable size and proper Riser.

The Indicator Dial is an arbitrary scale reading from 0 to 100. The tensions which can be measured on the different sizes of cable by any given model of the Indicator, are clearly shown on the Calibration Chart which is attached to the carrying case. This involves the conversion of the dial readings into pounds by means of the Conversion Table previously mentioned.

*Standard preformed Aircraft Cable is used in calibrating, 7 x 7 stranding in cables of 1/16" and 3/32", 7 x 9 stranding in cables 1/8" through 5/16" sizes.*

In testing or calibrating the instrument, a dead weight arrangement is always accurate and preferable. However, this may be done in a testing machine against a hydraulic gauge or other measuring device. In this case it is important that the reading of the check gauge or scale be taken after the test load of the tensiometer is applied.

The attitude of the Indicator does not affect the readings- i.e. it makes no difference whether the Indicator is in a vertical or horizontal attitude, or at any point between these positions.

### **Warning: Use of Tensiometer on Cable Systems Equipped with Cable Tension Regulators**

Cable Tensiometers should not be used for adjusting the rig load in a cable system where an automatic cable tension regulator is installed. In all cases, such cable systems should be rigged by adjusting them so that the pointer on the cable tension regulator scale indicates the correct number based on the surrounding temperature, as indicated on the chart provided in the Airplane Service Manual. The tensiometer may be used to check the tension so obtained, but it must be remembered that the actual cable tension will vary from the nominal, depending on the errors in the instrument itself, manufacturing tolerance of springs in the regulators, rate of the regulator spring, and condition of the control cable. Cable tension readings taken on regulated control systems by means of a tensiometer could, therefore, be misleading.

Toll Free Nationwide & Canada: **800-645-8180**

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## To Take a Reading

1. Select the proper Riser for the size cable to be tested, by referring to the top of the Calibration Table which indicates the numbered Riser appropriate to the different sizes of cable. Insert the Riser on the pin at the upper center of the instrument.
2. Open the Trigger- by moving it away from the case of the instrument and place the instrument on the cable to be tested.
3. Close the Trigger, note the reading on the scale. Convert the scale reading into pounds by referring to the Calibration Table. The scale reading is given in the column headed by the size cable being tested and the corresponding pounds is given in the column headed "Tension", reading across.
4. Remove the instrument from the cable by opening the Trigger. This retracts the Riser and leaves the instrument free to slide from the cable.

(Due principally to the uneven surface of the stranded cables, slight variations in readings may occur on the same cable at the same tension. If closest possible accuracy is desired, take two or three readings at slightly different locations on the cable and average them.)

**Warning:** Do not overload the instrument- that is, permit the Pointer to go beyond the "100" mark on the dial. When first applying to a tight cable, close the Trigger slowly and watch the Pointer to be sure it will not go above the "100" mark when the load is fully applied. Permanent damage may be done to the instrument when it is overloaded.

## To Take a Reading When the Dial Cannot Be Seen

If the Dial cannot be seen when the instrument is on the cable, the Pointer may be locked at its reading position, **before** releasing the Trigger, by pressing forward (toward the Dial) on the small lever located at the upper left-hand part of the instrument. After the Pointer has been thus locked in reading position, the Trigger is released, the instrument removed from the cable and the reading taken. The Pointer is then returned to "0" by reversing the movement of the locking mechanism. **Do not set lock before clamping instrument on cable as incorrect reading will result.**

## Adjustment & Repair

If adjustment or repair is necessary, return the instrument to USATCO at the below address.

*It is recommended that tensiometers be calibrated annually to ensure proper functioning of the device.*

**USATCO TENSIO METER CALIBRATION, SALES, REPAIR**  
60 Fleetwood Ct., Ronkonkoma, NY 11779-6951 .....tel: (631) 471-3300 fax: (631) 471-3308