
ALBION DEVICES, INC.

Precision Gages and Temperature Compensation

Pub: ALB_Stack Gage

August 2002

Series 8000 Temperature Compensated Bearing Stack or Plate Gage

Twin T°Comp 110 temperature compensating indicators (see over), mounted in custom fixturing, measure IDs of bearing races. Available in standard and custom railroad bearing sizes, with size adjustment kits (see over).

Hardware Features:

- LVDTs in floating shuttles find center instantly.
- Temperature sensor mounted in base contacts under side of bearing or master when in position.
- Second sensor monitors gage temperature.
- T°Comp 110 temperature compensating indicators display compensated readings at two different heights in the bore.

Software options (sampling at 100 readings per second):

- Ver 5.0: Peak reading (averages high and low point, indicates out of round). .00005in/.001mm reading.
- Ver 7.5 (recommended): True average (averages all readings taken between manually initiated start and stop signal - durable punch button provided). .00005in/.001mm reading.
(More details on next page)



A L B I O N

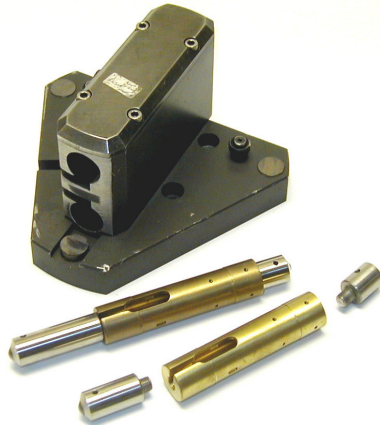
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Size Adjustment kits



Easy changeover size adjustment kits available for railroad standard and custom sizes. Change the diameter configuration of your gage within 10 minutes.

More on Software

1. Version C_5 software: The first Plate Gages made. Simple averaging of the deviations from the Master by taking the "highest" and "lowest" values and dividing by two. The green and yellow LED's check the diameter and the red light functions as an indication of "out-of-roundness". That is, if the average diameter exceeds the value in Parameter #9, then the red LED lights permanently. Proper use is to have the display in the **non-blinking mode** (normal when powered-on). The bearing is placed on the gage and the reset button is punched to "zero" the display. The bearing is rotated a full circle and the deviation is read. If it exceeds values set in P1/P2, the green (good) light turns off. If the value exceeds the settings of P3/P4, then the yellow (rework) light turns off. The red light does not come on after the yellow, because it is used for another function, namely the "out-of-roundness" function. P9 is used to set the turn-on of the red LED. It permanently lights when the value in P9 is exceeded and can be reset by starting another measurement cycle.
2. Version C_6 software: Same as above but the red LED does not permanently come on. Instead, the red LED does not come on until the value Parameter #9 is exceeded, then it stays on only as long as the exceeded value is maintained.
3. Version C7.5 software: Same as paragraph #1 above except:
 - a. This software does a "true average" of the deviations from the Master as the bearing is turned. It averages ALL readings taken during a measuring cycle.
 - b. As the bearing is placed on the gage, the display is automatically "zeroed".
 - c. The operator press the remote button to begin a measurement cycle
 - d. The bearing is quickly rotated through its circle.
 - e. The operator quickly hits the remote button again to stop the measuring cycle.
 - f. The value displayed is the true-averaged temperature compensated deviation from the Master size.



T°Comp 110 ("tee-comp")

Temperature compensating digital indicator. User programmable with separate coefficients of expansion for part, master and gage. Over 95% thermal compensation efficiency.

Resolution to .0001" or .00005", with measurement range of 40 thousandths and 20 thousandths respectively; inch or metric modes; RS232 output available; rechargeable battery or A/C powered; user programmable tolerance lights, liquid crystal digital display, available with protective metal shroud for rough working environments.

Senses temperatures of master, workpiece and gage while measuring, makes adjustment in real time, and instantly displays output as if all were at constant 68°F(20°C).

SPECIFICATIONS

Measurement range/LVDT travel: $\pm .02$ inch (± 0.5 mm)

Resolution: .0001 inch ; .00005 inch/0.001mm

Repeatability: $\pm .0001$ inch (± 0.0025 mm)

Temperature ranges

Environmental: 32°F(0°C) - 125°F(51°C)

Workpiece: 32°F(0°C) - 150°F(65°C)

Response times

10°F change - 2.0 secs, flat surface

3.5 secs, curved surface

30°F change - 2.4 secs, flat surface

5.5 secs, curved surface