# INSTRUCTION SHEET

FOR THE

GERBER VARIABLE SCALE ATTACHMENT MODEL No. L-100

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The purpose of the Log Scale Attachment is to allow the user to interpolate, read, and plot points having a logarithmic relationship.

By adding the Log Scale Attachment Model L-100 to a Gerber Variable Scale Model TP 007100, the standard linearly proportional spring is kept in the instrument and is used in various graphical logarithmic computations.
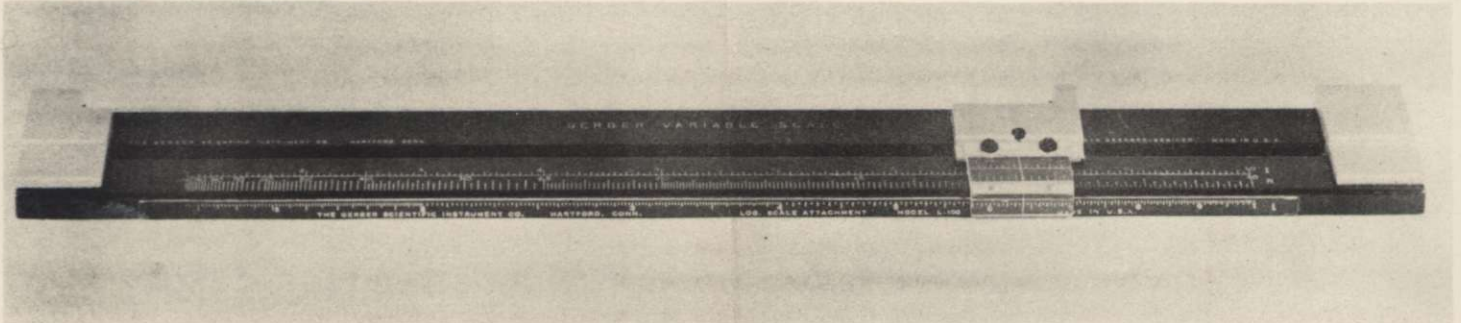
Installation Of The Log Scale Attachment Model L-100 To The Gerber Variable Scale Model TP007100

Step 1.

Strip protective paper from double sided pressure adhesive tape on back side of LOG SCALE strip. (Avoid finger prints or dust on exposed surface.)

Step. 2.

Clean back side of the GERBER VARIABLE SCALE with cleaning fluid or acetone. Then press the LOG SCALE ATTACHMENT to the attaching surface, so that "L 1" on the right of the LOG SCALE ATTACHMENT lines up with "10" on the "R" Scale.

Step 3.

Remove the standard plexiglas window and attach the Log Scale plexiglas window.

Step 4.

To calibrate the instrument, place the GERBER VARIABLE SCALE over an accurate inch scale and move the slide until there are exactly 10 inches between the "O" and "100" coil   Then line up the plexiglas so that the hairline is over "10" on the "R", "I" and "L" scales, and tighten the plexiglas screws.

Interpolate Between Graphical Logarithms

In order to show the mechanical procedures involved, actual examples are given below. There are two types, namely; TYPE A, where the log 1, .01, 1000, etc. is known. The other type is TYPE B which is similar to TYPE A with the exception that in the former the Unity Log has to be located.

TYPE A. . . . Log 1, (.01, .1, 100 etc.) is known

GIVEN: Two points, Log 1 and Log 5

PROBLEM: Find Log at point in question, POINT "C".

SOLUTION:
1. Set indicator to Log 5 on LOG SCALE ("L" SCALE)
2. Set "O" coil on POINT Log 1 on graph.
3. Read "Constant" on spring at POINT Log 5 and remember value.
4. Move slide so that "Constant" on spring is over point in question, (POINT "C"), and read the value of Log "C" with indicator on LOG SCALE.

TYPE B. . . . Log 1, (.1, 10, 100 etc.) is unknown.

GIVEN: Two points, Log 2 and Log 5.

PROBLEM: Find Log at point in question, POINT "C".

SOLUTION:
1. Set indicator to Log 2 on LOG SCALE and place 100 coil over POINT Log 2
2. Move slide to Log 5 and make a POINT "D" at 100 coil
3. Place "O" coil at POINT Log 2, and 100 coil at POINT "D" and read "Constant" at POINT Log 5
4. Set indicator to Log 5 on LOG SCALE and place instrument so that the "Constant" on spring is over POINT Log 5. (THE "O" COIL LOCATES THE LOG 1 AT LEFT. IT IS ADVISABLE TO MARK THIS POINT SINCE FURTHER INTERPOLATIONS WILL ALWAYS REQUIRE THIS POINT.)
5. Move slide so that "Constant" on spring is over POINT "C" and read value of Log "C" with indicator on LOG SCALE.

Plot Log Scales

The problems of plotting points having a logarithmic relationship are similar to those of interpolation. Again there are two types to be considered, namely TYPE A', and TYPE B'. In TYPE A' the location of the Unity Log is known, whereas in TYPE B' the Unity Log must be located.

TYPE A'. . . . Same as TYPE A

GIVEN: Same as TYPE A

PROBLEM: Plot Log Scale — POINTS Log C_n

SOLUTION:
1. Same as TYPE A
2. Same as TYPE A
3. Same as TYPE A
4. Set indicator of slide to values of Log C_n on LOG SCALE and plot required corresponding POINTS Log C_n at "Constant" on spring.

TYPE B'. . . . Same as TYPE B

GIVEN: Same as TYPE B

PROBLEM: Plot Log Scale — POINTS Log C_n

SOLUTION:
1. Same as TYPE B
2. Same as TYPE B
3. Same as TYPE B
4. Same as TYPE B
5. Set indicator of slide to values of Log C_n on LOG SCALE and plot required corresponding POINTS Log C_n at "Constant" on spring.