

1985/18. Caliper tool supplement to the field logging handbook for the SIE logger

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**Abstract**

Instructions are given for operating the SIE logger caliper tool.

**INTRODUCTION**

This Caliper Tool User Manual is a supplement to the "Field logging handbook for the SIE logger" (Unpublished Report 1985/07) and should be used in conjunction with it. This manual is based on both field experience and the SIE manuals provided with the equipment.

**OPERATOR CHECK LIST**

- Caliper tool complete with end cap, in carry case
- Caliper 80 mm calibration ring
- T5 Caliper module
- Dummy module
- Module changing tool
- Extender card (strictly for use only by users authorised to adjust the T5 Caliper module)

**FIELD OPERATION**

Set up the equipment in logging position at the hole as described in the main manual, including connection of the (caliper) logging tool to the cable and the insertion of the T5 Caliper module and the dummy module in the T201 Recorder slots normally occupied by the T2 Electric module and T150 Ratemeter module.

**IMPORTANT:** MAKE CERTAIN THAT THE CALIPER MODULE IS INSERTED ONLY WITH THE DUMMY MODULE (The T3 module, as always, occupies the far left slot). IF CALIPER ARM POWER IS APPLIED WITH THE POWER TURNED ON ANY OTHER MODULE DAMAGE WILL OCCUR TO THE CIRCUITS.

- Set the NUCLEAR/ELECTRIC switch to NUCLEAR
- Turn the uppermost function switch on the caliper module to off
- Insert the caliper pen (either may be used)
- Turn the recording unit power switch to ON. The LED should illuminate giving indication of adequate battery power (for the recorder, but not necessarily for the motor).
- Prepare the chosen pen so that ink flows smoothly onto the chart paper as the paper drive mechanism is advanced.
- Turn the uppermost caliper function switch to "ARMS PWR". Hold the lower function switch to the "OPEN ARMS/LOG" position.
- As the motor in the probe operates, attempting to open the arms, the ARMS OPEN lamp will light, and when the motor stops (arms in fully extended position) the ARMS OPEN lamp will go out or dim considerably. At this time release the lower caliper function switch and turn the upper function switch to "LOG". The lamp will go out and you are ready to check the operation of the tool.
- Insert the closed arms into the 80 mm I.D. calibrating ring and using the zero control on the T3 module, adjust the pen to read 31 mm on the calibrated scale at the top of the recorder.

This corresponds to a reading of 3-1/8" or 80 mm. The tool may also now be inserted into any larger calibrating ring available to check for appropriate deflection. The above results will signify that the probe and module are operating satisfactorily. If not, follow adjustment note at end of this section (strictly authorised adjusters only).

- Close the arms by turning the upper function switch to "ARMS PWR" and holding the lower function switch in the "CLOSE ARMS" position. The ARMS OPEN lamp will light up as the arms are retracting and go out when the arms are fully retracted.
- Turn the upper function switch to OFF. Turn the T201 recorder power switch to OFF.
- Locate the caliper tool in the hole at zero depth.
- Set the depth counter (and Register 0, if T35 in use) to zero.
- Lower the caliper tool to the bottom of the hole.
- When the bottom of the hole is reached set the brake if advisable but do not forget to release before attempting to raise the tool or you will overload the motor and (hopefully) trip the circuit breaker.
- Turn the T201 recorder power on and switch the upper function switch to ARMS PWR. Hold the lower function switch in the OPEN ARMS/LOG position.
- As the motor in the probe operates, attempting to open the arms, the "ARMS OPEN" lamp will light, and when the motor stops (arms in fully extended position) the "ARMS OPEN" lamp will go out or dim considerably. At this time release the lower function switch and turn the upper function switch to LOG. The lamp will go out and you are ready to commence logging. In case of indicating lamp failure, allow at least one minute for arms to open.
- Turn "CHART SPEED" switch to desired scale.
- Switch "CHART DIRECTION" switch to NORMAL
- Mark depth measurement, identifying information and settings on the chart.
- Release the brake if set.
- Raise the caliper tool. The cable speed is not critical but should not exceed 20 metres/minute.
- Continue to wind to the top of the hole. Mark zero depth and any other pertinent information on the chart.

NOTE: The cable has a maximum stretch of 100 mm per 100 metres.

- Turn the recording unit "CHART SPEED" switch to OFF.
- Close the caliper arms by turning the upper function switch to ARMS PWR and holding the lower function switch to the CLOSE ARMS position. The "ARMS OPEN" lamp will light up as the arms are retracting and extinguish when they are fully retracted.
- Turn the upper caliper module function switch to OFF and switch the T201 recorder "POWER" switch to OFF.
- Remove the caliper logging tool from the hole.
- Remove the caliper logging tool from the cablehead. Wipe the threads and "O" rings to remove any dirt and water. Replace protective caps.

CAUTION: AT NO TIME GO DOWN THE HOLE WITH THE CALIPER ARMS OPEN.

NOTE FOR USERS AUTHORISED TO ADJUST CALIPER MODULE:

If the pen reading does not go from 1 to 10 on the scale but gives more or less span, a span adjustment is provided as a screwdriver adjustment on the caliper board: use the extender card to make appropriate adjustments.

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