

4370 AND 4390 THERMOCOUPLES recommended for surface temperatures between 1600° F.

ROLLS-

190 THERMOCOUPLE is suggested for most applications of this type. The length of the lead should be held perpendicular to the axis of the roll (a swivel joint is provided to make this possible). The couple should be held firmly against the roll so that both guides are in contact and the roll fits into the "V" notches. Heavy pressure will not change the reading but unnecessary wear on the guides. Maximum temperature 500° F.

280 THERMOCOUPLE should be used when the length of the 4090 is objectionable. The couple should be exercised to be certain the thermocouple junction (center) is in contact with the roll. Maximum temperature 500° F.

Soft Metals, Oil, Air, etc.)

130 THERMOCOUPLE can be used for most non-corrosive liquids. The thermocouple should be immersed at least 1/2". When used for molten metal temperatures it will tend to give a lower temperature regardless of depth of immersion. Maximum temperature 1600° F.

190 THERMOCOUPLE is provided with a stainless steel protection tube. It will, therefore, give accurate surface readings when used in molten metals. It can also be used for mildly corrosive liquids. Maximum temperature 1600° F.

MATERIALS - (Rubber, Waxes, Greases, etc.)

130 THERMOCOUPLE is suggested for this service. For maximum accuracy it should be immersed at least 1-1/2" or 2" beyond the tip. The tube diameter is 1/8". Maximum temperature 1000° F.

120 THERMOCOUPLE (1-1/6" Dia.) should be used when the larger diameter of the lead is objectionable. It should be immersed at least 3/4". When used on comparatively hard materials (such as rubber) extreme care should be used to avoid buckling the thin wall stainless steel lead. Maximum temperature 1000° F.

MAINTENANCE:

Before using or storing your pyrometer, be sure that the cover of the instrument is closed, the pointer panel and window clean and it damps the pointer oscillations thereby prolonging the life of the instrument.

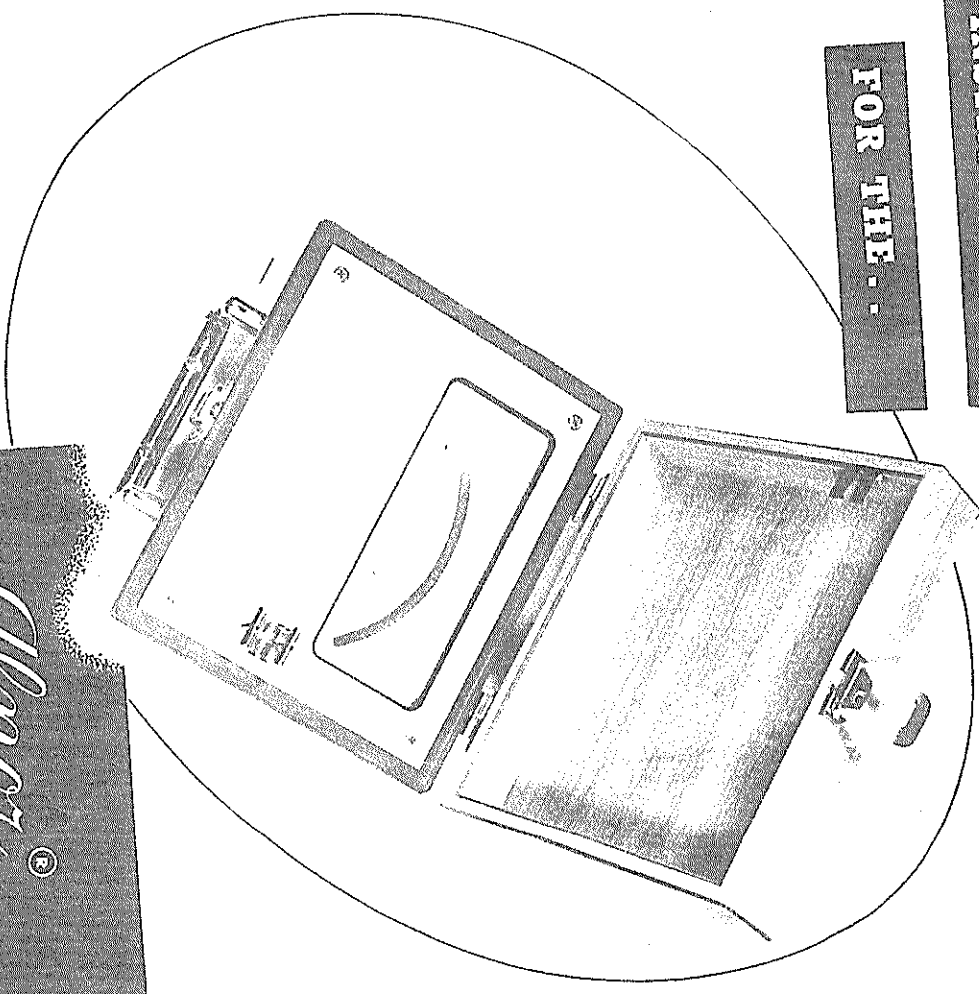
At or store this pyrometer where it will be subjected to vibration or shock. Discard damaged thermocouples. They can generally be repaired economically at the factory. Replacement thermal elements, which you can install yourself, are available in models 4280, 4090 and 4130.

Instrument or its arm or thermocouples are in need of repair, return them to the factory. All instruments are specially calibrated and adjusted so that interchangeability is possible.

The manufacturer will be glad to answer any questions regarding the use of the Thermocoon for special applications. Frequently we can supply special cable or tube lengths or design and thermocouples to make the instrument more suitable for your specific requirements. Please send to assist with any other problems involving the measurement of Temperatures, Air Flow, Dew Points.

INSTRUCTIONS

FOR THE . . .



Thermocoon
THERMOCOON

PRECISION INSTRUMENTS FOR EVERY INDUSTRY

The "Alnor" Thermocon is a multi-purpose portable temperature measuring instrument. By the use of easily interchangeable thermocouples, it can be used equally well to measure the temperatures of flat surfaces, revolving rolls, plastic materials, or liquids.

Each Thermocon set consists of the following:

- 1 Indicator
- 1 type 4220 extension arm
- 1 or more thermocouples

Only the best of engineering, workmanship, and material have gone into the construction of this Thermocon. The indicator has been carefully calibrated and inspected; the arms are individually adjusted to insure interchangeability; and the thermocouples are individually calibrated for the service for which they are intended.

The "Alnor" Thermocon is a precision instrument, and it should not be subjected to shocks and jars. Treat it with respect and it will long remain the accurate sensitive meter that it was when it left our laboratory. Note that the cover is attached with "slip hinges" to allow easy removal for convenience.

ADJUSTMENT:

This Thermocon is equipped with an internal automatic cold end compensator which automatically readjusts the position of the pointer as the temperature of the instrument changes. This compensator was properly set at the factory. To eliminate the possibility of error due to a shift in the compensator adjustment during shipment, it is advisable to check the cold end setting by the following simple procedure.

1. Attach the 4220 flexible arm and either the 4030 or 4040 thermocouple as explained under "Connections".
2. Read the thermometer which is mounted behind the meter scale.
3. Place the thermocouple on the reference block (Fig. 1) which is recessed in the panel to the left of the cold end adjuster (a knurled knob).
4. Obtain a temperature reading of this block using the methods explained under "Temperature Readings". If this reading differs from the thermometer, turn the cold end adjuster until the two correspond.

You will find that the compensator rarely gets out of adjustment. Nevertheless, it is good practice to make the above check occasionally.

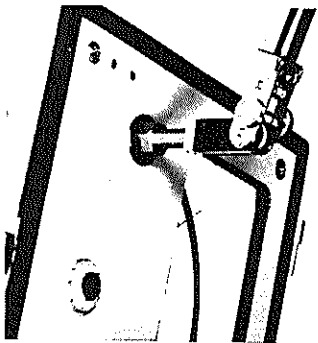
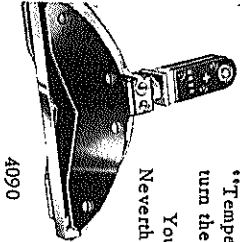


FIG. 1



4090



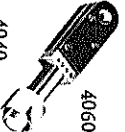
4030



4050



4040



4060

CONNECTIONS:

The "Alnor" Thermocon has a specially designed connector to provide a good electrical and mechanical connection between the extension arm and the instrument. Open the connector to its maximum opening by turning the knurled sleeve. Place the connector in the cradle blocks on the panel of the meter. See Figure 2. Tighten the knurled sleeve.

To connect the thermocouple to the extension arm, back the knurled disc against the stop so that the alloy yoke is spread apart. Slip the selected thermocouple into the yoke, with the positive (+) terminal on the thermocouple engaged in the positive (+) slot in the yoke. Tighten the yoke by turning the knurled disc. See Figure 3. Notice the thermocouple can be swung thru 180° and clamped in place at any desired angle.

TEMPERATURE READINGS:

After connections and adjustment have been completed, the instrument is ready for use. The meter is designed for use in a horizontal position. For maximum accuracy read the instrument from such a position that the pointer is directly over its reflection in the mirror. Notes on the selection and use of various thermocouples follow.

STATIONARY SURFACES

Use Type 4030, 4040, 4050, or 4060 thermocouple. For accurate readings, the surface should be clean. The thermocouple tip should be held squarely and firmly against the surface. Heavy pressure is not required. Rock the arm slightly to be sure the thermal element is flat against the surface. Note the self-aligning feature of these tips. Use the highest reading obtainable when measuring temperatures above room temperature and the lowest temperature obtainable when measuring temperatures below room temperature.

TYPE 4040 THERMOCOUPLE is recommended for most surface temperatures. It has the rapid acting fine wire thermal element and a shield to give mechanical protection to the self-aligning tip. Maximum temperature 1200° F.

TYPE 4030 THERMOCOUPLE does not have the protective shield. It is recommended for use when surface temperatures in small cavities or close to obstructions must be obtained. Maximum temperature 1200° F.

TYPE 4060 THERMOCOUPLE has a gold disc thermal pick-up. It may be used for surface temperatures where the fragility of the fine wire element is objectionable. It does not act as rapidly as the fine wire thermocouple and should be held in contact with the surface for 10 to 15 seconds to insure temperature stability. It is provided with a shield to protect the self-aligning tip from mechanical damage. Maximum temperature 1200° F.

TYPE 4050 THERMOCOUPLE is similar to the 4060 and recommended for similar service. It does not have the protective shield and is suggested for applications where the 5/8" O.D. of the shield is objectionable. Maximum temperature 1200° F.

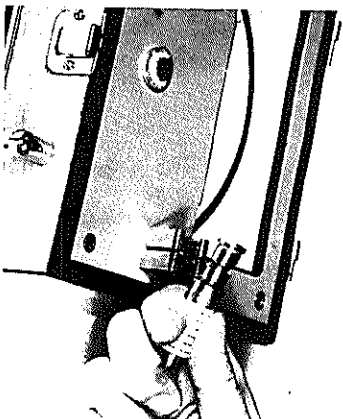


FIG. 2

ATTACHING THE EXTENSION ARM

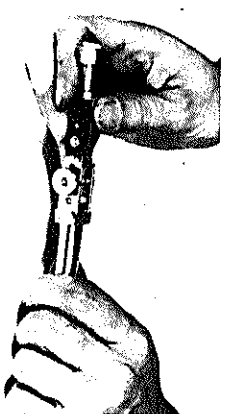


FIG. 3

ATTACHING THE THERMOCOUPLES