HALLIKAINEN *Instruments*
INDUSTRIAL and SCIENTIFIC
1341 SEVENTH STREET, BERKELEY 10, CALIFORNIA

KINEMATIC VISCOSITY BATHS

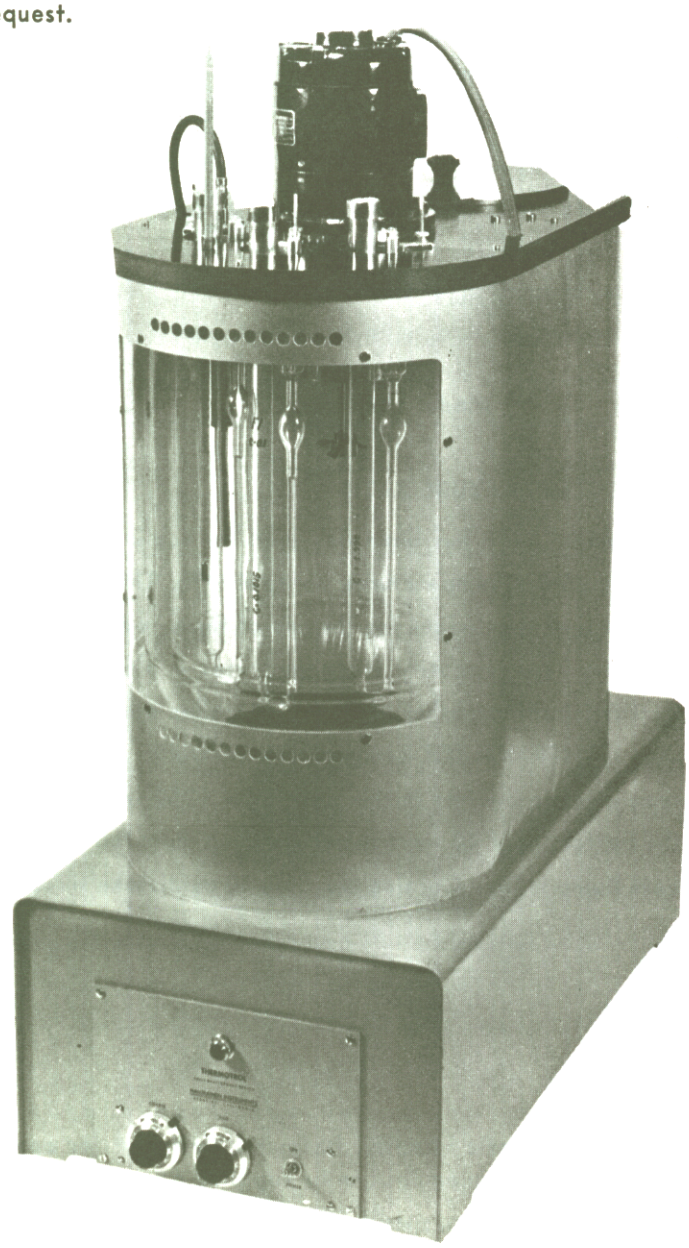
The Hallikainen Kinematic Viscosity Baths are intended for use in performing precision viscosity and density tests. They have been designed to meet the requirements of the petroleum industry for constant temperature baths covering a wide temperature range and having high accuracy and simple, sturdy construction.

There are three baths which together cover the temperature range from −70°F to +400°F. The Low Temperature Bath operates from −70°F to ambient, using dry ice as coolant. The Medium Temperature Bath has a temperature range from ambient to 220°F and the High Temperature Bath a range of from 200°F to 400°F.

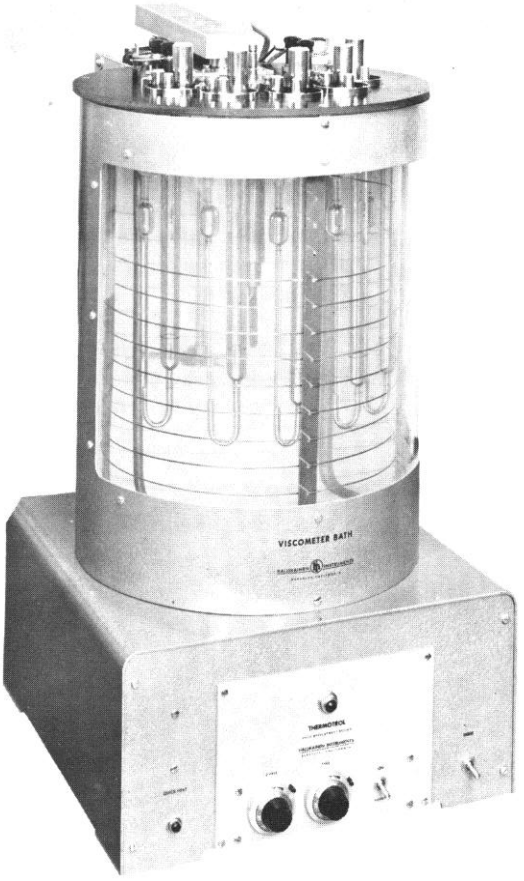
Each bath includes the Hallikainen-Shell THERMOTROL temperature controller to control the temperature of the bath liquid. This controller has a sensitivity of .001°C and incorporates proportional and reset control action. The THERMOTROL will control the temperature of the bath liquid to .01°F or better at a point. The THERMOTROL is described in detail in a separate bulletin available on request.

LOW TEMPERATURE BATH

Model 1087 has been developed for testing jet fuels, etc. This bath uses dry ice for the cooling medium. The bath consists of a 2½ gallon Pyrex glass Dewar into which three round head or four rectangular head capillary type viscosity tubes may be suspended. A motor driven stirrer and pump are also suspended into the bath through the top cover. To the rear of this glass Dewar is a 3½ gallon stainless steel Dewar. Into the liquid contained within this Dewar is placed the dry ice used for cooling. The THERMOTROL is mounted in the base of the bath. In operation, liquid from the glass Dewar is pumped through a stainless steel coil in the stainless steel Dewar and back to the glass Dewar. The THERMOTROL governs the amount of fluid being pumped by operation of a solenoid valve in the liquid line. Methanol is recommended for use as the bath medium in this bath. A heavy, clear plastic window is set into the steel shell surrounding the glass Dewar. The steel shell is painted with a silver gray hammertone enamel. All piping and the solenoid valve are mounted under the top cover to prevent frosting. Illumination of the bath is provided from the rear of the glass Dewar by means of two 40 watt showcase lamps.



Model 1087



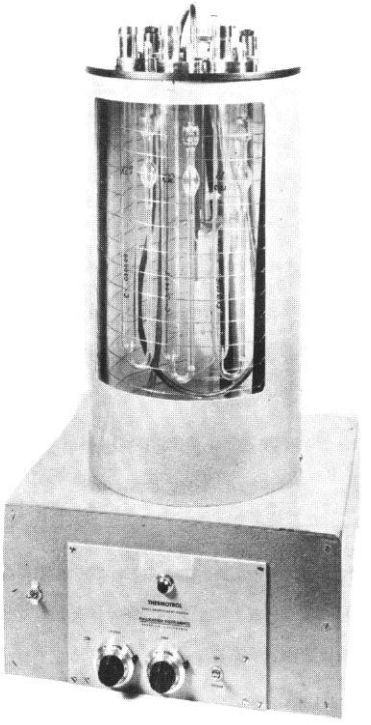
Model 1115

MEDIUM TEMPERATURE BATH

Model 1115 is designed for use in determining the viscosity of lubricating oils and other products requiring constant temperature baths in a range of ambient to 220°F. This bath consists of a seven gallon Pyrex glass jar into which may be suspended five round head or seven rectangular head capillary type viscosity tubes. Also suspended from the cover are a motor driven stirrer with Hallikainen-Shell Jet-Stir Impeller, a 1000 watt tubular heater and a 125 watt control heater, a stainless steel cooling coil and a resistance thermometer for the THERMOTROL temperature controller. The THERMOTROL is mounted in the base. The glass jar is housed in a 16 gauge steel shell with a viewing window cut out in front. The steel shell and the base are silver gray hammertone finish. The bath is illuminated from the bottom by a 40 watt showcase lamp mounted in the base. An oil of very low viscosity, such as medicinal oil, is recommended for the bath liquid.

HIGH TEMPERATURE BATH

Model 1155 has been designed for use in testing asphalts and other products requiring temperatures up to 400°F. This bath is similar to Model 1115 except that it provides for the use of three round head or four rectangular head capillary type viscosity tubes and uses a 3½ gallon Pyrex glass jar which is installed inside another glass jar (4 gallon capacity) for safety. This bath also uses a THERMOTROL temperature controller mounted in the base. The tubular type electric heaters in this bath total 1250 watts. The bath is illuminated from the bottom by a 40 watt showcase lamp mounted in the base. The recommended bath liquid is Dow Corning No. 550, 50 centistoke silicone oil.



Model 1155

GENERAL

All kinematic viscosity baths are designed for operation on a 115 volt, 60 cycle AC source of power. Other voltages and frequencies can be supplied on special order.

When ordering, specify the type of openings required for the viscometer tubes, that is, whether round or rectangular. The viscometer tubes are not supplied with the baths as standard equipment but can be furnished if ordered as extra items.