



H-2165 & H-2165.4F
Instruction Manual
SAYBOLT VISCOMETER BATH

Manufactured by:

Humboldt Mfg. Co.
7300 West Agatite Avenue
Norridge, Illinois 60706 U.S.A.

Customer Service:

Tel: 1.708.456.6300
Fax: 1.708.456.5412
Email: hmc@ehumboldt.com
USA Toll Free: 1.800.544.7220
Website: www.humboldtmfg.com

Sold and Serviced by:

Humboldt and Authorized Dealers Worldwide

TABLE OF CONTENTS

	Page
1. Introduction	3
2. Purpose	3
3. Unpacking Instruction	3
4. Assembly Instructions	3
5. Operating Instruction	4
6. Storage Procedure	4
7. Warranty	5
8. Drawings/Photo	6, 7, 8 & 9

1. Introduction

This manual is provided as an aid in setting up, operating and maintaining the instrument. It does not supply the necessary information required to perform the ASTM or other applicable test methods. This information must be obtained from the various Societies & Institutes who develop the test methods I.E. Federal Test Method, ASTM, I.P. etc. This instrument is more fully described on the following pages taken from our main catalog.

2. Purpose

The purpose of the Saybolt Viscometer Bath is to provide a convenient means of heating an oil medium to a specified temperature between the range of room temperature and 250°F and hold that precise temperature at that exact point for an indefinite period. The function of the apparatus is to maintain the Saybolt Viscosity Tubes at a precise, steady and unvarying temperature so that the sample to be tested in the Viscosity Tube (not furnished with the bath) can be run at the specified temperature that results in precise Saybolt Viscosity determinations.

This bath is capable of maintaining up to four Saybolt Viscosity Tubes at the same specified temperature. The temperature can easily be changed if desired by resetting the controls as outlined in the following instructions.

The power utility required are 115V, 50/60Hz, 12.3 Amp and 220~240V, 50/60Hz, 6.4 Amps.

3. Unpacking Instructions

This unit comes packed in a double carton with the accessories packed separately. Remove the main bath from the carton and place on a firm level table. Remove and unpack all the accessories from the carton and clean the instrument prior to the assembly.

4. Assembly Instructions

- 4.1 Place the Viscometer on a level surface (4 leveling screws are provided at bottom of bath). Shield from drafts.
- 4.2 Fill the bath through the filling hole with white technical bath oil until it runs out overflow provided in rear of bath (center hose nipple). **USE OF WATER WILL VOID WARRANTY.**

NOTE: The white technical bath oil referred to should be thin heat-transfer oil having a flash point 330°F. (Using viscous oil causes carbonization of the heating elements due to retarded circulation). We also advise changing the bath oil periodically and cleaning all interior parts with a suitable solvent.

- 4.3 Place a receptacle under overflow outlet to catch excess oil that will come out as bath is brought up to test temperature. (Do not turn on current before bath is filled with oil as this will injure control heaters).
- 4.4 Connect the line cord to a properly fused (10 amps) and grounded receptacle of the correct voltage as indicated on the information tag.
- 4.5 Install the thermistor probe in the holder located on top of bath.
- 4.6 Connect the cooling coils to a suitable cold water supply if necessary.
- 4.7 Install test thermometer.

5. Operating Instruction

- 5.1 Turn the line and light switch to ON (the motor will come on when the line switch is activated).
- 5.2 Turn the HI-INPUT-LO-INPUT switch to high.
- 5.3 Turn the ten-turn potentiometer dial clockwise all the way to maximum and turn the right hand Vernier potentiometer dial to medium range. When bath reaches 95°F then switch to LO for lower temperature testing or leave it in high range for higher temperature testing.
- 5.4 When bath reaches desired temperature, turn ten-turn potentiometer counter-clockwise until temperature indicating pilot light starts to blink ON and OFF. Make fine adjustments with Vernier potentiometer until exact set point is reached.
- 5.5 When test temperature is maintained, proceed with test according to ASTM D-88 Method.

6. Storage Procedure

This laboratory test instrument consist of Electrical & Mechanical components. Storage facilities should not be subject to extremes of high and low temperatures or extremes of high and low moisture conditions. Storage facilities should be consistent with indoor laboratory environment.

Note: Unit is shipped in corrugated cartons and if long-term storage is anticipated, repacking with water resistant packing is recommended to insure a safe condition for the equipment.

7. Warranty

Humboldt Mfg. Co. warrants its products to be free from defects in material or workmanship. The exclusive remedy for this warranty is Humboldt Mfg. Co., factory replacement of any part or parts of such product, for the warranty of this product please refer to Humboldt Mfg. Co. catalog on Terms and Conditions of Sale. The purchaser is responsible for the transportation charges. Humboldt Mfg. Co. shall not be responsible under this warranty if the goods have been improperly maintained, installed, operated or the goods have been altered or modified so as to adversely affect the operation, use performance or durability or so as to change their intended use. The Humboldt Mfg. Co. liability under the warranty contained in this clause is limited to the repair or replacement of defective goods and making good, defective workmanship.

CAUTION: Keep hands, clothing and other objects away from moving parts when the machine is in operation.

8. Drawings/Photo



H-2165

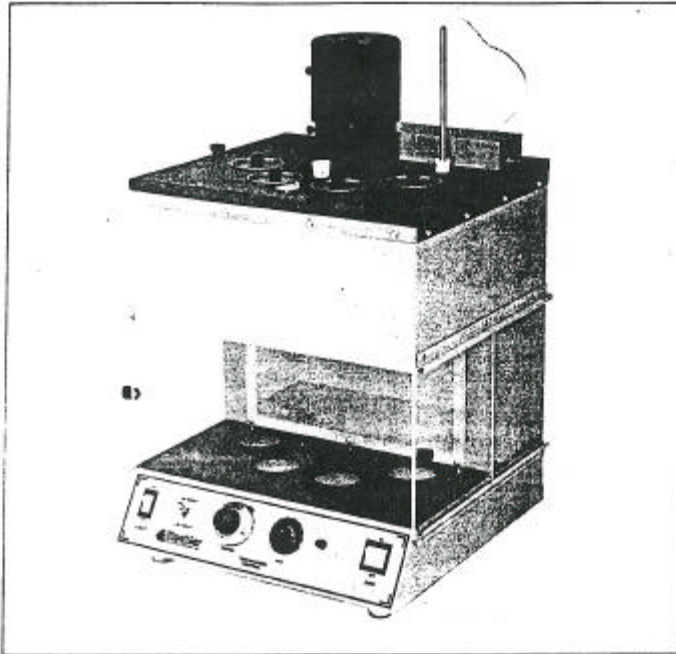
Saybolt Viscometer Bath

- Conforms to ASTM D88, D244, FTM 791-304 and AASHTO T72 specifications
- Four tube capacity
- Solid state temperature control with thermistor sensor probe

Four-place constant temperature bath performs Saybolt Universal and Saybolt Furol viscosity determinations at temperatures between 70 and 275°F (21 and 135°C). Meets rigorous ASTM requirements for bath temperature control precision. Thermistor-activated solid state control provides convenient, dependable operation. Ten-turn and one-turn adjustment-reference dials allow for precise, repeatable temperature settings. Quick response 500W and 75W coil heaters provide rapid heat distribution, and a silent 1/20 hp air cooled stirrer completely circulates the bath medium to assure temperature uniformity. A built-in cooling coil aids in maintaining precise temperature control at near-ambient temperatures.

Handling of receiving flasks is facilitated by an easy to clean Kolormate II™ alignment plate and sliding draft shields. Fluorescent backlighting provides excellent visibility in the receiving flask area during testing.

Fully insulated bath interior is constructed entirely of stainless steel. Bath is equipped with a built-in overflow pipe and drain valve to simplify changing and filling of bath oil to the exact level required in relation to the viscometer tubes. A machined 1/2 in. (13 mm) oil resistant Colorlith II™ top plate provides excellent insulation and is easily removed to allow for cleaning of the bath interior if required. Top plate supports heaters, stirrer and thermistor probe and is fitted with four removable stainless steel port covers, bath oil filling port cover, and bath thermometer holder.



Housed in a heavy gauge steel exterior with corrosion resistant polyurethane enamel finish and levelling feet for perfect bath alignment. Control panel in base of unit has ten-turn and one-turn potentiometers, pilot light, and line and light switches.

Specifications

Conforms to the specifications of:
 ASTM D88, D244, FTM 791-304,
 AASHTO T72
 Capacity: 4 viscometer tubes
 Temperature Range:
 70 to 275°F (21 to 135°C)
 Controller Sensitivity: ± 0.03°F
 (± 0.015°C)
 Heater Range: 0-575W
 Bath Capacity/Medium: 3 gal (11.4 l)
 water or white technical oil

Dimensions

l x w x h, in. (cm)
 13¾ x 13¾ x 23½
 (35 x 35 x 60)

Shipping Information

Net Weight: 45 lbs (20 kg)
 Shipping Weight: 78 lbs (35 kg)
 Dimensions: 24 x 20 x 28"
 (61 x 51 x 71 cm)

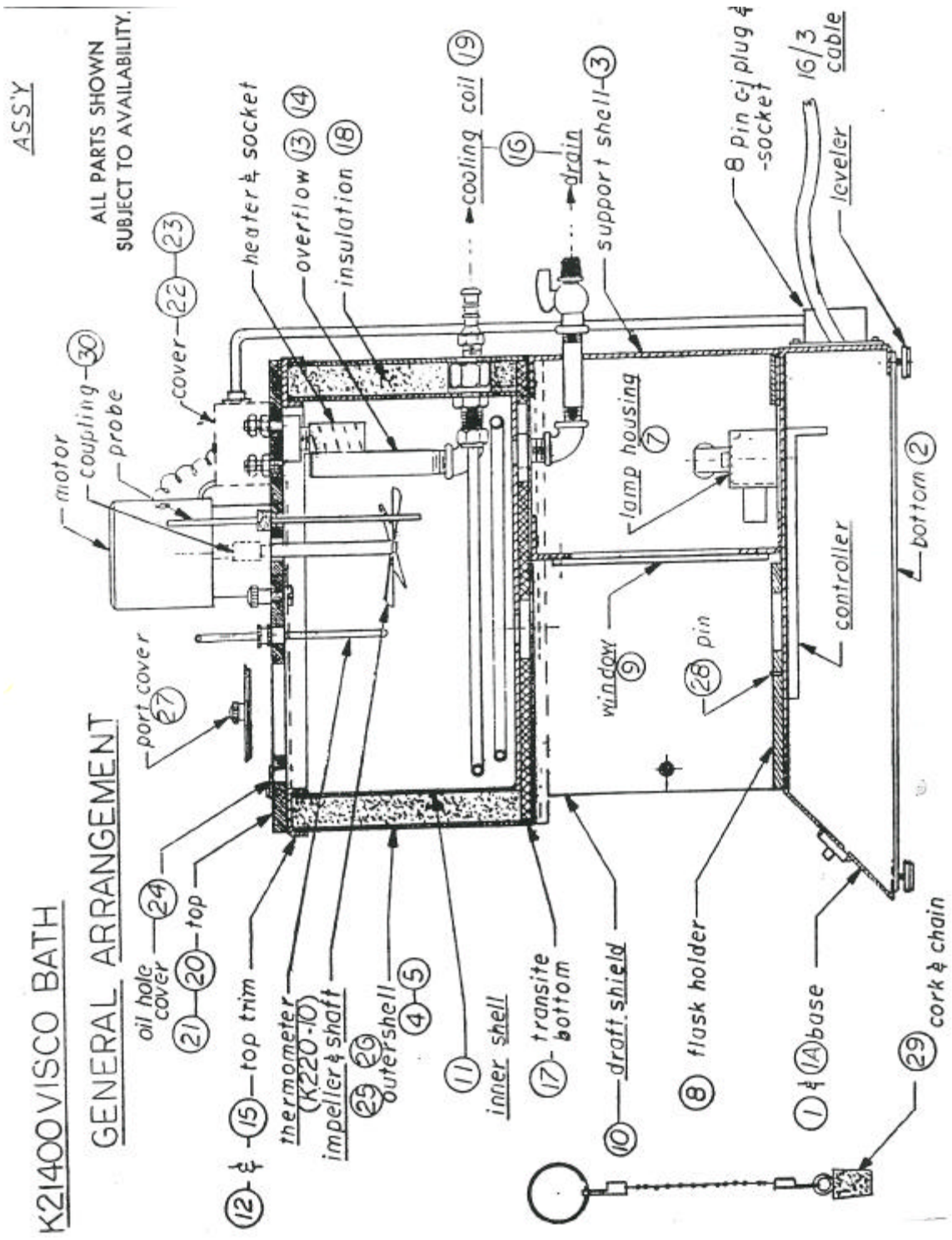
Ordering Information

Supplied with 4 thermometer supports, 4 chained corks, oil strainer, withdrawal tube, tube nut wrench, orifice wrench, 2 port closures, 4 port covers, and viscometer tube cleaner. Order viscometer tubes, orifices, receiving flasks, and thermometers separately.

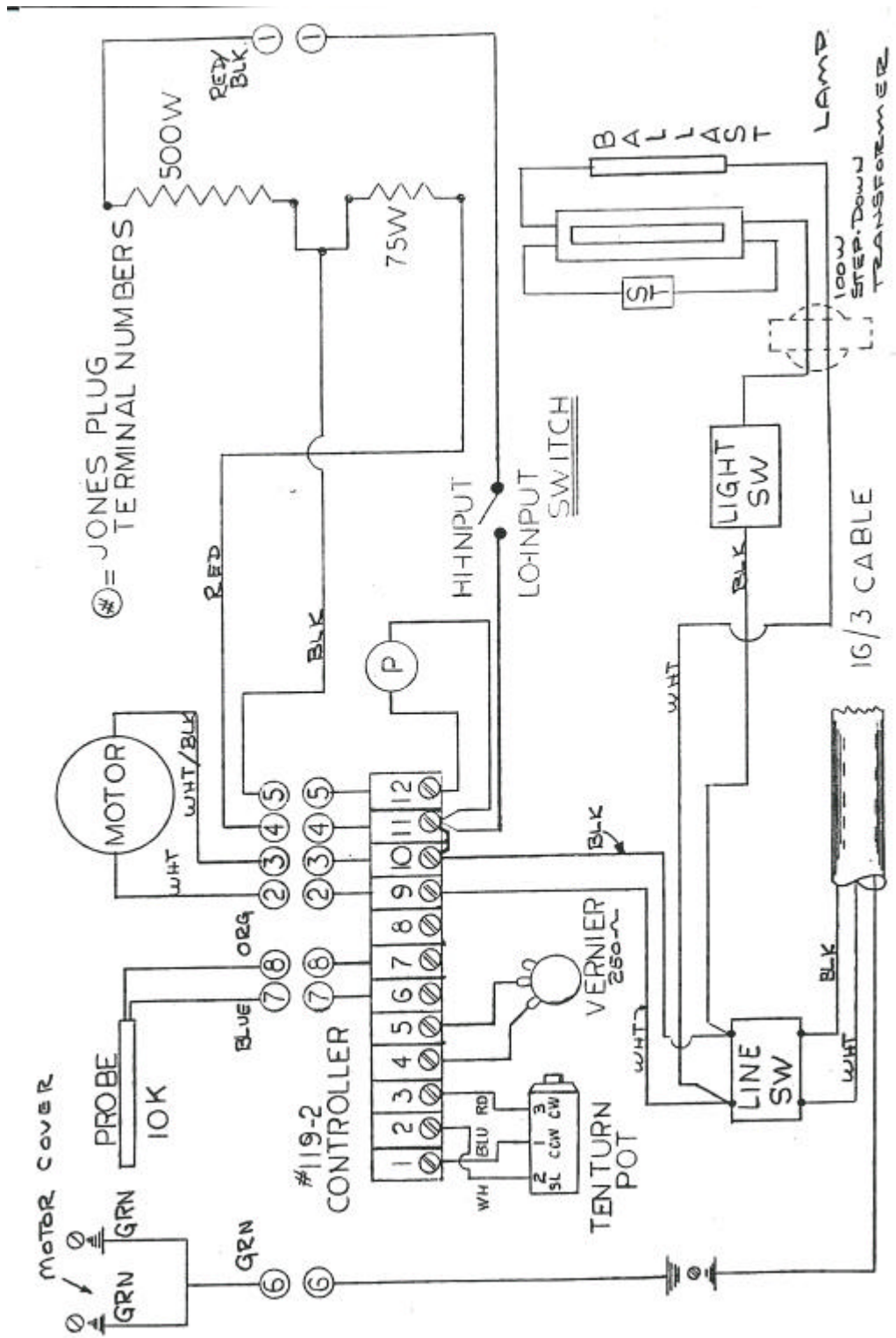
Catalog Number

Description

K21400	Saybolt Viscometer Bath 115V 50/60 Hz
K21490	Saybolt Viscometer Bath 220-240V 50/60 Hz



H-2165



H-2165