



# HVU SERIES

## Automated Ubbelohde Viscometers

- 🌐 Temperature range -40° to 100°C (-40° to 212°F)
- 🌐 Ideal for low temperature aviation turbine fuel and for lubricant testing
- 🌐 Strict accordance to standard methods
- 🌐 Ultra precise NIR or NTC meniscus detection
- 🌐 Multi-instrument networking

# HVU SERIES

## AUTOMATIC KINEMATIC VISCOSITY TESTING WHILE MEETING ASTM D445 REQUIREMENTS

Herzog's HVU Series offers truly stand-alone operation with exceptional bath temperature range and stability. It simultaneously tests up to two samples using standard Ubbelohde-style capillary tubes. Near-infrared (NIR) or NTC thermal meniscus detection systems precisely measure flow properties of even the most challenging sample types, while an automatic tube cleaning system incorporates Kalrez™ seals to withstand use of aggressive solvents such as toluene or acetone. Complete cycle time, including automated cleaning, is 30 to 40 minutes. Results can be exported immediately or on-demand to a printer or LIMS.

### KEY ADVANTAGES

#### BEST PRECISION AND IN PERFECT CORRELATION TO ASTM D445

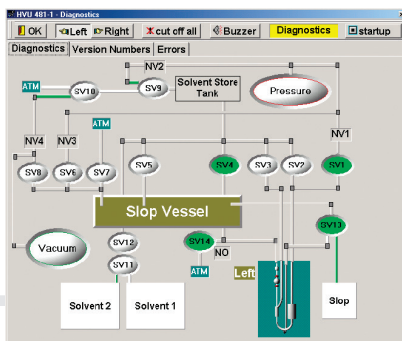
- Ubbelohde capillary tubes protect sample from external ambient conditions
- Dynamic/static sample tempering quickly achieves equilibrium sample temperature
- Highly precise near infrared (NIR) 2-point meniscus detection unaffected by surface tension effects, sample conductivity, or water content
- Programmable, multi-solvent cleaning cycles
- Results immediately display on local digital readout and can be output automatically or on-demand

#### RUGGED, RELIABLE OPERATION

- Withstands extensive operation
- Quick tube changes in under 2 minutes minimize routine maintenance downtime
- Quality construction and reliable operation backed by limited parts, service warranties
- Built-in calibration, self-test and system diagnostics
- Windows-based data management organizes test parameters, capillaries and results for easy retrieval

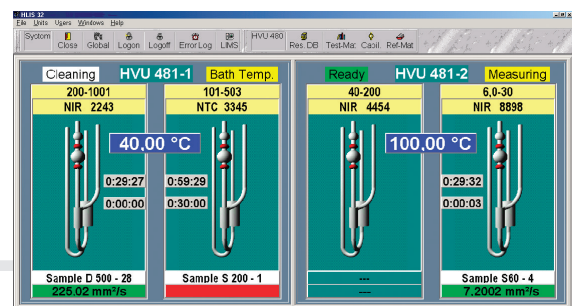
#### QUICK DIAGNOSTICS

Provides real-time status display and control of all mechanical and electrical systems, identifying active functions in green. While instrument is in stand-by, easily activate solenoid valves, pressure and/or vacuum by clicking the corresponding on-screen button.



#### EASY AND CONVENIENT OVERVIEW

At a glance, view status of all instruments on the network. Operating status, sample ID, bath temperature and viscosity are all displayed. Color codes make it easy for a single operator to manage many tests in process.



## 481 MODEL

- Temperature Range: 20 to 150°C (68 to 302°F)
- Economical, automated viscosity measurements
- Stand alone operation
- Performs two tests simultaneously
- Automatic, multi-solvent cleaning system; withstands aggressive solvents
- PC-based instrument control and multi-instrument networking capabilities
- Upgradeable for automated sampling



Upgrade the 481 at any time to enable fully automated high-throughput testing using Herzog's MP 491 Automatic 48- or 96-Position Sample Changers.



## 482 MODEL

- Temperature Range: -40 to +100°C (-40 to +212°F)
- Ideal for low temperature aviation turbine fuel and for high and low temperature lubricant testing
- Stand alone operation
- Performs two tests simultaneously
- Automatic, multi-solvent cleaning system; withstands aggressive solvents
- PC-based instrument control and multi-instrument networking capabilities





## SPECIFICATIONS

Operation	
Standard Test Methods	ASTM D 445, D 446, D 2270; IP 71 Sections 1&2; DIN 51 562; ISO 3104 and 3105
Fuel Specifications	ASTM D975, D7467, D6751, EN 590
Precision	As good or better than the precision published in ASTM D445
Operation	
Bath Temperature Stability	±0.01°C (±0.02°F)
Bath Temperature Control	Proportional heat control, high velocity bath media circulation, sleeved capillary tubes, pressurized sample agitation
Sample induction	Manually with syringe; HVU 481 is upgradeable for use with MP 491 Autosamplers (48- or 96-position)
Meniscus Detection/Timing	Near-Infrared (NIR): High precision technique for clean, black, water-containing, and/or conductive samples Thermal (NTC): For high carbon or stable emulsion (dark samples); Adapter Set 108-332 required for NTC detection (20 to 100°C detection range) on Model 482
Auto cleaning	Dual solvent system with programmable cycle parameters; low solvent usage (40 ml minimum). Gravity intake and discharge; no external vacuum pump required. Built-in automatic detection of cleaning solvent availability. Kalrez™ seals compatible with various solvents, including acetone. No viton seals.
Diagnostics & Calibration	Real time status display and control for all mechanical and electrical systems locally or with optional PC network
Utility Requirements	
Electrical	230 VAC 50/60 Hz 1200 W; 110 VAC available with transformer
Cooling Water	Standard tap water for testing temperatures between 25° and 60°C (77° to 140°F); external cooling bath for temperatures down to -40°C (-40°F)
Solvents	External solvent supply; up to 2 solvents may be used
Other Specifications	
Size & Weight	481: 350 x 515 x 900 mm (13.7 x 20.3 x 35.4 inches); 88 kg (194 lbs) 482: 350 x 515 x 900 mm (13.7 x 20.3 x 35.4 inches); 88 kg (194 lbs)
Accessories	Circulation Cooler with cooler isolating valve adapter: down to -20°C (-4°F) – 08301-000-00 Circulation Cooler with cooler isolating valve adapter: down to -40°C (-40°F) – 08284-000-00 Cooler Isolating Valve, prevents bath cooling when temperature above 40°C (104°F) is selected – 101-173 NTC Detection Capillary Adapter for Model HVU 482 – 108-332 Waste Level Sensor for waste container – 638-031

Continuing research and development may result in specifications or appearance changes at any time

### ABOUT PAC

PAC develops advanced instrumentation for lab and process applications based on strong **Analytical Expertise** that ensures **Optimal Performance** for our clients. Our analyzers help our clients meet complex industry challenges by providing a low cost of ownership, safe operation, high performance with fast, accurate, and actionable results, high uptime through reliable instrumentation, and compliance with standard methods.

Our solutions are from industry-leading brands: AC Analytical Controls, Advanced Sensors, Alcor, Antek, Herzog, ISL, Cambridge Viscosity, Phase Technology, PSPI, and PetroSpec. We are committed to delivering superior and local customer service worldwide with 16 office locations and a network of over 50 distributors. PAC operates as a unit of Roper Technologies, Inc., a diversified technology company and a constituent of S&P 500, Fortune 1000, and Russell 1000 indices.

### HEADQUARTERS

PAC LP | 8824 Fallbrook Drive | Houston, Texas 77064 | USA  
T: +1 800.444.8378 | F: +1 281.580.0719  
www.paclp.com