



Pressure Aging Vessel— H-1640
Pressure Aging Vessel, 230V 50/60Hz— H-1640.4F

The Pressure Aging Vessel (PAV) is used to simulate in service oxidative aging of asphalt binder according to procedures developed by the Strategic Highway Research Program (SHRP). The H-1640 is fully compliant with the most recent ASTM and AASHTO standards for these tests. (Refer to ASTM designation D6521-05 and AASHTO method R28-06). The complete PAV system consists of an ASME-code stainless steel pressure vessel in a stainless steel cabinet with encased band heaters, a precision sample holder for simultaneous testing of ten specimens, a set of ten TFOT specimen trays, a pressure controller, temperature controller, pressure and temperature measurement devices, temperature recorder, and a specimen loading and unloading tool.

The H-1640 PAV takes the hassle out of running and documenting asphalt binder aging operations. Three easy, non-complicated steps produce accurate and reliable results. Just press the "heat" button, inset specimens when prompted and press the "Age" button and let the PAV do the rest. Custom status screens guide the user step-by-step through the entire process. Each display screen (preheat start-up, preheat ready, aging heat up, aging pressurized, and aging complete) is simple and direct, with detailed process and status information. The final output screen, when the test is complete, shows the current vessel pressure, as well as minimum and maximum temperatures achieved during the test procedure. Process data (temperature and pressure) is continually stored at regular intervals in the programmable logic controller (PLC) that controls and monitors the process.

The H-1640 PAV features a compact, benchtop design with integral pressure vessel. Its rotating vessel lid with rounded support block provides easy opening and closing. A built-in timer accumulates and records out-of-range time (out-of-range time for the PAV is typically less than 10 minutes during a 20-hour test) Minimum and maximum temperature data is recorded and displayed at the end of each test.

Optional remote control operation and data access is also available, please contact Humboldt. This new control setup has many exciting prospects, including improved productivity and tighter process control, with the ability to control testing and to access data from a single remote location. With the appropriate hardware, a single user is able to initiate or cancel a test, monitor test progress, and view test results on any number of PAVs located anywhere in the world.

UPS Battery Backup System— H-1641.1
 Prevents power failures, sags, surges, under and over voltages. Includes extended battery module EDM, and provides 4 hours of backup at full load. Provides three-stage charging, doubling battery life and optimizing recharge times. Provides 60-day advanced notification of end of useful battery life. Power Requirements: 230 VAC, 1 Ph. 60 Hz.



H-1640

Specifications	
Operating Pressure	2.10 ±0.05 MPa (304 psi)
Temperature Range	90°C to 110°C (194°F to 230°F)
Temperature Control Resolution	±0.1°C
Test Temperature Uniformity	±0.5°C
Time to Setpoint	3 hours from ambient
Return to Setpoint	120 min. after preheating and loading of specimens
Pressure Vessel	ASME code section VIII, division 1; 1992 A 93
Maximum Pressure	325 psi (2.24 MPa) at 120°C (250°F)
Pressure Safety Release	325 psi (2.24 MPa)

PAV Verification Kit— H-1641.2
 Provides NIST-traceable temperature and pressure verification and includes a calibration block. Temperature range is -201 to 1210°C with a ± 0.03°C accuracy. Pressure range is 0 to 500 psi with an accuracy of ± 0.25% full scale (ANSI/ASME B40.1 Grade 4A)

PAV O-Ring— H-1641.3
 Single-stage air pressure regulator (for external use on air tank)

- 0-4,000 psi high pressure gauge.
- 0-600 psi low pressure gauge includes relief valve.

CGA Adapter— H-1641.4
 For use with bottles with 346 CGA connection

High Pressure Hose— H-1641.5
 6 ft. stainless steel braided sheath pressure hose.
 Includes fittings and quick connect coupling.

Specimen Pans Set— H-1641.6
 Set of 10 AASHTO T179 pans reduces down time between aging samples.