

HİRA TESTING EQUIPMENT



DYNAMIC SHEAR RHEOMETER (DSR)

STANDARDS: ASTM P246, AASHTO T315, JTG E20-2011 T0628

The dynamic shear rheometer (DSR) is used to evaluate the viscous (non-recoverable) and elastic (recoverable) properties of aged and unaged asphalt in the temperature range 5-85 °C by measuring the dynamic shear modulus G^* and phase angle δ of the bitumen to predict the ability to resist rutting and fatigue cracking.

The DSR test uses a thin asphalt binder sample sandwiched between two circular plates. The lower plate is fixed while the upper plate oscillates back and forth across the sample to create a shearing action.

Ultra-low inertia servo motor technology.

-Smooth positioning and drive speed regulation are realized through toothless torque.

-Ultra-low inertia hollow cup motor design, fast torque and speed response, and excellent dynamic characteristics.

-Relative to the volume and weight of the motor itself, it can provide extremely high torque and power.

-Absolute linear relationship between current and torque, voltage and speed.

Ultra-high precision sensing and measuring system

-Optical encoder, with a resolution of 10-4 rad, can accurately measure the rotational angular displacement and angular velocity.

-Ultra-high sensitivity normal force sensor design, fast transient response, accurate measurement and control of normal force.

-Ultra sensitive torque sensor design, which can accurately measure rotor torque.

-The ultra-high precision grating system accurately measures and controls the vertical running position, and the gap resolution is 0.1 μm .

Temperature control unit

-Peltier temperature control system is adopted, and high-resolution temperature sensor is embedded to ensure fast and accurate sample temperature control.

-One step plug-in design of power supply, communication and fluid connection, fast, convenient and firm.

Integrated design

-All mechanical, power supply, control, communication, display and other components are arranged in one Machine body, with small volume, high integration and high requirements for design, processing and assembly.

Intelligent software

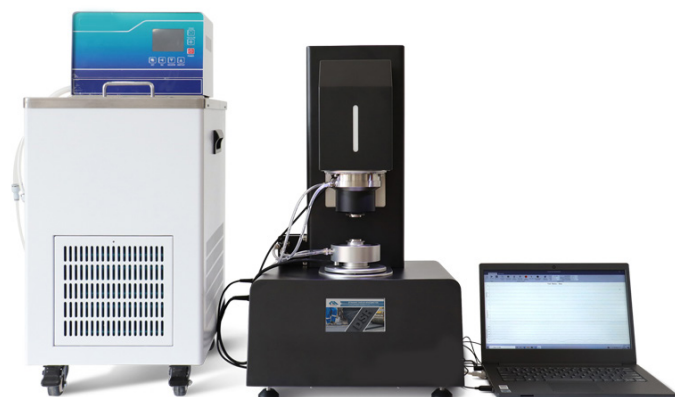
-Friendly interface to ensure the best rheological measurement operation.

-Including the setting of fixture, temperature, test and other parameters required for all DSR tests.

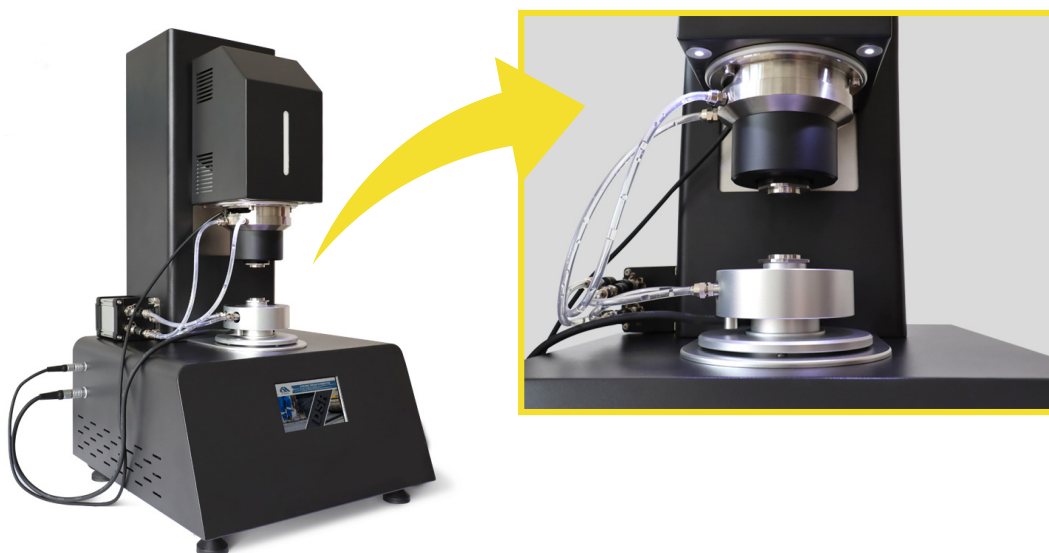
-Try to avoid the influence of operators.

-Time temperature equivalent superposition (TTS) to generate the main curve

Supplied with DSR Test host, 1 pair of 25mm test plate and 1 pair of 8mm test plate, Laptop, Software, Intelligent constant temperature water bath 8L, 25mm and 8mm Silica gel test mold, Dismounting wrench for test plate, Sample trimming scraper, Supporting pipeline.



HR-AS2265



HR-AS2265

Technical Specifications:

Product Code	Product Name
HR-AS2265	Dynamic Shear Rheometer
Speed range	0.01 to 2850 r/min
Angular velocity range	0.01 to 300 rad/s
Deflection angle resolution	10-4 rad
Oscillation frequency	0.1 to 50 Hz
Torque range	0.001 to 150 mNm
Torque resolution	0.001 mNm
Normal force range	0.01 to 50N
Normal force resolution	1mN
Temperature range	5 to 85 °C (water bath working temperature 25 °C);
Temperature resolution	0.01 °C
Temperature control accuracy	+ / - 0.1 °C
Measuring system	1 pair of 25mm test plate and 1 pair of 8mm test plate
Dimensions	400 x 415 x 670 mm
Weight	Approx. 30kg

Spare Parts & Accessories:

Product Code	Product Name
HR-AS2265/1	DSR Test host
HR-AS2265/2	1 pair of 25mm test plate and 1 pair of 8mm test plate
HR-AS2265/3	Laptop
HR-AS2265/4	Software
HR-AS2265/5	Intelligent constant temperature water bath 8L
HR-AS2265/6	25mm and 8mm Silica gel test mold
HR-AS2265/7	Dismounting wrench for test plate
HR-AS2265/8	Sample trimming scraper
HR-AS2265/9	Supporting pipeline

