

KASON-CR10C Computer Controlled Double Barrel Capillary Rheometer



Note: The picture is for reference only

I 、 Scope of application :

1 、 This machine is suitable for measuring the shear rate of plastics and polymer materials, composite/filled materials, elastomers and the fluidity of the melt under shear stress at a certain temperature, including the apparent viscosity of thermoplastics and thermosetting materials.

2 、 This rheometer is a computer-controlled intelligent capillary rheometer, which can work under constant pressure, constant speed, constant temperature, different heating rates, different temperatures, different shear rates, etc. The software automatically determines the pressure, temperature, speed and other test parameters of different plastics under different die diameters. The software automatically draws curves and saves and prints data.

3 、 Different specifications (low temperature type, high temperature type, different pressures, different rod diameters, etc.) can be customized according to user requirements. This machine has a high pressure, double pressure head and double barrel, frame-door type structure.

II 、 The dynamic measurement and control capillary rheometer developed by our company has the following characteristics :

1 、 High data collection frequency (greater than 100PPS), can more accurately record

the transition points of materials in different states without missing the key material state transition points; accurately calculate the apparent viscosity at different shear rates.

2、 Can achieve the superposition of multiple data curve and display coordinates in various curve forms.

3、 The load loading device of the instrument is designed reasonably, using high-precision pressure sensors for data acquisition, eliminating the traditional load sensor acquisition; Dual closed loop of software and hardware, achieving stepless adjustment of speed and loading force; Manual and automatic loading control can be used, which is convenient, fast, and accurate. Inductive manual displacement adjustment.

4、 Regarding the coordinate axes of shear viscosity and shear rate curves: During the test, the coordinate axis is the normal coordinate axis. When the test is over, if you want to view the log coordinate axis image, you can directly adjust it with the mouse. So that you can observe the image in two ways, and the lowest point of the coordinate axis is set with the mouse after the test.

5、 The whole machine adopts frame H-type structure. , which has more beautiful appearance, stronger stability, and easier transportation and installation.

6、 This machine adopts the double barrels mainly has some functions in the single barrel on the basis of of the expansion. Measure the viscosity is relatively more accurate than a single barrel,because the single barrel generally measures the apparent viscosity, which is not the true viscosity of the material. But the double barrels can correct some parameters, and the measured apparent viscosity is more accurate than that of a single barrel.

7、 The machine software calculation adopts open model design, the model can be corrected, different material systems, the test results are different, the two dies of the double barrel can be calibrated (equipped with long die and zero die), and the shear viscosity and extension viscosity can be measured at the same time; Bagley correction is performed in real time. Single barrel are also fine,but double barrels are more accurate.

8、 This machine adopts a double pressure head and double barrel structure and can make two kinds of samples at the same time or the same sample twice at the same time, which is good for repeatability comparison of the same sample and data comparison of different samples; it saves time and has high work efficiency.

9、 The barrel graphic curve displays in real time the pressure, temperature, force, shear rate, deformation and velocity of the two indenters, and the remaining amount of sample in each barrel

10、 Scalability: This instrument can be expanded into a low temperature test structure without replacing the host.

III、 System composition

The system structure design adopts "H" frame design to ensure the structural strength. The transmission structure adopts a Taiwan brand precision ball screw to achieve kinetic energy transmission, and the speed control system adopts an AC servo system to achieve precise control of displacement and pressure. The heating unit adopts a spiral heating wire for overall heating, and the overall temperature of the barrel is uniform. The high-tech measurement and control system and software interface are simple and intuitive, and can set the test mode and related operating parameters, and display relevant curves and

calculation results in real time.

IV、 Test items

- 1、 Constant speed shear test: it can measure the curve of shear stress and shear rate, and the curve of shear viscosity and shear rate
- 2、 Constant pressure shear test: it can measure the shear viscosity and shear rate curve
- 3、 Step shear rate test: different shear rates can be set according to the user's requirements, the shear stress and shear rate curve, and the shear viscosity and shear rate curve can be measured, and the melt fracture and the minimum flow pressure and shear rate of the melt can be determined according to the changes of the curve during the test.
 - a)Flow/non-flow test: measuring the relationship between viscosity and temperature, can accurately determine the minimum flow temperature
 - b)Melt fracture and flow instability, study the phenomenon of flow instability, including melt rupture and melt fracture.

V、 Software control interface



VI、 Main technical parameters and accuracy

- 1、 Temperature range: Room temperature~400℃ (Can be customized according to customer requirements,price negotiable)
- 2、 Heating rate: 1-6℃/min, Continuously adjustable, and rapid heating
- 3、 Temperature measurement display accuracy: 0.1℃
- 4、 Pressure range: 1-50MPa±0.5%或 1-100MPa±0.5% (Can be customized according to customer requirements,price negotiable)
- 5、 Maximum driving force: 10KN、 20KN、 50KN (Can be customized according to customer requirements,price negotiable)
- 6、 Pressure measurement accuracy: ±0.5%FS
- 7、 Pressure resolution: 0.1Mpa

FOCUS IN MATERIAL TEST

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