



Water Pickup System, Model WPS-101



OVERVIEW: Kershaw Instrumentation L.L.C. has developed a technique for measuring water pickup of inks. This "titration" test is an automatic approach, which is quick and reproducible and requires no operator attention once the test is started. The digital displays on the instrument console eliminate the requirement of evaluation and/or analysis of the data by the operator, thus eliminating operator error.

PRINCIPLE: Water pickup is determined by monitoring the torque changes on a mixing blade as fountain solution/water is injected into the mixing ink at a controlled rate. The torque profile is characterized by two parameters, Emulsification Capacity (EC) and the change in torque (T). The EC parameter is the water pickup value in grams of fountain solution emulsified per 100 grams of ink (percent). The T parameter reflects the nature of the rheology changes upon emulsification.

OPERATION: To operate the system, a 25 gram sample of the ink is prepared in a disposable four-ounce can that is seated in a holder which is temperature controlled to 30°C. Next a motor driven propeller is lowered into the can and the injector is set in place over the sample. The operator then presses the start button to initiate the test. No further operator attention is required. A typical test requires from 3 to 8 minutes to operate, depending on the characteristics of the ink being tested. At the end of the test, the EC and T values are displayed on digital read-outs for the operator.

UPGRADED UNITS: Kershaw Instrumentation LLC. offers 2 upgraded models of the WPS-101. The principle and operation is the same as described above with a few added features as follows.

WPS-101C: This model includes a computer interface, which allows the operator to connect the water pickup tester to a computer. The software provided allows the operator to display real-time torque verse EC curves, which can be printed, stored and/or overlaid over other tests for comparison. The graphics included in the software allow for easy auto and manual scaling of the graphs. The file structure allows for ease in storing and recalling tests, and importing of the files to other documents, or spreadsheets.

WPS-101ir: This model includes all of the features of the WPS-101C, and also features a temperature channel. An infrared temperature sensor monitors the rising ink temperature during the test. A second data acquisition channel is included to plot and store the temperature data.

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