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## Automatic Cement Compression & Flexure Testing Machines ZI 1037

Standards: EN 196-1, 459-2, 1015-11, 13454-2;  
ASTM C109, C348, C349; BS 3892-1, 4551-1

Specification:

The Automatic Cement Compression & Flexural Testing Machine having single or double testing chamber are designed for reliable and consistent testing of mortar samples. These compression and flexure testers are the results of continuous applications and research studies to upgrade the machines with the latest technologies and conform the current standards in terms of its technical properties taking into account client requirements by using suitable accessories. These machines also meet the requirements of CE norms for safety and health of the operator. Compression and flexure jigs, distance pieces, and also removable transparent front-rear safety doors (should be factory installed) should be ordered separately. The automatic cement compression and flexure testing machines allow less experienced operators to perform the tests.

Once the machine has been switched on and the specimen is positioned and centered by the help of centering apparatus. The automatic cement compression and flexure testing machines consist of very rigid two column single or double chamber frames, automatic hydraulic power pack with data acquisition and control system.

### **Power Pack**

Automatic Hydraulic Power Pack, dual stage, controlled by control panel is designed to supply



the required oil to the load frames for loading. Very silent power pack can load the specimen between 50 N/sec to 2.4 kN/sec with an accuracy of  $\pm 5\%$ . A Rapid approach pump is supplied as standard. Safety valve (maximum pressure valve) is used to avoid machine overloading.

### **Motor**

The motor which drives the dual pump is an AC motor, 380 V, 50-60 Hz, 3 phase, 1 hp and 0.75 kW and it is controlled by motor inverter. The variation in the oil flow is executed with the variation of the rotation speed of the motor.

### **Distribution Block**

A distribution block is used to control the oil flow direction supplied by the dual stage pump, the following parts are fitted to the distribution block;

- a - Solenoid valve
- b - Safety valve (maximum pressure valve)
- c - Transducer
- d - Low pressure gear pump
- e - High pressure radial piston pump

### **Dual Stage Pump**

The dual stage pump is formed by two groups

#### **Low pressure gear pump**

High pressure radial piston pump.

On the dual stage pump, a high delivery, low pressure gear pump is used for rapid approach, while a low delivery, high pressure radial piston pump is used for test execution. The Rapid approach facility shortens the time interval from piston start until the upper platen touches to the specimen. This excellent feature helps to save a lot of time when a large number of specimens are going to be tested.

### **Oil Tank**

The tank includes enough oil to fill the mechanism which pushes the ram during the test. The level and oil temperature can be seen on the indicator fitted to the tank. It has 20 L capacity. Hydraulic motor oil, number 46, must be used.

Dimensions : 360 x 380 x 900 mm

Weight (approx.) : 80 kg

Power : 750 W

### Control Unit

Control Unit is designed to control the machine and processing of data from load cells and pressure transducers which are fitted to the machine. All the operations of control unit are controlled from the front panel consisting of a 800x480 pixel 65535 color resistive touch screen display and function keys 2 analogue channels are provided for load-cells or pressure transducers. Control unit has easy to use menu options. The control unit's digital graphic display is able to draw real-time "Load vs. Time", or "Stress vs. Time" graphics. Control unit offers many addition unique features. You can save more than 10000 test results in its internal memory. Control unit has support for various off-the-shelf USB printers. Thanks to its built-in internet protocol suite, every aspect of control unit device can be controlled remotely from anywhere around the world.

Maximum horizontal clearance for placing sample is limited with the border of the platens. Sample must be placed such that its ends will not overlap the ends of platens and it must be centered perfectly. The suitable vertical clearance for specimen can be adjusted with distance pieces.

Model	ZI 1037	ZI 1038	ZI 1038
Test Type	Compression	Flexure	Compression
Capacity	250 kN	15 kN	250 kN
Class 1 Measuring Range	2.5 to 250 kN	0.5 to 15 kN	2.5 to 250 kN
The roughness value for texture of loading and auxiliary platens	≤3.2 μm	≤3.2 μm	≤3.2 μm
Lower Platen Dimensions	165 mm	165 mm	165 mm
Upper Platen Dimensions	165 mm	165 mm	165 mm
Maximum Vertical Clearance Between Platens	263 mm	263 mm	263 mm
Piston Diameter	160 mm	80 mm	160 mm
Maximum Piston Movement	50 mm	50 mm	50 mm
Horizontal Clearance	300 mm	200 mm	300 mm
Power	750 W	750 W	750 W
Oil Capacity	20 L	20 L	20 L
Maximum Working Pressure	125 bar	30 bar	125 bar
Rapid Approach Rate	50 mm/min	80 mm/min	50 mm/min
Dimensions (WxLxH)	830x500x 1650 mm	1050x500x 1650 mm	1050x500x 1650 mm
Weight	265 kg	410 kg	410 kg

