

## Cold Compression Strength



## **General Features**

Cold Compression Strength Testing Machine determines the compressive load that fired pellets withstand before breaking. This machine measures the crushing strength of iron ore pellet at the precision of one decimal number in kilograms. In other words, the technological advantage of this machine is that it registers the crushing force and time precisely. The machine is capable of receiving one thousand pieces of data from the load cell per second to determine the fastest route to the peak crushing force.

Along with the high sensitivity, the machine is designed so as to be operated easily, to perform the tests with minimum operating skill, receive data, as well as to process and conduct the test with the highest power.

The device consists of a loading unit, with an automatic handler and feeder for the samples and an electronic unit for indication, printing, and statistic calculation of crushing strength test data.

## **System Features**

The device loading, with a capacity of 2,000 Dan (~2,000 kg), works at constant compression speed (8, 15, 20, or 40 mm/min). The low speed is kept only during the compression period. High-speed movement of the compression plate is provided in the sweeping and return phases to reduce total test time. The load measuring system is equipped with an electrical self-calibration procedure, performed periodically. Data are displayed and printed both in kilogram and with a resolution of 1 kg.

## **Automatic feeder**

The task of the feeder is to carry pellets to the disc and subsequently to below the ramrod. The feeder of the machine is an angled bowl with two holes of 180 degrees from the center of the feeder in the corner. When the bowl rotates, the pellets enter the hole, and the escape route above the bowl leads the pellets towards the disc.



## **Operating Mode**

The equipment can be operated in manual or auto mode. In manual mode, the operator puts a substance in the disc and by pressing 1<sup>st</sup> test the punch moves down and determines the load at which the test piece undergoes complete breakage.

In Auto test mode the electronic unit identifies automatically the crushing strength as the maximum load in a “load decrease crushing logic” or a “time base crushing logic” with programmable parameters. Auto Mode allows using the system not only for routine purpose but also as a research tool.

## **Electronic Unit**

The electronic unit drives the compression process and provides to display and to print the crushing strength values and to calculated statistic data. The available statistics are: minimum and maximum value, number of tests with values under different thresholds, mean value, standard deviation and variation coefficient. The electronic cage includes a thermal paper printer for status messages and current data printing. A remote host computer interface (RS232C) is included to allow data logging and/or graphic representation of the results. The Pasco CCS software is available for providing a user-friendly interface to archive and graphical print out of the test results.

## **Pasco CCS software**

The Pasco CCS software is optional dedicated software that allows the operator to have on-line monitoring of test results and to get the print out of test report as in the Standards. Acquisition, archiving, printing, and export of test data, together with the graphical representation of the results are fully provided. The software is compatible with Microsoft Windows© environment.

## **Load Cell Calibration system**

The CCS Calibration System is an external comparison tool that allows the users to perform a periodic calibration of the device with a certified load cell. All mechanical parts needed to operate with the load cell are included in the kit. The provided calibration certificate guarantees the precision of the readings.

## Specifications

### Electromechanical Press

Compression speed

8,15,20,40 mm/min

Max compression load

2000 kg

### Motor servo controller

Principle

static frequency converter

Output voltage

230 V 3 hp (PWM control)

Motor type

asynchronous 3 hp motor

### Electronic control, display and print unit

Display and print resolution

1 kg

Printer

Alphanumeric on thermal paper

Data digital output

RS 232 C to host computer

Main power

230 V ac  $\pm$  10% 50/60 Hz 250 VA max