



Fully Automatic Autoclave for Soundness of Portland Cement

ASTM C151, C490

AASHTO T107

Model: 2214031, 2214032



Brief Description of Autoclave:

Cement Autoclave provides accelerated curing of mortar bar specimens in controlled steam pressure and temperature to determine the expansion of hydraulic cements by the ASTM C151 method. This high quality and durable apparatus has been designed and made by Cantrol Inc.. High pressure boiler vessel made from stainless steel with 154 mm internal diameter and 400 mm height. The holding rack has the capacity for 10-cement specimen. The device controls all steps of process base on ASTM C151. It is possible to monitor all test progress in 7" touch screen LCD. After finishing all steps, the device would shut down automatically. To achieve the highest safety level, it's considered three safety methods: Safety valve, pressure switch and software with overload detecting system. All parts in contact with water or heated water are made of 316 S. Steel such as pressure vessel and cap, capping nuts, tubes and connectors, pressure transmitter, pressure switch, safety pop valve, air vent valves, electrical S. Steel heater and cement specimen holder. The pressure of vessel (60-300psi), (4-20bar) controlled by software during testing procedures automatically based on standard for more safety. The second pressure switch can cut off the main if the pressure exceeds 10 bar or the third safety device (POP valve) could release the pressure vessel if the pressure exceeds 22 bar due to its setting at 24 bar. The S. Steel tubes and connectors are statically tested and certified in 60bar (880psi). The machine is supplied with a wrench, heat resistance O-ring seals (10pcs), heat resistance grease and safety gloves.

Specifications of software and technical data:

1- 7 inches TFT Touch Screen, made in Taiwan (Fatek co.), UL and CSA approved.

2- Stainless Steel, 40 bar Pressure Transducer, made in Germany (Wika Co.), UL and CE approved.

3- Software designed and made by Control Inc. based on ASTM and AASHTO standards.

4-Save data's up to 500 tests in internal memory and USB,

Drawing pressure-time graph online and save the pressure valve in each steps on the test.

4- Model:2214031,110V, 60Hz.,2.2 KW, 1PH.

5- Model:2214032, 220V,50/60Hz., 2.2KW,1PH.

6- Dimension: 660x430x900mm, weight: 160 Kg

The items come with machine:

- | | |
|--|--------|
| 1- S. Steel cement specimen holder | 1pc |
| 2- Wrench for closing or opening of Cap of S. Steel Cylinder | 1pc |
| 3- Anti-Heat cloves | 1 pair |
| 4- Heat-proof grease | 1 can |
| 5- T handle for removing Cap | 2pcs |
| 6- O-ring (Silicon Rubber) | 10pcs |

The most important things you should do before starting machine:

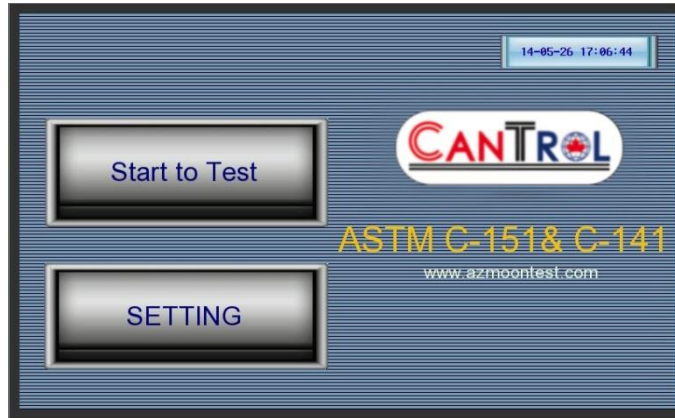
- 1- Install the machine at level position
- 2- Check out the water level in the cylinder
- 3- Apply the appropriate grease on O-ring before tightening the cap
- 4- Tight the cap by using the appropriate wrench
- 5- Close the discharge valve which is on top of cap
- 6- Use the gloves while working, because the cap and other parts on top of cap are very hot
- 7- Use the outlet which has the earth connection
- 8- Use the T handles when opening or closing the cap
- 9- Open the discharge valve when the test finished.

How to start the machine :

First connect the machine to outlet, put the specimens into cylinder then add an appropriate level of the water which is indicated with the S. Steel rod welded in the bottom of cylinder. Insert the specimens into hanger and put them into cylinder.

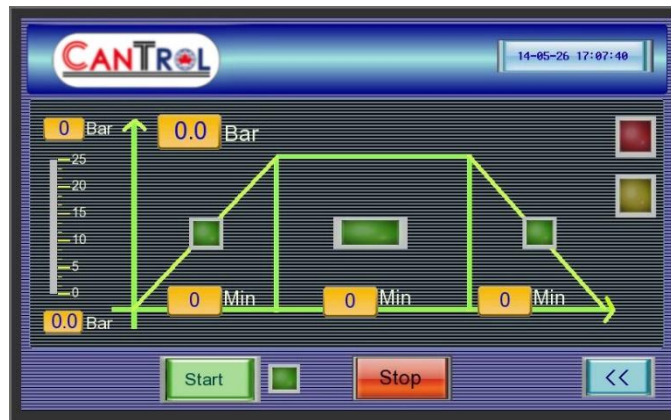
Close the cap and tighten the nuts by wrench. Now machine is ready to start.

Turn on the power switch of machine the first page of display will be seen,



Here are two option, Start to Test or going to Setting page.

When you start the test the following page will be seen.



Machine is now ready to test, in every stage of heating curve, the green light will be turned on green which is shown the test stage. At each stage, the pressure of cylinder (vessel) and the time of test will be shown on display. There are two red and yellow light on right hand of display. Red is on when

the heater is active and on. The yellow light is on when the cool fan is active and on.

At the end of test, machine will be stopped and machine goes off automatically.

Discharge the valve and let the machine cool down a bit. Open the cap and remove the specimen carefully to test the shrinkage test.

You might turn the machine off any time by touching the Stop button.

Maintenance of machine:

1-Clean the cylinder and remove any debris of cement after each test.

2- Check the machine out for any leakage.

3-Check the O-ring out for any damages and change it if needed.

Feel free to contact us if you have any questions and concerns.