Model TYE-1000 Computer Control Servo Hydraulic Compression Testing Machine

Applications:

This series compression testing machine is mainly designed for automatic compression test of building material items, such as concrete cylinder, cube, cement specimen and component etc, also used for compression performance test of rubber pad and top forge test of metal. With new design idea and advanced technology, this series have more advantages in appearance, operation & applications. It is ideal test equipment for quality control at industry & mineral enterprises, educational teaching in high schools, and technology searching at scientific institutes.

Standards:

It is conformed to EN 12390-3, 12390-4; BS 1881, EN772-1, ASTM E4, ASTM C139, ISO7500-1, EN10002-2, BS 1610, DIN51220, C1231 –AASHTO T22 -NF P18-411 -UNE 83304, 7242 etc.

Applicable Specimens:

Extensive ranges for **Cubic sample**: 100mm, 150mm, 200mm and more; **Rectangular sample**: 400x200x200mm, 400x200x400mm etc; **Cylindrical sample** dia. 150x300mm, dia. 100x200mm, dia. 200x400mm or others as per customer required.

Specifications:

Model	TYE-1000
Max. Load (kN)	1000
Load measuring range	2-100% of F.S.
Load accuracy	Class 1
Constant loading rate	1-50kN/s (can be adjusted)
Back to zero relative error	±1%
Relative resolution	1%
Test space adjusting mode	By dual action actuator
Compression platen (mm)	Φ220mm
Distance between two platens(mm)	600mm
Distance between columns	290x200mm
Ram travel	250mm
Max. moving speed of piston	100mm/min
Power supply	1-phase, 220V, 50Hz, 0.75kW
Dimension for load frame/ power pack	500x5700x1650mm/600x600x1030mm
Weight	1800kg

Features of each part:

Load frame:

Load frame consists of upper crosshead, four (04) columns, upper & lower platen, safety cover, load cell, piston, oil cylinder, and safety limit switches. It features as following,

- Good appearance without any screw exposed outside.
- Four columns structure makes the loading frame with higher stiffness;
- Upper compression platen is with ball seat assembly;
- Testing space up to 600mm is adjusted by both piston and adjustable spacer/blocks to meet the requirements for various specimens
- High precision load cell configured with this machine can measure the test load with higher accuracy;
- Double action actuator with 250mm stroke, piston-moving speed is over 100mm/min, which provides higher working efficiency; However, the piston return mode for traditional machine depends on gravity of piston with slow speed & high cost.
- Failure detection function;
- Safety covers is mounted around the columns to protect the operator, the front gate is with interlock switch to prevent machine operation when gate is open.
- Stroke protection: When the ram arrives at the upper limited position, limited switch will work to stop the motor of oil pump.

Hydraulic power pack unit

Hydraulic power pack unit consists of electrical cabinet, operating buttons for power supply & piston moving upwards & downwards, oil pump, servo valves, oil tanks etc. it features as following,

- Electrical elements are connected with 24V low voltage control according to CE requirements;
- Imported Japanese gearing oil pump is with features of low noise, stable pressure and long work life etc.
- High accuracy servo valve assembly guarantees the running of machine stable under servo control;

Control parts:

- Load cell measures the testing load: the load cell is installed between the lower platen and piston to measure the test load on specimen directly. The accuracy of the load cell is within 1‰. It ensures the accuracy of testing results on installation structure and parts performance.
- Full digital PCIE card specialized for testing machine is the data conversion and signal transmission device between the control unit and the computer. The analog signal of the load cell is converted to digital signal by the analog digital converter in the PCIE card, and then the digital signal is transferred to the computer for data processing. The digital signal of the photoelectric encoder is multiplied by four times of the original digital amount by the PCIE card.
- Computer with software can be available to control machine. Please see more details as **Annex-1 for softwar**e
- Servo control: close loop strain and stress control, curves of Load vs. time; actual load rate in real time; once specimen parameter setting, press “start” to complete the test.

Safety devices:

- Safety covers is mounted around the columns to protect the operator, the front gate is with interlock switch to prevent machine operation when gate is open.
- Stroke protection: When the ram arrives at the upper limited position, the motor of oil pump will stop.
- Overload protection: When the testing load is over 2%-5% of Max. Load, the system will unload.

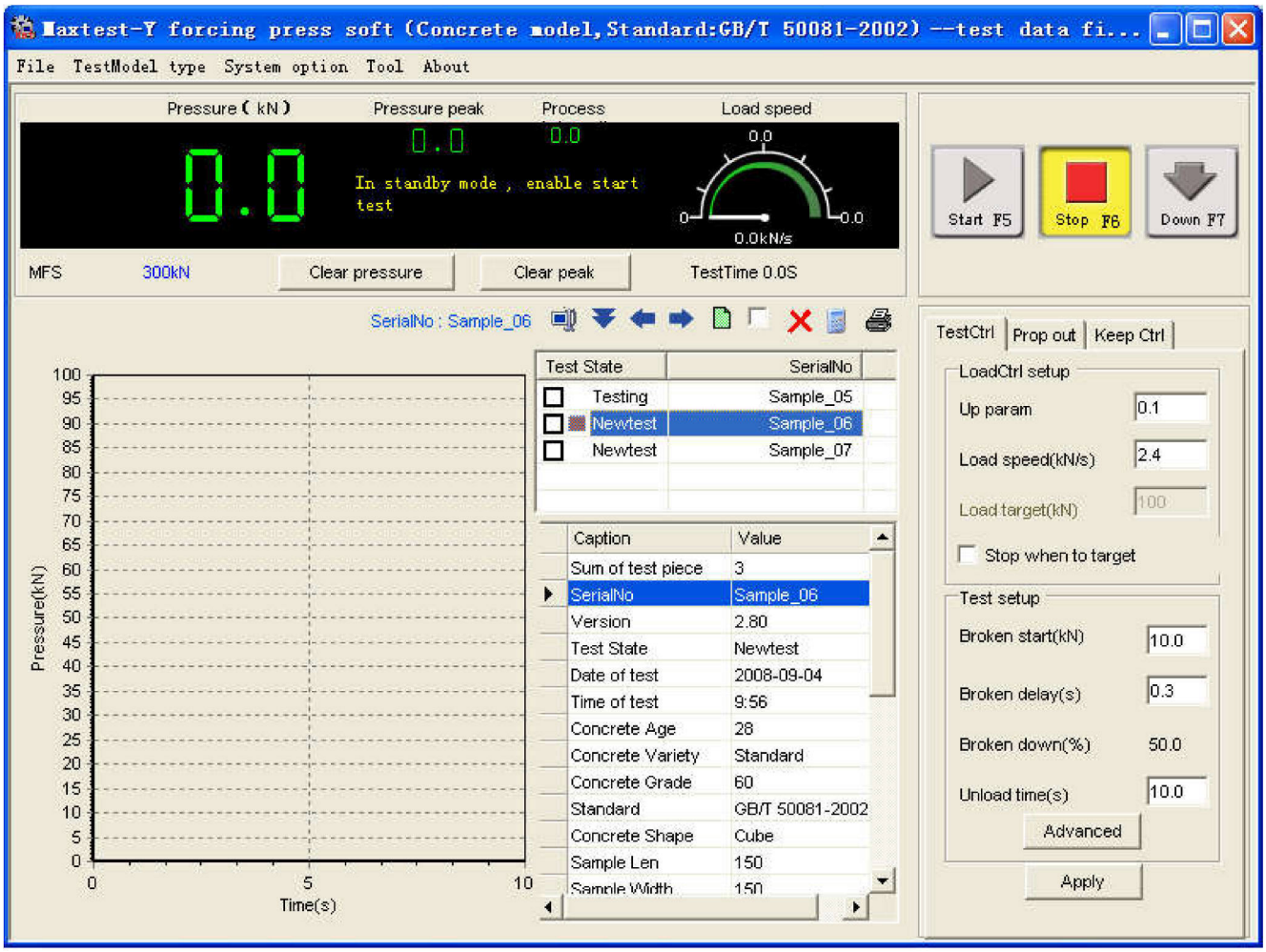
Optional Accessories:

Bending fixture for concrete bending test

Annex-1 Software Instruction

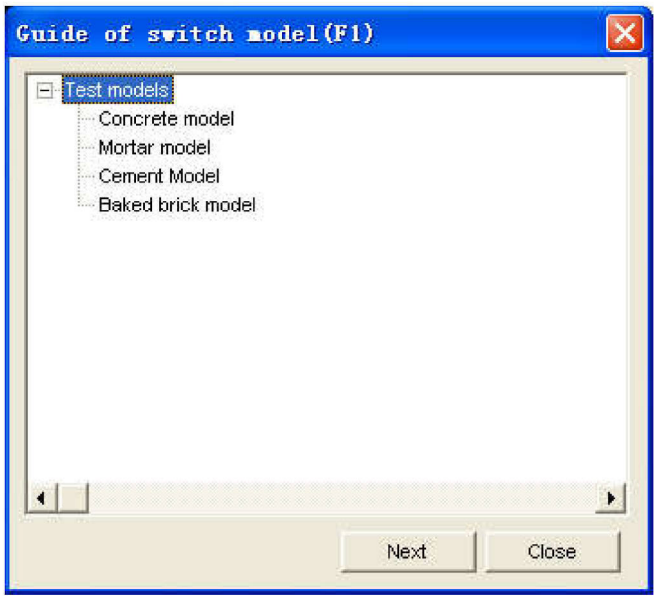
Features of Measuring & Control software

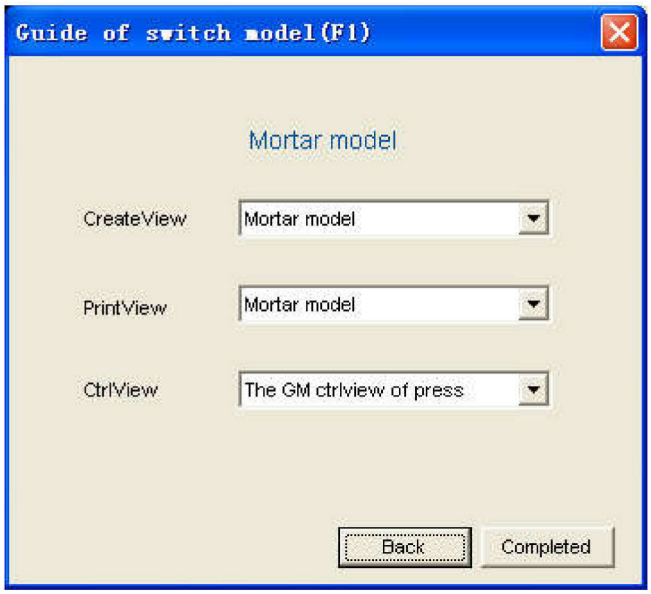
TE software refers to the software characteristics of the top manufacturers of testing machine in the world and proposals of various testing requirements from the end users, and combines all the advantages of former versions of software with lots of new features. Optimized software structure makes the testing operation easy, convenient and powerful. **Main interface** is as following,



Some more functions:

Choose the test model & related Standard according to different tests

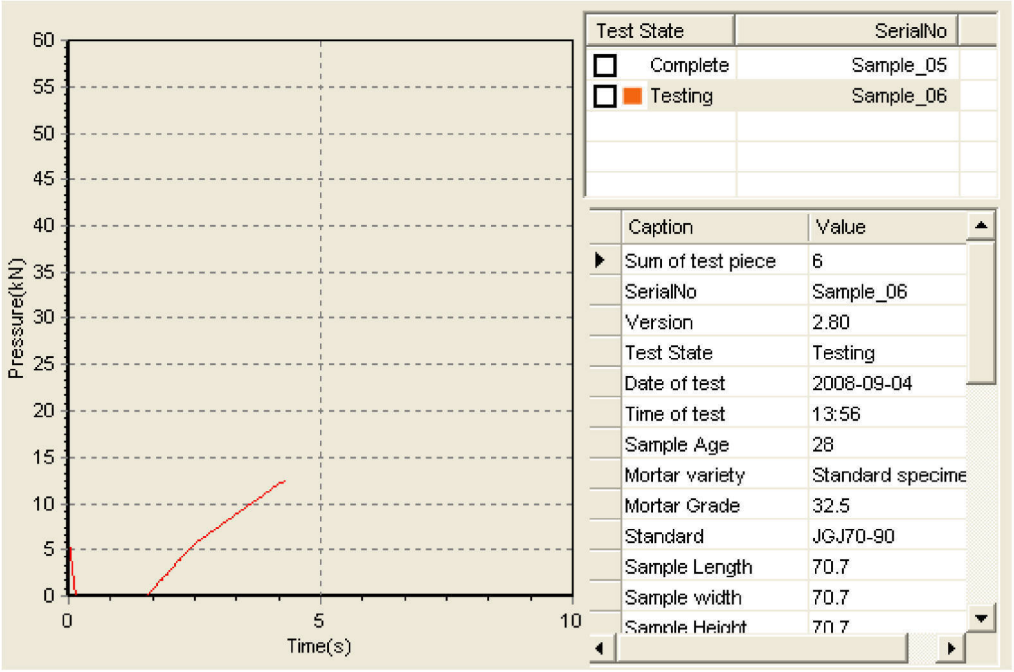




Digital indicators

- **Clear pressure** and **Clear peak:** Reset the pressure and the pressure peak.
- **Pressure:** Show the current load of the machine.
- **Pressure peak:** Maximum load of the process.
- **Process:** Show the test state.
- **Load speed:** Show the current load loaded speed.
- **MFS:** The maximum of the measuring range.
- **Test time:** Show the current test run time.

Data & Test curve Show:



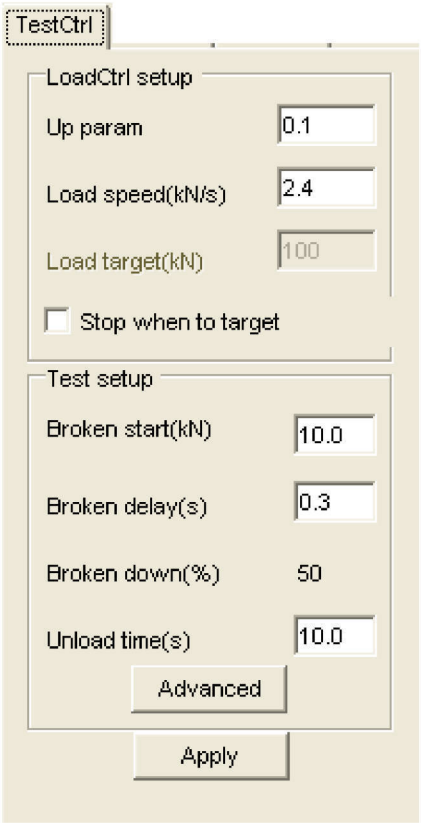
The **curve area** will show the current load-time curve in the testing test, as well it will show the result by the complete test.

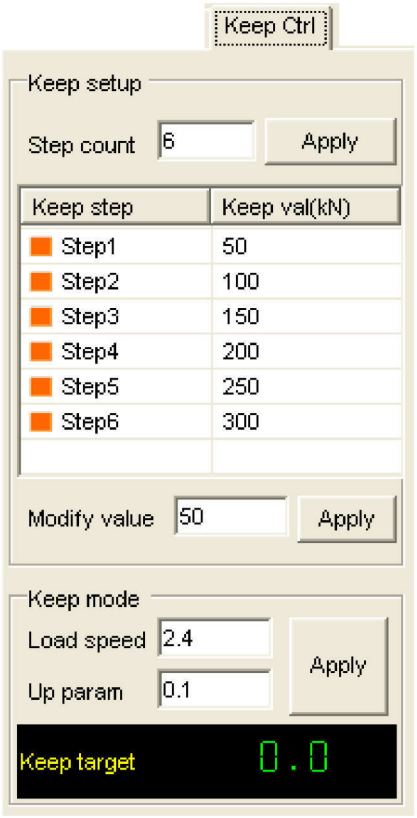
The **data details** show the test detail, such as the sum of the test piece, the date of the test etc.

Control type

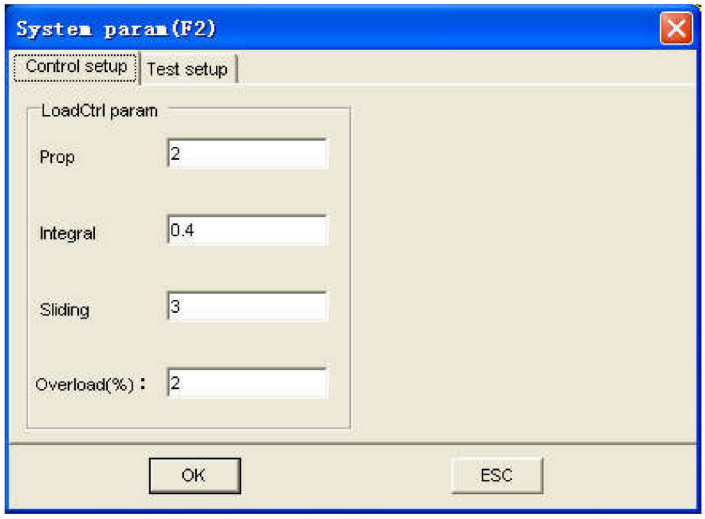
TestCtrl: This is the default control model.

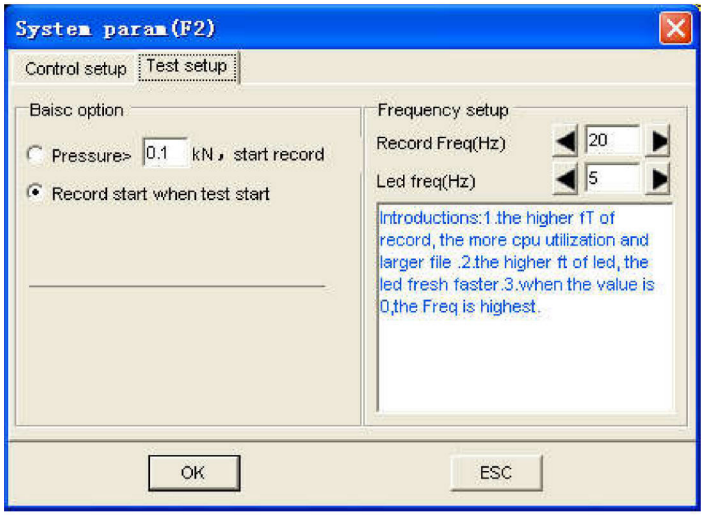
- **Up param:** Set the speed before to load (the test machine touch the sample). The real speed is about the value*12(mm/min).
- **Load speed (kN/s):** The speed of the load to load.
- **Load target:** The test will stop when the load achieve the set target. This only work when you select the **Stop when to target**.
- **Broken start (KN):** Only if the load excess the value set, the program start to check whether the sample has broken or not.
- **Broken delay (s):** When the condition when the sample broken achieved, if in this time the load go up, the program consider it is a false broken; else it is true.
- **Broken down (%):** When the load is lower than the maximum percentage, the program treats it as has broken.



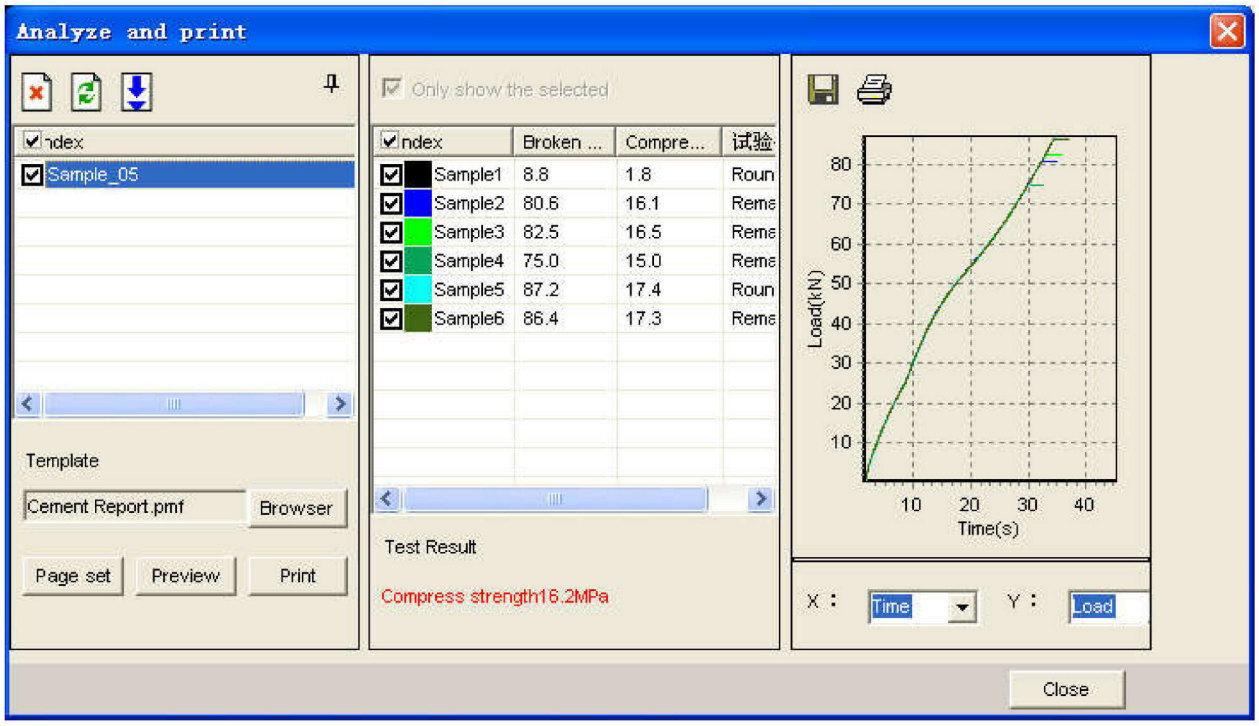


System program (F2)

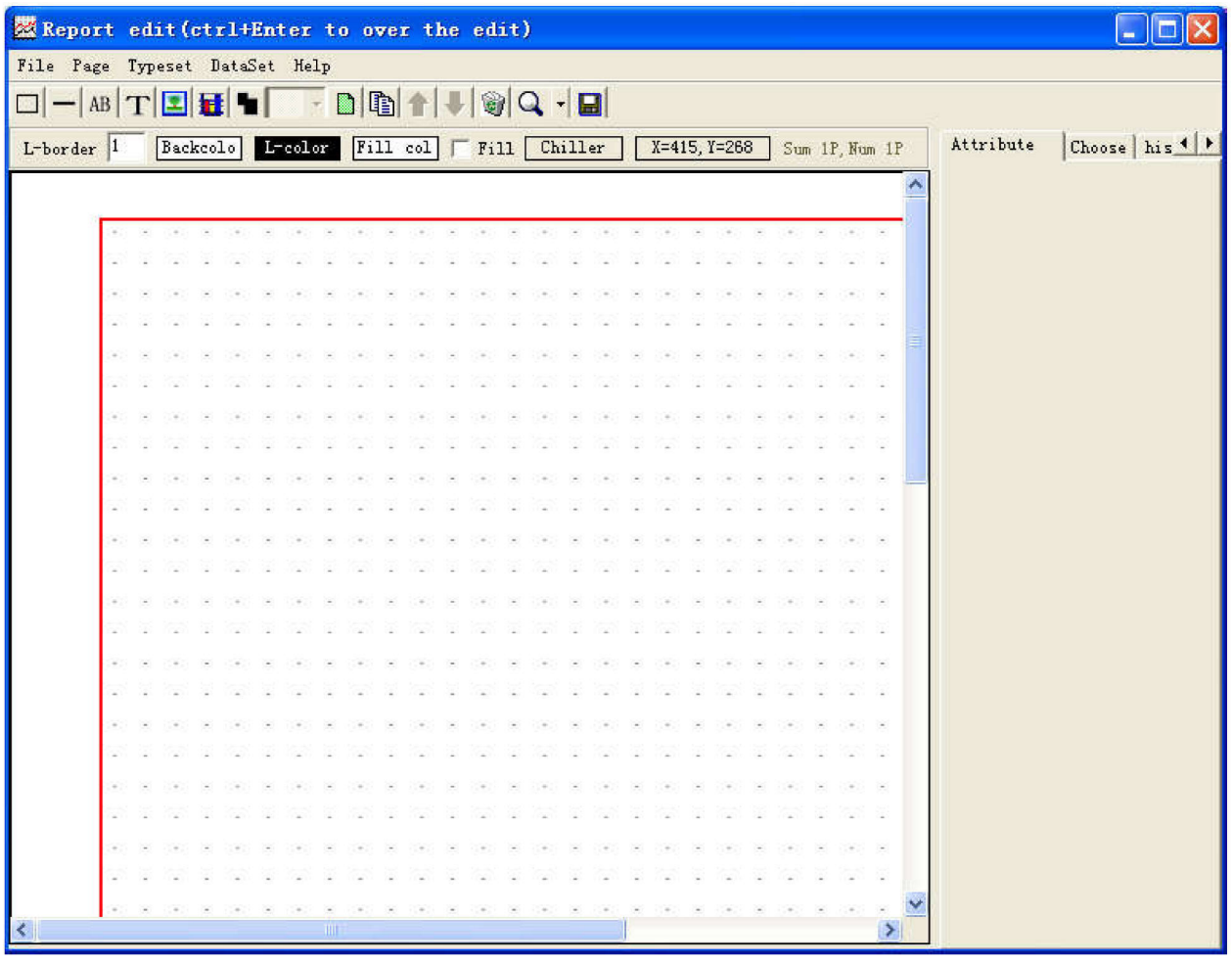




Analyze and print view:



Template for test report can be edited by customer



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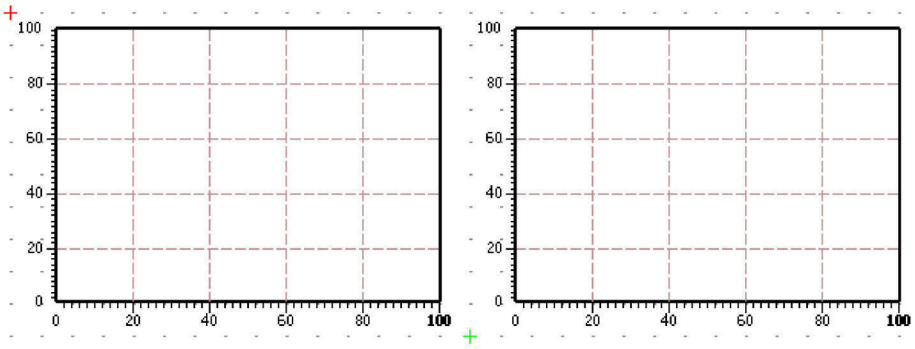
New Report Template

Deflection	
Air	
Water	
Ultimate	



Data vision

0

Testing Condition
Test state information

Type of ultimate strength
CtrlLoad of ultimate strength test
At step 1:CtrlLoad of incremental test
At step 2:CtrlLoad of incremental test
At step 3:CtrlLoad of incremental test
At step 4:CtrlLoad of incremental test
At step 5:CtrlLoad of incremental test
record-Load at positive ultimate strength
record-Load at negative ultimate strength
The positive ultimate strength test is completed or not
The negative ultimate strength test is completed or not
The observation-record of positive ultimate strength test
The observation-record of negative ultimate strength test
Window area
At step 1:ctrlload of deflection test
At step 2:ctrlload of deflection test
At step 3:ctrlload of deflection test
At step 4:CtrlLoad of deflection test
Positive deflection test is or isn't completed
Negative deflection test is or isn't completed
At step 1:keepload of positive deflection test
At step 1:dispA of positive deflection test
At step 1:dispB of positive deflection test
At step 1:dispC of positive deflection test
At step 1:deflection of positive deflection test

Ok Cancel