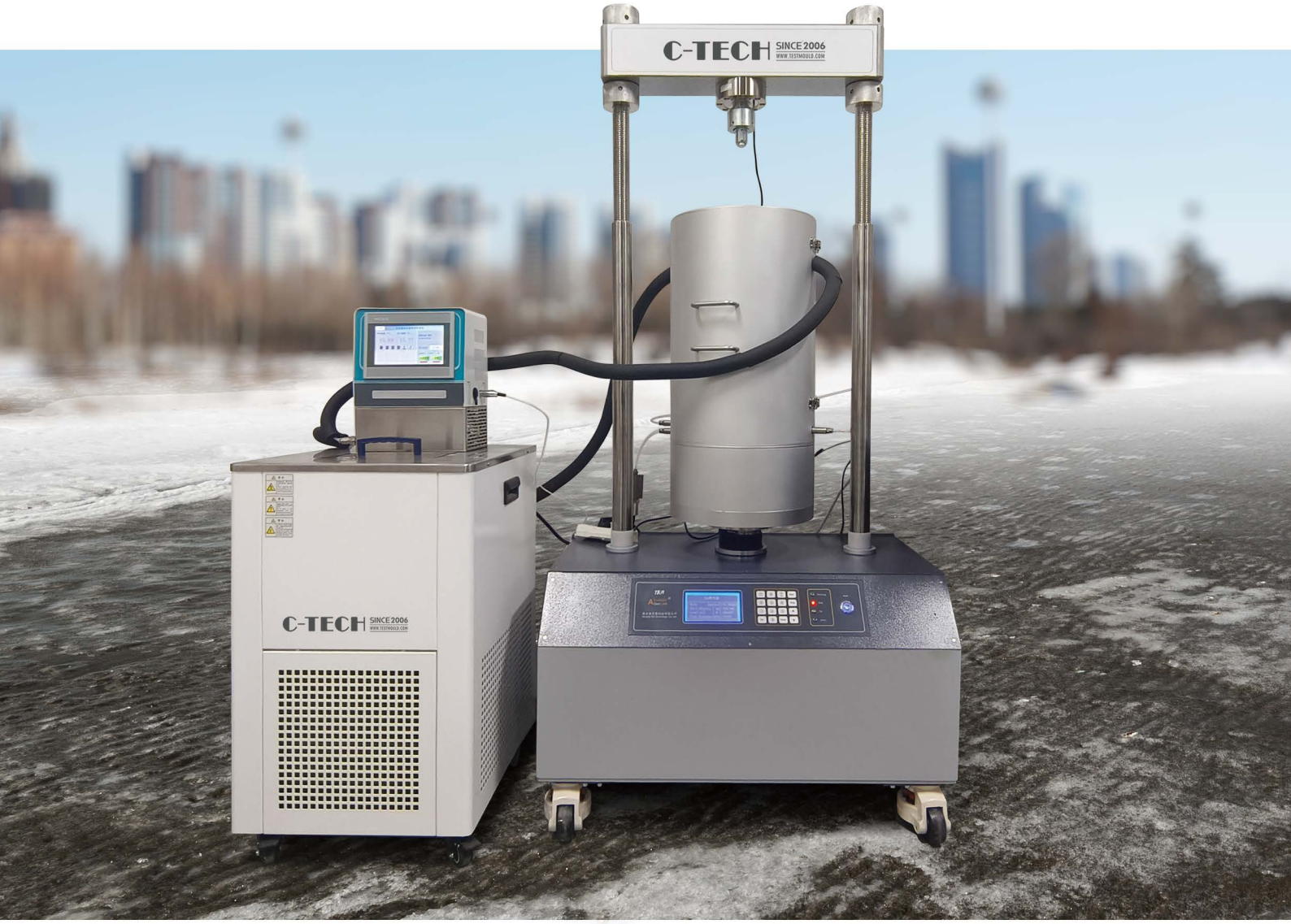
AUTOMATIC FROZEN SOIL TRIAXIAL SYSTEM PAT-20

The automatic frozen soil triaxial system PAT-20 is used to evaluate the mechanical properties of frozen soil under different temperatures, pressures, and stress paths. It is widely used in cold-region engineering, frozen soil subgrades, tunnels, and underground engineering construction to determine the strength, deformation, and stability characteristics of frozen soil.



LOAD FRAME

The front panel of the load frame is equipped with an LCD screen, an embedded 16-key keyboard. It has a built-in 4-channel data acquisition unit, which can acquire data from sensors such as pore pressure, load, LVDT, and PT100 temperature sensor. It comes with 4 sets of LED indicators to indicate the working status.

Shear rate	0.00001~10 mm/min, stepless speed regulation
Maximum stroke	150mm
Load capacity	200kN
Load cell	200kN, accuracy: +/-0.1%F.S
Pore pressure sensor	0-3MPa, accuracy: +/-0.1%F.S
Display	240×128 LCD screen

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AUTOMATIC FROZEN SOIL TRIAXIAL SYSTEM PAT-20

CELL PRESSURE/BACK PRESSURE VOLUME CONTROLLER

CELL PRESSURE VOLUME CONTROLLER

- Cell pressure: 0~3MPa, resolution not exceed 1kPa, regulated and displayed to 1kPa.
- Volume: Not less than 260 ml, resolution not greater than 0.001 ml, accuracy not less than +/- 0.01 ml.
- Connection via USB port.
- Control panel with keyboard and LCD display.
- Automatic protection to prevent over pressure and volume

BACK PRESSURE VOLUME CONTROLLER

- Back pressure: 0~3MPa, resolution not exceed 1kPa, regulated and displayed to 1kPa.
- Volume: Not less than 260 ml, resolution not greater than 0.001 ml, accuracy not less than +/- 0.01 ml.
- Connection via USB port.
- Control panel with keyboard and LCD display.
- Automatic protection to prevent over pressure and volume

FROZEN SOIL TRIAXIAL CELL

Dual-chamber temperature-controlled triaxial cell, the inner chamber used for loading and the outer chamber used for temperature control. Adopts liquid heating method, and the temperature is closed-loop controlled in real-time via software. It comes with two sets of temperature sensors: one for detecting ambient temperature and the other for closed-loop control of sample temperature.

Sample size	Ø39.1mm*H.80mm, Ø61.8mm*H.125mm, Ø100mm*H.200mm
Temperature control range	-30~+100℃, accuracy: +/-0.1℃
Temperature sensor	2 sets
Heating method	Liquid heating method

SOFTWARE

The dedicated control software can realize automatic control of the entire test process, including test control, data acquisition, and automatic saving. It has two control modes: strain control and stress control.

The software automatically collects, displays, and saves various data in real time. Users can combine the test modules in any way according to the test requirements, and each module can be set with temperature control range and temperature loading gradient. The software can process the test data after the test.

TEST MODULES

- Data acquisition module
- Back pressure saturation module
- UU, CU, CD test module
- K0 consolidation module
- Stress path triaxial test module
- Triaxial creep test module
- Frozen soil test module
- Asphalt triaxial test module.

MAIN CONFIGURATION

No.	Item	Quantity	Remarks
1	Load frame	1 set	200kN
2	Cell pressure volume controller	1 set	3MPa/260cc
3	Back pressure volume controller	1 set	3MPa/260cc
4	Load cell	1 set	200kN, including installation accessories.
5	Pore pressure sensor	1 set	
6	Dual-chamber temperature-controlled triaxial cell	1 set	
7	Control software	1 set	
8	Automatic water supply system	1 set	For replenishing water to the triaxial cell.
9	Temperature control system	1 set	

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