







Laboratory equipment co.,limited

## LABORATORY CEMENT MORTAR MIXER TPCE-20H

# PRODUCT MANUAL



### **C-TECH LABORATORY EQUIPMENT CO., LTD**

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## I. Overview

The Laboratory Cement Mortar Mixer TPCE-20H consistently and thoroughly blend mortar, cement, and other materials using an innovative planetary motion. It is mainly composed of mixing bowl, mixing paddle and corresponding mechanisms.

## II. Technical specifications

	Low speed		High speed	
Mixing paddle revolutions	Rotation: 140±2r/min	Revolution: 62±2r/min	Rotation: 285±3r/min	Revolution: 125±3r/min
Movement trajectory	Same as ISO679–1989 (E)			
Mixing paddle	Width: 135mm			
Mixing paddle connection	Quick-connect (the paddle can be disassembled at any time, which is convenient for cleaning the paddle)			
Mixing bowl	Capacity: 5L; thickness 1.5mm			
Mixing bowl installation	Magnetic locking structure			
Protective door	Automatic opening and closing (manual door is optional)			
Working gap	The working gap between the paddle and the bowl is 3±1mm			
Motor	Stepper motor soft transmission (power 0.75kW)			
Power supply	220V			
Dimensions	Length 400×width 560×height 900(mm)			
Weight	63kg (79kg including packaging)			

## III. Technical requirements

### Rotation and revolution speed of mixing paddle at high and low speed

The rotation and revolution speed of the mixing paddle at high and low speeds should meet the following requirements:



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	Rotation r/min	Revolution r/min
Low speed	140±2	62±2
High speed	285±3	125±3

## Working procedure

There are two modes, manual and automatic.

The automatic control program is: low speed 30s±1s, then low speed 30s±1s, at the same time automatically start adding sand and finish adding sand within 15s, high speed 30s±1s, stop 90s±1s, high speed 60s±1s.

The manual control has high, stop, low speed and sand feed button, and is interlocked with automatic.



## Sand feeding device

Completeness: The standard sand used in a test can all enter the bowl without splashing out.

Sand feeding device: The cement mortar mixer adopts a new sand feeding structure, the sand feeding speed is more uniform, and the time control is more precise.

## Mixing bowl



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The mixing bowl is made of stainless steel.

Mixing bowl depth:  $\approx 180\text{mm}$ .

Inner diameter of mixing bowl:  $\approx 202\text{mm}$ , the difference between the inner diameters in the vertical direction is not more than  $0.5\text{mm}$ .

Mixing bowl wall thickness:  $\approx 1.5\text{mm}$ .

The mixing bowl adopts a magnetic locking structure (more convenient to take and place, no shaking after fixing).



### Mixing paddle

The mixing paddle is made of stainless steel.

The shaft of the mixing paddle is locked by an eccentric locking device and a quick locking device, and the mixing paddle can be disassembled at any time for cleaning.

Mixing paddle total width:  $\approx 135\text{mm}$ ; effective length  $\approx 130\text{mm}$ ; mixing paddle wing width:  $8\text{mm} \pm 1\text{mm}$ ; mixing paddle wing thickness:  $6\text{mm} \pm 2\text{mm}$ .

The working gap between the mixing paddle and the bottom of the bowl and the wall of the bowl:  $3\text{mm} \pm 1\text{mm}$ .



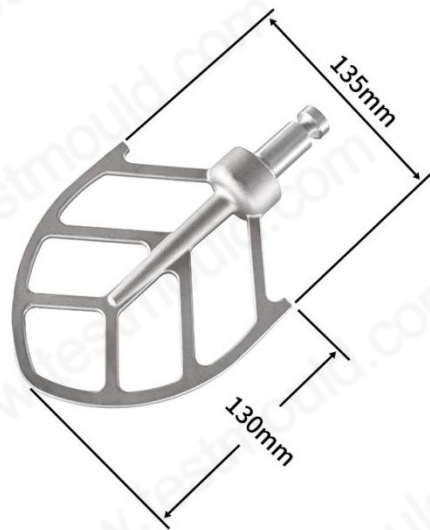
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### Running status

The sign of the revolution direction is marked on the eye-catching position of the equipment. The rotation direction of the mixing paddle is clockwise, and the revolution direction is counterclockwise.

The sound of the cement mortar mixer is normal when it is running, and there is no obvious shaking of the bowl and mixing paddle.

### Insulation

The electrical control of the cement mortar mixer is stable and reliable, and the insulation resistance of the whole machine is  $\geq 2M\Omega$

### Appearance

The outer surface of the cement mortar mixer shall not be rough or uneven.

The non-processed surface of the cement mortar mixer should be treated with antirust, and the paint on the outer surface should be flat, smooth, uniform and consistent in tone.

The machined parts of the cement mortar mixer must not have



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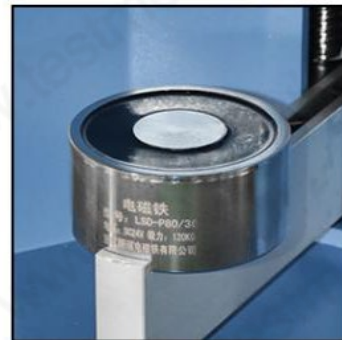
bumps, scratches and rust spots.

The cement mortar mixer is equipped with an automatic door to prevent dust from flying.

#### IV. Structure

The new sand feeding structure adopts the program control stepper motor to rotate at variable speed, drives the sand feeding bucket to rotate and pours the sand evenly into the mixing bowl. The sand feeding process is controlled by the program, which fully complies with the sand feeding speed specified in the standard.

Magnetic mixing bowl locking device: The mixing bowl is fixed by magnetic suction, and the one-button fixing is convenient and stable, avoiding the shaking of the mixing bowl during the mixing process.



Users can program the control mode of the test process according to their actual requirements, and the equipment automatically complete the test. It can realize the function of continuous loading and maintaining load under any load. There is no shock and vibration during the test, and the reading is stable. The test process can be simulated and reproduced.



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Adopts mechanical buttons and touch screen, there is no need to take off the gloves to touch the screen during operation. Commonly used functions can be controlled by mechanical buttons, which can protect the touch screen and prolong its service life.

The protective door adopts an automatic opening/closing door, can be easily opened/closed by using the button.

The mixing paddle adopts a quick lock joint without the need for auxiliary tools. By pulling the lock buckle downwards, the mixing paddle can be quickly disassembled for cleaning.



The mixing bowl rack adopts stepper motor and ball screw to achieve automatic lifting and accurate positioning.

The main shaft adopts stepper motor soft drive, combined with planetary gear device to reduce equipment noise and improve service life



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