1. Introduction

- Used for strength test at high temperature for round bar specimen, rectangular specimen, tubes, etc.
- Comply with GB/T4338 Metallic materials-Tensile testing at high temperature, HB5195 Tensile Test Method of Metals at High Temperature, GB/T2039 Metallic materials-creep and durable testing method in tension, HB5150 Metallic materials-durable testing method in tension.
- Composed of: high temperature furnace body, temperature measuring and control display system, heating element, temperature element, adjustable bracket device (for hydraulic universal testing machine), high temperature tensile grips and connectors, deformation measuring device, deformation sensor, acquisition system, water cooling circulating system, software, etc.

Features:

- Using cylinder type with bi-parting door structure and realize temperature control accuracy by the control of heating power percentage;

- The temperature controller adopts most advanced control mode of combination of self-developed man-machine interface HMI with central processing unit, with features of perfect control, intuitive operation interface, good control accuracy and reliable performance;
- Equipped with a removable support (for hydraulic universal testing machine), when using, just pull the high temperature furnace into test space; and when it is not necessary, just remove it easily;
- Using two-channel extensometer to measure deformation and adopts average signal value of two channels as real value. Using measurement device to convert deformation into 1-10V analog signal, with deformation resolution of 0.001mm.

2. Structure introduction

2.1 high temperature furnace body

- Adopting bi-parting structure, with good stainless steel outer wall, high temperature

resistant material-aluminium oxide furnace tube, with thermal-insulating ceramic fiber cotton between furnace tube and furnace wall, good insulating effect.

2.2 heating element : kanthal wire, with 3 temperature control range

2.3 temperature measuring element: adopt NiCr-NiSi (K-type) thermocouple,with 3 temperature control range

2.4 high temperature grips and connectors

Proper heat-resisting material is adopted as temperature requirements. Round specimen grip M12×Φ5mm/M16×Φ10mm (optional) or flat specimen grips 1-4mm/4-8mm (optional) are equipped as customers` requirements.

2.5 deformation measuring device: optional as customers` requirements.

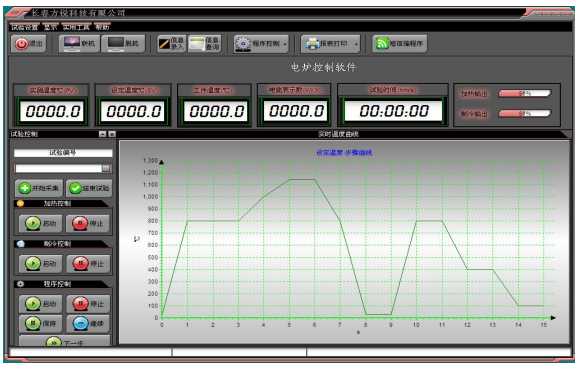
2.6 water cooling circulating system: composed of stainless steel water tank, circulating pump, PVC pipeline.

2.7 temperature measurement and control system

- Composed of temperature measuring element (thermocouple), central processing unit (PLC), imported temperature test meter (PID adjustment, with AT function), and computer man-machine interactive interface (HIM), etc
- Temperature and deformation can be monitored in the real time and temperature specimen curve plotted, with functions of curve storage, data retrieval, abnomal data alarming and protection.
- With independent running subsystem, temperature control subsystem, I/O control, analogue A/D subsystem, which all be composed to temperature control system.

- Real-time temperature display (0.1 ℃), real-time curve, historical curve, temperature at each point and storage time can be viewed online.
- Control mode: setting value mode, program mode, timing stop mode.
- Temperature module has AT function and automatic adjust PID parameters. Temperature rising and hold can be automatically completed by PID, accurate, easy to operate.

- With PC interface, can be connected with PC, on which display, set and control temperature parameters. When any abnormal condition occurs, there will be sound-light alarm.
- With overload, overcurrent, undervoltage, vacuum test and control, over temperature protection and give alarm and interlock protection function.
- With variety of optional extension function, satisfying with different technical requirements.



2.8 deformation acquisition module

With deformation acquisition module, deformation displayed on colorful touch controller. PC record test parameters in real time and plot deformatin-termperature curve, deformation-specimen curve, and can be saved and exported.

2.9 control software

- The upper computer has same control function as (HMI) temperature measurement and control system, recording test parameter, plotting curves, analyze test results, with optional SMS reminder function.

3. Technical Specification

1) working temperature: 300℃ -1200℃
2) long-time working temperature: 1100℃
3) Heating component: FeCrAl resistance wire
4) diameter of heating wire: Φ1.5mm
5) temperature element: K-type temperature thermocouple (including special compensation lead)
6) even heat area length: 100mm
7) measuring range segments: three-step control
8) measuring points of heat: 3
9) measuring sensitivity of temperature: 0.1℃
10) measuring precision of temperature: 0.2%

11) temperature accuracy

Test temperature (℃)	Temperature error (℃)	Temperature gradient (℃)
100-600	±2	3
600-900	±3	±4
900-1200	±4	±5

12) inner dimension of furnace(Dia×L).: Φ90×300mm

13) overall dimension of furnace(Dia×L): Φ320*380mm

14) Power: limit power 5KW

4. System Configuration

No.	Items	Spec.	Qty.
1	High temperature furnace body	**100℃-600℃**	1set
2	Touch screen intelligent temperature controller	**English test interface**	1pc.
3	K type temperature thermocouple	including special compensation lead wire	3pcs.
4	Temperature measurement and control system		1set
5	High temperature pull rod, connecting rod and rod connectors		1set
6	High temperature tensile grips	Grips for flat specimen: 1-4mm / 4-8mm (optional) Grips for round specimen: M12×Φ5mm/M16×Φ10mm(optional)	1set 1set
7	Circulating water cooling system	Including stainless steel water tank, pump, etc.	1set

For further information please contact:

TEST
MACHINES
AUSTRALIA

0418 369 505

sales@testmachines.com.au

www.testmachines.com.au