General Introduction

NO.	Product Name	Dimension(mm^3)	Power Supply	Required Gas
1	Contact Heat En-702	800*450*1000	AC220,1000W Socket 10A	Null
2	Convective Heat EN 367	470*600*600	AC220,200W Socket 10A	propane and compressed air(0~0.3Mpa adjustable)
3	Radiant Heat EN-6942	1200*500*1300	AC220,15000W Air switch C80	compressed air(0~0.3Mpa adjustable)
4	Small splashes of molten metal EN-348	770*580*910	AC220,200W Socket 10A	Oxygen and Acetylene
5	Large splashes of molten metal EN-373	1300*1500*700	AC220,200W AC380,15KW Socket 10A, Air switch 3 phase C30	Null

Contact Heat Transmission Test Apparatus

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Introduction

This instrument is designed according to EN702 standard,and it can meet requirements of Chinese standard AQ6103-2007 Protective gloves for welders.The test results includes contact temperature,time of starting test,threshold time etc.

The principle is:under set contact temperature,the measuring protective fabric contacts heating column while bearing 49N pressure,the time of temperature raising 10℃ from initial temperature is threshold time,which is used to evaluate thermal protective property.

Features

1. Adopt high temperature resisting metal heating element,contact diameter is ¢25.2±0.05 mm.
2. Heating temperature range is ambient~500℃,the HMI can show it directly.
3. Contact area of calorimeter is ¢25±0.05×D5±0.02mm,measuring range is not less than 500℃.
4. Contact force:49N,contact speed:5mm/s,calorimeter is controlled by Servo motor,which is automatic up and down.All test process are automatically controlled by program.
5. The platform of heating element can be moved horizontally,which is easy for put sample and make sure the operator's safety.
6. LCD display,PLC automatically records start time,threshold time,end temperature of threshold time,real-time temperature.

Introduction of main machined parts

No.	Name	Craft
1	Contact heat source and measuring parts	Stainless steel or brass machined as per standard
2	Control cabinet	Customized by reputable cabinet factory
3	Other auxiliary facilities	Thickness of iron plate is 1.5mm ,seamless welded cabinet with baking finish for cars
4	Heater	Made in China
5	Auxiliary fixtures	Aluminum processing

Main Components

No,	Name	Remark
1	Operation method	Touch screen operation
2	Software	Designed by AIC
3	PLC	Delta DVP 16EC00T3
4	Touch Screen	Weinview SK-043AE
5	Motor	Speed adjustable 5GU-90W/reinforced single phase
6	Screw pulley	Taiwan HIWIN
7	Temperature controller	Omron

Heat Transfer Index Test Apparatus

Introduction

A new term heat transfer index (HTI) has been introduced to avoid confusion with the thermal protective index (TPI) or other terms used in previous versions of this test. HTI calculated from the mean time in seconds to achieve a temperature rise of 24±0.2℃ when testing by this method using a copper disc and a starting temperature of 25±5℃. The heat transfer index provides a method of grading materials which does not imply that the material tested will give any precise protective time under actual use conditions.

Features

1.The apparatus is designed and manufactured according to EN 367 and ISO9151 standards.
2.The apparatus consists of the burner, the cover sheet and the specimen holder with copper calorimeter.
3.The cover sheet and the specimen holder are controlled via pneumatic transmission which is automatically controlled by software.
4.A horizontally oriented test specimen subjected to an incident heat flux of 80KW/㎡ from the flame of a Meker burner beneath it.
5.The heat passing through the specimen is measured by means of a small copper calorimeter on top of and contact with the specimen.
6.The time to record a temperature rise of 12 or 24℃ in the calorimeter is recorded in seconds.
7.The calorimeter cooling device shorten the test time.
8.The mean result for the three test specimens is calculated as the HTI.
9.The calibration of heat flow density of 80 kW/㎡ is performed automatically by software

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Introduction of main machined parts

No.	Name	Craft
1	Cover sheet	Customized corundum plate
2	Control cabinet	Customized by reputable cabinet factory
3	Other auxiliary facilities	Aluminum processing
4	Burner	USA Meker
5	Auxiliary fixtures	Aluminum processing or stainless steeel

Main Components

No,	Name	Remark
1	Operation method	Automatic controlled by computer
2	Software	Designed by AIC
3	Acquisition card	Taiwan ADVANTECH
4	Computer	Dell or Lenovo desktop
5	Copper plate heat flow meter	Customized
6	Button	ABB

Heat Radiation Resistant Test Equipment

Introduction

It is suitable to determine heat radiation resistance or thermal conductivity of protective gloves and protective clothing.

Features

1.Radiation source is made up of 6 groups heating bar,length of heat bar is 356mm±2mm,and the length of heating part is 178±2mm,diameter of heating bar is 7.9±0.1mm.
2.Radiation source uses PID temperature controller,controlling accuracy is ±1℃.
3.Heating capability of radiation source: Max.1200℃±5%,adopt PID adjustable controller.
4.Radiation heat flux:10～80 kw /m2
5.Sampling frequency if data acquisition card can reach 20Hz.
6.It has heat radiation flux sensor with quartz window and water circulating device,maximum measuring range is 100kw/m2.
7.It's supplied with copper calorimeter,which can measure the temperature change of sample's back.
8.Copper calorimeter is made of high conductivity oxygen-free pure copper.
9.Supplied with A and B type sample holders.
10.Sample moving device can be moved on platform freely.
11.Test parameter can be set by software,and it starts test automatically.It can test temperature rising 12s and 24s,heat flux density Q and heat transfer coefficient HF.

Introduction of main machined parts

No.	Name	Craft
1	Heat auxiliary facilities	Stainless steel and 2mm SS sheet machines,seamless welding
2	Sample holder	Stainless steel machines as per standard
3	Other auxiliary facilities	Aluminum or iron baking finish
4	Auxiliary fixtures	Aluminum processing or stainless steeel

Main Components

No,	Name	Remark
1	Operation method	Automatic controlled by computer
2	Software	Designed by AIC
3	Acquisition card	Taiwan ADVANTECH
4	Computer	Dell or Lenovo desktop
5	Heat flow meter	Imported
6	Heating bar	Customized

Molten Metal Splashes Impact Test Apparatus

Introduction

It is designed according to EN348 and ISO 9150,and it can meet requirements of Chinese standard GB8965.2-2009 “Protective clothing for welders” and GB/T 17599-1998 “Determination of behaviour of materials on impact of small splashes of molten meta”.

Projections of molten metal drops at a point on a vertical oriented test specimen and measurement of the number of the drops required to cause a 40℃ temperature rise in a sensor behind the specimen.

Features

1.This equipment is made up of burner,sample frame,welding rod driving device,burner flux controller,HMI device.
2.Oxy-acetylene torch is used to melt metal strip,caliber of welding tip is (1.2±0.1)mm
3.The step motor drives metal strip,and it can set its running speed.
4.Molten guiding device is supplied with high temperature resistant anti-sticking guide slot,45° angel.
5.Temperature sensor is used to measure temperature rising of sample’s back.
6.Supplied with heavy copper hammer to set fabric’s preload tension 175g±0.5g.
7.Data of temperature rising can be recorded automatically,and the molten drop numbers should be recorded by operator.

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Introduction of main machined parts

No.	Name	Craft
1	Contact parts of burner	Stainless steel machined as per standard
2	Auxiliary fixtures	Aluminum processing or stainless steeel
3	Other auxiliary facilities	Thickness of iron plate is 1.5mm ,seamless welded cabinet with baking finish for cars

Main Components

No,	Name	Remark
1	Operation method	Touch screen operation
2	Software	Designed by AIC
3	PLC	Delta DVP 16EC00T3
4	Touch Screen	Weinview SK-043AE
5	Motor	Speed adjustable 5GU-90W/reinforced single phase
6	Acetylene burner	Standard part
7	Temperature display	Delta

Molten Metal Splashes Resistant Test Apparatus

Introduction

It is suitable to measure the resistance of protective materials to liquid metal splash.During test,certain molten metal splashes on sample which is installed at specified angel.Put a PVC film on the sample's back to contact it.Record the change of PVC film after splashing to evaluate the damage situation.According to test result,using bigger or smaller metal to repeat the test until the damage of PVC film is least.

- Melt the metal with furnace having induction coils and high frequency generator.
- Far IR temperature measuring device is used to control temperature and measure splashing temperature.
- Temperature is set at 700°C~1800° by temperature controller.
- Step motor controls inclination speed and angel.

Features

1.Imported standard PVC film, weight is 300g±30g/m2.
2.Crucible of molten metal liquid,height 97mm,diameter of upper is 80mm,diameter of bottom is 56mm,volume 190ml.
3.High frequency heating device can have melting treatment on metals,temperature is not less than 1800℃.
4.Far IR temperature measuring device can measure temperature of molten metal liquid not less than 2400℃,accuracy ±1%.It's also supplied with circulating water cooling device.
5.Molten metal liquid toppling device,it's angel and speed are controlled by step motor.
6.Standard stainless steel sample frame can be used to install sample and PVC film.
7.Sandbox drawer at bottom is convenient to clean test residue.
8.Outer protection cover is supplied to protect operator

Introduction of main machined parts

No.	Name	Craft
1	Contact parts of burner	Stainless steel machined as per standard
2	Auxiliary fixtures	Aluminum processing or stainless steel machined
3	Other auxiliary facilities	Thickness of iron plate is 1.5mm ,seamless welded cabinet with baking finish for cars

Main Components

No,	Name	Remark
1	Operation method	Controlled by button
2	Cylinder	Taiwan Airtac
3	High frequency heater	15KW medium frequency,with circulating water cooling
4	IR temperature measuring device	Fixed online shortwave IR temperature sensor probe transmitter,800℃~2600℃
5	Graphite crucible	Customized

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