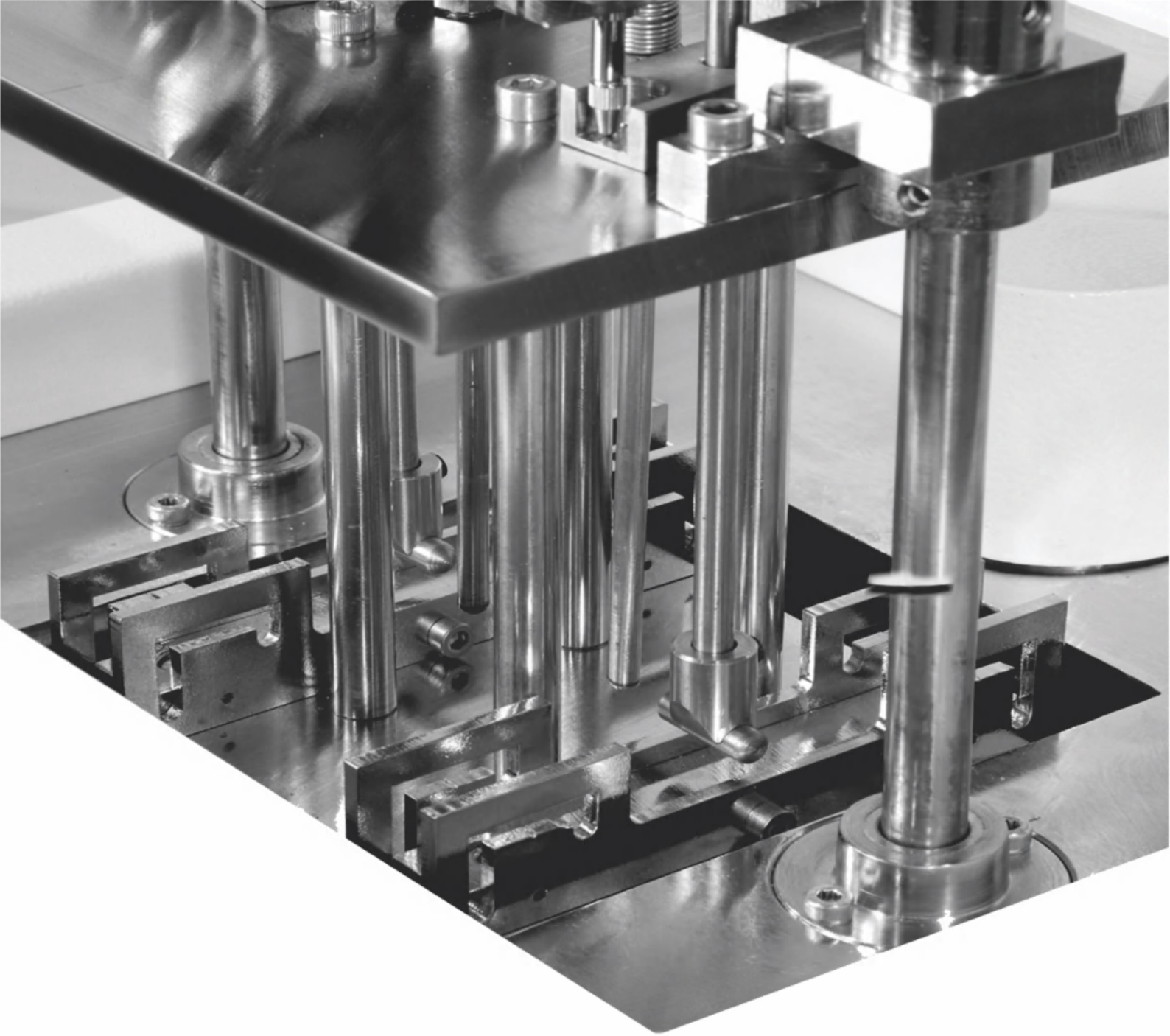


سازندگان تجهیزات پلاستیک ایرسا

SPiC

Raw Material Testing Machines

Static Material Testing Machine

Impact Tester

Universal Tensile Tester

Thermo Analyzer Tester (DSC)

CNC Milling Machine

Extrusion Plastometer Tester (MFR)

Copy Milling Machine

HDT/Vicat Tester

Sample Cuthing Press

Furnace

Product Testing Machines

combo thermal cycling unit

Notch Milling Machine

Oil Bath/ESCR

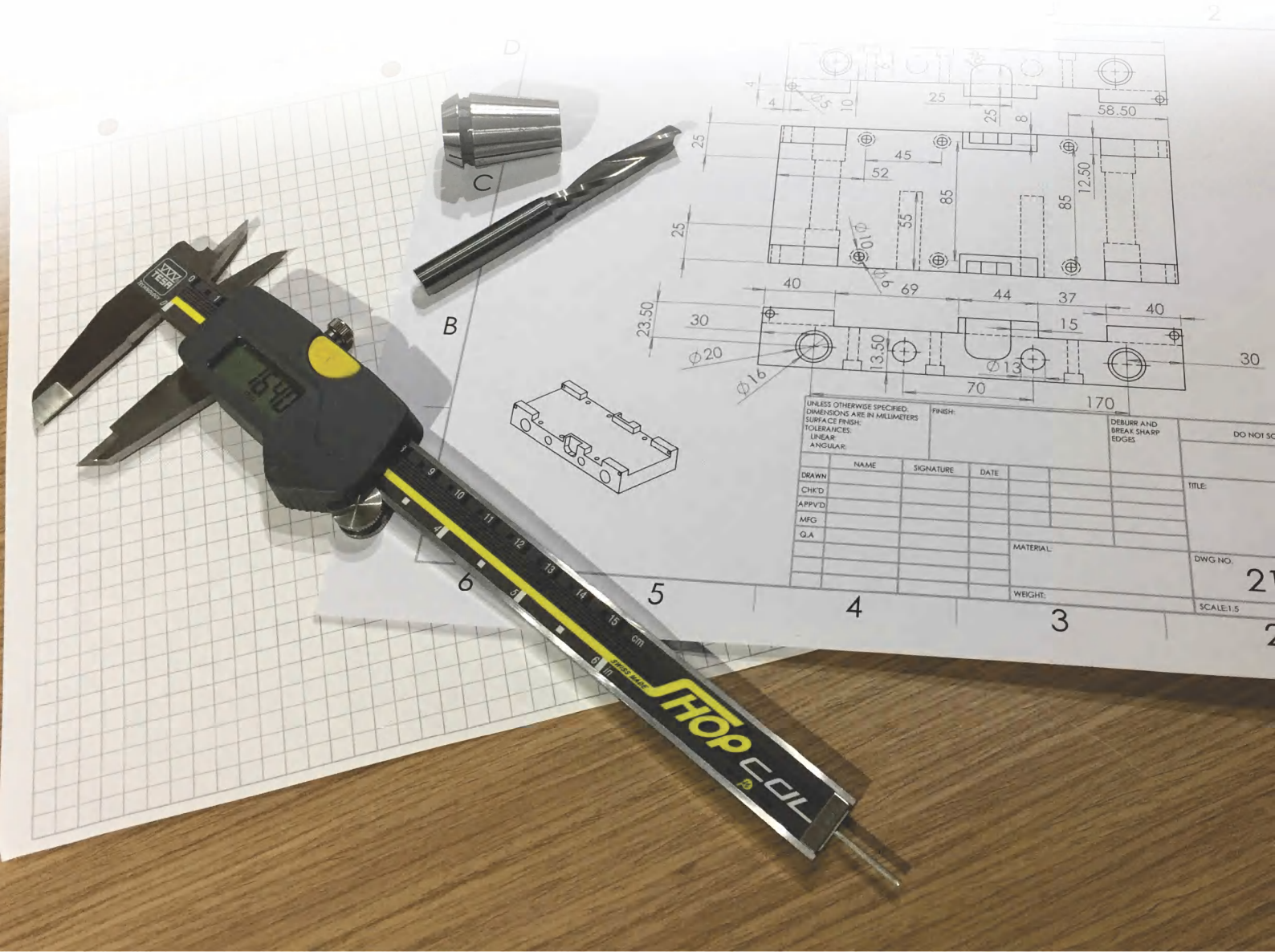
Airless Pressure

Water Test Tank

Test Oven

Endclosure Cap & Circometer

Constatnt R & D, Innovation and perfect quality is our main Philosophy.



Static Material Testing Machine

SPICO Twin column universal testing machine are use in all industries Wordwide for materials testing ,product testing, guality control and R & D application.

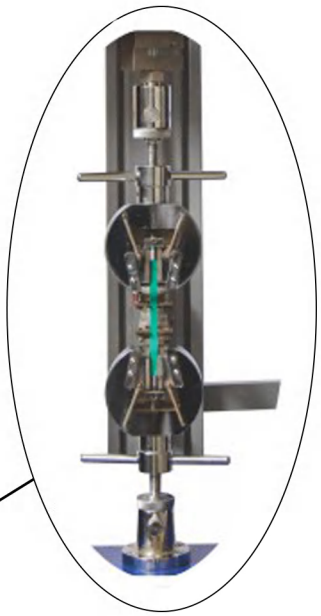
Control System Utitises in two models:

- Integral PC System running SPICOtest with 19”Touch Screen Monitor .
- Spico test on customer PC.

High efficiency and reversibility Ballscrew

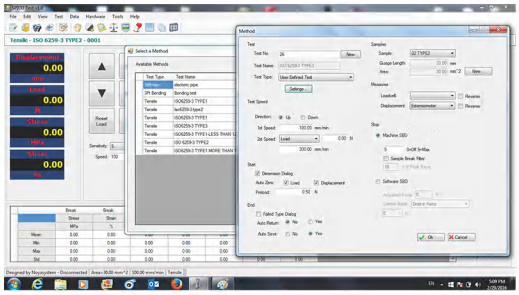
high Accrracy load cell

Delta servo motor with minimum back lash Gear box

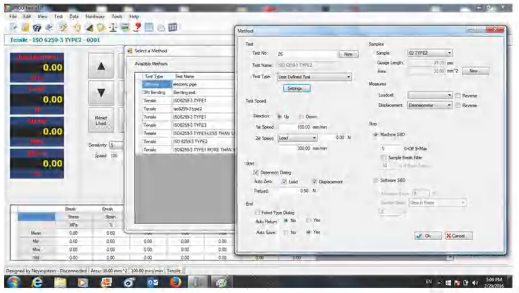


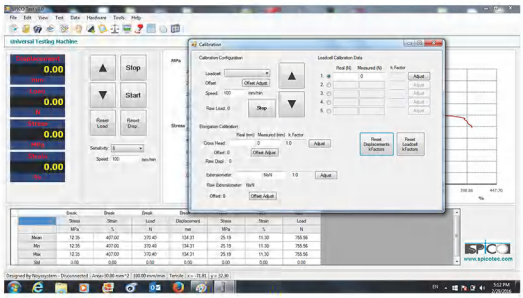
Universal Tensile Tester

SPICO one column is a powerful. flexible and Cost-effective testing solution.
All facilities we can find in Tensile Machine, make this unit to be used for test on Plastic, Elastomers, paper, Board, Textiles, Foams and Food stuffs.



SPICO Test software give possibility to perform:
Tensile, Compression, Bending, Fatigue, Creep, Tear, Peel, Load rate,Spring, User define test according to the international standard.

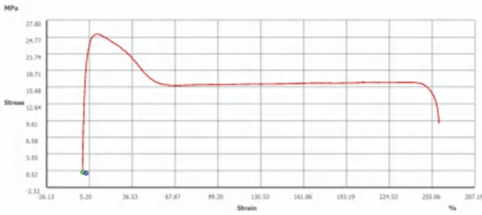




SPICO LAB
Test Report
ACCORDING TO ISO 6259-3

Test Descriptions:
SPEED : 50.00 mm/min
GAUGE LENGTH : 50.00 mm
SAMPLE THICKNESS : 8.00 mm
PIPE SIZE : 110*8.1
STANDARD : ISO6259-3
SAMPLE SHAPE : Rectangle
SAMPLE WIDTH : 10.00 mm
DATE : 2/3/2016
PIPE MATERIAL : PE100
BATCH NO : S77532

	Break Stress	Break Strain	Break Displacement	Break Load	Yield Stress	Yield Strain	Elasticity Young Modulus
	MPa	%	mm	N	MPa	%	mpa
Mean	9.09	261.08	130.54	763.36	25.28	10.52	135.04
Max	9.09	261.08	130.54	763.36	25.28	10.52	135.04
Min	9.09	261.08	130.54	763.36	25.28	10.52	135.04



Operator :

Manager :

Displacement Measuring Device

Non-contact Video Extensometer

Single Camera System | 3D Horizontal System | 3D Vertical System | Multiple Camera System

Long Distance Extensometer

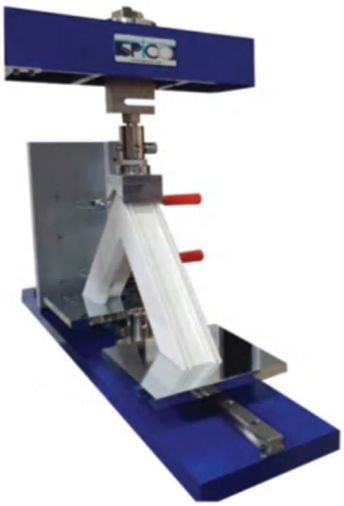
Environment Chamber

Temperature Chamber Spesification	
Temperature range	-70˚C - 300˚C
Width	400 mm
Depth	500 mm
Height	650 mm
Cooling System	LN_2
Inner Body	Stainless steel
Outer Body	Metal with hydrostatic cover
Automatic Air circulation	

Automatic temperature controller

Temperature Chamber

Veriety of Grips



CNC Milling Machine

Spico CNC machine is a table - top unit to make sample type being applied tensile, bending and impact test for plastic and composite material according to customer standard defined.

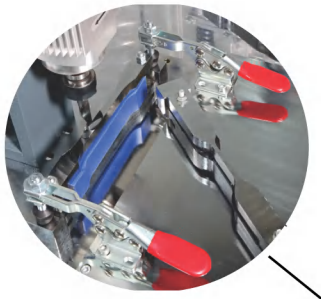
This machine is released by two type of table:

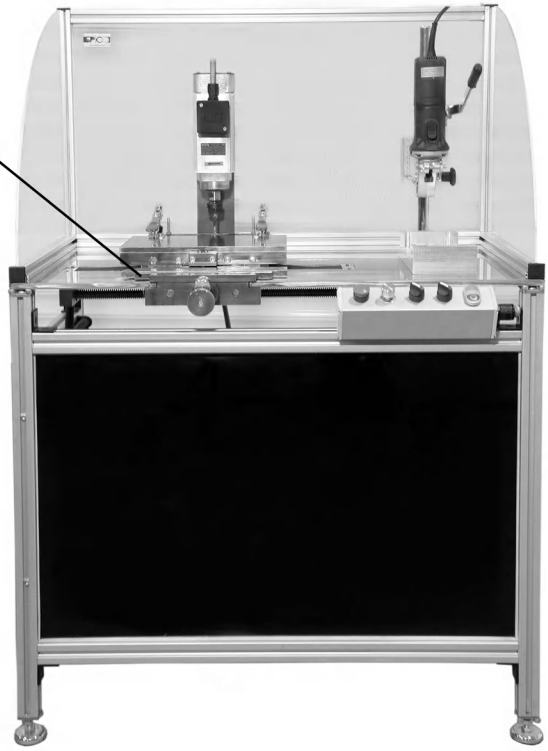
- Table may be equipped with clamping device to make pre-define sample form
- Table can be hold the sample sheet form to produce various type of shape according to the customer diagram

integrated controller must be supplied to one pc, running the user - friendly software one window.

customers advantage get maximum thickness sample up to 100 mm.

Copy Milling Machine & Sample Cutting Press





Hydraulic operated test **sample cutting press** will produce dummble form samples from plastic and rubber.
The sample cutters can be made to any size or shaperequired by the user or any international standard up to max.12mm thickness.

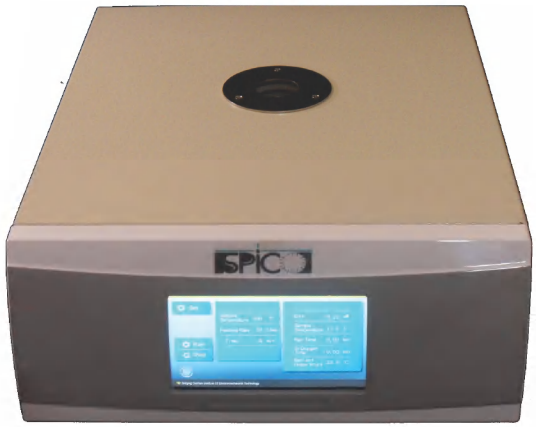
The SPICO copy milling machine is especially developed for the shapng of plastic samples for tensile tests, and other kinds of elongation tests.
Our intention was to produce amachine which can be used with the minimum of skill and training. The result is an extremely simple operated unit.The machine consists of solid base frame with a 2 axis linear movement milling top. A template is mounted on the machine wich provides the profile for the sample. Operator control is via an integrated panel at the front of the machine.

The SPICO universal pendulum impact tester is designed to determine the energy required to break or rupture specimens such as plastic and composite.

Both izod and charpy tests can be carried out by replacing pendulum and rise type.

wide range of pendulum may be equipped bye base unit from 1 to 50 J.

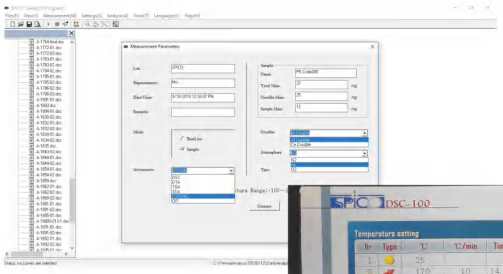
Thermo Analyze Tester



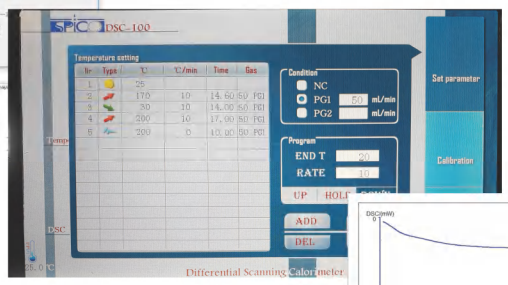
Diffrential scanning calorimeter (DSC)
is designed to determine the inner heat transition relating to temperature and heat flow , it is widely used in the field of polymer development, performance testing & quality control. DSC research and development includes the following field: glass transition temperature, melting point, cold crystallization, crystallization, phase transition, oxidation nduction time (OIT).Temperature control be done with heating and cooling to ensure accurate tempurature control.
DSC software on windows operation system inform facilities to calibrate temperature and sensitivity , perform various temperature segments, record and analyzes Test result.

Thermo gravimetric analyzer (TGA)
is in Tg, temperature, the temperature or cooling process, observe the quality with temperature or the change of time, the purpose is to study material thermal stability and components.widely used in plastic, rubber , coating, drugs, catalyst, inorganic materials, metal materials and composites, fields of research and development, optimizing process and quality control. Measurement and research material following characteristics: Thermal stability, decomposing process, adsorpation and desorpation , oxidation and reduction , ingredients quantitative analysis,additives and filler influence, moisture and volatiles reaction kinetics.

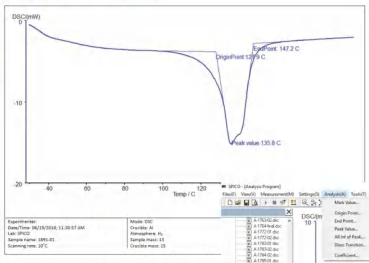
Software Features



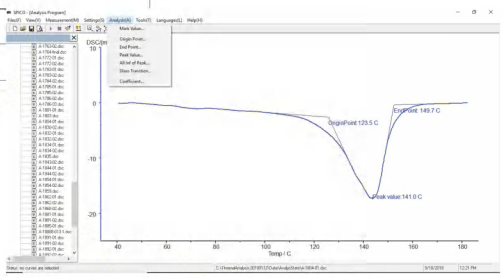
Choose Mesurment Device



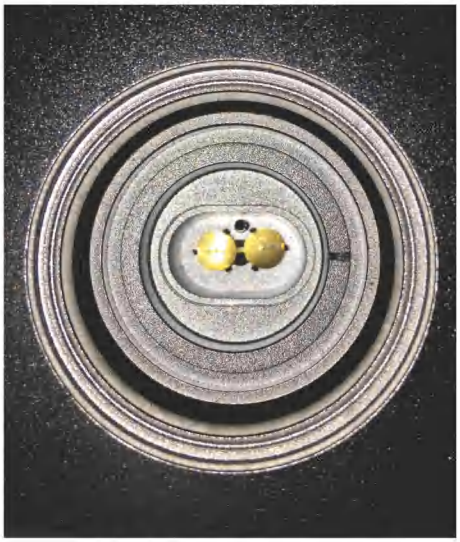
Parameter Setting



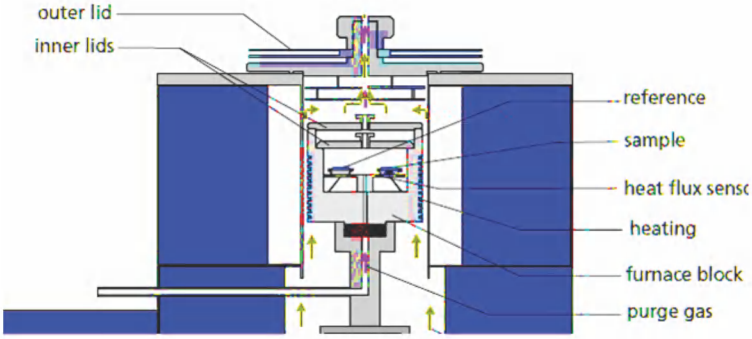
Testing Result



Softwar Analysis



Furnace Include Sensors DSC



Schematic Furnac Body DSC

Extrusion Plastometer (MFR) Tester

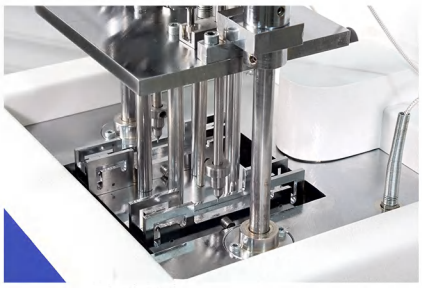
Our MFR (MFI) tester were made, as we found all our customers need the unit with best quality material to get advantage high accuracy fo result in long term usage.
According to method of standard ISO1133,we guarantee the accurate temperature distribution and constancy in heating channel, the reproducibility of result in always secured.
An automatic or manual extrudate cutter,a separating door and die plug are optionally available.

user friend cutting system

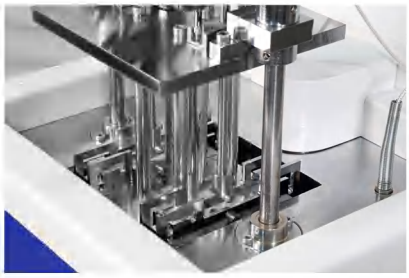
Different useful
accessories be supplied

The Compact bench tube furnace is available as split, non split, vertical and horizontal models. We design on board microprocessor control as user-friend keypad to perform any kinds of dynamic and ISO thermtemperature segments.

HDT / Vicat Tester

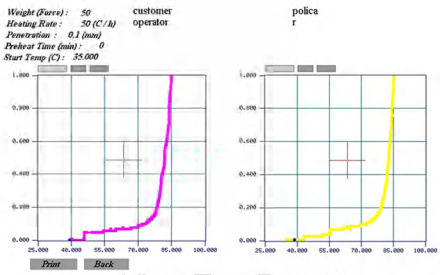


HDT Test Needle



Vicat Test Needle

The HDT/Vicat apparatus allows for multiple simultaneous testing of sample depending on the amountof test station available.The simple manually operated raise and lower function of the test station ensure easy access to the test sample support for sample loading and retrieval and after each test.
Each test station is fitted with a PT100 platinum resistance thermometer and separated one to control temperature.We design on board microprocessor with 7” touch screen provide simple screen to entre parameters and get result and curve of data recording for each station base on Temp.
VS Time , penetration (Deflection) VS Time and penetration VS Temp.



Vicat Test Report

Oil Bath / ESCR

Spico Oil Bath equipped with digital temperature controller, heater and a PT-100 platinum resistance thermometer accurately maintains the test temperature.To en sure temperature stability within the bath stirrer motor system is fitted. The bath is fitted with a stainless sample rack wich holds glass test tubes.

ESCR Accessories according to ASTM D1693:

Stainless stel sample holder
Punch and die set for samples
Notch device for preparing the samples
Bending clamp for bending the sample into a Ushape
Sample transfer tool
10 glass transfer tool
Eggypal (1Lit.)

Notch Milling Machine (SCG)

The test is determining the resistance to slow crack growth of pipes, expressed in terms of time to failure in a hydrostatic pressure test on pipe with machined longitudinal notches in the outside surface. The purpose of this fully automatic machines to prepare notched test pipe according to ISO 11379

HIGHLIGHT:

- Convident operation and clear visualisation via integratedtouch display.
- Fixation of the test sample with power-driven holder and torgue-limiting sensors.
- Automatic computing of the zero point of each other milling process: calibration by means of supplied reference gauge.

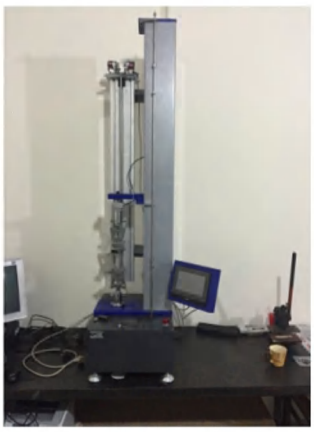
Service, Calibration & Maintenance

Hot-line and customer support

Any problem with your testing system must be solved quickly to save time and money. Spico hot-line telephone service and remote maintenance ensure our customer about operation of our units.

Calibration

We provide professional traceable calibration by high accurate instrument.



Combo Termal Cycling Unit

Automatic cooling system

Circulation system

Flow rate control system

Thermal cycling test on pipes and fitting system according to standard EN 12293.

Pump system with motorized valve

Sample cabinet

Hydrostatic/Burst Airless Pressure Unit

Spico Airless Pressure was born to perform as one of the most important test on thermoplastic pipes,hydrostatic and burst pressure test.Modular design be innovated possibility to supply any number of station in future easily with customer self, as we can improve Max.16 separated stations in same cabinet.
long time experience corporate best quality of usage parts give advantage, long service life.

Hydrostatic module, inclouded 4 individual station be able to control pressure with ±1 1% test pressure during test time.
Burst module , provides one linear burst pressure station up to 100 bar within 60-70 seconds.

Individual Hydrostatic/ Burst module

Pressure supply system

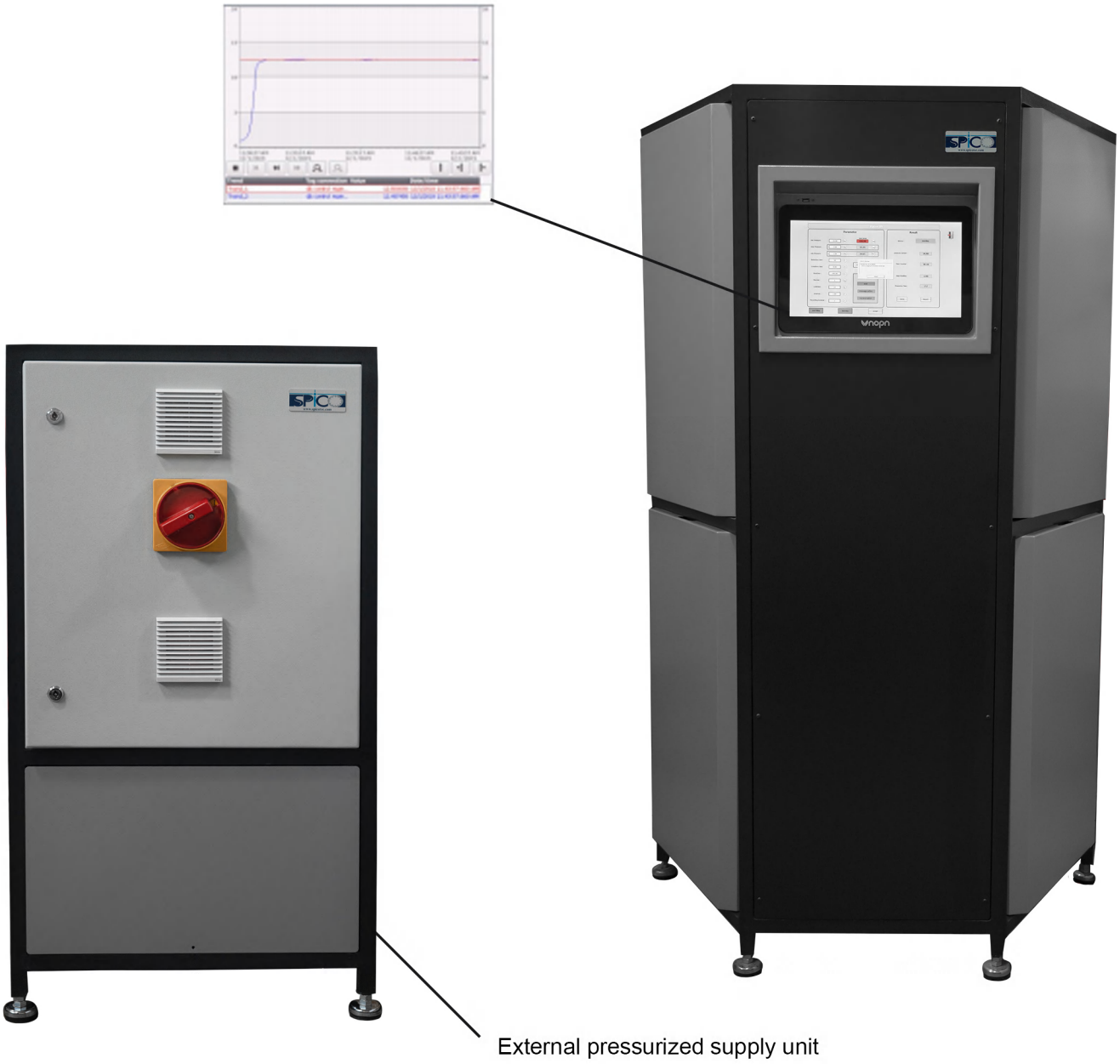
Professional Airless Pressure Unit

The MRS is determined by performing regression analysis according to ISO 9080 on the test data from the result of long-term pressure testing.

This results allows for service life time.

HPTSP-36,was designed for this purpose.

Its compact structure, flexibility and high percision remain unparalleled.



External pressurized supply unit

Water Test Tank

The internal pressure creep test is a test procedure for determining the strength of thermoplastic pipes. the samples are subjected to a constant hydrostatic internal pressure at a constatnt ambient temperature either for a specified period or until they fail.Test tanks are specially designed for testing thermoplastic pipes and fittings.The high reliability ,durability of the matrials used and the constant temperatures in the test tank with respect to both volume and time provide particularly reliable test conditions.there are a wide range of tank dimensions and station connections ,enabling the tanks to be flexibly adapted to various operating conditions.

HIGHLIGHT:

- Motor-operated lid.
- Automatic Water level control .
- All parts made from High-quality stainless steel.
- Uniform circulation system.

Spico Test Air Oven is one of the available method to supply condition temprature in hydrostatic pressere test. In other hand,optimal use of the internal space while perfect air circulation system keep high temperature stability and homogeneous.
Vertical extension system allows easy handling of sample outside the chamber.

In other hand, optimal use of the internal space while perfect air circulation system keep high temperature stability and homogeneous

Spico Water Test Bath be equipped with hydrostatic pressure unit to perform tests on pipes and fittings.
This unit was made to be able work on high temperature (Max. 95°C) during long-termproperly.
Control system would be done from airless unit so user have a complete control on the test tank as well as check and record the temperature during the test time.

Endclosure Cap & Circometer

Stainless Steel Endclosure Caps, used on hydrostatic internal pressure .the most important design on this kinds of caps would be simple and reliable assemble.

Advantage:

- Stainless steel guarantee long term usage with 160 bar pressure.
- The special simple venting valve,
- User friendly assembly,
- Range of Size: 16-160 mm (Pipe diameters).

Circometer

- Black and silver color,
- 0.05 mm vernier scale
- Made from INOX
- Range: 15-1100 mm

Technical Specification

Universal Tensile	UTM-S50-1	UTM-S50-2	UTM-S250-1	UTM-S250-2	UTM-S500	UTM-S1000
Test Force (Capacity)-KN	1	5	10	25	50	100
Structure	One column			Two column		
Space between Test Axis to Column-mm	105	105	203	203	203	203
Speed range-mm/min	0.05-1200			0.05-500		
Crosshead Travel (Excluding) grips-mm	800	800		1260	1260	1100
Width-mm	550			750	750	810
Depth-mm	500			478	478	575
Height-mm	1400			1800	1800	1800
Data Calculated Resolution	24 Bit					
Force Measurement Accuracy	Grade 0.5 accoriding to OIN EN ISO 7500-1					
Strain Measurement Accuracy (acc cross head)	±0.01mm					
Speed Accuracy	±0.2% of set speed					

Optional:

- **Be supplied with Extensometer**
- **Be supplied with Maximum four Load-Cell**
- **Various king of Grips according to customer standard**

Technical Specification

	CNC-S70/S100	CNC - S200	Milling Machine
Clamping range for blanks small	Max. Thickness 30 mm Max. Length 220 mm	—	Max. Thickness 30 mm Max. Length 170 mm
Clamping range for blanks big	CNC-S70 Max.Thickness 70 mm CNC-S100 Max.Thickness 100 mm Max.Lenght 250 mm	—	
Number of test bars	Max. 3	—	1
Number of test bars per Milling process	Max. 3	—	1
Rotational speed of spindle	3000-18000 per minute		
Milling program	Can be selected according to EN, ISO, ASTM		ISO 6259-3 Type 1&2
Noise Emission	100 dB (A) during milling process		
Width (milling table)	400 mm		
Depth (milling table)	300 mm		
Max. Cutting Area	100 mm	200 mm	
Width	730 mm		650mm(MSP1)
Depth	850 mm		500mm(MSP1)
Height	1100 mm		1400mm(MSP1)
Weight	290 kg		75kg
Voltage data	230 V, 50 Hz		
Milling table with mechanical clamping device			
Hard metal milling cutter Ø6, 8, 10, 12 mm (subject to standard)			
Operation via PC			

Optional:

- **Diamond milling cutter**
- **Industrial vacuum cleaner**
- **Close loop Controller**
- **Servo motor axe**

Technical Specification

Specification	Impact Tester	
Test Type	IZOD/CHARPY	
Intial Impact Angle	150	
Test Capacity	Izod 1~1j Charpy 1~5j	Izod 1~50j Charpy 1j~50j
	Best Test Range: 20 ~ 90% of the pendulum capacity	
Minimum Display Angle	0.05	
Feature	High Accuracy Electronic Display, Can Directly Read Impact Energy Value. Machine Is Equipped With Level Display Device To Make Sure Machine Accuracy After Is Fixed. With Specimen Impact Area And Collection Areato Enhance Safety And Reduce Clean Time. Replacing Different Capacity Pendulum To Do Tests If The Strength Of Specimen Has Big Discrepant. Vise To Clamp Specimen Is Equipped With Fixed Device To Make Specimen Clamp Position Is More Accurate. Multi-purpose In One Machine Can Replace Vise To Do IZOD/CHARPY Test. Multi Selection Of Various Unit Can Display.	
Optional	related energy test pendulum and various type of test vise. V-shape specimen notching machine. analysis software	
Dimension	90x30x76cm	90x38x76cm
Weight	100kg	160kg

Technical Specification

Thermo-analyzer tester	DSC	TGA
Temperature Range	Ambient to 800°C (Optional: -100 to 800°C with LN2)	Room Temp. To 1150°C (Optional: Room Temp. To 1350°C) (Optional: Romm Temp. To 1450°C)
Neasuring Range - Mw	0 - ±500mW	-
Heating Rate	0 - 80°C/min	1 - 80°C/min
Cooling Time - Min	-	15 min 1000 C to 100°C
Balance Measuring Scope	-	1mgr - 2gr
Temperature Resolution	0.1°C	
Resolution	0.01μW	0.01μg
Temperture Fluctuation	±0.1°C	
Temperatur Repeatability	±0.1°C	
Noise	0.01μW	-
Accuracy	0.01μW	-
Sensitivity	0.01μW	-
Display	7" LCD touch screen (24bit color)	
Temperature Control Mode	Rising Temperature, Constant Temperature (full Automatic Programmed Control)	Rising Temperature, Cooling Temperature, Constant temperature
Curve Scanning	Rising scan, cooling scan	
Atmosphere	-	Inert, Oxidizing, Reducible, Static & Dynamic
Atmosphere Control	Embedded Digital Flow Meter & Software Control	built-in gas flow meter, including switch two way gas and control flow volume
Data Interface	Standard Usb Connector	RSS-232, Special Software
-	Gas Flow Would Be Control And Measured By Solenoid Valves And Flow Meter	

Technical Specification

Extrusion Plastometer Tester (MFR)

Temperature range	+100 to 400°C
Temperature distribution travel in bore	0.3°C
Temperature sensors	2 pieces of Pt100
Temperature regulation	By PLC control
Temperature display resolution	0.1°C
Display	HMI Touch screen 4"
Introtuce	USB Flash memory to export test results
Load	2.16 / 5 kg (other weight can be supplied)
Dimension (WidthxDepthxHeight)	500x420x670 mm
Weight	35 kg
Power supply	230 V/ 50Hz

Accessories:
- **Piston rod**
- **Tungsten carbide die head according to standard**
- **Cylinder brush**
- **Cylinder cleaning rod**
- **Leveling rod**
- **Die gauge set (Go-no-Go)**
- **Filling funnel**
- **Observation mirror**

Furnace

Temperature range	1100°C	1200°C
Element type	Chrome-Alumel (Kanthal form Sweden)	
Work tubes diameter	2" inches	
Heated lengths	300 mm	
Thermocouple	2 Pieces of type-k (jumo from Germany)	
Power supply	220 V	

PID electronic temperature control with PC

Second On/Off control to protect temperature with Emergency-Stop

Programmable control with PC to performance 10 temperature/time programs

over temperature limiter

HDT/Vicat

Number of sample stations	2
Temperature range	Up to 300°C
Temperature resolution	±0.01°C
Temperature ramp rate	50°C/120°C
Digital Transducer Resolution - mm	0.01mm
HDT span support - mm	64mm/100mm
Bath capacity - lit	8 lit
HDT heads	1 per station
Vicat nibbles	1 per station
Special oil bath stirrer guarantee uniform temperature	
Manual Raise/Lower of test stations	
Solenoid operated cooling system	
Integrated safety thermostat	
Standard weights	
Supplied USB flash memory to record test report	

Oil Bath

Temperature range	Ambiant-100°C
Temperature accuracy	±0.2°C
Resolution	0.1°C
PT100 PRT sensor accurate	0.1°C
Number of glass tubes	10
PID electronic temperature control	
Integrated stirrer motor	
Stainless steel liquid bath	
Sample specimen holders (stainless steel)	
Stirrer motor system to ensure temperature stability	

Notch milling machine (SCG)

		SNM-1
Pipe outside diameter	mm	60-630
Max.pipe length	mm	1500
Notch length	mm	60-650
Wall thickness	mm	5-50
Adapter for test sample size 1:63-160 mm		✓
Adapter for test sample size 2:>160-315 mm		✓
Adapter for test sample size 3:>315-630 mm		✓
V milling head		•
Diameter	mm	200
Number of teeth		20
Rotational speed motor		700 rpm
Rapid longitudinal feed rate	mm/min	940
Slow longitudinal feed rate	mm/min	141
Cutting feed rate in line with standard ISO 13479		0.01 (mm/rev)/tooth
Swardextraction system		
Groove measuring instrument		✓
Noise emission		<70 dB(A)
Width	mm	1950
Depth	mm	850
Height	mm	2000
Weight	kg	390
Voltage data	230/400V,50/60 Hz (other voltage on request)	
Options	Exhavster (Sward extraction system)	

Technical Specification

Combo Thermal Cycling Unit	SP-TCT3	SP-TCT6
Max. number of test lines	3	6
Pressure range - bar	4 -16	
Temperature range cold cycle	15-30	
Temperature range hot cycle	50-95	
Temperature accuracy in specimen	at 95 °C ±1,5 °K, at 20 °C ±4 °K	
Adjustment accuracy temperature controller	± 0,2	
Pressure measurement accuracy - %	0. 5 % of Full Scale	
Pressure accuracy in specimen	+0,2/ +0,3/	0,1 bar at 10 bar -0,15 bar at 15 bar
Flow rate accuracy - %	± 5%	
Cycle time - min	3 ... 9.999	
Max. number of cycles each test	99.999	
Nominal capacity hot water tank - Lit.	3 00	5 00
Nominal capacity cold water tank - Lit.	3 00	5 00
Tank class	unpressurized	
Pumps delivery rate at 10 bar - m³/h	4	12
Pumps delivery rate at 16 bar - m³/h	3	10
Max. total cross secton at 10 bar/0,5 m/s - mm²	2000	6500
Plate heat exchanger for connecti n to external	included	
water cooling supply		
External cooling unit	optional	
Controls at unit by means	Software on PC	
Permissible operatig ambient temperature	+5 up to +25	
Max. relative air humidity	70 %, noncondensing	
Power supply voltage	230/400 V, 50 Hz	
Supply Unit Dimension	3000*1100*2100 (L*W*H)	3000*1300*2100 (L*W*H)

Technical Specification

Airless pressure/ Professional airless	HPTS-4	HPTS-8	HPTS-12	HPTS-16	HPTSP-36
Number of modules	1	2	3	4	9
Number of stations	4	8	12	16	36
Pressure range of unit up to	100 bar				200bar
Integrated high pressure noiseless pump (from Italy) capacity	11lit/min				15lit/min
Accuracy class for pressure transducer (from Switzerland)	0.5% of Full Scale				
Range of transducer may be order by customer	10, 16, 25, 40, 60, 100 bar				
330 bar high quality pressure reservoir from Hydac (Germany)	4lit				10lit
Special solenoid valves to control pressure with 0.01 bar resolution (Spico & ipt)					
15'' touch screen , pc base software full control panel with possibility make user defined test report					
Control panel switch box completely made and supplied from Germany (schneider)					
Individual control system for any module (4stations) guarantee separated strong full control with PLC (Germany)					
Data interface communication between controllers and software	fast ethernet (400HZ)				
External pressurized water supply unit	×				✓
Width(mm)	1150				
Depth(mm)	1000				
Height(mm)	1800				
Voltage data	230/400V,50/60HZ				

Modules

	Internal hydrostatic test	Burst test
number of stations	4	1
pressure range up to (bar)	100	100
individual PLC controller	✓	✓
regulated pressure increase (linear)	-	✓

Optional:

Individual burst station

Sens-line connection

Control equipped test bath

Master gauge

Technical Specification

Water test tank/Test oven	wTs-60	wTs-100	wTs-200	TOS-406	TOS-6010
Total volume(lit)	600	1000	2000	400	600
water depth(height)-mm	800	1300	1300	1100	1100
width(internal)-mm	1100	1000	1000	600	900
length(internal)-mm	650	750	1500	600	600
Height(external)-mm	1200	1150	1550	2000	2000
Width(external)-mm	1700	1400	1400	900	1200
Length(external)-mm	1130	2200	2200	1400	1400
Number of manifold slots(racks included connection)		4,8,10	8,12,16	6	10
Temperature range(℃)		min.amblant temp.t10/max95		40-120	
Water temperature (with chiller)		min20/max95		-	
Temperature adjust able in increments of			0.1 ℃		
Spatial and temporal temperature constancy		±0.5 ℃		±1.0℃	
Temperature control with regulating accuracy		±0.1		±0.2	
All parts coming into contact with water stainless steel					
Heating water	6kw	9kw	20kw	2kw	
Voltage data		230/400v,50/60Hz		230v	
Over temperature shut down					
Plc controller (Germany)and power switch box equipped inside airless pressure cabinet					
Pc base software be used full automatic control and monitoring and export temperature curve vs time					

Water test tank

Insulation stainless steel lid equipped by user friendly motorized system

Heat exchanger and connection to external chiller

Special hot water circulation pump with stainless steel pump body

Circulation system check with flow switch

Number of suspension rails	1	1	2	-
Automatic water level control				

Test oven

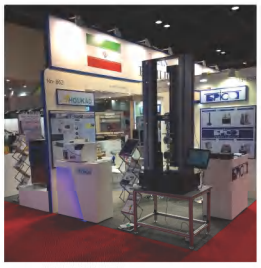
Insulation two layers door with satety switch

Perfect air circulation system guarantee stability of temperature in all point of inside chamber

Sliding rack system enables the individual connections to be fitted outside easily

Event

PAVILION
No- 868
Meeting Area
IranLab Expo
Registration Desk



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