

سازندگان تجهیزات پلاستیک ایرسا



Raw Material Testing Machines



Static Material Testing Machine



Impact Tester



Universal Tensile Tester



**Thermo Analyze Tester
(DSC/TGA)**



CNC Milling Machine



Extrusion Plastometer (MFR) Tester



Copy Milling Machine



HDT/Vicat Tester



Sample Cutting Press



Furnance

Product testing machines



Thermal Cycling unit



Notch Milling Machine



Oil Bath /ESCR



Airless Pressure



Water Test Tank

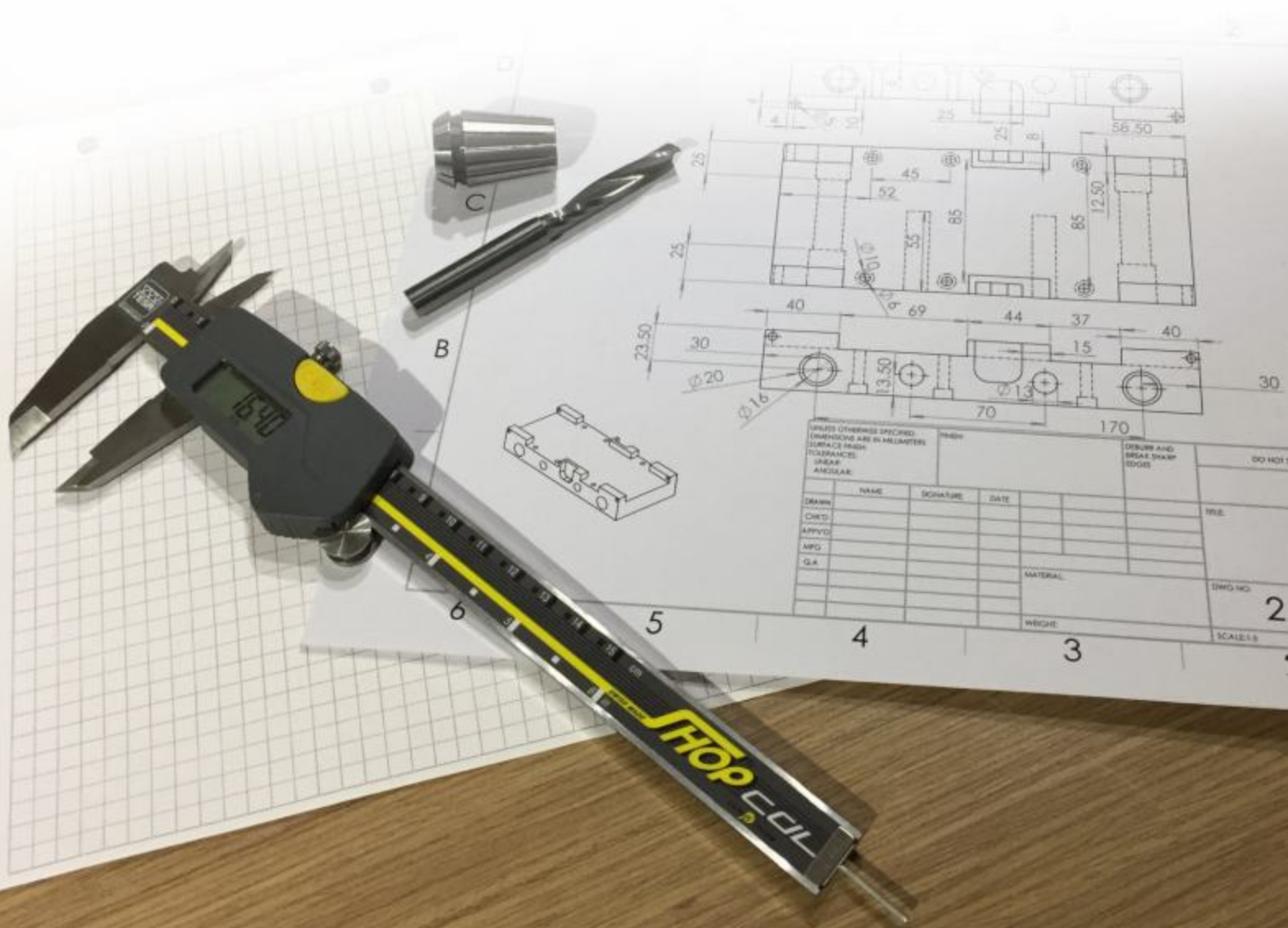


Test Oven



Endclosure Cap

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



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

Control System Utilizes in two models:

- Integral PC System running SPICO Test with 19" Touch Screen Monitor.
- 7" HMI Control Panel with running SPICO Test Software on Customer PC.



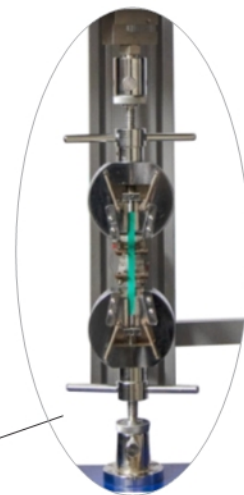
High efficiency and reversibility ballscrew from HIWIN



High Accrracy load-cell from Revere



Delta servo motor with minimum Back-lash Gear box from Apex



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.

SPICOTest 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

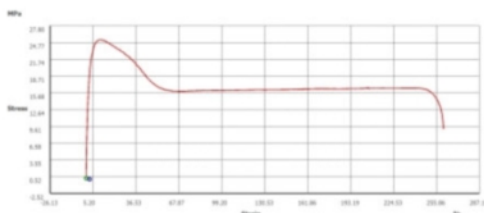
ACCORDING TO ISO 6259-3

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

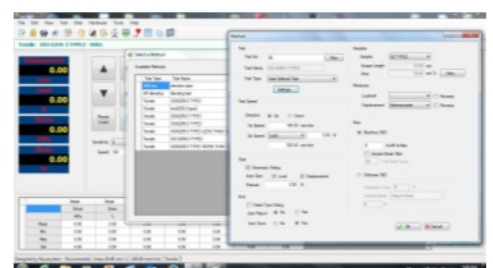
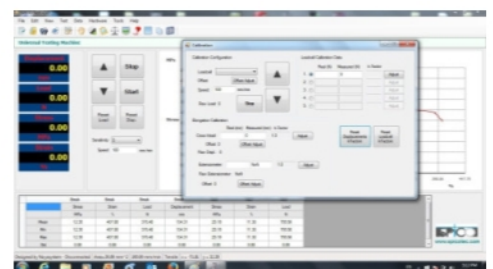
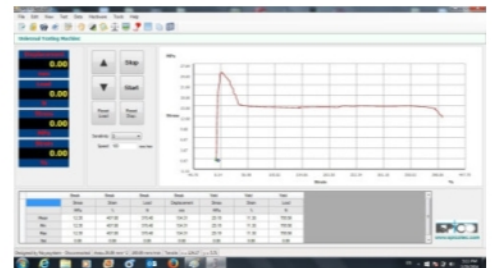
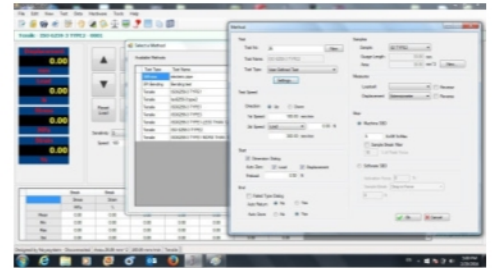
SAMPLE SHAPE : Rectangle
SAMPLE WIDTH : 10.00 mm
DATE : 2/3/2016
PIPE MATERIAL : PE100
BATCHNO : 577532

	Break	Break	Break	Break	Yield	Yield	Elasticity
	Stress	Strain	Displacement	Load	Stress	Strain	Young Modulus
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 :



Non-contact Video Extensometer



Long Distance Extensometer



Environment Chamber

Temperature Chamber Specification

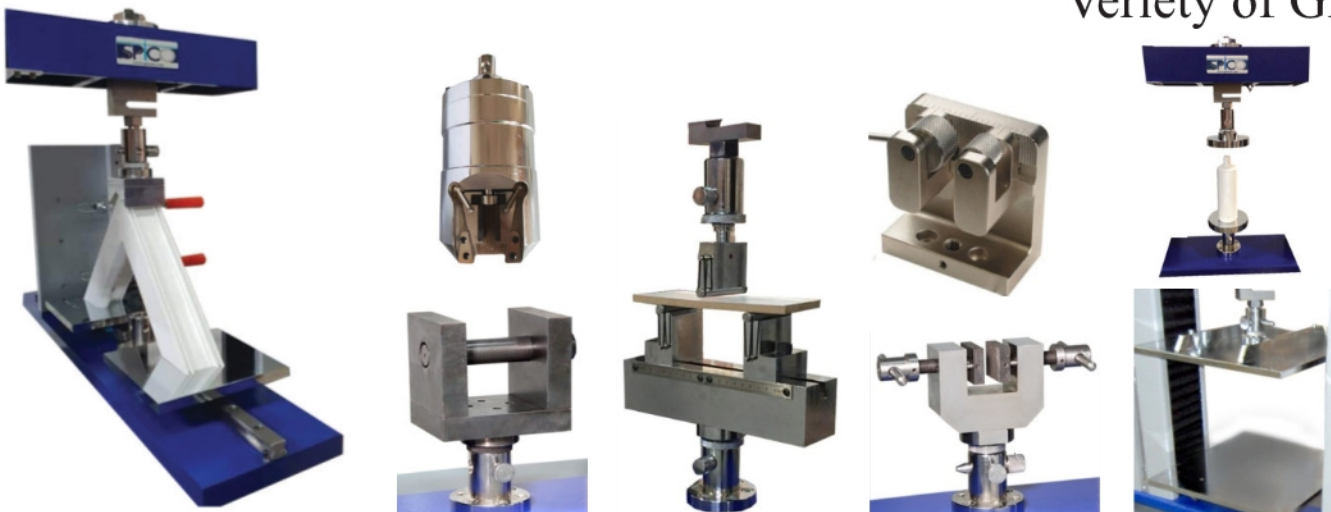
Temperature range	-70°C - 300°C
Width	400 mm
Depth	500 mm
Height	650 mm
Cooling System	LN ₂
Inner Body	Stainless steel
Outer Body	Metal with hydrostatic cover
Automatic Air circulation	

Automatic temperature controller

Temperature Chamber



Variety of Grips





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.

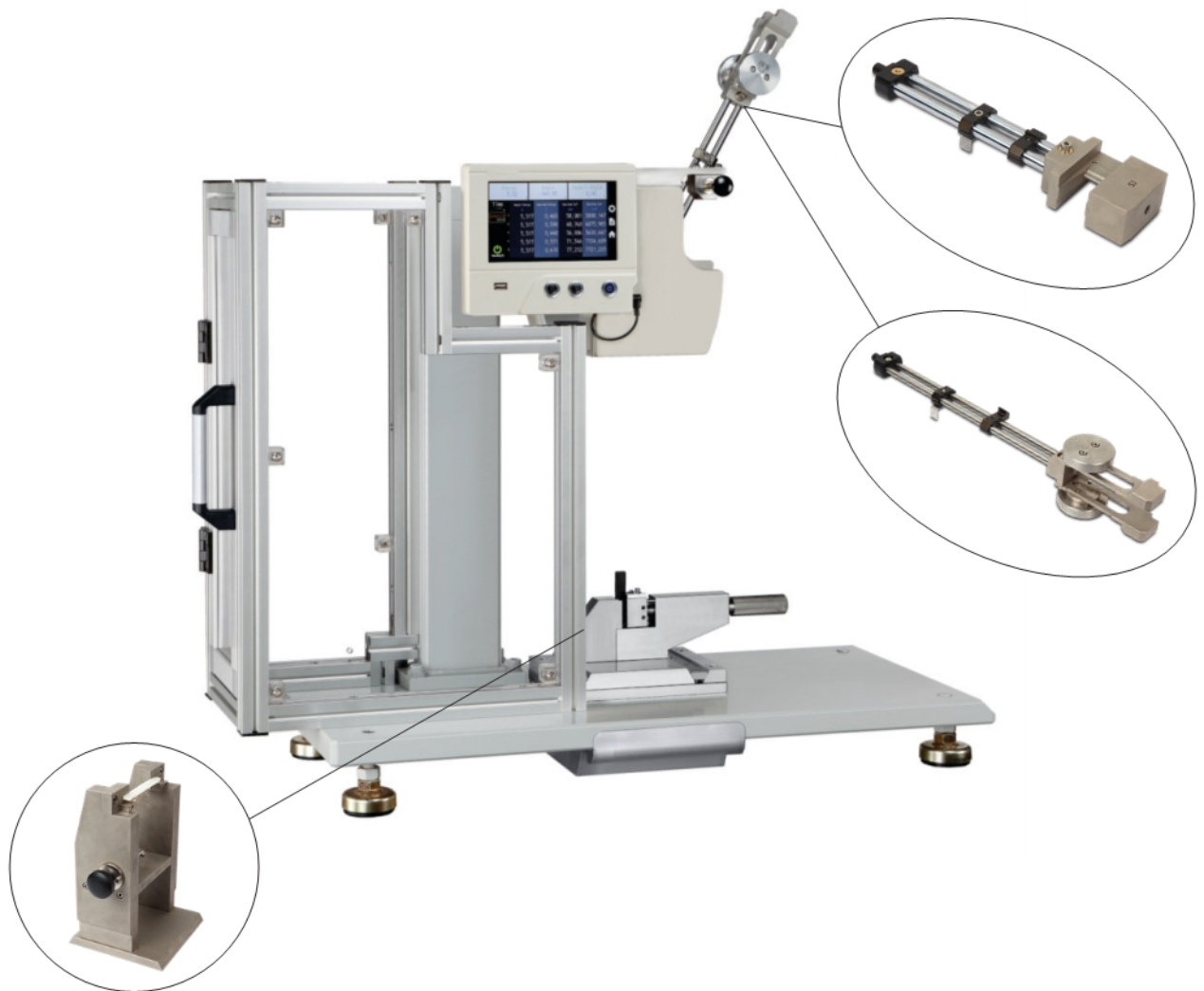


Hydraulic operated test sample cutting press will produce dumbbell form samples from plastic and rubber.

The sample cutters can be made to any size or shape required by the user or any international standard up to max. 12mm thickness.

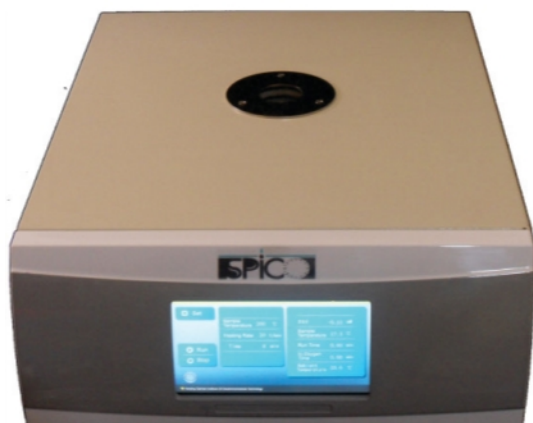
The SPICO copy milling machine is especially developed for the shaping of plastic samples for Tensile tests, and other kinds of elongation tests.

Our intention was to produce a machine which can be used with the minimum of skill and training. The result is an extremely simple to operate unit. The machine consists of solid base frame with a 2 axis linear movement milling top. A template is mounted on the machine which 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 by base unit from 1 to 50 J.

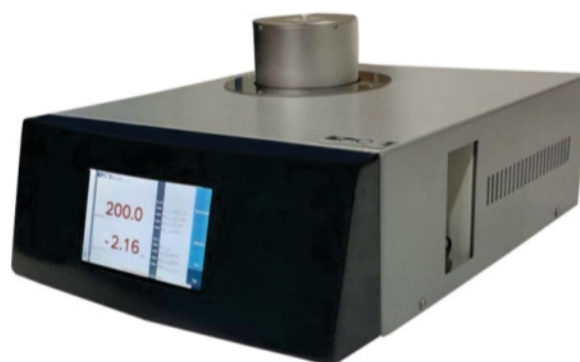


Differential scanning calorimeter (DSC)

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 induction time (OIT).

Temperature control be done with heating and cooling to ensure accurate temperature control.

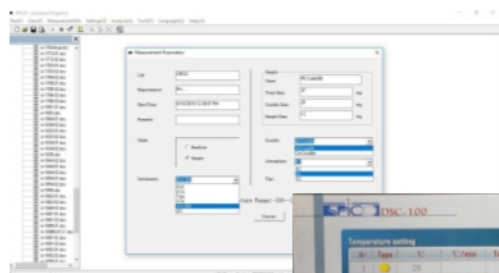
DSC Software on windows operating system inform facilities to calibrate temperature and sensitivity, perform various temperature segments, record and analyzes Test Result.



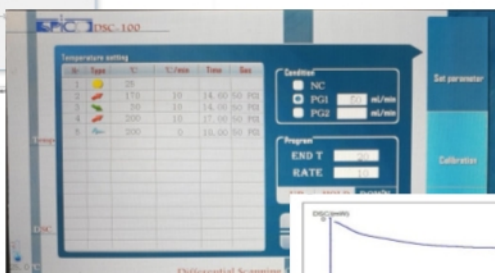
Thermo gravimetric analyzer (TGA)

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.

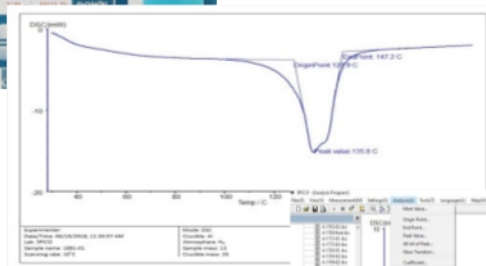
Measurement and research material following characteristics: Thermal stability, decomposing process, adsorption and desorption, oxidation and reduction, ingredients quantitative analysis, additives and filler influence, moisture and volatiles, reaction kinetics.



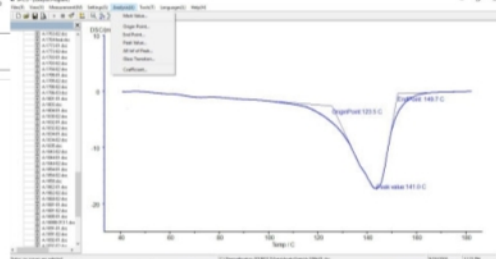
Choose Mesurment Device



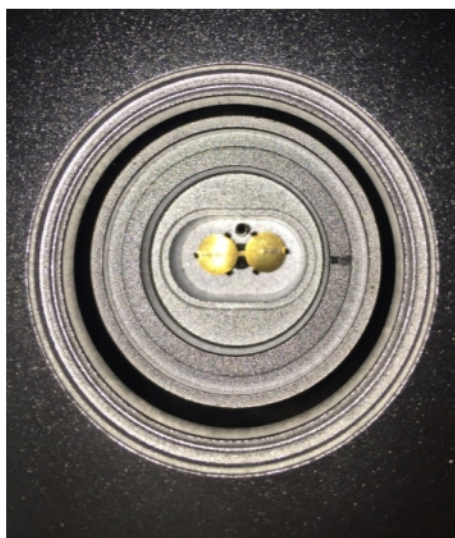
Parameter Setting



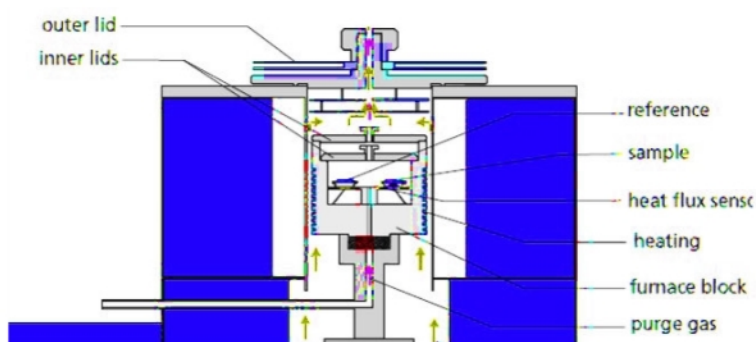
Softwer Analysis



Testing Result



Furnace In Clude Sensors
DSC

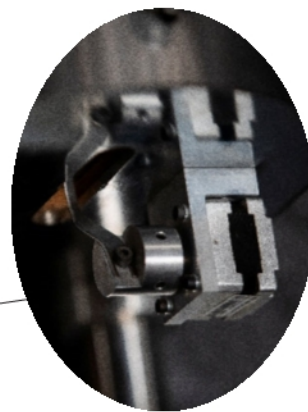


Schematic Furnace Body
DSC

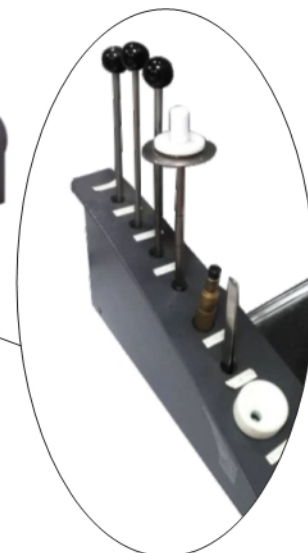
Our **MFR (MFI)** tester were made, as we found all our customers need The unit with best quality material to get advantage high accuracy of result in long term usage.

According to method A of standard ISO1133, we guarantee the accurate temperature distribution and constancy in heating channel, the reproducibility of result is always secured.

An automatic or manual extrudate cutter, a separating door and a 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-friendly keypad to perform any kinds of dynamic and ISOtherm temperature segments.





SPICO Oil Bath equipped with a digital temperature controller, heater and a PT-100 platinum resistance thermometer accurately maintains the test temperature. To ensure temperature stability within the bath stirrer motor system is fitted.

The bath is fitted with a stainless sample rack which holds glass test tubes.

ESCR Accessories according to ASTM D1693:

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





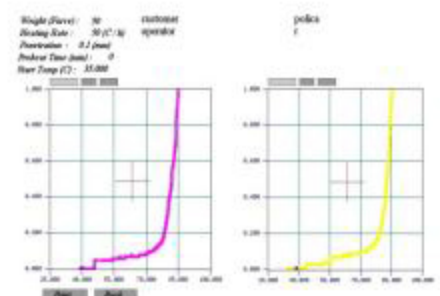
The HDT/Vicat apparatus allows for multiple simultaneous testing of sample depending on the amount of test stations available. The simple manually operated raise and lower function of the test stations ensure easy access to the test sample support for sample loading and retrieval and after each test. 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 enter 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.



HDT Test Needle



Vicat Test Needle



Vicat Test Report

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 watches in the outside surface.

The purpose of this fully automatic machine is to prepare notched test pipe according to ISO 13479.

HIGHLIGHT:

- Convenient operation and clear visualisation via integrated touch display..
- Fixation of the test sample with power-driven holder and torque-limiting friction coupling.
- Automatic computing of the zero point of each other milling process; calibration by means of supplied reference gauge.



Hot-line and customer support

A 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.





**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

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 stations in future easily with customer self, as we can improve Max.36 separated station in same cabinet. long time experience corporate best quality of usage parts give advantage long service life.

Hydrostatic module inclorded 4 indivisual stations be able to control pressure within ± 1 % test pressure during test time.

Burst module , provides one linear burst pressure station up tp 100 bar within 60-70 seconds.



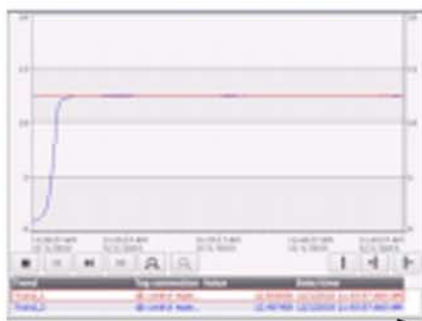
Hydrostatic/Burst module



Pressure supply system

The **MRS** is determined by performing regression analysis in according with ISO 9080 on the test data from the result of long-term pressure testing, this results allows for service lifetime.

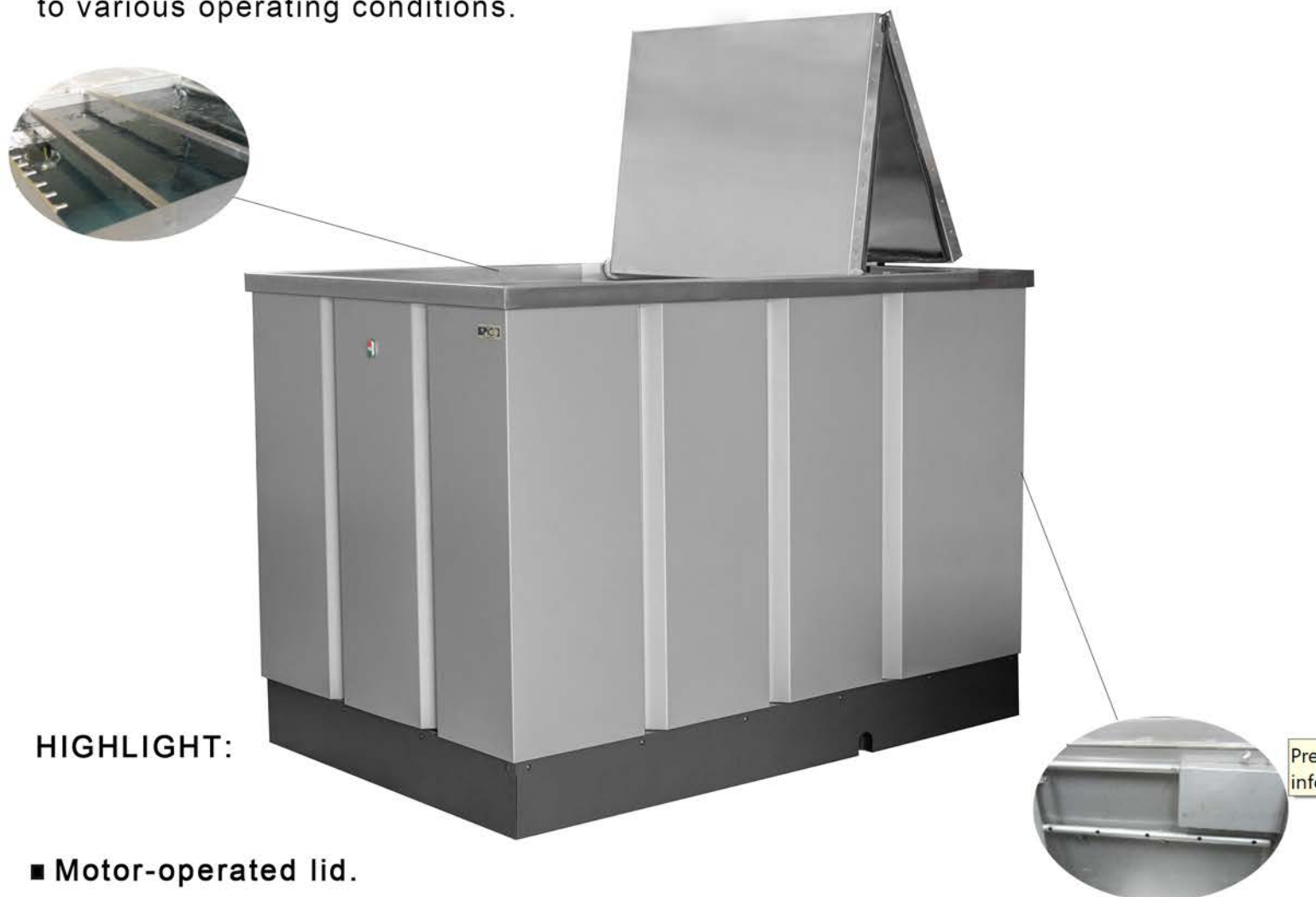
HPTSP-36, was designed for this purpose. its compact structure, flexibility and high percision remain unparalleled.



External pressurized supply unit



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 constant 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 materials 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 connection options, 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.



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



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	406	406	406	406
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 according to OIN EN ISO 7500-1					
Strain Measurement Accuracy	±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

	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.Length 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

Specification

Test Type	IZOD/CHARPY	
Initial 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	<p>High Accuracy Electronic Display, Can Directly Read Impact Energy Value.</p> <p>Machine Is Equipped With Level Display Device To Make Sure Machine Accuracy After Is Fixed.</p> <p>With Specimen Impact Area And Collection Area To Enhance Safety And Reduce Clean Time.</p> <p>Replacing Different Capacity Pendulum To Do Tests If The Strength Of Specimen Has Big Discrepant.</p> <p>Vise To Clamp Specimen Is Equipped With Fixed Device To Make Specimen Clamp Position Is More Accurate.</p> <p>Multi-purpose In One Machine Can Replace Vise To Do IZOD/CHARPY Test.</p> <p>Multi Selection Of Various Unit Can Display.</p>	
Optional	<p>related energy test pendulum and various type of test vise.</p> <p>V-shape specimen notching machine.</p> <p>analysis software</p>	
Dimension	90x30x76cm	90x38x76cm
Weight	100kg	160kg

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: Room Temp. To 1450°C)
Measuring 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
Temperature Fluctuation	±0.1°C	
Temperature 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	

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"
Introduce	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	

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

Notch milling machine (SCG)

Pipe outside diameter	mm	60-360
Max.pipe length	mm	1500
Notch length	mm	50-650
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		680rpm
Rapid longitudinal feed rate	mm/min	940
Slow longitudinal feed rate	mm/min	140
Cutting feed rate in line with standard ISO 13479		0.01 (mm/rev)/tooth
Swarf extraction system		
Groove measuring instrument		✓
Noise emission		<70 dB(A)
Width	mm	1950
Depth	mm	1000
Height	mm	2200
Weight	kg	430
Voltage data	230/400V,50/60 Hz (other voltage on request)	
Options	Exhavster (Sward extraction system)	

	SP-TCT3	SP-TCT6
Combo Thermal Cycling Unit		
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 section at 10 bar/0,5 m/s - mm²	2000	6500
Plate heat exchanger for connecti n to external water cooling supply	included	
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)

Water test tank/Test oven	wTs-100	wTs-200	TOS-406
Total volume(lit)	1000	2000	400
water depth(height)-mm	1300	1300	1100
width(internal)-mm	1000	1000	600
length(internal)-mm	750	1500	600
Height(external)-mm	1150	1550	2000
Width(external)-mm	1400	1400	900
Length(external)-mm	2200	2200	1400
Number of manifold slots(racks included connection)	4,8,10	8,12,16	6
Temperature range(°C)	min.ambient temp.t10/max95		40-120
Water temperature (with chiller)	min20/max95		-
Temperature adjust able in increments of	0.1 °C		-
Spatial and temporal temperature constancy	± 0.5 °C		± 1.0℃
Temperature control with regulating accuracy	± 0.1		± 0.2
All parts coming into contact with water stainless steel			
Heating water	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	2	-
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Automatic water level control

Test oven

Insulation two layers door with safety 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



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