



alarge

'LABORATORY TECHNOLOGIES'



AGILE, ROBUST AND SMART TEST SYSTEMS



ALARGE ALIÇ AĞACI MAK. ELEK. AR-GE SAN. TİC. LTD. ŞTİ.

HISTORY

1997 - Alarge Alıç Ağacı Machine Electronic R&D Company was established.

1997 - Butt Welding Machines manufacturing has started.

1999 - Alarge participated in TUYAP Fair for the first time. Alarge has been participating in the TUYAP fair regularly.



2001 - Hydrostatic Pressure Test Machines manufacturing has started.

2000 - Alarge participated in Frankfurt ISH Fair for the first time. Alarge has been participating in the Frankfurt ISH Fair regularly.

2002 - Alarge participated in Munich IFAD Fair for the first time. Alarge has been participating in the Munich IFAD Fair regularly.

2005 - Electrofüzyon Device manufacturing has started.



2007 - Izod Charpy Pendulum Impact Device has been developed.



2008 - GRP Pressure Test Device was manufactured for pipes with a diameter of 1200 mm and a length of 12500 mm.



2009 - GRP Pressure Test Device was manufactured for a pipe with a diameter of 3000 mm and a length of 12500 mm.

2009 - Split Disc manufacturing has started.

2009 - Chemistry Laboratory, established by Alarge at TSE, is located in TSE Gebze Campus.

2011 - The first Manual Vicat Test Machine was developed, followed by an Automatic Vicat Test Machine

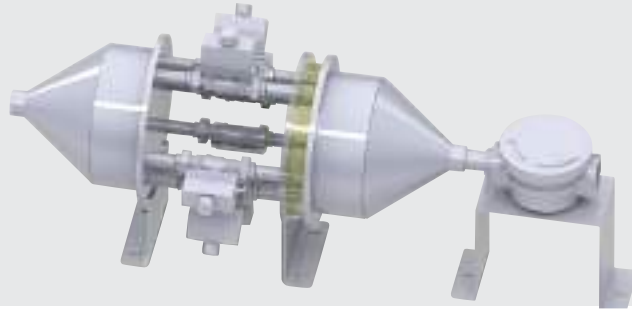
2012 - Türkiye State Hydraulic Works Quality Control Laboratory Şanlıurfa Project established by Alarge

2013 - The first CNC Sample Cutting Device was produced.

2013 - Alarge participated in Dusseldorf K Rubber and Plastic Fair for the first time. Alarge has been participating in the K Düsseldorf Fair every three years.

2017 - Gas Meter Tester was produced.

2017 - Quality Control Laboratory established by Alarge for a private pipe company in Azerbaijan



2014 - Pressure Cycle Test Equipment was developed.

2014 - Turkiye State Hydraulic Works Quality Control Laboratory Ankara Project

2018 - OIT was developed.

2018 - Quality Control Laboratory established by Alarge at SupraTherm Company in Romania



2015 - Finger Joint was developed.



2020 - Microtome was developed.

2016 - Wire Packaging Machine was developed.

2016 - Türlab Laboratory Project established by Alarge at Ankara

2021- Friction Coefficient Test Device was manufactured.

2021 - Film Sample Cutting Device was developed.



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PRESSURE TEST SYSTEMS

HYDROSTATIC PRESSURE TEST EQUIPMENT

GRP PIPE PRESSURE TEST SYSTEMS

AL TANK TEST TANKS

END CAPS

AL AIR - AIR TANK PRESSURE TEST MACHINE

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PRESSURE TEST SYSTEMS

HYDROSTATIC PRESSURE TEST EQUIPMENT

GRP PIPE PRESSURE TEST SYSTEMS

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AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.

HYDROSTATIC PRESSURE TEST MACHINES

**Up to 3000 bar*



LOW OPERATING COSTS

Compliance with
Standards

TS EN 12201-1,2

TS EN ISO 1167-1,2

TS EN 715, TS 418,

EN 921, ASTM-D 1598,

TS EN 1447, TS EN 12107

Determine the
long-term fatigue
strength of PE, PVC,
PP and PE-R, GRP
compositesteel pipes.

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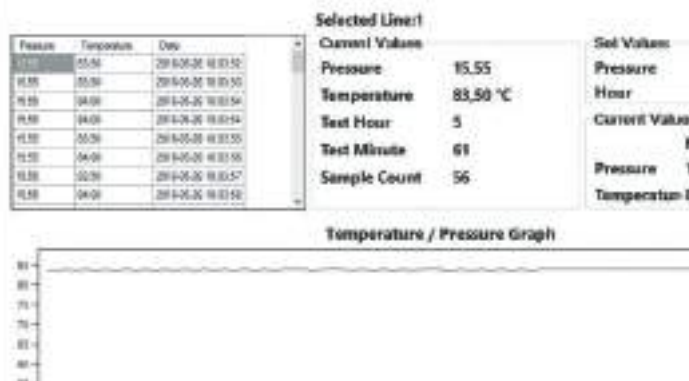
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HYDROSTATIC PRESSURE TEST MACHINES

TECHNICAL SPECIFICATIONS

- ✓ Ability to test Instant, 165 h, 1000 h and 10000 h experiments in independent test stations
- ✓ Testing each line at independent pressure and time values
- ✓ Synchronization up to 100 stations no water hammer
- ✓ Superiority over conventional two-valve chopper systems
- ✓ 10 times longer valve life than two valve technology
- ✓ Easy filling with high flow pump
- ✓ Energy saving
- ✓ Reaching desired pressure in a very short time due to airless 4 valve system and accumulator water hammer
- ✓ 10 times lower wastewater
- ✓ Stainless steel installation system
- ✓ Top quality electrical and wiring system
- ✓ Easy service with standard electrical control panel and components
- ✓ Very low operating cost
- ✓ Remote service
- ✓ Long life

Remote service and data transfer with ES 232/485 and ethernet module.



Fill	Burst	System Pressure	0.0 bar	2:09:20
		1.test pressure	0.00 /	
		1.test time	0 /	
		2.test pressure	0.00 /	
		2.test time	0 /	
		3.test pressure	0.00 /	
		3.test time	0 /	
		4.test pressure	0.00 /	
		4.test time	0 /	

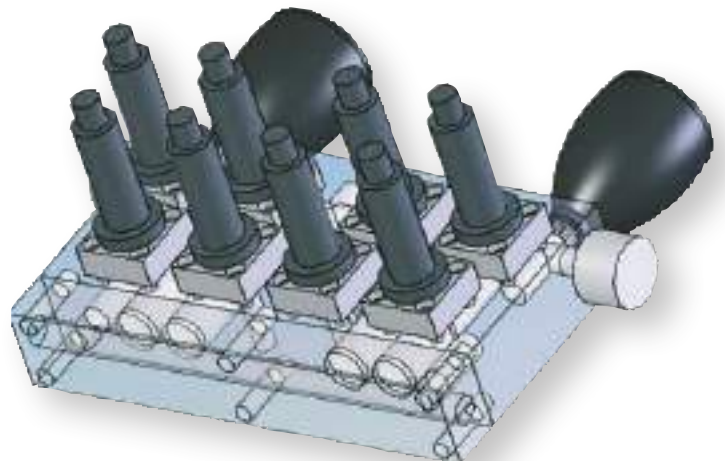
CONTROL SYSTEM



SOFTWARE

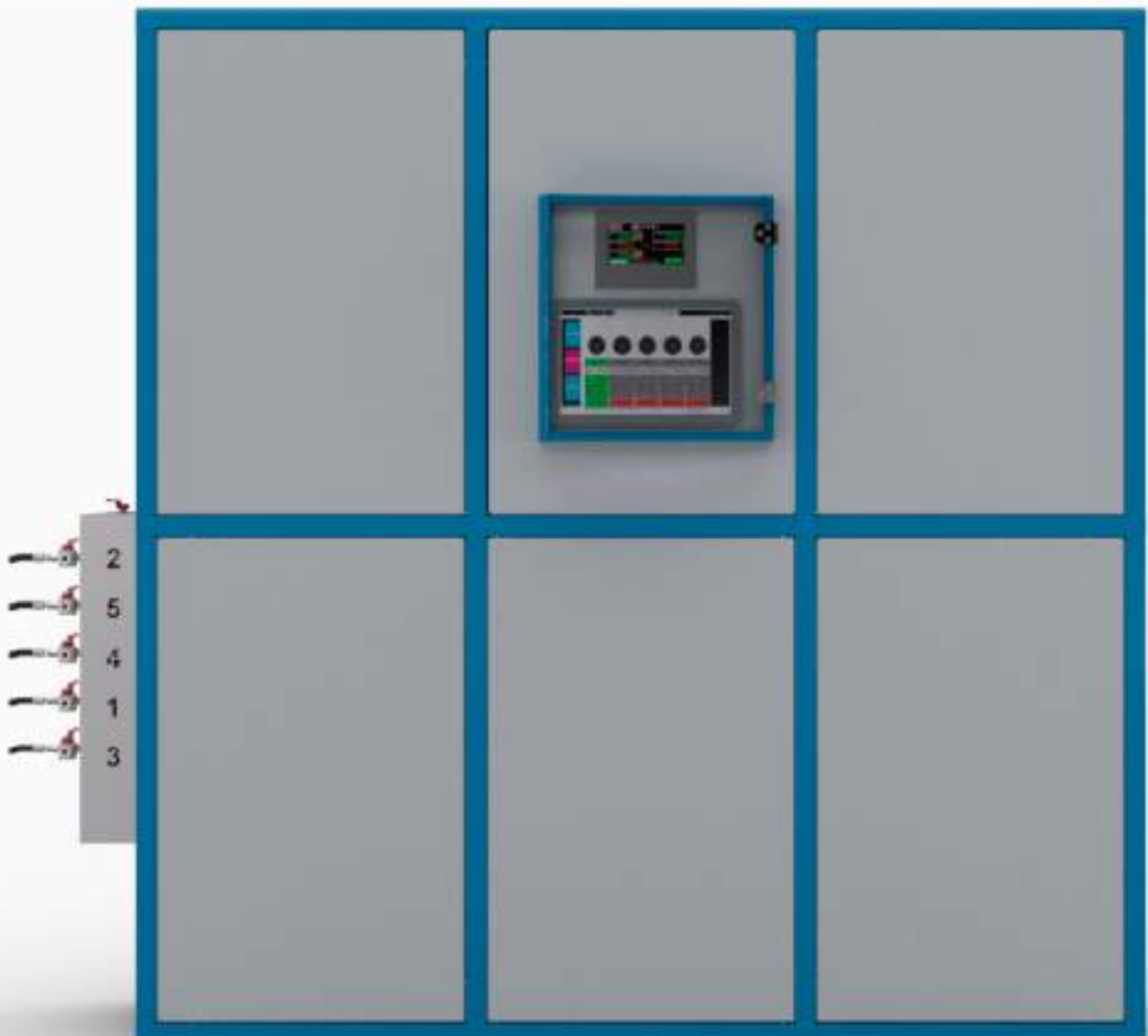
- ✓ AL BTC graphical reporting software
- ✓ Real-time pressure - time graph
- ✓ Evaluation of statistical results
- ✓ Average wave value
- ✓ User and sample identification
- ✓ Leak alarm
- ✓ Pause/continue options
- ✓ Ability to see tank temperature from report
- ✓ Tank temperature errors information
- ✓ Test animation
- ✓ Reporting screen with manufacturer logo
- ✓ Windows and PDF based reports
- ✓ Single or multiple representation of past experiments

- ✓ PLC and PC control with touch screen
- ✓ Fast data exchange, 400 pcs / sec
- ✓ ± 0.1 ° C temperature measurement accuracy
- ✓ $\pm 0.2 - 0.25$ pressure measurement accuracy
- ✓ 4 - 20 mAMP and 0-10 V sensor data
- ✓ 1" / 4 - 1" / 8 pressure transmitter and installation
- ✓ ability to see tank water temperature on the control panel and graphics software
- ✓ Infrastructure for receiving direct pressure data from pressure test heads
- ✓ Low voltage control system
- ✓ Test input and monitoring from 17" / 42" touch screen and reporting software
- ✓ 7-10.1" touch screen user display
- ✓ 15.7 "AL BTC reporting software integration



HYDROSTATIC PRESSURE TEST SYSTEM

- ✓ Max. Test pressure:
3000 bar
- ✓ Boutique production
according to the desired
number of stations
- ✓ Opportunity to test
at different stations at
independent pressures and
independent time



TECHNICAL SPECIFICATIONS

- ✓ Suitable for pressure test of composite hydrogen cylinders , gas tubes and for special purposes
- ✓ Pressure Sensitivity: 0.25% Bar
- ✓ Hydraulic drive
- ✓ Addition of mechanical and electronic equipment for cycle testing
- ✓ Cycle and long life test up to 3000 bar
- ✓ Special system up to 3000 bar for bursting test
- ✓ Explosion test-specific design
- ✓ PLC-controlled system
- ✓ Touch screen user control interface
- ✓ Real-time data show and reporting software
- ✓ Real-time pressure changing graph in cycle pressure test
- ✓ Completely stainless steel
- ✓ Pneumatic , hydraulic and gear box drive force



GRP PIPE PRESSURE TEST SYSTEMS

Standards

ASTM D 3517-3754

DIN 16869, AWWA C950

- ✓ AL -PT GRP Pipe Pressure Test Machine
- ✓ Pressure test equipment for GRP (Glass reinforced polyester) pipes.
- ✓ PLC-controlled mechanical system
- ✓ Test controlling by touch screen PC
- ✓ Completely digital control
- ✓ Automatic charging,



TECHNICAL SPECIFICATIONS

pressurizing, and discharging

- ✓ Test with max 40 bars
- ✓ 4 valves fuzzy logic hydraulic pressure balance system
- ✓ Hydraulic pipe lifting system
- ✓ Automatic double panel moving system , easy adjustment and fast assembly of test pipe
- ✓ Four synchronized and position controlled hydraulic pistons
- ✓ Hole locking systems for pressure pipe end
- ✓ Real-time data login and

special software for reporting

- ✓ Automatic leak detection system
- ✓ Up to 4000m diameter and 15 meter long
- ✓ Hydraulic driving systems
- ✓ Rigid frame calculated with computer simulation
- ✓ Automatic water level adjustment systems with special water level sensing system
- ✓ 3 lips/4 lips special gasket design
- ✓ 3 speed position and ergonomic test condionations



HYDROSTATIC PRESSURE TEST MACHINES TECHNICAL SPECIFICATIONS

MODEL	AL HBT2	AL HBT3	AL HBT 5	AL HBT 10	AL HBT 20	AL HBT 40
Number of Lines	2	3	5	10	20	40
Control	PLC/PC Touch Screen					
Data Display	Included PC					
Precision	0,01 bar					
Accuracy	0,25 %					
Max. Test Pressure	100 bar					
Burst Pressure	120 bar					
Pump	170 bar		200 bar			
Flow Control	4 Valve Fuzzy Logic System Control					
Standards	TS EN 12201-1, TS EN 12201-2, TS EN ISO 1167-1, TS EN ISO 1167-2, TS EN 715, TS 418, EN 921, ASTM-D 1598, TS EN 1447, TS EN 12107					
Source Voltage	380 V					
Data Transfer	SD Card, USB					
Power	2 kW		3 kW			
Dimensions (cm) (HxLxW)	136x81x65		192x104x95		192x104x285	

Available ✓ Optional □ Not Applicable ✗

Technical Identity:

Fully stainless system, fuzzy logic valve control system (max. 120 bar), flow and pressure measurement at micro levels.

Usage Identity:

User-friendly interface, max. safety, easy connection system, multi-line simultaneous testing.





AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.

AL TANK TEST TANKS

Adjustable hanging design.



Internal pressure/hydrostatic tests are performed in conditioned water environment. Compliance with the standards **ISO 1167, ASTM D 1598, ASTM D 1599**. The water distribution into the AL TANK let $\pm 0,5 - 1^\circ\text{C}$, provided by the circulation of water in the tank.

Locations of the heaters, the fluid taken and feeding for circulation in the tank are designed with computer simulation and the results have been proved by EU accreditation.

It is suitable for PPRC, PPH, PPB, PE, PVC PE-RT pipes and even composite pipes. Database management, system network.

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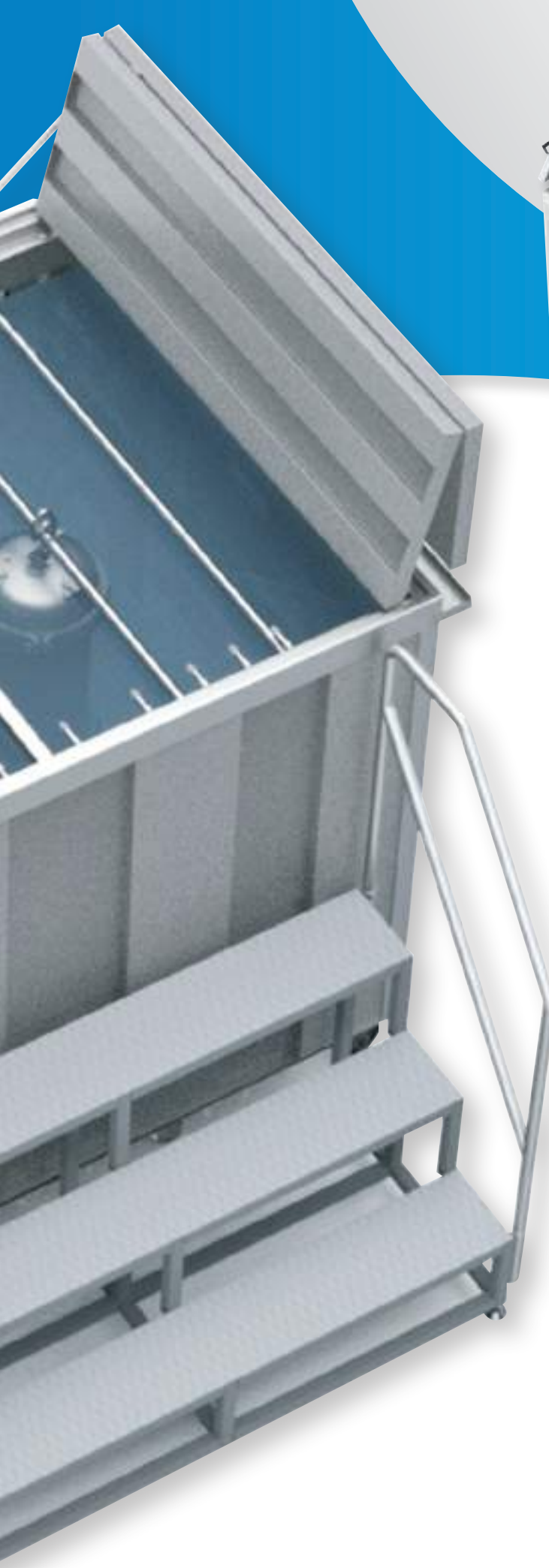
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AL TANK TEST TANKS

TECHNICAL SPECIFICATIONS

- ✓ Zero steam leakage, energy saving with double layer insulation, minimum operating cost and water loss
- ✓ Double safety control for instant temperature change
- ✓ Automatic filling with water level control
- ✓ Safety Discharge Duct for High level water
- ✓ Bottom discharge
- ✓ Folding lid with remote / direct control
- ✓ Safe operation
- ✓ High performance for water temperature distribution with ideal balancing circulation
- ✓ Usage with glycol water up to 105 ° C
- ✓ Nearly up to $\pm 0,5$ ° C in-tank temperature distribution
- ✓ Applicable to any dimensions
- ✓ Positioning and traveling hanger system of test sample with End Caps inside the tank





CONTROL SYSTEM

- ✓ Fast data transferring 400 Hz
- ✓ 5.4 -10 " PLC Touch Screen (4.2", 7", 10") panel application.
- ✓ 17 - 62 " Touch Screen PC Panel
- ✓ Real-time temperature measurement up to 4 points
- ✓ Successful standard and accreditation requirements
- ✓ Connection to main pressure / hydrostatic test machine
- ✓ Frame around inner stainless cabinet (damage prevention)
- 1.2 mm outer coating
- Pneumatic cap drive system
- Wheel and fixing possibility
- Design without heat bridge
- Special cover gasket
- 1.5 mm up to 3 mm inside layer thickness.

MODEL	HEATING MODULE
Temperature Range	Environment Temp. - 95 °C
Sensitivity	± 0,1 °C
Accuracy	± 1 °C
Resolution	± 0,1 °C
Data Display	Tank Panel

MODEL	COOLING MODULE
Temperature Range	20 °C - Environment Temp.
Sensitivity	± 0,1 °C
Accuracy	± 1 °C
Resolution	± 0,1 °C
Data Display	Tank Panel

AL TANK TEST TANKS TECHNICAL SPECIFICATIONS

MODEL	AL-TANK S	AL-TANK M	AL-TANK L	AL-TANK B
Number of Lines	1-5	5-10	10-15	<input type="checkbox"/>
Internal Length	1,2 m	1,6 m	2,1m	<input type="checkbox"/>
Outer Length	1,5 m	1,9 m	2,4 m	Dependent to Internal Dimension
Internal Width	1,0 m	1,0 m	1,1m	
Outer Width	1,4 m	1,5 m	1,6 m	
Internal Height	1,2 m	1,2 m	1,2 m	
Outer Height (Cap Closed)	1,55 m	1,6 m	1,6 m	
Outer Height (Cap Opened)	2,2 m	2,3 m	2,3 m	
Number of Hanger	1-3	3-6	4-8	<input type="checkbox"/>
Foldable Cover	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Heat Insulation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Water Discharge Valve	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Water Level Sensor / Valve	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Water Circulation Pump	150 W	150 W	250 W	400 W
Heating Module kW	7,5/12	10/18	15/30	20/50
Cooling Module kW	0,5	1kW	1,5/2,5 kW	3,5/9 kW
Material	304 Stainless Steel			
Control Panel 4" / 7"	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Standarts	ISO 1167, ASTM D 1598, ASTM D 1599			
Air Pressure (Needing)	6-8 Bar			

Available Optional Not Applicable

Dimensions can be changed.

Technical Identity:

Homogeneous temperature distribution with heating system supported by analysis, insulation for energy saving, stainless steel cover and body, design with analysis software. Stainless steel extra profile frame.

Usage Identity:

Quick and easy connection, safe testing, special design. Database management, system network. Cooling and heating.



Foldable lid gasket



**AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.**

END CAPS

***Patented TR 2016/20266
*Boutique manufacturing
up to 4000 diameter**



End caps are used intensively to measure strength performance of thermoplastic pipes under pressure in compliance with TS EN ISO 1167, ASTM D 1598-1599 standards.

EASY ASSEMBLY

HIGH PRESSURE

NO NEED TO PRESS

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END CAPS

TECHNICAL SPECIFICATIONS

- ✓ Ideal design for leak-free, long term tests
- ✓ Designed to tolerate the strain and shape changing expansion of pipe during hydrostatic pressure tests
- ✓ Does not require hammering or pressing, special gasket design and gasket tightened with screw system
- ✓ Adaptive silicon/rubber one or two multiple lips gasket joint
 - ✓ Stainless steel fittings
 - ✓ In compliance with TS EN ISO 1167, ASTM D 1598-1599 standards
 - ✓ AISI 304, 316 and 316L stainless steel, precision pressure and sand casting
- ✓ Suitable for 16 - 2600 mm PE, PP, PE-RT, PEX and PVC pipes
 - ✓ Optional galvenize steel



ARTPM ELECTRONIC KIT



ALARGE REAL TIME PRESSURE MEASUREMENT KIT

- ✓ Wi-Fi Bluetooth connections
- ✓ Optional touch screen integrated into Alarge Reporting Software
- ✓ Real time display of pressure and test time
- ✓ Real time graphic drawing and display
- ✓ Easy connection to the touch screen with USB and RS 232
- ✓ Suitable for all end cap models



END CAPS

TECHNICAL SPECIFICATIONS

MODEL	ALCAPLT					
Diameter Ø (mm)	16	20	25	32	40	50
	63	75	90			
Max. Test Pressure (Bar)	150					
Manufacturing Method	Machining / Precision Castings					
Material	AISI 304, 316, 316 L					
Diameter Ø (mm)	110	125	140	160	180	200
	225	250	280	315	355	400
Max. Test Pressure (Bar)	100					
Manufacturing Method	Hot Galvanized Stees Sheet / Precision Casting / Machining					
Material	AISI 304, 316, 316 L / Steel Sheet					
Diameter Ø (mm)	450	500	560	630	710	
Max. Test Pressure (Bar)	100	90	80	70	70	
Manufacturing Method	Sand Casting, Machining / Hot Galvanized Steel Sheet					
Material	AISI 304, 316, 316 L					
Diameter Ø (mm)	800	900	1000	1100	1200	1400
	1600	1800	2000	2200	2400	2600
Max. Test Pressure (Bar)	50					
Manufacturing Method	Hot Galvanized Stees Sheet / Precision Casting					
Material	AISI 304, 316, 316 L					
Compability with pipes	✓					
Air Purge Valve	✓					
Easy Connection	✓					
Eyebolt	✓					
Gasket Gauge Screw	✓					
Standards	ISO 1167, ASTM D 1598, ASTM D 1599					

Available ✓ Optional ☐ Not Applicable ✗



Technical Identity:

Pore-free precision casting, stainless materials, adjustable gasketed, endurance to high pressures.

Usage Identity:

Assembly without hammering or pressing for hydrostatic pressure test, high sealing ability dive to its adjustable gasket feature design, ideal design and weight for an ergonomic assembly.



**AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.**

AL AIR AIR TANK PRESSURE TEST MACHINE

Standards

TS 1203 EN 286-1

TS 1203 EN 286-1

TS EN 13445-5

TS EN 1012-1:2010

Air Tank
Pressure Test
Machine,
Performs
hydrostatic
pressurization
test of brake
compressor
air tanks used
in commercial
vehicles (bus
trucks, etc.)
compliance
with TS 1203
EN 286-1, TS
EN 1012-1:2010,
TS EN 13445-5
standards.



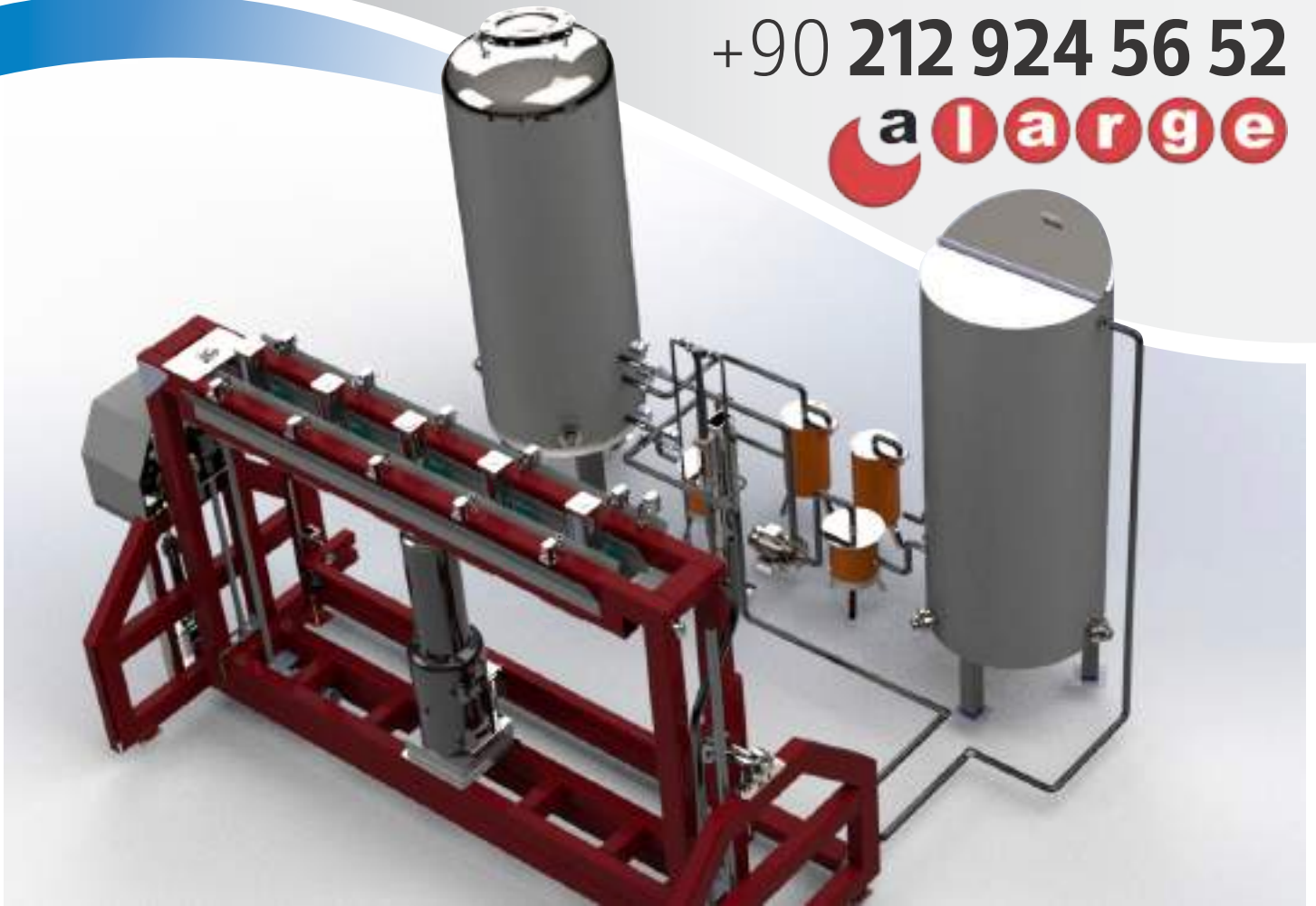
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- ✓ Test machine can be have 5-10 or up to customer request test stations
- ✓ Automatic filling and discharging system.
- ✓ Automatic pressurization system
- ✓ Safety barrier with light barrier (infrared,laser, etc.)
- ✓ Panasonic PLC control system
- ✓ You can connect test tanks to the test machine 1 piece or 1 set or as your wish. All stations can make test seperately.
- ✓ Special design according to different tank sizes and desired number of stations.
- ✓ Stainless steel supply tanks with 3 mm thickness.
- ✓ Test can be make with water or

optional phosphate solution.

- ✓ System cleans the phosphate solution inside of the tank with water (optional)
- ✓ All stations monitoring with pressure sensors which are 0,01 bar resolution.
- ✓ supply tanks has digital level indicator, and pressure sensors.
- ✓ 10" touchscreen control panel
- ✓ Pnomatic piston system fora ir tank locking mechanism.
- ✓ Variable stroke according to tank dimensions
- ✓ Rotation mechanism that completely rotates the test tanks for filling and discharging. Chain driven system.
- ✓ Solid and strong chassis with 5 mm profile.



MECHANICAL TEST SYTEMS

- AL UN - UNIVERSAL TEST MACHINE
- AL UN H - RING STIFFNESS TEST MACHINE
- AL VER - DROP WEIGHT TEST MACHINE
- PENDULUM IMPACT TEST MACHINE
- GRP SPLIT DISK TEST EQUIPMENT
- FRICTION COEFFICIENT TEST EQUIPMENT & PEELING DEVICE
- AL DIR - DRIP IRRIGATION TEST DEVICE
- AL ESCR - ENVIROMENTAL STRESS CRACK PROPAGATION TEST DEVICE
- AL GAS - METER CALIBRATION TESTER
- AL CYC PIPE THERMAL CYCLE TESTER
- AUTOMATIC FILM APPLICATOR
- AL ELM - ELMENDORF TEAR STRENGTH TESTING MACHINE
- DART DROP TEST DEVICE

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SUSTAINABILITY AND RESILIENCE.

AL UN UNIVERSAL TEST MACHINE

*and multiaxis load
solutions*



Alarge AL-UN machine compliance with **ISO 527, ISO 6259, ASTM D 638, ASTM D 624, ASTM D 412** standards and is equipped to perform dynamic and static tests up to 200 Hz frequency cycle tearing and peeling test attachments.

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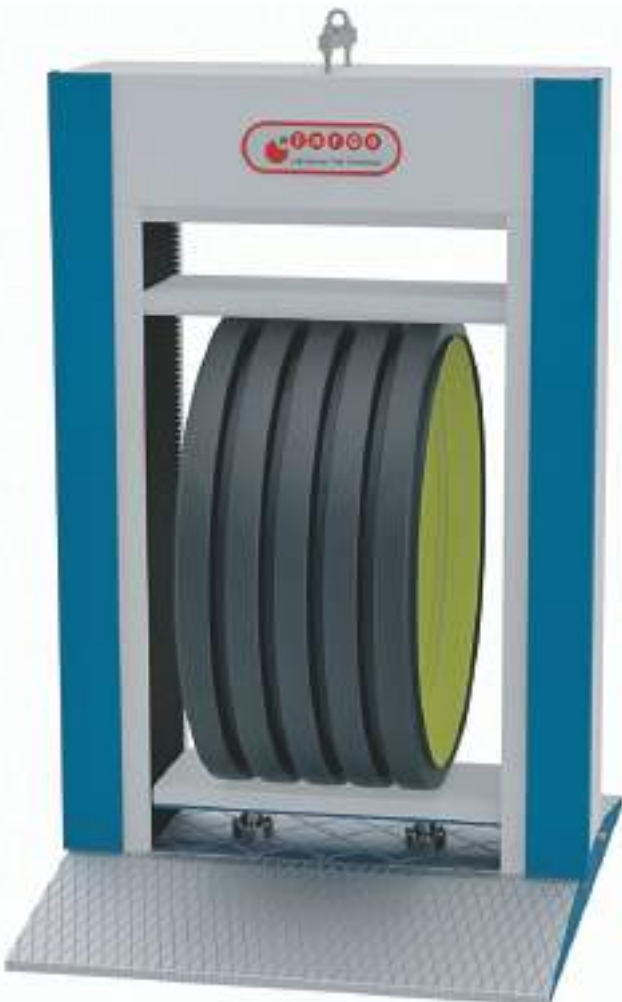
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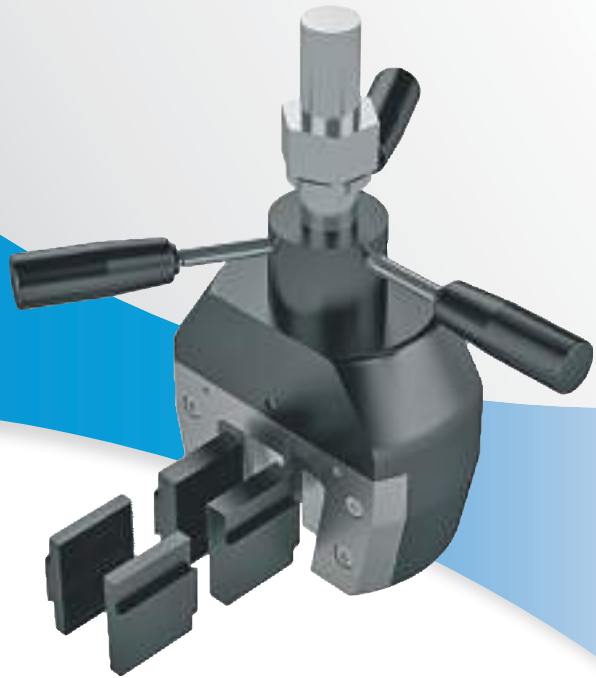
AL UN UNIVERSAL TEST MACHINE

FUNCTION SPECIFICATIONS



- ✓ Static Tensile
- ✓ Static Compression
- ✓ Dynamic Impact - Cycle Tensile
- ✓ Dynamic Impact - Cycle Compression
- ✓ Tensile test machine can perform GRP, steel, concrete and composite material tests.
- ✓ Sensitivity in load on strain measurement and frequency selection
- ✓ Sensitivity displacement measurement
- ✓ Strong frame - ball screw
- ✓ Chrome induction shaft bearing
- ✓ Full load strength with vertical (radial) load + axial bearing
- ✓ Single, double, column and robotic arm type options
- ✓ Remote access service network on many functional grips
- ✓ Suitable design for min. %1000 extension





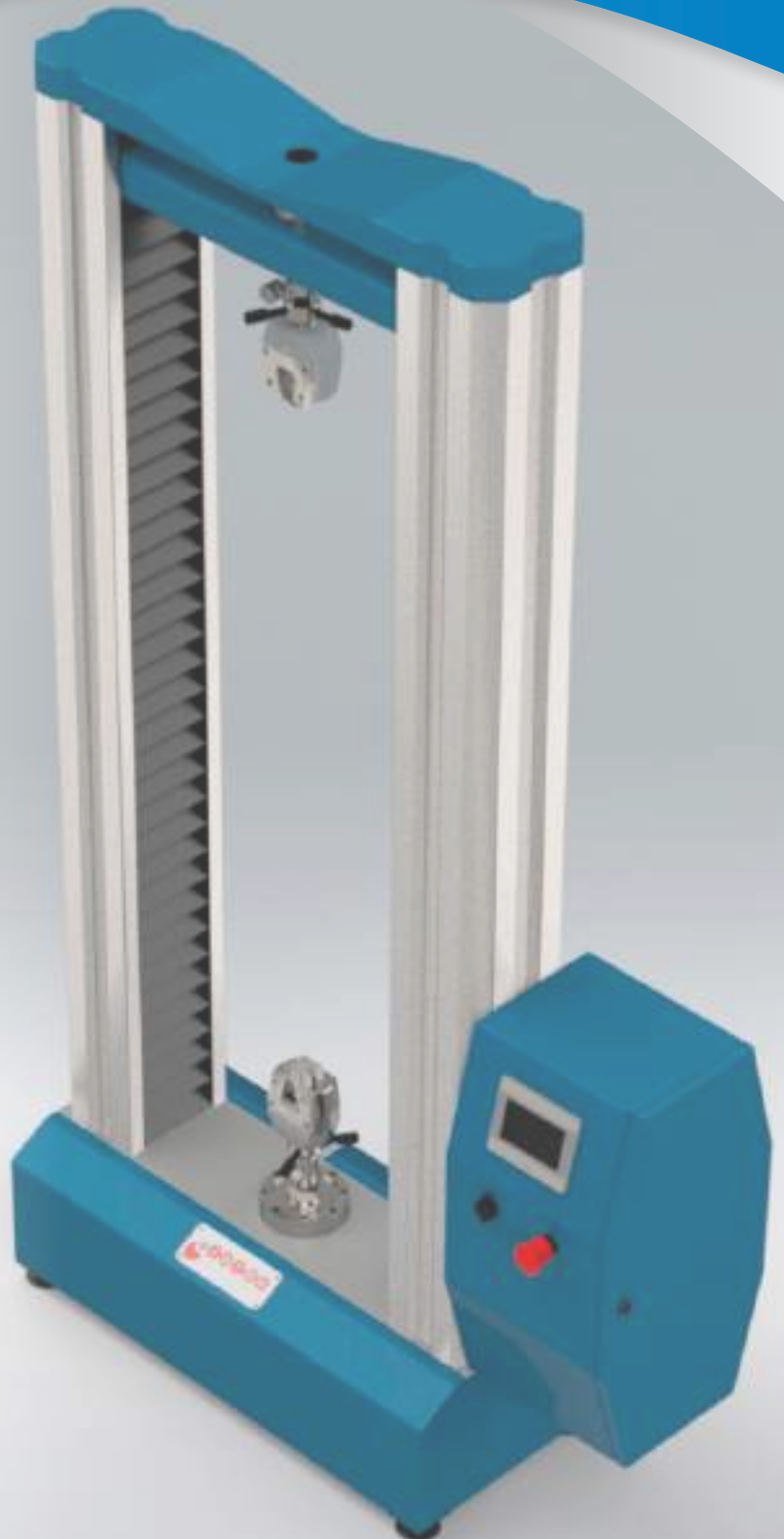
- ✓ % 0.25 precision, A type load cell (0,5 kN – 2000 kN)
- ✓ Traverse width: 200 – 5000 mm
- ✓ Crosshead speed : 0,0001 – 1500 mm/min
- ✓ Extensometer option with micron sensitivity
- ✓ Servo motor or AC motor options
- ✓ Robust mechanical design for 50% overload
- ✓ Video extensometer (Optional)
- ✓ Special production gapless screw + bearing system
- ✓ Worm gear reducer / chain-triglar transmission system and gapless reduction gear system
- ✓ Hydraulic and pneumatic grip options
- ✓ 414vw0 annealed special geometry grip sets (grip parts)
- ✓ Chrome / induction shaft. Nitration depth of 2 mm
- ✓ 17" touch screen PC control
- ✓ PLC system and communication software
- ✓ Electrical system for manual control with 4" touch screen panel

AL UN UNIVERSAL TEST MACHINE

FUNCTION SPECIFICATIONS

✓ Large Al Un graphic interface software:

1. Display the former test result
2. Ability to create analysis and comment page
3. Report Results in MS Office and PDF format
4. Report results in tabular form
5. Min. 400 data storage
6. Fast, real-time data process
7. Database for machine learning for customer experiments.



HYDRAULIC GRIPS

TECHNICAL SPECIFICATIONS

Hydraulic grips are ideal for high forces and high volume tests that involve repetitive opening and closing of jaws. Hydraulic grips are primarily used where test loads of 50 kN and up to 500 kN are required with high closing forces.

They are a versatile grip that can be used in both static, dynamic and reverse stress materials testing applications.

Hydraulic grips are suitable for round, flat

and asymmetrical section specimens using appropriate optional jaw faces. The interchangeable grip jaw faces accommodate both flat and round specimens and the grip design maintains a constant gripping force on the test specimen.

Test loads : 500–200–100–50 kN



HYDRAULIC GRIPS

TECHNICAL SPECIFICATIONS



SPECIMEN MATERIAL:

- ✓ Plastics
- ✓ Metals
- ✓ Composites
- ✓ Wood
- ✓ Textiles
- ✓ Fleece
- ✓ Paper
- ✓ Film
- ✓ Elastomers
- ✓ Geotextiles

APPLICATIONS:

- ✓ Tension
- ✓ Shear
- ✓ Fracture
- ✓ Fatigue
- ✓ Compression
- ✓ Torsion
- ✓ 180 Degree Peel
- ✓ Alternating load

MECHANICAL GRIPS

TECHNICAL SPECIFICATIONS



Mechanical Grips provide a very simple and efficient method for holding test specimens in a wide range of applications. Mechanical Grips are versatile general-purpose grips in which the faces remain stationary during loading. This makes it especially useful for applications where screw or pneumatic grips do not provide sufficient clamping force, or where

compressive or buckling forces are not desirable during specimen insertion. They feature a calibration line that provides a reference for specimen positioning. They are ideal for tensile testing of delicate flat, flexible specimens like plastic, foil, films, rubber, and flexible polymers.

Test Loads : 50–20–10–5 kN

SPECIMEN MATERIAL:

- ✓ Composites
- ✓ Plastics
- ✓ Metals
- ✓ Wood
- ✓ Polymers
- ✓ Textiles
- ✓ Films
- ✓ Rubber
- ✓ Paper

APPLICATIONS:

- ✓ Compression
- ✓ Tension
- ✓ Peel
- ✓ Tear
- ✓ Tensile



AL UN UNIVERSAL TEST MACHINE TECHNICAL SPECIFICATIONS

MODEL	AL-UN 1	AL-UN 5	AL-UN 10	AL-UN 20	AL-UN 30	AL-UN 50	AL-UN 100	AL-UN 200
Standards	ISO 527, ISO 6259, ASTM D 638, ASTM D 624, ASTM D 412							
Max. Test Power	1 kN	5 kN	10 kN	20 kN	30 kN	50 kN	100 kN	200 kN
Precision	% ±0,3							
Max. Distance Between Clamps	50 cm	100 cm	100 cm	150 cm	150 cm	150 cm	200 cm	200 cm
Vertical Space	10 cm	140 cm	140 cm	180 cm	180 cm	180 cm	250 cm	250 cm
Horizontal Space	30 cm	40 cm	40 cm	50 cm	50 cm	50 cm	80 cm	80 cm
Speed Range	0,001 – 1500 mm/dk							
Speed Precision	% ±0,1 / ±0,1 Special							
Structure	Single Column			Double Column				
Extensometer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Video Ext.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inner Extensometer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Video Inner Ext.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compression Die	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spherical Wedge Grip	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grip for Coarse Samples	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Double Sample Area	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accessory Preference	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control	PC Control			Touch Screen PC Control				
Graphic Software	Configurable graphic software according to user's preferences							
Data Transfer	USB, SD Card, Wi-Fi							
Required Power	220 V			380 V				

Available ✓ Optional Not Applicable ✗

✓ Data base system ✓ Multi Axis Loady

Technical Identity:

High precision and mechanical rigidity, special screw system and grips. Video extensometer and system network/ database supported.

Usage Identity:

Friendly operator touchscreen panel, suitable for scientific use, ergonomic design. Friendly in use with touchscreen panel. Suitable for scientific studies.





AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.

AL UN H RING STIFFNESS TEST MACHINE

* Boutique
Manufacturing with
Desirable Features

The ring stiffness of pipes is one of the significant indicators for the assessment of pipe stability. This test allows to determine the resistance of the external load of plastic pipe.

AL-UN H machine compliance with **ISO 527, ISO 6259, ASTM D 638, ASTM D 624, ASTM D 412** standards and is equipped to perform dynamic and static tests with a certain frequency cycle. Database management, system network.

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Fax: +90 212 278 61 33 Mail: info@alarge.com.tr

AL UN H RING STIFFNESS TEST MACHINE

TECHNICAL SPECIFICATIONS



AL UN S RING STIFFNESS TEST MACHINE



Boutique
Manufacturing

Suitable for
Ø 250 mm
thermoplastic
pipes.

FUNCTIONS

- ✓ Static tensile
- ✓ Static compression
- ✓ Dynamic impact - Cycle Tensile
- ✓ Dynamic impact - Cycle Compression
- ✓ Enable to test GRP, composite, metal, concrete etc. materials
- ✓ Performing wide range load and frequency
- ✓ Precise displacement measurement
- ✓ Strong frame - lead screws and threaded nuts with axial and radial dual bearing
- ✓ Chromed inductioned lead screws, 2 mm nitration depth
- ✓ Single and double column options
- ✓ Remote access service network
- ✓ Database management, system network.

TECHNICAL SPECIFICATIONS

- ✓ Suitable design for min. %1000 extension
- ✓ % 0.25 Accuracy, A type load cell (0,5 kN – 2000 kN)
- ✓ Traverse width: 200 – 2000 mm
- ✓ Crosshead speed : 0,001 – 1500 mm/min
- ✓ 0-5000 mm Compression range
- ✓ Extensometer option with micron sensitivity
- ✓ Video ext. for inner and outer diameter measurement.
- ✓ Servo motor or AC motor options
- ✓ Robust mechanical design for 50% overload
- ✓ Video extensometer (Optional)
- ✓ Special production low axial play (gapless) + bearing system
- ✓ Worm gear reducer / chain-triglar transmission system



- ✓ Hydraulic and pneumatic jaw options
- ✓ 4140 annealed special geometry grip parts
- ✓ 17 "touch screen PC control
- ✓ PLC system and communication software
- ✓ Electrical system for manual control

ALARGE AL TEST – GRAPHICAL INTERFACE SOFTWARE

- Simultaneous viewing on the same graph of former test results
- Creating analysis and comment page
- Exporting results as MS Office ve PDF
- Report results in table form
- Min. 400 data storage in second
- Real-time fast data processing



AL UN H RING STIFFNESS TEST MACHINE TECHNICAL SPECIFICATIONS

MODEL	AL-UN 5	AL-UN 10	AL-UN 20	AL-UN 30	AL-UN 50	AL-UN 100	AL-UN 200
Standards	ISO 527, ISO 6259, ASTM D 638, ASTM D 624, ASTM D 412						
Maximum Test Force	5 kN	10 kN	20 kN	30 kN	50 kN	100 kN	200 kN
Load Cell Sensitivity	% ±0,2						
Max Space Between Grips	100 cm	100 cm	1250	1250	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vertical Max Space	140 cm	140 cm	180 cm	250 cm	350 cm	400 cm	500 cm
Speed Range	1-1000 mm/min						
Speed Sensitivity	% ±0,1						
Position Sensitivity	10-100 micron						
Constraction	Single Column			Double Column			
Extensometer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inside Extensometer Inside Video Ext.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compression Cap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pneumatic Conic Spherical Grips	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Special Grips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Double Samples Part	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accessory Options	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control Panel	HMI Screen / PLC Control						
Graphic Software	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Transfer	USB, SD Card, Wi-Fi						
Supply Voltage	220 V			380 V			

Available Optional Not Applicable

*Configurable graphic software according to user's preferences

Technical Identity:

Special design jaws. High sensivity, strong frame/special inner deflection measurement Servo motor and control.

Usage Identity:

Long life, low service requirement and low maintenance cost, fast service system, special designs, easy sample connection. Database management, system network.





**AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.**

AL VER DROP WEIGHT TEST MACHINE

Standards

ISO 3127, ASTM D 2444

Alarge AL-VER machine compliance with ISO 3127, EN 744, EN 1411 ASTM D 2444 standards and is created for determining the drop impact resistance of corrugated pipe, water supply pipe and plate. Database management, system/neural network.

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Fax: +90 212 278 6133 **Mail:** info@alarge.com.tr

AL VER DROP WEIGHT TEST MACHINE

TECHNICAL SPECIFICATIONS



SPECIFICATIONS

- ✓ Automatic drop counting
- ✓ Vacuum system
- ✓ Automatic height adjustment
- ✓ Safety cabinet
- ✓ User-friendly, easy operation
- ✓ PLC control system
- ✓ Automatic by-pass

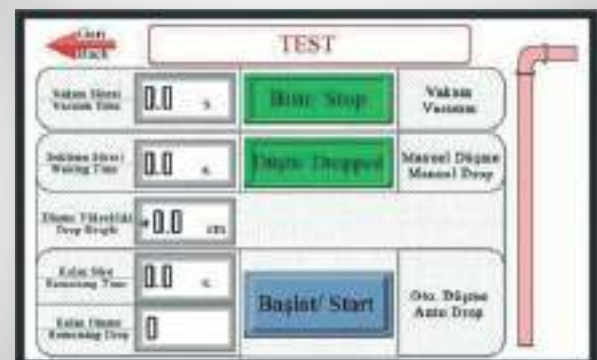
TECHNICAL SPECIFICATIONS

- ✓ 0-99 impact number
- ✓ 1.6 kW vacuum pump
- ✓ Flow rate of 210 m³ / h
- ✓ 0-200 mbar vacuum pressure
- ✓ 5.4" / 7" Touch screen
- ✓ PLC control, 400 mBps data rate

PLC SOFTWARE

PLC SOFTWARE FUNCTIONS

- ✓ Determination of pipe diameter and type
- ✓ Real-time height display
- ✓ Standby time
- ✓ Drop height
- ✓ Vacuum time setting option
- ✓ Remaining test quantity
- ✓ Analysing test results



AL VER DROP WEIGHT TEST MACHINE TECHNICAL SPECIFICATIONS

MODEL	AL-VER B	AL-VER D
Max. Drop Weight (kg)	16	16
Max. Drop Height (mm)	2000	2000
Height Accuracy (mm)	10	5
Max. Impact Speed (m/s)	20	20
Radius of Weight Curvature (mm)	100	100
Support Distance (mm)	600	600
Sample Center Deviation	10	1
Buton Control	✓	✗
PLC Control	✗	✓
Touch Screen	✗	✓
Standarts	EN 744, EN 1411, ISO 3127, ASIM D 2444	
Weight (kg)	200	200
Power (W)	320	320
Voltage	220V	220V

Available ✓ Optional □ Not Applicable ✗

Technical Identity:

**High precision testing process.
Vacuumed system. Air releasing
control system**

Usage Identity:

**User friendly with PLC
controlled touch screen.
Complete automatic control.
Database management, system
network.**





AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.

PENDULUM IMPACT TEST MACHINE

Standards

ISO 179, ISO 180, ISO 8256,
ASTM D 256, ASTM D 4812



The impact test determines the breaking energy of plastics under dynamic load. There are two different test methods. Izod and Charpy test methods. The Izod impact test specimen is placed vertically while the Charpy test specimen is placed horizontally.

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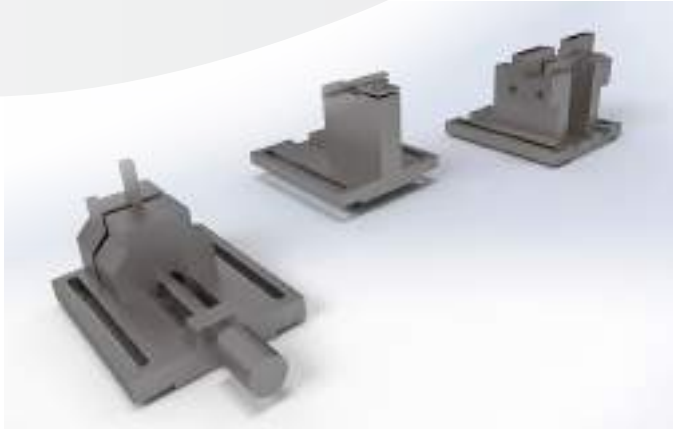
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PENDULUM IMPACT TEST MACHINE



Special design Hammers & Clamps for Izod, Charpy & Tensile Impact Tests
 Hammer designs have been tested with dynamic pc simulations compliance with **ISO 179, ASTM E23, ISO 148-1, ASTM A370-**

NIST standards.

Hammer Capacities: **1-2-5-15-25-50 J**

Boutique Manufacturing up to 300 J

Fully compatible with all radiuses, masses and impact energy in the standards.

- ✓ Angle calculation: 1024 up to 10.000 pulse. Cycle rotary encoder.
- ✓ Pneumatic brake system
- ✓ Hammer drop angle
- ✓ 20 joules = 140°
- ✓ Angles may vary slightly due to calibration results and hammer weight
- ✓ Operating conditions: 10-38 °C. 10-80% moisture, dust and corrosive gas free
- ✓ Digital auto-calibration.
- ✓ Friction free calibration system software
- ✓ Configurations as Izod, Charpy or Izod and Charpy

tester.

- ✓ Different hammer sizes available
- ✓ The hammer is designed to strike from the center at an angle
- ✓ Standards: ISO 179, ISO 180, ISO 8256, ASTM D 256, ASTM D 4812
- ✓ 4.3" TFT LED 65536 color touch screen
- ✓ Data transfer option to PC and A large Reporting Software via RS 232/480 and ethernet module
- ✓ Real-time angle value display



PENDULUM IMPACT TEST MACHINE

PENDULUM IMPACT TEST MACHINE TECHNICAL SPECIFICATIONS

IZOD TYPE		
MODEL NO	AL IZ-5	AL IZ-50
Hammer Capacity	1J, 2J, 5J	15J, 25J, 50J
Pendulum Speed	3.5m/s	3.5m/s
Starting Angle	126°	126°
Impact Edge Radius	R=2 mm	R=2 mm
Jaw Length	40 mm	40 mm
Impact cutting edge radius	R=2 mm	R=2 mm
Arm Length	400 mm	400 mm
Impact Edge Radius	16°	16°
Pendulum Momentum	PL(1J) = 0.5155Nm PL(5,5J) = 2.8355N.m	PL(5,15J) = 7.733Nm PL(22J) = 11.3419N.m

CHARPY TYPE		
MODEL NO	AL CH-5	AL CH50
Hammer Capacity	1J, 2J, 5J	15J, 25J, 50J
Pendulum Speed	2.9 m/s	3.5 m/s
Starting Angle	90°	126°
Arm Length	400mm	400mm
Impact Knife Radius	16°	16°
Impact Edge Radius	R=2mm	R=2mm
Jaw Length	40 mm	40 mm
Pendulum Momentum	PL (1J) = 0.5155 Nm PL (5J) = 2.578 Nm	PL (15J) = 7.733 Nm PL (25J) = 12.889 Nm PL (50J) = 25.777 Nm

Available ✓ Optional □ Not Applicable ✗



Usage Identity:
Load hanging
easy, fully
automatic load
lifting and self
calibration.

Technical Identity:

Able to exceed the free 80 oscillation given in the standard, energy at standard angles, hammer tip design according to standards, self-calibrating software.

AL-NT NOTCHING MACHINE TECHNICAL SPECIFICATIONS



Motor rating : 4 kW

1. Makes notches on plastic samples with a Type A blade.
2. The smallest notched sample thickness is 4 mm.
3. The notch depth can be adjusted precisely with the micrometer positioned on the device.
4. The speed of the cutter motor can be adjusted with a potentiometer.





**AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.**

GRP SPLIT DISK TEST EQUIPMENT

Standards

ISO-12709, BS-1394, BS-5480

GRP Split Disk Equipment is used to determine the apparent tensile strength of GRP pipe rings compliance with ISO-12709, BS-1394, BS-5480 standards. It determines the diametrical tensile strength of the ring sample obtained from the pipe.



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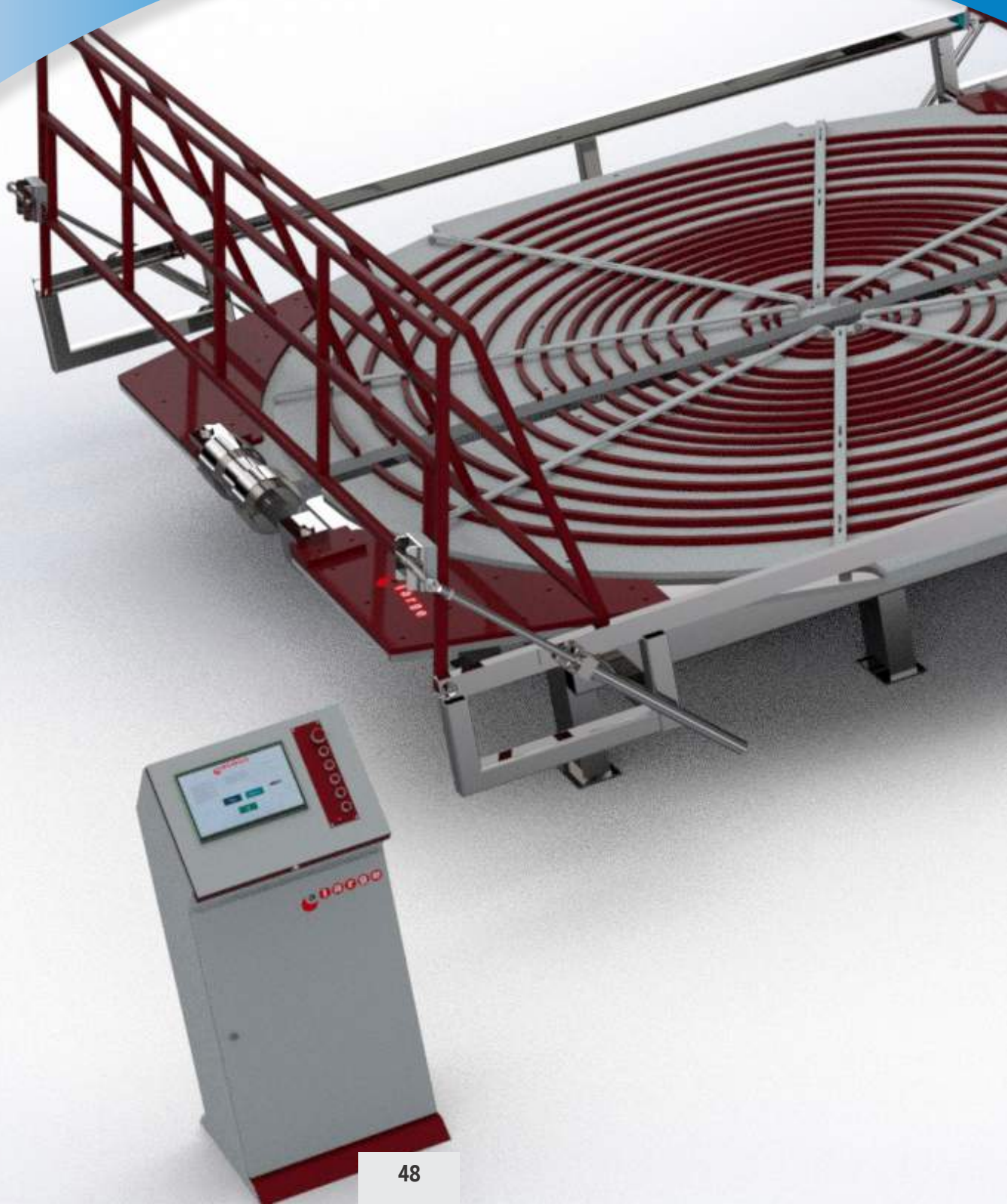
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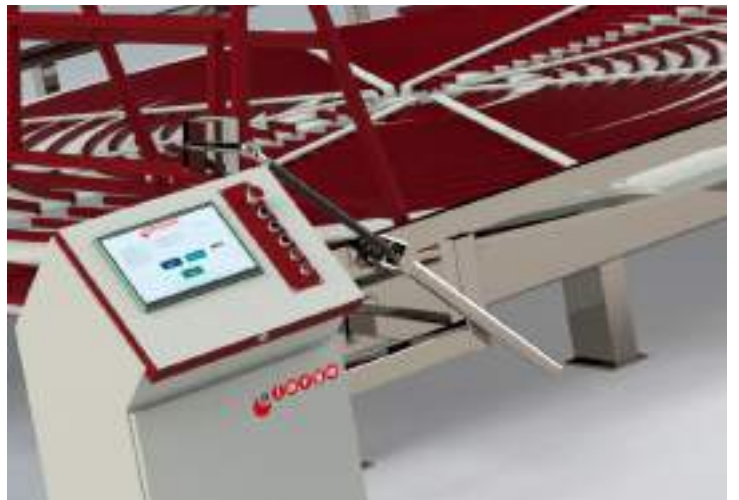
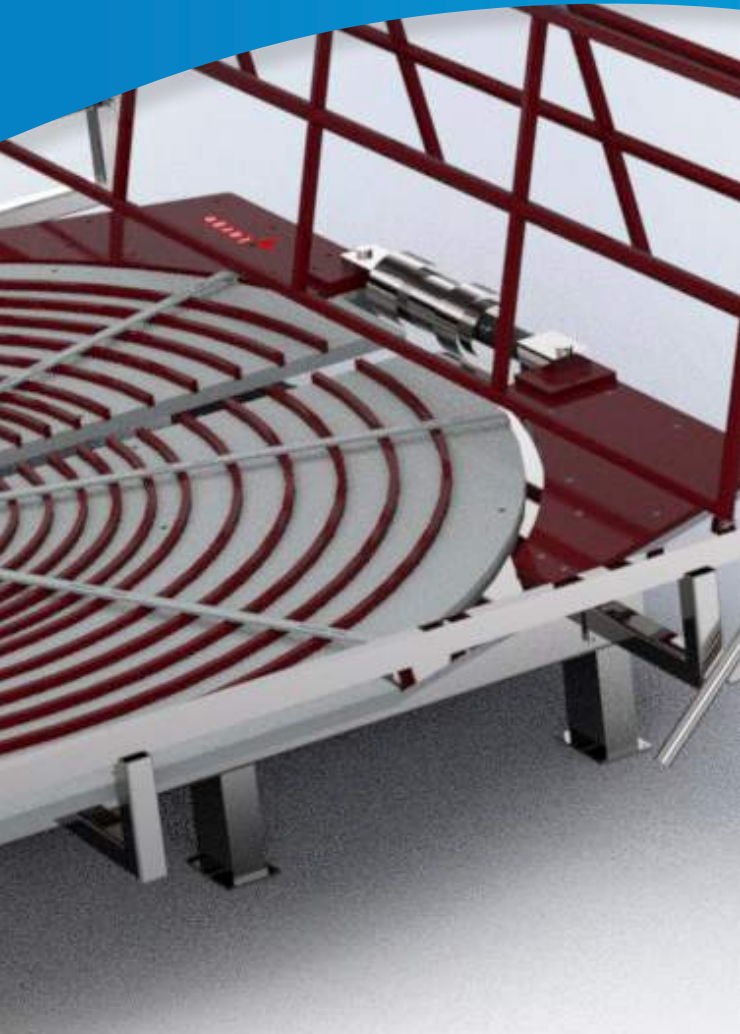
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GRP SPLIT DISK TEST

EQUIPMENT

TECHNICAL SPECIFICATIONS





FEATURES

- ✓ Test speed adjustment adjustable from 1 millimeter to 30 millimeters per minute.
- ✓ Measurement from 300 millimeters to 4,000 millimeters.
- ✓ Special load measuring sensor type. (20,000kgfx2)

- ✓ Maximum force capacity of 40,000 kilograms
- ✓ Mobile slide in track ball recirculators driven by 2 hydraulic cylinders.
- ✓ Cylinder Specifications: Diameter 110 millimeters, Maximum Working Pressure 250 bar, Maximum Stroke 220 millimeters)



TECHNICAL DATA

- ✓ Epsilon, Elastic modulus, Sigma, F (force) values are displayed automatically.
- ✓ Channels 1.5 centimeters - 2 centimeters deep.
- ✓ High position sensitivity.
- ✓ The desired speed is adjustable.
- ✓ Fixed speed opening.
- ✓ Electronic control with PLC and touchscreen

Technical Identity:

**Easy alignment and clamping of the test specimen. Wide range of applications
Stainless steel material.**

Usage Identity:

Database management, system network.



**AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.**

**FRICION
COEFFICIENT
TEST EQUIPMENT
& PEELING
DEVICE**

Standards

ISO8295, ISO15359, ISO638

ASTMD1894, GB/T10006, ASTM D3330

Friction Coefficient Test Equipment has been developed for the calculation of static and dynamic coefficients of friction materials compliance with ISO8295, ISO15359, ISO638, ASTMD1894, GB/T10006 standards.



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FRICTION COEFFICIENT TEST EQUIPMENT & PEELING DEVICE

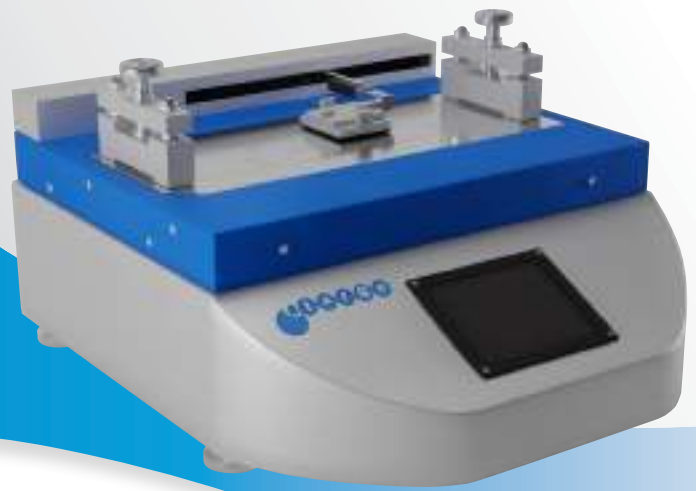
TECHNICAL SPECIFICATIONS

- ✓ Chromium-plated test surface.
- ✓ Static and dynamic friction calculation.
- ✓ Real - time data display.
- ✓ Reporting and USB recording.
- ✓ User - friendly interface.
- ✓ Fast and accurate results.
- ✓ 180 degree peeling capability.

TECHNICAL DATA

- ✓ Compatibility for composite materials such as plastic, rubber and paper.
- ✓ mN sensitivity.
- ✓ 100 mm/min speed and ± 10 mm/min precision.
- ✓ 0.5% FS precision
- ✓ .0-500 mm/min speed.
- ✓ Friction Coefficient Device
Stroke: 200 mm
- ✓ Peeling Device Stroke: 300 mm





APPLICATIONS

- ✓ Flexible packaging
- ✓ Metal
- ✓ Oppression
- ✓ Skins
- ✓ Composites
- ✓ Linoleum
- ✓ Foil
- ✓ Paper
- ✓ Plastics
- ✓ Tyre




a large

Test Sample		Second Sample
Name	Company Name	Name
Width(mm)	Operator Name	Width(mm)
Height(mm)		Height(mm)
Age(months)		Age(months)

Tare Calibration ON

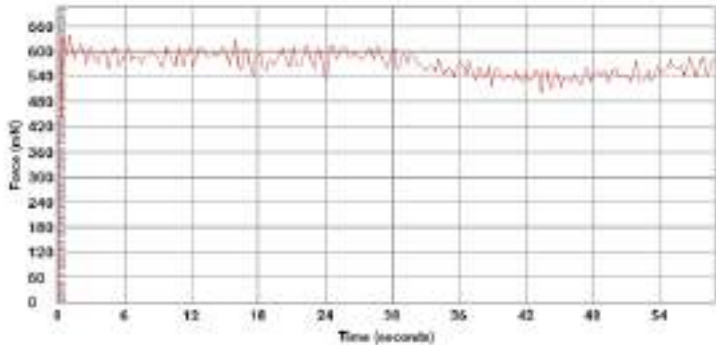
Motorized Test Angle Test

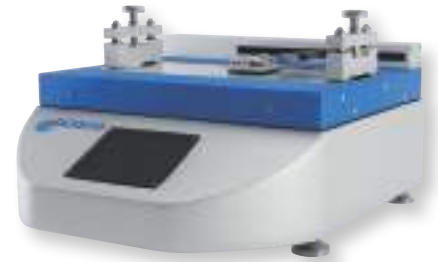
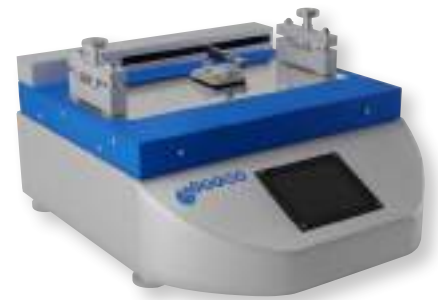
FRICTION COEFFICIENT TEST EQUIPMENT & PEELING DEVICE COF TEST RESULTS

Date: 22.03.2021
Time: 21:19:44

COF Test Results

Standard:	ISO 8295
Company Name:	Alarge
Operator Name:	Umut
Testing Weight(gr):	199.46
Test Mode:	Motorized Test
Sample Name:	Sample 1
Sample Width(mm):	80.0
Sample Height(mm):	200.0
Sample Age(months):	2.0
Testing Against:	The same sample
Max Static Coefficient of Friction:	0.327
Mean Static Coefficient of Friction:	0.301
Max Dynamic Coefficient of Friction:	0.322
Mean Dynamic Coefficient of Friction:	0.297





Technical Identity:

Option to test with samples of different thickness. Suitable reporting according to standards. Real time data graph on 7" screen.

Usage Identity:

Database management, system network.



**AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.**

AL DIR DRIP IRRIGATION TEST DEVICE

Standards

TS ISO 9261

ISO 9261 – TS EN 12734



Sprinkle irrigation water with dissoluble fertilizer or without fertilizer into or on the soil surface after draining and filtering is called drip irrigation.

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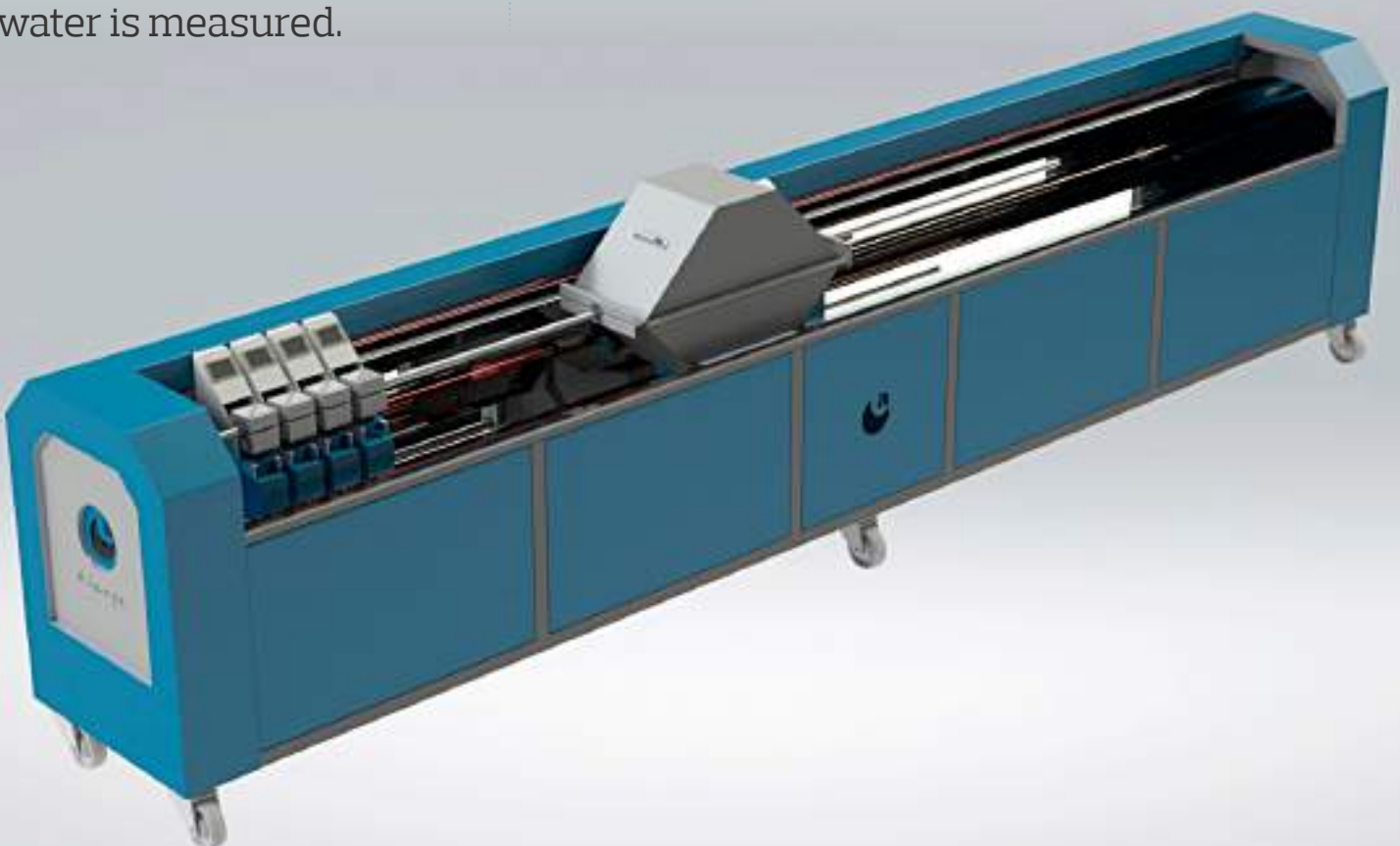
AL DIR DRIP IRRIGATION TEST DEVICE

The Drip Irrigation Pipes Test Device is designed for drip irrigation pipes and drippers used in agriculture

The samples are pressurized under adverse conditions that represent the real conditions of an agricultural environment, and then the amount of leaked water is measured.

TECHNICAL DATA

- ✓ Panasonic PLC Control
- ✓ 7" HMI Touch Operator Screen
- ✓ 15" Touch Reporting Computer
- ✓ Valve system working with fuzzy logic PWM control
- ✓ 10 Loadcells
- ✓ 9 Measuring Stations
- ✓ Maximum Measuring Range: 1200 mm
- ✓ Minimum Measuring Range: 120 mm





AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.

AL ESCR ENVIROMENTAL STRESS CRACK PROPAGATION TEST DEVICE

Standards

ASTM D1693

TS EN ISO 60811-406



Enviromental Stress Cracking Propagation Test depends on observation of the test materials which notched with blade, under specified temperature and chemical environment and under a given stress.

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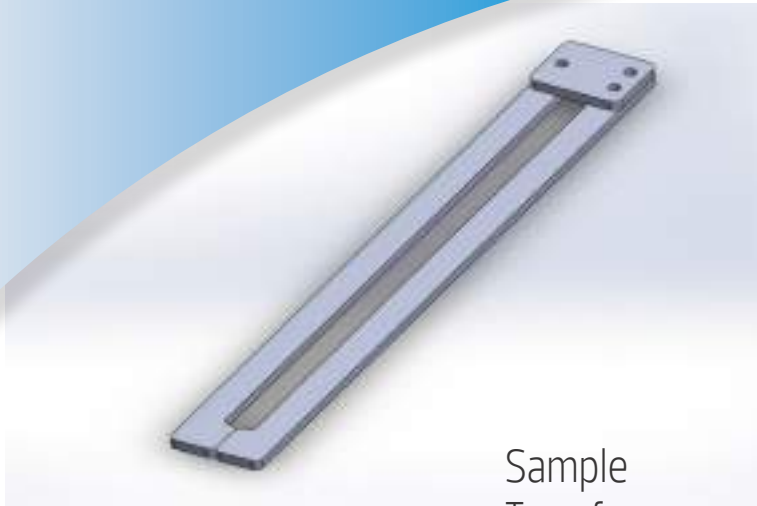
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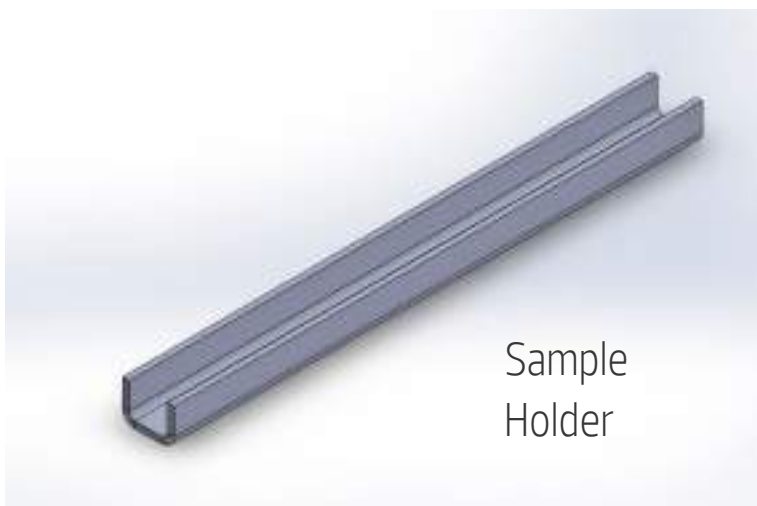
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AL ESCR ENVIROMENTAL STRESS CRACK PROPAGATION TEST DEVICE

TECHNICAL SPECIFICATIONS



Sample
Transfer
Apparatus



Sample
Holder



ACCESSORIES OF DEVICE

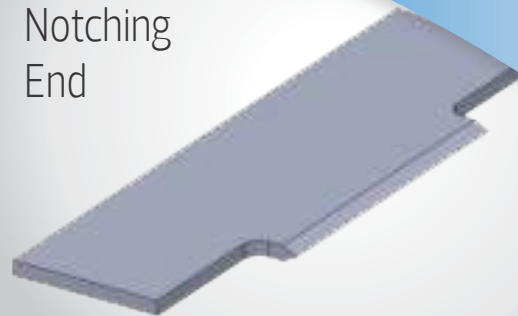
- ✓ Notching End
- ✓ Sample Bender
- ✓ Sample Transfer Apparatus
- ✓ Sample Holder
- ✓ Tube Stand
- ✓ Notching Press
- ✓ Sample Cutting Knife
- ✓ Sample Notch Opener
- ✓ Distilled Water Tank
- ✓ Glass Tube



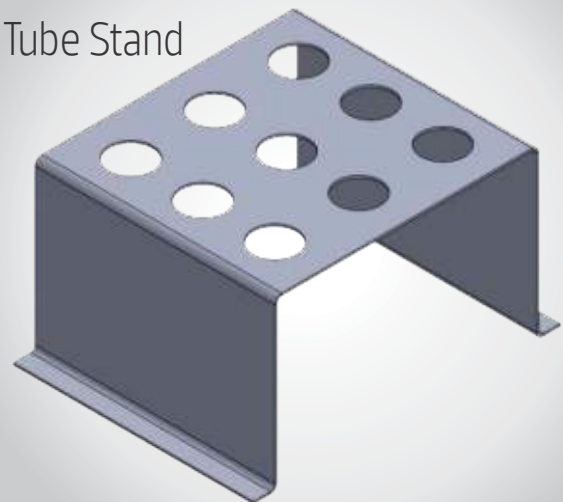
Notching Press



Notching End



Tube Stand

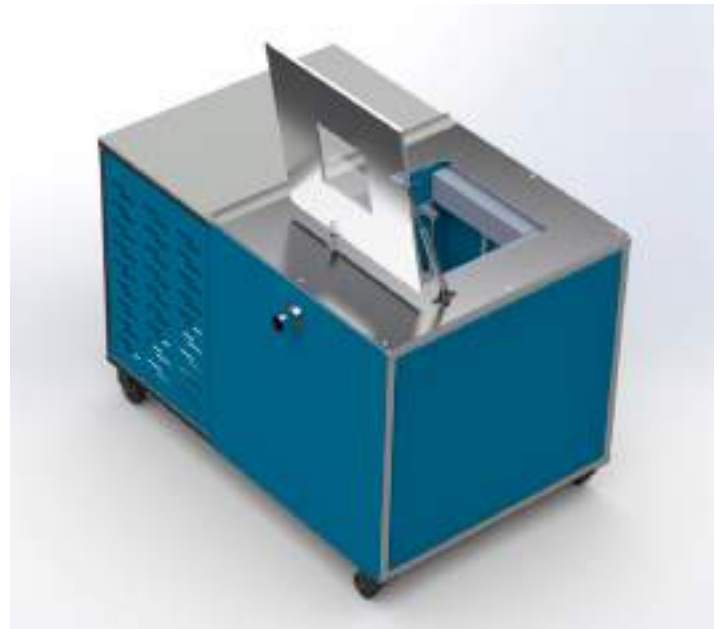


Sample Bender



AL ESCR ENVIROMENTAL STRESS CRACK PROPAGATION TEST DEVICE TECHNICAL SPECIFICATIONS

MODEL	AL ESCR
Tank Volume	7 L
Control	Programmable PID Microprocessor (N-Prime)
Tempature Sensor	Fe-Const Thermocouple
Range	Ambient Temperature +5 °C - 99 °C
Precision	0.1°C
Timer	1 min - 99.9 hour
Heat Diffussivity	0.1°C
Material	Stainless Steel
Standart	ASTM D 1693 - 01
Supply Voltage	280 V 50 Hz
Power	800 W



Technical Identity:

Temperature and time display.
Possibility of testing with 18 samples
Notching apparatus. Possibility of testing in liquid by adding liquid in container.

Usage Identity:

Database management, system network.



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SUSTAINABILITY AND RESILIENCE.

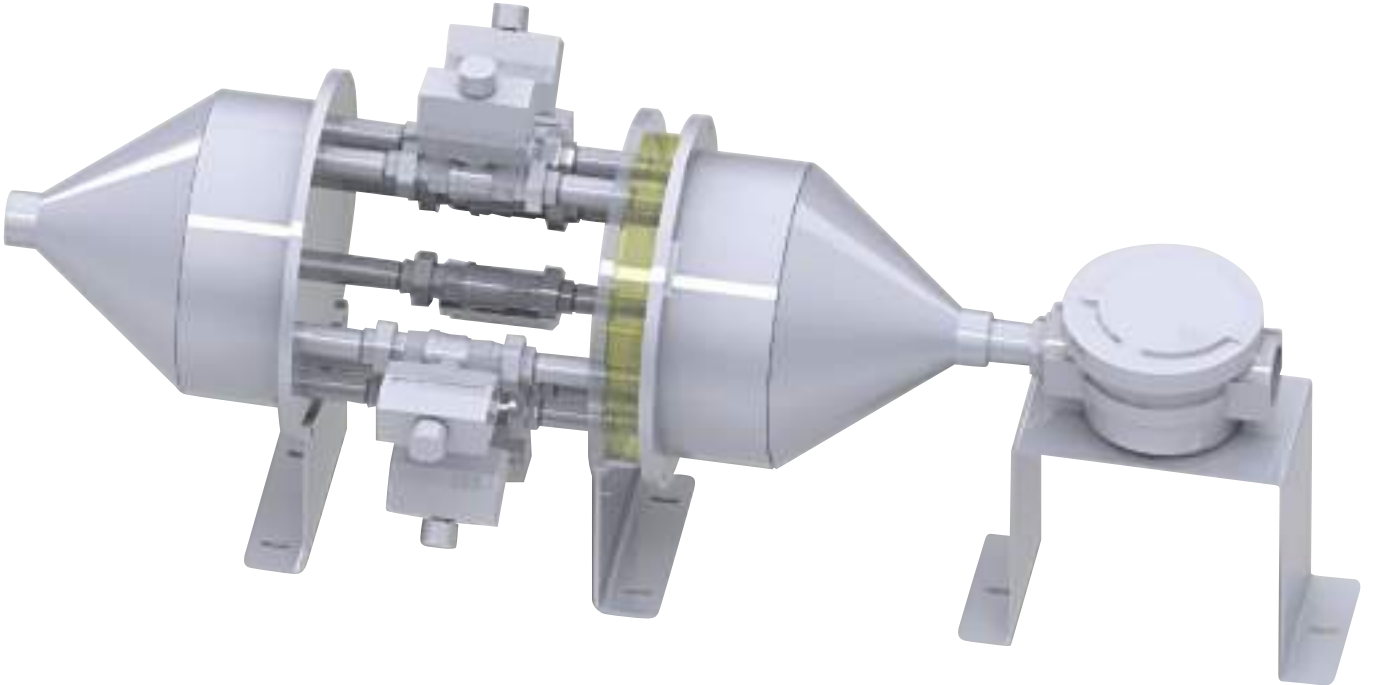
AL GAS METER CALIBRATION TESTER

Standards

014/32 EU (AB) (2004/22 AT)

AND TS EN 1359

Natural Gas Meter Test Machine, can perform flow control test of **6** or **12** gas meters at the same time, compliance with 2014/32 EU (AB) (2004/22 AT) and TS EN 1359 Standarts for flowmeter calibration of natural gas. The machine allows you to determine in case of blockage in gas meter or pressure loss more than specified in the standard.



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AL GAS METER

CALIBRATION TESTER

TECHNICAL SPECIFICATIONS



- ✓ The machine works with sonic nozzle system.
- ✓ It's measurement reliability is high because of $Mach > 1$.
- ✓ Boutique production that can made 3,6 and 12 line for G16, G10, G6 and G2,5 gas meters.
- ✓ It can test 12 gas meter at the same time.
- ✓ Outside temperature measuring sensibility of it is $\pm 0,1 \text{ }^\circ\text{C}$.
- ✓ Duct air temperature measuring sensibility is $\pm 0,1 \text{ }^\circ\text{C}$
- ✓ Gas meter pressure difference accuracy is high as $\%0,25$.
- ✓ Pressure difference can

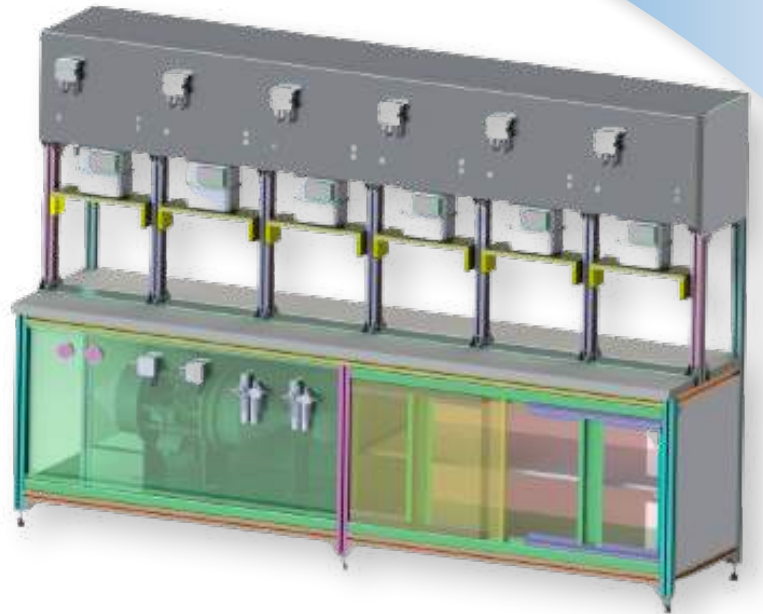
measured for all of gas meters.

- ✓ Test unit makes measurement error and pressure drop tests at Q_{max} , $0.2Q_{max}$, $0.1Q_{max}$ and Q_{min} flow points after that it can report their results.
- ✓ Gas meters can fixed on test unit, one by one.
- ✓ At least 6 gas meters or at least 12 gas meters should fixed on unit every test.
- ✓ Gas meters fixing distance can adjusted between 110– 130 mm.
- ✓ References of test unit is sonic nozzle.
- ✓ DN20–25–32 gas meter connectors will give with test unit.
- ✓ In accordance with PTB band 29, Temperature meters provides 0,05K resolution and $\%0,1K$ ($k=2$ %95) uncertainty value.
- ✓ In accordance with PTB band 29, pressure gauges provide 0,1mbar resolution and $\%0,3mbar$ ($k=2$ %95) uncertainty value.
- ✓ Definition of unlimited number of gas meters (Flow, flow rate,

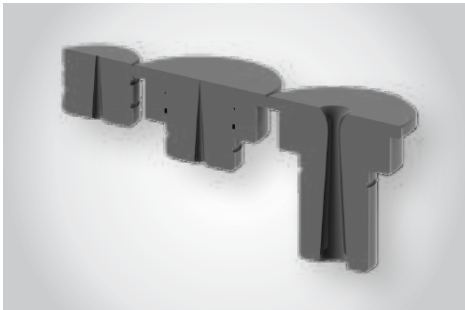


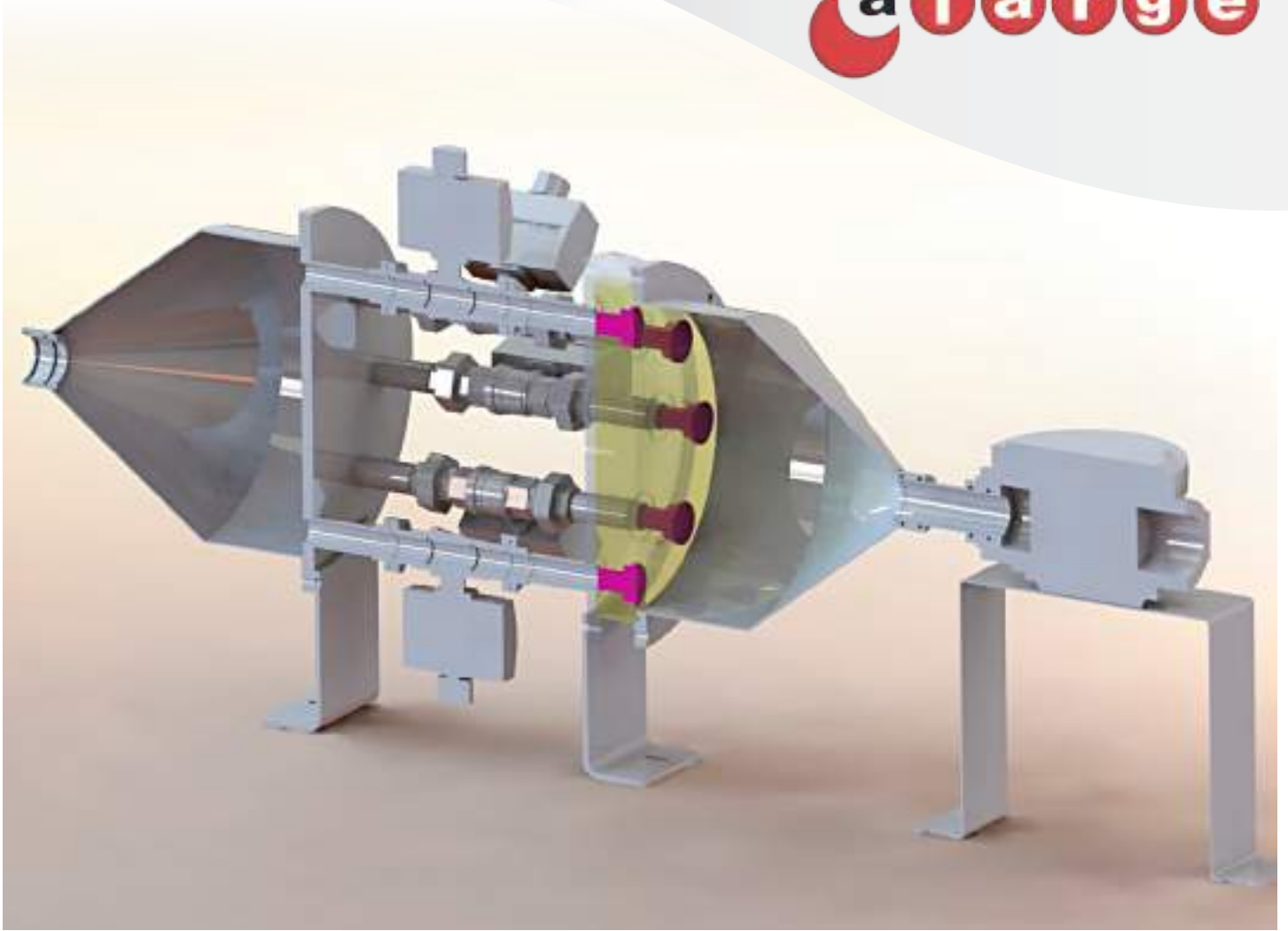
error limit, pressure drop, etc..)

- ✓ English and Turkish software suitable for testing and reporting
- ✓ Reworking of calibration value on software
- ✓ SQL based data saving structure
- ✓ Instant value monitoring during testing (flow, temperature, pressure, etc.)



SPECIAL SONIC NOZZLES





COMPLIANT STANDARTS

- ✓ Measurement and Measurement Tools Inspection Regulation
- ✓ 2014/32 EU (AB) MID Measurement Tools Inspection Regulation
- ✓ TS EN 1359- Gas meters with Diaphragm
- ✓ OIML R137 Gas meters
- ✓ PTB Band V29 Test Instructions Measuring Devices for Gas

Technical Identity:

- **Special %100 domestic manufactured sonic nozzles.**
- **Simultaneously 1 to 12 meters are to be test allowing.**
- **Automatic leak test.**

Usage Identity:

Database management, system network.



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AL CYC PIPE THERMAL CYCLE TESTER

STANDARDS

ISO 10508-1995 : Thermoplastics pipes and fittings for hot and cold water systems

GB / T 18998 : Industrial Chlorinated Polyvinyl Chloride (PVC-C) Piping System

GB / T 18993-2003 : Chlorinated Polyvinyl Chloride (PVC-C) Piping System for Hot and Cold Water

GB / T 18742-2002 : Polypropylene Piping System for Hot and Cold Water

CJ / T 138-2001 : Technical requirements for pipe fittings for cross-linked polyethylene (PE-X) pipes for construction purposes

Alarge AL CYC Pipe Thermal Cycle Tester is designed to examine the long-term performance of plastic pipes under pressure. It is based on the principle of fluid permeation at 90 °C for 1 min and at 10 °C for 1 min under pressure. AL CYC Test System implements the experimental processes in accordance with the following standards.



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PROPERTIES OF THE SYSTEM

- Equipment for testing different pressure, temperature and number of cycles at the same time in more than one line
- Sufficient size cabin, stainless cold hot water pumping and cooling and heating system
- Measurement with a load cell of 0.2% for tension measurement
- Stainless steel fittings
- Independent hot and cold water tank
- Testing with Alarge CYC PLC PC software
- ± 0.1 G C precision temperature measurement
- Cooling unit with min. 10 kW thermal power and 4 kW cooling capacity



THERMAL CYCLE TESTER CHARACTERISTICS

- The flow in the system is provided in a short time by the pump drivers and the pressure sensor is accurate to 0.25%.
- Tank level switches and water passage system from two tanks. Automatic drainage and emergency stop.
- The software optimizes the structure to prevent water mixture during cold water and hot water test passes for the most economical operating cost.
- Pumps are fully stainless steel and special temperature resistive gaskets.
- The system door is electronically locked throughout the test.





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**AUTOMATIC
FILM
APPLICATOR**



Standards

ASTM D823

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AUTOMATIC FILM APPLICATOR

TECHNICAL SPECIFICATIONS

- ✓ Accessory: Doctor Blade
- Aparatus
- ✓ Dimensions: 400 mm x 350 mm x 420 mm
- ✓ Weight: 30 Kg
- ✓ Sample Size: 210 mm x 297 mm

- ✓ Power Supply: AC 220V, 50/60 Hz
- ✓ Bed: Automatic temperature adjustable bed
- ✓ Sliding: Adjustable speed





**AGILE, ROBUST,
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**AL ELM
ELMENDORF TEAR
STRENGTH TESTING
MACHINE**



Standards

ISO 6383/2, T414

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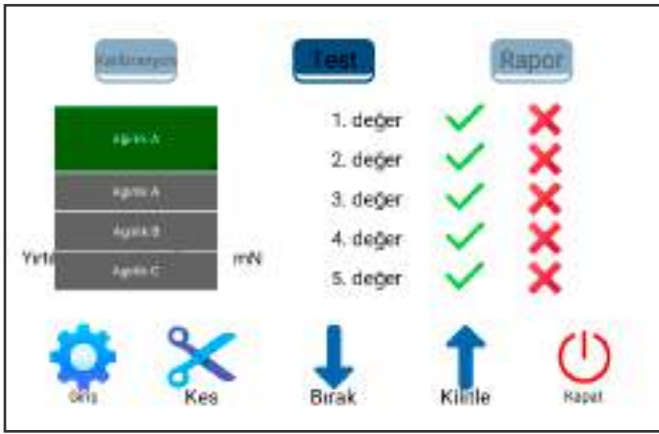
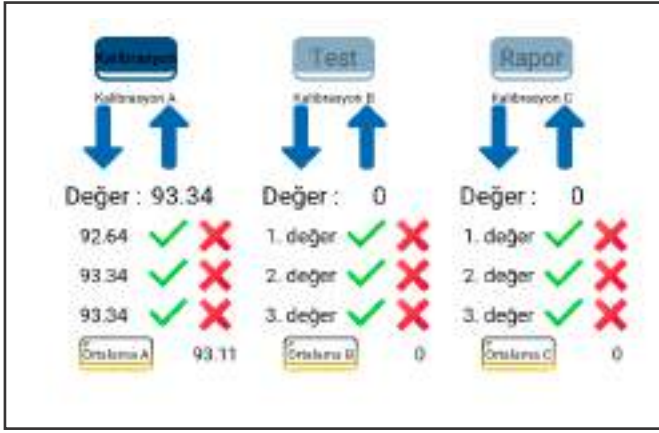
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AL ELM ELMENDORF TEAR STRENGTH TESTING MACHINE

TECHNICAL SPECIFICATIONS



Eimendorf Test Raporu

Tarih: 24.05.2023
Zaman: 21.42.19

Standart:	ISO 6383
Kullanıcı Adı:	umut
Firma Adı:	Alarge
Numune Adı:	p30
Numune Kodu:	970
Numune Turu:	Dikdörtgen Numune
Numune Kalınlığı:	0.25
Test Ağırlığı:	Ağırlık A
Test 1:	245.38
Test 2:	16.97
Test 3:	16.97
Test 4:	16.97
Test 5:	16.97
Maksimum:	245.38
Minimum:	16.97
Ortalama:	62.65
Standart Sapma:	91.36

- ✓ Range of Tearing Force: A = 8N, B = 16N, C = 32N
- ✓ Cut Length: 20 +- 0.2 mm
- ✓ Rip Length : 43 +- 0.2 mm
- ✓ Sample Size: 100 mm x 63 mm
- ✓ Power Supply: AC 220V, 50/60 Hz
- ✓ Dimensions: 580 mm x 440 mm x 280 mm
- ✓ Weight: 35 Kg
- ✓ Load: 8, 16, 32 Newton (3sets)

SAMPLE TEMPLATE:

- ✓ Rectangular Template: 1
- ✓ Constant-Radius Template: 1
- ✓ Display: 7 inch
- ✓ Reporting: PDF and EXCEL Reporting Format
- ✓ Interface : Easy to use and new generation interface



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DART DROP TEST DEVICE

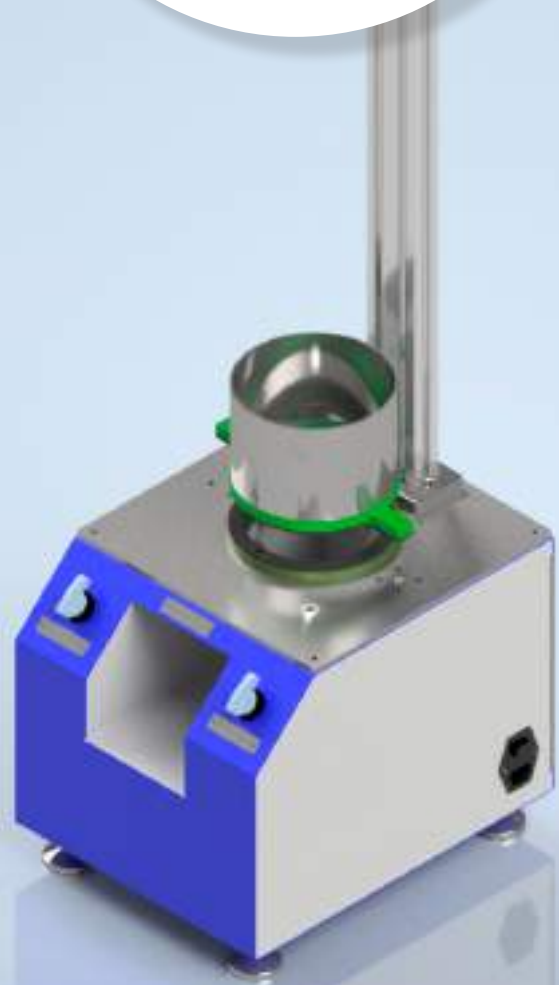
Standards :

**ASTM D1709,
ISO 7765-1
ASTM D5628- GEOMETRY FB**

Application :

- ✓ Plastic film
- ✓ Flexible packaging material
- ✓ Thin sheets
- ✓ Paper
- ✓ Other materials

The dart drop tester is used to measure the impact resistance of plastic film, paper and other materials in compliance with ASTM D1709 and ISO7765 free-falling dart Methods A and B. It is easy to operate and having innovative design. The tester is small enough to conveniently stand on a desktop or laboratory bench.



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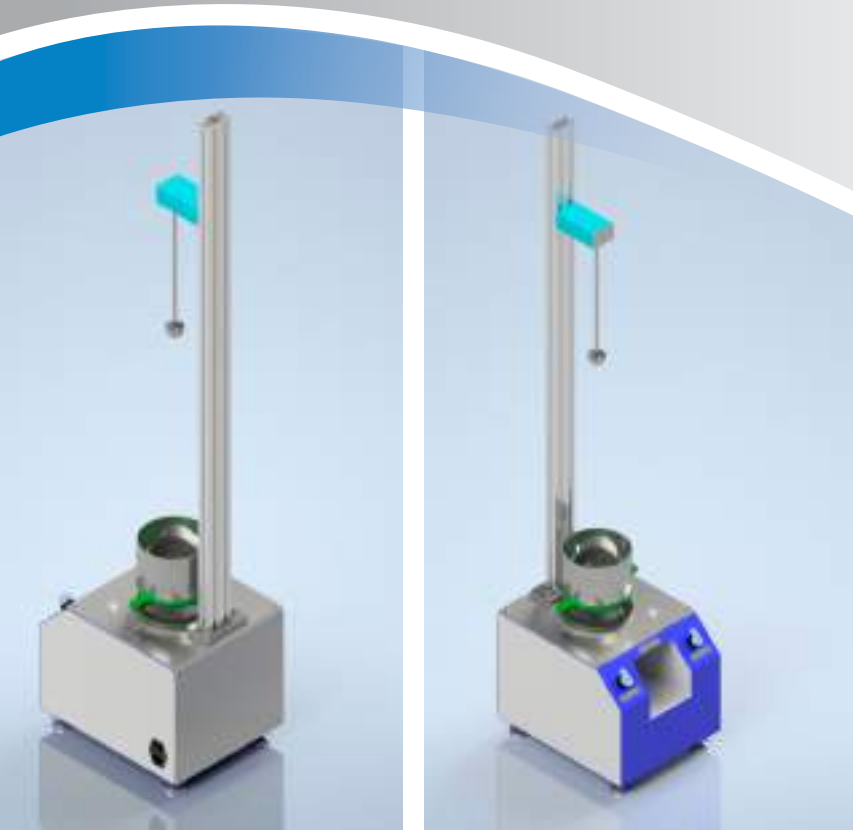
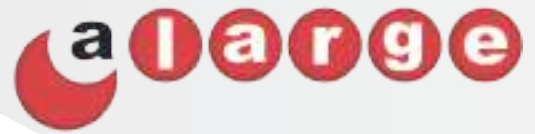
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For operator safety and convenience of usage, the specimen is secured in place using a pneumatic sample clamp. The operator needs to simultaneously activate dual switches mounted on either side of the instrument to engage the clamp and initiate the free falling dart.

Dart Options :

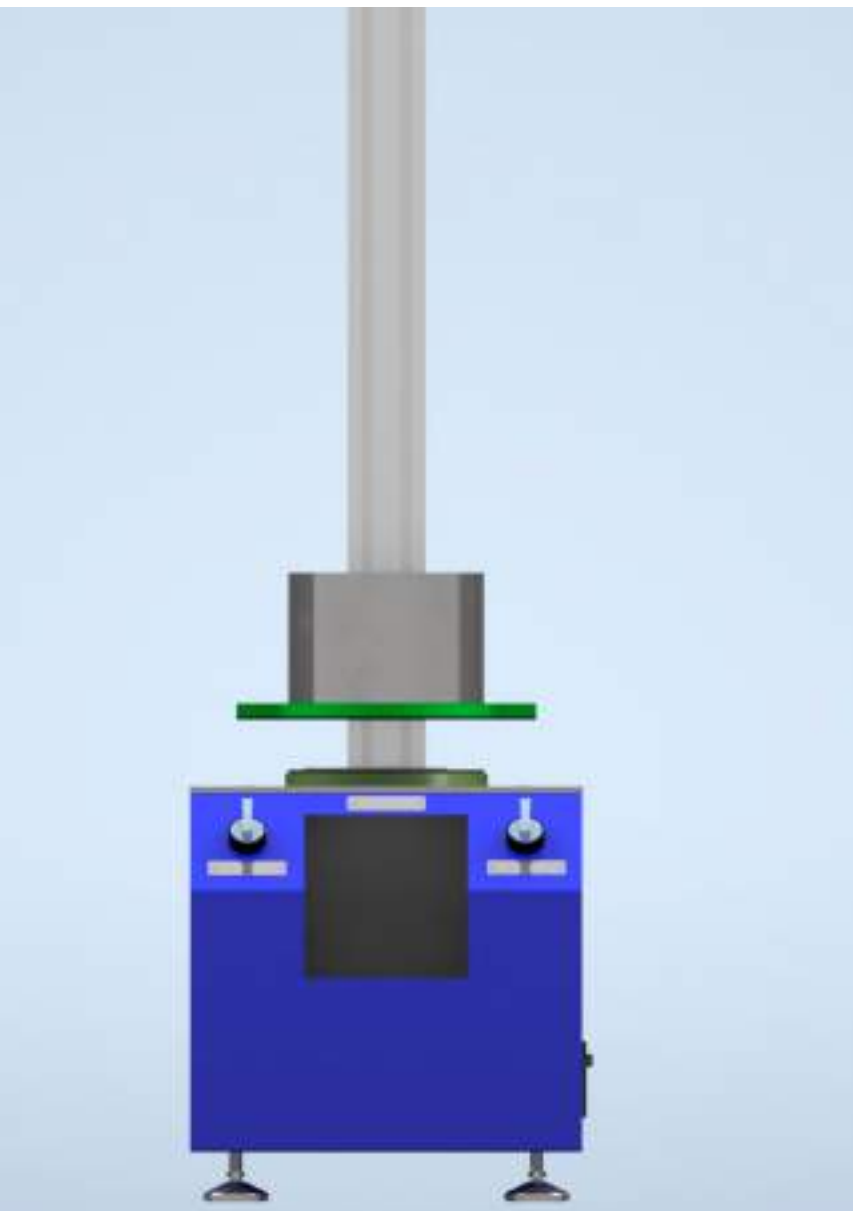
- ✓ Phenolic head
- ✓ Aluminum head
- ✓ Stainless Steel head

Features :

- ✓ Ergonomic tabletop design
- ✓ Pneumatic dart release
- ✓ Wide range of incremental weights
- ✓ Weight set included
- ✓ Cushioned dart landing area

Pneumatic operation enhances the reliability of test results.

A variety of film materials can be tested using spare darts and weight sets for particular dart weights.





THERMAL ANALYSIS TEST SYTEMS

THERMAL ANALYSIS TEST MACHINES
MFI - MELT FLOW INDEXER
AL KAR - CARBON BLACK CONTENT TEST E.
AL VIC VICAT TEST MACHINE
LABORATORY OVEN AND FURNACES

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[alargetestequip](https://www.instagram.com/alargetestequip)



THERMAL ANALYSIS TEST SYSTEMS

THERMAL ANALYSIS TEST MACHINES

MFI - MELT FLOW INDEXER

AL KAR - CARBON BLACK CONTENT TEST E.

AL VIC VICAT TEST MACHINE

LABORATORY OVEN AND FURNACES

VERTICAL FLAME PROPAGATION TESTER

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THERMAL ANALYSIS TEST MACHINES

Compliance with standards

ISO EN 11357-1, 11357-3, 11357-6, 11358-1, ASTM E1131

Thermal analysis techniques are techniques in which the physical properties of the substance and / or reaction products are measured as a function of temperature when a controlled temperature program is applied to a substance.

These techniques are widely used in both quality control and research studies of a wide range of industrial products such as polymers, drugs, clays and minerals, metals and alloys.



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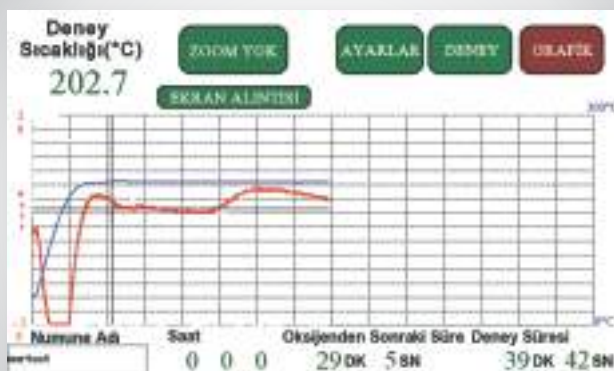
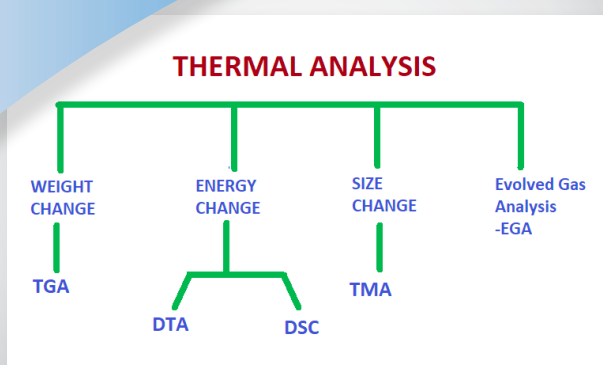
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THERMAL ANALYSIS TEST MACHINES

TECHNICAL SPECIFICATIONS



DSC/OIT TEST MACHINE

Oxidation Induction Time (OIT) is defined as the time period from the first contact with oxygen until the beginning of oxidation. The temperatures remain constant as the pure substance or compounds change state. The energy exchange is calculated by comparing the sample with a pure substance while keeping the sample at a certain temperature without heating / cooling or state changing.

AL-DSC/OIT PROPERTIES

- ✓ The sample amount is max 50 mg
- ✓ Temperature range is between $-170 + 900\text{ }^{\circ}\text{C}$.
- ✓ Temperature accuracy $\pm 0.2\text{ }^{\circ}\text{C}$
- ✓ Temperature resolution $\pm 0.02\text{ }^{\circ}\text{C}$
- ✓ Heating rate $0.01 - 500\text{ }^{\circ}\text{C} / \text{min}$
- ✓ Calorimeter accuracy $< \pm 0.3\%$
- ✓ Calorimeter sensitivity 0.35 mW
- ✓ OIT works according to the 11357-6 standard in the range of 10 - 1000 mg.
- ✓ 5.4" touch screen user panel
- ✓ Data transmission rate in microseconds

AL-DSC/OIT SOFTWARE

- ✓ Real time mW / temperature and temperature / time curve
- ✓ Setting OIT time
- ✓ Enthalpy calculation from the curve
- ✓ Crystallinity calculation from the curve
- ✓ Determining the melting temperature
- ✓ Determination of thermal and temperature peaks
- ✓ Creating reports in PDF format
- ✓ Plotting different experiments in a row



THERMAL ANALYSIS TEST MACHINES TECHNICAL SPECIFICATIONS

MODEL	AL DSC/OIT
Standards	TS EN ISO 11357-1, 11357-6, 11357-3
Working Temperature	25-300 °C
Resolution	0,02 °C
Accuracy	0,02 °C
Temperature Control	Dijital PID
Sample Weight	17 mg
Heating Speed	0.01 - 500 °C/min
Calorimeter Accuracy	< ±0,3 %
Calorimeter Sensitivity	0.35 mW
Control Panel	5.4" Touchscreen User Panel
Dimensions	600x600x170 mm
Net Mass	21,5 kg
Power Consumption	2,6 A (0-240 V AC 50-60 Hz)
Required Gases	Nitrogen, Oksigen (Ultra Pure, Ultra Dry)



Melting Enthalpy
 ΔH J/gr and crystallization

Convenience of use:
**Specific user friendly
software.**



THERMAL ANALYSIS TEST MACHINES TECHNICAL SPECIFICATIONS

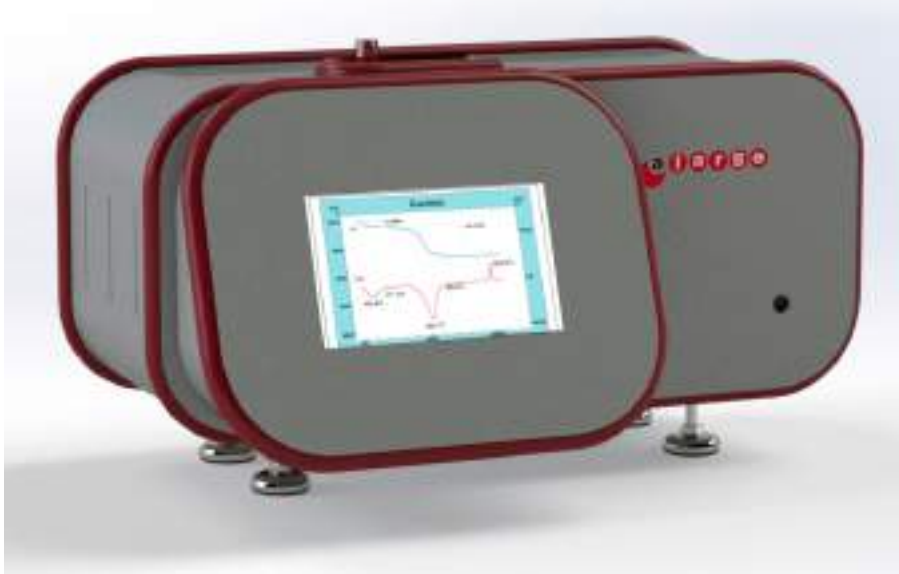
MODEL	AL TGA
Standards	TS EN ISO 11358-1, ASTM E1131
Working Temperature	-170 / +900 °C
Resolution	0,02 °C
Accuracy	0,02 °C
Temperature Control	Dijital PID
Sample (Max.)	50 mg
Heating Speed	0.01 - 500 °C/min
Calorimeter Accuracy	< ±0.3 %
Calorimeter Sensitivity	0.35 mW
Control Panel	5.4" Touchscreen User Panel
Dimensions	600x600x170 mm
Net Mass	21,5 kg
Power Consumption	2,6 A (0-240 V AC 50-60 Hz)
Required Gases	Nitrogen, Oksigen (Ultra Pure, Ultra Dry)

THERMOGRAVIMETRIC ANALIZ TEST MACHINE (TGA)

TGA is a quantitative analysis technique based on temperature and weight variation of the sample. This changes are observed according to result of rupture of physical or chemical bonds in the environment full of nitrogen or argon. It provides the determination of the purity and quantity of components in the sample based on degradation.

TGA PROPERTIES

- ✓ Temperature Range
-170/900 °C
- ✓ Temperature accuracy
±0.2 °C
- ✓ Automatic Gas Switch
Nitrogen to Oxygen
- ✓ Minimum Sample Weight
0,015g/ max 50
- ✓ Weighting Range 0,015 - 1 g
- ✓ Weight Resolution 0,1 mg



Technical Identity:

High precision, PLC control.

Usage Identity:

PC PLC Touch Screen Control Panel, Detailed test report, Ergonomical design.



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AL MFI MELT FLOW INDEXER

* **Long Life – High Precision**

Melt flow index tests are carried out and define the true process to characterise the melt flow of plastic raw materials. Equipment can perform compliance with **TS EN ISO 1133** and **ASTM D 1238** standards. It simulates the behaviour of polymer product or raw material in melt phase, with measuring melt characteristic and determine the quality.



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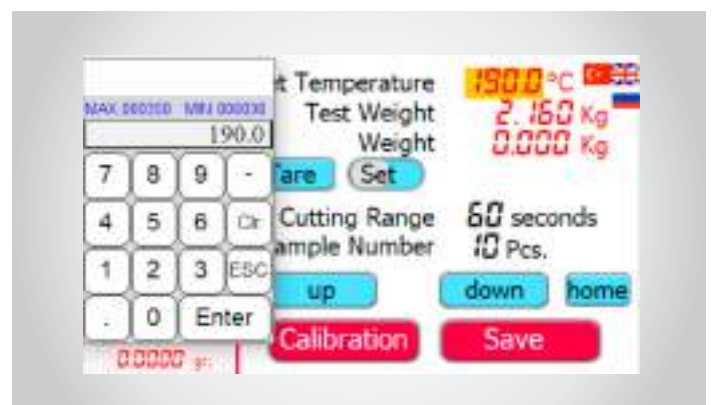
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AL MFI MELT FLOW INDEXER

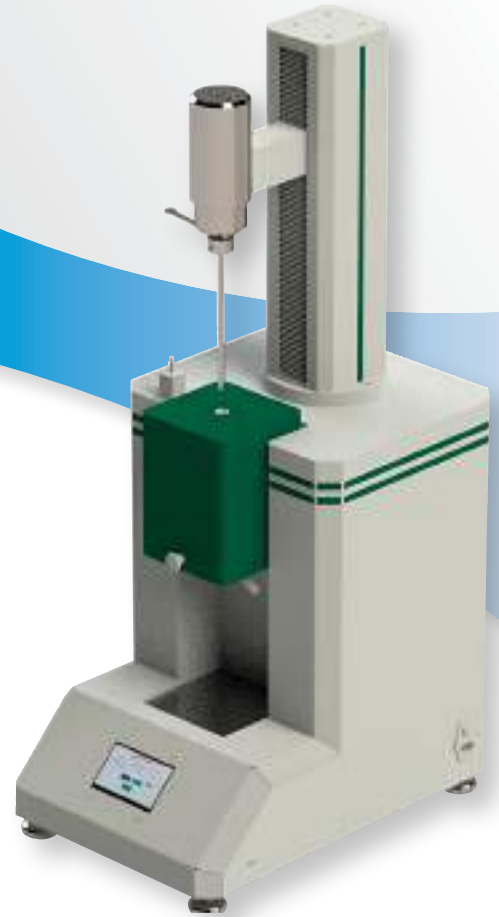
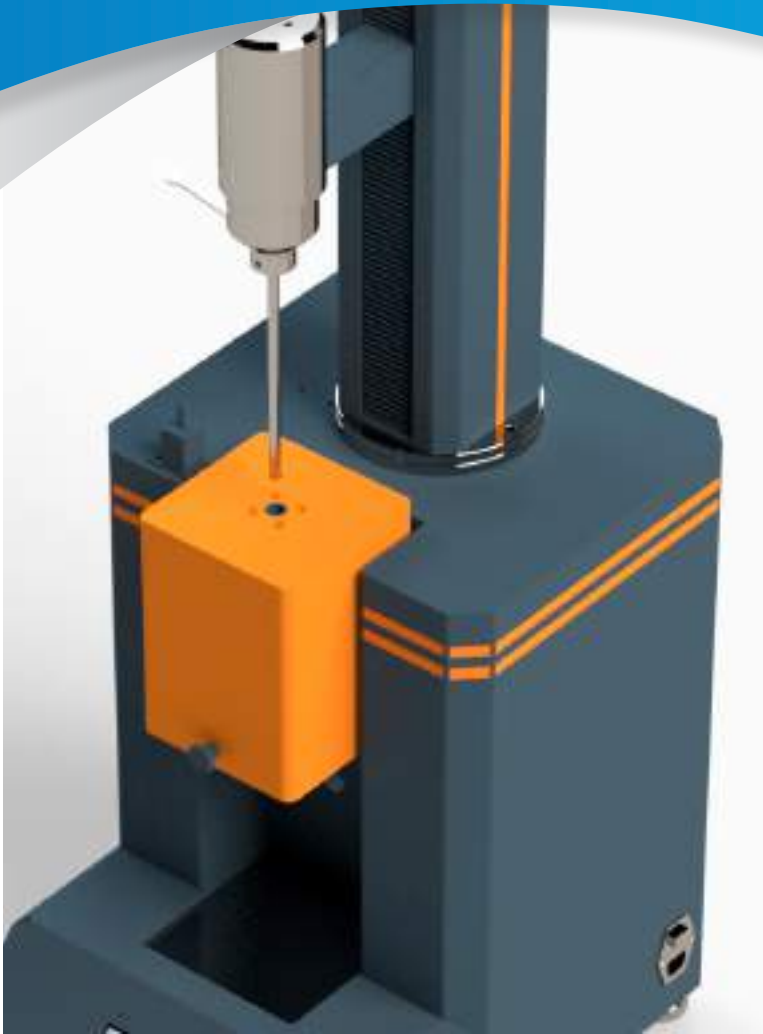
TECHNICAL SPECIFICATIONS

3 MODELS AVAILABLE: AL MFI-A, AL MFI-AB and AL MFI-ABA

- ✓ Two region heaters and two region adaptive/PID control heating system
- ✓ Independent temperature control in both compartments
- ✓ Equivalence in heat distribution
- ✓ User friendly, high precision easy to use
- ✓ Functional with touch screen and graphical software
- ✓ Automated cutter – adjustable cutting time, type and plug ping for release
- ✓ Rigid, solid and stable structure
- ✓ Automated calculation and reporting software for MFI MVR test



- ✓ Modular structure. AL MFI A, AL MFI AB and AL MFI ABA instruments are convertible to each other



ORIFICE SPECIFICATIONS

Length	8 mm ± 0,025 mm
Exterior Dimensions	9,55 +- 0,007 mm
Interior Dimensions	9,55 +- 0,007 mm
Rigidity	500 Vickers
Surface Roughness	10 micron
Material	Tungsten Carbide
Lengh	162 mm
Coating	Titanium

AL MFI MELT FLOW INDEXER TECHNICAL SPECIFICATIONS

MODEL	AL-MFI-A	AL-MFI-AB	AL-MFI-ABA
Test Method	MFI, MFR	MFI, MFR, MVR	MFI, MFR, MVR
Standards	ASTM D1238, TS EN ISO 1133		
Orifice Material	Titanium Coated Tungsten Carbide	Titanium Coated Tungsten Carbide	Titanium Coated Tungsten Carbide
Type end/Orifice Plug	X	✓	✓
Orifice Diamonds	2,095 ± 0,005 mm		
Diameter of Melting Channel	9,55 +- 0,007 mm		
Melting Channel Material	Tungsten Carbide	Tungsten Carbide	Tungsten Carbide
Temperature Range	120-450 °C	120-450 °C	120-450 °C
Temperature Accuracy	0.1 °C	0.1 °C	0.1 °C
Temperature Control	Adaptive PID	Adaptive PID	Adaptive PID
Heating Time	10 min (25-200 °C)	10 min (25-200 °C)	10 min (25-up to 200 °C)
Sample Size	3-8 g	3-8 g	3-8 g
Cutting	Step Motor	Step Motor	Step Motor
Cutting Accuracy	0,01sn	0,01sn	0,01sn
Cutting Time Range	0-9999 sn	0-9999 sn	0-9999 sn
Distance Sensor	<input type="checkbox"/>	✓	✓
Distance Sensor Accuracy	<input type="checkbox"/>	5 micron	5 micron
Auto. Weight Loading Module	<input type="checkbox"/>	<input type="checkbox"/>	✓
0,325 kg Load	✓	✓	✓
1,2 kg Load	✓	✓	✓
2,16 kg Load	✓	✓	✓
3,8 kg Load	✓	✓	✓
5,0 kg Load	✓	✓	✓
8,7 kg Load	✓	✓	✓
10,0 kg Load	✓	✓	✓
12,5 kg Load	<input type="checkbox"/>	<input type="checkbox"/>	✓
20,0 kg Load	<input type="checkbox"/>	<input type="checkbox"/>	✓
21,6 kg Load	<input type="checkbox"/>	<input type="checkbox"/>	✓
USB Data Port	✓	✓	✓
Alarge Reporting Software	✓	✓	✓
Net Weight	40 kg	43 kg	80 kg
Electric Rating	220 V / Single Phase	220 V / Single Phase	220 V / Single Phase
Power (Watt)	450 W	450 W	450 W

Available ✓ Optional Not Applicable X



Technical Identity :

Equivalent heat dissipation with dual zone heating system, high accuracy titanium coated Tungsten Carbide Core and Type end / Orifice.

Usage Identity :

Otomatik cutting and touch screen panel easy testing. Type and plug mechanism to get air from sample. Statistical evaluation of result.



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**AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.**

AL KAR CARBON BLACK CONTENT TEST EQUIPMENT

**ISO 6964,
ASTM D 1603**
standards.

Alarge AL KAR Carbon Black Content Test Equipment performed to measure the carbon black content of the engineering plastics.

TECHNICAL PROPERTIES

- In compliance with international standards
- Operation under high temperature, inert atmosphere
- The amount of carbon black is calculated from the weight difference.
- Gas cleaning system
- Precise carbon determination by inert atmosphere control
- PID Control System
- Touch screen operation panel
- Temperature range of 550 and 900 ° C
- Quartz tube and ceramic insulation.



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AL KAR CARBON BLACK CONTENT TEST EQUIPMENT TECHNICAL SPECIFICATIONS

MODEL	AL-KAR 1	AL-KAR 2	AL-KAR 3
Standards	ISO 6964, ASTM D 1603		
Type	Single Furnace	Double Furnace	Triple Furnace
Temperature Range	50-900 °C		
Temperature Sensitivity	0,1°C		
Temperature Control	Digital PID		
Max. Sample Weight	2 g	2 x 2 g	3 x 2 g
Gas	%99,9 Nitrogen		
Net Weight	40 kg	60	80
Voltage	220 V		
Dimensions(WxLxH) cm	40x70x70	40x85x70	40x100x70

AL KAR – 2, 3 CARBON BLACK EQUIPMENT WITH MULTIPLE FURNACES

POSSIBILITY TO PERFORM MULTIPLE SEPARATE TESTS AT THE SAME TIME

Apparatus:

- ✓ ceramic boat crucibles
- ✓ drying tube and wash bottles for safety
- ✓ Quartz test tubes
- ✓ Gas cleaning apparatus



AL-MIC MICROTOM

Al-MIC Microtom is used for cutting thin samples for OIT device or Carbon Black Distribution Device

- ✓ The cutting range: 20 - 750 microns
- ✓ Servo motor control.
- ✓ High sensitivity with special knife.

Technical Specifications :

- ✓ Automatic or manuel sample cutting.
- ✓ 4.7" touch screen panel.
- ✓ Security sensor
- ✓ Panasonic PLC control



AL POL POLARIZED MICROSCOPE

Optical System: UCIS infinity independent achromatic optical system

Observation Tube: Seidentopf trinocular viewing head, inclined 30°, rotatable 360°, 50-75 mm interpupillary distance settings, ±5 diopter adjustment

Eyepiece: WF10x plan eyepieces, 20 mm field of view, high eye point

Objective: Infinity achromatic objective 4X, 10X, 40X, 100X

Nose-piece: Quadruple nose-piece inward facing with positive click stops





Condenser:

Abbe condenser

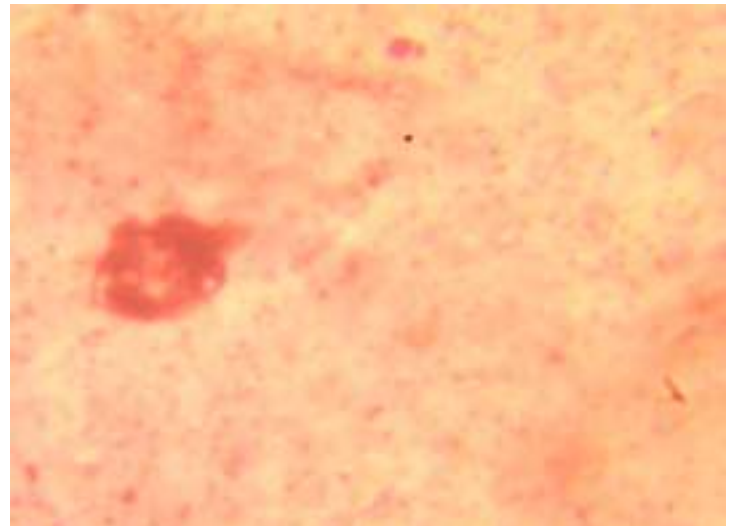
N.A.1.25 With iris diaphragm, phase-contrast / dark filed slide holder, hand-wheel lift, precise condenser up and down adjustable system. The condenser bracket is equipped with a condenser center adjustment device for easy alignment of the center of the illumination system. The condenser aperture diaphragm uses the same color as the color of the objective lens to facilitate high resolution, high contrast images.

Coarse and Fine Focus: Low position coaxial coarse and fine focus mechanism with markings on fine focus knobs. Moving range 9mm. Fine focus sensitivity 0.001 mm

Stage: Mechanical stage 156*138mm, moving range 76*54mm. Sensitivity is 0.1 mm, two calipers, moving ruler, XY low position hand wheel.

CONFIGURATION LIST

MODEL	AL-MIC200
UB200 Body	✓
Trinocular, Interpupillary Distance 50-75 mm (20:80)	✓
High Eye-Point Plan Eyepiece WF10X/20	✓
Infinity Achromatic Objective 4X N.A.0.13	✓
Infinity Achromatic Objective 10X N.A. 0.30	✓
Infinity Achromatic Objective 40X(S) N.A.0.70	✓
Infinity Achromatic Objective 100X(S)/(Oil) N.A. 1.25	✓
Mechanical Stage, Right Handed, 156X138 mm, Movement Range 76X54 mm	✓
Quadruple Nosepiece, Inward Facing	✓
Abbe Condenser	✓
Kohler Illuminator (With Field Diaphragm)	✓
for 6V 20W Halogen Lamps	✓
1X C-Mount	✓
Polarizer	✓
Analyzer	✓
11.6" LCD Screen	✓
Blue Filter (φ38)	✓
Ground Glass (φ38)	✓
6V 20W Osram Lamp	✓ ✓
250V/3.15A φ5X20 Fuse	✓ ✓ ✓
Immersion Oil	✓
Dust Cover	✓
2mm Allen Screw Driver	✓
Power Cord	✓





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SUSTAINABILITY AND RESILIENCE.**

AL VIC VICAT TEST MACHINE

Standards

HDT ISO 75, ASTM D 648

VICAT ISO 306, ASTM D 1525



Thermoplastics materials can be characterized by different testing methods Vicat / HDT is one of the main testing methods. It is based on measuring whether the temperature is within the accepted range when a standard needle tip pierce / stick 1 mm into the sample. Database management, system network.

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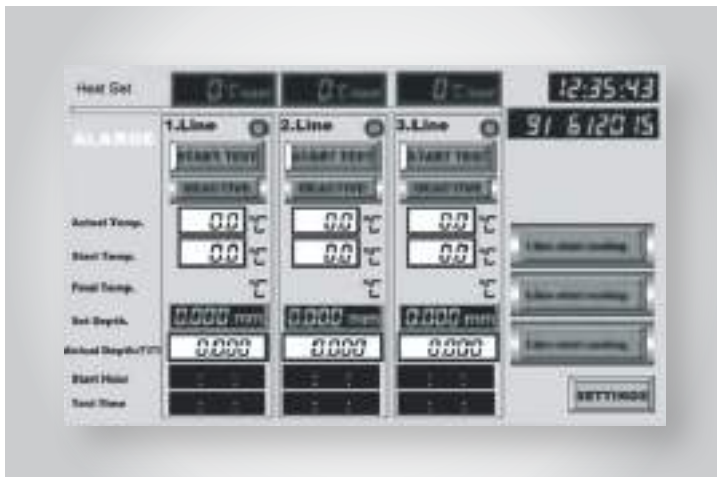
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AL VIC VICAT TEST MACHINE

TECHNICAL SPECIFICATIONS



- Ability to test 6 samples at the same time
- Compliance with test frequency
- Fast cooling attachments
- Highly reliable results
- Compliance with scientific studies
- Extremely low failure statistics
- Extremely low maintenance costs
- Ability to work with silicone or other industrial oils
- 1 mm² polished needle
- High level weight accuracy
- Stable frame / ergonomic desktop design
- Functional control design



- ✓ 0.2% position measurement resolution
- ✓ ± 0.1 ° C temperature measurement accuracy
- ✓ Linear temperature rise
- ✓ ± 5 ° C Homogeneous temperature distribution
- ✓ 10.1", 5.7" and 7" touch screen options
- ✓ User-friendly, fast screen switching
- ✓ Al VIC / HDT Software
- ✓ Sample dimensions (width, length, thickness) entry option

AL VIC/HDT SOFTWARE



- ✓ Temperature linearity curve
- ✓ Needle edge displacement curve
- ✓ Data table with time
- ✓ Result table
- ✓ User interface
- ✓ Real-time graphical display
- ✓ Report with company logo
- ✓ 15.7 "Touch PC display
- ✓ PDF Windows 10 convertible report format



AL VIC VICAT TEST MACHINE

TECHNICAL SPECIFICATIONS

MODEL	AL-VIC
Number of Lines	1-3-6
Number of Chamber	1-2
Temperature Range	20-300 °C
Temperature Increase	Adaptive control and PID
Temperature Accuracy	0,1°C
Fast Cooling System	50-120 °C/h
Measurement Resolution	0,001 - 0,005
Measurement Sensitivity	0,1%
Weight	10 N - 50 N
Weight Sensitivity	0,0005 kg
HDT Test	<input type="checkbox"/>
Operation	TouchScreen PC / PLC
Software	✓
PC	✓
Standarts	ISO 75, 306, ASTM D 648, 1525
Height	1010 mm. max
Width	660 mm
Length	650 mm
Weight	50 - 70 kg
Power	220 V

Available ✓ Optional Not Applicable ✗

Technical Identity:

Ability to test with high sensitivity and accuracy, Homogeneous temperature distribution

Usage Identity:

User-friendly interface, High definition test, easy to test and report. Database management, system network.





**AGILE, ROBUST,
SMART LAB SYSTEM.**

SUSTAINABILITY AND RESILIENCE.

LABORATORY OVEN AND FURNACES



CLIMATIC CABIN

Climatic cabinets are used for simulation of standard climates and extreme environmental conditions, such as dry heat, high air humidity, up to freeze. Climatic cabinet designed for all research and control laboratories to perform: cold and/or hot temperature measurement at controlled humidity conditions, any kind of freezing/thawing tests and accelerated curing tests.

- ✓ 120 L , 250 L , 600 L options.
- ✓ Temperature operating range °C: -50-150

- ✓ Humidity range: 20%RH 98%RH
- ✓ Humidity-controlled temperature range: 10 - 70 °C
- ✓ Temperature setting accuracy: ± 0.1 °C
- ✓ Humidity adjustment accuracy: 1 % Rh
- ✓ Number of shelves: 2-7
- ✓ Repeatability: 1-999
- ✓ Internal surface structure: Stainless Steel
- ✓ External surface structure: electrostatic coated steel
- ✓ Touch screen
- ✓ Number of programs: 1-10
- ✓ Automatic water supply unit.

EN 196-1, EN 1367-1, EN 12390-9 STANDARDS.

- ✓ Doors with magnetic seal, with safety lock
- ✓ Forced ventilation
- ✓ Internal temperature and humidity sensor
- ✓ Heating system with low thermal inertia electric resistances, with safety

- thermostat
- ✓ Cooling system with CFC-free refrigeration unit, hermetic type with air condensation
 - ✓ Humidification system with water steam generator
 - ✓ Direct expansion

- dehumidification system with separate evaporator
- ✓ Control and command unit with two separate digital regulators for temperature and humidity, equipped with RS 485 interface

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LABORATORY OVEN AND FURNACES



COMBUSTION CABINET

UL 94, ASTM D635, ASTM D3801, ASTM D4804,

ASTM D5048, ASTM D4986, IEC 60695 :11-10 / 11-20,

ISO 9772, ISO 9773 STANDARDS.

The flammability test cabinet is professionally designed for the determination of the resistance to combustion of industrial samples such as plastics, thermoplastics, fabrics, and composites in a controlled and standard environment. It can be used for all polymers.

The flammability test cabinet is used in testing laboratories to check the flammability of parts of plastic materials to ensure the safety of electronic devices or devices. The cabin is made of stainless steel. The inside of the cabin

is black for easy observation and has a large sliding window. Sample placement and bunsen burner placement can be changed horizontally / vertically.

- ✓ 0.1 s resolution digital timers
- ✓ Burner positioning apparatus for manual use
- ✓ Manometer / pressure meter, 300 mm
- ✓ 0°, 20°, 45° adjustable burner

Applications

- ✓ Plastics
- ✓ Consumer Electronic
- ✓ Textile
- ✓ Architecture and Construction





MUFFLE FURNACE

EN 12697-1 -C, EN 13108 STANDARDS.

Minimize outer surface temperatures while maintaining uniform heat distribution within the chamber. Suitable for a variety of industrial and

laboratory applications. Muffle Furnace has the ideal design for applications of different sectors such as metal, ceramic and food industry, jewellery and

dentistry with high temperature furnaces for general purpose, maximum operating temperatures of 1000 °C.

Technical Specifications

- ✓ Internal surface structure Aluminum oxide fire brick
- ✓ Temperature sensor Ni-CrNi Thermolement
- ✓ Exterior Oven painted sheet metal
- ✓ Electronic thermostat with digital display
- ✓ Internal temperature differences $\pm 10\text{ }^{\circ}\text{C}$
- ✓ Temperature range: 250 => 1000 °C
- ✓ Capacity: 2 L – 4L – 7L- 10L – 12L
- ✓ Thermostat operating accuracy: $\pm 1\text{ }^{\circ}\text{C}$
- ✓ Thermostat adjustment accuracy: 1 °C
- ✓ Temperature measurement accuracy: 1°C
- ✓ Insulation material: Ceramic
- ✓ Heating power: 2500 W
- ✓ Input voltage: AC 220 V – 50/60 Hz



OVEN

TS EN 50086, TS EN 1604, EN 60811-1-2,

TS 9764, TS 11451 STANDARDS.

Sterilizer devices are used in all environments where sterilization processes are carried out with dry

air and in food, chemistry, electricity, electronics, paint, textile, etc. of the industry. It is used in heating-drying

processes between ambient temperature and 250 °C in sectors.

Technical Specifications

- ✓ 5 L, 10 L, 20L, 48 L, 60 L 120 L, 250 L, 500 L and 750 L volume options.
- ✓ Temperature operating range: Ambient Temperature + 5 °C / 250 °C
- ✓ Ideal design for dry air sterilization, drying and heating
- ✓ Control system with programmable PID microprocessor
- ✓ Digital display for temperature and time, easy to

- use control panel
- ✓ Suitable insulation for constant and stable temperatures
- ✓ Anodized (Anodic oxidation) coated aluminum cell
- ✓ Homogeneous temperature distribution and stability provided by natural air circulation
- ✓ Low heat loss thanks to tightly closing and fully sealing door
- ✓ Adjustable ventilation flap

- ✓ Safety thermostat
- ✓ Made the program 1 min.
 - Snooze for a set time between 99.9 hours
 - Thermostat operating accuracy: ± 1 °C
 - Thermostat adjustment sensitivity: 1 °C
 - Insulation material: ceramic
 - Temperature measurement accuracy: 1 °C
 - Stainless steel interior and exterior



AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.

VERTICAL FLAME PROPAGATION TESTER



Standards :

TS EN 60332 / IEC 60332

This device is designed to perform vertical flame propagation tests of cable, insulated single core wire samples, non-metallic and composite conduits, electrical insulated conductor, under a 1 kW pre-mixed flame. The device consists of metallic enclosure and ignition source.

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It creates a flame with the combination of air and propane gas and applies the flame to the cable sample for a time determined according to the cable outer diameter. The test device is designed in accordance with TS EN | IEC 60332 / IEC 61386-1 standards.



The Flame Propagation Test Apparatus consists of:

- ✓ Stainless steel made chamber, interior anti-corrosion coating for long life use.
- ✓ Stainless steel made sample support arm.
- ✓ 1 kW air-gas pre-mixed burner.
- ✓ Flowmeters for propane gas and air flow control.
- ✓ 12 L/min air flowmeter – 1.5 L/min propane flowmeter
- ✓ Individual gas and air regulators.
- ✓ Burning Angle Slope 45°
- ✓ Flame Power 1 kW

Advance:

- ✓ Flame height measuring gauge.
- ✓ Adjustable flame application timer.
- ✓ Measure and monitor flame temperature with thermocouple
- ✓ Alarm at the end of application time
- ✓ Ventilation system that protects the user



PERMEABILITY /LEAKAGE TEST SYSTEMS

OXYGEN PERMEABILITY RATE TESTER
GEOSYNTHETIC BARRIER WATER PERMEABILITY TESTER
PIPE LEAK-TIGHTNESS TEST MACHINE
AL VAK - VACUUM LEAK TEST DEVICE

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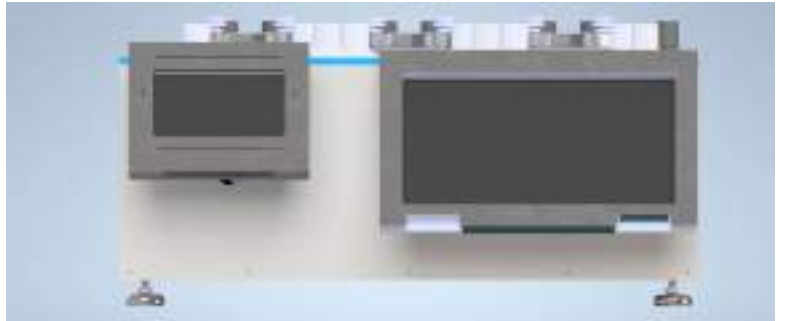


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OXYGEN PERMEABILITY RATE TESTER



The Oxygen Permeability Tester is based on the equivalent pressure method and can be used professionally in determining the oxygen permeability rates of films or sheets.



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OXYGEN PERMEABILITY RATE TESTER



Oxygen Permeability Tester has 3 test stations. It serves 3 independent test opportunities with same or different samples. The product is highly sensitive and can be used to test films/sheets with low to high OTR values. It is a long- life machine and does not require extra maintenance.

**LOW BARRIER TO HIGH
BARRIER FILMS TEST CHANCE**

**1, 2 AND 3 TEST STATION
OPPORTUNITIES**

LOW GAS CONSUMPTION



TECHNICAL DATA

- ✓ 3 Independent Test Lines
- ✓ Low Gas Consumption
- ✓ Special Low Flow Rate System
- ✓ Opportunity to Determine the Duration of Testing Phases
- ✓ 0.00001 Oxygen Sensor Resolution and Detect Oxygen Molecule in ppm Level
- ✓ Real Time Ppm Change And Oxygen Transmission Rate Graph
- ✓ Low Barrier To High Barrier Films Test Chance
- ✓ Intelligent Electronic and Software System Controls the Whole Test Automatically
- ✓ Specialized Software is Used to Display The Real-Time Test, Analyze, And Report

TEST RANGE:

0.1 – 5000+ Otr cm³ /m²/24h

✓ Oxygen Sensor

Resolution: 0.00001 ppm

✓ Test Area: 50.00 cm²

✓ Gas Pressure:

180–600 mbar

✓ Carrier Gas Flow:

0.00035–0.0007 ml/min

✓ Sample Thickness:

≤3 mm

✓ Test Gase:

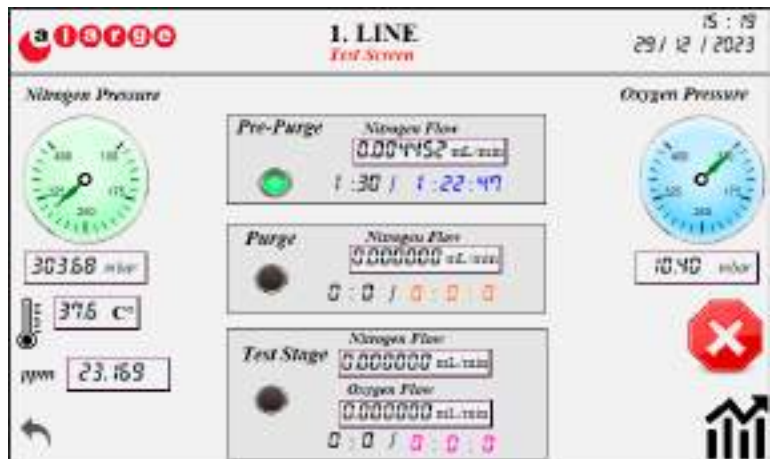
99.999% High Purity

Nitrogen

99.95% Oxygen

✓ Power Supply:

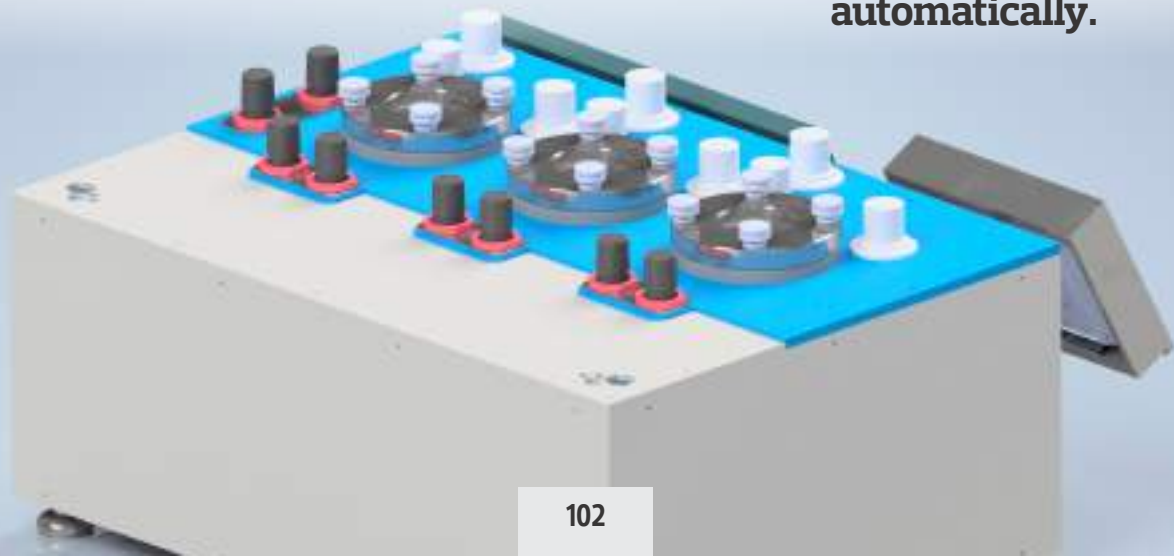
220 AC



Various plastic film (PP/PET/PE/PVC/BOPP/ CPP, etc.), sheeting, coextrusions, metals, foils, laminated film, paper sheets, other barrier sheet metals, and packages.

Special low flow rate system can measure 0.00035 mL/min flow levels.

Intelligent electronic and software system control test automatically.





**AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.**

**GEOSYNTHETIC
BARRIER WATER
PERMEABILITY
TESTER**

**Standards :
TS_EN_14150
TS_EN_1928**



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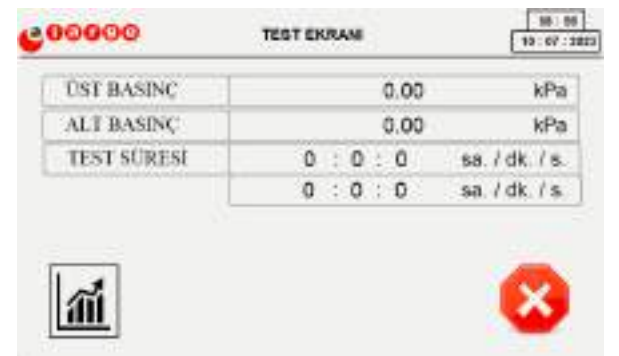
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This device is used to measure the steady-state water permeability of geosynthetic barriers used to retain water in long-term applications. The test allows accurate measurement of water up to $10^{-6} \text{ m}^3 / \text{m}^2 / \text{day}$

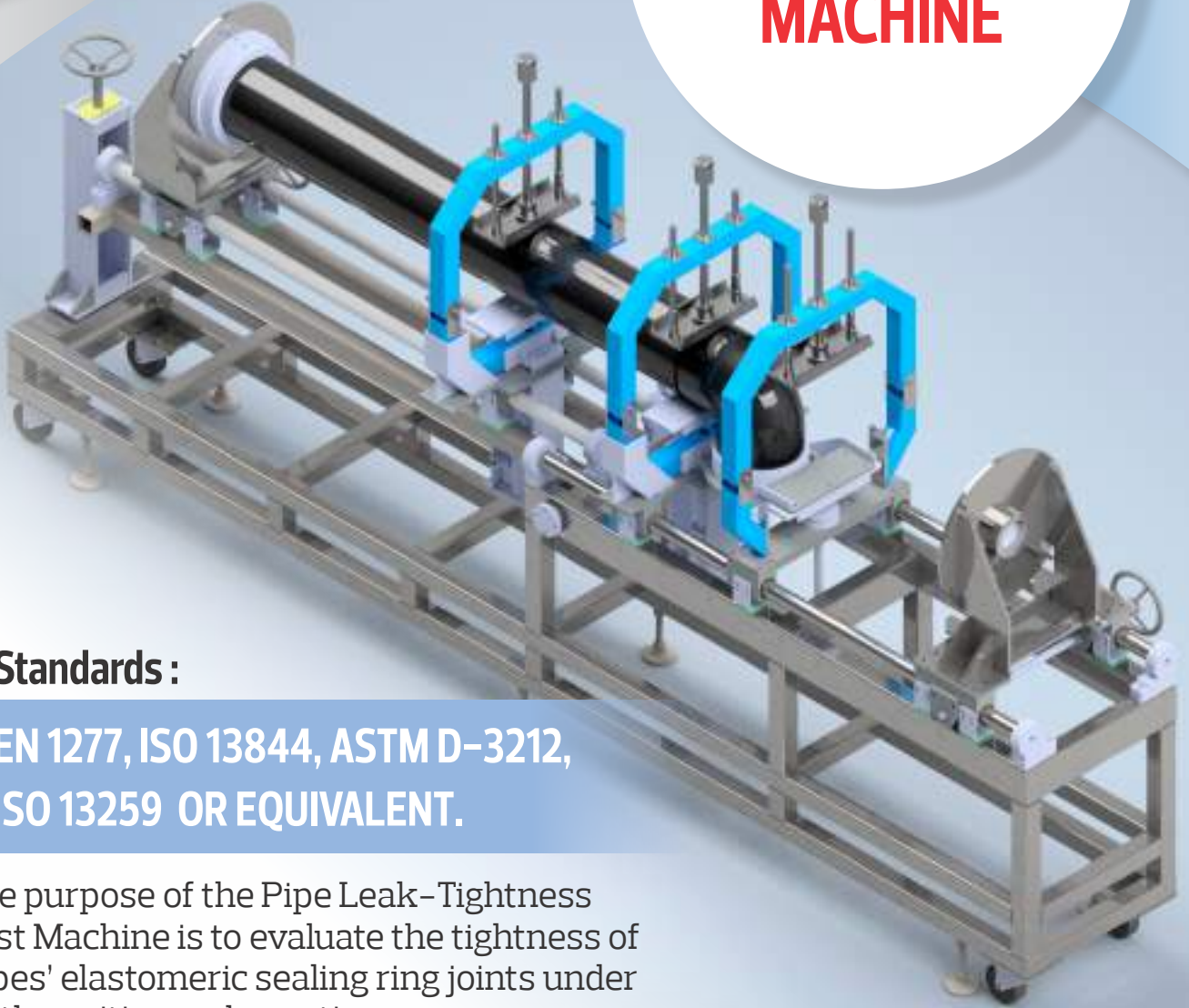
- ✓ Pressure stabilization guarantee thanks to four-valve fuzzy logic pressurization method
- ✓ Real-time pressure graph
- ✓ Easy sample insertion chamber
- ✓ 7" HMI display
- ✓ Water drain outlet
- ✓ Precise measurement in Pa





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PIPE LEAK- TIGHTNESS TEST MACHINE



Standards :

**EN 1277, ISO 13844, ASTM D-3212,
ISO 13259 OR EQUIVALENT.**

The purpose of the Pipe Leak-Tightness Test Machine is to evaluate the tightness of pipes' elastomeric sealing ring joints under both positive and negative pressure.

The pipe leak tightness test machine is the most stable and robust solution for testing joints of buried non-pressure plastic pipe systems.

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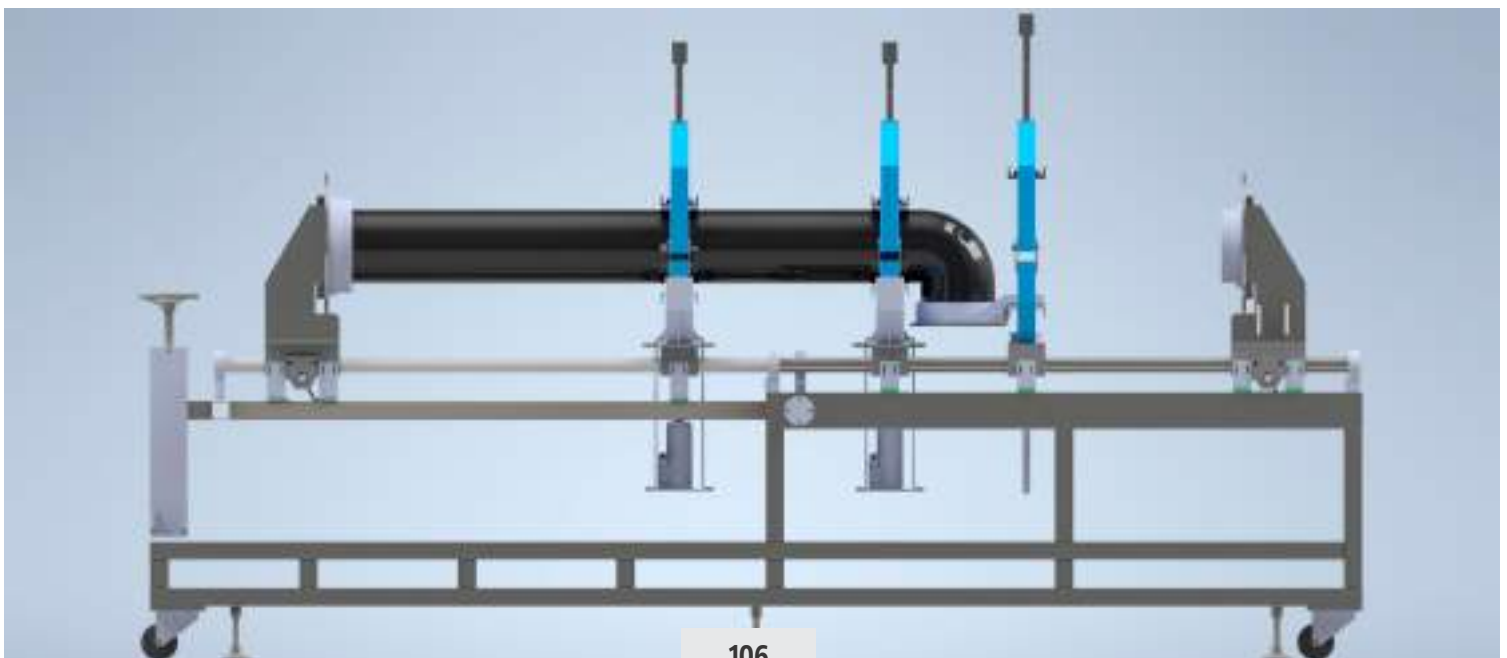


Test frames available:

- ✓ Ø50-75-110-160-200 PVC
- ✓ Ø75-100-150-200-250-315
CORRUGATED
- ✓ Maximum sample length: 2650 mm
- ✓ Maximum vacuum pressure:
-0,5 bar
- ✓ Accuracy during vacuum: +/- 0,005
- ✓ Maximum positive pressure: 0.5 bar
- ✓ Accuracy during positive pressure:
+/- 0,005
- ✓ Double diametric deflection: Yes
- ✓ Angular deflection: Yes
- ✓ Touchscreen: 7"
- ✓ Main frame dimensions (LxWxH):
3200 x 1400 x 2100
- ✓ Weight approx: 600 kg



- ✓ Easily Assembly Test Pipes.
- ✓ PLC Control System.
- ✓ Real-Time Pressure Graphs.
- ✓ Friendly HMI Desing
- ✓ Real-Time Test Pressure Graph
- ✓ Data Logging and Report Generator.
- ✓ Robust construction for industrial use
- ✓ High accuracy





**AGILE, ROBUST,
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AL VAK VACUUM LEAK TEST DEVICE

Standards

ASTM D3078-02

EN ISO 13056, GB/T 15171



It is a method for testing joints, fittings, pipes etc. under a vacuum leak test for thermoplastic piping systems. It applies to piping systems based on thermoplastic pipes designed for use in hot and cold water pressure applications.

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AL VAK VACUUM

LEAK TEST DEVICE

TECHNICAL SPECIFICATIONS

VACUUM LEAK TEST DEVICE FEATURES

- ✓ Adjustable test pressure
- ✓ Up to 99 hours of testing time
- ✓ Adjustable leakage pressure limit
- ✓ Instantly traceable test chart
- ✓ High speed data transfer via USB or Ethernet
- ✓ Ability to set the duration of the test from the screen





TECHNICAL DATA

- ✓ PLC controlled system
- ✓ 220/230 V – 50/60 Hz working electricity
- ✓ 50 mBar test pressure
- ✓ 50 mBar leakage setting
- ✓ 0.75kW capacity vacuum pump
- ✓ 1 milibar precision control with pressure sensor
- ✓ Vacuum up to -950 milibar.
- ✓ Test Procedure

TEST PROCEDURE

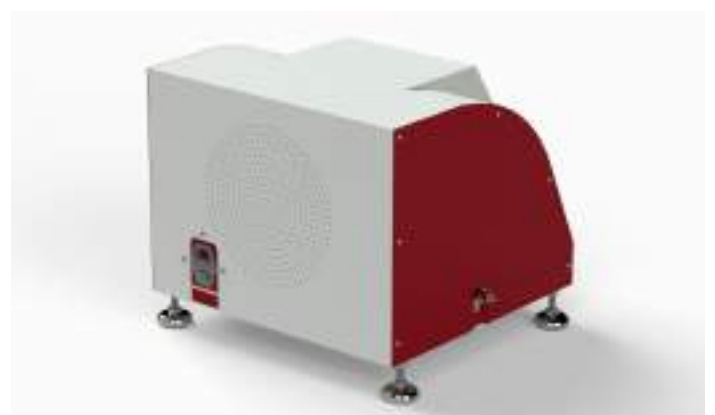
- ✓ A test suite of pipes and assemblies is subjected to a partial vacuum over a period of time. After isolating the sample from the vacuum source, any pressure increase in the sample is monitored and recorded within one hour. The pressure rise in the pipe assembly must not be greater than 0.05 bar.

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AL VAK VACUUM LEAK TEST DEVICE



Technical Identity:

Ideal for checking leakage of packed strips, blisters & small sachets. Package practice specifications. Programmable vacuum level and hold time. Slow venting for better results.

Usage Identity:

Database management, system network.



OTHER PRODUCTS

MINI PLASTIC INJECTION MOULDING MACHINE

BUTT WELDING

CNC

OPTICAL DEVICES

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OTHER PRODUCTS

MINI PLASTIC INJECTION MOLDING MACHINE
HYDRAULIC PLASTIC INJECTION MACHINE
BUTT WELDING
AL CNC - CNC ROUTER
OPTICAL DEVICES

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**AGILE, ROBUST,
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SUSTAINABILITY AND RESILIENCE.**

MINI PLASTIC INJECTION MOLDING MACHINE



The Industrial Mini Plastic Injection Molding Machine allows you to produce the samples you need in a laboratory environment. It offers the possibility of working with various plastics such as LDPE, HDPE, PP and with wide MFI ranges. All control is provided by servo motors, you can use the product effortlessly by plugging it in. It serves fully automatic operation. Cooling system is included.



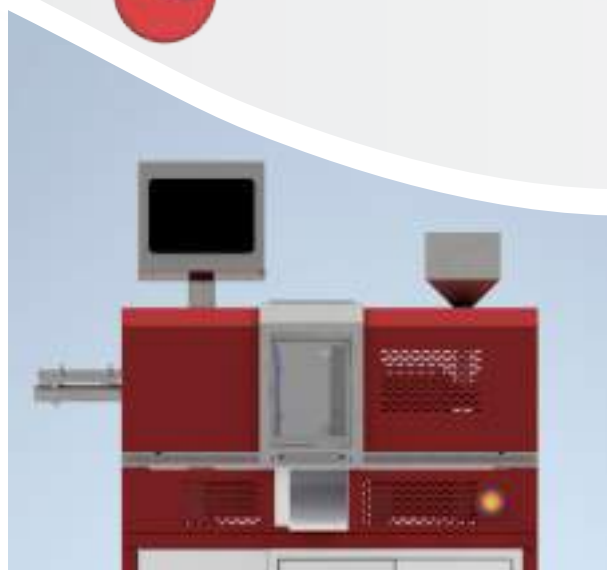
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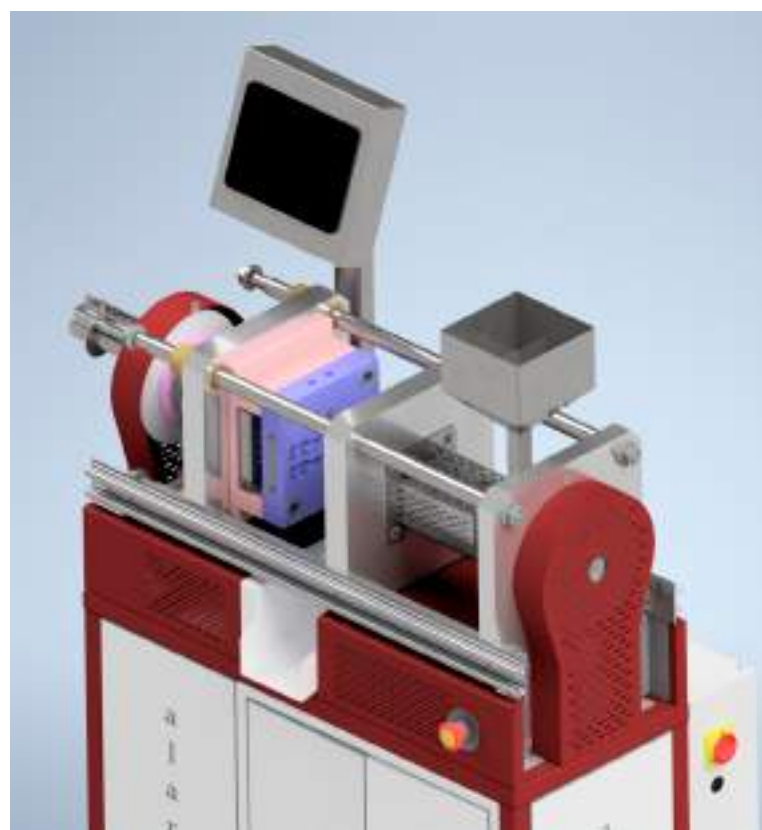
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Çifte Havuzlar Mah. Eski Londra Asfaltı Cd. YTÜ Teknopark D2 Blok No: 2B01 Davutpaşa - İstanbul/TÜRKİYE

Fax: +90 212 278 61 33 **Mail:** info@alarge.com.tr



Control Unit	PLC
User Control	7" Touchscreen
Temperature Control	PID
Heater	250 W 5 Heaters -
Screw Diameter	25 mm
Material Silo Capacity	2 kg
Distance Between Columns	220*220 mm
Ejector Stroke	16 mm
Maximum Opening Stroke	100 mm
Distance Between Plates	225 mm
Compression Force	251.3 kN
Operating Voltage	220V AC



- ✓ Maximum Efficiency with Minimum Energy.
- ✓ Fully Electric, Fully Automatic
- ✓ Possibility to work with range MFI values
- ✓ Suitable with most plastic derivatives.
- ✓ Manuel and automatic choose

- ✓ User-friendly menu.
- ✓ Multiple language options.
- ✓ Cooling water distributor
- ✓ Serve-electric screw drive
- ✓ Piece counter
- ✓ Ability to enter number of samples
- ✓ Servo motor control



**AGILE, ROBUST,
SMART LAB SYSTEM.
SUSTAINABILITY AND RESILIENCE.**

HYDRAULIC PLASTIC INJECTION MACHINE

Standards

**EN ISO 20430:2020
ISO 10724-1:1998
BS EN 201**

The whole machine is small in size, light in weight, easy to move, install and use, suitable for one mold, 1-10 grams of product injection.



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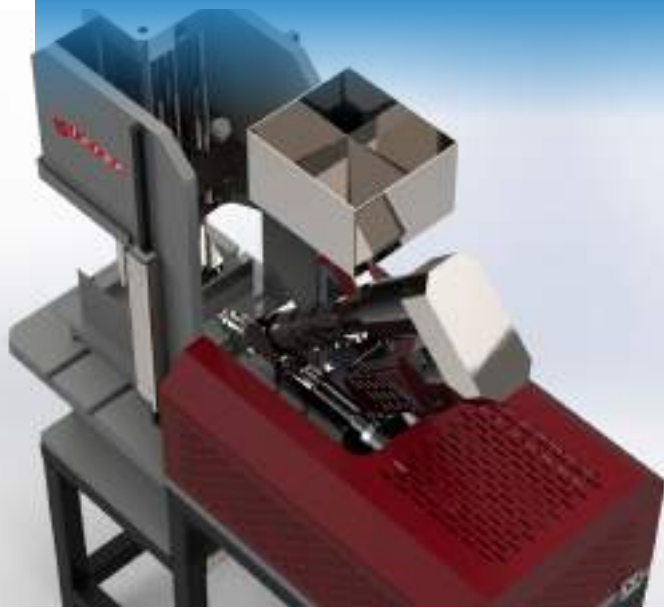
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TECHNICAL SPECIFICATIONS

- PLC control
- Servo motor driven system which can control more precision and accuracy
- Very quiet motor pump controlled by an inverter
- Cooling circuit
- PID temperature control
- 4 temperature control zones with differentiated mould temperature adjustment (moving and fixed half)
- Pressure control with electronic transducer
- Injection and clamp position controlled with linear transducers
- 7" touch screen control
- Proportional hydraulics
- Low running costs – installed power 3 kW – cooling approximately 120 l/h
- 60 cm³ Theoretical Shot Volume



PLASTIC PROCESSING :

- ✓ PE, PP, PVC, ABS, PET, PPRC, PC
- ✓ Horizontal style
- ✓ Full Automatic and Semi Automatic mode
- ✓ The touch screen to start and stop the machine, adjust settings and monitor progress in real time.
- ✓ Temperature tolerance band
- ✓ Hydraulic ejection with ejector return sensor
- ✓ Mold clamping system Unique crank arm mechanical structure system which can enhance the mold clamping force

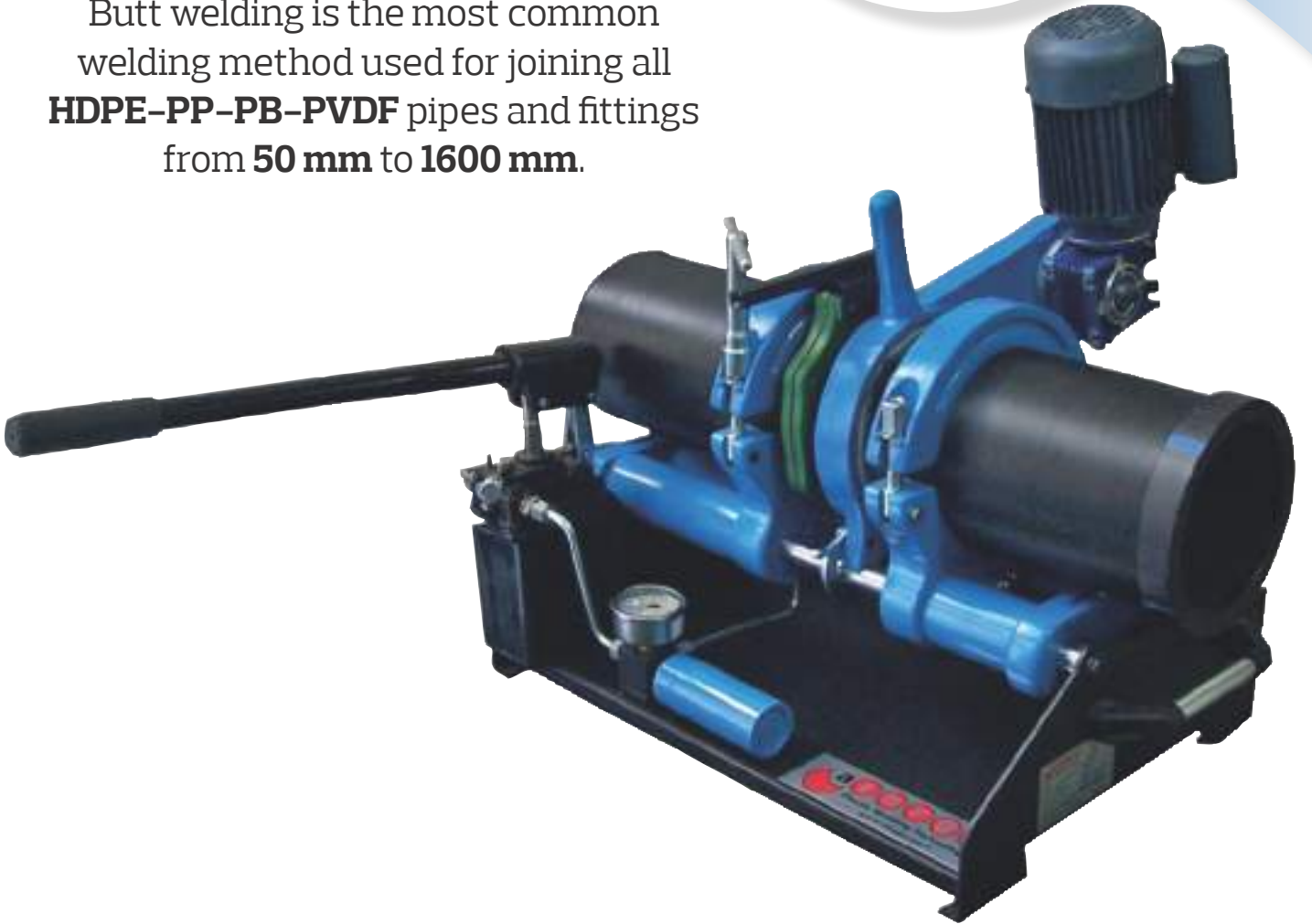




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BUTT WELDING MACHINE

Butt welding is the most common welding method used for joining all **HDPE-PP-PB-PVDF** pipes and fittings from **50 mm** to **1600 mm**.



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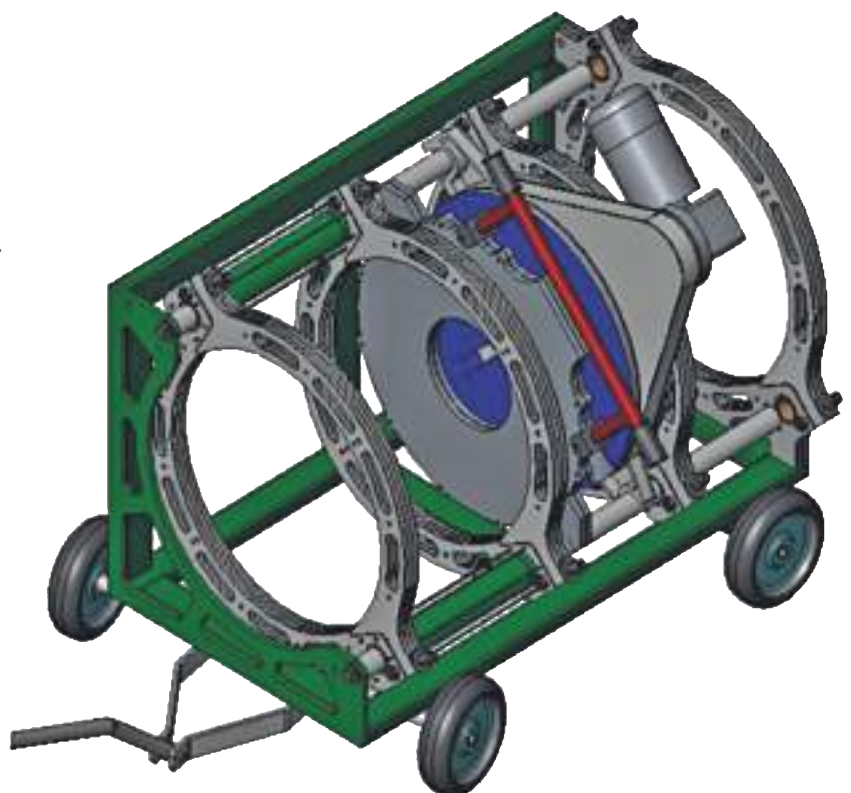
BUTT WELDING MACHINE

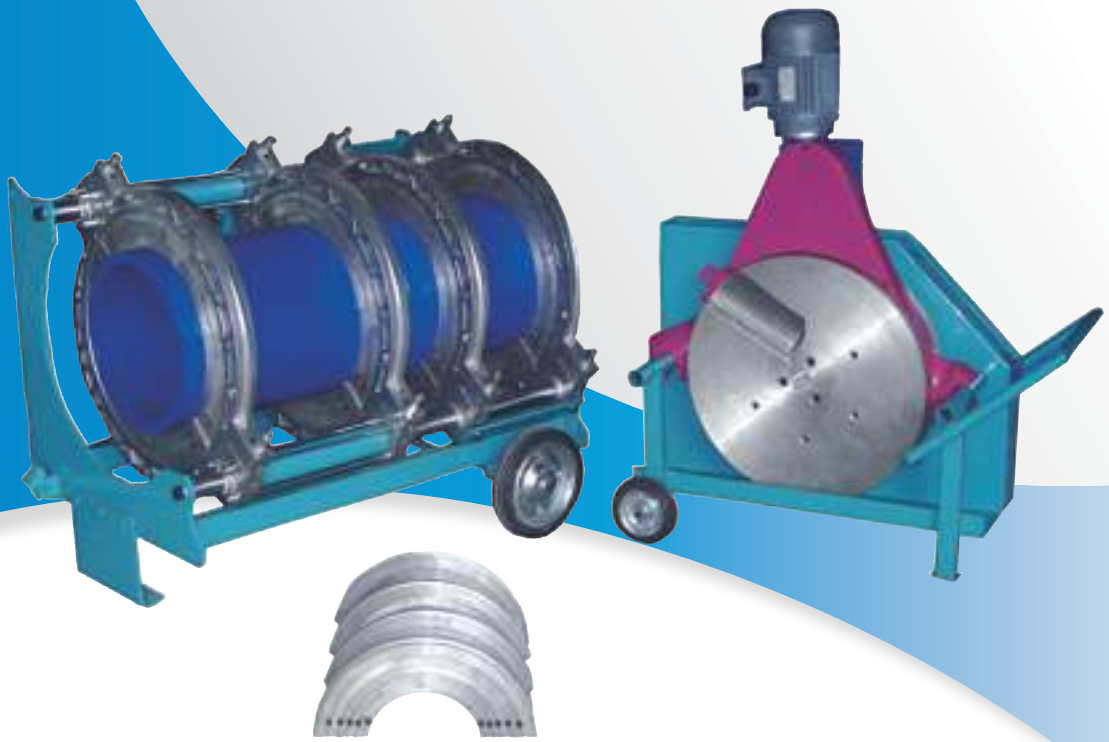
TECHNICAL SPECIFICATIONS

Butt Welding Machines generally consist of 5 main parts:

- ✓ Piston and Shaft
- ✓ Jaw Group
- ✓ Trimmer
- ✓ Heater
- ✓ Chassis

The shafts are mounted on the chassis. Jaw groups and threads are placed on the spindle system and their moving parts move on the spindle. The trimmer and heater are freely connected to the chassis and can be transported if necessary.



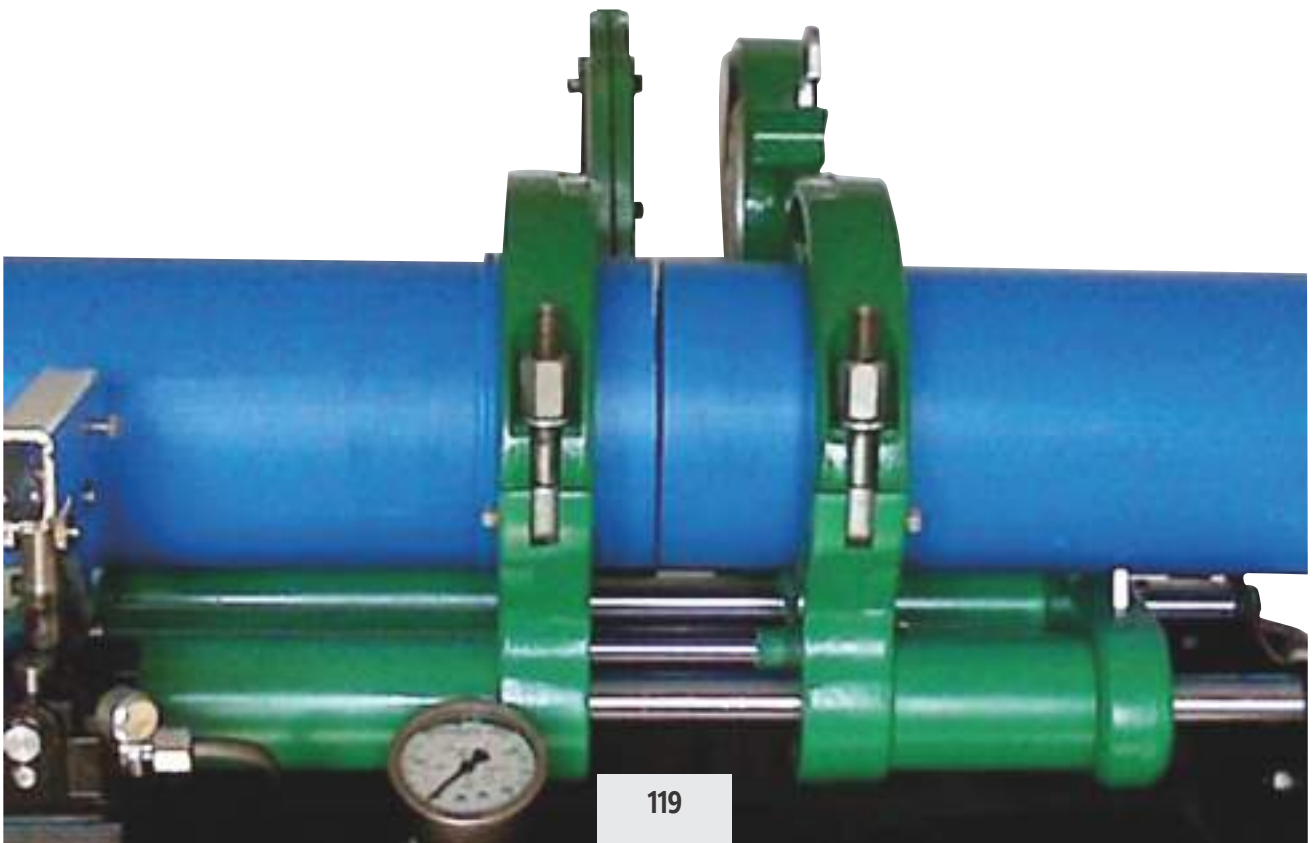


BUTT WELDING MACHINE TRIMMER

It prepares the pipes for heating by cleaning the forehead of the pipes fixed and centered on the main body with two rotating blades on the right and left sides and the cutting blades on these blades.

BUTT WELDING MACHINE HEATER

By heating the pipe butt surfaces with the heating plate, the pipe butt surfaces, which were brought to the necessary roughness by the trimming process, are prepared for the joining process. The digital heat setting thermostat on the heater plate is used to adjust the heater's temperature.



BUTT WELDING MACHINE

TECHNICAL SPECIFICATIONS



- ✓ Remote button controlled
- ✓ Digital controlled heater
- ✓ Digital pressure gauge
- ✓ Ease of axing thanks to hydraulically tightened threads
- ✓ Easy to use in the field with adjustable hydraulic feet

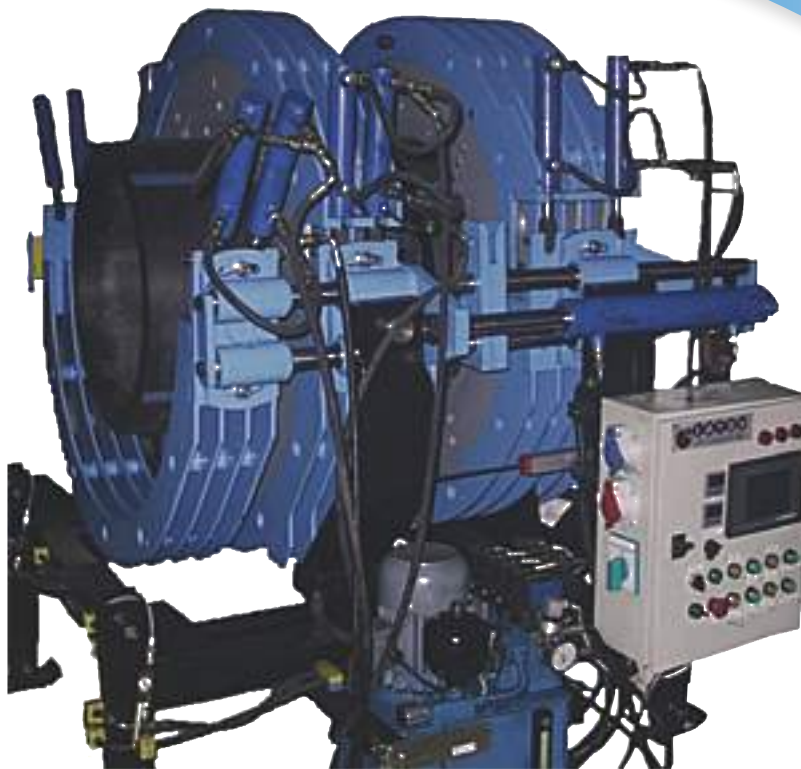
AL 1000

TECHNICAL SPECIFICATIONS

MODEL	AL 1000
Material	HDPE - PP - PB - PVDF
Working Range	Ø500 mm - Ø1000 mm
Hydraulic Unit Electric Power	380 V, 2.200 W
Trimmer Electric Power	380 V, 3.000 W
Heater Electric Power	380 V, 15.000 W
Total Electricity Consumption	20.200 W
Working Temperature	180° - 280° C
Operating Pressure	0 - 200 bar

ANGLE AND BUTT WELDING OPTIONS





AL 1200

TECHNICAL SPECIFICATIONS

MODEL	AL 1200
Material	HDPE - PP - PB - PVDF
Working Range	Ø710 mm - Ø1200 mm
Hydraulic Unit Electric Power	380 V, 2.200 W
Trimmer Electric Power	380 V, 3.000 W
Heater Electric Power	380 V, 16.000 W
Total Electricity Consumption	21.200 W
Working Temperature	180° - 280° C
Operating Pressure	0 - 250 bar
ANGLED WELDING 2 CLAMPS OPTIONAL	
BUTT WELDING 4 CLAMPS OPTIONAL	

BUTT WELDING MACHINE

TECHNICAL SPECIFICATIONS



OTHER MODELS

TECHNICAL SPECIFICATIONS

MODEL	AL 500	AL 630	AL 800
Malzeme	HDPE - PP - PB - PVDF	HDPE - PP - PB - PVDF	HDPE - PP - PB - PVDF
Çalışma Aralığı	Ø180 mm - Ø500 mm	Ø315mm - Ø630 mm	Ø500 mm - Ø800 mm
Hidrolik Sistem	3800 V, 550 W	220 V, 550 W	380 V, 750 W
Tıraşlayıcı	380V, 1100 W	220 V, 1200 W	380 V, 1.500 W
Isıtıcı	380 V, 5500 W	220 V, 1500 W	380 V, 10.000 W
Toplam Güç	7150 W	9750 W	9750 W
Çalışma Sıcaklığı	180° - 280° C	180° - 280° C	180° - 280° C
Basınç Çalışma Aralığı	0 - 150 bar	0 - 150 bar	0 - 200 bar



BUTT WELDING MACHINE HOUSING BOX

The trimer supports the heater and shields it from outside influences, while the support box stops the heater from losing heat (impact, water, etc.).

BUTT WELDING MACHINE CONTROL UNIT

Electric and hydraulic control unit; It transmits the electricity required for the operation of the machine to the heater and trimmer and the hydraulic pressure to the main machine.

AL 1600

TECHNICAL SPECIFICATIONS

MODEL	AL 1600
Material	HDPE - PP - PB - PVDF
Working Range	Ø1000 mm - Ø1600 mm
Hydraulic Unit Electrical Power	380 V, 3.000 W
Trimmer Electric Power	380 V, 4.000 W
Heater Electric Power	380 V, 24.000 W
Total Electricity Consumption	31.000 W
Working Temperature	180° - 280° C
Operating Pressure	0 - 250 bar
ANGLED WELDING 2 CLAMPS OPTIONAL	
BUTT WELDING 4 CLAMPS OPTIONAL	



OTHER MODELS

TECHNICAL SPECIFICATIONS

MODEL	AL 160	AL 250	AL 315
Malzeme	HDPE - PP - PB - PVDF	HDPE - PP - PB - PVDF	HDPE - PP - PB - PVDF
Çalışma Aralığı	Ø50 mm - Ø160 mm	Ø75 mm - Ø250 mm	Ø90 mm - Ø315 mm
Hidrolik Sistem	220 V, 550 W	220 V, 550 W	380 V, 550 W
Tıraşlayıcı	220 V, 1200 W	220 V, 1200 W	380 V, 750 W
Isıtıcı	220 V, 1500 W	220 V, 1500 W	380 V, 3.500 W
Toplam Güç	3250 W	3250 W	4800 W
Çalışma Sıcaklığı	180° - 280° C	180° - 280° C	180° - 280° C
Basınç Çalışma Aralığı	0 - 150 bar	0 - 150 bar	0 - 150 bar





**AGILE, ROBUST,
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SUSTAINABILITY AND RESILIENCE.**

AL CNC CNC ROUTER

TECHNICAL SPECIFICATIONS

With the CNC Sample Preparation Device, 3 types of standard tensile samples can be cut from plastic materials such as PE, PVC, PP, PS and pipe sections of different diameters.

The device can cut samples up to 65 mm thickness.

Fixing apparatuses and clamps will be provided with the device so that the plate-shaped parts up to 65 mm thick can be processed at one time.

- ✓ 1 set Pneumatic vise
- ✓ 1 set clamping attachments
- ✓ 2 cutters will be given.
- ✓ 10" touch screen control without a computer



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- ✓ If desired, new types can be added to the software for a fee. In addition, if the user wishes, can create own or have "g code" on the machine and do it in private sections.
- ✓ Working area of the mill in the device in X, Y and Z axes shall be at least 600*600*180 mm.
- ✓ 0.001mm precision in the axis movements
- ✓ 7. X, Y, Z axis movements will be smooth and sensitive due to ball screw and ball bearing
- ✓ 18000 rpm maximum speed
- ✓ 2.2 kW motor power
- ✓ Emergency stop button
- ✓ 220-240 Volt, 50Hz working electricity



MACHINABLE MATERIALS:

- ✓ Aluminium
 - ✓ MDF
- ✓ Plywood
- ✓ Plexiglass
 - ✓ Delrin
 - ✓ Bronze
- ✓ Solid wood
- ✓ Polyamide



**AGILE, ROBUST,
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SUSTAINABILITY AND RESILIENCE.**

OPTICAL DEVICES

AL COL HIGH QUALITY COLORIMETER

AL-COL colorimeter, easy to use and cost-effective, widely used in R&D, quality control and production management department, can measure color difference accurately and quickly.

- User friendly design and easy to operate
- Stable performance
- Easy & quick localization
- PC software may realize many additional functions
- Advanced design for power supply

APPLICABLE INDUSTRIES

Automobile, stonematerial, plastic, metal, paints, printing and others.



TECHNICAL SPECIFICATIONS

- **Illuminating / Viewing Geometry** : 8/d
- **Measuring Aperture** : Ø68mm
- **Detector** : Silicon photoelectric diode
- **Color Space** : CIEL*a*b*C*h*
CIEL*a*b* CIEXYZ
- **Color Difference Formula** :
 ΔE^*ab $\Delta L^*a^*b^*$ $\Delta E^*C^*h^*$
- **Light Source** : D65
- **Light Source Device** : LED
blue light excitation
- **Errors Between Each Equipment** : $\leq 0.40 \Delta E^*ab$
- **Storage** : 100pcs standards 20000pcs samples
- **Repeatability** : Standard deviation within ΔE^*ab 0.07
Average of 30 measurements of standard white plate
- **Weight** : 500g
- **Dimension** : 205*70*100 mm
- **Power source** :
Rechargeable lithium-ion battery 3.7V@3200mAh
- **Lamp Life** : 5 years, more than 1.6 million measurements

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OPTICAL DEVICES



AL GLO GLOSS METER

ISO 2813, GB/T 9754, ASTM D 523, ASTM D 2457 STANDARDS.

- 3.5 inch large screen with high resolution full-view display
- Display 5 sets of measurement data, better for comparison
- Connectable to PC, for more extend futures
- Super configuration of hardware, integrated multiple innovative technologies
- Automatic calibration, convenient and quick AL-GLO is an economic gloss meter with independent intellectual property rights. It is manufactured according to ISO02813 and GB/T 9754 standards. It has a large display screen, stable performance, high accuracy and user friendly interface.

PRODUCT FEATURES

- 60° angle for semi-gloss
- Concise appearance, feel good
- Display 5 sets of measurement data, good for comparison
- Built-in lithium ion rechargeable battery
- Basic model measurement can

meet basic glossiness testing requirements

- Connectable to PC, for more extend futures
- One button for all angles measurement
- Comply with international standards
- Stable performance, easy to read data.

APPLICABLE INDUSTRIES

Automobile, stonematerial, plastic, metal, paints, printing and others.

SPECIFICATION FEATURES

- Measuring Angle:** 60°
- Comply With Standard:** ISO 2813, GB/T 9754, ASTM D 523, ASTM D 2457
- Measuring Area (mm):** 9x15
- Measuring Range:** 0-300GU
- Division Value:** 0.1GU
- Measurement Range:** 0-10GU, 10-100GU, 100-300GU
- Repeatability:** ±0.1GU, ±0.2GU, ±0.2%GU
- Reproducibility:** ±0.2GU, ±0.5GU,

±0.5%GU

Measurement Standard: Conform with JJG696 first class glossmeter working requirement

Chromaticity Corresponding: Corresponding with CIE 1931(2°) under CIE C light source

Errors: ±1.5, ±1.5 %

Measuring Time: 0.5s

Dimension: LWH : 160mm*75mm*90mm

Weight: 350g

Language: English

Battery: 3200mAh Li-ion battery, >10000 times (within 8 hours)

Display: TFT 3.5 inch

Interface: USB/RS-232

Storage: Basic mode: 1000

Software: GQC6 Quality control software

Operation Temperature: 0-40°

Storage Temperature: -20-50°C

Humidity: <85% relative humidity, no condensation

Standard Accessories: Power adapter, USB cable, user manual, GQC6 software CD (except HG60S), calibration plate

AL HAZ HAZEMETER

Transmittance haze meter, AL-HAZ, is designed for plastic sheets, films, glasses, LCD panel, touch screen and other transparent and semi-transparent materials haze and transmittance measurement. It does not need warm-up during test which saves significant time.

COMPLIANCE WITH AS TM D 1003,
ISO 13468, ISO 14782,
JIS K 7361 and JIS K 7136.

AL-HAZ HAZEMETER ADVANTAGES

- 1** Conforms to international standards **ASTM D 1003, ISO 13468, ISO 14782, JIS K 7361 and JIS K 7136.**
- 2** Three kinds of light sources A,C and D65 for haze and total transmittance measurement.
- 3** It can realize transmittance compensation measurement which can provide higher accuracy test result.
- 4** Open measurement area, no limit on sample size.
- 5** Instrument is with 5.0 inches TFT display screen with good human-computer interface.
- 6** It can realize both horizontal and vertical measurements to process wider class of materials.
- 7** It adopts LED light source whose lifetime can reach 10 years.
- 8** No need to do a warm-up, after the instrument is calibrated, it can be used immediately. The measurement time is only 3 seconds.
- 9** Small size and light weight which makes it much easier to carry.





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'LABORATORY TECHNOLOGIES'



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