MSE TEKNOLOJİ

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"engineered high quality process machines"

MSE Furnace
"engineered high quality furnaces"

PRODUCTS

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DEVICES

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Mixer and Homogenizer
Ball Mill
Attrition Mill
Hot Mill
High Temperature Polymer Mixer
Shaping or Forming Devices
Manual / Automatic Presses
Double-Action Automatic Powder Press
Composite Press (Tmax 450°C)
Atmosphere Controlled Hot Press (Tmax 2800°C)
Ultra-Sensitive Press
Cold Isostatic Press
Piston Type Extruder (for ceramics)
Tape Caster and Doctor Blade
Energy Systems
Pyrolysis System
Biochar System
Purification / Carbonization / Gasification
High Pressure and Test Systems
Hot Blasting Cabinet
Simulated Test Station
Cold Isostatic Press
Climatic Cabin
Pasteurization System (7500Bar)
Sealing Tester For Sailing Equipment Under Pressure

+ Industrial Furnaces (Tmax 1800°C) Laboratory Furnaces (Tmax 2800°C)

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PRODUCTS

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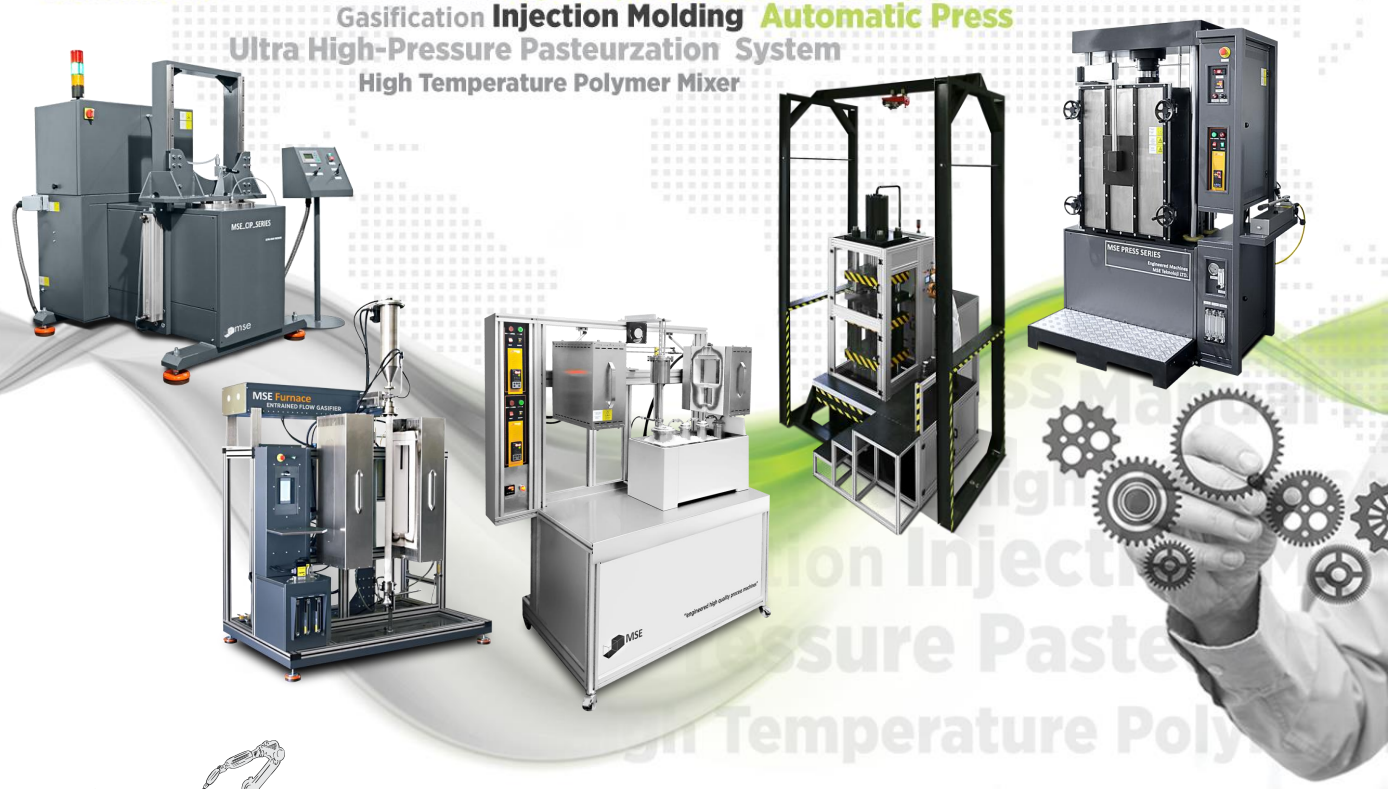
PILOT SCALE DEVICES

Biochar System Glass Fiber Production Device High-Pressure Testing Device Cold Isostatic Press
Piston/Screw Extruder Attrition Mill Atmosphere Controlled Hot Press Tape Caster Screen Print
Pyrolysis System Polymer Hot Press Manual Press Ultra-Sensitive Press Carbonization
Viscometer Ball Mill Purification High Temperature Electrical Test Equipment Climatic Cabin
Gasification Injection Molding Automatic Press
Ultra High-Pressure Pasteurzation System
High Temperature Polymer Mixer



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COLD ISOSTATIC PRESS (Ultra High Pressure Food Pasteurization Equipment 7500 Bar)

What is Cold Isostatic Pressing?

The sample is applied pressure to all points of the sample in three axes by means of a liquid at room temperature.

What is the difference of normal press (single axis)?

In normal pressing, While one-axis force is applying, due to the surfaces of the mold and the mold cannot be filled evenly. The forced surfaces never get equal pressure on every point. This may form condensation gradients in the cooked sample. These problems do not occur with isostatic pressing. In addition, high pressure values and high wet density are obtained in isostatic pressing and a more homogenous sintering can be done at relatively low temperature. Isostatic presses with wet reservoirs are generally used for research purposes, whereas for mass production, isostatic presses with dry reservoir are preferred.

All our models are manufactured in accordance with the prescribed pressure vessels regulations of the European Union. The highest safety coefficients are used.

Dry Bag Cold Isostatic Press

Our company designs and manufactures reliable and ergonomic equipment using materials that meet the standards. It can design and produce all designs with mechanical and applied simulations in advance.

Such presses are preferred for industrial applications rather than wet molded type.

Some products that can be done with this method;

Various refractory parts, casting rails, nozzles
Spark plug
Ceramic tube
Porcelain plate
Brick
Dental ceramics
Grinding Consumables

Due to the lack of a standard product, please contact us.

Working Pressure: 200 MPa
Inner Diameter: 150 mm
Depth: 600 mm

PYROLYSIS SYSTEM

These systems are designed in accordance with the pyrolysis system, carbonization and gasification studies such as petroleum-based organic materials such as rubber, plastic or tar, which can be converted to gas, solid or liquid products by heating in an oxygen-free conditions.

- Tmax:850°C
- Temperature control for both chimney and reactor at the same time
- ±3°C temperature display sensitivity
- Programmable and adjustable heat and time, PID controlled heating
- External temperature measurement feature from the reactor zone
- One piece high temperature and corrosion resistant stainless steel reactor
- Gas-tight feature
- Adjustable gas inlet for reactor
- Trap chambers for condensation
- Manual flow meter
- Sufficient quantity of ceramic/metal filter particles for the samples

Optional Features:
-Gas collection unit

PYROLYSIS SYSTEM SERIES

SLOW PYROLYSIS AND GASIFICATION SYSTEMS SERIES				
Product Code	**Reactor Volume (L)**	**Max. Temperature (°C)**	**Approx. Heating Ramp (°C/dk)**	**Reactor**
PYR_S850_250	0,25	850	25	Fixed
PYR_S850_550	0,5	850	19	Fixed
PYR_S850_1000	1	850	12	Fixed
PYR_S850_1500	1,5	850	10	Fixed
PYR_S850_2000	2	850	7	Fixed
PYR_S850_3500	3,5	850	5	Fixed
PYR_S CUSTOM	*	*	*	*

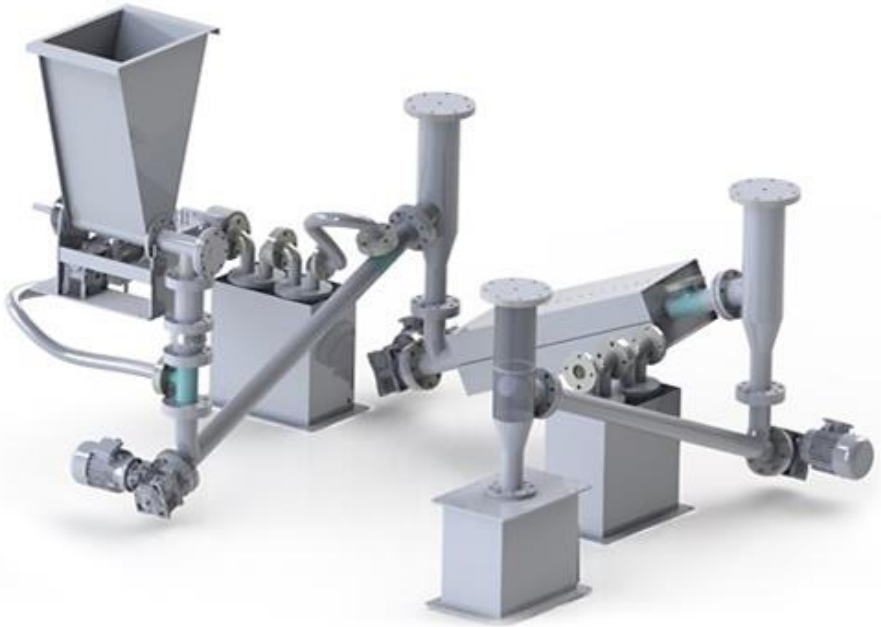
* It can makeable according to the customer demand. Please contact us.

FAST PYROLYSIS AND GASIFICATION SYSTEMS SERIES				
Product Code	**Reactor Volume (L)**	**Max. Temperature (°C)**	**Approx. Heating Ramp (°C/dk)**	**Reactor**
PYR_F20_850	20	850	600	Moving
PYR_F30_850	30	850	600	Moving
PYR_F40_850	40	850	600	Moving
PYR_F50_850	50	850	600	Moving
PYR_F80_850	80	850	600	Moving
PYR_F100_850	100	850	600	Moving
PYR_F CUSTOM	*	*	*	*

* It can makeable according to the customer demand. Please contact us.

BIOCHAR SYSTEM

This system is for conversion of biomass into biofuel.



PILOT SCALE DEVICES / ENERGY SYSTEMS

ENTRAINED FLOW GASIFIER

Temperature: 1400°C

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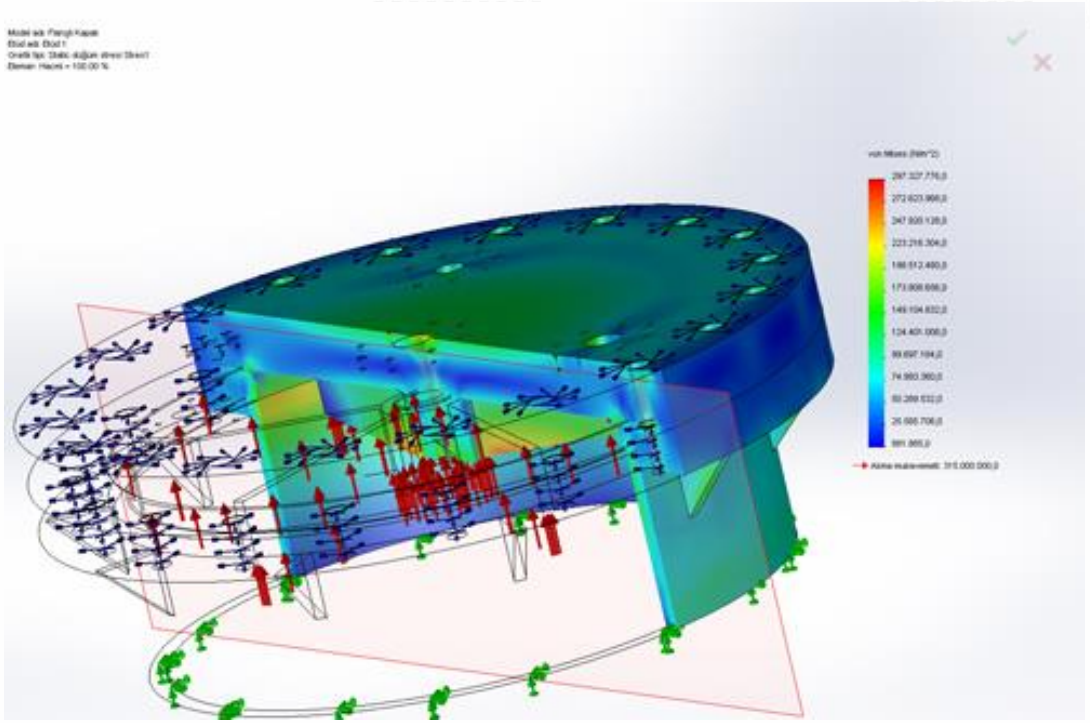
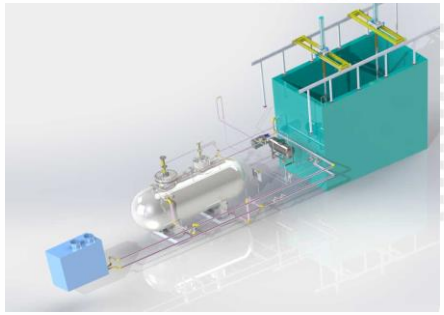
PRESSURE TANK FOR TIGHTNESS TEST

Manufacture Standard: AD- 2000 Merk Blatt

Pressure Vessels Regulations (Germany)



UNDERWATER PERFORMANCE PLANT FOR ACOUSTIC DEVICES (SONAR TEST SYSTEM)



PRODUCTS

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LABORATORY SCALE DEVICES

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BALL MILL

The ball mill is an effective method that reduces the size of the powders and also provides a good dispersion. The working principle is to place a sufficient amount of ball (grinder medium), raw material (powder, grind) and grinding medium (water, ethanol, etc.) into the cylindrical reservoir and rotate the hopper at the appropriate speed. This method is used in mixing, crushing, homogenizing and dispersing. What is important in this process is the diameter of the receptacle used, the quantities fed, the diameter and the density of the ball and the speed of rotation. These parameters are very important in terms of meeting the expectations of the process. However, the choice of material (ball, bowl coating) is important for the process of contamination and wear. Our company provides training for all these processes during device installation. Use The mill has rotating rollers that can be adjusted according to the diameter of the vessel to be used. In addition, thanks to the special coating on the rotating rollers, you can use a mill from a 60cc chamber to a 10.000 cc container simultaneously.

Sound insulation (Get rid of noise pollution) Noise and accident protection cover is standard. Ultra soundproofing insulation coating can be selected as option.

Adjustable Speed (Effective Grit) Effective milling is by adjusting the rotational speed with respect to the chamber and ball diameter used for mixing or dispersing. This feature is standard on our devices.

Chemical Resistance The coating and paint used in our device are also stable against many chemicals used in the laboratory. These products available to buy with the device: Grinding cups and grinding balls.

Safety All models of our devices are equipped with anti-crash cover and automatic stop feature with door opening.

- Adjustable rotation speed up to 380 rpm
- Coated structure resistant to chemicals with aluminum construction.
- Digital display
- Capability of working with 60cc to 10 000cc grinding jars at same time
- Able to process different size grinding jars
- Rubber coated rotating cylinder.
- Adjustable distance between cylinders
- Cover for sound and accident prevention
- Auto stop while the lid is opening
- Fan system in case of overheating
- Anti noise rubber feet

Optional Features:
- (ATM) Atmosphere Control
- (US) Ultra sound insulation

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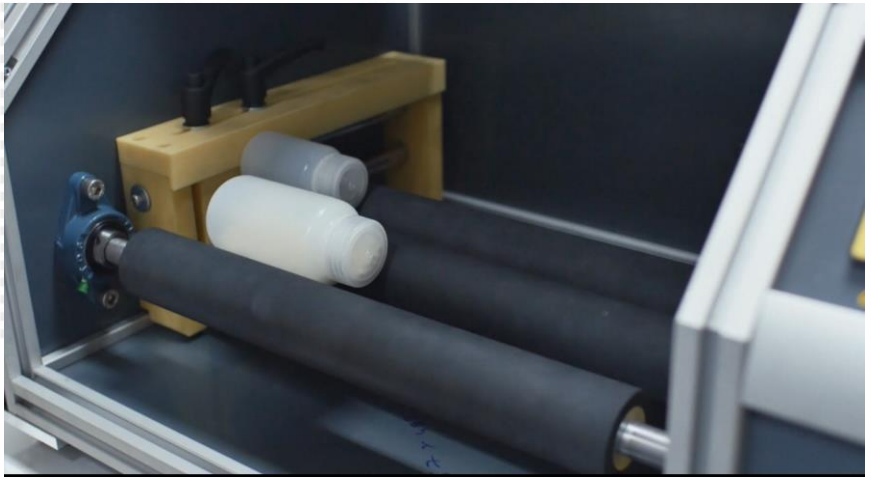
BALL MILL SERIES

BALL MILLS			
Product Code	**Speed (rpm)**	**Number of Cylinders**	**Floor**
BM_S38003	380	3	1
BM_S38004	380	4	1
BM_D38003	380	6	2
BM_D38004	380	8	2
BM_CUSTOM	*	*	*
* It is manufactured according to the customer's demand. Please contact us.			



Additional information for single floor in ball mills;

Adjustable distance between two cylinders except the first cylinder,

Load capacity per row: 22 kg

Total load capacity: 44 kg

Usable dimensions per row (for equal rows); diameter 160 mm x width 400 mm

Largest size range available for single row: diameter 260 mm x width 400 mm

ATTRITOR MILL SERIES

According to the desired powder characteristics that to be grinding, you can use shafts, grinder balls and containers made of different materials in the device. It provides easy usage thanks to its shaft and lifted chamber. Thanks to its vertical operation, it is suitable for smaller size and high speed grinding. With the optional atmosphere control feature, you can protect dust from the oxidizing atmosphere.

- Adjustable rotation speed up to 600 rpm
- Strong construction and epoxy shippimer powder coated
- Digital display
- Stainless steel water cooling jacket
- Stainless steel grinding receptacle
- Stainless steel shaft
- Adjustable height of grinding receptacle
- Changeable grinder shank and shank removes apparatus
- Easy usage
- Fast grinding
- Smaller grain size

Optional Features:
-Atmosphere Control

ATTRITOR MILLS		
Product Code	**Speed (rpm)**	**Jar Capacity (cc)**
AM_600025	600	250
AM_600050	600	500
AM_600075	600	750
AM_600100	600	1000
AM_CUSTOM	*	*
* It is manufactured according to the customer's demand. Please contact us.		

HOT MILL

Designed for mixing the materials under temperature. Hot Mills are available in wide a ranges of volumes and temperatures up to 600°C continuous use.

- Stainless steel inner structure
- 4 qty rotation cylinders
- Adjustable rotation sped up to 380 rpm
- Programmable step controller via digital display
- Observation of set and real temperature
- Delayed start and program save feature
- Temperature control via PID and ±1°C temperature display sensitivity
- System protection for over temperature. Audio visual warning alarm
- Temperature measurement via thermocouples
- Error display in case a breakdown
- Percentage of electrical energy consumption
- Able to resume the program after the power failure
- Heating on two sides
- Exhaust gas outlet connected to inner volume
- High-quality insulated heat zone
- Low energy consumption
- Auto power cut while the lid is opening
- Sideways opening lid**
- Low external surface temperature(Max: R.T+40°C) thanks to double-layers steel construction
- Epoxy painted galvanized-steel exterior
- Height adjustable, non-slip rubber feet

HOT MILLS		
Product Code	**Speed (rpm)**	**Number of Cylinders**
HM_S38003	380	3
HM_S38004	380	4
HM_CUSTOM	*	*
* It is manufactured according to the customer's demand. Please contact us.		

LABORATORY SCALE DEVICES / MIXER AND HOMOGENIZER

POLYMER MIXER

The uniformity of your polymers throughout your process has a direct impact on quality of the finished product.

- Maximum temperature: 250°C
- Mixing capacity: 250 cc
- Digital mixing speed display
- Able to tilt of jar for casting

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MANUAL PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactured for the purpose of the process use.
Our standard manual presses are produced up to 50 tons. Please contact us for higher capacity.

- Hardened pressure plates both top and bottom
- Digital force display; momentary force read
- High precision at low flow with manual double-flow hand pump
- Aluminum structure
- Adjustable manual force
- Plexiglass protective cover
- %100 parallel pressing
- 150 mm stroke distance
- Single action pressing
- Desktop available design

MANUAL PRESS SERIES

Manual presses are in our standard production in the range up to 50 tons from 5 tons. You can review the table below for the series of manual press in our standard production.

MANUAL PRESSES				
Product Code	**Force (kg)**	**Plate Dimensions (mm)**	**Number of Column**	**Mould Connection**
Single - Action				
LP_M2S05	5.000	100*150	2	None
LP_M2S10	10.000	100*150	2	None
LP_M2S20	20.000	100*150	2	None
LP_M2S30	30.000	100*150	2	None
LP_M4S50	50.000	300*300	4	None
LP_M CUSTOM	*	*	*	*
* It is manufactured according to the customer's demand. Please contact us.				

LABORATORY SCALE DEVICES /SHAPING AND FORMING

MANUAL HOT PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactured for the purpose of the process use. Our standard manual hot presses are produced up to 50 tons and 380 °C. Please contact us for higher capacity.

- Programmable and adjustable temperature and waiting time via PID controller
- Digital force display; momentary force read
- Heatable pressuring plates both top and bottom
- Water circulated cooling infrastructure
- High precision at low flow with manual double-flow hand pump
- Aluminum structure
- Adjustable force by manual hand pump
- Parallel pressing
- 150 mm stroke distance
- Single action pressing

Temperature: 300°C
Force Capacity: 50 tons
Separate temperature controller for top and bottom platen

Temperature: 380°C
Force Capacity: 24 tons

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MANUAL HOT PRESS SERIES

Manual hot presses are in our standard production in the range up to 50 tons from 5 tons. You can review the table below for the series of manual hot press in our standard production. Please contact us for larger force capacity and pressure platens sizes.

MANUAL HOT PRESSES					
Product Code	**Force (kg)**	**Temperature (°C)**	**Plate Dimensions (mm)**	**Number of Column**	**Mould Connection**
Single - Action					
LP_M4SH05	5000	300	200*200	4	None
LP_M4SH10	10000	300	300*300	4	None
LP_M4SH20	20000	300	350*350	4	None
LP_M4SH30	30000	300	400*400	4	None
LP_M4SH50	50000	300	500*500	4	None
LP_M CUSTOM	*	*	*	*	*
* It is manufactured according to the customer's demand. Please contact us.					

LABORATORY SCALE DEVICES /SHAPING AND FORMING

MANUAL HOT POWDER PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactured for the purpose of the process use.

- Programmable and adjustable temperature and waiting time via PID controller
- Digital force display; momentary force read
- High precision at low flow with the manual double-flow hand pump
- Able to work in the inert atmosphere via a vertically positioned stainless steel tube
- Stainless steel water circulated gas inlet and outlet flanges
- 300 mm heating zone length
- 150 mm stroke distance
- Adjustable force by manual hand pump
- Water circulated cooling infrastructure
- Single action pressing

Temperature: 650°C
Force Capacity: 25 tons
Tube Diamater: 60 mm
Atmosphere controlled

AUTOMATIC PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactured for the purpose of the process use.
Our standard automatic presses are produced up to 50 tons. Please contact us for higher capacity.

- Hardened pressure plates both top and bottom
- Adjustable force, waiting time and position control via a touch screen
- Electronic safety system, emergency stop button, warning alarm and PLC controlled smart system
- Adjustable mould height with 0,05 mm sensitivity
- Mould connection ability and mould connection apparatus
- Automatic coordinating
- Sample ejection
- Able to produce same sample every cycle
- Plexiglass protective lid
- 200 mm stroke distance
- Double-action pressing

Optional Features:
-(LC) Load cell
-(VM) Vibrated feeding into the mold

Force Capacity: 30 tons
Dual axis pressing

***This product cannot be operated under 10% of the force value. (Force sensitivity = ± (Maximum force) x 0,015)

AUTOMATIC PRESS SERIES

Automatic presses are in our standard production in the range up to 50 tons from 5 tons. You can review the table below for the series of automatic press in our standard production.

AUTOMATIC PRESSES				
Product Code	**Force (kg)**	**Plate Dimensions (mm)**	**Number of Column**	**Mould Connection**
Single - Action				
LP_A4S05	5.000	150*150	4	✓
LP_A4S10	10.000	150*150	4	✓
LP_A4S20	20.000	200*200	4	✓
LP_A4S30	30.000	250*250	4	✓
LP_A4S50	50.000	300*300	4	✓
LP_A4S70WS	70.000	350*350	4	✓
LP_A4S100WS	100.000	370*370	4	✓
LP_A CUSTOM	*	*	*	*
* It is manufactured according to the customer's demand. Please contact us.				

AUTOMATIC COMPOSITE / HOT PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactured for the purpose of the process use.
Our standard automatic hot presses are produced up to 50 tons and 380 °C. Please contact us for higher capacity.

- Hardened pressure plates both top and bottom
- Electronic safety system, emergency stop button, warning alarm and PLC controlled smart system
- Adjustable force, temperature, waiting time and position control via a touch screen
- Heatable pressure platens
- Water cooled hydraulic system, water cooling infrastructure
- Able to display separate temperature of both top and bottom
- Automatically keeps the same force apply and display continuous force
- 150 mm stroke distance
- Single action pressing

Optional Features:
-(LC) Load cell
-(PHP) Heat transfer plates (2 pcs.)

Temperature: 300°C
Force Capacity: 30 tons
Automatic force appyling

***This product cannot be operated under 10% of the force value. (Force sensitivity = ± (Maximum force) x 0,015)

LABORATORY SCALE DEVICES / SHAPING AND FORMING

AUTOMATIC COMPOSITE / HOT PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactured for the purpose of the process use.
Our standard automatic hot presses are produced up to 50 tons and 380 °C. Please contact us for higher capacity.

- Adjustable force, temperature, time and position control via a touch screen
- Temperatures of the plates can be viewed and adjusted separately
- Electronic security system, protective light barrier, emergency stop button, warning alarm and PLC controlled, PID heated,
- Critical state control, overheating of the cooling water
- Water-cooled hydraulic system, water cooling infrastructure
- Data record by Wi-Fi
- Automatic force applying
- Load cell
- Continuous application of the same force
- Single-action and parallel pressing
- Mould connection feature
- Controlled cooling with water and air combination

Temperature: 450°C
Force Capacity: 50 tons
Automatic pressing
Plate Dimensions: 550 x 550 mm
Stroke Distance: 700 mm
Heating Zones: 16 +16
Force Sensitivity: ± 10 kg
Force Precision: ± 5 kg
Temperature Uniformity on The Plates Surface : ± 3°C
External Thermocouple Input

MULTI-FUNCTIONAL AUTOMATIC POLYMER PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactured for the purpose of the process use.

- Adjustable force, temperature, waiting time and position control via a touch screen
- PLC controlled smart system, heating by PID
- Electronic safety system, emergency stop button, warning alarm
- Water cooled hydraulic system and infrastructure
- Force control via patented MSE_Servo Hydraulic system
- Able to display separate temperature of both top and bottom
- Automatically keeps the same force apply and display continuous force
- Force control via patented MSE_Servo Hydraulic system
- Load cell
- Detachable furnace chamber and heating plates heating according to working type
- Single axis pressing

Temperature: 300°C
Force Capacity: 30 Tons
700 mm stroke distance
Able to work with composite and different geometric formed moulds

AUTOMATIC COMPOSITE / HOT PRESS SERIES

Automatic hot presses are in our standard production in the range up to 50 tons from 5 tons. You can review the table below for the series of automatic composite press in our standard production.

AUTOMATIC HOT PRESSES					
Product Code	**Force (kg)**	**Temperature (°C)**	**Plate Dimensions (mm)**	**Number of Column**	**Mould Connection**
Single - Action					
LP_A4SH05	5000	300	200*200	4	✓
LP_A4SH10	10000	300	200*200	4	✓
LP_A4SH20	20000	300	350*350	4	✓
LP_A4SH30	30000	300	350*350	4	✓
LP_A4SH50	50000	300	500*500	4	✓
LP_A4SH70WS	70000	300	600*600	4	✓
LP_A4S100WS	100000	300	700*700	4	✓
LP_A CUSTOM	*	*	*	*	*
* It is manufactured according to the customer's demand. Please contact us.					

ATMOSPHERE CONTROLLED MANUAL HOT PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactured for the purpose of the process use.

- Programmable and adjustable temperature and waiting time via PID controller
- Digital force display; momentary force read
- Adjustable stroke distance
- Emergency stop button, warning alarm, auto power cut while lid is opening
- Able to work at maximum temperature
- High precision at low flow with the manual double-flow hand pump
- Adjustable force by manual hand pump
- Adjustable gas flow meter
- Water cooling infrastructure
- Over temperature alarm
- Atmosphere controlled cooled cabin
- Do not able to work without lid closed
- 10^-1 mbar vacuum pump and vacuum display
- Single action pressing

Temperature: 1100°C
Force Capacity: 50 tons
Atmosphere controlled
Manual hand pump

ATMOSPHERE CONTROLLED MANUAL HOT PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactur

- PLC controller, touch panel,
- Programmable and adjustable temperature and waiting time via PID controller
- Digital force display; momentary force read
- Adjustable stroke distance
- Emergency stop button, voice and display warning, auto power cut while lid is opening
- Able to work at maximum temperature
- High precision at low flow with the manual double-flow hand pump
- Adjustable force by manual hand pump
- Adjustable gas flow meter
- Water circulated cooling infrastructure
- Over temperature alarm
- Atmosphere controlled cooled cabin
- Do not able to work without lid closed
- 10^-1 mbar vacuum pump and vacuum display
- Double action

Temperature: 850°C
Force Capacity: 25 tons
Atmosphere controlled heating chamber
Manual force appyling via manual hand pump

LABORATORY SCALE DEVICES / SHAPING AND FORMING

ATMOSPHERE CONTROLLED MANUAL HOT PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactured for the purpose of the process use.

- PID controlled heating
- PLC control and touch screen, applied force, waiting time, temperature and position control,
- Adjustable stroke distance and adjustable force by manual hand pump
- Process log display and automatically adjustable vacuum operation via touch screen
- Data recording with USB output and the ability to automatically adjust and program the vacuum operation via touch screen
- Electronic safety system, emergency stop button, warning alarm, auto power cut while lid is opening
- Water circulated cooling infrastructure
- High precision at low flow with the manual double-flow hand pump
- Able to work at maximum temperature
- Over temperature alarm
- Water circulated cooling infrastructure
- Atmosphere controlled cooled cabin
- Do not able to work without lid closed
- Adjustable gas and cooling water flow meter
- 10^-2 mbar vacuum pump and vacuum display

Temperature: 250 °C
Force Capacity: 20 ton
Atmosphere controlled
Manual hand pump

ATMOSPHERE CONTROLLED AUTOMATIC HOT PRESS

Pressing, which is one of the most widely used methods of material shaping methods, has been designed to design different presses according to the basic requirements of the application. MSE Teknoloji produces various press-driven presses with various characteristics in accordance with the new requirements in the field of technology, industry and R & D. Apart from the standard specifications, a number of presses are designed and manufactured for the purpose of the process use.

- PID controlled heating
- Programmable force, dwell time, temperature and position control via PLC control and touch screen,
- Adjustable stroke distance, process log display and automatically adjustable vacuum operation via touch screen
- Electronic safety system, emergency stop button, warning alarm, auto power cut while lid is opening
- Force control via patented MSE_Servo Hydraulic system
- Load cell integrated
- Able to use singly as furnace or a press
- Able to work at max. temperature
- Over temperature alarm
- PC software and remote connection
- Atmosphere controlled cooled cabin, cooling temperature display
- Do not able to work without lid closed
- Automatic power cut when the lid is open
- Adjustable gas flow meter
- 10^-2 mbar vacuum pump
- Water circulated hydraulic system protection
- Graphite blocks and pressure refractories for high temperatures
- Double action pressing

Temperature: 1200 °C
Force Capacity: 25 ton
Automatic pressing
Atmosphere controlled

ULTRA SENSITIVE PRESS

These presses, designed by MSE Teknoloji, apply the force value entered on a touch screen to the product to be pressed very sensitive. This sensitivity is proportional to the capacity of the press and it can show a precision of 10 Newtons (-1 kg) in a 500,000 Newton (-50 Tons) press. Such presses are often used in special-purpose and polymer electrolyte membrane (PEM) applications to compress the structure. The power units of these presses were developed by MSE Teknoloji.

- Programmable and controllable via PLC touch screen
- Able to display the force, distance and save it to a computer via USB
- Servo motor based mechanical pressing system
- Excellent force accuracy ± 1 Kg
- Adjustable force apply and waiting time
- Adjustable stroke distance
- Load cell
- Parallel pressing
- Emergency stop button
- Plexiglass protective lid

Optional Features:
-(EX) Ex-proof

Ex-proof
Force Capacity: 250 kg
Force Sensitivity: ±1 kg

Force Capacity: 50 tons
Force Sensitivity: ±1 kg

COLD ISOSTATIC PRESS **(Ultra High Pressure Food Pasteurization Equipment)**

Cold isostatic pressing applies pressure in a liquid from every direction to achieve greater uniformity of compaction (high-quality parts) for intricate shapes as compared to uniaxial pressing.

- PLC controlled smart system, ability to remote connection
- Adjustable pressure and waiting time
- Electronic safety system, pressure warning lamp, high pressure and lid sensor
- Automatically openable locked lid and auto pressure application
- Water tank made of AISI 304
- High quality pressure vessel
- Pressurization liquid made of Boron oil / water mixed
- Suction filter
- Pressurization valve
- Suitable with ASME Section VIII design standard

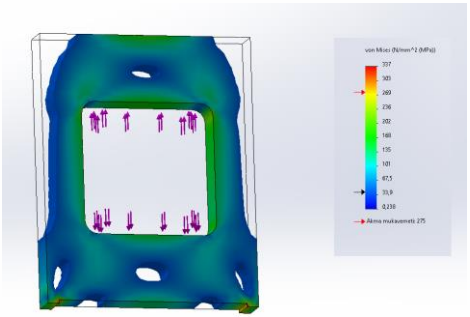
Working Pressure: 250 MPa
Inner Diameter: 140 mm
Depth: 150 mm

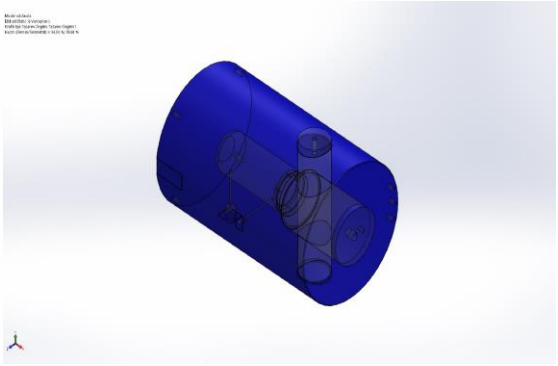
COLD ISOSTATIC PRESS

Cold isostatic pressing (CIP) applies pressure in a liquid from every direction to achieve greater uniformity of compaction (high-quality parts) for intricate shapes as compared to uniaxial pressing. MSE produces CIPs up to 5500 Bar. CIPs produced by our company, which can exceed 4000 Bar, are used in food pasteurization, and CIPs operating below 4000 bar are used in material production.

All pressure vessels used in the products are tested with finite element software before production. In addition, it is tested at 1.5 times the usage pressure according to the post-production ultrasonic inspection and pressure vessels regulation.

We manufacture our covers in the form of pin, gear or external block closure according to the pressure.





COLD ISOSTATIC PRESS

In MSE CIPs we use air driven pump to achieve high pressure.The control panel is separate from the device and is connected to the device with a socket.

The pressure to exit from the control screen and the waiting time at the pressure are set.
When necessary, features such as the number of steps and memory increase, heating feature can be added in accordance with the customer's request. Please contact us for these features.

Standart Properties of MSE CIP's

- PLC controlled smart system, ability to remote connection
- Adjustable pressure and waiting time
- Electronic safety system, pressure warning lamp, high pressure and lid sensor
- Automatically openable locked lid and auto pressure application
- Water tank made of AISI 304
- High quality pressure vessel
- Pressurization liquid made of Boron oil / water mixed
- Suction filter
- Pressurization valve
- Suitable with ASME Section VIII design standard

COLD ISOSTATIC PRESS (Ultra High Pressure Food Pasteurization Equipment)

COLD ISOSTATIC PRESSES			
Product Code	**Diameter (mm)**	**Maximum Pressure (MPa)**	**Depth (mm)**
Automatic			
CIP_WB_A050300150	50	300	150
CIP_WB_A050350150	50	350	150
CIP_WB_A050400150	50	400	150
CIP_WB_A050550150	50	550	150
CIP_WB_A075300200	75	300	200
CIP_WB_A075350200	75	350	200
CIP_WB_A100300200	100	300	200
CIP_WB_A100350200	100	350	200
CIP_WB_A100250300	100	250	300
CIP_WB_A100200300	100	200	300
CIP_WB_A100300200	100	300	200
CIP_WB_A150200300	150	200	300
CIP_WB_A150300500	150	300	500
CIP_WB_A200200300	200	200	300
CIP_WB_A200300300	200	300	300
CIP_WB_A100400200	100	400	200
CIP_WB_A150400300	150	400	300
CIP_WB_A COSTUM	*	*	*

* It is manufactured according to the customer's demand. Please contact us.

PISTON TYPE EXTRUDER

The process is carried out by pushing the material contained in a sleeve with a hydraulic piston. The product exit speed and pressure are adjusted by hydraulic power. The biggest advantage of this type is that it can operate at high pressure, can be used in injection molding and requires less maintenance. However, rather than continuous production, partial continuous production (1.fill in raw material, 2.process and 3.replenishment) can be made. According to the product to be produced homogenizer, heated, water jacketed and vacuum can be used in production according to the material properties of the sleeve and mold properties are changing. Our company designs and manufactures extruders and molds.

WHAT IS EXTRACTING? This process is used to produce continuous parts with unchanging cross-sectional shape.
The general operating principle is that the material is shaped by pushing it into the mold with a certain shape from a hive.
Extruders are manufactured in various models according to their intended use. In general, there are two types of screw type and piston type.
These machines can be homogenizer, heated, water jacketed and vacuumed according to the product to be produced.
Our company designs and manufactures extruders and molds for every purpose.
EXTRUDER BETA 1.0: With Extruder Beta 1.0 software, you can continuously see the values such as pressure, speed and force in every point of the device. You can then repeat the processes you have performed and take measures to solve problems.

- Changeable mould outlet
- Adjustable piston speed (1-400 rpm)
- Able to work under low volume
- Vacuum infrastructure
- Mirror-like working parts
- Hardened, antiadhesive coated sleeve and piston
- Able to work both vertical and horizontal
- Constant velocity sampling and mold pressure display.
- Emergency stop button
- External feeding component inlet

Optional Features:
-(HMG) Homogenizer
-(OM) Heating system (Metal optimization)
-(V) Vacuum pump
-(PCC) PC Communication and Software

EXTRUDER SERIES

You can review the table below for the series of extruder in our standard production.

PISTON TYPE EXTRUDERS				
Product Code	**Diameter (mm)**	**Length (mm)**	**Max. Force (KN)**	**Max. Pressure (bar)**
EXP_S025150	25	150	15,7	450
EXP_S040150	40	150	40,2	450
EXP_S050200	50	200	62,8	450
EXP_S070250	70	250	123,1	450
EXP_S080300	80	300	160,8	450
EXP_S100350	100	350	251,2	450
EXP_S120400	120	400	361,7	450
EXP_S150500	150	500	565,2	450
EXP_S200800	200	800	1004,8	450
EXP_SCUSTOM	*	*	*	*
* It is manufactured according to the customer's demand. Please contact us.				

LABORATORY SCALE DEVICES / SHAPING AND FORMING

METAL/POLYMER INJECTION MOLDING

Injection technique is used in the preparation of various sizes, colors, complex designs and different types of plastic, metal and ceramic samples suitable for the needs of industries such as electrical, automotive, electronics and white goods.

- **Adjustable temperature up to 600°C (Metal Injection)**
- **Adjustable temperature up to 300°C (Polymer Injection)**

- Adjustable pressure and digital display
- Aluminum construction
- High strength nitration coated sleeve
- Removable sleeve and system components
- Programmable, Heating via PID controller
- Limitation of temperature
- K type thermocouple
- Replaceable sleeve mold
- Parallel sleeve-ram structure

Optional Features:
(AV) Automatic vacuum
(V) Standat vacuum pump

METAL/POLYMER INJECTION MOLDING SERIES

You can review the table below for the series of injecton molding in our standard production.

POLYMER INJECTION MOULDING MACHINES			
Product Code	**Temperature (°C)**	**Pressure (MPa)**	**Barrel Dimensions (ØXH) (mm**
IM_2500_20_300	300	80	20 x 150
IM_2500_30_300	300	35	30 x 150
IM_2500_40_300	300	20	40 x 150
IM_CUSTOM	*	*	*
* It is manufactured according to the customer's demand. Please contact us.			

METAL INJECTION MOULDING MACHINES			
Product Code	**Temperature (°C)**	**Pressure (MPa)**	**Barrel Dimensions (ØXH) (mm**
IM_2500_20_600	600	80	20 x 150
IM_2500_30_600	600	35	30 x 150
IM_2500_40_600	600	20	40 x 150
IM_CUSTOM	*	*	*
* It is manufactured according to the customer's demand. Please contact us.			

TAPE CASTER & DOCTOR BLADE

Tape casting, in the most general mean, is that powders are finely cast under a certain shear stress by mixing with the appropriate amount of binder system (binder-plasticizer dispersing solvent). The produced tapes are 5-250 microns thick and the desired production thickness is obtained by pressing the tapes on top of each other.
Moving Knife Fixed Coaster: It is generally preferred for R & D laboratory studies. The blade moves at a certain speed on the carrier bottom and pulls the strip. The strip is cut to the desired size on the base. Tape casting requires a binder system. Thanks to our patented TC-S1 binder solution, you can achieve your desired production in a very short time. Thanks to the adjustable casting speed and thickness, you can control the cutting force of your process. You can precisely adjust the casting thickness on the included doctor blade. All stainless steel doctor blade is not affected by chemicals used in cleaning and process. On demand of our customers, the following trainings are provided to produce the target product.
Note: After pressing, the structure exhibits bulk behavior and does not act as a layer. After this process, the product is obtained after binder removal and burning.
Sludge Preparation: How is the dispersion done? What materials and methods to choose? How is the optimum viscosity practically adjusted?
Tape Casting: What should be the blade spacing? How fast should it be cast? How to laminate? How burn out to be done?
Burning: How to remove the flat part? What should be the burning regime? What kind of materials should be used?
MSE provides a training its customers in order to produce their own tapes whom buy a tape caster device.

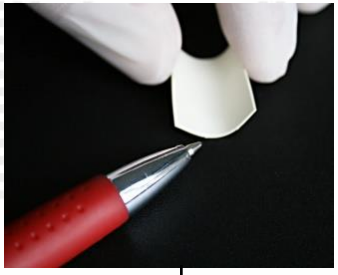
- Aluminum structure
- Adjustable speed (0-20 cm/sec)
- Automatic stop and precision motion feature without ripple effect
- Forward and backward movement for push arm
- Safety cover and observation glass for casting area
- Lightened and scaled glass casting area
- Chemically resistant casting area
- Digital speed display
- Electrically operated cabin lid
- Doctor's blade with 5 micron sensitivity
- Casting and blade storage cabin

Optional Features:
-(PR) Protection from powders and impurities
-(UV) UV lamp
-(SC) Storage cabinet, -(MS) Measurement scale, -(L) Lightened,
-(HD) Heating and drying system , - (PCC) PC Communication and Software

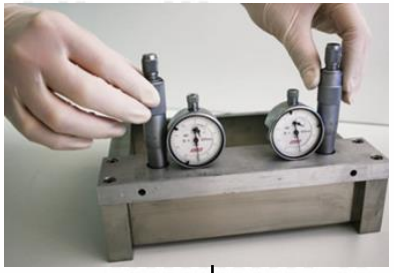
TAPE CASTER & DOCTOR BLADE

You can review the table below for the series of tape caster in our standard production.

TAPE CASTING DEVICE SERIES				
Product Code	**Width of Casting Area (mm)**	**Length of Casting Area (mm)**	**Doctor Blade**	**Casting Surface**
TC_H_150_80	150	800	Moving	Glass
TC_H_150_120	150	1200	Moving	Glass
TC_H_200_80	200	800	Moving	Glass
TC_H_200_120	200	1200	Moving	Glass
TC_S_150	150	5000	Fixed	Mylar
TC_S_120	100	5000	Fixed	Mylar
TC_CUSTOM	*	*	*	*
* It is manufactured according to the customer's demand. Please contact us.				



(0,1-10 mm) Thickness



Doctor Blade , 5-250 Micron thickness sensitivity

CLIMATIC CABINET

It's designed for testing samples under certain temperature, moisture, atmosphere and wind conditions.

- Heating and cooling system
- Wind, humidity and temperature control via PC
- Wind speed (0,1 – 2 m/hr.)
- ± %5 sensitivity humidity control
- Temperature: 30°C
- Rail rack system for samples
- Observation glass on the lid

LABORATORY SCALE DEVICES / TEST CABINES

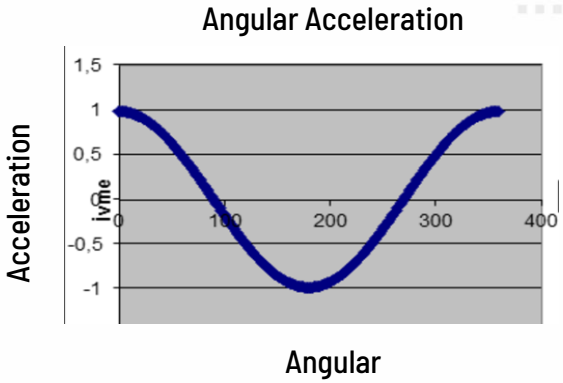
HOT BLASTING CABINET

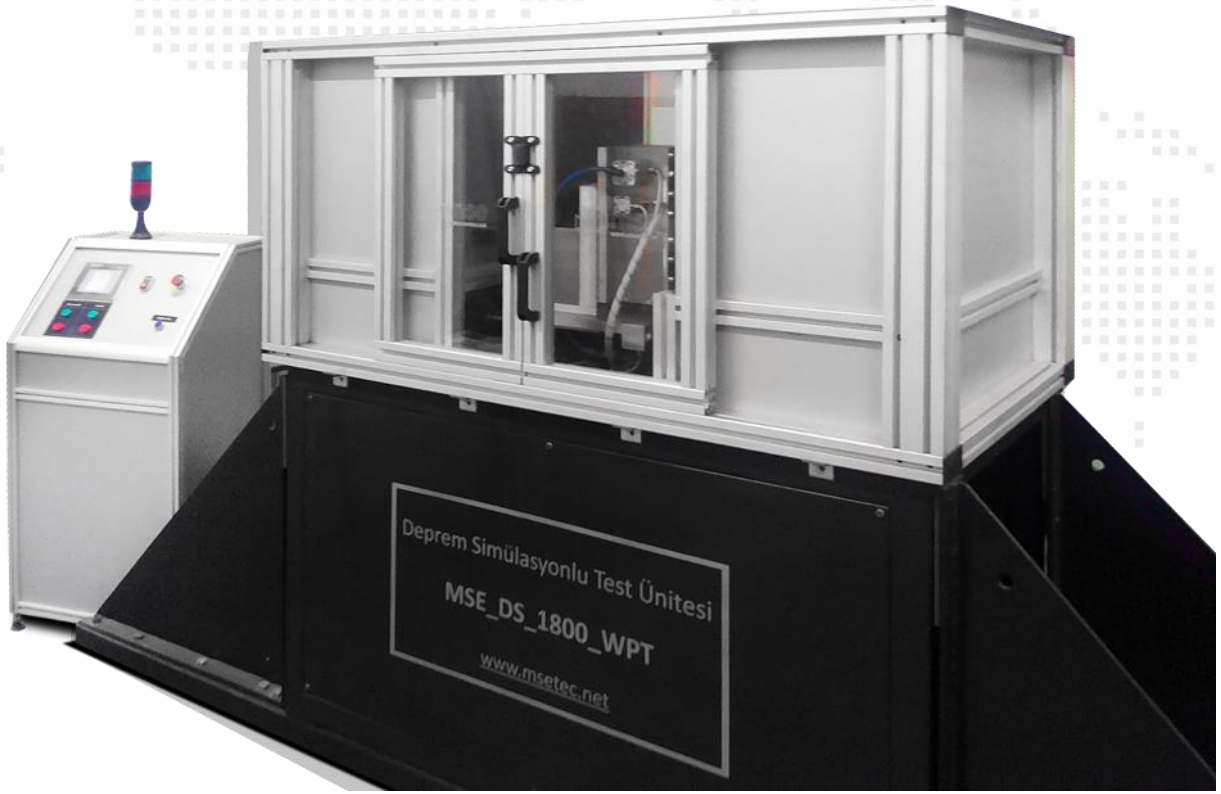
It is designed to test pipes of different diameters and sizes under temperature and pressure.

- Temperature:250°C
- Pressure: 8 bar
- Observation glass on the lid
- Programmable temperature and time
- Auto power cut when lid is opened
- Stainless steel cabin and protection cage

SIMULATED TEST STATION

It has been produced according to Auto-cut Natural Gas Valve Test Compliance to EN-12884.



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