



**OPERATION & INSTRUCTION MANUAL  
AUTOMATIC MOUNTING PRESS**

# **ECOPRESS 52/102/202**

## EC Declaration of Conformity

- Manufacturer** : Metkon Instruments Inc.
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- Model No** : ECOPRESS 52/102/202

Herewith declares that;  
**Hot Mounting Press,**

- is in conformity with the provisions of the Machinery Directive **(directive 2006/42/EEC)**, as amended, and with national implementing legislation;
- is in conformity with the provisions of the Low Voltage Directive **(directive 2014/35/EU)**, as amended, and with national implementing legislation;
- is in conformity with the provisions of the EMC Directive **(directive 2014/30/EU)**, as amended, and with national implementing legislation;

And furthermore declares that

- the following (parts/clauses of) standards have been applied

**EN ISO 12100:2010, TS EN 60204-1, TS EN IEC 61000-6-2, TS EN 61000-6-4**

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**Year:** 2019  
Bursa / Turkey



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## DESCRIPTION

### Design

All ECOPRESS models have electrohydraulic operation, which do not require air. The sample is ejected fast and very smoothly. All hydraulic components are housed in an ABS cabinet, which is ergonomically designed.

ECOPRESS 52 is a cost effective automatic digital mounting press with hydraulic pressure (requires no air). It is fully automatic and suitable for all current hot mounting materials used in materialography. User-friendly and modern-looking control panel for mounting parameters provides high productivity with last parameter settings being retained in the memory. The control panel is specially designed to maximize operator comfort and operation versatility. It is possible to set mounting parameters in seconds.

ECOPRESS 52 is an easy to use mounting press. All button controls, direct reading pressure gauge and valve are on the front panel. Simply place the sample and the mounting media in the cylinder and close the mold closure. Set the "Molding Temperature", "Heating Time", "Cooling Time" and "Pressure" then press the "Start" key. Pressure, heating and cooling are automatically controlled and the total cycle time for a complete cool mount takes 8 to 10 minutes. The actual heating temperature and the heating time are digitally displayed throughout the moulding cycle. The last parameter settings are always retained in the memory. An audible signal notifies the operator when the process is completed.

ECOPRESS 102/202 are high capacity, state of the art automatic mounting presses having advanced software with programmable colored HMI touch screen controls. Robust bayonet closure allows for quick and safe operation. Wide selection of mould assemblies from 25 to 50 mm in diameter are available. Two mounts can be produced simultaneously with the use of an intermediate ram. ECOPRESS 202, available with dual cylinder can produce four mounts at a time offering a perfect solution for labs with high specimen throughput.

ECOPRESS 102/202 have preprogrammed moulding sequences built-in (factory set) from which you can choose according to your own applications. You only need to place the sample in the mould, select the program number for your specific application and depress the "Start" button. That is it! ECOPRESS does the rest for you! After pressing the start key, the fully automatic program sequence is executed with the preselected parameters. The pressure, heating and cooling are automatically controlled and the total cycle time of a complete cool mount takes 8 to 10 minutes. The parameters can be changed and adjusted during the mounting process. ECOPRESS 102/202 has additional capacity to store up to 99 operator-created programs. User-friendly program data and instructions are displayed on a large touch screen LCD.



ECOPRESS 52



ECOPRESS 102



ECOPRESS 202

## Technical Data

Model Order No	ECOPRESS 52 25 10	ECOPRESS 102 25 11	ECOPRESS 202 25 12
Number of Moulds	1	1	2
Maximum Pressure, bar	300 bars	300 bars	300 bars
Maximum Temperature, °C	200 °C	200 °C	200 °C
Heating Power, Watt	1650 W	1650 W	2 x 1650 W
Fast Cooling	Yes	Yes	Yes
Slow Cooling	Yes	Yes	Yes
Operation	Automatic	Programmable Automatic	Programmable Automatic
Display	Digital Display	7" Colored Touch Screen LCD	7" Colored Touch Screen LCD
Mould Assembly, mm	25-50 mm	25-50 mm	25-50 mm
Dimensions, mm, WxDxH	360 x 560 x 470	360 x 560 x 470	470 x 560 x 470
Weight, kgs	37 kgs	38 kgs	54 kgs

## Warranty

The ECOPRESS is guaranteed against defective material or workmanship defects for a period of 12 months from the date of receipt by the customer or latest 18 months after the shipping date. The warranty is not valid if inspection shows evidence of misuse or unauthorized repair. Warranty covers only replacement of defective materials. If this unit need to be returned to our factory for service, please contact your distributor for authorization and include the following details: Serial Number of the unit, Invoice number and date. Transport costs belong to the customer.



### NOTE

The equipment is designed to be used with METKON accessories and consumables. In case of misuse of equipment, improper installation, alteration, use of different source parts, improper repair, METKON will accept NO responsibility for any damages to the operator or the equipment. Disassembling of any part should always be performed by a qualified technician

## Safety Precautions

**Read the below instructions carefully before use.**

- Place the machine on a sturdy and safe platform.
- The equipment must be installed in compliance with local safety regulations.
- Only use approved METKON accessories and consumables to achieve maximum safety and lifetime.
- Follow the instructions and safety regulations when lifting and carrying the equipment.
- Be sure that the water connections are assembled properly without any water leakage.
- Be sure that the water outlet hose is safely assembled to the outlet connection.
- Be sure that the mould assembly is properly installed on the mounting press before starting the process.
- Be sure that the top closure and the upper ram is correctly mounted before starting the process.
- Do not operate the mounting press with a higher force/pressure than the parameters recommended for the actual cylinder diameter.
- In case of mounting powder swallow, please contact to your doctor.
- Do not operate the unit without installing the mould assembly.
- Do not operate the unit without mounting powder.
- Disconnect the electrical connection before servicing the equipment.
- Follow the periodically maintenance.



### NOTE

METKON Instruments Inc. can make any changes without notice on the equipment, accessories, consumables and miscellaneous products. Consequently; visual or written information on the instruction manuals, technical materials, catalogues, website, product videos and other marketing materials may show inconsistencies and may be different from the product.

## INSTALLATION & SET UP

### Unpacking & Checking Contents of Package

Carefully unpack and check contents of the package. If any components are missing or damaged, save the packing list and materials and advise your distributor and the carrier of the discrepancy.

Carefully unpack and check that the following items have been received:

- Drain Hose for Hot Water, 1.5 m, 1 piece
- Water Inlet Hose, 1.5 m, 1 piece
- Power Cable, 1.8 m, 1 piece
- Aluminium Funnel, 2 pieces
- Hose Clamp,  $\varnothing 10 - \varnothing 16$  mm, 2 pieces
- Pneumatic Fitting, 8 mm to  $\frac{1}{4}$ ", 1 piece
- Brass adapter,  $\frac{1}{4}$ " to  $\frac{1}{2}$ ", 2 pieces
- Nozzle,  $\frac{1}{4}$ " to 10 mm, 1 piece
- Magnetic Bits Holder, T-type, 6.3 x 100 mm, 1 piece
- Screwdriver, 6 x 100 mm, 1 piece
- Hex Key, 8 mm, 1 piece
- Hex Key, 4 mm, 1 piece
- Scale, 1 piece
- Spatula, 1 piece



#### WARNING

Please consider the weight of equipment and be sure that there are enough people (at least 2) or lifting equipment to lift safely for transportation. It is recommended to wear safety shoes during transportation.



#### ATTENTION

ECOPRESS is bolted to a wood base for protection during shipping. Remove the bolt securing the unit to the wood base.

### Step by Step Unpacking

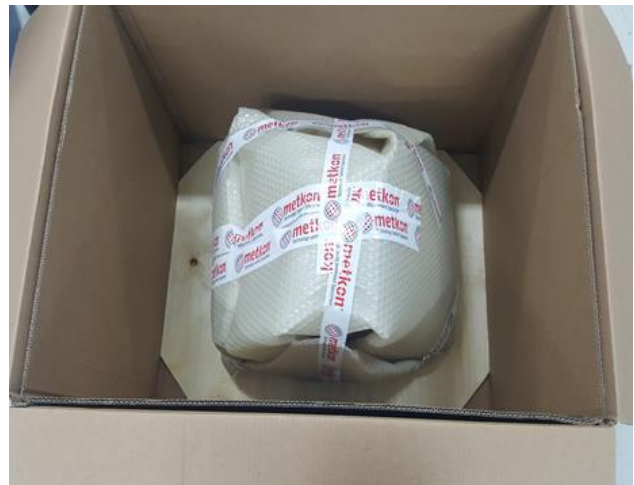
- Carefully remove the outer stretch wrap, cut the strips and remove the cover.



- Open the box and remove filling materials inside the box.



- Remove the consumables first.



- Remove the equipment from the box by holding the bottom. Be careful not to damage ABS cover when lifting. Please consider weight of equipment when lifting it. Lift the equipment by considering the center of gravity.



- Carefully remove the protective bubble wrap. Be careful not to damage equipment while using a knife.



- Remove the protective foam on the touch screen [ECOPRESS 102/202].



## Installation and Set-Up



### CAUTION

Follow approved procedures and take all necessary preventive safety measures when lifting and installing this equipment. Improper lifting can result equipment damage.

- ECOPRESS is available either as bench top or with cabinet.
- ECOPRESS should be placed on a sturdy and safe platform. Please be sure that the platform is large enough and can stand its weight.
- In order to work with equipment comfortably, it is recommended to leave at least 30 cm space from all side of the equipment.
- You can see the dimensions and weights of ECOPRESS series:

ECOPRESS 52			
Dimensions	W	D	H
	36 cm	56 cm	47 cm
Weight	Approx. 37 kgs		

ECOPRESS 102			
Dimensions	W	D	H
	36 cm	56 cm	47 cm
Weight	Approx. 38 kgs		

ECOPRESS 202			
Dimensions	W	D	H
	47 cm	56 cm	47 cm
Weight	Approx. 54 kgs		



### ATTENTION

IN ORDER TO PREVENT OIL LEAKAGE FROM THE RESERVOIR, DO NOT TILT THE EQUIPMENT.



## Electrical Installation

Before making electrical connections, check that the voltage and frequency stated on the specification plate correspond to the local voltage and frequency. Check that the values for mono-phase voltage if it is compatible with the intended electrical supply before installation.



### ATTENTION

Connect the unit to the grounded mains voltage.



### WARNING

Electrical Shock Hazard. A qualified electrical technician should perform all hard wiring and electrical maintenance.

- Disconnect the power supply before making any electrical adjustments.
- Make sure that the supply voltage and frequency is correct. Check the values from the machine identification plate located at the rear of the machine:

ECOPRESS 52/102		
Voltage / Frequency	Operational Power Range	Fuse Rating
230 V, 50/60 Hz. 1 ph.	200 - 250 V	10A (C Type)
115 V, 50/60 Hz. 1 ph.	100 - 125 V	20A (C Type)

ECOPRESS 202		
Voltage / Frequency	Operational Power Range	Fuse Rating
230 V, 50/60 Hz. 1 ph.	200 - 250 V	20A (C Type)
115 V, 50/60 Hz. 1 ph.	100 - 125 V	32A (C Type)



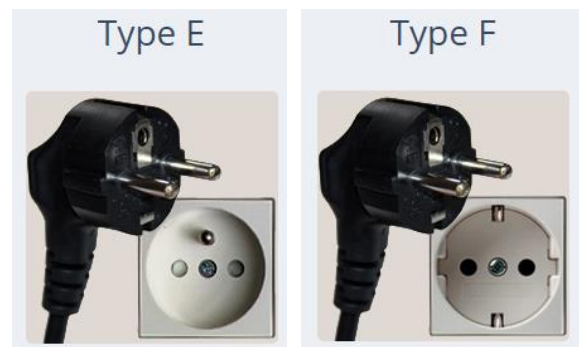
Identification Plate

- Connect the equipment to the grounded mains voltage. Power cord will be supplied with the equipment.
- Length of power cable is 1.8 meters.



Power Cable

- You can see suitable power sockets as below. If you have not suitable power socket, in this case you should supply a suitable power cord.



## Water & Cable Connections

- ECOPRESS requires water supply with a minimum of 2 liters/min flow rate.
- Maximum water pressure must not exceed 3 bars. Well water or hard water must not be used.
- Lower water flow rate and pressure will not affect the operation of the ECOPRESS but longer cooling times may be needed.



### ATTENTION

A Hydrophore generates much higher water pressure than city water. This causes input hose to blow out and solenoid valve to be damaged. Maximum water pressure must not exceed 3 bars.



### ATTENTION

Well water or hard water causes solenoid valve to be clogged up and broke down due to dirt and lime.

- If the equipment used with well water, hydrophore or very hard water; a water filtering and pressure regulator system must be used. Please contact Metkon Service [metkonservice@metkon.com] or your local representative if you need water filtering and pressure regulator system.



**Water Filtering and Pressure Regulator System**

- Water inlet and drain hoses will be sent together with the equipment. [See: Installation Kit]
- See diameters of hoses as below:

**Drain Hose:**

Interior diameter: 5/16"  
Outer diameter: 14 mm

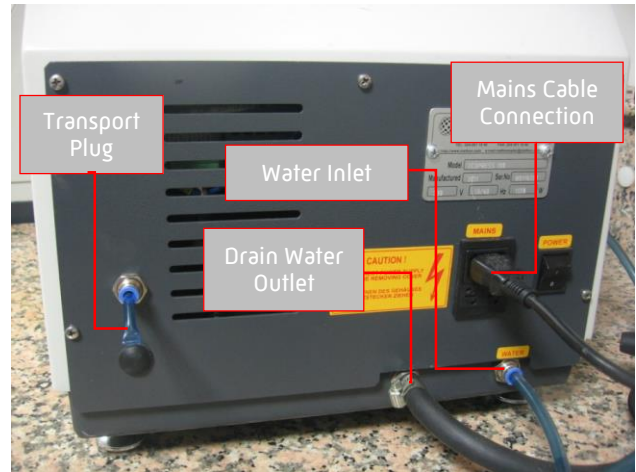
**Water Hose:**

Interior diameter: 5 mm  
Outer diameter: 8 mm (5/16")

- Please be sure that there are enough space or holes for hoses at the backside of the equipment.
- Below fittings will be sent for water hose connection together with the equipment :



- Connect the line water to the unit with the plastic tube supplied.
- Fix the copper tube to the water outlet of the unit to the drain.



**Connections**



**CAUTION**

After making the connection of line water and drains please check if any leaks are occurred or not, before any electrical connection.



**ATTENTION**

There is a small blue plug at the backside of the equipment, which is used for transport. This plug is used to prevent oil leakages during the transport. Please take the plug out before using the equipment and do not use it anymore unless you will transport it somewhere.

**NOTE:** If for any reason the ECOPRESS has to be moved, close the small blue plug before moving and open before operating.

**Optional Recirculating Cooling System**

The GR 1363 Recirculating Cooling System is composed of 40 liters stainless steel cooling tank, 24V recirculating pump and connection hoses, etc.



**Recirculating Cooling System**

Follow below steps to make recirculating cooling system ready for operation:

- Position the recirculating cooling tank below level of ECOPRESS.
- Fit the blue inlet pipe to the ECOPRESS
- Fit the black hose to the drain outlet on the ECOPRESS.
- Fill the tank with fresh water.

## Mounting Mould Assembly

ECOPRESS is shipped as completely assembled. However if you need to change the mould or assemble it later for any reason, follow the below steps to assemble the mould:

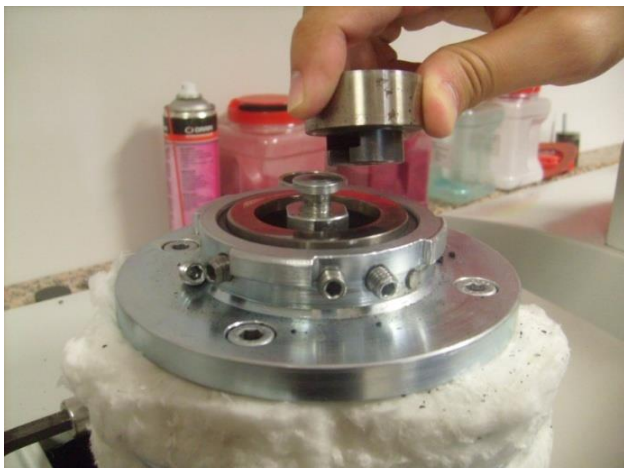
- Take out the mould closure completely.



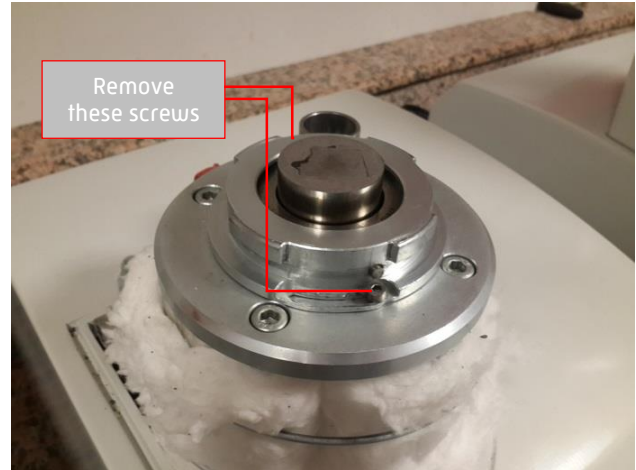
- Remove the two fixing screws from back of the ABS cover of the mould chamber then, remove the upper ABS cover.



- Take out the bottom ram then, lower the ramrod to the bottom.



- Disassemble the screws and take out the upper part metal thread of the mould.



- Tighten (clockwise) the Cylinder Lock screw.



- Take out the mould assembly as shown in below photo:



- Replace your mould assembly. Insert the mould assembly until it sits level with the mould closure.



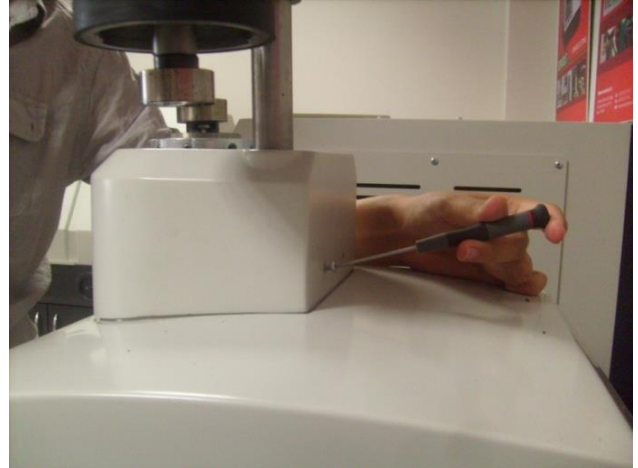
- Loosen (counterclockwise) the Cylinder Lock screw shown on below photo:



- Insert the Mould Cylinder Insulator Ring into the Mould Closure. Align the holes of the Insulator Ring with the screws.



- Close the upper cover and assemble the screws.



- Assemble the upper part metal thread of the mould cover and tighten the screws.



### **IMPORTANT!**

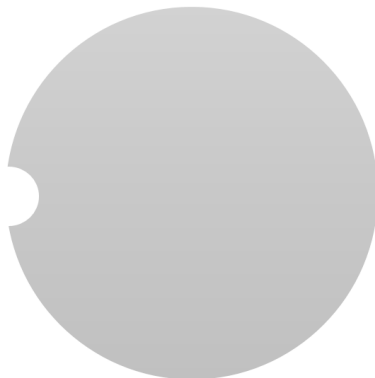
You should order the mould assembly according to dimensions and shape of your sample. Big samples, which touch the inner wall of moulds, can scratch the mould assembly. In addition, using less hot mounting powders than the required can scratch the mould assembly. Please keep in mind that this kind of damages due to operator fault are not covered by warranty.

**Using Intermediate Ram**

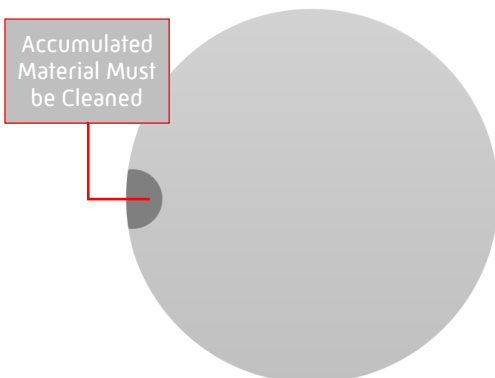
You can get double mounts in one cycle by using intermediate ram. After placing your first sample and mounting compound, insert the intermediate ram with the help of the magnetic ram holder. Then put your second sample and mounting compound.



Please clean the material accumulated at the groove of the intermediate ram as shown below before each operation for safety.



**Intermediate Ram before Operation**



**Intermediate Ram after Operation**

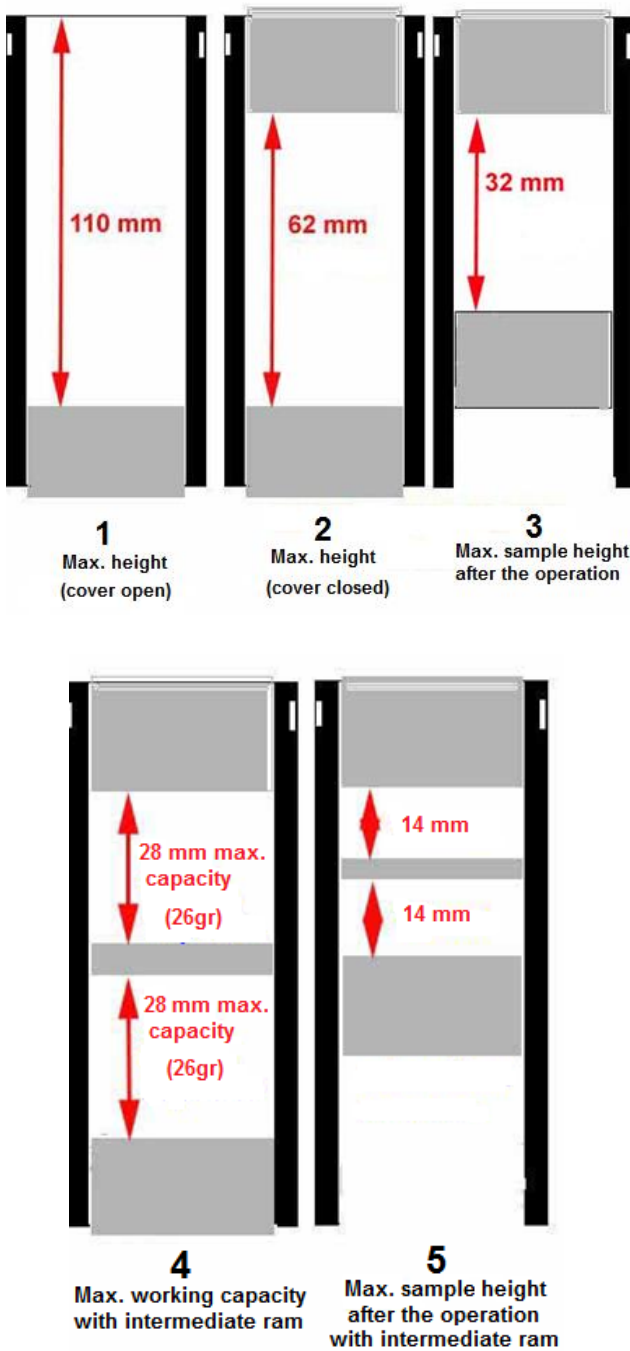
- Be sure that the resin that you put on the sample exceeds the sample height enough.
- Maximum height of the samples should be 10 mm.
- If the put resin is not enough, the sample may touch to the upper ram or to the intermediate ram. This will distort the intermediate ram and the inner surface of the mold assembly.
- Do not put your specimen close the edge of mould. Otherwise, the sample may scratch the mould.

Each mounting compound has different melting and cooling properties. Therefore, the working capacity and amount of powder would be change for each powder. Below table shows general dimensions according to different compounds in Ø40 mm mould assembly.

No	1	2	3	4	5
Phenolic	110 mm	62 mm	32 mm	28 mm (26 gr)	14 mm
Epoxy	110 mm	62 mm	33 mm	28 mm (38 gr)	15 mm
Acrylic	110 mm	62 mm	40 mm	28 mm (25 gr)	17 mm
Diallyphtalat	110 mm	62 mm	27 mm	28 mm (28 gr)	12 mm

Above-mentioned information has been given as a reference for Ø 40 mm to give an idea about the mounting compound transformation.

Below table shows capacity of the moulds in different stages while using phenolic mounting powder in Ø40 mm mould assembly.



**ATTENTION**  
All mould jamming and scratching problems caused by operator fault are out of warranty!

**Noise Level**

Approx. 60 dB is measured at idle running at a distance of 1 m from the machine.

**CONTROL PANEL (ECOPRESS 52)**

ECOPRESS 52 has a modern looking and easy to use operator panel with buttons and knob. It has specially designed to increase operator comfort and maximize productivity. All mounting parameters can be set easily and quickly. A multipurpose digital display allows you to observe all parameters.



ECOPRESS 52 Control Panel

**Control Button Functions**

- Cooling Time
- Heating Temperature
- Heating Time
- Manual Cooling
- Ram Down
- Ram Up
- Slow Cooling
- Start/Stop

## TOUCH SCREEN CONTROL PANEL (ECOPRESS 102/202)

The operation panel is a 7" touch screen LCD. HMI touch screen controls increasing the productivity, sample consistency and operator comfort.



ECOPRESS 102/202 HMI Touch Screen

### Control Button Functions

	Main menu
	Metkon contact info
	Service and maintenance menu
	Information
	Language Selection
	Bar/PSI Selection
	°C/°F Selection
	Consumable List
	Application Areas
	Automatic Mounting Menu
	Temperature Parameters
	Pressure Parameters
	Heating Time Setting
	Mould Dimension Selection
	Cooling Parameters
	Switch to Left Mould
	Switch to Right Mould
	Ram Up
	Ram Down
	Manual Cooling
	Load Existing Program
	Save Parameters

## Password List

Below are passwords, which are required for operating and programming the machine. You can use any of them.

Username	Password
Start-up Password	1840
USER1	1234
USER2	123456
USER3	1000

## Operation Parameter Ranges

Heating Temperature	: 0 – 200 °C
Preheating Temperature	: 0 – 199 °C
Pressure for Ø25-30-40	: 0 – 300 Bar
Pressure for Ø50	: 0 – 220 Bar
Preload Pressure for Ø25-30-40	: 20 – 299 Bar
Preload Pressure for Ø50	: 20 – 219 Bar
Heating Time	: 0 – 35 Mins
Mould Size, mm	: Ø25-30-40-50 mm
Mould Size, inch	: Ø1"-1 ¼"-1 ½"-2"
Stand-by Temperature	: 0 – 60 °C

## Recommended Parameters

For Ø25 and Ø30 mm Mould Assemblies				
Moulding Resin	BAK/CON	DAP	EPO	NET
Heating Temperature	170 °C	180 °C	180 °C	150 °C
Pressure	250 bar	210 bar	210 bar	230 bar
Curing Time	3-4 mins	4-5 mins	4-6 mins	3-4 mins
Cooling Method	Cooling Based on Time	Cooling Based on Time	Cooling Based on Time	Slow Cooling
Cooling Time	3-4 mins	3-4 mins	3-4 mins	5 sec ON 30 sec OFF

For Ø40 mm Mould Assemblies				
Moulding Resin	BAK/CON	DAP	EPO	NET
Heating Temperature	170 °C	180 °C	180 °C	150 °C
Pressure	250 bar	210 bar	210 bar	230 bar
Curing Time	2-3 mins	3-4 mins	4-5 mins	3-4 mins
Cooling Method	Cooling Based on Time	Cooling Based on Time	Cooling Based on Time	Slow Cooling
Cooling Time	3-4 mins	3-4 mins	3-4 mins	5 sec ON 30 sec OFF

For Ø50 mm Mould Assemblies				
Moulding Resin	BAK/CON	DAP	EPO	NET
Heating Temperature	170 °C	180 °C	180 °C	150 °C
Pressure for Ø50 Mould	210 bar	210 bar	210 bar	210 bar
Curing Time	2-3 mins	3-4 mins	4-5 mins	3-4 mins
Cooling Method	Cooling Based on Time	Cooling Based on Time	Cooling Based on Time	Slow Cooling
Cooling Time	3-4 mins	3-4 mins	3-4 mins	5 sec ON 30 sec OFF



### NOTE

These are the minimum parameters to obtain a good mount in the shortest time. Higher values do not cause negative effect on the mount quality but total cycle time may be increased. Sample shape, powder amount and temperature of city water may effect the mount quality. If you cannot obtain good sample with these parameters, please try different parameters by following recommendations on the troubleshooting section.



## OPERATION

### Making a Mould

- Turn on the equipment from the main switch at the rear side.



- Open the bayonet closure.



- Move the ram upmost position by pressing "Ram Up" button.



- Clean the powder residue from the upper and bottom rams. Brush away any loose mounting material or other deposits from around the mold area before making a mold.
- Apply Mould Release Spray after every fifth or sixth mold to prevent buildup of molding powder on the inside of the mold cylinder and the outside faces of the upper and lower rams.
- Put a specimen on the ram as below.



- Move the ram to the bottom position by pressing "Ram Down" button.

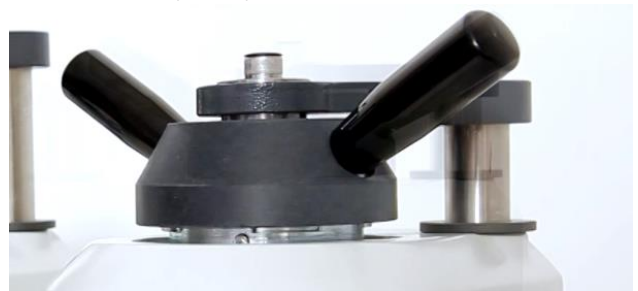
- Put enough amount of mounting powder inside the mould.



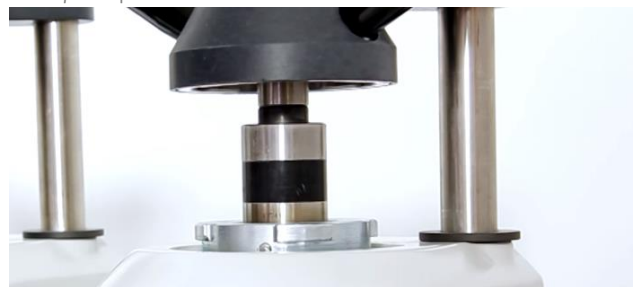
- Clean the sidewalls of the mould and upper ram. Otherwise, upper ram cannot go inside the mould and bayonet closure cannot be closed. Because there is very small tolerance between the rams and mould.
- After cleaning, close the bayonet closure. Be sure that the closure is closed properly. Hear the click noise to be sure that it is closed properly. Otherwise, the thread of the closure may break under pressure.



- Set parameters or select a specific program and press "START" button. The mounting cycle will be completed automatically. An audio signal will notify the operator when mounting operation is completed.
- After mounting operation is completed, turn the bayonet closure to unlock it. Do not try to pull it up. Because, the upper ram is expanded due to temperature and cannot be moved up easily.



- Press "Ram Up" button to move ram up. You can take your specimen.

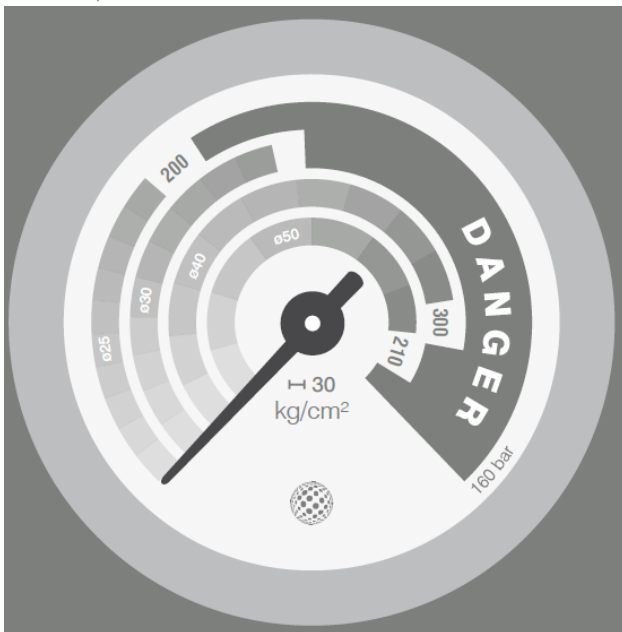


## Setting Parameters (for ECOPRESS 52)

### Adjusting Pressure

Follow below steps to adjust pressure:

- Put some mounting powder inside the mould and close the bayonet closure.
- Press "START" button.
- Wait until bottom ram goes up and apply pressure.
- Pull up the pressure regulator to unlock it.
- Set the pressure by turning pressure regulator. Observe the pressure from the gauge.
- After desired pressure value is set, push the pressure regulator to lock it.
- Press "STOP" button.
- The pressure is set!



Gauge



#### ATTENTION

The maximum allowable pressure for different types of moulds are marked on the gauge. Never increase the pressure into the "DANGER" zone. This may damage the hydraulic system.

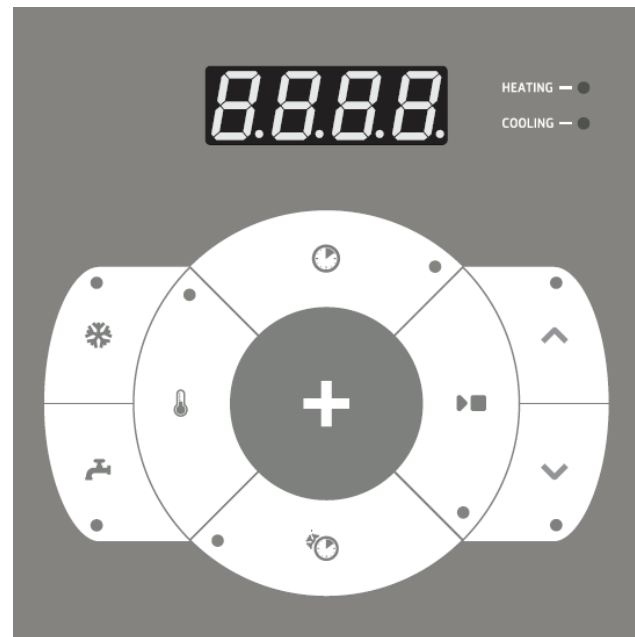
Warranty will not cover the damages due to operator fault.



#### NOTE

The pressure is already set in the METKON Factory according to purchased mould diameter and Bakelite mounting powder (BAK). However, if you change the mold later with

different diameter, it is required to adjust the pressure. If you are using different type of mounting powders, you do not have to change pressure parameter every time. You can use same pressure parameter for each mounting powders. Just adjust the pressure parameter for the mounting powder, which require the highest pressure.



ECOPRESS 52 Control Panel

### Moving the Bottom Ram

- Press "Ram Down" button to move the ram downwards. Press the same button again to stop the ram.



- Press "Ram Up" button to move the ram upwards. Press the same button again to stop the ram.



### Setting Heating Temperature

- Press the "Heating Temperature" button. The LED of this button will blink and the last parameter will be seen on the display.



- Set heating temperature by turning knob.
- Push the knob to save heating temperature.
- Heating temperature is set.

### Setting Heating Time

- Press the "Heating Time" button. The LED of this button will blink and the last parameter will be seen on the display.



- Set heating time by turning knob.
- Push the knob to save heating time.
- Heating time is set.

### Setting Cooling Time

- Press the "Cooling Time" button. The LED of this button will blink and the last parameter will be seen on the display.



- Set cooling time by turning knob.
- Push the knob to save cooling time.
- Cooling time is set.

### Slow Cooling

- Slow cooling feature is used while moulding with Transparent Acrylic Powder (NET). This mounting powder will be clear only with the slow cooling.
- When you press "Slow Cooling" button, the LED of this button will be on and slow cooling mode will be activated. In slow cooling, the cooling water will be on for 5 second, will be off for 30 seconds. This cycle will continue until mould temperature reaches to 35 °C.



- When slow cooling mode is active, the cooling time parameter will be deactive.
- Press same button again if you want to deactivate the slow cooling mode. The LED of this button will be off and slow cooling mode will be deactivated.

### Changing the Slow Cooling Parameters

- Keep pressing the "Slow Cooling" button for 5 seconds. The final temperature will be seen on the display. Set the final temperature by turning knob and press on the knob to save the parameter.
- After that, press "Slow Cooling" button. Now, the "water on time" will be seen on the display and the LED of this button will blink. Set and save the "water on time" by knob in same way.
- Finally, press again "Slow Cooling" button. Now, the "water off time" will be seen on the display and the LED of this button will blink. Set and save the "water off time" by knob in same way.

### Manuel Soğutma

- When you press "Manual Cooling" button, the LED of this button will be on and cooling water will be active. The water circulation will continue as long as manual cooling mode is active.



- Press the same button again to turn off the cooling water.

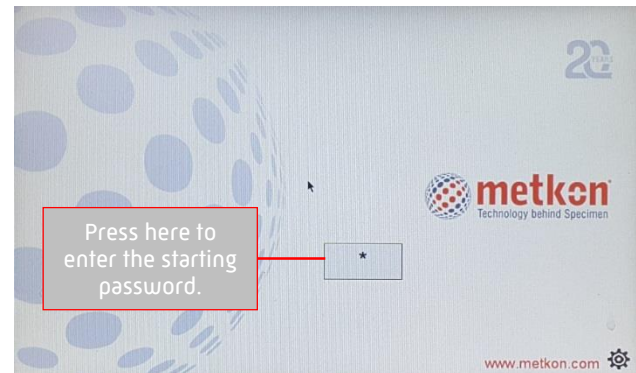
### Start and Stop

- Press the "Start/Stop" button to run or stop the equipment. The LED of this button will be on when equipment is running.



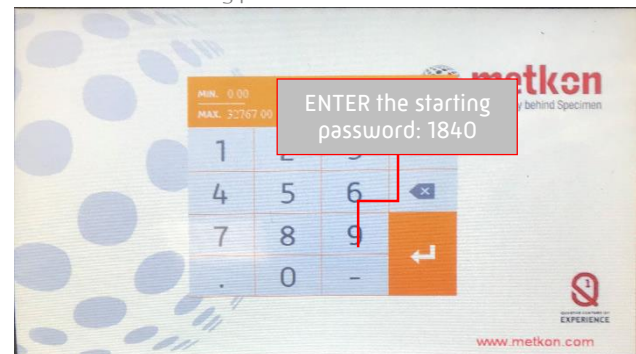
### Setting Parameters (for ECOPRESS 102/202)

- Turn on the equipment from the main switch at the rear side. The screen will become light up as below.



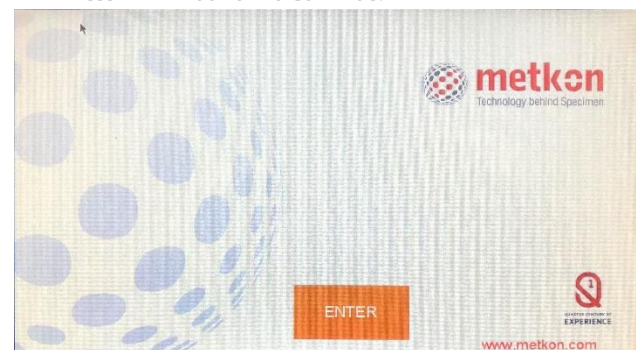
Starting Screen

- Enter the starting password: 1840



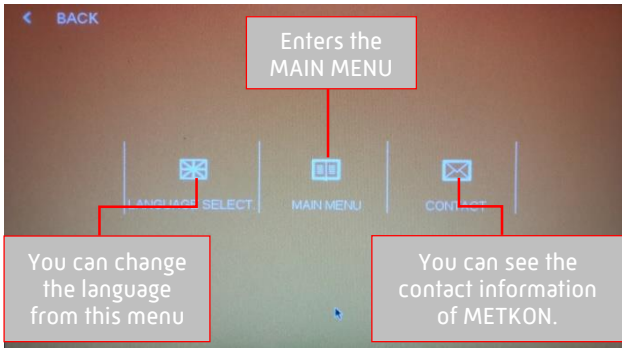
Entering the Starting Password

- Press ENTER button to continue.



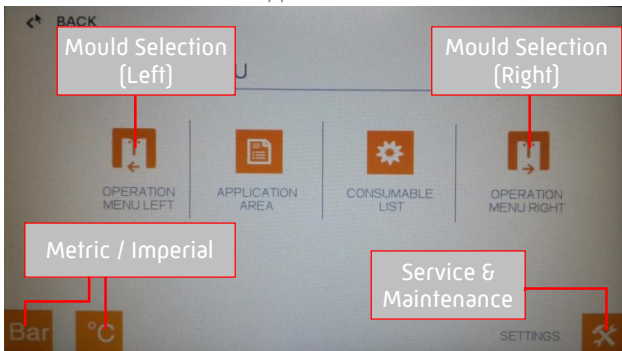
Starting Screen

- The menu will appear as below. Press MAIN MENU button to continue.



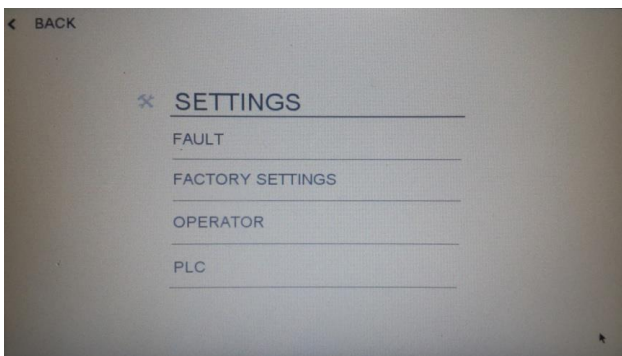
Starting Menu

- The MAIN MENU will appear as below:



Main Menu

- Service and Maintenance Menu - From this menu, you can see the lists of possible faults, for periodic maintenance, and the factory settings.



Service and Maintenance Menu

In order to have Access to the "maintenance" division, you need to login. The user name is "USER 1" and the password is "1234".

You can follow the instructions listed in this menu for maintenance and monitoring of your equipment. The date and the time is also set in this menu.

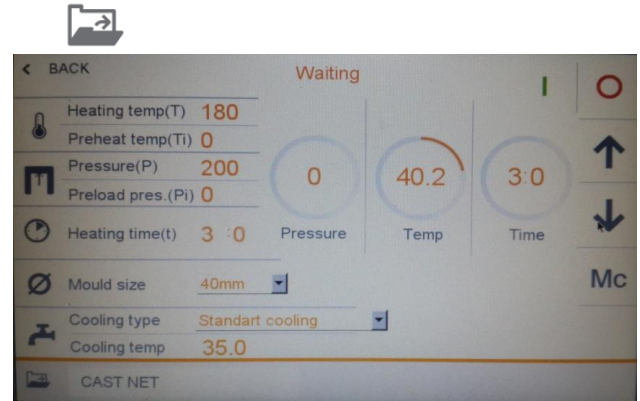
**ATTENTION**



Every week, month & year you will be advised of required maintenance procedures via the machines software. The functions will not work unless you adhere to the maintenance menu.

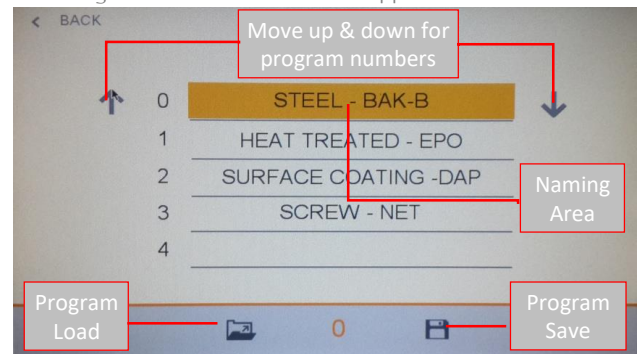
**Creating and Saving Mounting Parameters**

- Set all the parameters from the touch screen and depress "Load" button.



Operation Menu

- Program Save/Load menu will appear as below:



Save Program

- Select an empty area by the help of up/down arrows.
- Touch the naming area.
- Type a specific program name.
- Press save button.



**NOTE:** The parameters can be changed and adjusted during the mounting process.

- To load an existing program, select an existing program by the help of up/down arrows and then press the "Load" icon.



## SERVICE AND MAINTENANCE

### Maintenance

It is very important to carry out all maintenance steps on time to use machine without problem for a long time.

Strictly follow daily, weekly and monthly maintenance recommendations.

#### Rams:

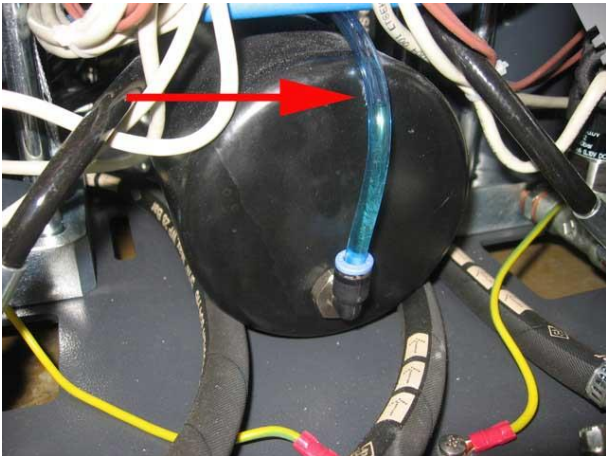
If there is any resin on the rams from previous mountings, remove it with a cloth or a wooden spatula.

#### Cylinder:

Keep the cylinder clean. If necessary, clean it with alcohol or any other degreasing fluid.

### REFILLING OIL IN THE SYSTEM

If the oil level is decreased anyhow, you can fill the oil from the back of the equipment. If the oil level is low, the rams will not move up & down. You can check the level from the oil reservoir which the level has to be as below.



You can fill the oil from the back of the equipment.



The specifications of the oil are given as below.

Brand Name: Mobil DTE H46

ISO VG	Kinematic Viscosity mm <sup>2</sup> /s or cSt		Viscosity Index	Density at 15 °C g/cm <sup>3</sup>	Pour Point °C	Flash Point °C
	40°C	100°C				
-	37	5,5	-	0,871	-30	-

### Daily Maintenance

After every mount, wipe away the flash and dirt especially on the upper and lower rams and inside the mould cylinder. Use the scraper supplied to remove the tightly adhering flash. Do not allow the mounting material to accumulate on the mould surfaces as below.



In case the mould assembly is jammed and the rams get stuck in the cylinder due to the accumulation of mounting powder on the surfaces, then;

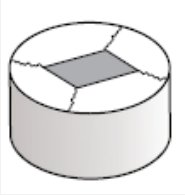
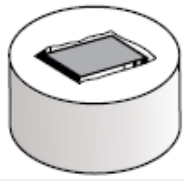
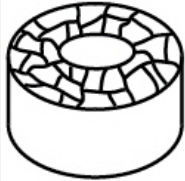
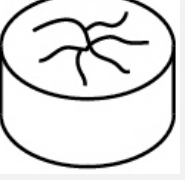

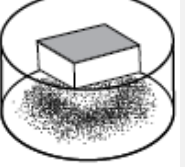
- i. Close the mould closure.
- ii. Heat up the system to 180 °C without pressure.
- iii. Move the lower ram up and down a few times.
- iv. Cool down the system.
- v. Clean both rams the inside of the cylinder with the scraper and / or by cloth.

## Troubleshooting

### ECOPRESS Troubleshooting

ERROR	CAUSE	ACTION
Process will not start	Heating time and cooling time are set at zero	Set the correct heating & cooling times.
Insufficient compression	Incorrect setting of force/pressure.	Set the correct parameter.
Insufficient heating	Incorrect setting of time or temperature for heating	Set the correct parameter.
Insufficient cooling	Incorrect setting of time for cooling.	Set the correct parameter.
	Mains tap is either closed or not opened	Open the tap.
	Filter at the water inlet is blocked.	Clean the filter
	Insufficient water within the Recirculation Cooling Unit. The water is too hot.	Fill to the correct water level.
	The cooling tubes are clogged	Clean the tubes.
The top closure cannot be closed down completely	The top closure is not mounted	Press the top closure straight down, turn the top closure clockwise
	The upper ram is too hot.	Let the top closure and the upper ram cool down. Reduce the mounting temperature
	Cured resin inside the mounting cylinder	Clean the mounting cylinder with a brass wire bush
	Cured resin on the cylindrical surface of the upper ram.	Clean the ram with the scraper supplied.
The top closure cannot be loosened.	The top closure has been dropped on the floor/table, causing a bulge in the edge of the ram.	Replace the upper ram.
	Dirt on the upper ram and the mounting cylinder.	Clean the upper ram and inside the cylinder. Use an mould release spray.
	Cured resin on the cylindrical surface of the upper ram.	Put heating on for 1 min. and try again.

## Thermosetting Resins Troubleshooting

	PROBLEM	CAUSE	SOLUTION
	Radial Cracking	Too large sample section.	Increase mould diameter or reduce specimen size. The distance between the specimen and the cylinder wall must be a minimum of 3 mm to avoid cracks in the resin.
		Sample corners too sharp.	Decrease samples size. Round sample corners.
	Edge Shrinkage	Incorrect resin choice	Try with a lower linear shrinkage value.
		Dirty sample surfaces.	Clean and dry samples thoroughly.
		Mount not fully cooled under pressure.	Increase the cooling time
	Mold appears grainy with insufficient compression.	Curing temperature too low.	Increase cure temperature.
		Heat time too short.	Increase heat time.
		Insufficient mounting pressure.	Increase mounting pressure.
	Bulging or soft mould	Insufficient process.	Increase heat time.
			Increase mounting pressure.
	Circumferential Cracks	Absorbed moisture.	Store resin in a dry area.
			Keep resin containers closed.
			Dry resins at low temperatures.
	Cottonball Effect	Excessive cooling rate	Reduce the cooling rate by choosing "cooling by time"
		Insufficient heating time	Increase the heating time.

## ACCESSORIES AND CONSUMABLES

### Mould Assemblies & Accessories

Order No	Mould Assemblies
26 01-03	Mould assembly, Ø1" with intermediate ram
26 02-03	Mould assembly, Ø1 1/4" with intermediate ram
26 03-03	Mould assembly, Ø1 1/2" with intermediate ram
26 07-03	Mould assembly, Ø2" with intermediate ram
26 04-03	Mould assembly, Ø25 mm with intermediate ram
26 05-03	Mould assembly, Ø30 mm with intermediate ram
26 06-03	Mould assembly, Ø40 mm with intermediate ram
26 08-03	Mould assembly, Ø50 mm with intermediate ram

26 11-03	Mould assembly, Ø1" with chamfered bottom ram and intermediate ram
26 12-03	Mould assembly, Ø1 1/4" with chamfered bottom ram and intermediate ram
26 13-03	Mould assembly, Ø1 1/2" with chamfered bottom ram and intermediate ram
26 17-03	Mould assembly, Ø2" with chamfered bottom ram and intermediate ram
26 14-03	Mould assembly, Ø25 mm with chamfered bottom ram and intermediate ram
26 15-03	Mould assembly, Ø30 mm with chamfered bottom ram and intermediate ram
26 16-03	Mould assembly, Ø40 mm with chamfered bottom ram and intermediate ram
26 18-03	Mould assembly, Ø50 mm with chamfered bottom ram and intermediate ram

Order No	Accessories for ECOPRESS
GR 1363	Recirculating Coolant System, 40 lt

GR 1397-00	Water Filtering and Pressure Regulator System for city water inlet. Keeps the water pressure at the appropriate level and protects from sudden pressure spikes. Filtering out impurities in the water and prevents calcification.
YM 3824-00	Spare Siliphos Cartridge Filter (for Water Filtering and Pressure Regulator System [GR 1397-00])

Order No	Spare Part Kit for ECOPRESS
GR 1967	<b>Recommended Set of Spare Parts, ECOPRESS 52/102/202</b> *HANDLE, 1 pc. *THERMOCOUPLE, 1 pc. *SELENOID VALVE, 24 DC, 1 pc. *HEATING ROD, 3 pcs.



## Consumables

The most important properties of a hot mounting compound are; Hardness, Shrinkage and Viscosity. The Hardness of the compound should match the hardness of the specimen in order to avoid uneven abrasion during grinding. If the shrinkage during curing is large, a gap between the specimen and the mount will occur and the edge will not be adequately protected. Viscosity should allow the compound to contact all areas of the sample.



29-001 BAK-B



29-002 BAK-R



29-010 NET



29-011 EPO



29-012 DAP



29-013 CON

Order No	CODE	DESCRIPTION
29-001	BAK-B	Black Phenolic Powder, 1 kg.
29-001/10	BAK-B	Black Phenolic Powder, 10 kgs
29-001/20	BAK-B	Black Phenolic Powder, 20 kgs
29-002	BAK-R	Red Phenolic Powder, 1 kg
29-002/10	BAK-R	Red Phenolic Powder, 10 kgs
29-002/20	BAK-R	Red Phenolic Powder, 20 kgs
29-010	NET	Transparent Acrylic Powder, 1 kg
29-010/10	NET	Transparent Acrylic Powder, 10 kgs
29-011	EPO	Epoxy, Hard 1 kg
29-011/10	EPO	Epoxy, Hard, 10 kgs
29-012	DAP	Diallylphthalat, 1 kg
29-012/10	DAP	Diallylphthalat, 10 kgs
29-014	DAP ECO	Diallylphthalat Eco, 1 kg
29-014/10	DAP ECO	Diallylphthalat Eco, 10 kgs
29-013	CON	Conductive Bakelite powder, 0.5 kg
29-099	SMOOTH	Mould Release Spray Can, 400 ml

## TECHNICAL DOCUMENTATION

### Customer Service

Our factory-trained assembly personal is at your disposal for customer service.  
Please contact the following address:

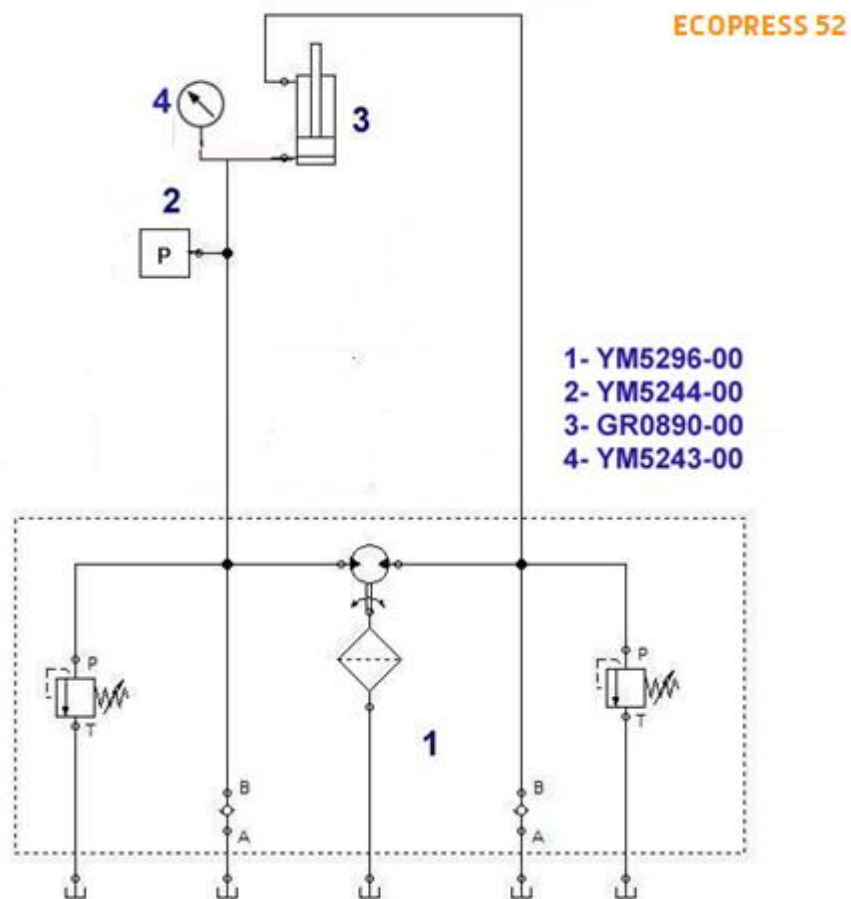
#### Head Quarter

#### Metkon Instruments Inc.

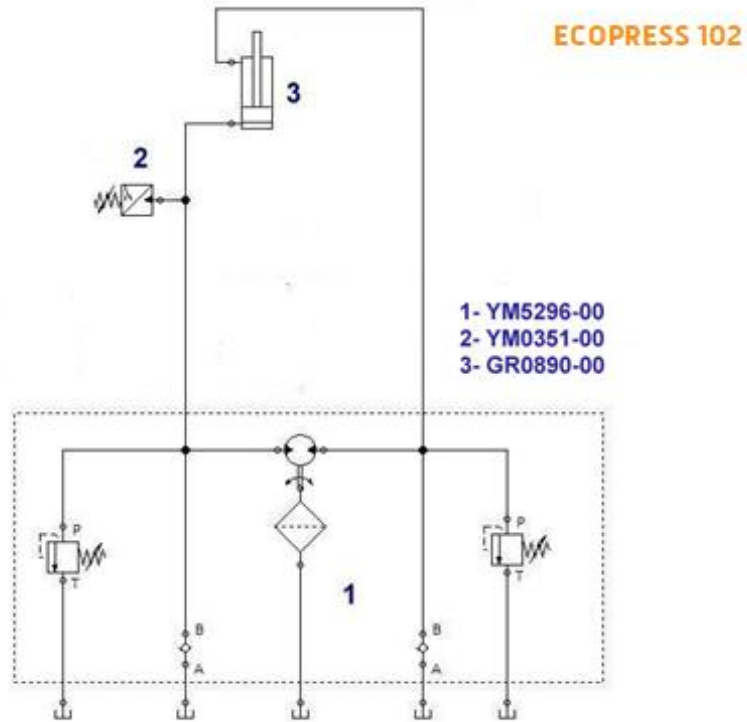
Demirtas Dumlupinar Organize Sanayi Sitesi  
Ali Osman Sonmez Cad. No:14 Bursa/TURKEY  
Tel: +90 [224] 261 1840  
Fax: +90 [224] 261 1844  
E-Mail: [metkonsales@metkon.com](mailto:metkonsales@metkon.com)  
Web: [www.metkon.com](http://www.metkon.com)

### Hydraulic Wiring Diagrams

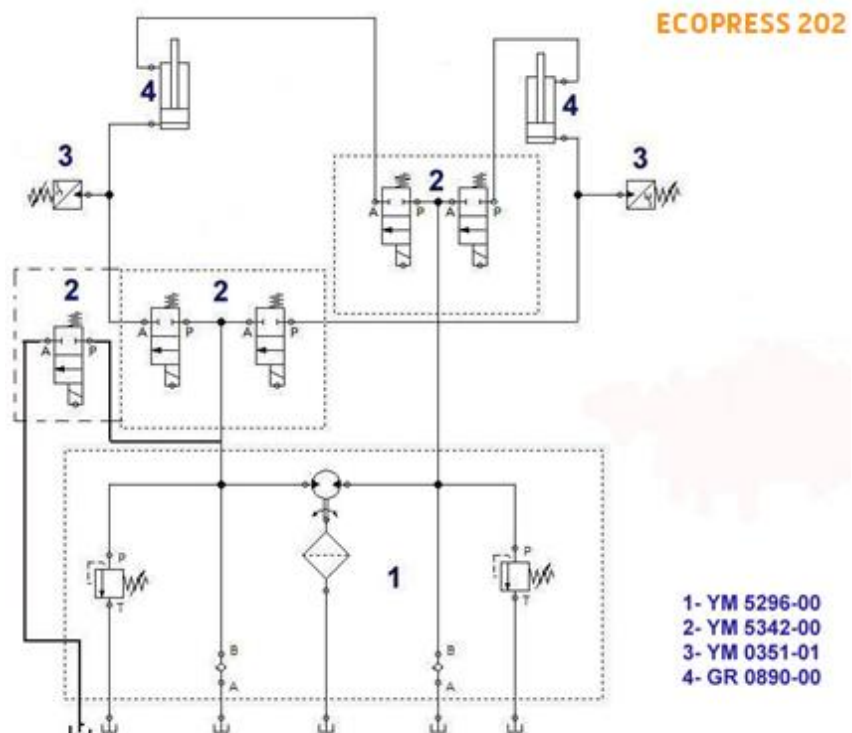
#### ECOPRESS 52



ECOPRESS 102



ECOPRESS 202





MicroscopeWorld

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