

Department of Mechanical Engineering

Makerspace Safe Operating Procedure

Vacuum Former

CAUTION: DO NOT use this machine unless a teacher has instructed you in its safe use and operation and has given permission. Safety glasses must always be worn in work areas. Long and loose hair must be contained or restrained. A mask must be worn when excessive airborne dust or toxic vapors are created. Appropriate footwear with substantial uppers must be worn. Rings and jewelry must not be worn near moving machinery components. Close fitting, protective clothing or a workshop apron is encouraged.

Adapted from *Formech*

Only suitably qualified personnel should make electrical connections.

Turn off the machine and disconnect the power supply when the machine is not in use.

The heater and pump on this model are not intended to be left running indefinitely.

Never remove any panels unless the electrical supply has been isolated.

Always let the machine cool down before attempting to work on it. Some parts of the heater and heat shield become extremely hot during operation.

Note the safety warning labels situated on the front and rear panels. Never remove any warning labels from the machine.

Note the 'HOT SURFACES' safety labelling on the heater & heater guard. These areas can become VERY HOT.

Only use the machine for vacuum forming plastic. It is not intended for any other purpose.

Ensure that the area you are working in is properly ventilated and that you are aware of the potential hazards from the plastics you are forming. It is the responsibility of the owner or designated responsible person to assess the risks associated with any dangerous fumes given off and to determine any necessary precautions required such as fume extraction. Contact your plastics supplier to gain information regarding hazardous fumes.

The heater and pump on this model are not intended to be left running indefinitely.

There is a risk of being burnt when handling heated plastic. Always wear suitable personal protective equipment such as gloves. > Ensure that the area surrounding the machine is clean and frequently cleared of finished product and any scrap.

This machine is fitted with a dry running vacuum pump. Do not lubricate. Do not allow any liquid to enter the vacuum system. Ensure that molds are properly sealed to prevent ingress of dust into the vacuum circuit. Severe damage may be caused if the above is not observed.

Daily repetitive use of this or any other machine may lead to a) fatigue and loss of concentration b) possible strains.

Operators should be trained in the use of correct lifting techniques to minimize these effects. > Users of this machine should complete regular competence tests.

DO NOT USE THIS MACHINE FOR ANY PURPOSES OTHER THAN THE VACUUM FORMING AND BLOW MOLDING OF PLASTICS SHEET.

DO NOT USE THE HEATER TO APPLY HEAT TO ANY MATERIAL OTHER THAN PLASTIC SHEET AS PART OF THE VACUUM FORMING PROCESS SUCH AS: FOOD PRODUCTS, ALL TYPES OF PARTICLES, POWDER, DUST, ALL TYPES OF LIQUID, WOOD, PAPER, METALS AND ANY FORMS OF COMBUSTABLE MATERIALS.

DO NOT USE TABLE MECHANISM TO CLAMP, COMPRESS, FOLD OR APPLY FORCE TO ANY ITEM UNDER ANY CIRCUMSTANCES.

DO NOT USE THE CLAMPING FRAME TO CLAMP COMPRESS, FOLD OR APPLY FORCE TO ANY ITEM OTHER THAN THE CLAMPING OF SHEET PLASTICS AS PART OF THE VACUUM FORMING PROCESS.

DO NOT USE THE RELEASE TABLE AIR FUNCTION TO APPLY PRESSURE FOR ANY OTHER MEANS OTHER THAN TO RELEASE THE MOLDING FROM A FITTED MOLD TOOL.

DO NOT USE THE TABLE VACUUM PORT TO SUPPLY VACUUM FOR ANY OTHER MEANS OTHER THAN TO APPLY VACUUM UNDER A MOLD TOOL AS PART OF THE VACUUM FORMING PROCESS

DO NOT ALLOW OTHER PERSONS WITHIN 1 METER (39 INCHES) OF THE TABLE / APERTURE TRAP POINT WHEN OPERATING THE TABLE USING THE TWO-HANDED CONTROL TABLE LIFT FUNCTION.

DO NOT BLOCK THE PUMP EXHAUST PORT ON THE REAR OF THE MACHINE AND **DO NOT** USE THIS PRESSURE OUTLET TO APPLY PRESSURE FOR ANY OTHER PURPOSE.

DO NOT USE THE TOP OF THE HEATER OR TOP OF THE HEATER GUARD TO STACK PLASTICS OR OTHER MATERIALS.

DO NOT USE THE UNDERSIDE OF THE REAR OF THE MACHINE TO STORE ANY ITEM(S).

DO NOT USE THE MACHINE TO STACK OR LEAN ITEMS AGAINST THE SIDES.

DO NOT USE THE FAN OUTPUTS TO APPLY AIRFLOW FOR ANY OTHER PURPOSE OTHER THAN THE COOLING OF VACUUM FORMINGS AS PART OF THE VACUUM FORMING OR BLOW MOLDING PROCESS.

DO NOT OBSTRUCT THE HEATER TRANSPORT WITH ANY ITEM OR USE THE TRANSPORT WHEELS TO CUT OR FORM ANY ITEM OR MATERIAL.

DO NOT USE ANY OTHER PART OF THE HEATER TO MOVE THE HEATER FORWARDS AND BACKWARDS OTHER THAN THE HEATER HANDLE. **DO NOT** USE THE FAN GANTRY TO HANG ANY ITEM.

DO NOT MOUNT THE FAN POSTS ON THE UNDER SIDE OF THE FAN GANTRY DO NOT REMOVE THE SIDE PANELS OF THIS MACHINE TO USE THE PNEUMATIC CYLINDER TO CUT, COMPRESS, BEND OR FORM ANY ITEM.

DO NOT USE OR MODIFY THE ELECTRICAL POWER IN THE CONTROL PANEL TO SUPPLY ANY OTHER DEVICE OR TO APPLY MODIFICATIONS TO THE MACHINE OR ITS FUNCTIONS.

Potential Hazards

Electric Shock

Burning

Injury from Compressed Air

Toxic Fume Inhalation

Injury from Trapping

Lifting, Reaching, and Stretching

Fire

Airborne Particles

By signing this document, I, _____, agree to abide by I agree to use makerspace responsibly in accordance with the rules, policies, and guidelines in this document.

MEDDL User

Date

MEDDL Makerspace

Date