

**PORTALCAST<sup>®</sup>**

# Block Cutting and Casting System

## PREINSTALLATION PLANNING GUIDE



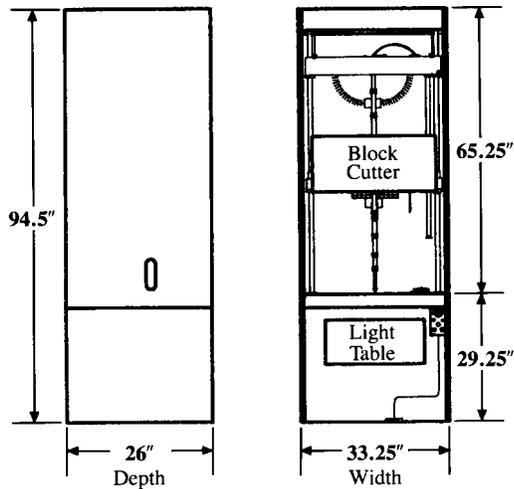
**DIACOR**

# Preinstallation Planning Guide

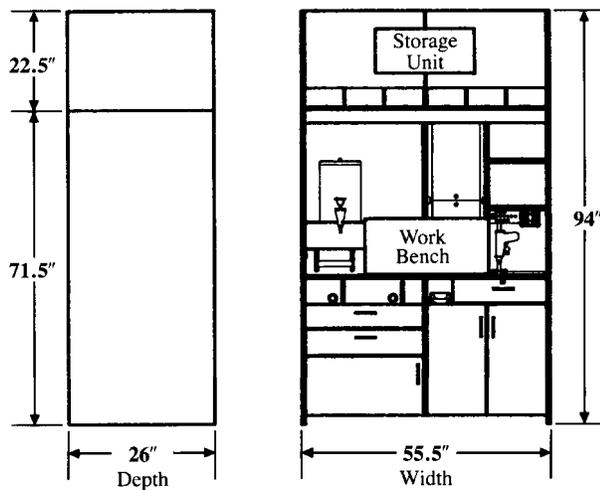
## POWER REQUIREMENTS

### Dimensions

**Mold Shaper Assembly**



**Workstation Assembly**



The Mold Shaper Assembly is designed to be connected to a standard 20-ampere power circuit found in most electrical systems. The unit is equipped with a 6-foot length of three-wire power cord with a standard, hospital-grade, three-prong, grounded power plug.

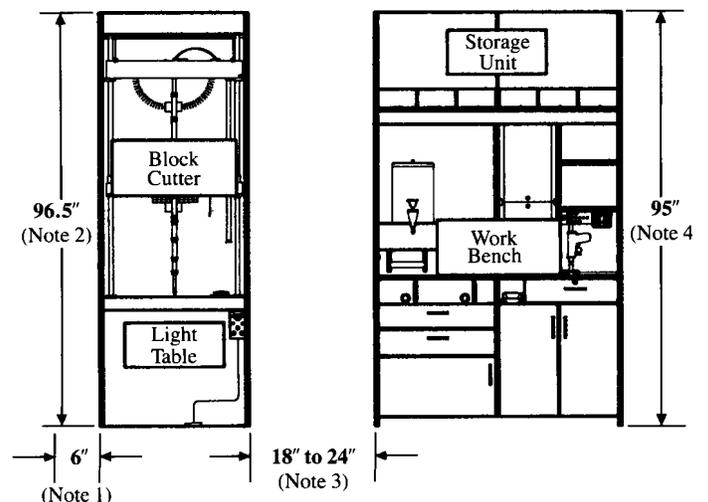
The Workstation Assembly requires a dedicated 30-ampere power circuit. This unit is designed to be connected directly to a junction box supplied by the customer. To facilitate this connection, the Workstation Assembly is equipped with a three-wire power cable enclosed in flexible metal conduit that is routed from an internal circuit breaker panel through the back of the unit. Approximately 6 feet of conduit is available at the rear of the workbench to allow routing of the cable to a junction box mounted above the unit (typically in the space above a false ceiling).

Power requirements for the Mold Shaper Assembly and the Workstation Assembly are as follows:

	Mold Shaper Assembly	Workstation Assembly
Frequency	60 Hertz ( $\pm 1$ Hertz)	60 Hertz ( $\pm 1$ Hertz)
Voltage	115 volts, single phase	115 volts, single phase
Current	3.2 amperes	>20 amperes *

\*The functional elements of the Workstation Assembly itself draw less than 20 amperes. However, with all accessories operational, such as both melting pots, the drill press and vacuum cleaner, the current draw can exceed 20 amperes.

### Clearance Requirements



### FLOOR LOADING REQUIREMENTS

Wire Cutter	228 lb	104 kg
Light Table	87 lb	40 kg
<b>Totals</b>	<b>315 lb</b>	<b>144 kg</b>
Storage Unit	180 lb	82 kg
Workbench	700 lb	318 kg
<b>Totals</b>	<b>880 lb</b>	<b>400 kg</b>

### NOTES:

1. A minimum clearance of 6 inches is required at the left side of the Mold Shaper Assembly to allow extension of the C-arm beyond the limits of the casework.
2. A minimum of 2 inches additional vertical clearance is required for the Mold Shaper Assembly (96.5 inches total).

The Mold Shaper Assembly is equipped with leveling pads that can be extended up to 1 inch. The block cutter is mounted on the light table using a tongue-and-groove technique. A minimum of 1 inch additional clearance is required to allow the block cutter to be lifted clear of the light table prior to mounting on the light table.

3. The distance between the Mold Shaper Assembly Workstation Assembly is arbitrary. However, a distance of 18 to 24 inches is recommended to allow convenient placement of a large refuse container between the two units.

4. The Workstation Assembly is equipped with leveling pads that can be extended up to 1 inch.

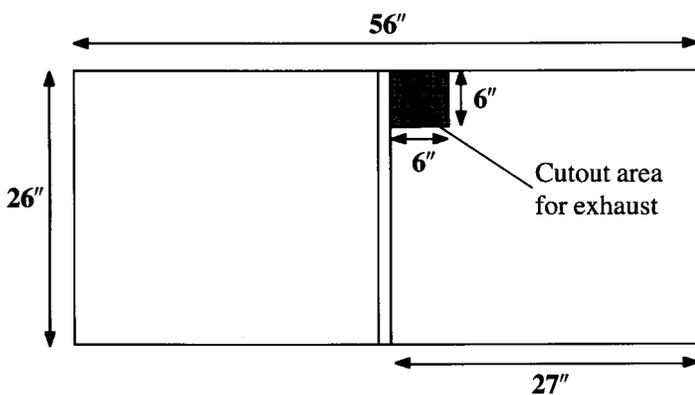
5. A minimum clearance of 1 inch is required between the rear of the units and the wall.

### VENTILATION REQUIREMENTS

The Workstation Assembly has a small ventilation fan rated at 120 cfm, with no back-pressure. The purpose of the fan is to remove potentially toxic fumes from the Workstation when Styrofoam is being cut, and when the Cerrobend pots are in use. Potentially toxic fumes also can occur when the soldering iron is used and the tip is allowed to super-heat.

When the ventilation fan is turned on, air is pushed up through the workbench area and channeled through the storage unit. The air exits the storage unit through an opening cut in the top of the unit. This opening is the connection point for exhaust ductwork that must be supplied by the customer. The location of the opening is shown in the following illustration.

#### Top View of Storage Unit



The ventilation system for the Workstation Assembly operates most efficiently when connected to a 4-inch or 6-inch duct having a slight outward passive airflow resulting from positive pressure gradient throughout the building. The vent **must not** be connected to any ductwork where there is any chance of recirculating toxic fumes.

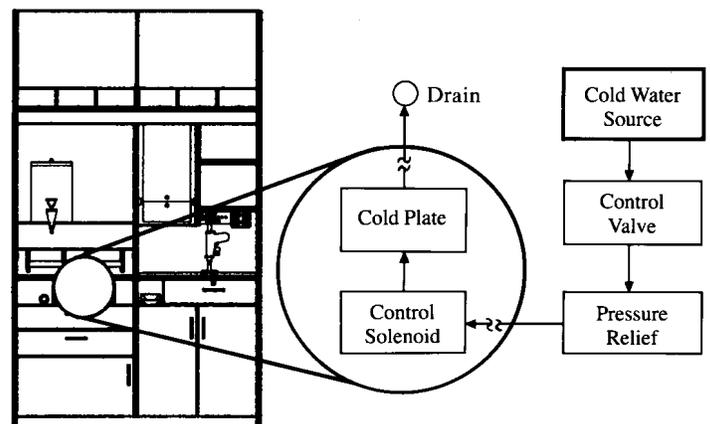
It is **not recommended** that the exhaust vent for the Workstation Assembly be connected to an air exhaust System containing auxiliary blowers, such as those

found typically in hospital exhaust air systems, unless the air-flow from the system is limited to approximately 120 cm. The much greater air-flow rates usually generated by auxiliary blowers are not required for adequate ventilation of the Workstation Assembly, and could result in an excess accumulation of dust in various small orifices within the cabinet.

### COOLING REQUIREMENTS

The Workstation Assembly contains a cooling plate that is used to accelerate the cooling process after liquid Cerrobend has been poured into a prepared mold. There are two cooling method options available to the user. The first is a self-contained refrigerator system that cools the plate to between 45°F and 50°F. The compressor is turned on by the COOLING switch on the control panel and the temperature of the plate is measured and controls the amount of time that the compressor runs. The system generates a heat rejection to space of 1000 BTU/hour under normal operating conditions. The Workstation is shipped with the refrigerator option installed unless a water cooled system is specified. The second cooling method option is a water cooled system where an internal solenoid is used to control the flow of water to the cooling plate. The approximate location of the solenoid and the cooling plate within the workstation Assembly is shown in the following illustration.

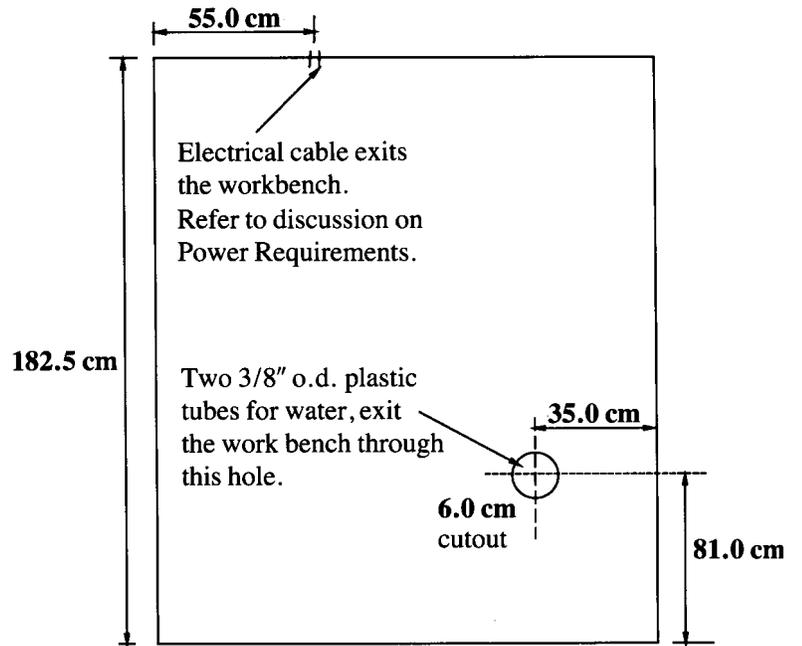
#### Water Flow Diagram



Two lengths of 3/8-inch plastic tubing are provided with the Workstation Assembly. The input line connects to the control solenoid, and the output line connects to the cooling plate. The lengths of plastic tubing are marked "INPUT" and "OUTPUT," respectively. Both water lines exit the unit through a hole that has been cut in the rear of the workbench. The location of the hole is shown in the following illustration. The connectors required to connect the plastic tubing to the cold water source and the pressure relief mechanism must be supplied by the customer. The control valve and pressure relief mechanism, if required, also must be supplied by the customer.

Approximately 5 feet of plastic tubing extends beyond the rear of the unit to facilitate connection to the external water source, which may be unfiltered tap water. A water temperature between 45°F and 60°F will produce satisfactory results. However, results will be improved significantly if chilled water is supplied to the unit.

### Rear View of Workbench



NOTE: Drawing is not to scale.

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