

OPERATING MANUAL

CURE ZONE 2

(#A001-051)

UV FLOOD CURING SYSTEM



1229 W. Cortland St.
Chicago, IL 60614
(800) 621-1296

**CURE ZONE 2
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OPERATING MANUAL**

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INTRODUCTION

The UV (ultra violet) light system described in this manual is technically advanced. The UV light from this equipment is powerful. It is used with light sensitive resinous materials. These are cured or transformed from a liquid to a solid state by polymerization during light exposure. The most common uses are bonding, potting, coating and sealing.

The range of materials and applications is extensive, spanning many industries and end products from electronics to automotive. Included are Polymer (plastic) coatings, adhesives and potting compounds.

UV light generally should be used with care including eye protection to avoid exposure and injury.

GENERAL DESCRIPTION

The Cure Zone 2 UV light system is basic for a range of applications. Because of its simplicity of operation, it is well suited for initial use with UV responsive materials in laboratory or production circumstances.

Using a medium-intensity flood light source, the Cure Zone 2 illuminates an 8-inch x 8-inch work area (64 square inches). It uses long wave (UVA) ultra violet light, moderate in strength. Major components are a power supply base, reflector housing with UV lamp, a full UV shield, adjustable work surface, connector cable and a power cord.

To accommodate various-sized parts, the work surface can be positioned at three levels. It arrives set at the mid point. Two thumb screws at the back can be removed for adjustment. Alternate holes for the other two positions are capped with black plastic plugs which should be saved and reinserted. All adjustments to the work surface should be made with the equipment off and after having cooled to the touch.

The support platen is covered by a special silicone rubber mat which resists UV deterioration and chemical attack. With use, it may soften and need replacement.

For production or alternate use, the reflector housing can be separated from the base by removing screws at the sides and back of the housing. The reflector housing can be mounted or fixed over a conveyor for example. The 6' connector cable may be needed to accomplish this change.

The hinged front cover with a UV filtering plastic door should be down for unit operation. UV light generally should be used with care, including eye protection,

to avoid exposure and possible injury. See setup and operating section for more detail.

The work surface can be adjusted up or down to accommodate various size parts. Curing time will be minimized when the coating or bonding section of the part to be cured is positioned 1-2" from the lower edge of the reflector housing. Increasing the distance from the reflector housing will result in slower cure speeds.

A glass filter substantially reduces any short and medium wave UV output. Operation of the Cure Zone 2 without the glass filter may cure some materials quicker and more tack free, however, extra UV protection may be required. Refer to section on UV SAFETY.

UNPACKING AND INSPECTION

Unpack the system and inspect it for shipping damage or missing components. Report damages, if any, to freight carrier. Save packaging for safe storage or future shipping.

INSTALLATION AND OPERATION

The CURE ZONE 2 will arrive completely assembled. All that is required is to plug in the connector cable and power cord, both are at the rear of the unit. The system should be positioned to allow at least a 6" clearance in each direction for adequate ventilation, as two fans at the top and right side discharge cooling air.

Adjust work surface height so that material to be cured is 1-2" below lower edge of reflector housing. The work surface can be raised or lowered from the pre set mid-range position. Remove the two thumb screws at the back and relocate the work surface per the instructions in GENERAL DESCRIPTION.

OPERATION

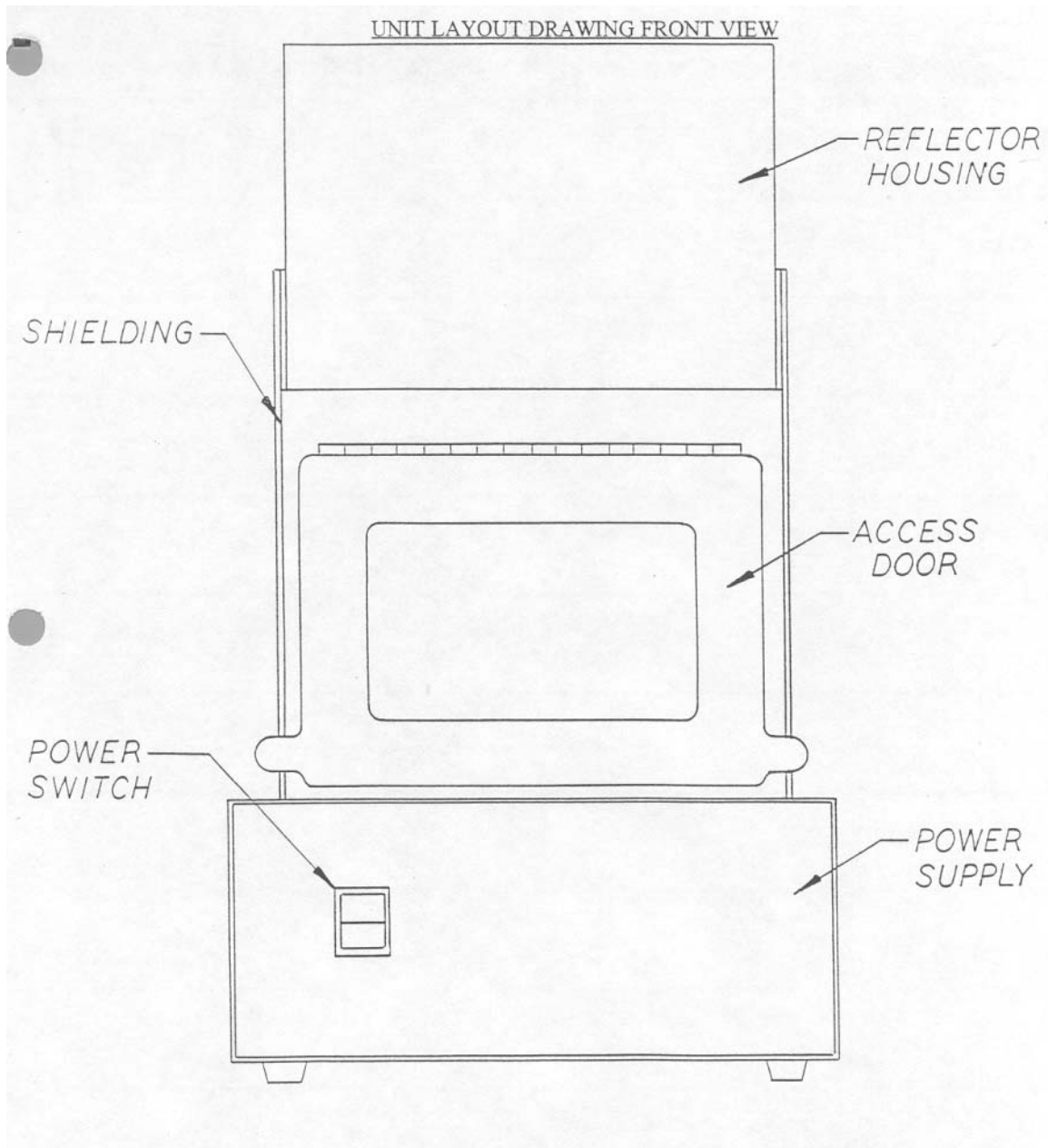
To energize system, turn power switch on. Be sure UV glasses are being worn for eye protection. Wait 5 minutes for lamp to reach full power. The unit is now ready to use. The unit should be kept under power without frequent cycling.

During use sequences, the lamp should be lit a minimum of 15 minutes at a time. After turning system off, allow 5 minutes for system to cool before relighting lamp (switch on again). Lamp life will be greatly enhanced if lamp cycling is kept to a minimum. It is suggested that the lamp is left on through work breaks.

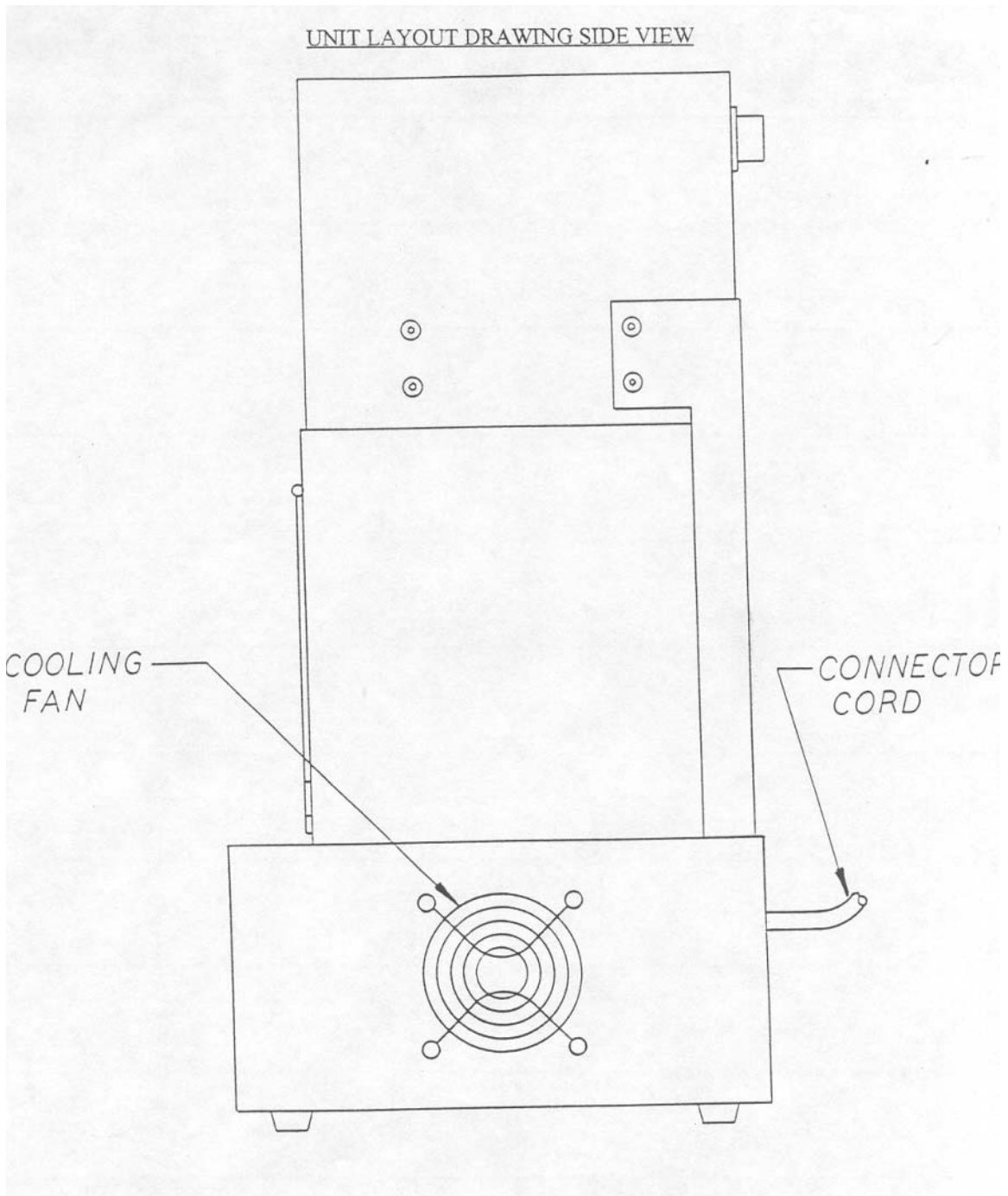
UV light exposure to the part and material is controlled by the operator. A timing sequence and spacing must be developed for holding the work piece under the lamp. Once the cycle is established, the timing should be controlled by a timer if groups of similar parts are to be processed. It is best to work with the shield down.

The reflector housing may be located remotely from the power supply. Remove the reflector housing by backing out the retaining button head screws. Use these holes and the adjacent set (see sketch), to mount the lamp reflector section over a conveyor or work station securely. A longer connecting cable may be needed. This can be purchased from Con-Trol-Cure. Be sure to allow adequate ventilation and UV shielding. Refer to section on UV SAFETY. No attempt to remove the reflector housing from the base should be made until the unit is switched off and the power cord is unplugged from the power source.

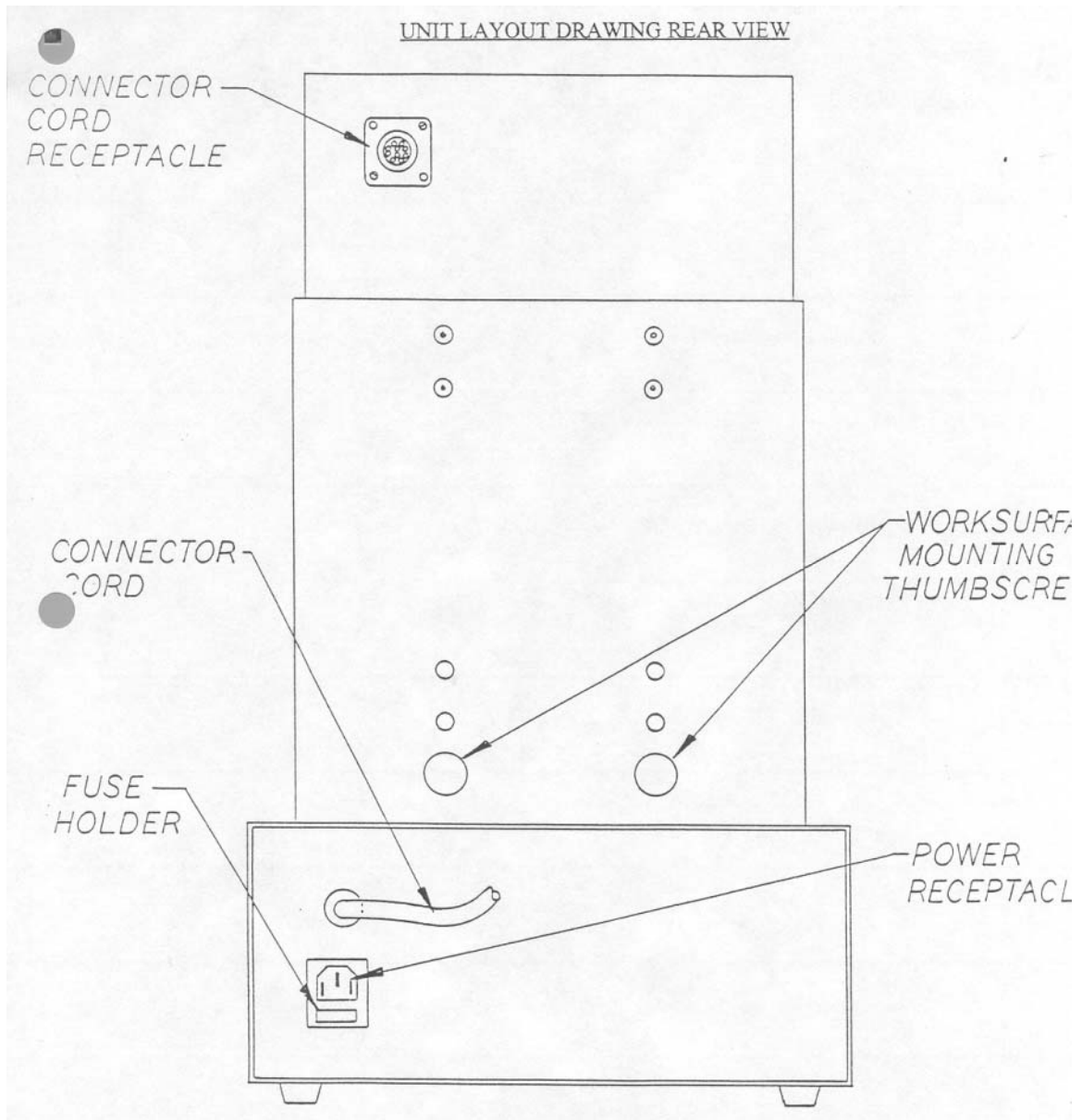
UNIT LAYOUT DRAWING FRONT VIEW



UNIT LAYOUT DRAWING SIDE VIEW



UNIT LAYOUT DRAWING REAR VIEW



SPECIFICATIONS

Power input: 120 VAC, 60 Hz single phase, 8 amps max.

Ultraviolet output: 80 mw/cm² of long wave, (UVA), ultraviolet energy illuminating an 8" x 8" (20cm x 20cm) cure area.

Note: Intensity measured 2" (5cm) below reflector housing with a radiometer peak response at 365nm.

Lamp Type: 400 Watt Metal Halide

Power Supply Dimensions: 11.5"x10.0"x5.0"(29.2cmx25.4cmx12.7cm) Reflector Housing Dimensions: 9.5"x 8.25"x7.25"(24.1cmx21.0cmx18.4cm) Total Weight: 36 Pounds (16.4kg)

MAINTENANCE

The CURE ZONE 2 was designed to operate with minimum maintenance. Follow the schedule below to keep the CURE ZONE 2 in peak operating condition:

A. GLASS & REFLECTOR

Clean glass filter, if used, every 2 months or as required.

Use isopropyl alcohol and a clean cloth. A hardly visible thin film of cured material can coat the glass filter reducing transmittance by as much as 30%. Clean reflector every 4 months or as required. Use isopropyl alcohol or glass cleaner and clean cloth. Remove filter glass by removing cap screws. Save and reuse Teflon washers.

B. LAMP & SOCKETS

Inspect lamp sockets for corrosion when replacing lamp. Replace lamp sockets if corroded. Heat generated by a poor connection can cause premature Lamp failure. Replace lamp every 1000 hours or as required to maintain adequate intensity for curing process.

CAUTION

**Grip lamp at ends, not in the center when handling.
Use a soft cloth, or cotton gloves if practical. If the lamp is touched in the center, remove fingerprints with isopropyl alcohol.**

C. WORK SURFACE PAD

The special red silicone pad bonded to the support platen may deteriorate over time due to heat and resin contact. The pad is easily replaced.

SPARE PARTS

*5185 Fuse, 8 amp Fast Acting

*5157 Lamp Socket

*5077 Lamp, Type AF Standard Lamp

*±5478 Lamp, Type AH Special Lamp

5050 Power Switch

5159 Igniter

5220 6 Ft. Connector Cord (Extension) 5183 Work Surface Replacement Pad

***RECOMMENDED SPARE PART**

±Systems with non standard (Special) Lamps carry a sticker on the Reflector Housing which designates its type and part number (P.N.).

TROUBLESHOOTING

LAMP DOES NOT LIGHT, POWER SWITCH DOES NOT ILLUMINATE, FANS DO NOT START:

- check that power cord is plugged in
- check fuse in plug receptacle

LAMP DOES NOT LIGHT, POWER SWITCH ILLUMINATES, FANS START:

- check lamp to be sure it is seated properly in lamp sockets
- lamp at end of life
- check that connector cord is properly plugged in at both ends
- inspect lamp sockets for evidence of excessive heat or arcing, lead wires may be burnt off

UV OUTPUT LOW (READING FROM RADIOMETER):

- glass filter dirty
- lamp aged or defective
- reflector dirty
- radiometer defective or out of calibration

ADHESIVE OR COATING DOES NOT CURE COMPLETELY:

- UV output low (see above)
- adhesive or coating does not cure with long wave UV light
- adhesive or coating needs higher intensity UV light to cure tack free
- adhesive or coating defective

RADIOMETERS

A radiometer is a tool used to measure the output intensity of a light source. The intensity values listed in this manual were measured with a probe style radiometer with a 365nm probe. Intensity readings taken with a different radiometer should not be compared directly with the values in this manual. Radiometers from two different manufacturers can give readings that vary by more than 100%. Radiometers can be used to track lamp life and to determine acceptable intensities to ensure full cure within the curing process time frame.

Radiometers are sold by:
UV PROCESS SUPPLY
1229 W CORTLAND
CHICAGO, IL 60614-4805
Tel: (773) 248-0099
Fax: (773) 880-6647

UV SAFETY

The CURE ZONE 2 is a safe UV curing system when used properly. The system incorporates UV shielding and a non-reflective work surface.

The guidelines below should be closely followed to ensure protection from the ultraviolet light:

- UV Protective glasses with side shields should be worn at all times.
- Potentially exposed skin should be covered. Long sleeve shirts and gloves should be worn when placing arms and hands under the UV light.
- Never look directly at the output from a UV lamp.

WARNING: UV Energy is transmitted from the reflector housing. Protective eyewear equipped with side shields are required which meets ANSI Z80.3 certification.

UV safety is the responsibility of the user especially when operating the CURE ZONE 2 in a non-standard configuration. When in doubt about UV Safety, call UV PROCESS SUPPLY Technical Service before proceeding (773-248-0099)

UV safety products and radiometers are sold by UV Process Supply. Contact us for recommendations or visit our website at www.uvprocess.com.