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1 INTRODUCTION

This Instruction Manual must be studied and followed for the safe and efficient operation of the "C-30 Electrostatic Fluidized Bed Coater". Study this manual before locating and installing the equipment.

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In future correspondence, please refer to the MODEL (C-30 Electrostatic Fluidized Bed Coater) and SERIAL NUMBER 15947 (located on rear of Coater) of the "POWDER COATING MACHINE".

2 SHIPPING

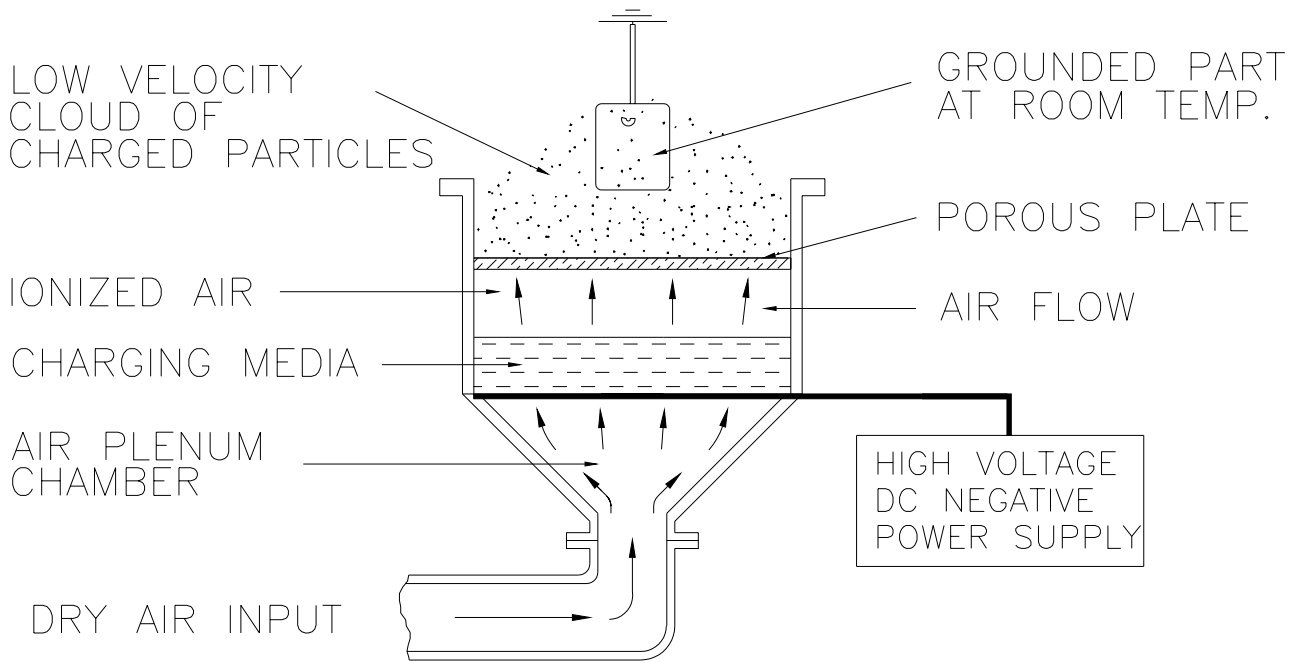
Sometimes equipment can be damaged in transit. An inspection of the shipping crate should be made upon delivery, and when equipment is removed, it should be carefully inspected to make sure the unit is in good condition. If the equipment is damaged, the carrier's claim agent should be requested to prepare a report, a copy of which should be sent to:

ELECTROSTATIC TECHNOLOGY, INC
A SUBSIDIARY OF NORDSON CORPORATION
4 PIN OAK DRIVE
BRANFORD, CT 06405

Electrostatic Technology, Inc will then advise concerning repairs and replacements.

3 OPERATING PRINCIPLES

3.1 SCHEMATIC DIAGRAM OF AN ELECTROSTATIC COATER



3.2 PROCESS DESCRIPTION

Powder particles are aerated in a fluidizing chamber and are electrostatically charged by ionized air forced through a porous plate at the base of the chamber. As the powder particles become charged, they repel each other to such a degree that they rise above the chamber forming a cloud or veil of charged particles. When a grounded object is placed in this cloud, or conveyed through this cloud, the charged powder particles, because of their opposite potential, are attracted to it. As the particles become attached to the object, they form a uniform coating, being more attracted to exposed areas than to those already insulated. The longer the object is exposed to the cloud, the thicker the coating becomes, until saturation eventually takes place.

Coating thickness is controlled by applied voltage to the charging media and exposure time to the cloud. Because of the high voltage capability of the charging media, a sufficiently great potential exists between it and most substrates to permit even natural insulators to be coated. Unlike equipment with exposed electrodes, Electrostatic Technology, Inc.'s unique air ionization process charges the powder without permitting the powder, the object, or the operator to come in contact with the charging media.

4 GENERAL SAFETY

4.1 INTRODUCTION

This section contains general study instructions for using your Electrostatic Technology, Inc. (ETI) equipment. Task-and-equipment-specific warnings are included in other sections of this manual where appropriate. Note all warnings and follow all instructions carefully. Failure to do so may result in personal injury, death, or property damage.

To use this equipment safely:

- Read and become familiar with the general safety instructions provided in this section of the manual before installing, operating, maintaining, or repairing this equipment.
- Read and carefully follow the instructions given throughout this manual for performing specific tasks and working with specific equipment.
- Store this manual within easy reach of personnel installing, operating, maintaining, or repairing this equipment.
- Follow all applicable procedures required by your company, industry standards, and government or regulatory agencies. Refer to the National Fire Protection Association (NFPA) standard 33 and to federal, state, regulatory agency, and local codes for rules and regulations covering installation and operation of powder coating systems.
- Obtain and read Material Safety Data Sheets (MSDS) for all materials used.

4.2 SAFETY SYMBOLS

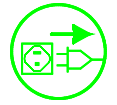
Become familiar with the safety symbols presented in this section. These symbols will alert you to safety hazards and conditions that may result in personal injury, death, or property and equipment damage.



WARNING: Failure to observe this warning may result in personal injury, death, or equipment damage.



WARNING: Risk of electrical shock. Failure to observe this warning may result in personal injury, death, or equipment damage.



WARNING: Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage.



WARNING: Risk of explosion of fire. Fire, open flames and smoking prohibited.



WARNING Wear protective clothing, safety goggles, and approved respiratory protection. Failure to observe may result in serious injury.



WARNING: System or material pressurized. Release pressure. Failure to observe this warning may result in serious injury of death.



CAUTION: Failure to observe may result in equipment damage.

4.3 QUALIFIED PERSONAL

"Qualified Personnel" is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance, and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations, and have been trained to safely install, operate, maintain, and repair the equipment. It is the responsibility of the company operating the equipment to see that its personnel meet these requirements.

4.4 INTENDED USE



WARNING: Use of this equipment in ways other than described in this manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in this manual.

ETI cannot be responsible for injuries or damages resulting from nonstandard, unintended applications of its equipment. This equipment is designed and intended only for the purpose described in this manual. Uses not described in this manual are considered unintended uses and may result in serious personal injury, death, or property damage. Unintended uses may result from taking the following actions:

- Making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine ETI replacement parts.
- Failure to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards.
- Using materials or auxiliary equipment that are inappropriate or incompatible with your ETI equipment.
- Allowing unqualified personnel to perform any task.

4.5 INSTALLATION

Read the installation section of all system components manuals before installing your equipment. A thorough understanding of the system components and their requirements will help you install the system safely and efficiently.

- Allow only qualified personnel to install ETI and auxiliary equipment.
- Use only approved equipment. Using unapproved equipment in an approved system may void agency approvals.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Follow all instructions for installing components and accessories.
- Install locking, manual, shutoff valves in the air supply lines to the system. This allows you to relieve air pressure and lock out the pneumatic system before undertaking maintenance and repairs.

4.5 INSTALLATION (continued)

- Install a locking disconnect switch or breaker in the service line ahead of any electrical equipment.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Ground all electrically conductive equipment within 10 feet (3 meters) of the coating area. Ungrounded conductive equipment can store a static charge which could ignite a fire or cause an explosion if a hot spark is discharged.
- Install safety interlocks which shut down the coating system if the exhaust fan fails, a fire is detected, or other emergency situation develops.
- Make sure the coating area floor is conductive to ground and that the operator's platform is grounded.
- Use only designated lifting points or lugs to lift and move heavy equipment. Always balance and block loads when lifting to prevent shifting. Lifting devices must be inspected, certified, and rated for a greater weight than the equipment being lifted.
- Protect components from damage, wear, and harsh environmental condition.
- Allow ample room for maintenance, material supply container drop-off and loading, panel accessibility, and cover removal.
- If safety devices must be removed for installation, reinstall them immediately after the work is completed and check them for proper functioning.

4.6 OPERATION

Only qualified personnel, physically capable of operating the equipment and with no impairments to their judgement or reaction times, should operate this equipment.

Read all component manuals before operating a powder coating system. A thorough understanding of all components and their operations will help you operate the system safely and efficiently.

- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Before starting this equipment, check all safety interlocks, fire detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Know where EMERGENCY STOP buttons, shutoff valves, and fire extinguishers are located. Make sure they work. If a component malfunctions, shut down and lock out the equipment immediately.
- Before operating, make sure all conductive equipment in the coating area is connected to a true earth ground.
- Never operate equipment with a known malfunction or leak.
- Do not attempt to operate electrical equipment if standing water is present.
- Never touch exposed electrical connections on equipment while the power is ON.
- Do not operate the equipment at pressures higher than the rated maximum working pressure of any component in the system.
- Know the pinch points, temperatures, and pressures for all equipment that you are working with. Recognize potential hazards associated with these and exercise appropriate caution.
- Wear shoes with conductive soles, such as leather, or use grounding straps to maintain a connection to ground when working with or around electrostatic equipment.

4.6 OPERATION (continued)

- Do not wear or carry metallic objects (jewelry or tools) while working with or around electrostatic equipment. Ungrounded metal can store a static charge and cause harmful shocks.
- Keep parts of the body or loose clothing away from moving equipment or parts. Remove personal jewelry and cover or tie back long hair.
- Wear National Institute of Occupational Safety and Health (NIOSH) approved respirators, safety glasses or goggles, and gloves while handling powder containers, filling hoppers, operating coating equipment, and performing maintenance or cleaning tasks. Avoid getting powder coatings on your skin.
- Do not smoke in the coating area. A lit cigarette could ignite a fire or cause an explosion.
- If you notice electrical arcing in the coating equipment, shut down the system immediately. An arc can cause a fire or explosion.
- Shut off electrostatic power supplies before making adjustments to powder coating fluidized bed.
- Shut off moving equipment before taking measurements or inspecting workpieces.
- Wash exposed skin frequently with soap and water, especially before eating or drinking. Do not use solvents to remove coating materials from your skin.
- Do not use high-pressure compressed air to blow powder off your skin or clothes. High-pressure compressed air can be injected under the skin and cause serious illness or death. Treat all high-pressure fittings and hoses as if they could lead and cause injury.

4.7 LESS OBVIOUS DANGERS

Operators should also be aware of less obvious dangers in the workplace that often cannot be completely eliminated:

- Exposed surfaces on the equipment which may be hot or have sharp edges and cannot be practically safeguarded.
- Electrical equipment which may remain energized for a period of time after the equipment has been shut off.
- Vapors and materials which may cause allergic reactions or other health problems.
- Automatic hydraulic, pneumatic, or mechanical equipment or parts that may move without warning.
- Unguarded, moving mechanical assemblies.

4.8 ACTION IN THE EVENT OF A SYSTEM OR COMPONENT MALFUNCTION

Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.

- Disconnect and lock out electrical power. Close and lock out hydraulic and pneumatic shutoff valves and relieve pressures.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component.

4.9 MAINTENANCE & REPAIR

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.

- Always wear appropriate protective devices and use safety devices when working on this equipment
- Follow the recommended maintenance procedures in your equipment manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Use only genuine ETI replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.
- Disconnect, lock out, and tag electrical power at a disconnect or breaker in the service line ahead of electrical equipment before servicing.
- Do not attempt to service electrical equipment if there is standing water present. Do not service electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.
- Do not attempt to service a moving piece of equipment. Shut off the equipment and lock out power. Secure equipment to prevent uncontrolled movement.
- Relieve air pressures before servicing equipment. Follow the specific instructions in this manual.
- Make sure that the area or room where you are working is sufficiently ventilated.
- If a "power on" test is required, perform the test carefully and then shut off and lock out power as soon as the test is over.
- Connect all disconnected equipment ground cables and wires after servicing the equipment. Ground all conductive equipment.
- Check interlock systems periodically to ensure their effectiveness.

4.9 MAINTENANCE & REPAIR (continued)



WARNING: Operating faulty electrostatic equipment is hazardous and can cause electrocution, fire, or explosion. Make resistance checks part of your periodic maintenance program.

- Do not store flammable materials in the coating area or room. Keep containers or flammable materials far enough away from the coater to prevent their inclusion in a fire. If a fire or explosion occurs, flammable materials in the area will increase the chances and the extent of personal injuries and property damage.
- Practice good housekeeping procedures. Do not allow dust or powder coatings to accumulate in the coating area or on electrical equipment. Read this information carefully and follow instruction.

4.10 DISPOSAL

Dispose of equipment and materials used in operation and cleaning according to your local regulations.

5 AIR AND ELECTRICAL REQUIREMENTS

5.1 POWDER COATING MACHINE

5.1.1 Air

A clean supply of compressed air must be provided using a $\frac{3}{8}$ " minimum I.D. line. the compressed air requirement is 3 SCFM (.085 M³/min) @ 60 psi (4.1 BAR) minimum to 80 psi (5.5. BAR) maximum.

5.1.2 Electrical

120 Volts, 60 Hertz, 1-Phase, (a cord with a three-wire duplex plug is provided).



IMPORTANT: The wall receptacle must provide a proper ground connection for the plug equipment ground wire. Polarity of the receptacle must be according to code.

6 DESCRIPTION OF COMPONENTS

6.1 MODEL C-30 COATER

The coating machine is complete with Coating Bed, High Voltage Power Supply, Air Flow Meter, and controls. The coating chamber is of a patented design which insures that neither powder, substrate being processed, nor foreign objects can contact the charging media.

7 **INSTALLATION**

These instructions for installing, operating and maintaining the Model C-30 must be followed for its safe and efficient operation. In particular, precautions should be observed whenever the unit is operated. Study this manual before installing or operating the equipment. Some voltages employed in this equipment are high. Remember that any source of voltage can be hazardous.

7.1 **LOCATION**

Place "C-30 Coater" on a level surface at the desired location. Refer to Floor Plan Drawing in the Appendix.



NOTE: This machine is designed to apply non-combustible powdered materials; however, if combustible powders are used, they should be ducted to the exterior of the building in accordance with NFPA guidelines.

7.2 **AIR CONNECTION**

Connect the air from the plant air supply line to the female fitting on the side of the Model C-30 cabinet. Refer to the Pneumatic Schematic in the Appendix of this manual.

7.3 **CONTROL SETTINGS**

Turn the "High Voltage Control" counterclockwise and the "Air Control" clockwise to minimum settings. Place all switches in the "OFF" position.

7.4 **DESICCANT AIR DRYER**

Prior to operation of the ETI Model C-30 Coater, it is necessary that the final installation of the Desiccant Air Dryer be made. The Desiccant Air Dryer is located inside the Model C-30 cabinet. Certain parts of the Desiccant Air Dryer are shipped disassembled to prevent breakage and to preserve the integrity of the desiccant.

For installation of the Desiccant Air Dryer, follow these steps:

- Step 1 - Loosen and remove the (10) screws from back panel of the C-30 Coater cabinet.
- Step 2 - Remove the support block located under the Desiccant Air Dryer.
- Step 3 - Unscrew the metal collar and remove the collar and bowl from the Desiccant Air Dryer.

7.4 DESICCANT AIR DRYER (continued)

- Step 4 - Open 1 package of desiccant and pour into the plastic bowl. Be careful not to get any desiccant down the inlet tube. NOTE: An extra can of desiccant is included for maintenance use.
- Step 5 - Reassemble the filled bowl and metal collar. Make sure the o-ring is in the proper position.
- Step 6 - Replace the back panel of the Model C-30 Coater cabinet and tighten the (10) screws.

7.5 ELECTRICAL CONNECTION

Plug the electrical cord from the rear of the Model C-30 Coater cabinet to a receptacle outlet rated: 110 Volts, 60 Hz, 1-Phase.



CAUTION: THE RECEPTACLE MUST HAVE A PROPER GROUND CONNECTION.

7.6 FOOTSWITCH

Plug the "C-30 Coater Footswitch" into the receptacle located on the side of the Model C-30 Coater cabinet.

8 DESCRIPTION OF CONTROLS

8.1 COATING PANEL ILLUSTRATION

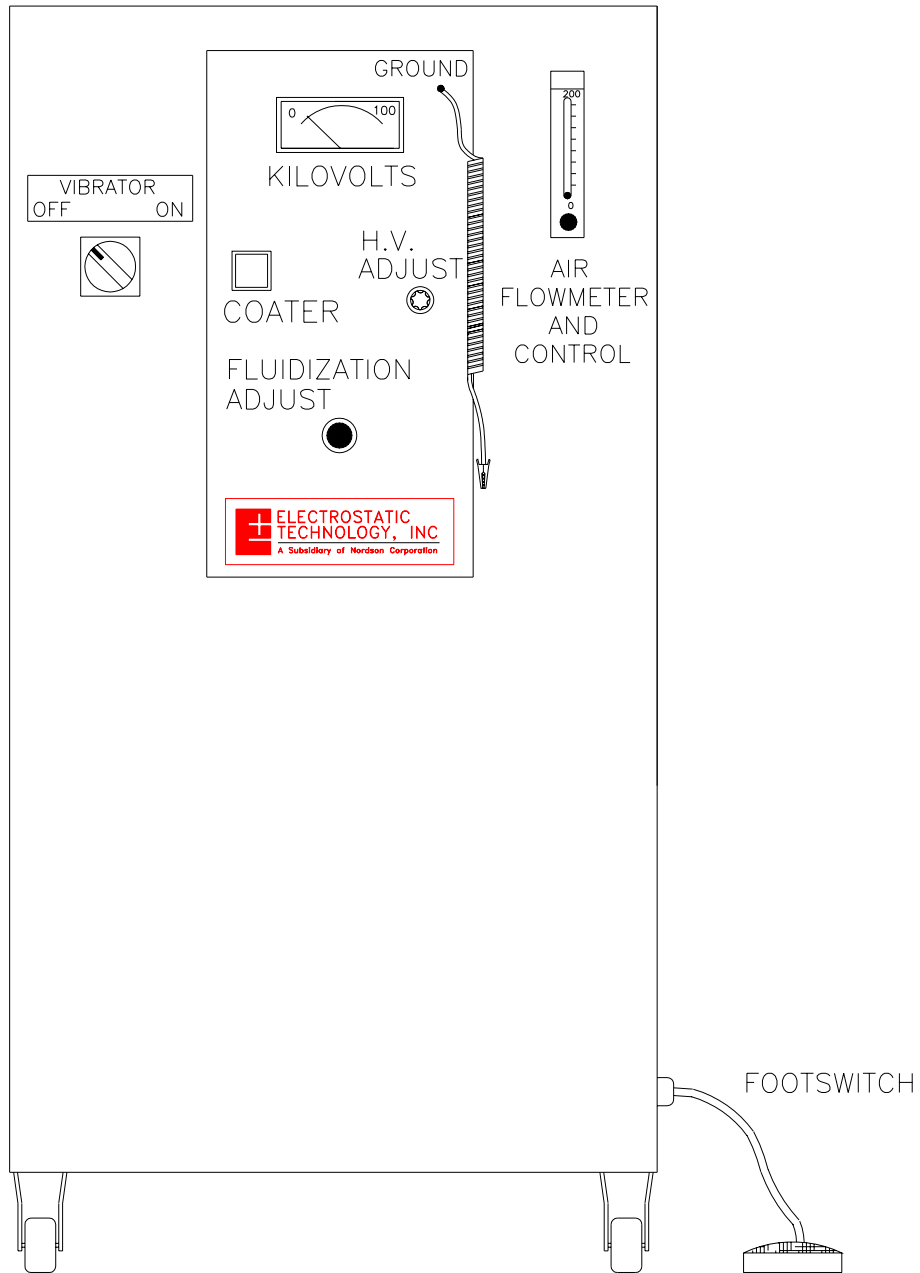


Illustration of a Typical Model C-30 Coater Control Panel

8.2 DESCRIPTION OF CONTROLS

<u>COATER</u> ON/OFF pushbutton	Energizes control Circuit (wait 5 minutes after energizing to allow time for circuits to warm up).
<u>H.V. ADJUST</u> Adjustable pot	Adjusts the output of the High Voltage power supply (0-80 kV).
<u>FLUIDIZATION ADJUST</u> Regulator	Adjusts the amount of dry pressurized air supplied to the Air Flow Meter.
<u>AIR FLOW METER AND CONTROL</u>	Adjusts and indicates the amount of fluidizing air supplied to the Coating Bed.
<u>KILOVOLTS METER</u>	Indicates the voltage being supplied by the High Voltage Power Supply when the Footswitch is pressed.
<u>GROUND CONNECTION</u>	There is a ground wire with a banana plug and alligator clip included with the C-30 Coater. Plug this ground wire into the receptacle on the front of the C-30 and make contact with the tooling fixtures or individual parts to be coated. This must be done in order to ensure a proper ground potential to allow for coating.
<u>FOOTSWITCH</u>	Activates the Model C-30 Coater when pressed. The coating unit will only operate while the Footswitch is depressed and cease to operate when the Footswitch is released.
<u>VIBRATOR ON/OFF</u> Selector Switch	Turns "ON" and "OFF" Vibrator located on Coating Bed. This unit has been factory set. NOTE: When Vibrator is turned "ON", it may cause resonance in Kilovolts Meter needle.

9 START-UP AND OPERATION PROCEDURE

9.1 MACHINE SET-UP

- Step 1 - Load the Bed Tray of the Coater with 1 inch (2.54 cm) of suitable electrostatic fluid bed coating material.
- Step 2 - Turn High Voltage control to zero (counter-clockwise).
- Step 3 - Turn Main Power switch "ON". Wait 5 minutes for warm-up.
- Step 4 - Actuate Footswitch by pressing down on it.
- Step 5 - Turn "Fluidization Adjust" knob on Control Panel to maximum "OFF" position (counter-clockwise). Gradually turn "Fluidization Adjust" knob clockwise while watching the "Air Flow Meter" until the steel ball in the "Air Flow Meter" reaches its top reading. Continue turning the knob 2-3 more revolutions after the steel ball reaches the top reading. Lock "Fluidization Adjust" knob by pushing "IN" slightly.
- Step 6 - Turn "Air Flow Meter" knob clockwise until "OFF" position. The "Air Flow Meter" knob will be used to control air to the coating bed. When using the Coater, turn the "Air Flow Meter" knob to adjust and control powder fluidization.
- Step 7 - Turn Air Flow Meter knob (counter-clockwise) up to where adequate fluidization (bubbling) of the powder in the bed is achieved and a cloud forms in the bed.
- Step 8 - Actuate Footswitch again and slowly close the blast gate located on top of the Coating Hood until the cloud drifts outward from the hood. Open the blast gate slightly and the powder cloud should drift inward with minimal turbulence. The optimum setting is the point where the cloud is active, yet contained in the Coating Hood with no migration outside the Coating Hood.

9.2 DUAL POLARITY POWER SUPPLY

- To change polarity on the C-30 Coater observe the following procedure.
- Step 1 - Turn High Voltage "OFF". Turn High Voltage Control knob counter-clockwise. (Voltage meter will read zero, but wait at least one minute for voltage to dissipate).
- Step 2 - Remove back panel of C-30 Coater.
- Step 3 - Unscrew knurled chrome plated connector from power supply and withdraw cable.

9.2 DUAL POLARITY POWER SUPPLY (continued)

Step 4 - Insert cable into other terminal and tighten connector.

9.3 COATING OPERATION

Step 1 - Press High Voltage "ON".

Step 2 - Turn High Voltage adjustment to a start point of 30 kV.

Step 3 - Make sure to **ground** the substrate to be coated and pass it through the rotating powder cloud approximately 2-3 inches above the surface of the fluidizing powder.

Step 4 - Remove the substrate and inspect after coating. Adjust fluidizing air, high voltage setting and/or length of coating cycle (line speed in order to obtain the optimum coating.

Step 5 - Repeat these steps as required to obtain a satisfactorily coated substrate.

10 SHUT-DOWN PROCEDURE

10.1 COATING OPERATION

Step 1 - Press Coating Machine Main Power (Coater) pushbutton "OFF".

10.2 RE-START PROCEDURE

When re-starting the coater, press Coating Machine Main Power (Coater) pushbutton "ON". High Voltage settings and air settings should not need to be re-adjusted. They will remain set as before shutdown.

10.3 EXTENDED SHUTDOWN PROCEDURE

When shutting the machine down for more than an overnight period, the following should be noted:

- When not in use, the coating material in the unit should be removed to prevent clogging of the porous plate. As most coating materials are hygroscopic, storage of the powder in the powder feeder for extended periods of time is not recommended. It is advisable that the powder be removed and stored in an air tight container. Observe the following procedure:

Step 1 - Remove as much of the powder as possible using a plastic scoop.

Step 2 - Push COATER pushbutton "ON".

Step 3 - Turn High Voltage "OFF". Turn the H.V. Control knob counter-clockwise.

Step 4 - Remove hose from the Coating Bed Hood. It may be used to vacuum the powder out of the coating bed (or use a shop vacuum with a soft plastic nozzle on the end of its hose).

Step 5 - Activate the Footswitch on the Model C-30 Coater.

Step 6 - Turn the fluidizing air to maximum by turning the Air Flowmeter clockwise.

Step 7 - Activate the Powder Collector and use its vacuum to clean the unit (or use a shop vacuum as noted above). Any residual powder not vacuumed out of the bed may be blown out by compressed air. Be very careful never to point the air directly into the porous plate. This could cause the powder particles to become lodged in the porous plate and cause non-uniform fluidizing.

10.4 POWDER/COLOR CHANGE



When changing powder from one color to another, it is very important that the Coating Bed be thoroughly cleaned to prevent contamination. The same bed cleaning procedure as above should be used.



11 TROUBLE SHOOTING – COATER

11.1 SYMPTOM: No High Voltage To Coating Bed

Cause: High Voltage control set too low.

Remedy: Increase High Voltage (clockwise turn off the High Voltage control).

Cause: High Voltage cable loose in power supply.

Remedy: Tighten the connector at the power supply.

Cause: High Voltage cable length in power supply.

Remedy: Remove connector from cable and reinstall so that more unshielded cable protrudes beyond the connector.

11.2 SYMPTOM: Insufficient Air To Fluidize Powder

Cause: Air control is set too low.

Remedy: Increase air flow through air flow meter.

Cause: Air supply line to coater not sufficient size.

Remedy: Install larger air line, 3/8 inch I.D. minimum.

Cause: Air leaking by gasket at porous plate.

Remedy: Tighten screws of porous plate ring.

Remedy: Check gasket – replace if necessary.

Cause: Clogged porous plate.

Remedy: Install new porous plate.

Cause: Air solenoid not operating.

Remedy: Replace defective solenoid.

11.3 SYMPTOM: Coating Powder Wet Or Damp

Cause: Moisture in fluidizing air.

Remedy: Install water separator in the air line to the coating machine.

Cause: Powder is HYGROSCOPIC and has absorbed moisture from the humid air around it.

Remedy: Aerate powder in the bed at low fluidized air setting for 20 minutes with the High Voltage turned "OFF".

11.4 SYMPTOM: Substrate Not Properly Grounded

Cause: Faulty ground to substrate.

Remedy: Check ground clip to substrate to make sure it is secure or insure that conveyor or tooling provides good ground.

12 MAINTENANCE

12.1 GENERAL

A systematic maintenance schedule should be set up and adhered to in order to insure optimum machine operation. Daily, weekly, and monthly schedules should be established as applicable for each part of the coating system.

WARNING: Allow only qualified personnel to perform maintenance.

12.2 AIR SYSTEM

The importance of keeping the compressed air clean, dry and oil free cannot be over-emphasized. More coating problems can be traced to failure to maintain the air filters and air dryers than any other cause. Consult manufacturers' maintenance sections in the Appendix.

Desiccant Air Dryer – Check the Desiccant Air Dryer regularly according to the following procedure:

DEPRESSURIZE UNIT BEFORE REMOVING METAL COLLAR AND BOWL.

Inspect the plastic bowl daily to detect crazing, cracking, damage, or any other deterioration. Immediately replace any crazed, cracked, or otherwise damaged or deteriorated bowl with a new plastic bowl and metal bowl guard.

If the bowl seal is crazed, cracked, or otherwise damaged or deteriorated, replace with manufacturer's approved seal.

Refill or regenerate desiccant with 1 package of desiccant.

REINSTALL BOWL AND METAL COLLAR BEFORE PRESSURIZING.

Refer to the Wilkerson section in the Appendix of this manual.

Air Line - The air line which enters the coater should be kept clean and free of all particles, water and oil.

12.3 FLUIDIC BED

The screws holding down the Coating Bed Hood (which secures the porous plate into position) should be checked periodically for tightness. Loose screws may cause geysers of rising powder and non-uniform fluidization.

Clean the powder tray after each use. Do not allow powder to remain in the coating bed Tray Insert overnight.

The porous plate is the key factor in controlling the powder cloud in the fluidic bed. Under normal operation, the powder on the plate will be uniformly fluidized (lightly bubbling) over the entire surface of the plate. If the fluidization is not uniform, the porous plate has become clogged and will have to be replaced. The porous plate will require periodic replacement depending upon hours of use, contaminants in the compressed air, and conditions of operation and cleaning.



CAUTION: THE UNIFORM POROSITY OF THE POROUS PLATE IS VERY IMPORTANT TO PROPER COATING. DO NOT SCRAPE OR EVEN TOUCH IT WITH A HARD OR SHARP OBJECT. NEVER POINT AN AIR GUN DIRECTLY AT THE PLATE

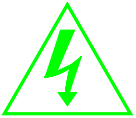
Clogging of the pores of the plate is the most common cause of failure. Once the porous plate has been removed, inspect it to determine which of the following reasons caused clogging:

- Leaving powder unused in the bed for an extended period of time during humid conditions.
- Oil or water in air supply system.
- Damage from scratching, gouging or denting the plate.
- Blowing compressed air directly at the surface of the plate.
- Correct the cause of plate failure and avoid conditions in the future which may have lead to it. Order a new porous plate and gasket material from ETI and carefully install.

12.3.1 Installation of Porous Plate

- Step 1 - Turn Model C-30 Coater "OFF".
- Step 2 - Unplug the Coater from electrical power source.
- Step 3 - Remove the Powder Collector Hose from the Coating Bed Hood.
- Step 4 - Remove the tooling plate (if applicable).
- Step 5 - Vacuum all the powder from the bed tray and remove from the Coater.
- Step 6 - Remove screws from the Coating Bed Tray Insert and remove from Coater.
- Step 7 - Place gasket material around underside edge of new Insert flange.
- Step 8 - Place Coating Bed Tray Insert into unit and tighten screws down evenly so that the Tray Insert is snug in unit.
- Step 9 - Replace the Powder Collection Hood.

12.4 MAINTENANCE CAUTION



WARNING: ELECTRICAL VOLTAGE USED IN THIS EQUIPMENT CAN BE HAZARDOUS. MAINTENANCE SHOULD BE HANDLED BY QUALIFIED PERSONNEL.

13 PATENTS

The C-30 Electrostatic Fluidized Bed Coater is manufactured under one or more of the following United States patents:

5,639,307	5,275,849
5,213,847	5,116,636
5,092,267	5,052,332
4,606,928	4,517,219
4,472,452	4,418,642
4,368,214	4,332,835
4,330,567	4,325,982
4,297,386	4,123,175
4,120,070	4,101,687
4,084,018	4,053,661
4,030,446	3,951,099
3,937,179	3,921,574
3,916,826	3,917,461
3,901,185	3,889,015
3,881,763	3,865,610
3,828,729	3,698,847

14 SPARE PARTS LIST

PART DESCRIPTION	ETI PART NO.	ASSEMBLY	QTY.	RECM'D SPARE	PRICE EACH
Coater Bed Tray Insert	C1896-0102	Bed	1	2	\$ 319
Plastic Screws 1/4"-20 x 1 1/2" (Bed Insert)		Bed	8	10	\$0.60
Gasket Material, 3/4" Wide	6513018	Bed	1 Roll	1 Roll	\$ 45
High Voltage Cable Assembly, 6 Ft. Long	5061012	Electrical	1	1	\$ 145
Powerstat (Variac), 10C	5043001	Electrical	1	1	\$ 135
Meter, 0-100	5039002	Electrical	2	-	-
Kilovolt Meter P.C. Board	5054005	Electrical	1	-	-
Circuit Breaker, 7 Amp	5019003	Electrical	1	1	-
Footswitch Assembly	A-13258	Electrical	1	1	\$ 116
Fuse (In Electrical Plug), 3 Amp, 3AG		Electrical	1	1	\$ 5
Desiccant Air Dryer	3015012	Pneumatic	1	-	-
Desiccant, Wilkerson or Equiv. # DRP-85-059	3015018	Pneumatic	A/R	1 Pkg	To Advise
Solenoid	3016003	Pneumatic	1	-	-
Air Regulator, 1/4" NPT Norgren #R07-200-RNK-AU	3013004	Pneumatic	1	-	-
Air Flow Meter, Dwyer #RMA-10	3018009	Pneumatic	1	-	-

Please Note: Prices are valid for 90 days from the date on this document.

15 FLOOR PLAN

See the Appendix for the Floor Plan Drawing.

16 PNEUMATIC

See the Appendix for Pneumatic Schematic.

17 ELECTRICAL SCHEMATIC

See the Appendix for the Electrical Schematic.

18 MANUFACTURER'S MANUALS

All of the Manufacturer's Manuals listed below can be found in the Appendix of this manual:

- Desiccant Air Dryer (Wilkerson)
- Flowmeter (Dwyer)
- High Voltage Power Supply
- Vibrator (Syntron)