

# CHICAGO<sup>®</sup>

Electric

## 230V POWDER COAT OVEN

**Model 95887**

### ASSEMBLY AND OPERATION INSTRUCTIONS



Due to continuing improvements, actual product may differ slightly from the product described herein.



3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our website at: <http://www.harborfreight.com>

**TO PREVENT SERIOUS INJURY, READ AND UNDERSTAND  
ALL WARNINGS AND INSTRUCTIONS BEFORE USE.**

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**For technical questions or replacement parts, please call 1-800-444-3353.**

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## SPECIFICATIONS

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Voltage	230 Volts AC
Frequency	60 Hz
Amperage @ Maximum	6.2 A
Wattage	500 Watts
Heaters	Single 500 Watt Heater Block
Cord Rating/Listing	14AWG X 3C
Plug type	No plug included. Oven must be wired to an appropriate 230 Volt AC Plug
Switch	Rotary Adjusted Thermostat
Switches included	Main Power, On/Off 230 VAC/8 AMP. Fan Power, On/Off 230 VAC/2 AMP.
Temperature control	Rotary Thermostat
Thermostat settings	0 - 480°F
Tray	1 Tray, 6 adjustment levels
Door size	21-1/8" W X 21-3/16" H
Door Window size	12-3/4"W X 12-7/8" H
Overall dimensions	33" H X 24-1/8" D X 24-5/8" W (Add 3" to Height for Fan Housing).

### Save This Manual

You will need this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures, parts list and assembly diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Write the product's serial number in the back of the manual near the assembly diagram, or write month and year of purchase if product has no serial number. Keep this manual and invoice in a safe and dry place for future reference.

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## GENERAL SAFETY RULES

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**READ AND UNDERSTAND ALL INSTRUCTIONS**  
**Failure to follow all instructions listed below may result in**  
**electric shock, fire, and/or serious injury.**  
**SAVE THESE INSTRUCTIONS**

### WORK AREA

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.

2. **Always use eye, hand and body protection.** Always wear ANSI-approved safety goggles or full face shield and dust mask/respirator. Always wear fire retardant, heat proof work gloves, a full length fire retardant apron, long sleeve shirts, long pants and hard toed leather shoes.
3. **Do not operate Oven in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Extreme temperatures from Oven may ignite fumes.
4. **Keep bystanders, children, and visitors away while operating.** Protect others, provide barriers or shields as needed.

### **ELECTRICAL SAFETY**

1. **Grounded equipment must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the Oven should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
2. **Use only indoors, do not expose to rain or wet conditions.** Water entering the Powder Coat Oven will increase the risk of electric shock.
3. **Do not abuse the Power Cord. Never use the Power Cord to pull the Plug from an outlet. Keep the Power Cord away from heat, oil, and sharp edges. Replace damaged Power Cords immediately.** Damaged Power Cords increase the risk of electric shock.

### **PERSONAL SAFETY**

1. **Stay alert. Watch what you are doing, and use common sense when operating. Do not use this Oven while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating may result in burns and/or other serious personal injury.
2. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from from Over surfaces.** Loose clothes, jewelry, or long hair can be caught doors or vent fans.
3. **Avoid accidental starting. Be sure the Power Switch is off before plugging in.**
4. **Do not overreach when loading/unloading this Powder Coat Oven. Keep proper footing and balance at all times.** Proper footing and balance enables better control in unexpected situations.

## TOOL USE AND CARE

1. **Do not use this Oven if the Power Switch does not turn it on or off.** If the Powder Coat Oven cannot be controlled with the Power Switch, it is dangerous and must be replaced.
2. **Disconnect the Power Cord Plug from the power source before making any adjustments, changing accessories, or storing this Oven.** Such preventive safety measures reduce the risk of starting the Oven accidentally. **Always unplug the Oven and let it cool down completely before performing any inspection, maintenance, or especially cleaning procedures.**
3. **This Oven is dangerous in the hands of untrained users.** Never allow children to come in contact with this product.
4. **Maintain this Powder Coat Oven with care. Keep the Oven clean.** Do not use this Oven if damaged in any way. Tag it, "Do not use" until repaired.
5. **Check for any other condition that may affect the Oven's operation. If damaged, have the Oven serviced before using.** Many accidents are caused by poorly maintained equipment.

## SERVICE

1. **Service to this Powder Coat Oven must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
2. **Follow instructions in the "Inspection, Maintenance, And Cleaning" section of this manual.** Failure to follow maintenance instructions may create a risk of electric shock or injury.

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## SPECIFIC SAFETY RULES

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1. **Maintain labels and nameplates on the tool.** These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
2. **Maintain a safe working environment.** Make sure there is adequate surrounding workspace. Use this Oven only in a well ventilated area. Avoid high traffic areas where it could be accidentally touched while it is hot. Do not allow anyone to conduct any activities near the Oven while it is in use, or closely following it's use while it is still hot. Always keep the work area free from obstructions, grease, oil, trash and other debris. **NEVER use this Oven near flammable chemicals, dusts, and vapors.** Do not use this product in a damp or wet location.
3. **Proper location is imperative.** This Powder Coat Oven should be placed on a fire retardant table or stand approximately 36" above floor level to make loading and unloading easy. It should be protected from direct sunlight or drafts. Make sure the

table or stand is flat, level, sturdy and capable of supporting both the weight of the Oven and all objects placed inside for baking.

4. **NEVER ATTEMPT TO MOVE THE OVEN WHILE IT IS HOT.**
5. **Dress safely.** To avoid accidental burns, always wear ANSI-approved safety glasses, shatterproof fire retardant full face shield, fire retardant full length apron and fire retardant hand mitts when using this Powder Coat Oven.
6. **ALWAYS KEEP A FULLY CHARGED, COMMERCIAL FIRE EXTINGUISHER CLOSE AT HAND IN CASE OF ACCIDENTAL FIRE.**
7. **Prior to turning on the Oven, make sure to remove all tools and equipment from inside. DO NOT OVERLOAD OVEN RACKS.**
8. **NEVER CLEAN THE OVEN WITH COMBUSTIBLE OR CORROSIVE CLEANERS.**
9. **Always keep all extension cords from touching the surface of this Oven when it is in use.**
10. **WARNING: People with pacemakers should consult their physician(s) before using this product.** Electromagnetic fields in close proximity to a heart pacemaker could cause interference to or failure of the pacemaker.
11. **Never leave the Powder Coat Oven unattended when it is plugged into an electrical outlet. Turn off the Oven, and unplug it from its electrical outlet before leaving.**

**WARNING: Make sure to read and adhere to all warnings and instructions on the Material Safety Data Sheet provided by the manufacturer of all coatings used with this Oven.**

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## GROUNDING

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 **WARNING!**

Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

## EXTENSION CORDS

1. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. **(See Table A.)**
2. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. **(See Table A.)**
3. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. **(See Table A.)**
4. Make sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before use.
5. Protect your extension cords from sharp objects, excessive heat, and wet areas.

<b>RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS*</b> <b>(120 OR 230 VOLT)</b>					
<b>NAMEPLATE AMPERES (at full load)</b>	<b>EXTENSION CORD LENGTH</b>				
	<b>25 Feet</b>	<b>50 Feet</b>	<b>75 Feet</b>	<b>100 Feet</b>	<b>150 Feet</b>
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	18	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-

**TABLE A**      \* Based on limiting the line voltage drop to five volts at 150% of the rated amperes.

## SYMBOLOLOGY

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
<b>V~</b>	Volts Alternating Current
<b>A</b>	Amperes
n <sub>0</sub> xxxx/min.	No Load Revolutions per Minute (RPM)

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## UNPACKING

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When unpacking, check to make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.

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## ASSEMBLY INSTRUCTIONS

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NOTE: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

 **WARNING!** Make sure the Power Switch of the tool is in its “OFF” position and that the Oven is unplugged from its electrical outlet before making any adjustments.

1. **This Powder Coat Oven does not come equipped with an electrical power plug.** Prior to using, this Oven requires the attachment of **a grounded, 3-prong, 220 Volt, Power Plug** to its Power Electric Cord (10). For your safety, only a qualified, certified electrician should attach the Power Plug to the Electric Cord (10) attached to this Powder Coat Oven. Never remove the grounding prong or modify the Plug in any way. Do not use adapter plugs with the Power Plug. To comply with the National Electric Code, and to provide additional protection from the risk of electrical shock, the Power Plug should only be connected to a 220 Volt, 3-hole electrical outlet that is protected by a Ground Fault Circuit Interrupter (GFCI).

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## OPERATION INSTRUCTIONS

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1. Connect the Powder Coat Oven to a proper 220V electrical outlet after having the correct Power Plug attached to the Power Electric Cord (10).
2. Open the Oven Door and adjust Oven Racks to the correct height needed. Load the middle shelf first, or if you have just a few items, load as close to the center of the Oven as possible for even baking. Load Oven from center up and/or down.
3. Close Oven Door, close the Adjustable Vents located on the right and left sides of the Oven Cabinet. See Illustration on page 13.
4. Turn the Main Switch (1) to it’s “ON” position and set the Thermostat (3) at the maximum temperature setting as recommended by the manufacturer of the particular coating material you are using.
5. Check the Main “ON” Indicator Light (5) and Heaters “ON” Indicator Light (6), make sure they are illuminated.
6. Turn the Fan Switch (2) to it’s “ON” position. CAUTION: You may want to leave the Fan off if using a fine powder coat. Fine powders may be disturbed by the blowing Fan, which may remove some powder causing flat (dull) places on the finished product.

7. Depending on the Thermostat (3) setting, it may take up to one hour for the Oven temperature to reach the desired setting and stabilize within an allowable + or - 10 degree range.
8. Periodically check the Thermometer (9) to make sure the Oven stabilizes at the desired baking temperature.
9. Typically the Oven cycle-time for a powder coated object is obtained by adding the “heating up” time to the “dwell time”. The “heating up” time is how long it takes for the Powder Coat Oven to reach the desired temperature and the “dwell time” is the time required for the powder coated object to cure (dry all the way through) properly.

**NOTE:** To obtain the complete Oven cycle-time, consult the manufacturer’s manual for the powder coating and if necessary the manual for the object being coated. Different materials cure at different time lengths.

10. Use a stopwatch (not included) to show when the Oven cycle-time is completed. Turn the Main Switch (1) to it’s “OFF” position and reset the Thermostat (3) to a “0” degree setting.
11. Turn the Fan Switch (2) to “OFF”.
12. Allow the product being baked to set approximately 30 minutes. Then open the Oven Door and using oven mittens (not included) remove the powder coated objects.
13. Close the Oven Door, open the Adjustable Vents located on the right and left sides of the Oven Cabinet and allow the Oven to completely cool and all fumes to vent safely. This is especially important if your coatings are of a petroleum or lacquer base.

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## **INSPECTION, MAINTENANCE, AND CLEANING**

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 **WARNING!** Make sure the Power Switch of the Oven is in its “OFF” position and that the Oven is unplugged from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.

1. **BEFORE EACH USE**, inspect the general condition of the Oven. Check for loose screws, misalignment of movable shelves, cracked or broken shelves, damaged electrical cords, and any other condition that may affect its safe operation. If anything abnormal is heard or seen during operation, turn off the Oven immediately, have the problem corrected before any further use. **Do not use damaged equipment.**
2. **PERIODICALLY**, a measurement of Oven temperatures should be performed to ensure the Powder Coat Oven is operating properly. See numbers 3 through 8 of this section.
3. **To test the Oven Thermostat (3):** A commercial grade thermometer (not included) that has been previously calibrated and approved should be placed on the center Oven Rack. Close the Oven Door and close both Adjustable Vents on the sides

- of the Oven Cabinet. Turn the Main Switch (1) to “ON” and set the Thermostat (3) at 450 degrees Fahrenheit. The Thermostat (3) may be tested at any stage (up to 450° F during this phase of the test. To make the test, compare the readings of the readings of the Thermometer (not included) that was placed inside the Oven and the Oven Thermometer (9). If the two readings are NOT the same, the Thermostat (9) should be adjusted. Only a qualified technician should perform any adjustments to the Thermostat (9).
4. **To test the “heating up” time:** Close the Oven Door and close both Adjustable Vents on either side of the Oven Cabinet. Turn on the Main Switch (1) to “ON” and set the Thermostat (3) at 450 degrees Fahrenheit. Observe the Thermometer (9) and use a stop watch (not included) to record the amount of time the Oven takes to reach the desired temperature of 450° F.
  5. **To Test for Temperature Drift:** Close the Oven Door, close the Adjustable Vents on either side of the Oven Cabinet. Turn the Main Switch (1) to “ON” and set the Thermostat (3) to 450 degrees Fahrenheit. To test for any temperature “drift” (any variations in the preset temperature), the reading on the Thermometer (9) should be recorded once every hour for a period of eight hours. The temperature “drift” should not exceed + or - 10° F. If the temperature does exceed these specifications, have the Thermostat (3), the Blower Motor (7), Fan Blades (8) and the Heaters (4) checked for proper operation. Have this service provided by a qualified technician only.
  6. **To test the Temperature Recovery time:** Close the Oven Door, and close the Adjustable Vents on either side of the Oven Cabinet. Turn the Main Switch (1) “ON” and set the Thermostat (3) to 450 degrees Fahrenheit. When 450° F is reached, open the Oven Door for exactly one minute. Close the Oven Door and observe the Thermometer (9). Within thirty minutes the Thermometer (9) should reach 120° F. If the “recovery” time is more than 20 minutes, have a qualified technician check the Blower Motor (7), Fan Blades (8) and Heaters (4) for proper operation.
  7. **To test Thermostat Reproducibility:** When the last temperature reading has been taken at the end of the “Temperature Drift” test. (see **step #5** of this section). Turn the Main Switch (1) “OFF” but make sure to leave the Thermostat (3) set at 450 degrees Fahrenheit. Leave the Powder Coat Oven undisturbed with the Oven Door closed for 24 hours. At the end of this period, turn the Main Switch (9) “ON”. Leave the Thermostat (3) at 450° F for at least three hours. At the end of the three hour period the temperature should be within + or - 10° F of the 450° F. If the Temperature “drift” exceeds the 450° F a qualified technician should inspect and check the Blower Motor (7), Fan Blades (8), and Heaters (4) for proper operation.
  8. **To test for Temperature Overshoot:** Close the Oven Door and close the Adjustable Vents on either side of the Oven Cabinet. Turn the Main Switch (1) “ON” and set the Thermostat (3) to **any temperature** up to 450 degrees Fahrenheit. At least every five minutes record the temperature reading on the Thermometer (9) as the “set” degree reading approaches, finally settles and then, does NOT fluctuate. The maximum temperature recorded should not exceed 10° F over the degree setting

on the Thermostat (3). If it does exceed the 10° F, a qualified technician should check the Thermostat (3), Blower Motor (7), Fan Blades (8) and Heaters (4) for proper operation.

**NOTE: After any, or all of these tests, be sure to turn “OFF” the Main Switch (1), reset the Thermostat (3) to “0” and open the Adjustable Vents on both sides of the Oven Cabinet to allow the Oven to cool properly.**

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## **LIMITED 90 DAY WARRANTY**

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Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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## TROUBLESHOOTING

Problem	Possible Causes	Probable Solutions
Oven will not turn on, Heaters will not start, Fan will not operate.	<ol style="list-style-type: none"> <li>1. No power at outlet.</li> <li>2. Cord not connected.</li> <li>3. Cord is damaged or broken.</li>   <li>4. Circuit breaker has tripped.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check power at outlet.</li> <li>2. Check that cord is plugged in.</li> <li>3. Check electrical cord for damage and replace if any damage is found at all. Do not repair an electrical cord for this Oven.</li> <li>4. Turn off Oven. Reset breaker. Eliminate extension cord use and remove other loads on circuit.</li> </ol>

### PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

**Record Product's Serial Number Here:** \_\_\_\_\_

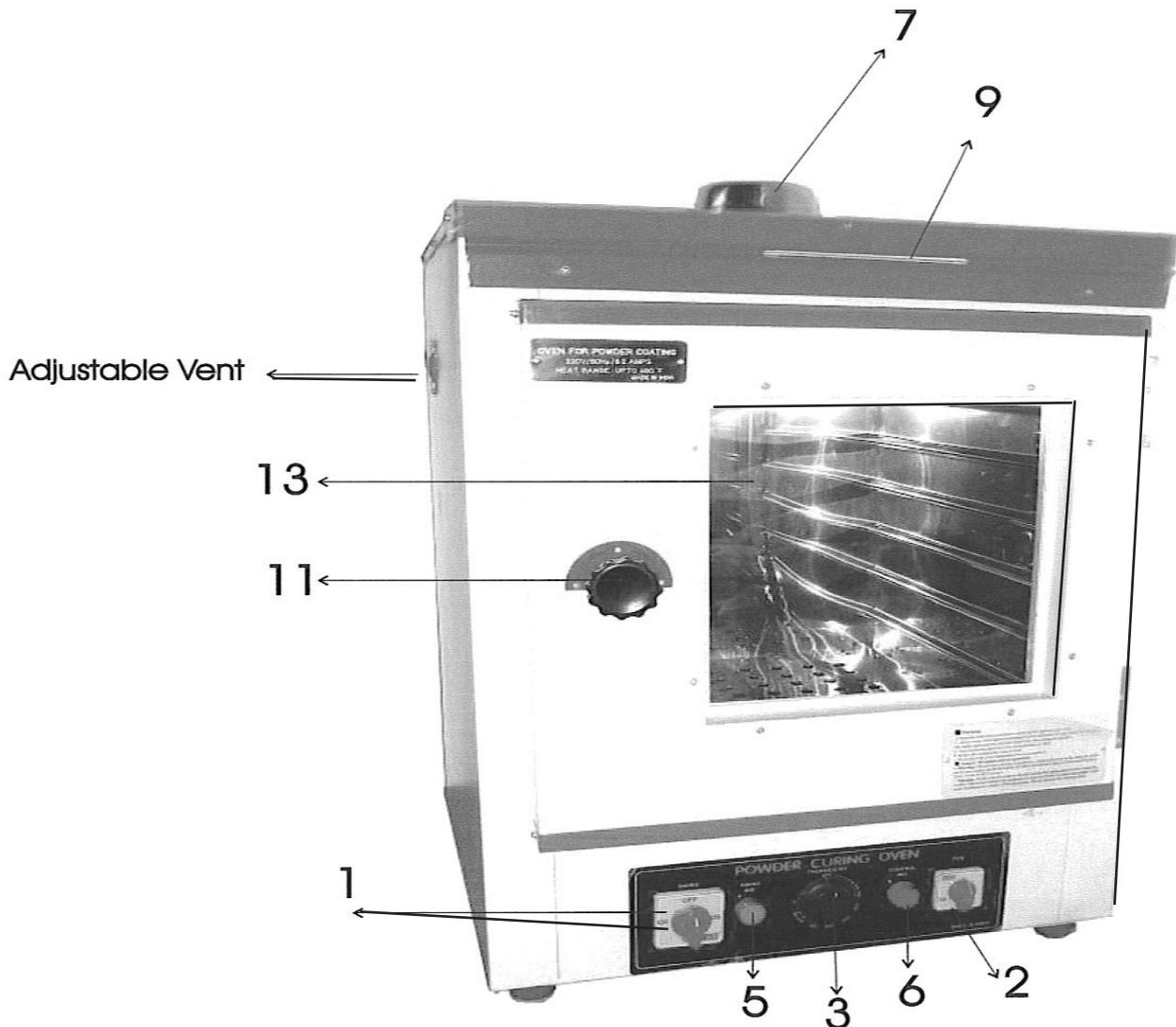
**Note:** If product has no serial number, record month and year of purchase instead.

**Note:** Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

## PARTS LIST

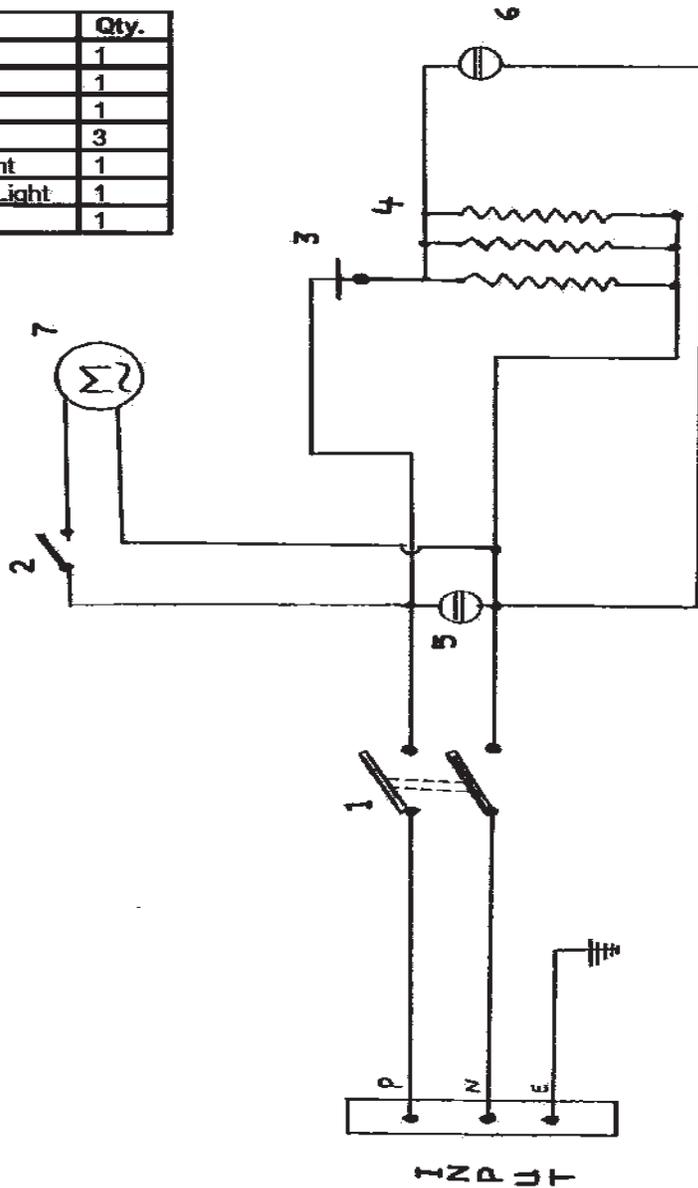
Part	Description	Q'ty	Part	Description	Q'ty
1	Main Switch ON/OFF	1	7	Blower Motor	1
2	Fan Switch ON/OFF	1	8	Fan Blades (not shown)	1
3	Thermostat	1	9	Thermometer	1
3A	Knob for Thermostat	1	10	Electric Cord (not shown)	1
4	Heaters (Heating Element not shown).	3	11	Knob for Oven Door	1
5	Main "ON" Indicator Light	1	12	Oven Rack (not shown)	1
6	Heaters "ON" Indicator Light	1	13	Window Glass	1

## PARTS DIAGRAM



## SCHEMATIC PARTS LIST / SCHEMATIC ASSEMBLY DIAGRAM

Part #	Description	Qty.
1	Main ON/OFF Switch	1
2	Fan ON/OFF Switch	1
3	Thermostat	1
4	Heaters	3
5	Main ON Indicator Light	1
6	Heaters ON Indicator Light	1
7	Blower Motor	1



**Note:** Parts not shown on Parts Diagram are; Heaters, Heating Elements (4), Fan Blades (8), Electric Power Cord (10) and the Oven Rack (12)