

# KOCH

**GRAND PRIZE™ 3 SMOKEHOUSE**

## Owner's Manual



**KOCH**  
EQUIPMENT



Rev. 2003

D

KOCH EQUIPMENT LLC

Owner's Manual



# Grand Prize™ 3 Smokehouse

**WITH  
MICROPROCESSOR OR STANDARD CONTROLLER  
AND COMPONENTS FOR ELECTRIC AND GAS HEAT,  
SINGLE AND 3 PHASE UNITS**

KOCH EQUIPMENT LLC

# Grand Prize™ 3 Smokehouse Owner's Manual

***Manufactured by*****Koch Equipment LLC  
1414 West 29<sup>th</sup> Street  
Kansas City, MO 64108-3604**

## INTRODUCTION

Congratulations on your Koch Grand Prize™ 3 Smokehouse purchase. The smokehouse was designed to give you years of trouble free operations and to help in the processing and preparation of your quality food products.

**⚠ WARNING** Please read this owner's manual to gain the maximum benefits of your smokehouse and its different components. Procedures and guidelines contained within the owner's manual and on the smokehouse must be followed precisely to avoid problems that can result in property damage, personal injury, or death. If you have questions related to the owner's manual or a Grand Prize™ 3 Smokehouse, please contact the Koch Equipment LLC Service Department at (800) 777-5624.

**⚠ WARNING** **A note about cleaning:** We recommend that the Grand Prize™ 3 Smokehouse be thoroughly inspected after each use and completely cleaned once a week. Sanitation experts should be consulted regarding proper cleaning methods. Bacterial testing should be done to insure that each component of the Grand Prize™ 3 is properly cleaned. Failure to properly clean and maintain the smokehouse could result in contamination of the product and buildup of combustible materials resulting in the risk of bodily injury or death.

**For Sales, Call:**

Phone (816) 753-2150 • Fax (816) 753-4976  
Toll-Free (800) 777-5624

**For Replacement Parts, Call:**

Phone (816) 753-2150 • Fax (816) 561-2854  
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**For Technical Support, Call:**

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EQUIPMENT

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# General

## **⚠ WARNING**

This owner's manual contains instructions and maintenance information pertinent to your Grand Prize™ 3 Smokehouse. Please read the owner's manual carefully and completely. Failure to do so could result in property damage, personal injury, or death.

**Receiving Problems:** As in all cases, before signing the bill of lading, be sure all items have been received as listed and there is no damage in shipment. If needed, a claim must be made immediately to the local truck line office and noted on the bill of lading.

Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_ Owner: \_\_\_\_\_  
 Ship Date: \_\_\_\_\_ Location: \_\_\_\_\_

Electrical service size for your Grand Prize™ 3 Smokehouse **with**

**electric heat** (check one):

\_\_\_\_\_ 220 Volt, single phase, **100 amps**

\_\_\_\_\_ 230 Volt, 3 phase, **60 amps**

\_\_\_\_\_ 380 Volt, 3 phase, **40 amps**

\_\_\_\_\_ 460 Volt, 3 phase, **30 amps**

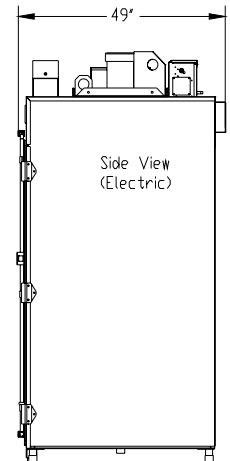
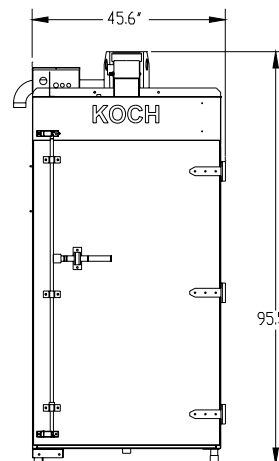
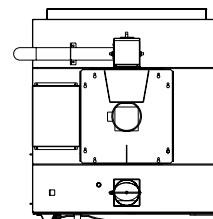
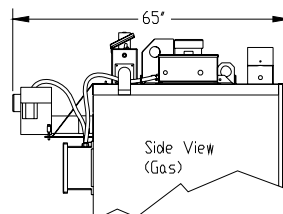
## **Overall Assembled Dimensions**

Gas Heated Grand Prize™ 3 Smokehouses **require 15 amp electric service** for all voltages, single or 3 phase.

## **Gas Requirements:**

Gas pressure for natural or propane = 5-in. to 14-in. water column

See STARTUP Page 11 for additional gas specifications/requirements



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## ICONS

 <b>WARNING</b> .....	Warning
Indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury	

 <b>DANGER</b> .....	Danger
Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.	

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**WARNING:** *All procedures and guidelines contained in this owner's manual and on the product must be followed precisely to avoid problems that can result in property damage, personal injury, or death. If you have any questions related to this information, please contact the Koch Equipment LLC Service Department at (800) 777-5624.*

**⚠ WARNING** A certified, licensed electrician and plumber must perform the initial installation and startup of the Grand Prize™ 3 Smokehouse.

**⚠ WARNING** The Grand Prize™ 3 Smokehouse must be installed with a minimum of 12-in. of horizontal clearance from any part of the cabinet, gas burner assembly and natural smoke producer. It is the owner's responsibility to insure that the Grand Prize™ 3 Smokehouse installation conforms to all local, state, and national codes and regulations.

**⚠ WARNING** The exhaust flue should be a stainless steel, Class A, triple-wall type or equivalent, installed by a qualified company with proper support, shielding, clearances, flashing, and rain cap. The flue interior must be kept clean. The natural byproducts of cooking and smoking (tar, grease, creosote, etc.) are combustible. Any buildup of these combustible materials exposes you to a severe fire hazard. To reduce the risk of fire, the Grand Prize™ 3 Smokehouse should be thoroughly inspected after each use and completely cleaned once a week. Refer to the MAINTENANCE Section for additional details on cleaning your smokehouse.

**⚠ WARNING** For safe operation, the smokehouse must be kept clean. We recommend a thorough inspection of the smokehouse after each use and a complete cleaning once a week. Check the ductwork, natural smoke pipe, and exhaust flue for any buildup of material on a regular and frequent basis. The natural byproducts of the cooking and smoking process (tar, grease, creosote, etc.) are combustible. Any buildup of these combustible materials exposes you to a potentially severe fire hazard. Refer to the MAINTENANCE Section for additional details on cleaning your house.

**⚠ WARNING** Gas burner safety concerns: Keep the area around the burner clear and free of combustible materials, gasoline, and other flammable liquids or vapors. Do not obstruct burner air inlet slots or ventilation grills for combustion air.



## WARNING (continued)

**⚠ WARNING** If you detect smoke coming from your house and suspect there may be a fire inside, **do not under any circumstances open the smokehouse door**. Turn off the electric power to the house and close the fresh air and exhaust damper, allowing the fire to remain inside the house and burn out naturally. Immediately contact your local Fire Department for assistance.

**⚠ WARNING** Should you notice any unusual changes to your normal cook schedule or the operation of the smokehouse, turn off the power and immediately investigate the problem. If necessary, call your local service company or the Koch Equipment LLC Service Department for assistance. Never operate the smokehouse under suspect conditions.

**⚠ WARNING** Never make any additions or changes to the Grand Prize™ 3 Smokehouse. This will void the limited warranty and could adversely affect the safety or operation of your Grand Prize™ 3 Smokehouse. Contact the Koch Equipment LLC Service Department with any questions that arise.

**⚠ WARNING** DO NOT attempt to operate your Grand Prize™ 3 Smokehouse without reading and understanding this entire owner's manual. Any question should be directed to the Koch Equipment LLC Service Department.

**⚠ WARNING** The Grand Prize™ 3 Smokehouse was intended to be utilized in the cooking and smoking of food products. The use of the smokehouse for any other purpose or for any purpose inconsistent with the procedures and guidelines contained in this owner's manual and on the product itself is a misuse of the product and will adversely affect the safety and operation of the Grand Prize™ 3 Smokehouse. Misuse of the product or use of the product in any manner not intended by the manufacturer will void the limited warranty.

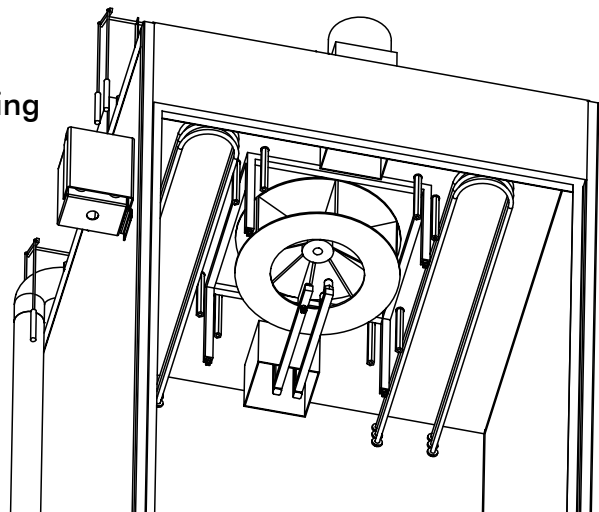
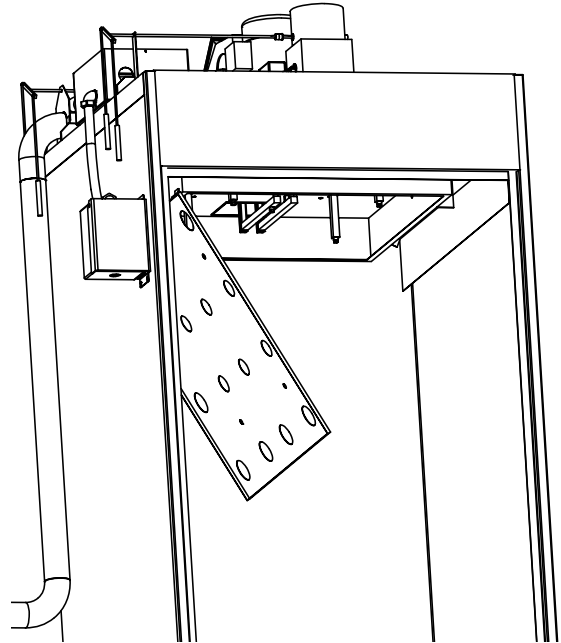
# General Safety Guidelines

**Obvious safety guidelines should be observed.**

- ⇒ Be sure to **turn off power to your smokehouse** before any maintenance work is performed.
- ⇒ Never reach into the overhead duct/fan area while power is turned on.
- ⇒ All surfaces inside of smokehouse will be hot to touch after use.

## Electric Heated Smokehouses

- ⇒ Remember that the heating elements will remain hot for a period of time after the smokehouse has been turned off.
- ⇒ Care should be taken at all times, especially when there is a need to remove any of the internal, overhead panels.
- ⇒ The best safety precaution around a smokehouse is to keep it clean! Always keep a fire extinguisher (Type BC) close to the smokehouse. Tar, grease, and creosote are combustible. Any buildup of these materials exposes you to a severe fire hazard. (See more on cleaning in following pages.)



# Gas Heated Smokehouses

**⚠ WARNING** *Warning! Please read the information pertaining to the gas burner and piping thoroughly. If the information is not followed exactly, a fire or explosion may result, causing property damage, personal injury, or death.*

**Do not** store or use gasoline or other flammable vapors and liquids in the vicinity of the smokehouse. Flammable vapor can travel significant distances and, if ignited, could result in death or serious personal injury.

---

## WHAT TO DO IF YOU SMELL GAS

**⚠ WARNING**  
**Do not try to light any appliance.**

**⚠ WARNING**  
**Do not touch any electrical switch. Do not use any telephone in your building.**

**⚠ WARNING**  
**Immediately call your gas supplier from a telephone outside the building. Follow the gas supplier's instructions.**

**⚠ WARNING**  
**If you cannot reach your gas supplier, call the fire department.**

---

A qualified installer, service agency, or the gas supplier must perform installation and service.

Please read additional gas burner safety concerns on following pages associated with the burner/piping installation.

# Gas Burner

Keep the area around the burner clear and free of combustible materials, gasoline and other flammable liquids or vapors. Do not obstruct burner air inlet slots or ventilation grilles for combustion air.

The burner motor features permanently lubricated ball bearings and requires no routine oiling maintenance.

## WARNING

**Warning:** If any flame is observed when the burner is on standby, or if the ignition spark or valve operator is heard to come on before the motor reaches operating speed, immediately turn off the manual gas control and burner power. A dangerous condition has developed and must be corrected. Contact our service department.

## WARNING

**Warning:** If Propane gas is used and the burner is located in a basement, crawl space or confining space, contact your gas supplier about installing a GAS LEAK warning device. Propane gas is heavier than air and can settle in low areas or confined spaces. This would create a danger of explosion or fire.

## WARNING

**Warning (Service):** Do not attempt to fire the burner with the burner back plate removed as air from the blower will not reach the combustion chamber and a dangerous level of unburned gas could accumulate.

## DANGER

**Danger (Service):** Be sure that the Main Manual Shut-off Valve and Burner Power Switch are turned off before removing any parts for service.

## Section

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# Installation

The Grand Prize™ 3 Smokehouse must be installed with a minimum 12-in. clearance surrounding the cabinet (and gas burner on back of some smokehouses) and must conform to all local, state, and national codes and regulations (this is the owner's responsibility).

Take time to **properly level** your Grand Prize™ 3 Smokehouse after it is put in place. This will aid in proper floor drainage and help minimize undue stress in the structure during operations.

When planning your installation, consider:

1. The Grand Prize™ 3 Smokehouse drainage from the center base of the house.
2. Open door swing/floor relationships.
3. Floor drain for dripping truck outside of house.
4. Convenient grease trap connected to floor drains for byproducts of cooking operation.
5. Maneuvering of truck in and out of the house.
6. A rectangular drain trough may be preferred to 4-in. diameter floor drains.
7. Installing a ball valve or water P-trap in line at drain.
8. Access to the back of the smokehouse for heating element maintenance.

## Additional Notes:

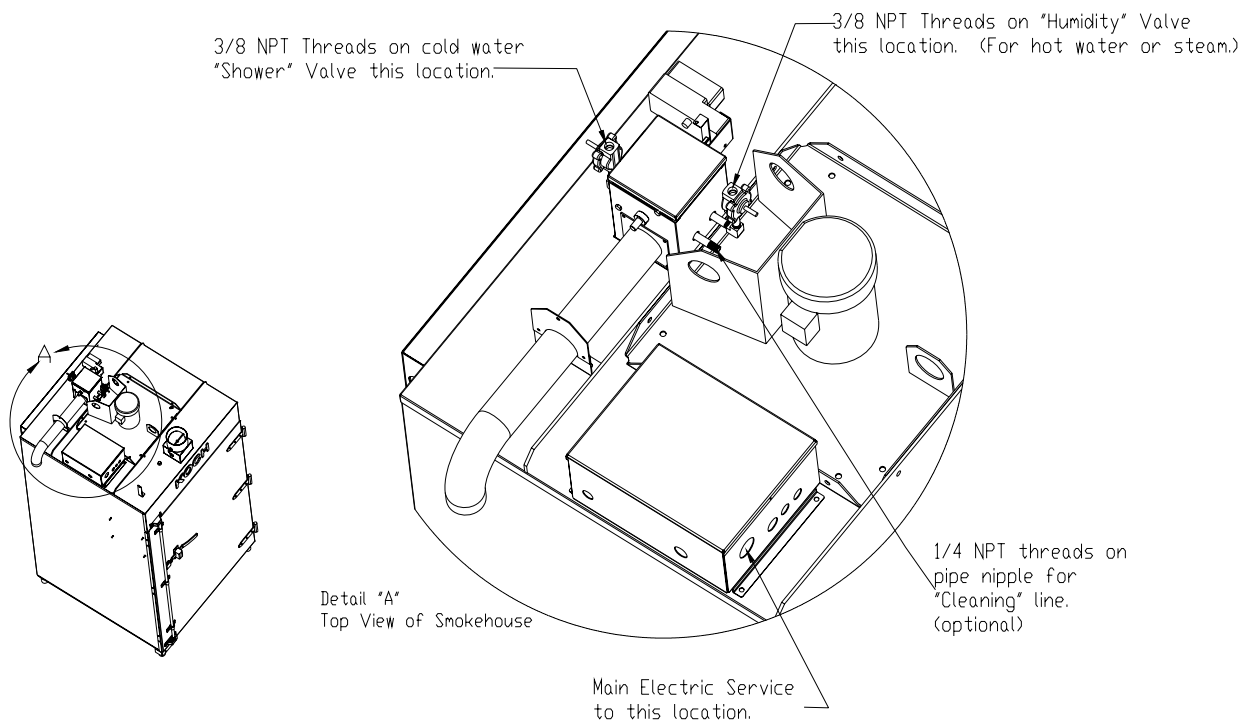
1. The Grand Prize™ 3 Smokehouse uses a portable stainless steel truck for product to be smoked or cooked. The exact capacity of the house depends upon the product and how it is loaded in (or on) the confines of that truck. Do not overload the stainless steel truck with product. Overloading the stainless steel truck could adversely affect the safety and operation of your Grand Prize™ 3 Smokehouse.
2. The Grand Prize™ 3 Smokehouse must only be equipped with genuine Koch options, accessories, and parts for proper operation and warranty coverage. Any variation without express written Koch Equipment approval voids the limited warranty provided with the equipment and may adversely affect the safety and operation of your Grand Prize™ 3 Smokehouse.
3. The Grand Prize™ 3 Smokehouse may be used with liquid smoke or no smoke at all. In this event, the natural smoke inlet must be capped to prevent the intake of uncontrolled fresh air.



# Smokehouse Connections

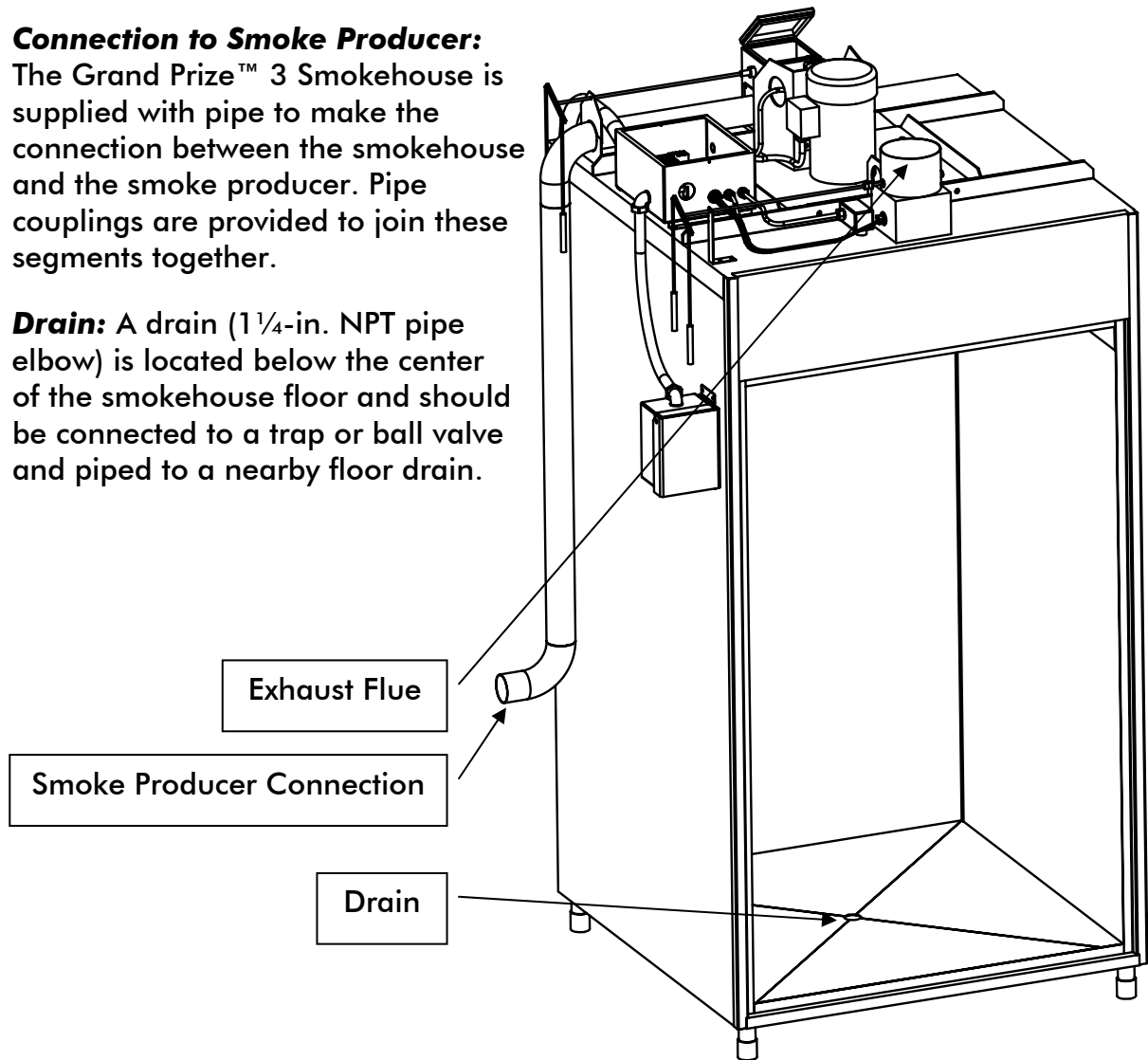
**Power:** Your smokehouse was ordered with one of several voltage options. See the identification tag (INTRODUCTION General on Page ii) as a reminder. Owner should supply a main power disconnect switch at the smokehouse location for insuring that power is off for all maintenance and cleaning operations. Owner is also responsible for circuit breaker and/or fuse protection. (See main electric service connection area on diagram below.)

**Plumbing:** There are three plumbing connections on top of the smokehouse: product shower, humidity, and smokehouse cleaning. (See the diagram below for the three locations and fitting sizes.)



# Additional Hookups

1. **Exhaust Flue:** The exhaust flue should be stainless steel "Class A," triple wall, type or equivalent, installed by a qualified company with proper support, shielding, clearances, flashing, and rain cap. The flue interior must be kept clean. The natural byproducts of cooking and smoking, tar, grease and creosote, etc. are combustible. Any buildup of these combustible materials exposes you to a severe fire hazard. To reduce the risk of fire, the smokehouse must be inspected after each use and completely cleaned once a week. The damper is manually operated by pulling the handles (on chains) located on the left side of the smokehouse.
2. **Connection to Smoke Producer:** The Grand Prize™ 3 Smokehouse is supplied with pipe to make the connection between the smokehouse and the smoke producer. Pipe couplings are provided to join these segments together.
3. **Drain:** A drain (1¼-in. NPT pipe elbow) is located below the center of the smokehouse floor and should be connected to a trap or ball valve and piped to a nearby floor drain.

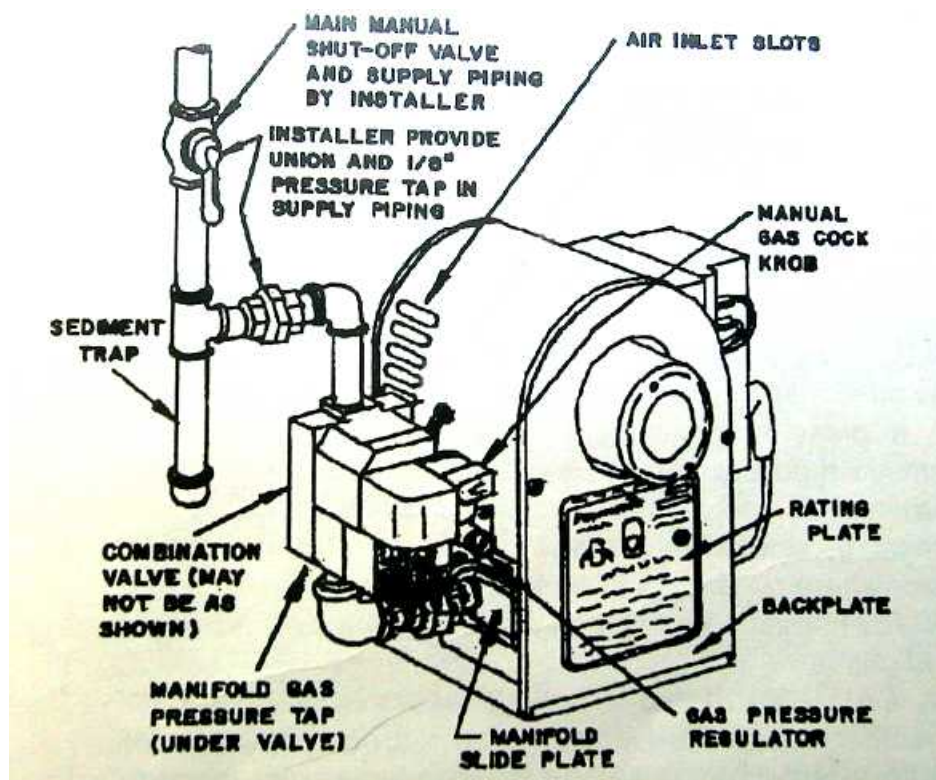


## Gas Connections/Regulations

**Ventilation:** Open utility areas of normal construction without storm windows or tight doors will normally allow sufficient air infiltration. However, if the smokehouse is located in a tight or separate room, ventilation to an open room may be required. In some cases, provision for an outside air supply near the gas burner may be necessary. Consult your installation expert for any questions about air flow requirements for the Grand Prize™ 3 Smokehouse.

**Gas Piping:** Gas pressure required for natural or propane gas should be between 5-in. and 14-in. water column. If the supply pressure exceeds the 14-in. water column, a suitable intermediate main regulator must be installed ahead of the main manual shut-off valve.

**⚠ WARNING Important:** The burner adjustments are factory set for proper operation. ***Do not attempt to make any adjustments to the burner settings.*** Any attempt to make adjustments to the burner settings will adversely affect your safe use and operation of the Grand Prize™ 3 Smokehouse and could result in death or serious bodily injury. If adjustments are required, contact the Koch Equipment LLC Service Department.



The burner gas supply piping should branch off from the main line as close to the gas meter as possible. Do not connect to the bottom of a horizontal section. Use new black pipe and malleable fittings free of cutting and threading burrs or defects.

Provide a sediment trap, union, and 1/8-in. pressure tap in piping close to burner as shown in the diagram on STARTUP Page 11. Use pipe joint compound resistant to liquid petroleum gases.

Piping must comply with local codes.

To obtain the maximum firing rate of 225 MBH, the natural and propane gas supply piping must be sized to provide a minimum of 5-in. water column pressure to the inlet of the combination valve when the burner and all other gas utilization equipment are activated.

### Supply Pipe Capacities in MBH

PIPE SIZE	TYPE OF GAS	APPROX. CAPACITY - MBH				
		LENGTH OF PIPE				
		10	20	40	60	100
1/2	NATURAL	130	90	60	50	
	PROPANE	200	145	100	80	60
3/4	NATURAL	225	190	130	105	80
	PROPANE		225	205	165	125
1	NATURAL			225	195	150
	PROPANE					225
1 1/4	NATURAL					225

(1 MBH = 1,000 BTU/Hour)

**Water/Steam Service:**

Koch recommends the use of a water filter system to minimize mineral deposits, etc. in the water lines, valves, and nozzles. This especially applies to some areas of the country where the water supply is a known cause of maintenance problems.

Owner should provide the following according to local, state, and national codes and regulations.

**Hot Water:**

The humidity system requires very hot water (+180° F) for best results in lieu of low-pressure live steam. The owner must supply a 3/8-in. insulated line direct to the solenoid valve located at the top of the house (as shown in previous drawings). The hot water is used on demand by spraying it into the fan and then on to the electric heaters, thus atomizing it into the air for maintaining the desired humidity level.

**Steam:**

For best results in humidity cooking, low-pressure (12 p.s.i.) live steam is desired for immediate humidification of the air inside the smokehouse. The results are minimum cooking schedules and possible increases in finished product yields. The Grand Prize™ 3 Smokehouse requires a 5 boiler horsepower steam generator with a flow rate of 145-lbs. steam per hour (at +212° F) for both humidity control and steam cooking (if desired). A 3/8-in. I.D. insulated steam supply line with a shutoff valve would be connected to the humidity solenoid valve. Inside the house, the humidity spray nozzle is removed when steam is used in place of hot water. A 3/8-in. I.D. drip leg for condensation equipped with a valve handy to the operator would be helpful to clear the steam line before cooking begins (run the actual condensate discharge to the floor away from the operator and toward a floor drain for safety).

**Liquid Smoke Option:**

Specific information on a Koch manual liquid smoke system (Koch 32 00 46) is covered in a separate owner's manual. If used, the owner would need to provide a minimum of 4 c.f.m. at 60 p.s.i. (2 horsepower) clean, compressed air and all necessary piping. A stainless steel tank is normally mounted on the rear of the house at center. Holes would be added at the lower center of the house for necessary plumbing. The automatic unit (Koch 32 00 48) requires electric wiring for solenoid operated air and liquid smoke valves.



## Section

## 3

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# CookMaster™ Microprocessor Controller

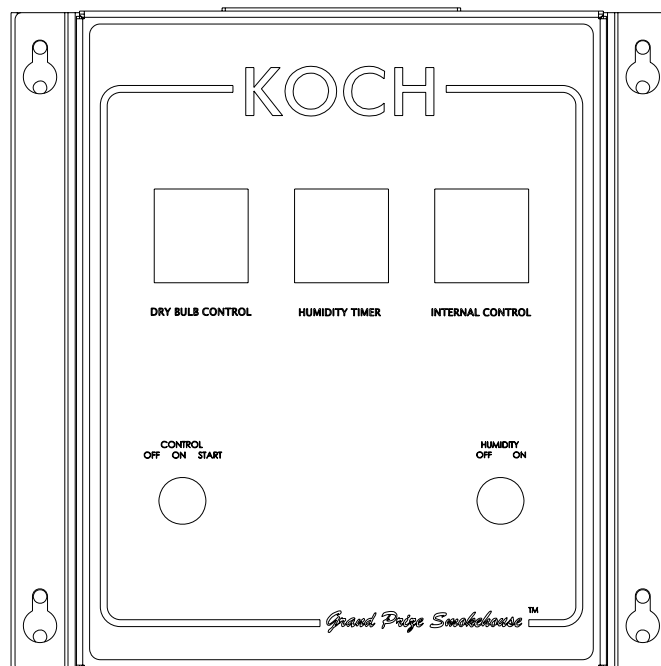


Please refer to separate manual for information pertaining to the operation of the CookMaster™ microprocessor controller.



# Grand Prize™ 3 Smokehouse Standard Controls

1. Load product into smokehouse.
2. Insert product internal temperature probe into product.
3. Close smokehouse door.
4. Set manual fresh air and exhaust dampers to desired position.
5. Rotate off/on/start switch to 'on' position.
6. Set dry bulb control to desired smokehouse operating temperature.
7. Set internal control to desired finished product temperature.
8. If humidity is desired, set humidity on and off times for desired amount of humidity, and rotate humidity switch to 'on' position.
9. Rotate off/on/start switch to 'start' position, then allow switch to spring return to 'on' position. This will start the main fan motor and begin smokehouse operation.
10. Re-adjust dry bulb control, humidity timer settings, and manual damper positions as required by the product cooking schedule.
11. Smokehouse will automatically turn off when product internal temperature reaches set point.



## Startup Assistance Option

The Grand Prize™ 3 Smokehouse is designed and built for installation by a certified plumber and electrician. We recommend owners and operators consult with their licensed professional tradesman during initial startup of the smokehouse. Additional startup assistance is available for those owners wishing a Koch Equipment technician to check the installation of the smokehouse and begin the cooking process. Please contact a Koch Equipment processing service manager for availability and rate information.

## Manual Fresh Air Damper

The Grand Prize™ 3 Smokehouse with standard control is equipped with a manually operated fresh air intake damper. Fresh air is brought into the house to dry the product surface by exhausting the humid air created by heat and evaporation of the moisture on the product surface itself. Smoke will not be absorbed into most products until its surface is slightly dry to the touch. Moisture is kept in the house by keeping the damper closed.

## High Temperature Safety Limit Switch

Located on the top of the smokehouse (left side of exhaust duct), this switch shuts off the electric power should the air in the ductwork exceed a preset maximum desired operating temperature. The switch will reset itself after the air temperature is lowered, the cause of the higher temperature is found, and the problem is resolved. (The house must then be restarted manually.)

## Humidity System Operation

The standard control includes a simple method for adding moisture to the smokehouse environment by spraying very hot water (or steam) into the heater/fan area on an adjustable time cycle. The control is numbered. The orange mark (adjustable) is for humidity 'on' setting. The yellow mark is for the humidity 'off' setting. There are two 'screwdriver' type settings that can be adjusted. The one on the lower left is to change the scale of reference, such as range. The lower right adjustment changes the units, such as to change from a reading in seconds to a reading in minutes. Note that the humidity on/off switch must be 'on' for this controller to function. In short, the longer the time setting, the more humidity you will get.

For dry products such as beef jerky, the humidity should be at "0" with the fresh air damper opened to bring in dryer air and exhaust the moist product air. Remember . . . an open damper also loses heat.

Also, if steam is used for humidity, the spray nozzles must be removed.

# Product Cook Schedules

Koch Grand Prize™ 3 Smokehouses are available with a variety of controls and accessories, plus either hot water or low pressure steam for humidity. Due to these variations, the suggested product cook schedules\* are to be used only as a guideline for developing your own exact schedules. Local customs, tastes, and processing techniques should be considered in developing your particular schedules.

All products manufactured, marketed, or sold in the U.S. must conform to USDA regulations to provide your customers with the finest and most wholesome products available. Koch Equipment assumes no liability for owner's products resulting from the use of this equipment or product cook schedules provided.

\*Please refer to separate booklet for information pertaining to the product cook schedules.

## Natural Smoke Product:

1. Keep the smokehouse and all accessories clean. Do not allow the buildup of tar, creosote, or grease in any part of the equipment. These byproducts of the cooking and smoking process are combustible. Any buildup of these combustible materials exposes you to a severe fire hazard. We recommend a thorough inspection of the smokehouse after each use and a complete cleaning once a week to reduce the risk of fire.
2. Follow the comments on each product schedule.
3. All products must be just dried on the surface before natural smoke is introduced into the house.
4. If heavier smoke is desired, extend smoke time such as when the schedule reads "maybe" (or adjust your smoke generator).
5. The manual damper controls the amount of fresh air allowed in the house and, therefore, the amount of air exhausted for drying.

## Liquid Smoke Product:

1. Keep the smokehouse and all accessories, including the liquid smoke atomizing nozzle, clean. These natural byproducts of cooking and smoking, including tar, grease, and creosote, are combustible. Any buildup of these combustible materials exposes you to a severe fire hazard. To minimize the risk of this fire hazard, the smokehouse and all accessories must be thoroughly inspected after each use and completely cleaned once a week.
2. Follow the comments on each product schedule.

3. All products must be just dried on the surface before liquid smoke is atomized inside the house.
4. Too heavy of an application of liquid smoke can impart a bitter flavor to the product. Experiment carefully with additional liquid smoke time and different types of liquid smoke. Follow manufacturer's instructions carefully. Handle with care, use only with stainless steel material.
5. When atomizing the liquid smoke, both the smokehouse fan and the electric heaters must be turned off. A dwell period follows to allow the smoke to dry on the product.
6. The manually operated fresh air damper should be fully closed during the liquid smoke application(s) and dwell time(s).
7. Owner must provide dry, clean, filtered compressed air, approximately 4 c.f.m. at 60 p.s.i. (2 horsepower compressor required, minimum), plus necessary piping.

## Smoke Producer

### Set-Up Instructions:

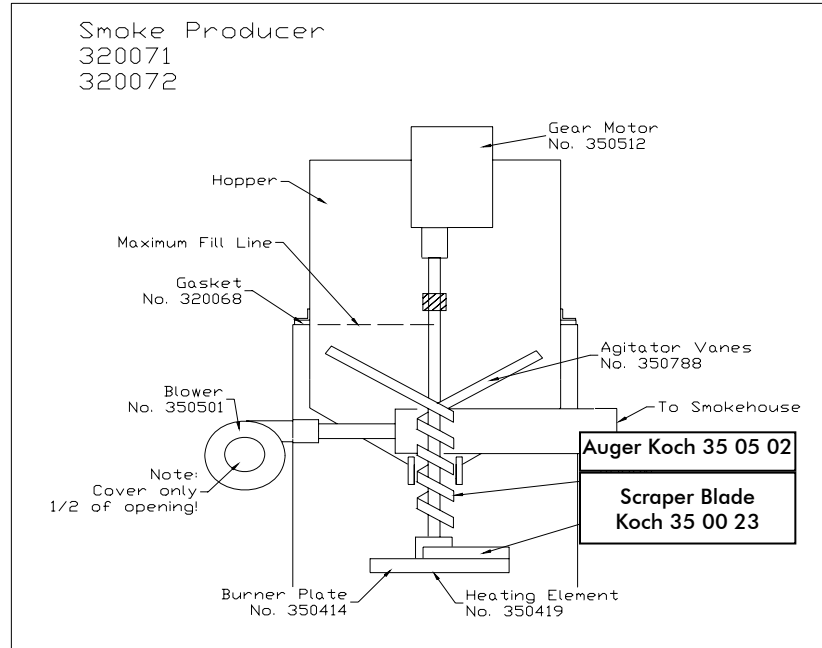
1. Place the smoke producer in position on the control side of the Grand Prize™ 3 Smokehouse. Connect the smoke inlet pipes between the producer and the smokehouse after both units have been leveled.
2. Connect a cold water supply line (1/4-in. copper) to the fire safety solenoid valve on the side of the smoke producer.
3. Connect power cord provided with smoke producer to AC receptacle (120-volt, 15 amps).
4. If smokehouse is equipped with a CookMaster™ microprocessor control, connect control wires provided with unit to the smoke producer as shown on OPERATIONAL Page 21.
5. The smoke producer is equipped with a cycle timer that operates the auger drive motor intermittently. The timer is preset at the factory for approximately 20% on and 80% off (refer to OPERATIONAL Page 22). This percentage can be adjusted to increase or decrease smoke production. See timer instructions on OPERATIONAL Page 22.
6. The small blower mounted on the side of the smoke producer has an air inlet cover plate. This **cover plate must be opened approximately half way** when the producer is in operation. If the cover plate is kept closed, there will be a poor circulation of smoke within the cabinet, and there will be excessive leakage around the seams of the smoke producer itself.
- 7. The safety switch is factory set – do not adjust.**

## Operating Instructions:

1. Load the hopper with sawdust.
2. If smokehouse is equipped with a manual control:
  - a. Turn the burner switch to the 'on' position.
  - b. After burner plate is fully heated (approximately fifteen minutes), turn the feeder switch to the 'on' position.
3. Smoke production begins. If not, check to see if scraper blade is turning on top of the burner plate.
4. The burner plate can be adjusted up or down. Be sure that the blade is not jammed tightly against the burn plate. If sawdust "flare-up" becomes a problem, the burner plate should be moved down between 1/8-in. and 1/4-in. below the scraper blade. This will allow a build-up of ash on the burner plate, which in turn keeps the fresh sawdust away from the hot burner plate.
5. Screening of sawdust is strongly recommended. The use of wood chips or strips of wood is not recommended, as they tend to clog the auger feeder.
6. **Remove the ashes daily.**
7. The hopper section should be removed for cleaning at the end of each day. Use Koch "Hi-Voltage" cleaner for best results. Use a wire brush to clean the burner plate. While the hopper plate is removed, check that the tube that directs air from the blower out of the smoke producer is in position. This is important for proper operation.

# Smoke Producer for Microprocessor Controlled Smokehouse

## Micro Conversion Kit, Koch 35 00 27



On/Off Timer  
Koch 35 05 17

Power Cable and  
Signal Cable from  
Smokehouse

Valve, Koch 80 01 34  
Coil, Koch 80 01 35

High Temperature Limit Switch  
Koch 35 07 97

**KOCH**  
EQUIPMENT

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# Smoke Producer

## CYCLE TIMER FOR GRAND PRIZE SMOKE PRODUCER

WIRING CAN BE TO EITHER SWITCH (1 OR 2)  
USE COMMON AND OPEN CONTACT POINTS

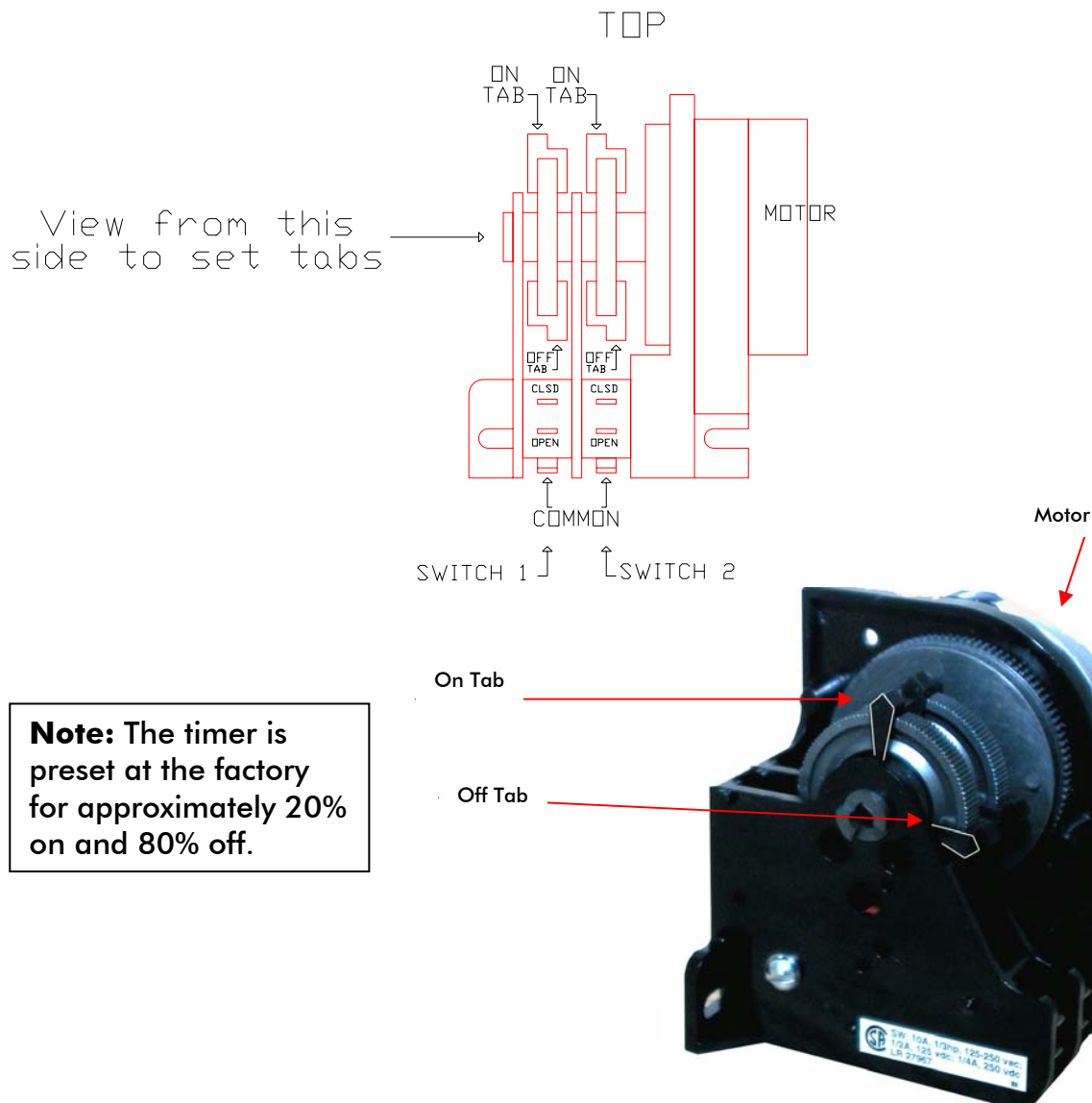
TO ADJUST TIMER:

ROTATE WHEELS COUNTER CLOCKWISE UNTIL "ON" TAB IS IN THE 12:00 (TOP) POSITION

FOR 25% ON AND 75% OFF: MOVE "OFF" TAB TO THE 3:00 POSITION

FOR 50% ON AND 50% OFF: MOVE "OFF" TAB TO THE 6:00 POSITION

FOR 75% ON AND 25% OFF: MOVE "OFF" TAB TO THE 9:00 POSITION



On/Off Percent Time, No: 35 05 17





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4

MAINTENANCE

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# Maintenance and Cleaning

A thorough preventive maintenance program is an owner's best protection against the risk of personal injury and unexpected downtime. The natural byproducts of cooking and smoking (tar, grease, creosote, etc.) are combustible. Any buildup of these materials exposes you to a severe fire hazard. To reduce the risk of fire, the Grand Prize™ 3 Smokehouse should be thoroughly inspected after each use and completely cleaned once a week. Inspection and cleaning should include, but is not limited to, all duct work, natural smoke pipe, and exhaust flue of the smokehouse. Sanitation experts should be consulted regarding proper cleaning methods. Bacterial testing should be done to insure that each component of the Grand Prize™ 3 Smokehouse is properly cleaned. Failure to properly clean and maintain the smokehouse could result in contamination of the product and buildup of combustible materials resulting in the risk of bodily injury or death. **KEEP IT CLEAN TO MINIMIZE THE RISK OF FIRE AND CONTAMINATION.**

We recommend that a schedule be setup to check all moving parts for wear and/or misalignment on a monthly basis.

Given all of the various ways equipment is used in different environments, Koch recommends the owner consult sanitation experts on how to properly clean each piece of machinery in their plant and to do bacterial testing to insure that the equipment is cleaned properly.

Check the ductwork, natural smoke pipe, and your exhaust flue for tar and creosote buildup frequently. **KEEP IT CLEAN.**

## Introduction:

The Koch Grand Prize™ 3 Smokehouse is plumbed with clean-in-place lines and nozzles in the overhead return duct area. A pressurized system is required to force cleaning, rinsing, and sanitizing solutions into these lines.

The optional natural smoke producer should be cleaned at least as frequently as the smokehouse and more frequently in some cases (including the smoke pipe).

**Frequency:**

Cleaning frequency and intensity depends upon a number of factors including type of smoke used, smoke concentration, type of product, frequency of usage, desired sanitation level, type of cleaner, and cleaner concentration. For normal operation, a thorough weekly cleaning is recommended with a basic daily cleanup procedure and inspection following each use. The smokehouse may require additional, more frequent cleaning depending upon individual use.

Initially, after thirty hours of smokehouse operation, follow the steps outlined below and then check the effectiveness on the interior of the smokehouse, inside the supply ducts and the fan and alternating damper area. If any traces of tar, etc. are detected, the concentration or application time of the cleaner should be increased or a cleaner specifically designed for tar removal should be used. In some cases, manual cleaning with a stiff bristled brush is required.

***The type of cleaner used must be compatible with Type 304 stainless steel and silicone rubber gasket and seals.***

# Cleaning Procedures

- A. Always use eye and hand protection, along with proper clothing and/or heavy apron, when cleaning and using the smokehouse.
- B. In preparation for cleaning the smokehouse, remove heavy deposits of grease and fat from the floor of the smokehouse to keep the drain from clogging. Be sure the drain valve or trap is open. Insert the smokehouse trucks, smokesticks, and racks in smokehouse and clean at the same time (if desired).
- C. Set the smokehouse control to +140° F. temperature and allow the smokehouse to remain at this temperature for ten to fifteen minutes. Set the humidity to maximum (wet heat softens deposits, dry heat hardens).
- D. Introduce pressurized cleaner into the cleaning line by use of a quick-connect coupling. Allow cleaner to flow for two or three minutes depending on how soiled the smokehouse appears. You will probably have to refill the tank with cleaner several times.
- E. Turn off the smokehouse control and check progress of the cleaning. Repeat step "C" if necessary. A brush or scraper may be used on heavily soiled areas of the smokehouse, trucks, smokesticks, and/or racks. Once the smokehouse is clean, close the door and restart the control and leave it at the previous setting ("B").
- F. To rinse, connect hot water to cleaning line and allow water to run long enough to completely rinse all residue from system and smokehouse. Operator should finish up by using hand-held hose.
- G. Turn off control and allow smokehouse to dry to your satisfaction.

**Note:** Always sanitize your house in accordance with the cleaning materials purchased or supplied locally. Use only USDA accepted products. If you have questions, ask your inspector or your supplier.

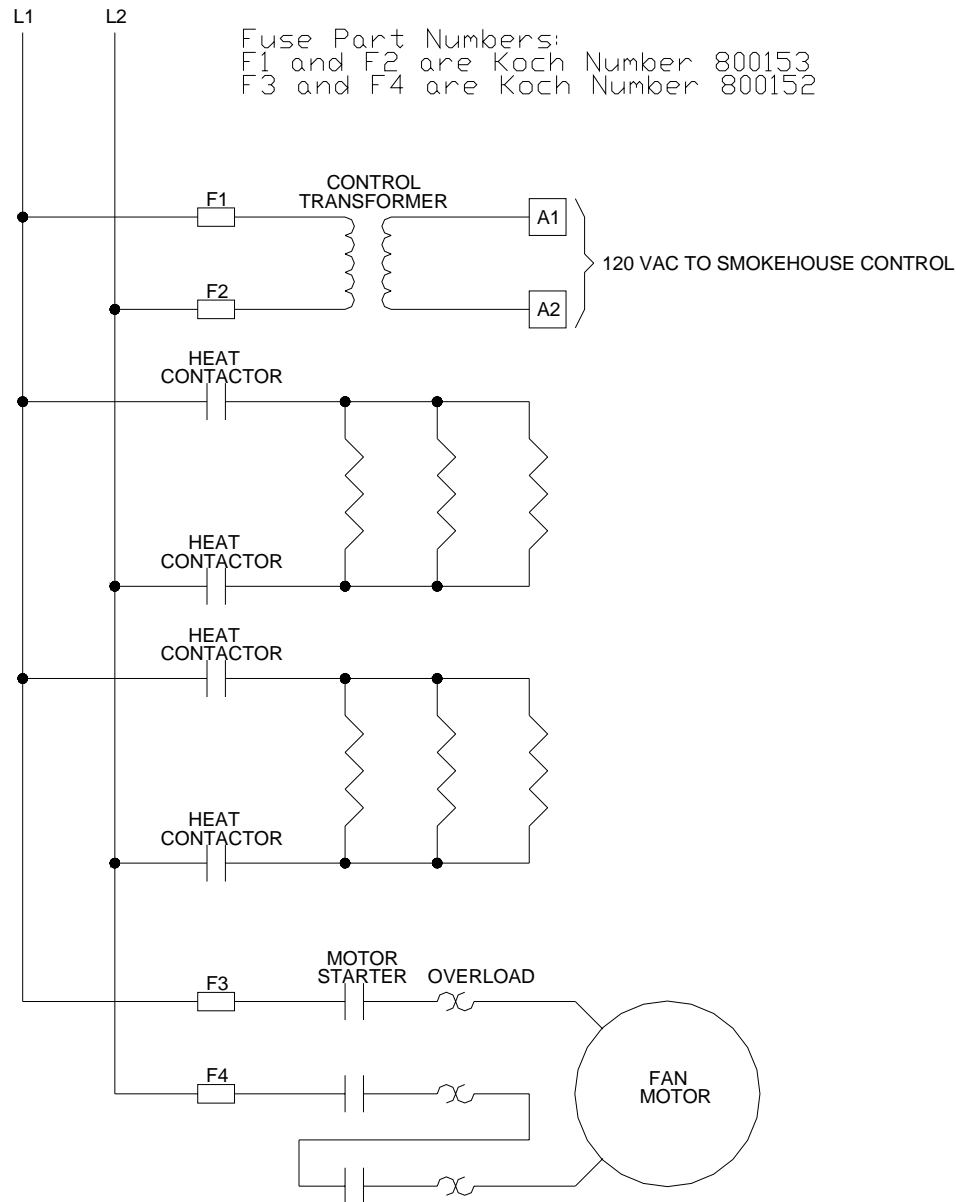
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## SCHEMATIC

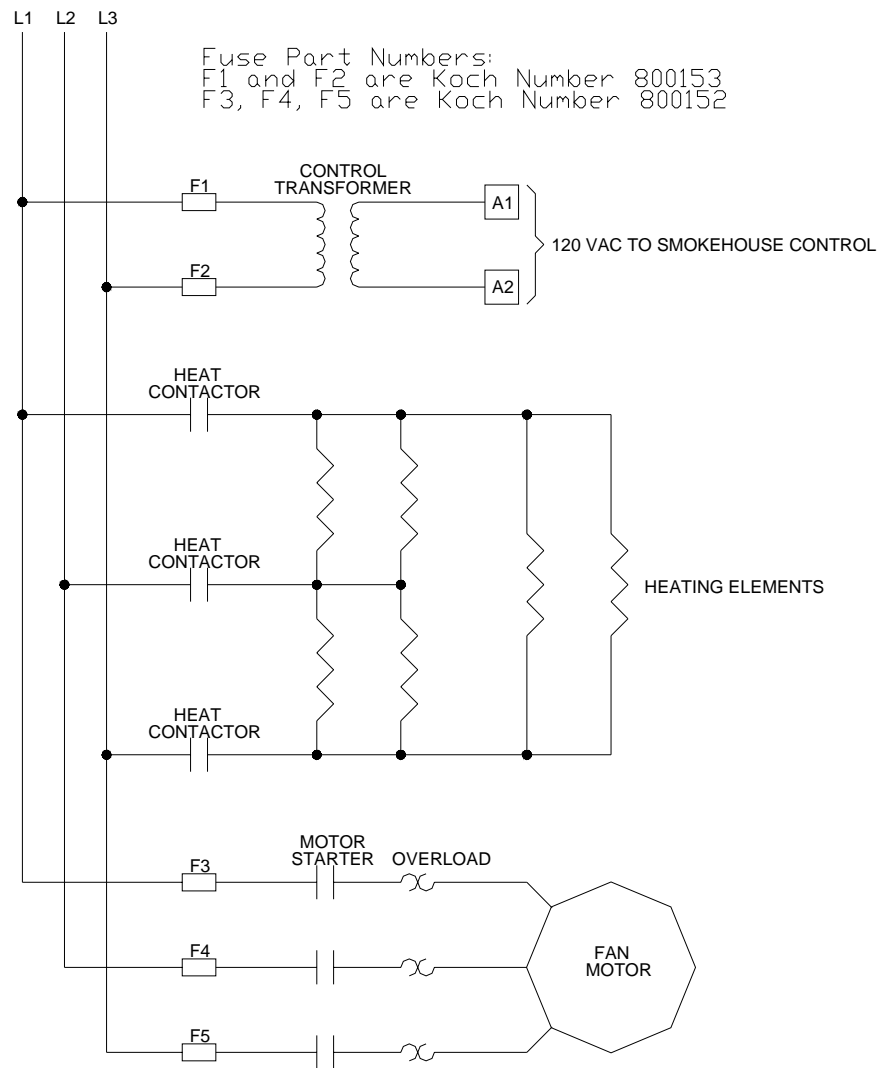
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# Single Phase Power Schematic



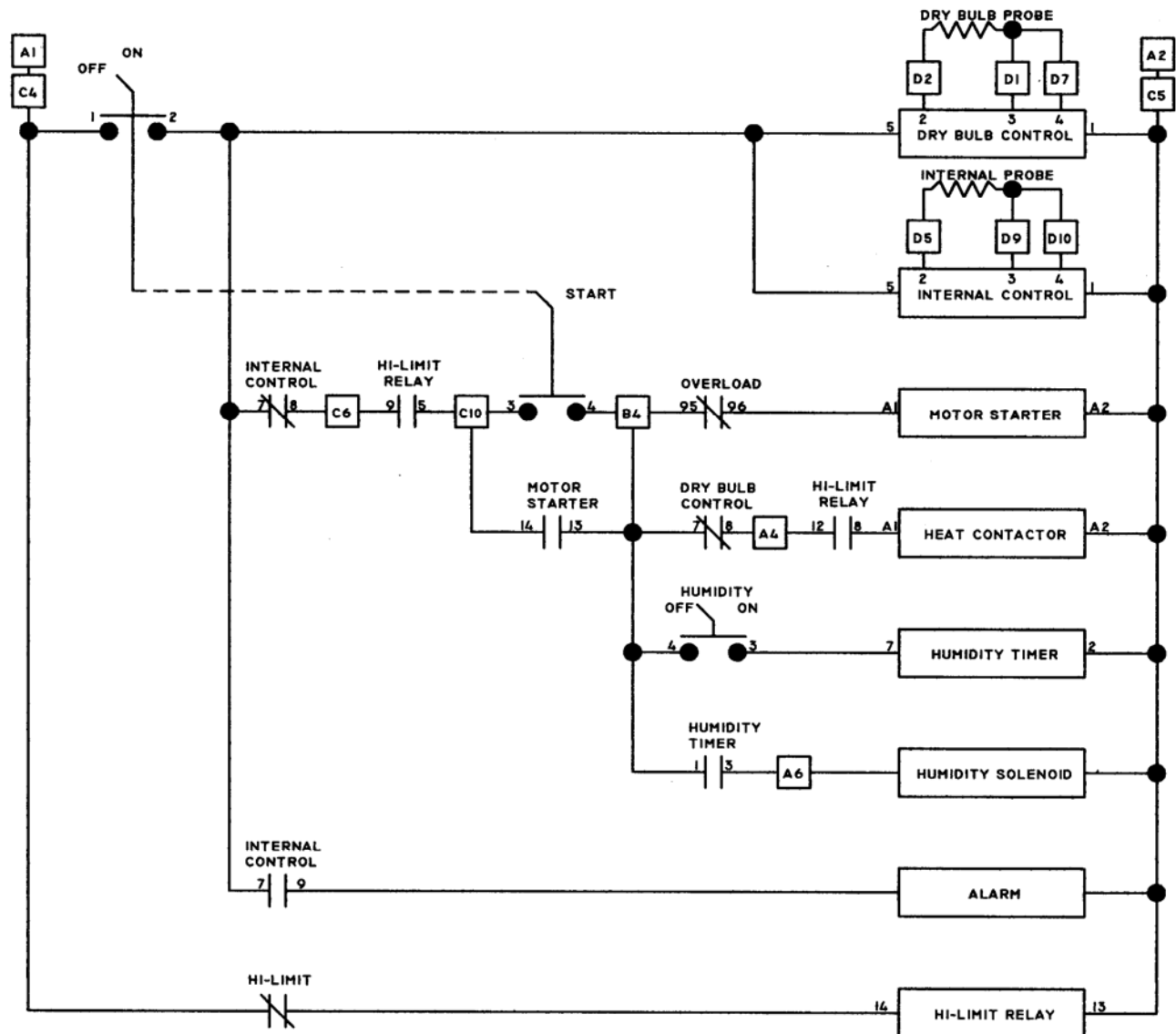
WIRING DIAGRAM FOR 1 PHASE POWER

# 3 Phase Power Schematic



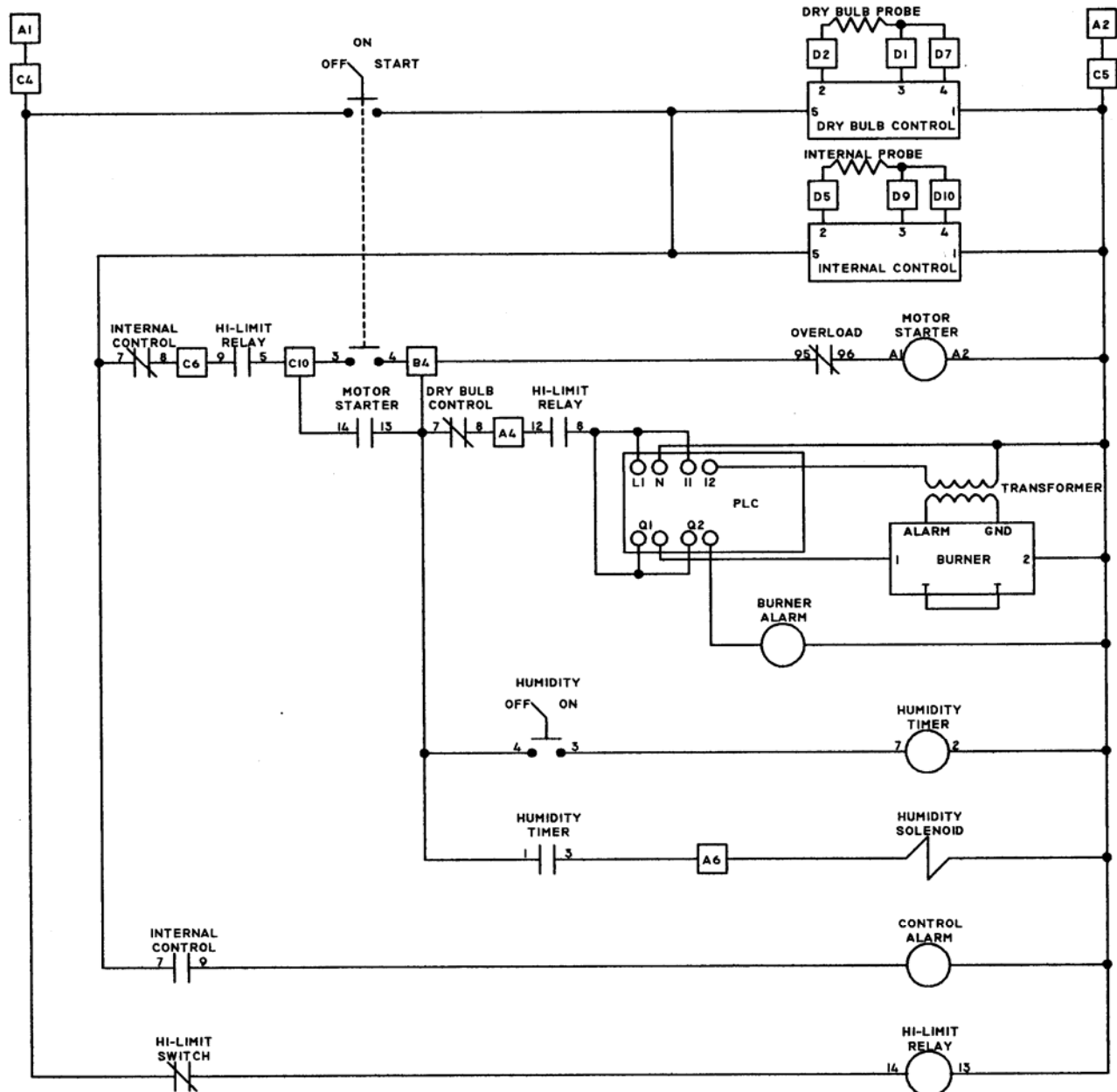
WIRING DIAGRAM FOR 3 PHASE POWER

# Standard Control for Grand Prize™ 3 Electric Smokehouse



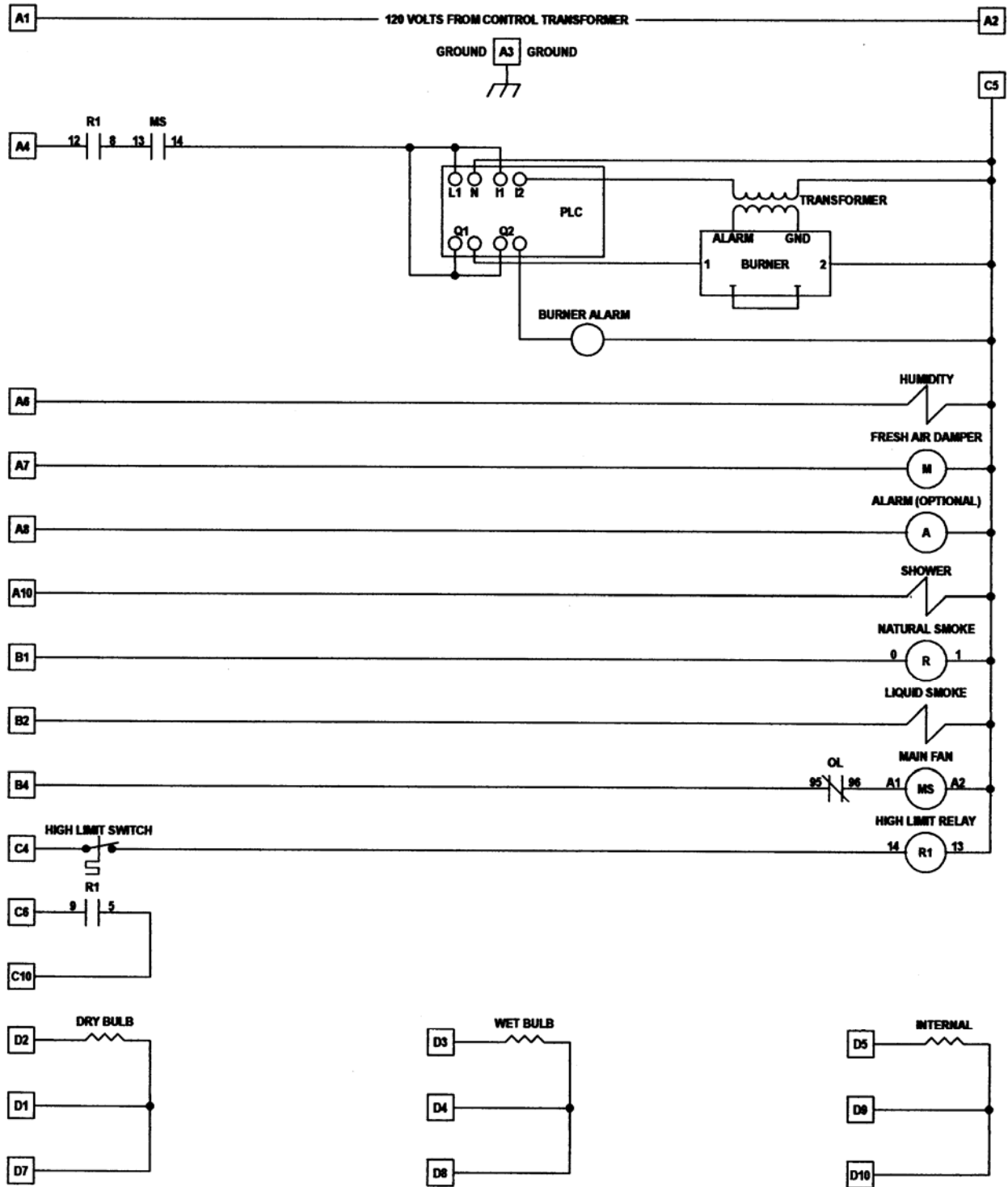


# Standard Control for Grand Prize™ 3 Gas Smokehouse

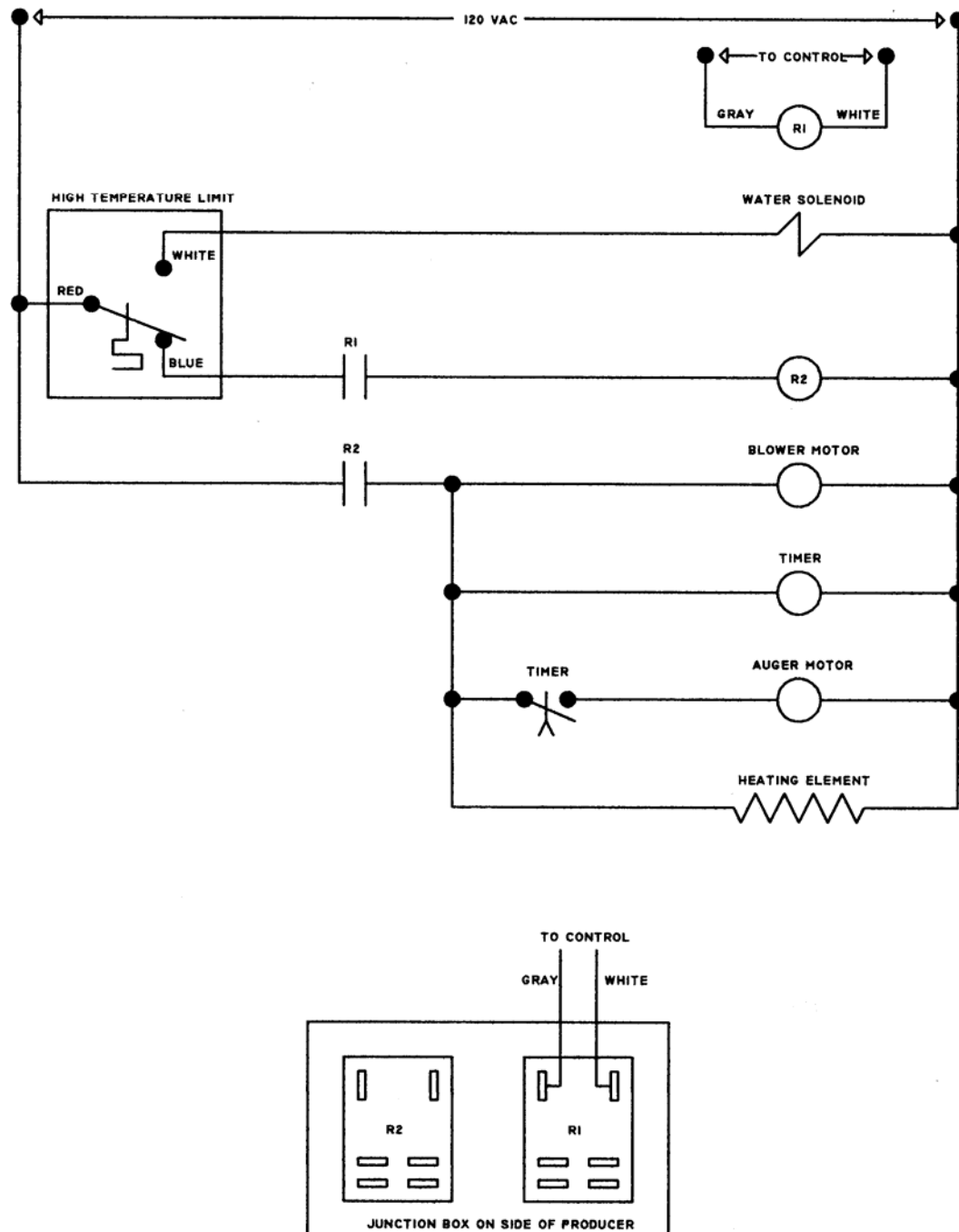




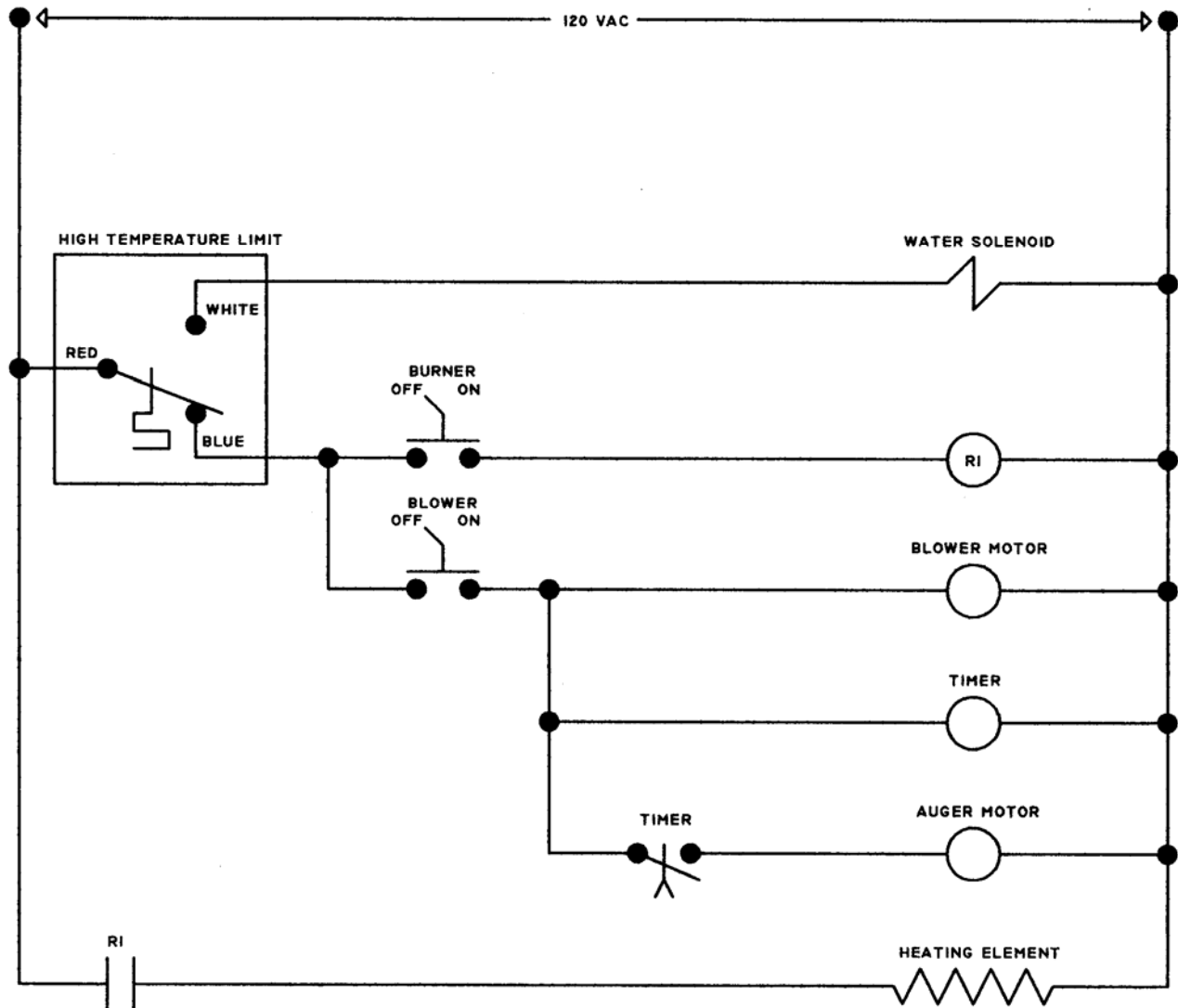
# Microprocessor Control for Grand Prize™ 3 Gas Smokehouse



# Smoke Producer for Grand Prize™ 3 Smokehouse with Microprocessor Control



# Smoke Producer for Grand Prize™ 3 Smokehouse with Standard Control



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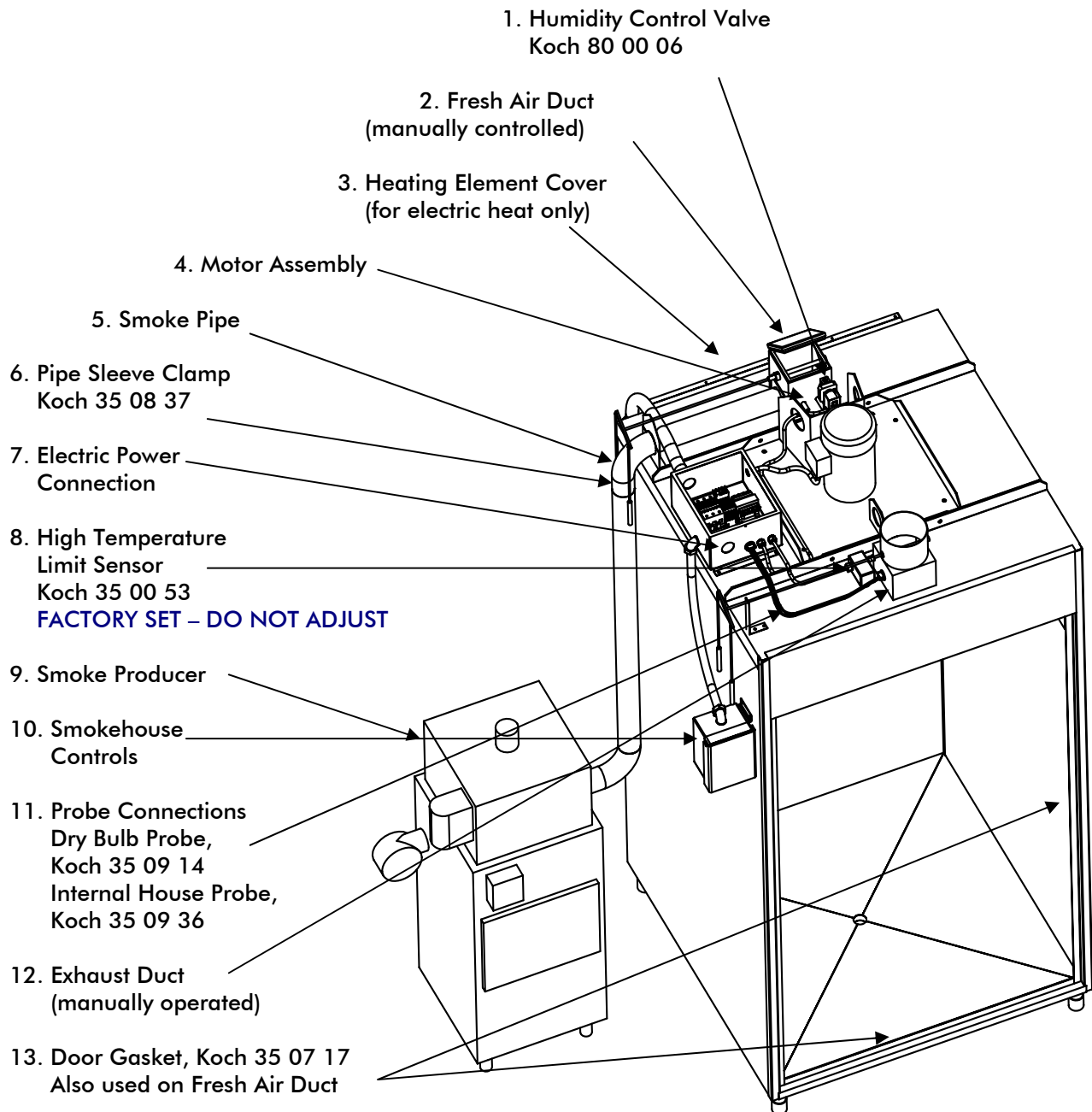
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## PARTS

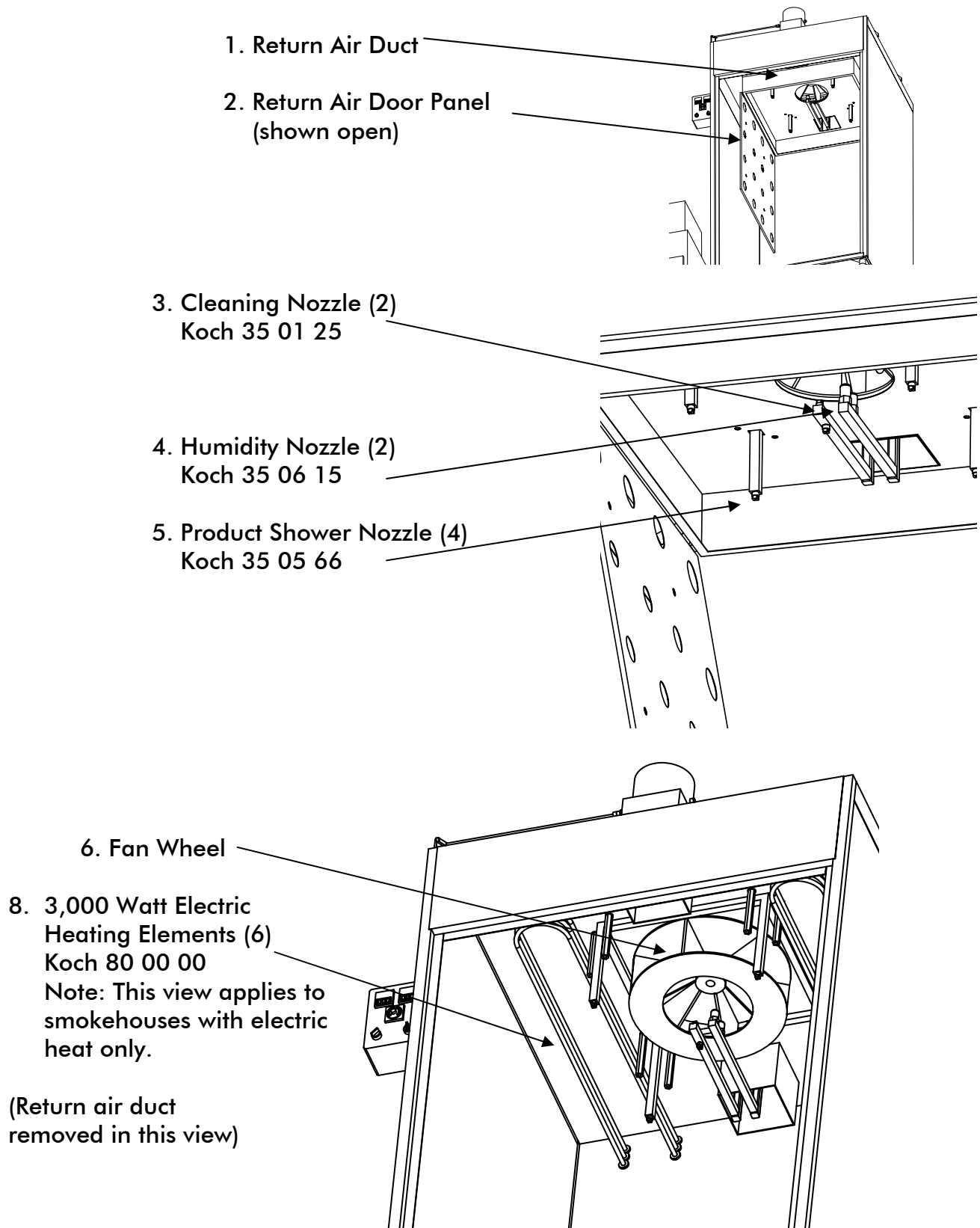
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# General Part Identification

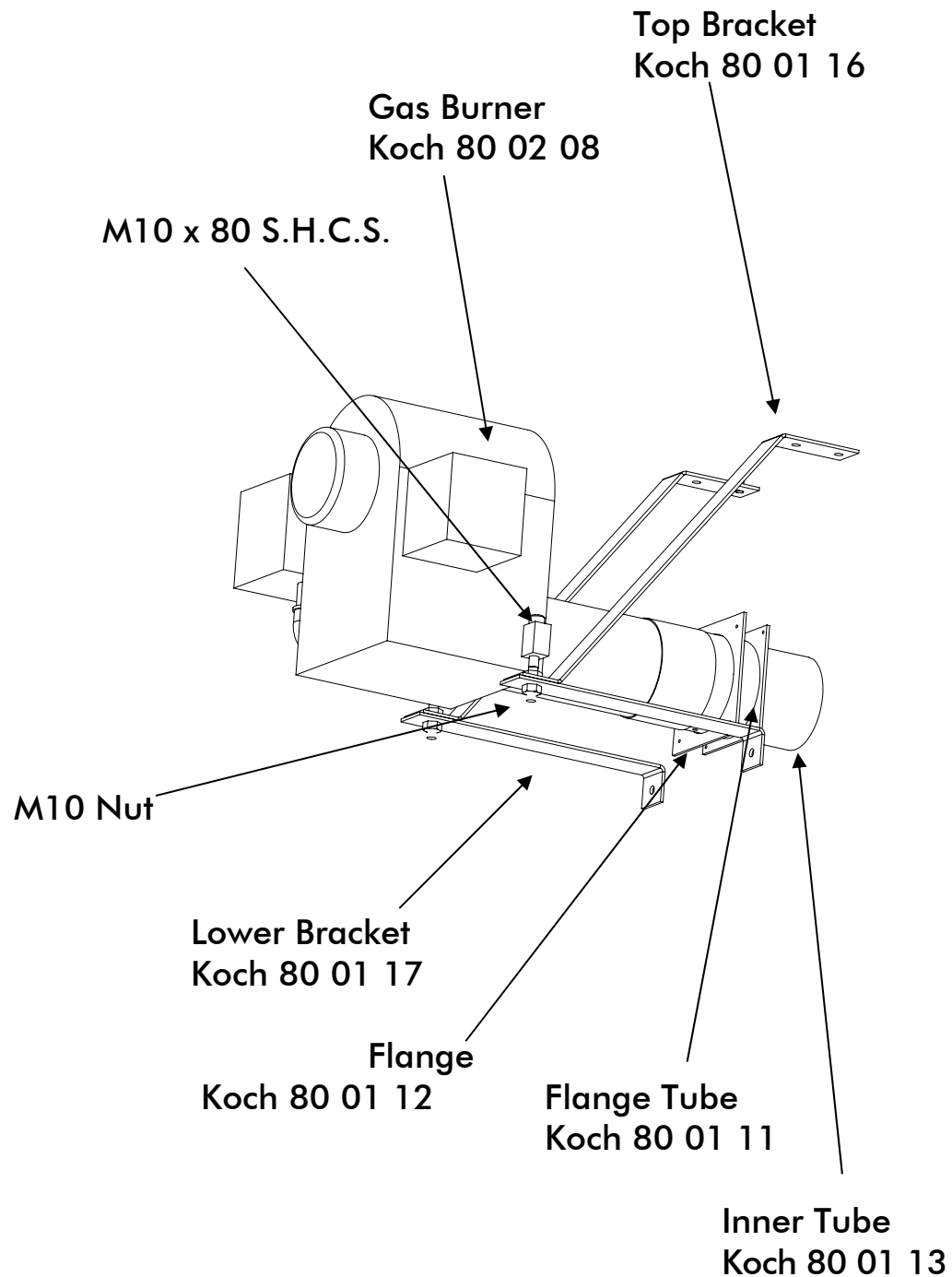




# General Part Identification

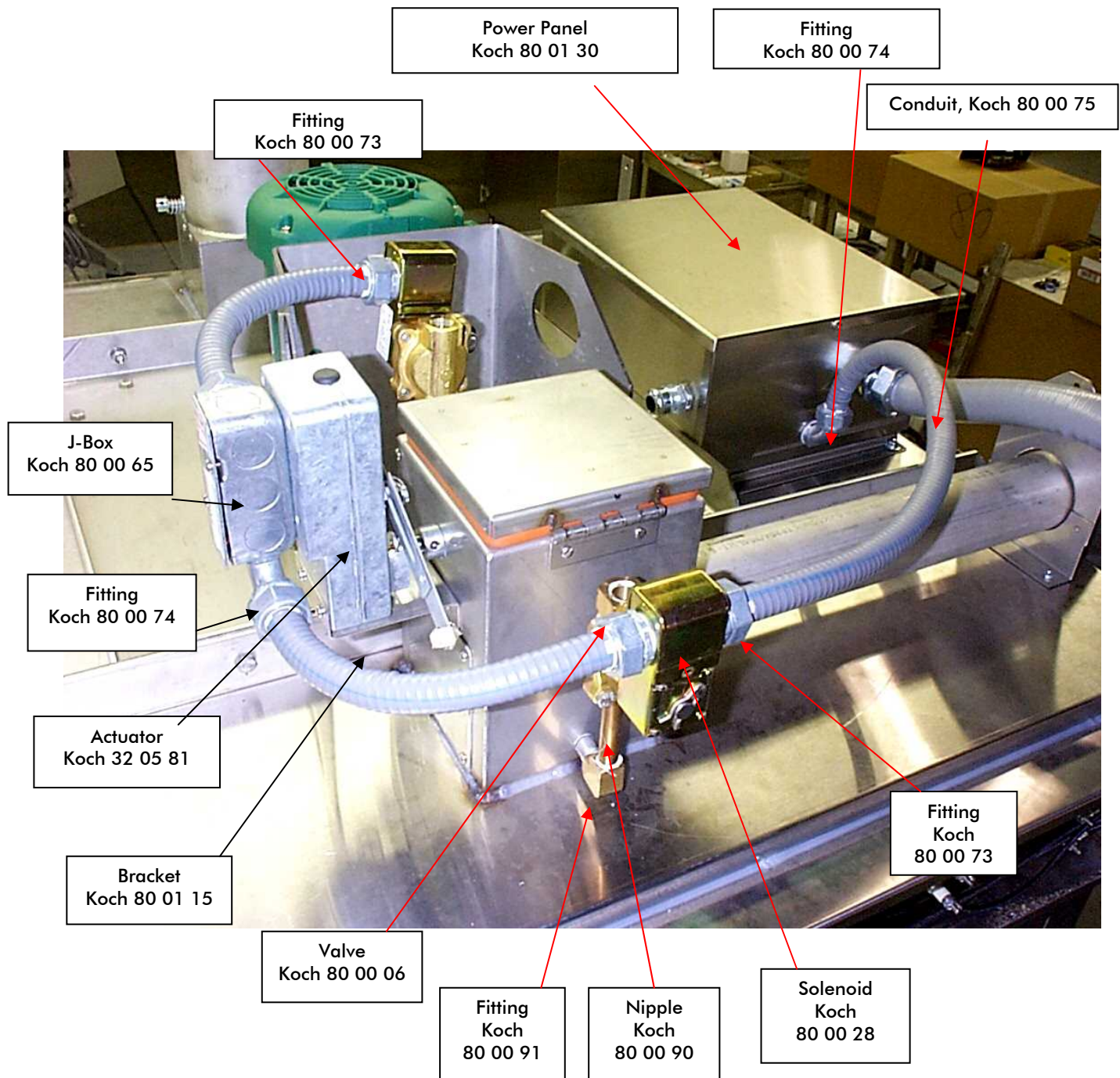


# General Part Identification: Gas Burner Option



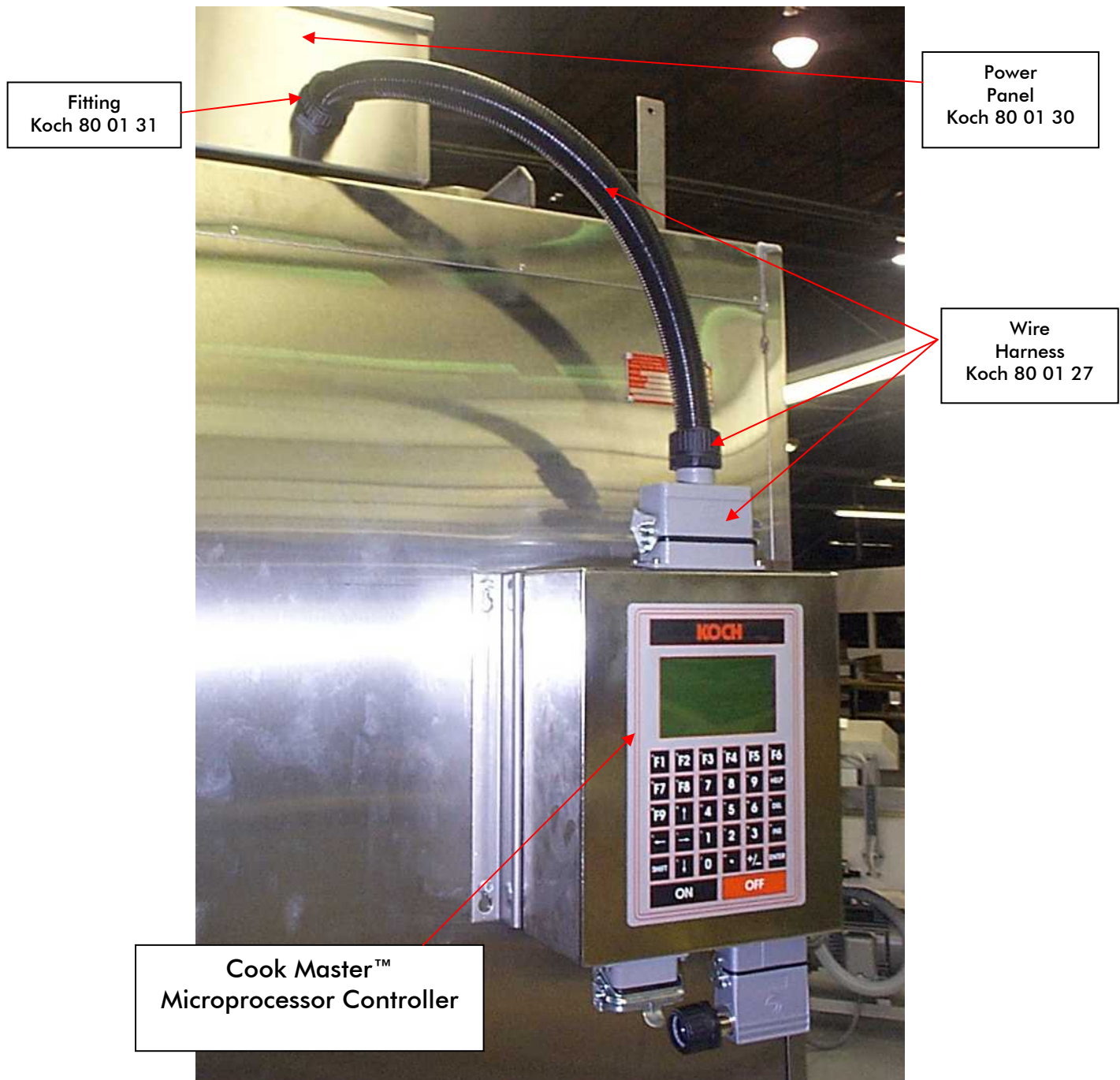
# Part Identification

## Microprocessor Power Package No. 35 00 37



# Part Identification

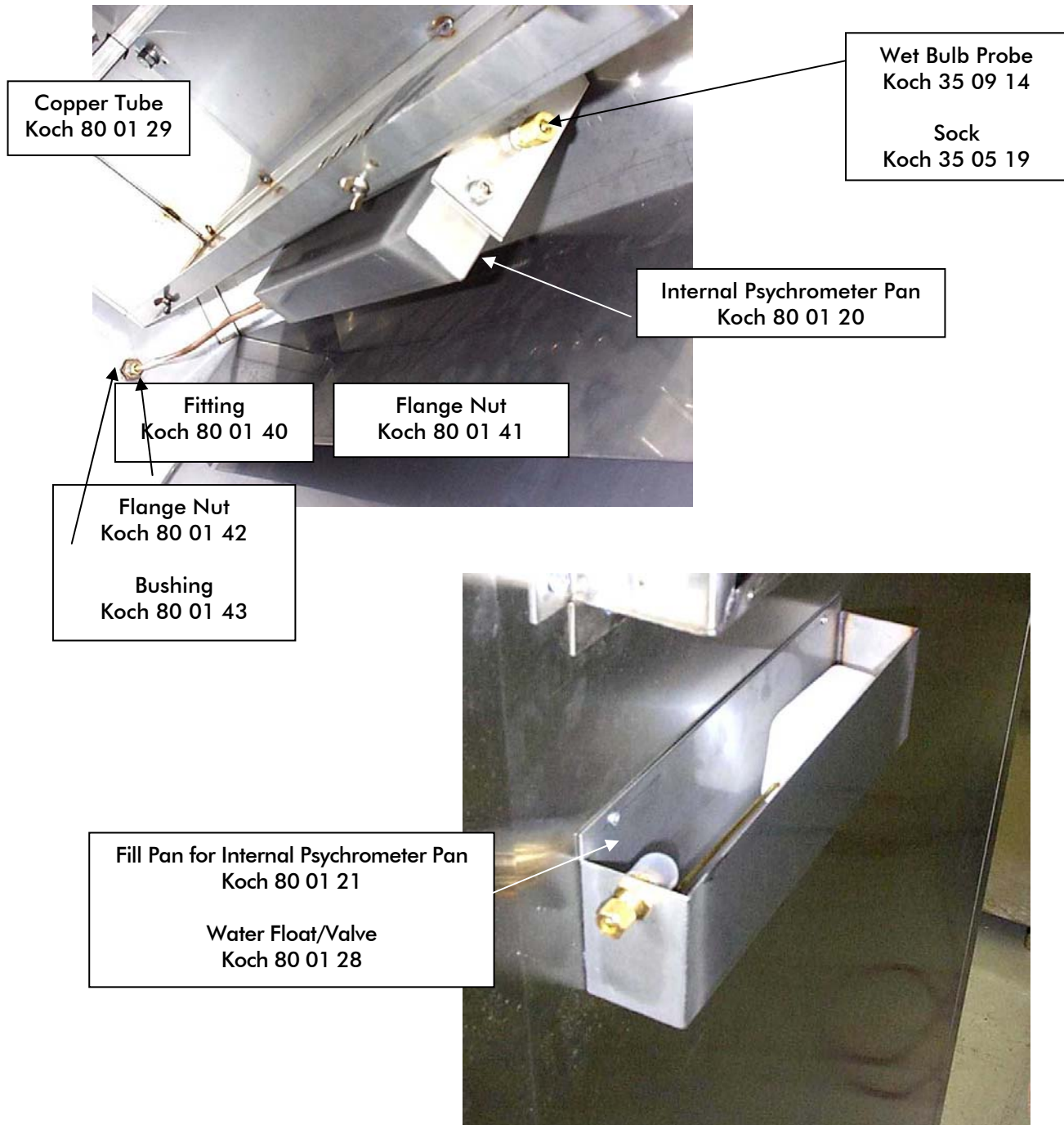
## Microprocessor Controlled Smokehouse





# Part Identification

## Component for Microprocessor Controlled Smokehouse



## Recommended On-Hand Spare Parts

Koch Nr.	Description	Quantity
<b>All Grand Prize™ 3 Smokehouses:</b>		
35 09 14	Probe, wet/dry	1 each
35 09 36	Probe, internal product temperature	1 each
80 01 52	F3, F4, F5 Fuse, MDL-7, 250V, 7 amp	1 box
80 01 53	F1, F2 Fuse, MDL-2, 250V, 2 amp	1 box
<b>CookMaster™ Microprocessor Control:</b>		
35 05 19	Wet socks	1 pair
<b>Chart Recorder:</b>		
35 09 41	Chart pens, red (five per pack)	1 pack
35 09 42	Chart pens, green (five per pack)	1 pack
35 09 38	Charts, 30/230° F, 24-hour, 10-in. (box of 100)	1 box
<b>Natural Smoke:</b>		
35 04 19	Heating element for smoke producer	1 each
<b>Liquid Smoke:</b>		
35 07 00	Gasket for liquid smoke nozzle	6 each
<b>Electric Smokehouse:</b>		
80 00 00	Heating element, 3,000 Watt	1 each
<b>Gas Smokehouse:</b>		
35 06 68	Electrode assembly	1 each

## Frequently Ordered Parts

Date	Part Nr.	Qty.	Part Ordered

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## Section

## 7

## SERVICE HISTORY

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## Service History

Date	Service Provided



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