



LABCONCO CORPORATION, 8811 PROSPECT, KANSAS CITY, MO. 64132, 816—333-8811

INSTRUCTION MANUAL

LABCONCO 47, 59, 70 PERCHLORIC ACID FUME HOODS

MODEL NO'S
47807 59807 70807

<u>MANUAL NO.</u>	<u>DATE</u>	<u>REV.</u>	<u>REVISED PAGES</u>	<u>ECO NO.</u>
47429	7-30-73	Released		1864
47429-01	8-30-74	A	7 and 9	2136
47429-02	9-24-74	B	6, 7, 8, 9, 10	2161
47429-03	5-28-76	C	4	2576
47429-04	6-9-76	D	4	2580
47429-05	4-19-77	E	3	2822
47429-06	9-16-77	F	1, 2, 3, 4, 5, 9, 10	2910
47429-07	8-21-78	G	1, 3	3164
47429-08	11-2-78	H	4	3192
47429-09	11-2-78	I	1, 5	3354
47429-10	8-2-79	J	A11	3416
47429-11	8-8-80	K	1, 2, 3, 4, 5, 7, 8, 9, 10, 11	3734

NOTE: PRODUCT DESIGNS ARE SUBJECT TO CHANGE WITHOUT NOTICE.



LABCONCO CORPORATION, 8811 PROSPECT, KANSAS CITY, MO. 64132, 816—333-8811

Dear Customer:

This letter is to insure that you get the best performance from your new Labconco product. We want to be sure you are satisfied. If damage has occurred in shipping, the customer must file a claim with the carrier IMMEDIATELY! DO NOT return any items to Labconco Corporation without written authorization from the factory. Your local laboratory apparatus dealer can assist you, and should be contacted if problems occur. If satisfaction is not obtained, contact Labconco Corporation.

We know that even the best products require service from time to time. So if this is ever true of your Labconco product, call the service department of the dealer from whom you purchased the unit. He is trained to make whatever might be wrong with your unit right. If you need additional help, call us at (816) 333-8811 and ask for our Service Manager. We will make sure that you get all the help you need.

We suggest you keep this letter with your instruction manual. It's nice to know you are protected, even though you may never need it.

Sincerely,

LABCONCO CORPORATION

Enclosure

TABLE OF CONTENTS

	<u>Page</u>
I. Introduction	1
A. General Description	1
B. Labeled Diagram of Unit	2
II. Installation	1
A. Specifications	1
B. Dimensional Drawing	4
C. Installation Instructions	3
1. Location	3
2. Connections	5
a. Duct Installation	5
b. Front Panel Connection	5
c. Plumbing Connections	5
III. Normal Operation	6
A. General Operation	6
B. Switch Control Operation	7
IV. Routine Maintenance	8
A. Sash Care	8
B. Trouble Shooting	8
V. Appendix	9
A. Replacement Parts	9
B. Electrical Schematic	10
C. Plumbing Schematic	11

I. Introduction

A. General Description

The Labconco Stainless Steel Perchloric Acid Fume Hood is designed for handling perchloric acid fumes in a wide range of laboratory applications.

Constructed of one-piece seamless, nonreactive stainless steel with coved interior corners, the hood includes a washdown system which prevents accumulation of perchloric salts or other potentially hazardous residue.

B. Labeled Diagram of Unit

(See Page 2)

II. Installation

A. Specifications

47804 Perchloric Acid-47 Fume Hood with Vapor Proof Lights and Fixtures.
The dimensions are 47" x 29" x 59" high. It is shipped assembled and wired for 115 volt, 60 Hz, AC. All 11-inch ID 316 stainless steel connection is provided on top of the hood for connection to the exhaust system. The static pressure loss through the hood does not exceed .2" at 100 fpm face velocity (720 cfm) or .3" at 125 fpm face velocity (900 cfm). The hood is provided with four service fixtures with serrated tips. The interior is one-piece seamless 316 stainless steel with coved internal corners, drain trough and one 2-inch drain connection. The hood has factory-installed switches, signal light, pressure sensor, and wiring for control and monitoring of fume exhaust. It has two 100-watt vapor proof incandescent lights, 1/4" tempered safety glass counterbalanced sash, stainless steel foil, and automatic air by-pass. The color of the hood body is soft white, with the removable front panel colored as specified. Shipping weight, 375 pounds.

59807 Perchloric Acid-59 Fume Hood with Vapor Proof Lights and Fixtures.
The dimensions are 59" x 29" x 59" high. It is shipped assembled and wired for 115 volt, 60 Hz, AC. An 11-inch ID 316 stainless steel connection is provided on top of the hood for connection to the exhaust system. Static pressure loss through the hood shall not exceed .3" at 100 fpm face velocity (940 cfm) or .5" at 125 fpm face velocity (1175 cfm). The hood is provided with four service fixtures with serrated tips. The interior is one-piece seamless 316 stainless steel with internal coved corners, drain trough and one 2-inch drain connection. It has factory-installed switches, signal light, pressure sensor, and wiring for control and monitoring of fume exhaust. The hood has two 100-watt vapor proof incandescent lights, 1/4" tempered safety glass counterbalanced sash, stainless steel foil and automatic air by-pass. The color of the hood body is soft white, with the color of the removable front panel as specified. Shipping weight, 415 pounds.

REMOVABLE ACCESS PANEL

This lightweight front panel is easily removed for inspection and maintenance of the washdown system, air-flow monitoring system, and all internal wiring.

BRIGHT WORKING AREA

The hood interior is illuminated by 100-watt, incandescent lights housed in vapor-proof fixtures to provide a bright, non-glare working area.

FIRE AND CHEMICAL RESISTANT

The 316 stainless-steel interior and durable vinyl-clad steel exterior are corrosion resistant and fire retardant.

TEMPERED-GLASS SASH

The sash is $\frac{3}{16}$ -inch thick, non-splintering tempered glass for easy viewing of the hood interior.

EQUIPPED WITH FACTORY-INSTALLED SERVICE FIXTURES

Service fixtures for gas, air, vacuum or water are factory installed. They can be operated with sash in any position. The serrated hose connections are chrome plated and the outer controls have color-coded index buttons.

STAINLESS STEEL INTERIOR

The entire interior—floor, walls and top—is 316 stainless steel; the seams are welded and polished to provide a smooth, crack-free surface.

AERODYNAMIC SASH OPENING

The unique design of the sash opening provides eddy-free air flow into the fume hood. The air foil assures continuous sweeping action for efficient fume removal. The By-Pass opening above the sash minimizes fluctuations in face velocity as the sash is raised or lowered.

FACTORY-INSTALLED WASHDOWN SYSTEM

A factory-installed, manually operated valve controls the hood wash-down system. All wash-down components in the fume handling area are 316 stainless steel.

AIR-FLOW MONITOR

A factory-installed air-flow sensor is included to monitor proper exhaust velocity in the hood.

FINGERTIP SASH CONTROL

The glass sash is counter-balanced for smooth, effortless control. Dual lead weights concealed in the sides of the hood operate quietly on vinyl-coated, stainless-steel cables and ball-bearing nylon sheaves.

COVED CORNERS FOR EASY CLEANING

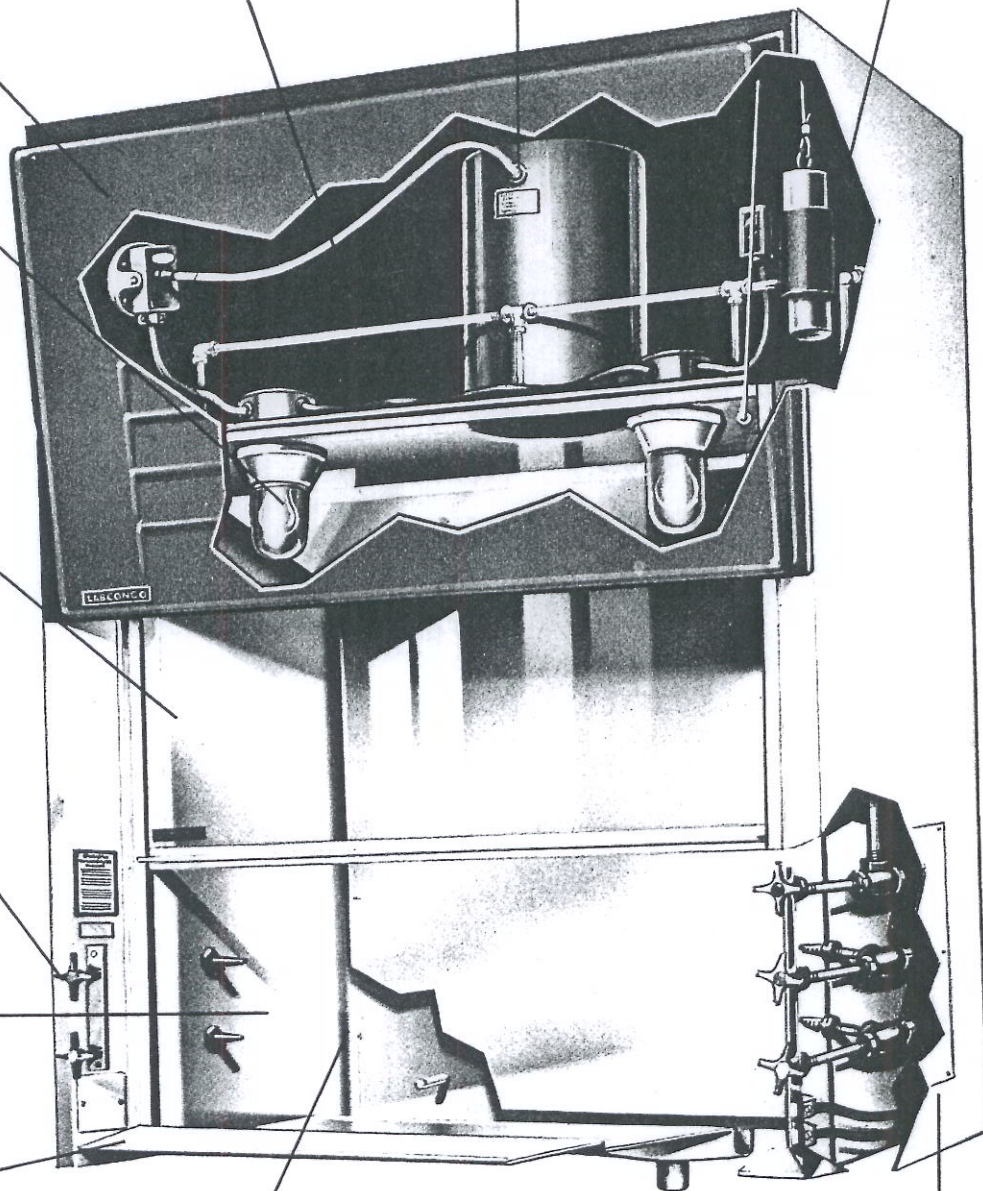
The smooth surface and gently coved corners of the one-piece interior make washdown quick and easy.

FACTORY WIRED

Exhaust system and air-pressure switches are factory installed. All wiring and electrical components are located outside the hood cavity, removed from contact with fumes.

STRONG STEEL EXTERIOR

The hood exterior is rugged, vinyl-clad steel. This maintenance-free surface resists scratches and corrosion.



70807 Perchloric acid-70 fume hood with vapor proof lights and fixtures. The dimensions of this unit are 70" x 29" x 59" high. It is shipped assembled and wired for 115-volt, 60 Hz, AC. An 11-inch ID 316 stainless steel connection is provided on top of the hood for connection to the exhaust system. The static pressure loss through the hood shall not exceed .5" at 100 fpm face velocity (1140 cfm) or .7" at 125 fpm face velocity (1425 cfm). The hood is provided with four service fixtures with serrated tips. Its interior is one-piece seamless 316 stainless steel with coved internal corners, drain trough and two 2-inch drain connections. The hood has factory-installed switches, signal lights, pressure sensor, and wiring for control and monitoring of hood fume exhaust. It has three 100-watt vapor proof incandescent lights, $\frac{1}{4}$ " tempered safety glass counterbalanced sash, stainless steel foil and automatic air by-pass. The color of the hood body is soft white, with the color of the removable front panel as specified. Shipping weight 475 pounds.

B. Dimensional Drawing

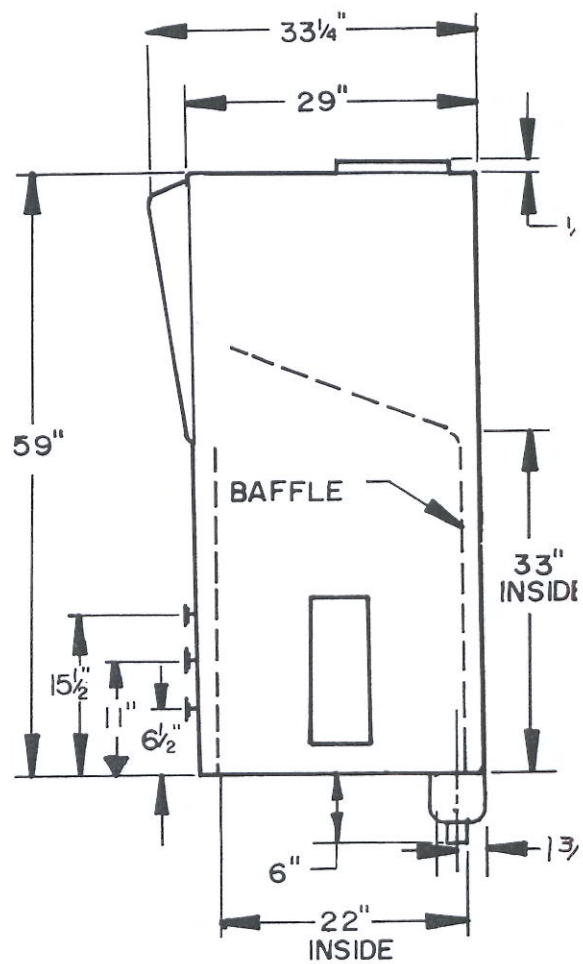
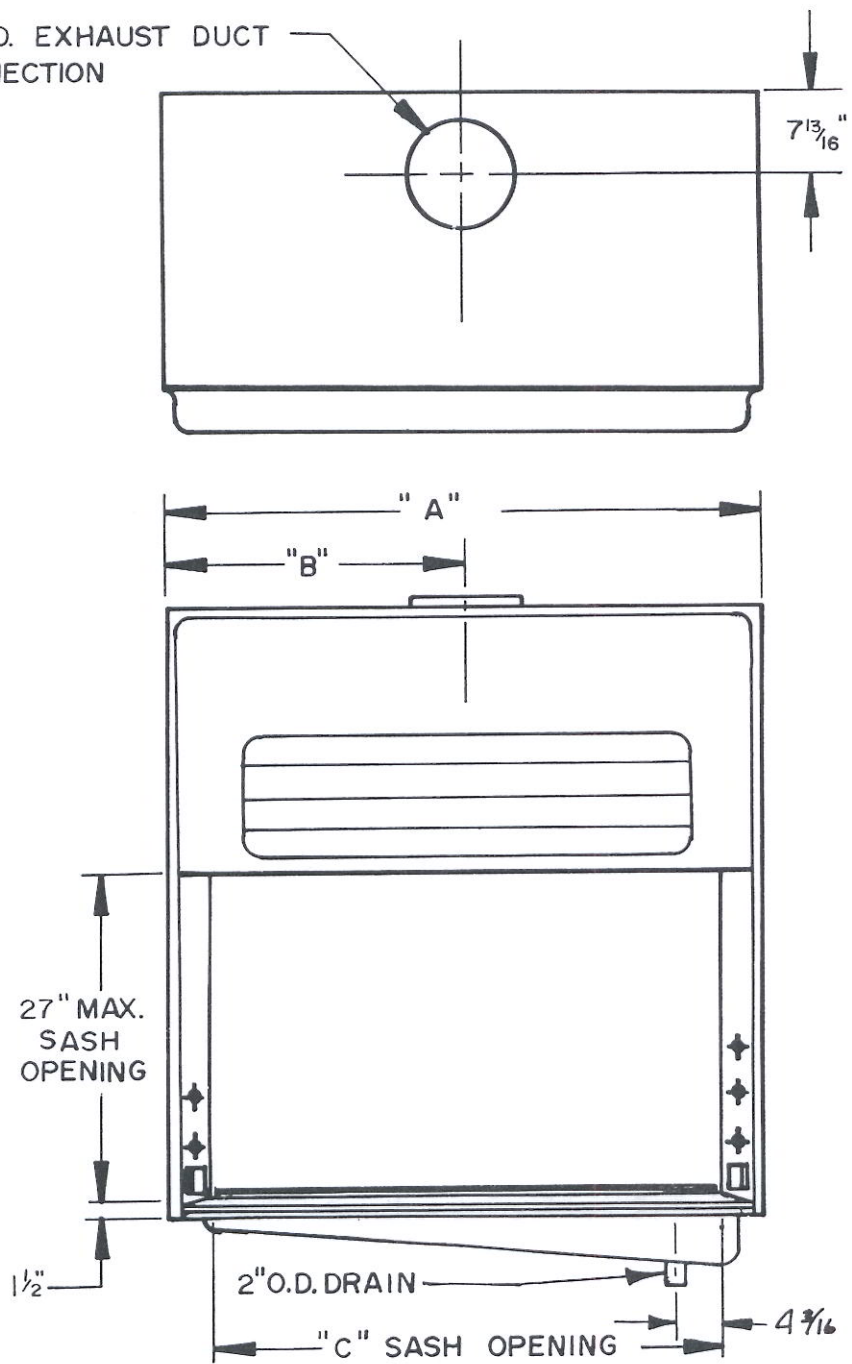
(See Page 4)

C. Installation Instructions

1. Location

- a. Remove the front panel from carton for later installation.
- b. Remove glass globe light covers.
- c. Install 100 watt lamps in sockets and replace globe covers.
- d. Remove the inner-mid-support and sash weight pads. Remove sash weights for later use.
- e. Place hood on desired supporting structure. (NOTE: Lift hood only by sides and rear to avoid damage to the hood structure.)
- f. Remove packaging material from sash.
- g. Check to insure the cables are passing over the pulleys and install sash counterweights by passing "S" hook through weight "eye". CAUTION: TIGHTEN THE "S" HOOK SECURELY.
- h. Refer to identification plate on the hood top right corner for hood electrical characteristics before connecting hood into any electrical source. The branch circuit and its circuit interrupting device (fuse or circuit breaker) must be of sufficient size to supply the electrical requirements of the hood. Only a grounded electrical outlet should be used.
- i. Connect hood to proper electrical supply and check operation.
- j. The hood is now ready for duct installation and plumbing.

11" O.D. EXHAUST DUCT
CONNECTION



2. Connections

a. Duct Installation

The duct should be fabricated of 316 stainless steel or unplasticised PVC and preferably welded in place so that no cracks or holes are present to collect the acid or its salts. This condition could result in the presence of explosive conditions. If a LABCONCO Air Ejector is to be used a flange must be provided at the end of the stack to mate to the ejector flange.

An exhaust stack washdown should be provided to cover the complete length of the stack.

It should be pointed out that the duct system must contain adequate water washdown to insure complete flushing of the entire fume removal system. It is recommended that the stack and baffle washdown systems be used for a period of at least 10 minutes to insure adequate flushing. All duct work should be as short and as straight as possible to prevent perchloric precipitate collecting at any point. A perchloric acid duct system should never be manifolded into duct work which is serving other fume hoods or is handling materials other than perchloric acid fumes.

b. Front Panel Connection

The hood front panel is held onto the hood by means of a clip strip located along the top edge of the panel. The lower edge of the panel is secured by two push type connectors.

c. Plumbing

The stack washdown is to be installed by the customer to meet his specific needs. The hood is provided with a 3/8 NPT female thread to which the customer may connect his stack washdown system. Location and type of spray nozzle to be determined and supplied by the customer to give complete stack vertical and horizontal washdown and to comply with local codes.

III. Normal Operation

A. General Operation

CAUTION:

The use of perchloric acid creates extreme inherent hazard because of certain of its characteristics. Since there is a constant danger of explosion when using perchloric acid, it is recommended that laboratories employing its use in any quantity become well informed of its characteristics. Only personnel fully cognizant with the properties of perchloric acid and the hazards associated with it should perform perchloric acid procedures.

This hood is specifically designed for use with perchloric acid. It should not be used as a general purpose laboratory fume hood. Because of extreme hazards, miscellaneous work should not be performed in this hood.

Safety requires regular water washdown of fume hood interior, duct work, and the air mover after use or preferably after each experiment. The baffle on this hood may be removed for access to all surfaces as a followup to washdown procedures. All deposits should be flushed away.

Utilize lowest quantities of perchloric acid to fit procedural requirements.

All apparatus used within the hood interior should have inorganic coatings and lubricants.

Although the LABCONCO Perchloric Acid Fume Hoods conform to all generally accepted standards of design for this type of equipment, we accept no responsibility or liability for accidents that may possibly occur in the use of perchloric acid in our hoods.

B. Switch Control Operation

There is an air pressure sensing switch located in the top of the hood. It senses the level of air flow through the stack. The Air Pressure switch is factory preset at 100 feet per minute. If a higher velocity is required, the air switch may be adjusted as follows:

1. Remove dust cover by loosening its retaining screw and pulling firmly at its bottom end.
2. Turn the slotted adjustment screw at the top of range spring housing clockwise (this will raise set point).

Blower

This switch is used to control the blower motor contactor and is a pilot circuit only. The red light in the switch will be on if the pressure switch located at the stack does not sense sufficient air flow. Adjust the pressure switch to shut off red light when air flow exists.

Lights

This switch turns on the lights.

IV. Routine Maintenance

A. Sash Care

The sash is fabricated of 3/16" thick tempered glass. This glass is highly resistant to impact and severe temperature changes. However, care should be exercised in the handling of this sash as it is not break proof. It can be washed with any window cleaner that is safe for use around the hood.

SASH REMOVAL

1. Remove the hood front panel.
2. Lower sash to the fully closed position.
3. Remove "S" hook from the eye of weight and remove weight.
4. Slide sash cables out between the hood top and side panel.
5. Remove 4 screws from either the left or right sash channel.
6. Slide the sash channel forward until the sash assembly is free of the channel.
7. Disengage sash from the opposite track.

B. Trouble Shooting

1. Blower red light comes on.

Cause: 1. Air flow through the exhaust stack is not sufficient and the pressure switch has been tripped.

V. Appendix

A. REPLACEMENT PARTS LIST LABCONCO 47", 59" & 70" PERCHLORIC HOODS Standard Model - 115 Volt, 60 Cycle

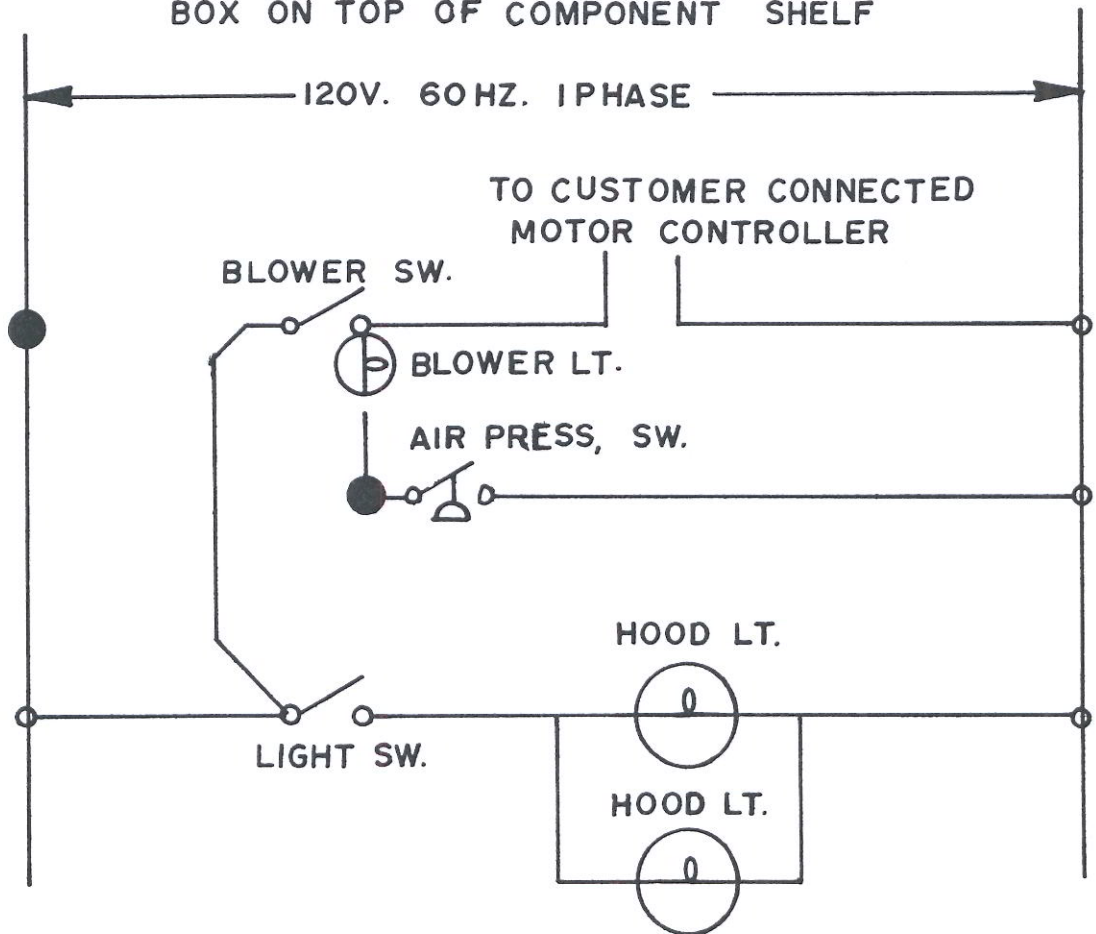
47887	59065	70777	Baffle
14272	14272	14272	Connector, hose
12738	12738	12738	Fixture, light
13527	13527	13527	Fixture, plumbing, remote control
47833	59823	70823	Foil, assembly
47735**	59029**	70729**	Panel, front
18585	18585	18585	Pulley, sash
47970	59894	70798	Kit, Sash Replacement
12729	12729	12729	Shield, light (Globe-Vapor Tight)
14858	14858	14858	Spray Nozzle
13202	13202	13202	Switch
13161	13161	13161	Switch with Pilot Light
13253	13250	13251	Switch, pressure, low

**Specify color by dash number

- 01 Char Blue
- 02 Electra Blue
- 03 Sunflower
- 04 Copper Mist
- 05 Tawny Olive
- 06 Glacier White
- 09 Unpainted

NOTE: When ordering replacement parts, specify the LABCONCO equipment model number and serial number located on the identification plate on the hood lower left front corner.

ALL CUSTOMER CONNECTIONS LOCATED IN 2 X 4 JUNCTION
BOX ON TOP OF COMPONENT SHELF



WIRING SCHEMATIC

PERCHLORIC HOOD

PLUMBING DIAGRAM PERCHLORIC HOOD

(11)

