

PORTA-CAT™



**PC-1000
PORTA-CAT™
PORTABLE AIR CLEANER
OWNER'S MANUAL**

Model #: PC-1000

Part #: _____

Serial #: _____

CALL 1-800-252-4647
www.uasinc.com
for United Air Specialists, Inc.'s
Customer Service Department

NOTE: Record information from unit nameplate.

PORTA-CAT™ MODEL PC-1000

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I. INTRODUCTION

Your new portable air cleaner is the most advanced product of its type on the market today and will provide you with a safer, healthier environment. As you begin its operation, we would like to remind you of a few important facts.

First, because we appreciate your business, we have manufactured an air cleaner engineered to rigid specifications, incorporating the latest technological advances. It is built using the best materials available and is subjected to rigorous quality control checks. A warranty backs every air cleaner that leaves our factory.

Second, like any piece of equipment, your air cleaner needs periodic maintenance. Properly cared for, it will operate at peak efficiency for many years to come.

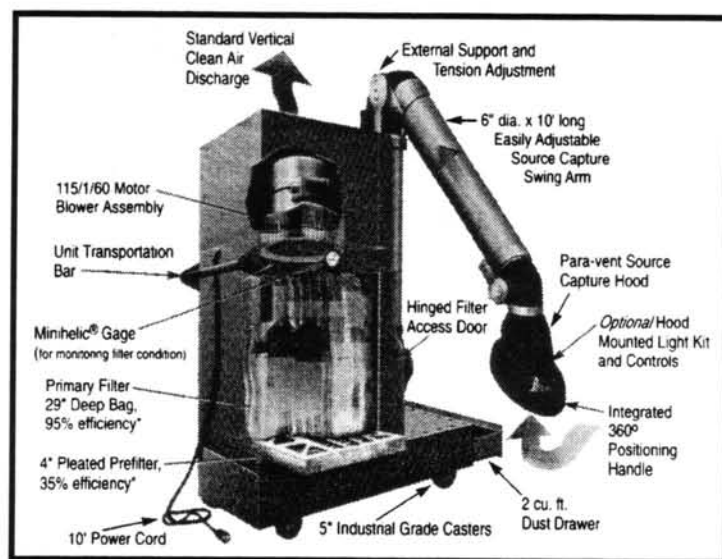
Finally, while we hope you never have any problems, United Air Specialists, Inc. is always ready to lend assistance through our factory-trained salespeople. Should you need information or service, contact your local salesperson or the Customer Service Department at United Air Specialists, Inc., 4440 Creek Road, Cincinnati, Ohio 45242, 1-800-252-4647, www.uasinc.com.

II. DESCRIPTION OF PORTA-CAT®

The PORTA-CAT portable air cleaner collects smoke and dust directly at the source. The dirty air is pulled through the swing arm entering the system through the exclusive parabolically-designed Para-vent® source capture hood. As shown below, pollutants are drawn through the externally supported swing arm, directing the dirty air vertically downward into the cabinet plenum. Before entering the first filtration stage, the dirty air makes a 180° turn creating an upward airflow pattern. The change in airflow direction causes drop-out of heavier solid particles into the removable dust drawer. The dirty air is then pulled through the first filtration stage where a 4" pleated prefilter rated at 35% efficiency* removes smaller particles. At the second filtration stage, a 29" deep extended surface bag filter rated at 95% efficiency* collects smaller and submicron particles. Clean air is then discharged back into the workspace through the top outlet of the PORTA-CAT. (Refer to Illustration 1.)

Your air cleaner is supplied with a prefilter and primary filter selected to suit your specific application. The prefilter traps most of the larger particles and some of the smaller ones, allowing the primary filter to operate at a higher efficiency over long periods of time. Tables 1 and 2 on page 2 describe each of the filter options.

**Efficiency per ASHRAE Standard 52.1-1992*



**Illustration 1
Porta-Cat
Description**

Table 1 PREFILTER OPTIONS

FILTER TYPE	DESCRIPTION	NOMINAL SIZE (H x W x D in.)	PART NO.	EFFICIENCY ASHRAE 52.1-1992	WEIGHT (LBS/KG)
Oil Impingement	<ul style="list-style-type: none"> - Washable baffle filter - Interlocking channel design 	24 x 24 x 2	33-0140	Not Applicable	8/3.6
Aluminum Mesh	<ul style="list-style-type: none"> - Four layers of aluminum mess 	24 x 24 x 2	33-1206	92% (Dust Arrestance)	4/1.8
4" Pleated*	<ul style="list-style-type: none"> - Pleated nonwoven reinforced cotton fiber media 	24 x 24 x 4	33-0130	35%	2.1/1
2" Pleated	<ul style="list-style-type: none"> - Pleated nonwoven reinforced cotton fiber media 	24 x 24 x 2	33-1213	35%	1.1/0.5

*Standard Filter - Not for use with 2" filter options

Table 2 PRIMARY FILTER AND AFTERFILTER OPTIONS

FILTER TYPE	DESCRIPTION	NOMINAL SIZE (H x W x D in.)	PART NO.	EFFICIENCY ASHRAE 52.1-1992	WEIGHT (LBS/KG)
Extended Surface Bag	<ul style="list-style-type: none"> - Ultra-fine fiberglass media with galvanized steel header frame 	24 x 24 x 29	33-1208	95%	8/3.6
		24 x 24 x 29	33-1207	65%	8/3.6
		24 x 24 x 22	33-1211*	95%	7/3.2
		24 x 24 x 22	33-1210*	65%	7/3.2
HEPA Cell	<ul style="list-style-type: none"> - Waterproof glass media with particle board frame 	24 x 24 x 6	33-1218	95%**	49/22
Activated Carbon Cell	<ul style="list-style-type: none"> - 12-1" trays of carbon (36 lbs.) - Metal frame - Refillable 	24 x 24 x 6	33-1219	Not Applicable	55/25
	<ul style="list-style-type: none"> - 12 replacement trays 	23 x 5 ⁵ / ₈ x 1	33-1258	Not Applicable	

* For use with HEPA/carbon cell options

**Thermal DOP - Federal Standard 209A

III. SPECIFICATIONS

STANDARD EQUIPMENT

Unit Dimensions: 73" H x 26 1/2" W x 43" D

Weight: 297 lbs. actual, 450 lbs. shipping

Construction: 16-gauge polyurethane painted steel cabinet with removable dust drawer, 5" diameter front fixed and 5" diameter rear swivel casters

Arm Assembly: 8" diameter x 10' long externally supported with Para-vent source capture hood and positioning handle

Prefilter: 24" x 24" x 4" pleated filter, 35% average efficiency*

Primary Filter: 24" x 24" x 29", 8-pocket 95% average efficiency*, 90 sq. ft. of media

Airflow: 1000 CFM Nominal

Motor: 1HP, TEFC 115/1/60

Noise Level: < 75 dba at 3'

Controls: On/Off switch on cabinet, 10' power cord

Filter Access: Side load, hinged door

Filter Monitor: 0-5" Minihelic® Gage

Dust Pan: 2 cu. ft. removable drawer

**Efficiency per ASHRAE Std. 52.1-1992*

OPTIONAL EQUIPMENT

Electrical: 1 HP, 3-phase motor

2 HP, 3-phase motor

Prefilter:

- 24" x 24" x 2" oil impingement baffle
- 24" x 24" x 2" aluminum mesh
- 24" x 24" x 2" pleated

Primary Filter:

- 65% bag - 29", 8-pocket, 90 sq. ft. of media
- 95% bag - 22", 8-pocket, 66 sq. ft. of media
- 65% bag - 22", 8-pocket, 66 sq. ft. of media
- 95% bag - 22", 8-pocket, 66 sq. ft. of media (oil mist)
- 95% bag - 29", 8-pocket, 90 sq. ft. of media
- 95% bag - 29", 8-pocket, 90 sq. ft. of media (oil mist)
- HEPA Cell - 6", 95% efficiency
- Activated Carbon Cell - 6", 24 lbs.

OPTIONAL ACCESSORIES

Hood Mounted Light Kit/Controls:

50 watt Quartz halogen hood light kit with transformer and hood-mounted controls

Swing Arm:

- 8" diameter, 7' long arm
- 8" diameter, 14' long arm
- 6" diameter, 7' long arm
- 6" diameter, 10' long arm
- 6" diameter, 14' long arm
- Inlet collar in place of swing arm

IV. INSTALLATION

Packaging: The PORTA-CAT mobile air cleaner is shipped in three containers. One container consists of the unit cabinet and filter components. The other two containers are packaged with the extraction arm and Para-vent source capture hood. The optional light kit comes preassembled to the extraction arm.

Inspection: Upon receipt of your unit, check for any shipping damage. A damaged carton indicates that the equipment may have received rough handling during shipping that may have caused internal damage. Notify your delivery carrier and enter a claim if any damage is found.

Open the filter access door. Examine the filters to make sure they have not become displaced during shipment (refer to Section VI for filter removal and replacement).

Swing arm assembly installation: The inlet flange of the PORTA-CAT cabinet has one set of 5/16-18 threaded inserts in the cabinet with the mounting hardware (bolts, flat and split ring washers) (see Figure 1).

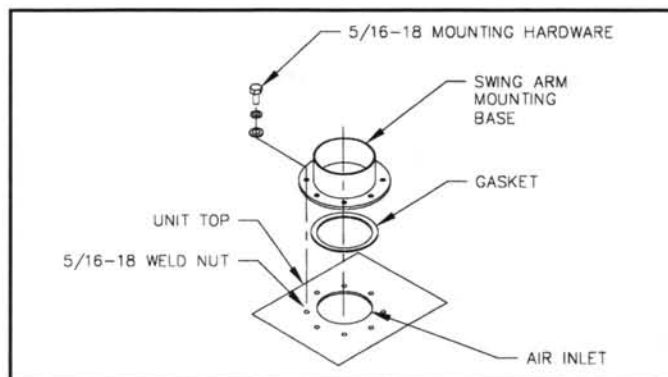


FIGURE 1: ARM SUPPORT DETAIL

The extraction arm assembly is best positioned by two people. All pivot points are factory tightened to keep the arms from moving during assembly. When mounting arm(s) on unit, a ceiling height of about 10 feet is required for adequate clearance. To assemble the swing arm to the PORTA-CAT, (see Figures 1 and 2):

1. Remove the swing arm assembly from its shipping box.
2. Remove bolts and washers from cabinet mounting flange.
3. Position flange gasket on the top of the unit.
4. If optional light kit was ordered, plug light cable into connector provided on side of unit.
5. Position the swing arm mounting base into place over the $\frac{5}{16}$ -18 inserts. Be sure gasket is positioned properly between unit and base

flange. Secure extraction arm to cabinet top with the $\frac{5}{16}$ bolts and washers provided (see Figure 2).

6. Attach Para-vent hood to end of swing arm using hardware kit (03-10179-0001) provided with hood.
7. Attach flexduct to end of hood with hose clamp.

Field adjustment: For ease of transport and installation, each swing arm is shipped with pivot friction pads and holding hardware tightened securely. After installation, friction pads should be adjusted to hold the arm in desired position without sagging, yet allow smooth movement from position to position with minimal operator effort. A wrench is required for tension adjustment of the friction pads. Movement should be gradual, yet firm.

CAUTION: Avoid over tightening of pivot sections and sharp pulling of the swing arm or Para-vent hood — unit tipping or damage to the arm components could result.

Electrical: The PORTA-CAT is provided with a 10' power cord. The 115/1/60 unit has a power cord with standard plug (confirm voltage of unit by referring to unit nameplate). All other units need to be fitted with appropriate male plug (not supplied as part of air cleaner).

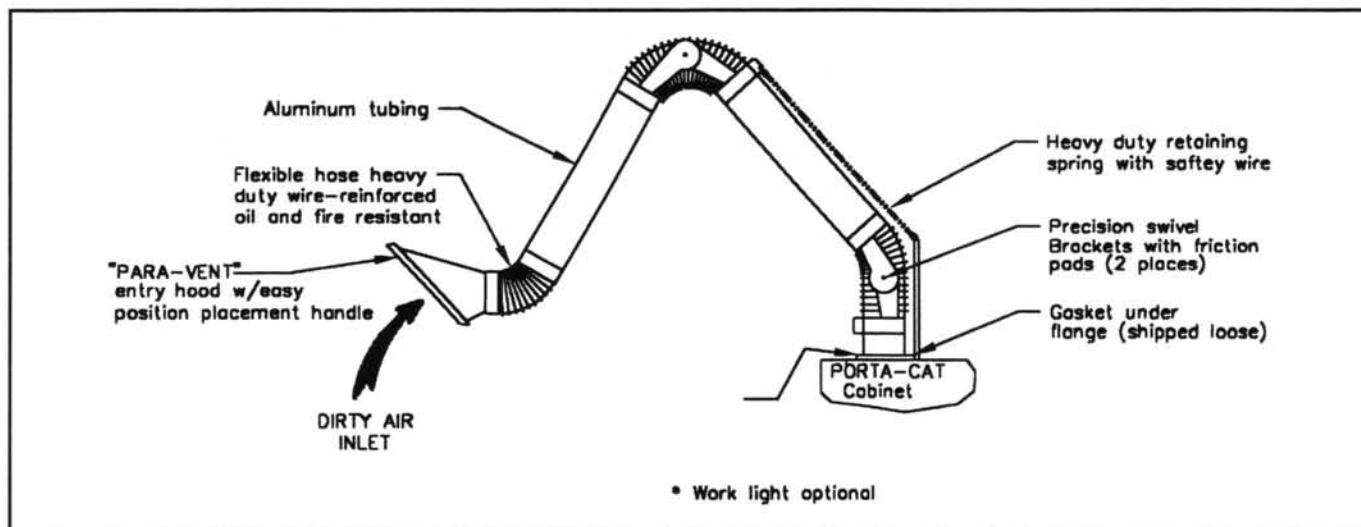


FIGURE 2: SWING ARM ASSEMBLY

V. OPERATION

Getting started

1. Position unit in desired location.

CAUTION: Do not attempt to move the PORTA-CAT unit by pulling on the swing arm or hood. Use the full width bar-type handle on the back of the unit to push the PORTA-CAT to desired location.

2. Lock rear wheel casters on the unit to secure in place.
3. Plug the unit into a properly grounded electrical receptacle.
4. Turn the unit on by pushing the toggle switch to the "on" position. On three-phase units, fan rotation will need to be verified by matching fan rotation with the "rotation" decal on the blower housing. Rotation should be clockwise as viewed from the motor side. Any two motor starter leads should be reversed if the rotation is not correct.
5. The filter monitor gauge should read between 0.5" and 0.75" w.g. while unit is operating with clean filters.

Positioning unit for effective contaminant collection

1. Position the unit, arm and hood so the contaminant is collected as it is released/produced by the process or operation and operator interference is minimal.
2. Position the hood where there is minimal influence of cross drafts coming from outside air sources or other operations.
3. Position the hood slightly higher than the contaminant source, with the face of the hood approximately 45 degrees from horizontal. The hood shape is designed for high velocity pick-up. It should be located as close to the contaminant source as practical and no further than 14" from the contaminant source.

Checklist

1. Check clean air outlet. Discharge air should remain visibly clean. If a filter leak should develop, the pressure gauge reading will decrease.
2. Check pressure drop on filter monitor gauge. Pressure drop across elements is considered normal at 0.5" to 1.5" w.g. Pressure drop readings over 1.5" w.g. may indicate the need to replace filters.

For filter replacement, see Section VI.

VI. MAINTENANCE

Before servicing

1. Collected dust may be hazardous. Consult with proper authorities for handling and disposal.
2. Collected dust may be a potential fire hazard.
3. Wear appropriate protective clothing.
4. Be environmentally aware of collected dust and its proper disposal.
5. Press unit toggle switch to "off" position. Unplug unit from electrical power source.

A. Filter Maintenance/Replacements

When the unit pressure gauge exceeds 1.5", the internal filters may require replacement.

Use the following procedure for filter replacement:

1. Disconnect power to unit (unplug unit).
2. Unlatch filter access door and inspect prefilter. Discard the prefilter if it is a disposable type. Replace the filter with the recommended UAS part number selected from Table 1 on page 2. If the prefilter is a reusable metallic type, clean and reinstall. Close the door, reconnect power and restart the unit.
3. Check pressure gauge reading, if over 1.5" w.g., continue to step 4.
4. Disconnect power and unlatch door.

5. If primary filter is a 29" long fiberglass bag, remove filter support rod (see photo #1) then remove and discard the filter. Replace the filter with the recommended UAS part number selected from Table 2 on page 2. Secure the access door and latch. Restart the unit.
 6. If primary filter is a 22" long fiberglass bag in combination with a HEPA or carbon cell, remove the 22" bag filter and discard. Replace the 22" bag filter with the recommended UAS part number selected from Table 2 on page 2. Secure and latch the door and restart the unit. If pressure gauge still reads over 1.5" w.g., go to step 7 (HEPA cell) or 8 (carbon cell).
 7. Rotate (outward) the support rod for the HEPA cell (see photo #2). This will allow the HEPA cell to slide out of the cabinet. Remove and discard the HEPA cell. Install new HEPA cell into cabinet and rotate (downward) the support rod into cabinet and rotate (downward) the support rod (see photo #3). Inspect HEPA cell to ensure proper seating of gasket. Latch door, reconnect power and restart unit.
 8. Rotate (outward) the support rod for the carbon cell (see photo #2). This will allow the carbon cell to slide out of the cabinet. Place the carbon cell on a work surface and remove the screws on the face of the cell frame. Set the frame cover and screws aside. Remove the 12 carbon trays from the cell frame. Replace the 12 carbon trays selected from Table 2 on page 2 or refill existing trays from bulk carbon supply. Reinsert trays and attach the frame cover.
- Slide the carbon cell frame into the cabinet and rotate (downward) the support rod (see photo #3). Inspect carbon cell to ensure proper seating against cabinet. Latch door, reconnect power, and restart the unit.

Porta-Cat Filter Maintenance

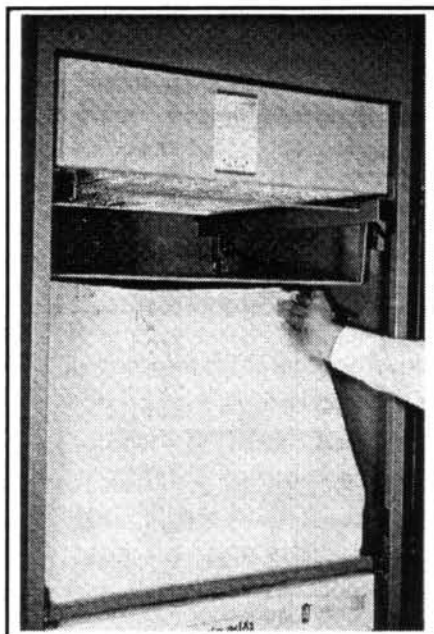


Photo 1

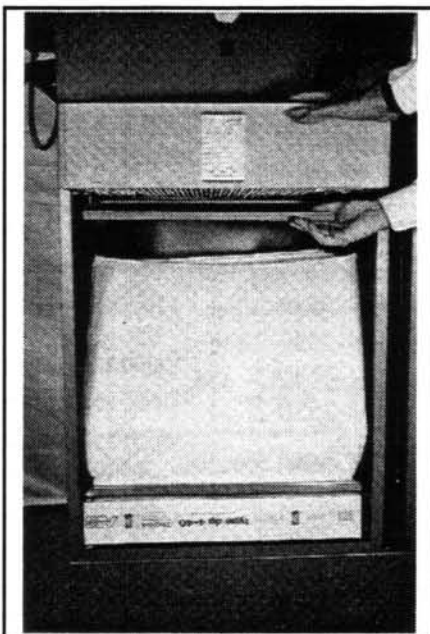


Photo 2

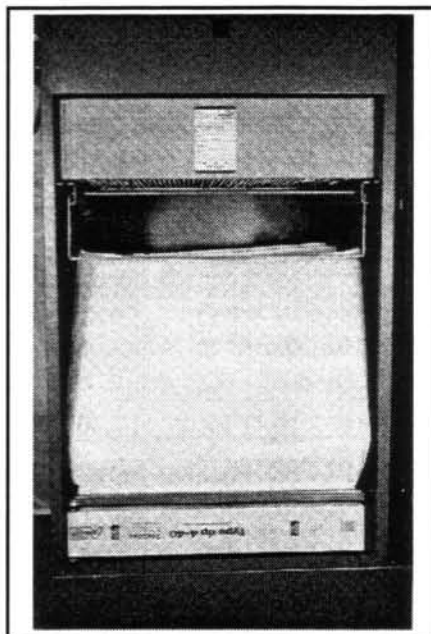


Photo 3

B. Electrical

Table 3 provides a listing of PORTA-CAT part numbers and their corresponding voltage, motor horsepower and full load amperage draw. Please complete the label on the inside cover of this manual to identify your unit by part number when corresponding with United Air Specialists, Inc. or your local salesperson.

C. Unit Control (on/off)

Units WITHOUT hood light kit option: All units without the hood light option will have the blower controlled from the unit. A toggle switch is provided to start/stop the blower.

Units WITH hood light kit option: Units with swing arm will have the blower controlled from the hood-mounted switch box located at the end of the extraction arm. The light will also be controlled at the hood with a black "on/off" rocker switch.

NOTE: Hood light kit should be ordered with the unit and factory installed. Field retrofit requires some unit modifications.

Light is NOT to be used unless the unit is operating. Without air movement, light may damage hood due to heat generation.

Part No.	Voltage	Wiring Diagram	Horsepower	FLA (AMPS)	Hood Mounted Light Kit
01-7021-1	115/1/60	04-2530-2	1	11.0	No
01-7021-1	203/1/60	04-2530-2	1	5.5	No
01-7021-1LT	115/1/60	04-2530-3	1	13.0	Yes
01-7021-1LT	230/1/60	04-2530-3	1	6.5	Yes
01-7022-1	208/3/60	04-2530-2	1	3.2	No
01-7022-2	230/3/60	04-2530-2	1	3.0	No
01-7022-3	460/3/60	04-2530-2	1	1.5	No
01-7022-4	575/3/60	04-2530-2	1	1.2	No
01-7022-1LT	208/3/60	04-2530-1	1	4.2	Yes
01-7022-2LT	230/3/60	04-2530-1	1	4.0	Yes
01-7022-3LT	460/3/60	04-2530-1	1	2.0	Yes
01-7022-4LT	575/3/60	04-2530-1	1	1.6	Yes
01-7023-1	208/3/60	04-2530-2	2	5.7	No
01-7023-2	230/3/60	04-2530-2	2	5.4	No
01-7023-3	460/3/60	04-2530-2	2	2.7	No
01-7023-4	575/3/60	04-2530-2	2	2.2	No
01-7023-1LT	208/3/60	04-2530-1	2	6.7	Yes
01-7023-2LT	230/3/60	04-2530-1	2	6.4	Yes
01-7023-3LT	460/3/60	04-2530-1	2	3.5	Yes
01-7023-4LT	575/3/60	04-2530-1	2	2.8	Yes

Table 3 PORTA-CAT MODEL PC-1000

VII. TROUBLESHOOTING

CAUTION: The following section is for the use of trained service personnel only. The following procedures will expose live electrical components and moving mechanical parts.

PROBLEM	CAUSE	SOLUTION
Blower/motor won't start or won't stay running.	Improper electrical supply. Motor failure. Starter overload tripped.	Refer to electrical diagrams, page 13. Replace motor. Reset overloads.
Dust/smoke emissions from clean air discharge	Filter(s) installed incorrectly. Filter(s) damaged.	Inspect and reinstall filters. (see Section VI). Replace damaged filter(s). (see Section VI).
Insufficient airflow.	Fan rotation backwards. Air inlet restricted.	Check fan rotation to ensure clockwise rotation (see Section V, "Getting Started"). Check Para-vent hood and swing arm for obstructions in air path.
Continual, excessive pressure drop (over 3") on filter monitor gauge.	Filters at end of useful life. Plugged filter(s).	Replace filters. (Refer to Section VI) Filter elements have reached end of useful life. Replace. (Refer to Section VI)

VIII. PARTS/SERVICE

The exploded view drawings and itemized bills of materials are shown on the following pages (pages 9-12). Use this information to determine part numbers for replacement parts.

To order parts, contact your local salesperson or UAS directly:

United Air Specialists, Inc.
4440 Creek Rd.
Cincinnati, Ohio 45242
Attn. Customer Service Department
1-800-252-4647
web address: uasinc.com

The following will be required for prompt delivery of replacement parts:

Data Required

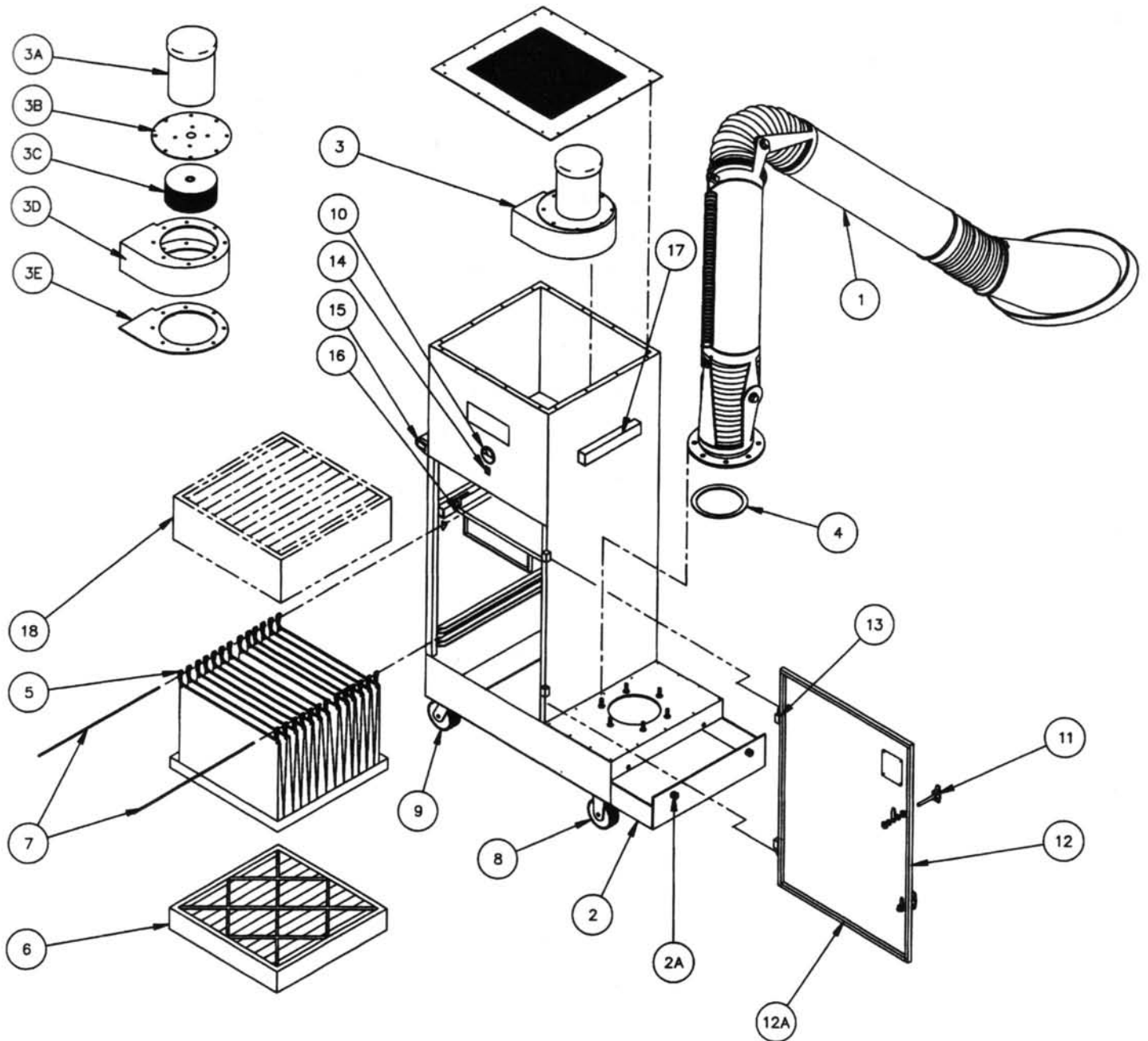
1. Unit Model Number
2. Unit Serial Number
3. Part Number and Description

Location of Data

- Side of Unit
Side of Unit
Exploded View

When returning a defective part under warranty, you must call your local salesperson or UAS for a return authorization number (RMA). This number must appear on the package being returned. This number will assure you a prompt reply.

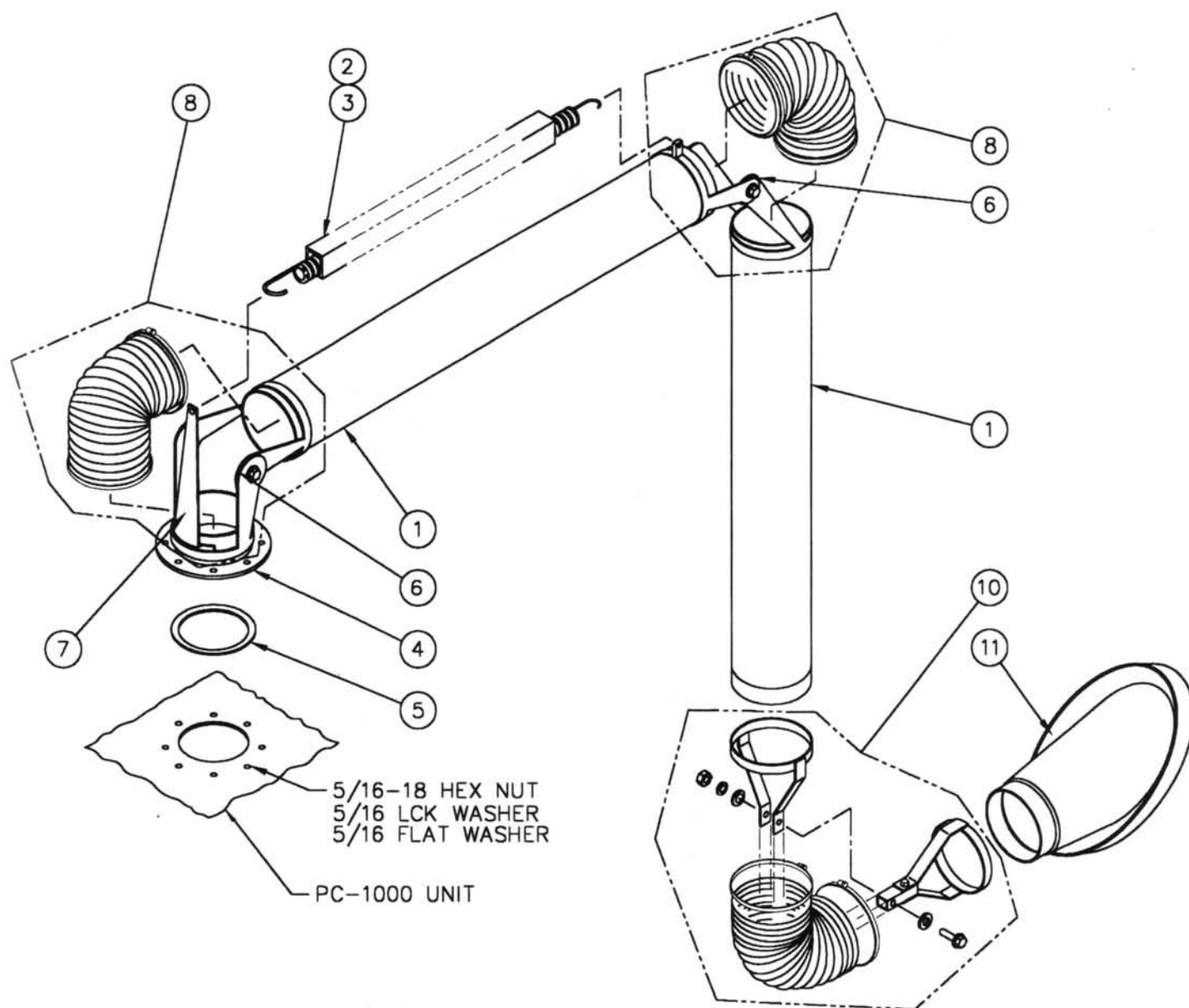
Model PC1000 Exploded View Drawing



MODEL PC1000 PARTS LIST

Item #	Part #	Description	Quantity
1*	(See page 11)	Swing arm assembly	1
2	18-2038	Dust pan assembly	1
2A	30-0503	Dust pan fastener (only)	2
3A	22-0271 22-0211 22-0272 22-0188 22-0189 22-0190	Motor, 1HP, 115-230/1/60 1HP, 208-460/3/60 1HP, 575/3/60 2HP, 115-230/1/60 2HP, 208-460/3/60 2HP, 575/3/60	1 (select)
3B	10-3377	Motor mounting plate	1
3C	32-0201-09 32-0201-08	Fan wheel - 1HP Fan wheel - 2HP	1 (select)
3D	18-2226 18-1940	Fan housing - 1HP Fan housing - 2HP	1 (select)
3E	42-0296	Fan insulation gasket	1
3F	10-9118	Restrictor Plate (1HP only)	1
4	42-1505 42-1504	Arm gasket 6" diameter Arm gasket 8" diameter	1 (select)
5	See Table 2 (pg. 2)	Pocket filter	1
6	See Table 1 (pg. 2)	Prefilter	1
7	10-8991	Filter support rod	2
8	17-0026	Fixed caster	2
9	17-0027	Swivel caster	2
10	07-0081	Filter pressure gauge	1
11	39-0275	Door latch	2
12	18-2216	Access door	1
12A	42-1528	Door gasket	11 ft.
13	39-0255 39-0256	Door hinge	2
14	20-2920	On/off switch	1
15	39-0259	Handle bar assembly	1
16	03-1483	Afterfilter track assembly	1 (optional)
17	42-0144	Swing arm pad	1
18	See Table 2 (pg. 2)	Afterfilter	1 (optional)

Exploded View of Swing Arm



SA-810-PM 8" DIAMETER X 10' LONG (STANDARD ARM)

<u>Item #</u>	<u>Part #</u>	<u>Description</u>	<u>Quantity</u>
1	45-0172	Pipe, 8" diameter	1
2	45-1504	Spring (SA-810)	1
3	45-0152	Steel cable	1
4	45-0180	Swivel joint	1
5	45-1504	Gasket (8" diameter)	1
6	45-0156	Friction pad (2/set)	1 set/joint
7	45-0194	Spring support bracket	1
8	45-0176	Joint, initial assembly	1
9	45-0176	Joint, middle assembly	1
10	45-0178	Joint, final assembly	1
11	15-0128	Para-vent hood (8")	1

SA-610-PM 6" DIAMETER X 10' LONG (OPTIONAL ARM)

<u>Item #</u>	<u>Part #</u>	<u>Description</u>	<u>Quantity</u>
1	45-0153	Pipe, 6" diameter	1
2	45-0195	Spring (SA-610)	1
3	45-0152	Steel cable	1
4	45-0163	Swivel joint	1
5	45-1505	Gasket (6" diameter)	1
6	45-0156	Friction pad (2/set)	1 set/joint
7	10-3387	Spring support bracket	1
8	45-0164	Joint, initial assembly	1
9	45-0164	Joint, middle assembly	1
10	45-0166	Joint, final assembly	1
11	15-0129	Para-vent hood (6")	1

OPTIONAL LIGHT KIT PARTS (NOT SHOWN)

<u>Item #</u>	<u>Part #</u>	<u>Description</u>	<u>Quantity</u>
A	20-2720	Lamp, halogen (50 watt)	1
B	20-2721	Socket, lamp	1
C	20-2712	Switch, on/off (light)	1
D	20-2914	Switch, on/off (blower)	1

IX. Electrical Diagrams

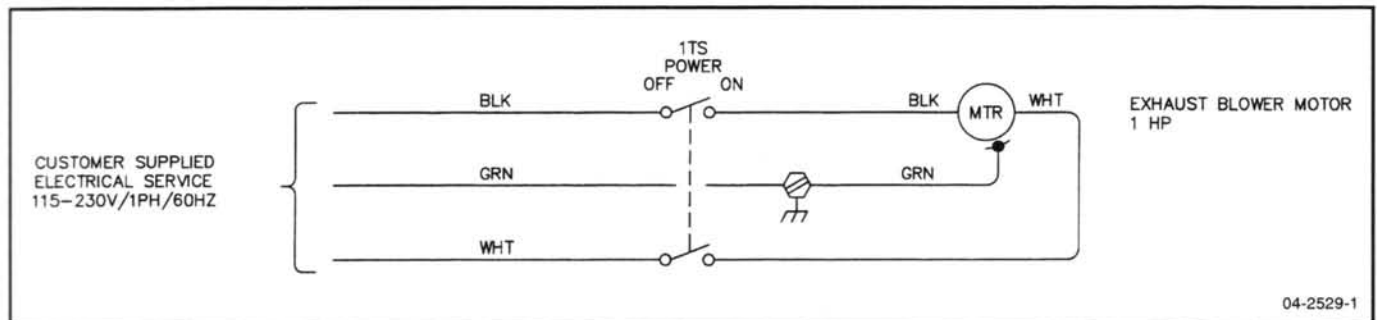


Figure 3: Single Phase PC-1000 without Light Kit

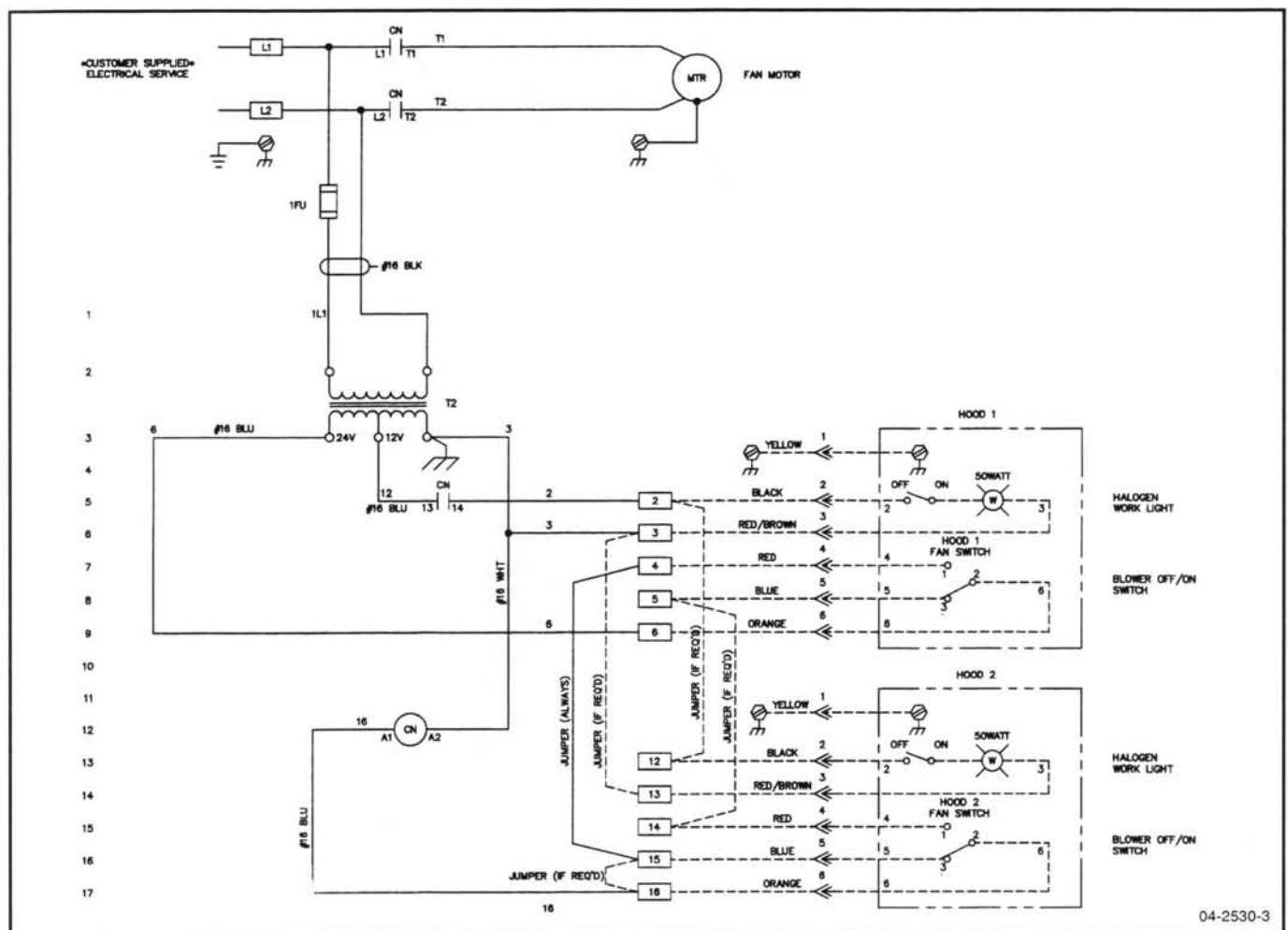


Figure 4: Single Phase PC-1000 with Light Kit

IX. Electrical Diagrams (con't)

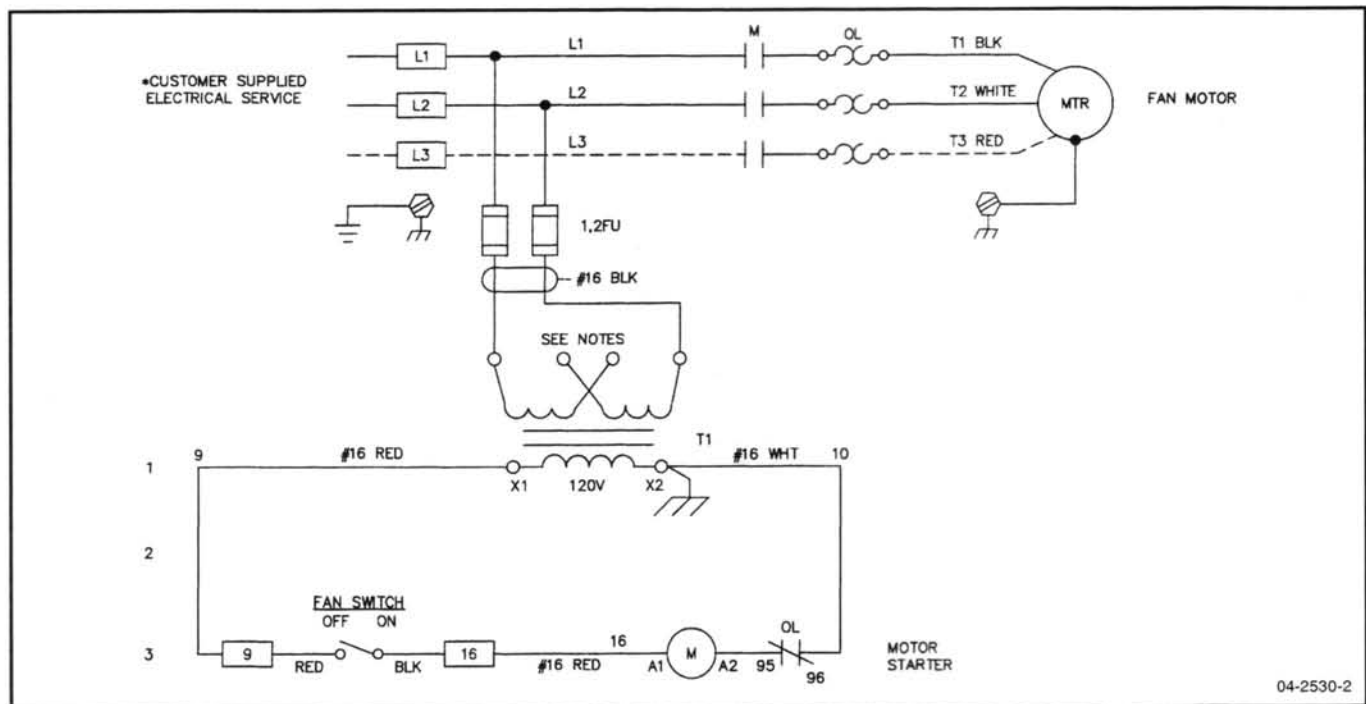


Figure 5: Three Phase PC-1000 without Light Kit

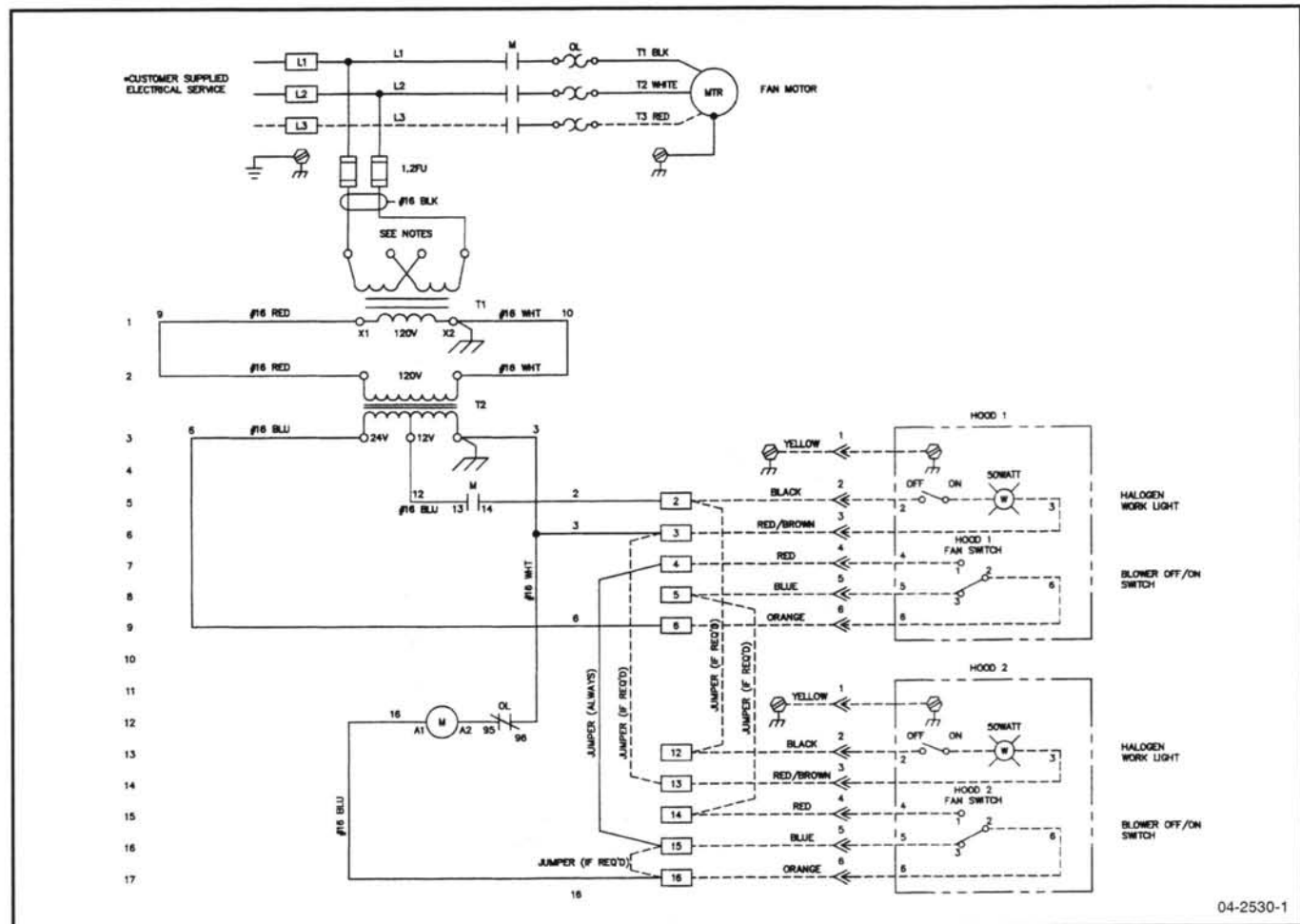


Figure 6: Three Phase PC-1000 with Light Kit

