

CromemcoTM

BRZ-II AND BRZ-III VENTILATION UNITS

INSTRUCTION MANUAL

CROMEMCO, Inc.
280 Bernardo Avenue
Mountain View, CA 94043

Part No. 023-6016

April 1981

Cromemco™

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Chapter 1

INTRODUCTION

A computer, like many other machines, functions more dependably when the surrounding air is clean and the temperature is constant and relatively cool.

Some computers are exposed to room temperatures that may be higher at certain times of the year than at others. Under normal operating conditions a computer will function unfailingly for years. But if the temperature in a room increases, for whatever reason, the overall temperature within the computer may also increase to a level that will alter the conductive characteristics of the integrated circuits.

As the capability of the computer system is expanded and the number of users increases there is a need to add circuit boards. Additional circuit boards also mean higher internal temperatures. A high temperature can take its toll on even the most reliable computers.

Dust may foul delicate electronic components and damage floppy diskettes. Filtered air improves the longevity of the computer and the floppy diskettes.

To maintain a dustless environment, and to dissipate heat, Cromemco has developed two ventilation units: the BRZ-II for the Cromemco System Two and the Z2-H computers, and the BRZ-III for the Cromemco System Three computer.

When mounted below your Cromemco computer system, the ventilation unit will protect the system against temperature increases and dust and thereby prolong its life.

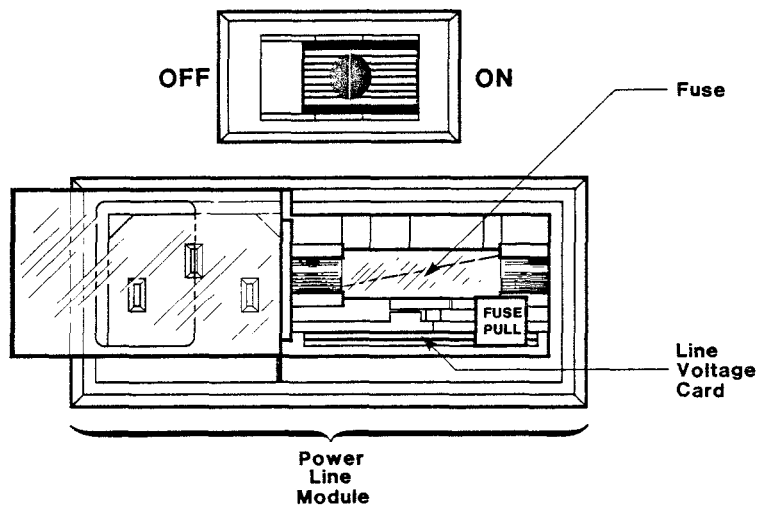
This manual presents the instructions you need to check, install, and maintain your new ventilation unit.

Chapter 2

INSTALLATION

Preinstallation Procedures

The BRZ-II and III are designed for use by Cromemco customers around the world. Because different countries have different voltage standards, these units include a device called a **Power Line Module**. The power line module changes the electrical configuration of the transformer so that the ventilation unit can adapt to different wall outlet voltages.



The power line module, located at the right rear of the unit, can accommodate voltages ranging from 100V to 260V.

Inside the power line module is a power cable connector (for a plug), a fuse, and a line voltage card. The unit's power cord is plugged into the power cable connector and the fuse protects the unit. The line voltage card acts to reconfigure the electrical pathways within the unit so that the voltage from a wall outlet can be used by the ventilation unit.

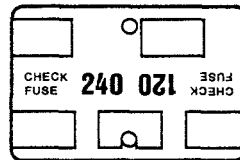
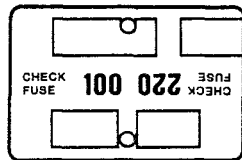
Before the ventilation unit is installed, the fuse in the power line module should be checked to determine if it is the right rating (see Appendix A) and the line voltage card, located inside the power line module, should be checked to see if it

is positioned properly for the wall outlet voltage.

Note: The fuse in the power line module should be rated at 5 amps. The fuse for the fans will vary depending on the line voltage. Refer to the chart at the end of this section for fan fuse requirements. Complete instructions on how to remove and replace fuses are given in Chapter 3 of this manual.

To determine if the voltage card is positioned properly for the wall outlet voltage, you must first know what the wall outlet voltage is in your area. If you are not sure what the line voltage is, check the wall outlet with a voltmeter. Your Cromemco dealer will assist you if you do not have a voltmeter.

The line voltage card is located on the right side of the power line module just below the fuse. There are four voltage readings on the line voltage card: 100V, 120V, 220V, and 240V.

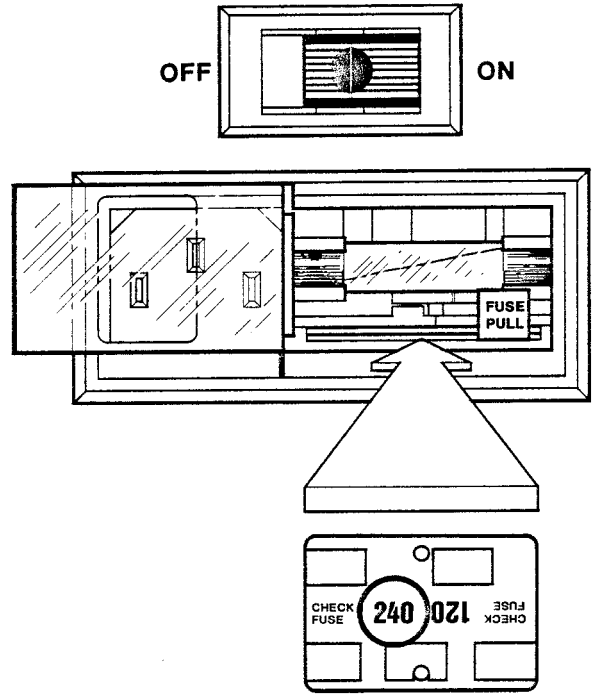
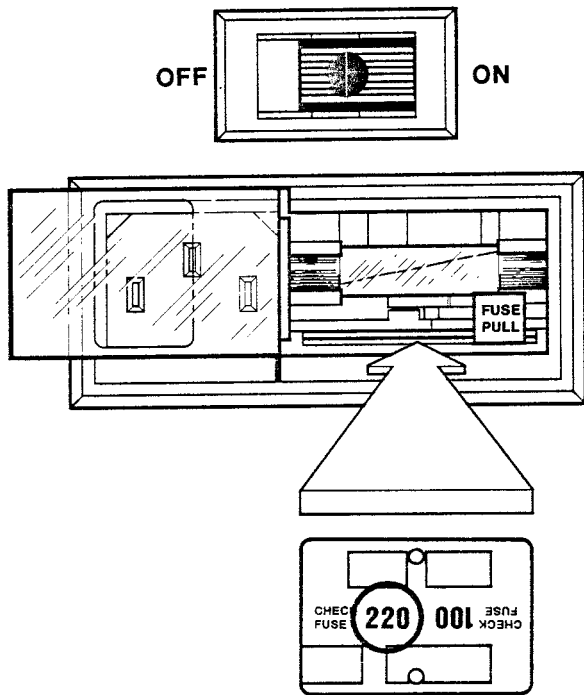
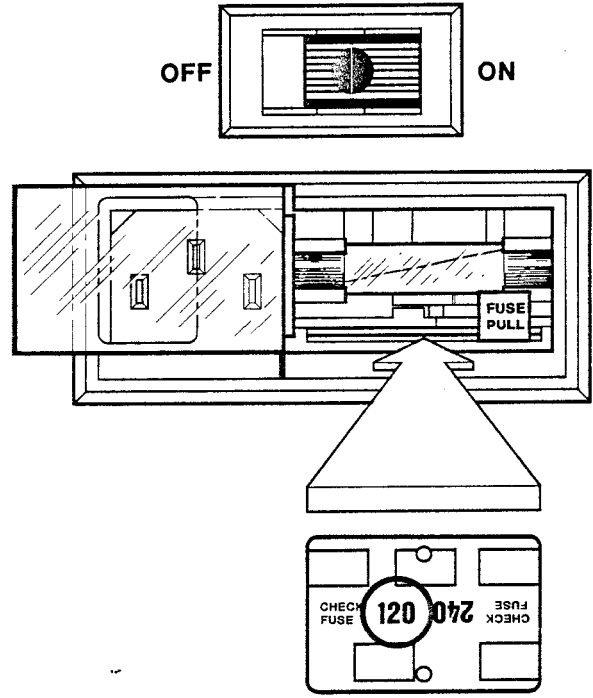
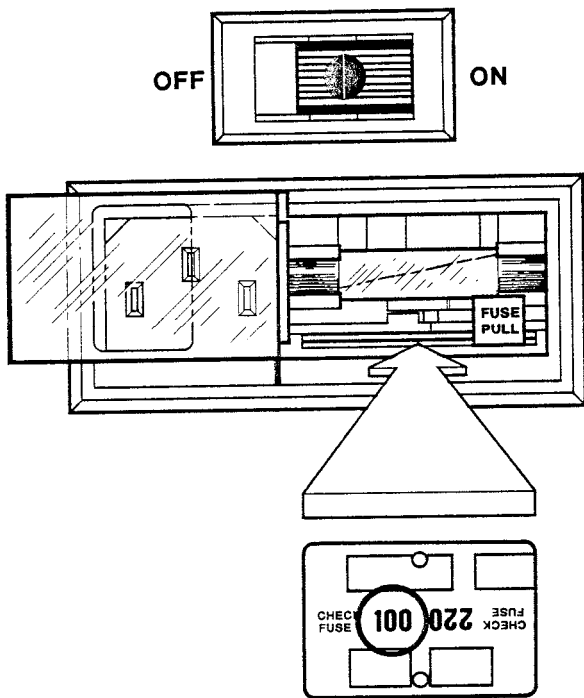


To determine if the line voltage card is positioned properly for the wall voltage in your area, move the clear plastic cover to the left and look inside the power line module. On the top side of the card you will see a number. This number represents the voltage the line voltage card has been positioned to handle. If your wall outlet voltage differs from this value, the line voltage card must be repositioned. The illustration on the next page shows the four positions in which the card can be placed.

Before the line voltage card is repositioned, the fuse must be removed by pulling out the lever marked **FUSE PULL**. The fuse will dislodge from its mount.

Next, with the fuse lever out, take any pointed instrument (a ballpoint pen works well), insert it into the hole in the line voltage card, and pry the

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card out of the module. The card has two settings on each side. Find the setting that most nearly matches your wall outlet voltage (refer to the

following chart) and reinsert the card so that the voltage reading selected is at the top of the card and faces you.

The chart below shows the four line voltage card readings, the range of voltages the line voltage card can accommodate at each reading, and the corresponding fuse requirements.

Line Voltage Card	Voltage Range	Power Line Module Fuse	Fan Fuse
100V	100 - 110V	5 amps	0.5 amps
120V	111 - 130V	5 amps	0.5 amps
220V	200 - 220V	5 amps	0.25 amps
240V	221 - 260V	5 amps	0.25 amps

Next, reinstall the fuse.

Finally, move the plastic cover to the right side of the power line module. This will expose the power cable connector on the left side of the power line module.

Note: Older models of the Cromemco System Two have bottom panels that are not compatible with the BRZ-II. Before you continue with these installation instructions, check the bottom panel of the Cromemco System Two. There should be two rows of perforations. If your system does not have two rows of perforations, then the panel will have to be replaced with one that does. This panel may be ordered from your Cromemco dealer or may be ordered directly from Cromemco by using the following part number and description:

016-0007 Z-2 Bottom Panel

Before the ventilation unit is installed, turn off your computer system. If the system includes a Hard Disk Drive, turn it off **first**, then turn off the rest of the system. If the system includes a floppy disk drive, make sure the disks are removed from the drives before turning the system off.

Installation and Start Up - Desk Mounted

First, pull the desk containing the computer system out from the wall.

Remove the grill on the back of the desk.

Unplug the I/O cables from the back of the computer. Be sure to label the I/O cables and outlets so that the cables can be plugged into the same outlets when the installation is completed.

To allow room at the back of the desk to install the ventilation unit, gently pull the computer system out of the desk about 3 or 4 inches. Place the ventilation unit on the floor with the outlets pointed toward the back of the desk.

Unplug the computer power cord from the wall outlet and plug it into one of the power cord outlets on the ventilation unit. (There is no need to unplug the computer power cord from the back of the computer.)

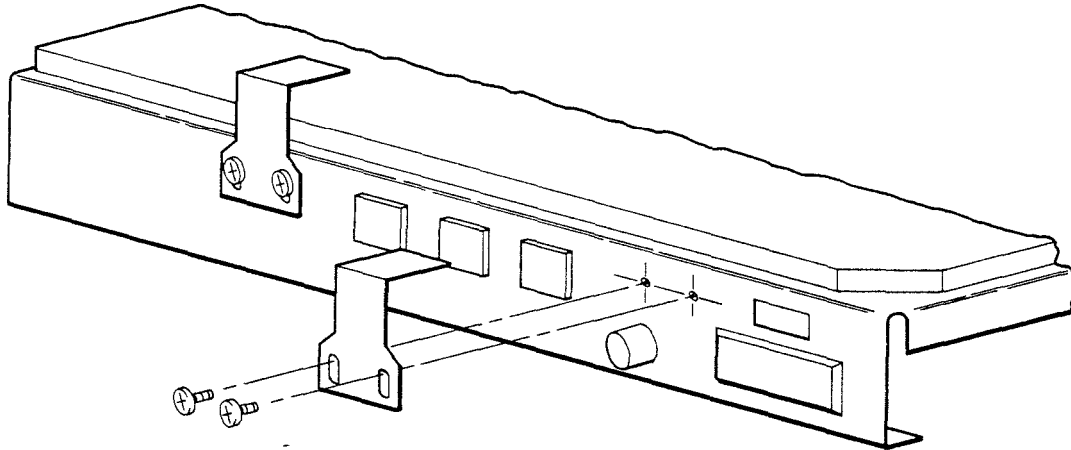
There are three power cord outlets on the back of the ventilation unit. Since one of the power outlets is used for the computer, the other two power outlets are available for peripherals (such as a terminal and a printer). You can plug in any peripheral you want; the outlets are provided so all the power cords are centrally located. (The fuse on the ventilation unit will blow if more than 4.5 amps is drawn through these outlets.)

Plug one end of the the ventilation unit power cord into the power line module.

Next, attach the two L-shaped brackets to the back of the ventilation unit. The following illustration shows where these brackets should be attached.

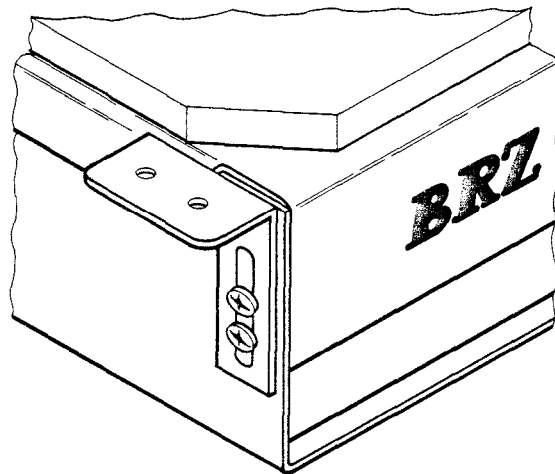
The ventilation unit fits on the bottom of the desk below the computer. To hold it in place against the bottom of the desk while you attach it, set the unit on a stack of books or a sturdy box.

Maneuver the back of the unit so that the brackets at the back of the ventilation unit slip over the edge of the cabinet. (Some bending of the brackets on the unit may be required to work the brackets into place.)



With the back brackets firmly in place, align and attach the front of the unit.

Align the front of the unit so that the bracket on the left side of the unit is flush with the corner of the desk--the outside edge of the bracket should be flush with the side of the desk and the front edge of the bracket should be flush with the front of the desk.



Mark the location of the bracket holes on the desk, and use a 3/32-inch (.1065 mm) drill bit to make starter holes where the bracket will be attached.

Attach the the bracket (on the left side of the unit) to the desk with 3-inch (#6) wood screws. Do not tighten the screws completely.

Adjust the unit so that it is flush with the front of the desk.

Drill starter holes in the desk for the bracket located on the right side of the unit.

Attach the right bracket to the desk.

Tighten all bracket screws.

Reconnect all I/O cables to the back of the computer system.

Move the computer back into place.

Replace the rear grill on the desk.

Plug the power cord from the power line module into a wall outlet and turn the ventilation unit on.

Installation and Start Up - Desk Top Mounted

If the computer system sits on a desk top or table, no installation is required for the ventilation unit. Simply center the computer system on top of the ventilation unit. Align the perforations on the bottom of the computer with the fan openings on the top of the ventilation unit.

Unplug the computer power cord from the wall outlet and plug it into one of the power cord outlets on the ventilation unit. (There is no need to unplug the computer power cord from the back of the computer.)

Next, plug any peripherals into the ventilation unit.

Plug one end of the ventilation unit power cord into the power line module and the other into a wall outlet.

Finally, turn the ventilation unit on.

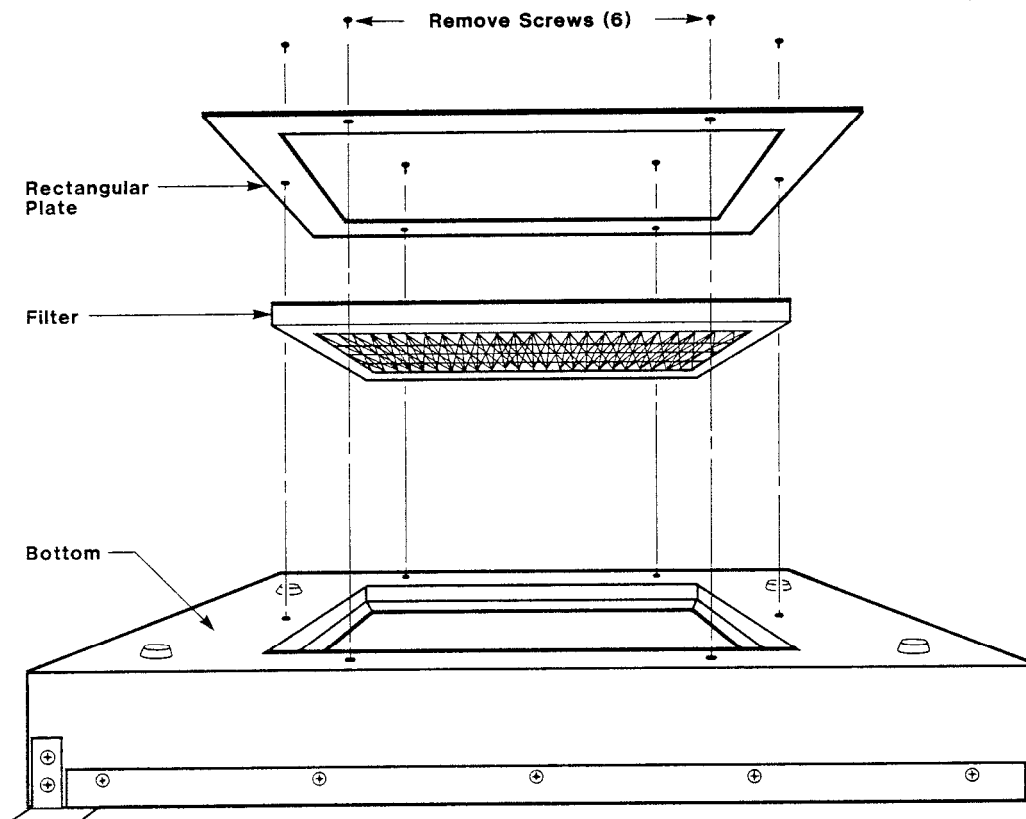
Chapter 3

Maintenance

Cleaning and Replacing the Filter

A dirty filter may overburden the fans and cause the ventilation unit to malfunction completely. To avoid this, clean the filter frequently and replace it periodically.

The filter is located on the bottom of the ventilation unit. It is held in place by six screws. To clean or replace the filter, unplug the system, and remove the screws and the rectangular plate that hold the filter in place. The filter should drop out. If it does not, take a pair of pliers and pull down gently. The filter should slip out easily.



To replace the filter, reverse the procedures described above.

Every month, the filter should be vacuum-cleaned or washed in warm water and mild detergent. Every six months the filter should be replaced.

Replacing Fuses

Power Line Module--The fuse in the power line module will blow if the ventilation unit is overloaded, so before you replace the fuse, unplug one or more power cords from the ventilation unit.

The fuse for the switched outlets on the ventilation unit is located on the right side of the power line module. To remove it, pull out on the lever marked **FUSE PULL** and the fuse will pop out. To replace the fuse, push the **FUSE PULL** lever back into its original position and press a new fuse into place. The fuse in the power line module should be rated at 5 amps.

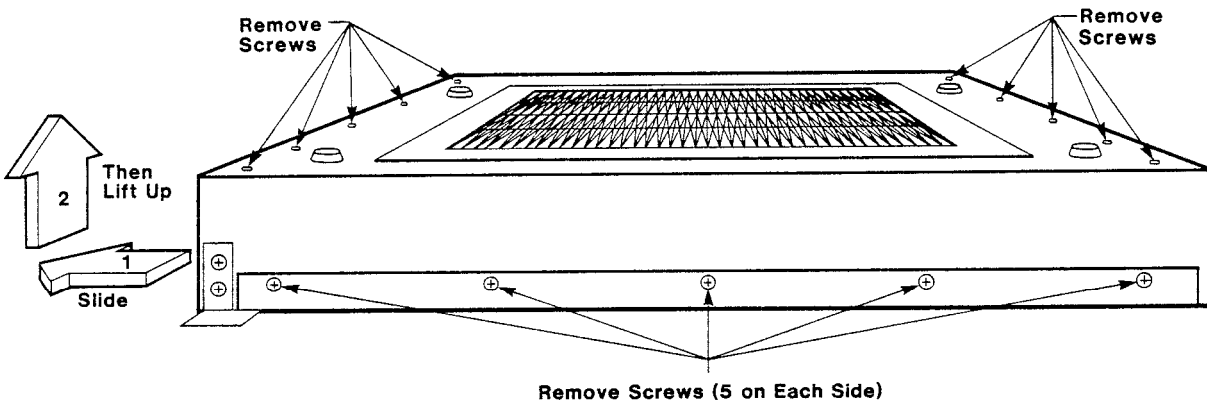
Fans--The fuse for the fans is located in the fuse holder to the right of the power outlets and to the left of the power line module. To remove the fuse, turn the fuse holder cap counterclockwise and pull out. Next, replace the old fuse with a new one--make sure it is the right rating--and screw the fuse holder cap back on. Refer to the chart in Chapter 2 for fuse requirements.

Replacing Fans

The ventilation unit is designed so that the fuse will blow if one or more of the fans malfunction.

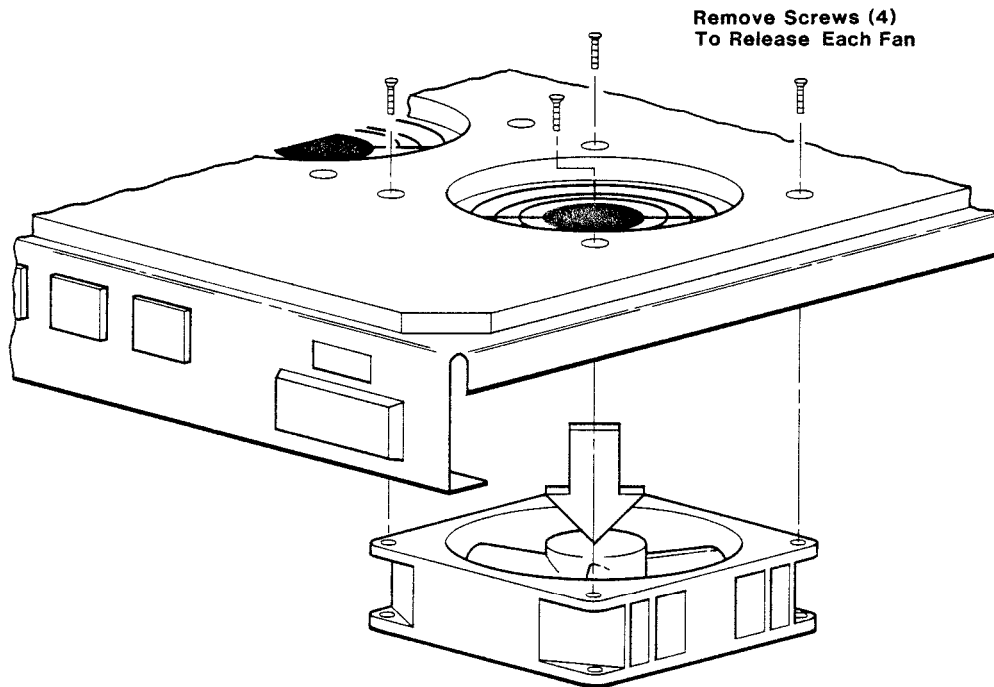
To determine which of the four fans is not working, remove the unit from the desk (or lift the computer off the unit if it is mounted on a table or desk top). Turn the unit over and remove the screws from the sides and bottom of the unit. (Do not remove the screws to the filter plate.) Lift the bottom panel away from the top panel. This will expose all of the fans which are mounted in the top panel.

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An electrical continuity check of each fan will reveal the faulty one(s). Contact your Cromemco dealer if you are unskilled at making such checks.

To remove a fan, take out the screws that hold the fan in place.



Included with this manual is a schematic diagram of the ventilation unit.. Use the diagram to determine where fan wires are reattached when the new fan is installed.

Contact your Cromemco dealer for a replacement fan

or order a new fan by using the following part number:

Model	Part No.	Description
BRZ-II	021-0135	WR2H1 ROTRON
BRZ-III	021-0107	ETRI

To replace the fan, reverse the procedures given above. Finally, if the fan fuse has blown, replace it using the procedures given in this manual. Reinstall the ventilation unit.

Caution: To avoid damage to your ventilation unit, order only the fan model which is listed in Appendix A.

Appendix A
SPECIFICATIONS

BRZ-II Ventilation Unit

FANS: Manufacturer: ROTRON
Model: Whisper/WR2H1
Total Airflow: 300 CFM (4 fans)

Caution: Circuit designed for this fan model only.

FILTER: Special Application Filter
Porosity: 10/45 PRM
Part No. 016-0159
Replace: Every 6 months
Clean: Every month

FUSES: Fan Fuse: 0.5 amps @ 115V AC
0.25 amps @ 220V AC

Power Line Module: 5 amps

POWER OUTPUT: 3 switched outlets, 4.5 amps total

INPUT VOLTAGE: 100/130V - 200/260V Line Voltage
Card Selectable

SHIPPING WT: 26 lbs.(11.8 kg.)

BRZ-III Ventilation Unit

FANS: Manufacturer: ETRI
Model: 126LF
Total Airflow: 140 CFM (4 fans)

Caution: Circuit designed for this fan model only.

FILTER: Special Application Filter
Porosity: 10/45 PRM
Part No. 016-0159
Replace: Every 6 months
Clean: Every month

FUSES: Fan Fuse: 0.5 amps @ 115V AC
0.25 amps @ 220V AC

Power Line Module: 5 amps

POWER OUTPUT: 3 switched outlets, 4.5 amps total

INPUT VOLTAGE: 100/130V - 200/260V Line Voltage
Card Selectable

SHIPPING WT: 24 lbs.(10.9 kg.)

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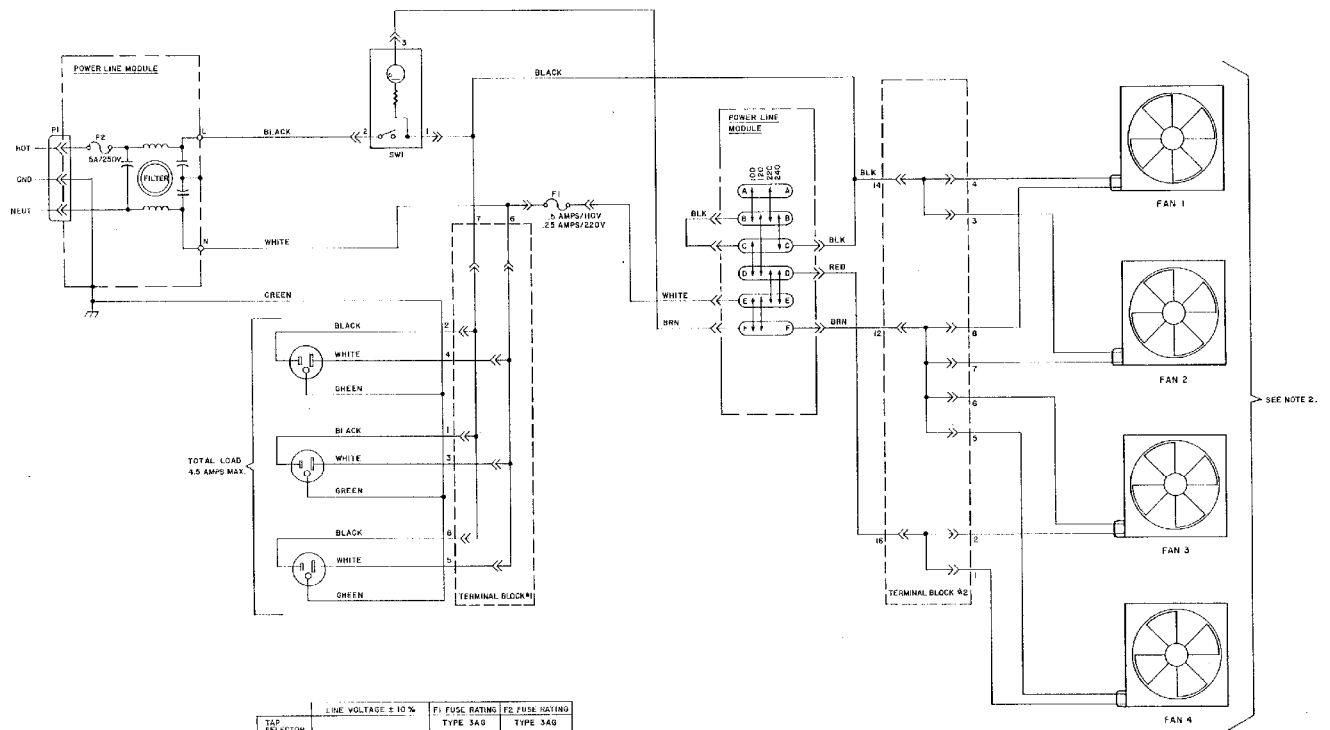
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TAP SELECTION RING POSITION	LINE VOLTAGE ± 10 %	F1 FUSE RATINGS	
		TYPE 3AG	TYPE 3AG
100	100	5	5A
120	120	5	5A
220	220	25	5A
240	240	25	5A

2. BUJRON MOD. W/NSPWH/WREWH FOR BRZ-II 115VAC
 ETRH MOD. ISGLF FOR BRZ-III 115VAC

1. DENOTES CHASSIS GROUND

NOTES:

Cromemco		BRZ-II+III HARNES CABLE SCHEMATIC	
DATE	REV	REV	REV
1/15/68	1	1	1
DESIGNED BY	WIK/BA	DESIGNED BY	WIK/BA
CHECKED BY	WIK/BA	CHECKED BY	WIK/BA
APPROVED BY	WIK/BA	APPROVED BY	WIK/BA
PROJECT NO.	BRZ - PSK - 0113	REV. NO.	A
DATE	1/15/68	REV. NO.	1