

# M1100

## Commercial Air Cleaner



Manual for

Installation • Operation • Maintenance

**TRION**®

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## I. SPECIFICATIONS

CFM:	500 - 1025, variable
Noise:	48 dB - 67 dB, variable
Efficiency:	95% (ASHRAE 52-76)
(depending on bag used)	65% (ASHRAE 52-76)
Motor:	1/3 hp direct drive
Input Power:	115 vac/60 hz - std. 240 vac/50 hz
Power Consumption:	115V/564watts/4.9 amps max.
Weight:	85 lbs.
Dimensions:	43" x 14 1/2" x 19" (L x W x H)
Filter Area:	34 sq. ft. Deep Pocket
Pre-filter:	20 ppi filter foam
After Adsorber:	1" final adsorber, refillable
Primary Filter:	65% deep pocket long bag 34 sq. ft.
optional:	95% deep pocket long bag 34 sq. ft.
optional:	Texwood bag (cleanable)
optional:	65% or 95% deep pocket short bag, 20 sq. ft. with adsorber module or HEPA filter
After Filter Option:	Honeycomb charcoal bypass filter, disposable

## II. PRINCIPLES OF OPERATION

The Trion Model 1100 consists of four basic components:

1. Cabinet for housing all components
2. Blower for moving the air
3. Electrical wiring
4. Collecting components

The air in any room contains millions of particles of dust. The composition of the dust will vary depending on the environment. The dust may be in the form of smoke, airborne dirt from outside, small particles of grease or moisture. The size of the particles (or particulate) will range from as little as .03 micron to anything large enough to remain airborne. (A micron is .0001 meter.)

When the unit is turned on, the blower begins moving the air through the pre-filter section. The pre-filter collects the large dust and lint particles. The air then enters the main filter where the dust or smoke is trapped in the millions of fibers of the bag. The cleaned air then passes through the unit and back into the room.

## III. NEW UNIT INSPECTION

Immediately upon receiving unit, carefully examine the carton for damage during transit. While uncartoning the unit, look for concealed shipping damage. If there is damage, it should be reported to the last carrier for filing claim and to your Trion distributor.

## IV. PREPARATION AND INSTALLATION

This manual should be carefully read before starting the preparation and installation of the air cleaner.

The installation should conform to all local ordinances associated with building codes and electrical codes required for the unit. Authorities having jurisdiction should be consulted before installation is made. If there are no local codes, the installation should conform to the National Electrical Code.

For maximum air cleaning efficiency, your air cleaner should be located as specified by your Trion distributor.

The Model 1100 is recommended for use in a dry environment.

The unit can be either wall-mounted or chain-hung. Four 1/4" dia. eyebolts, flat washers and nuts are supplied with the unit. Optional wall mount brackets are available from you Trion distributor.

### NOTE:

Remove the filters from the cabinet for easier handling.

The following materials will be needed to suspend the unit from the ceiling:

- A. 2/0 chain minimum rated at 240 lbs. working load.
- B. 12 lap links.
- C. Four 1/4 dia. eyebolts, flat washers and nuts are supplied with the unit. Optional wall mount brackets are available from your Trion distributor.
- D. Four 3" adjustable turnbuckles with eye bolts

### CAUTION:

No less than four chains may be used to suspend unit from ceiling. Chains should not angle from ceiling to unit more than 15 degrees.

1. Locate the four weld nuts in the top panel corners and thread one nut on each eyebolt; add lock and flat washers; then screw the eyebolt into the threaded weld nut in each corner of the top panel. Adjust eyebolts and tighten the nuts. The eyebolt should not project more than 1" into the unit.
2. Secure the chain to the ceiling by wrapping chains around beam or joist and securing with a lap link (total of 4 chains).
3. Fasten the turnbuckles to the eye bolts at each corner of the unit using four lap links. Fasten the remaining lap links to the free end of the turnbuckles.
4. Screw the turnbuckles out to approximately 1/2 full extension.
5. Raise unit up to chains, and fasten lap links to chains. Adjust turnbuckles until unit is level.
6. Re-install the pre-filter and collector assemblies.

For alternate installation methods, contact your local Trion distributor.

**CAUTION:**

Do not take chances. If you are unsure about the preceding method, stop the installation until you are satisfied that the method or procedure is correct.

The Model 1100 is shipped with a power cord suitable for plugging into a standard 3-wire, 115 volt wall outlet (see wiring diagram). The outlet must have available 15 amps at 115 volts for proper operation. The power cord must be protected against damage.

**CAUTION:**

Do not remove the third prong on the power cord. This unit must be grounded for safest operation.

## V. UNIT OPERATION

Plug the Model 1100 unit into a standard wall receptacle. If the receptacle is not of the 3-wire grounded type, an adapter can be purchased at any local electrical supply dealer.

To turn unit ON, rotate the knob clockwise. The speed controller allows a wide range of adjustment in the air flow through the unit.

As the bag begins loading with particulate, an increase in blower speed by adjusting the control knob may be required to maintain a given air flow.

## VI. MAINTENANCE

Precision equipment, such as your Trion air cleaner, will require a minimal amount of maintenance to keep it in good operating condition. All normal preventative maintenance can be done by you, or your local Trion distributor may offer a maintenance and cleaning contract at a nominal charge. Contact him or her for details.

**CAUTION:**

Always disconnect the power source before working on or near the motor or its wiring assembly.

If the power disconnect point is out of sight, lock it in the open position and tag to prevent unexpected application of power.

The Model 1100 cleaning components consist of pre-filter, main filter and/or optional adsorbent module.

The filters and module are accessible from the inlet end of the unit allowing simple, fast replacement.

Filters are changed according to the pressure across the filter. An optional magnahelic gauge and static pressure taps are available from Trion. A U-tube or slant gauge with a range of 0-2" water column also can be used to read filter pressure. Install pressure tap in "Low" side of the gauge.

MAIN FILTER	95%	65%
BOTH FILTERS CLEAN	.50	.40
CHANGE PRE-FILTER	.70	.70
RECOMMENDED FINAL	1.0	1.0

NOTE: These readings will vary slightly due to altitude and temperature.

(Above chart based on highest speed obtained by control. These readings are not actual but are typical of what you should see.)

Upon installation of the unit, note the initial pressure reading. Check daily and clean or replace pre-filter at the reading shown in the table. Pressure should return to near the initial pressure reading. When the pressure reading, with clean pre-filter, shows little improvement (less than 0.1") allow unit to run until recommended final pressure is reached. At that point, pre-filter should be cleaned and the main filter should be replaced.

Once a pattern has been established, the pre-filters can be cleaned or replaced on a calendar basis with the main filter being replaced when the gauge reads "Recommended Final" in the table. For example, if the unit takes six weeks to go from 0.50 to 0.70, the pre-filter should be cleaned every six weeks until no change

occurs in the pressure reading when the pre-filter is replaced. At that point, the unit would be allowed to run until 1.0 and both filters replaced.

**NOTE:**  
The unit can continue to run beyond the 1.0 pressure reading. However, air flow will be further reduced.

The above information is provided as a guide for when to change filters. However, the real determining factor for filter change is your own judgement. If the unit does not seem to move as much air as it did when it was new, the pre-filter or pleated filter may need to be replaced.

### VII. CLEANING AND INSPECTION OF CABINET

After the dirty components have been removed, an inspection of the cabinet should be made. Remove all foreign debris and dirt accumulation inside the cabinet. Check for dirt accumulation on the blower wheel blades and clean if there is a buildup. Inspect all wiring for loose connections and cracked insulation.

Bearings of both blower and blower motor should be checked for signs of unusual wear.

Models having motors with oil cups require periodic lubrication. Use SAE 20 non-detergent motor oil every six months. Motors with ball bearings do not require lubrication.

**NOTE:**  
The following instructions are for use by qualified personnel.

**WARNING:**  
The following procedures will expose hazardous live parts. **Disconnect the air cleaner before proceeding.**

### VIII. REPLACEMENT PARTS ORDERING INFORMATION

The following pages contain exploded views and bill of material for the Trion Model 1100. Use these pages to determine the part numbers of items that are needed. To order repair parts, contact your local Trion distributor.

The following information will be required for prompt delivery of repair parts:

INFORMATION	LOCATED
1. Unit model number	ID plate below switch
2. Unit serial number	ID plate inside cabinet
3. Part number & description	Exploded views

### IX. TROUBLESHOOTING

All Trion air cleaners are manufactured to give the user continued, troublefree service. However, as with all mechanical equipment, breakdowns do occur.

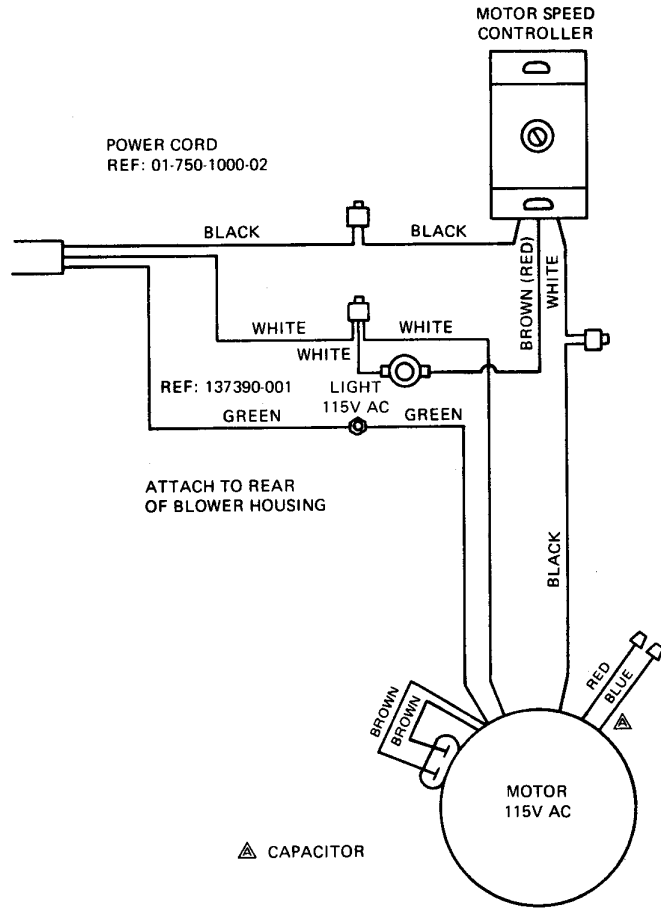
Troubleshooting the unit is very easy as there are only three electrical components in the unit: the motor with capacitor, the speed controller and a light.

PROBLEM	SOLUTION
A. Unit does not operate. Light does not operate.	A1. Check 115 VAC input power. A2. Broken lead in power cord. A3. Bad speed controller.
B. Light glows but blower does not run.	B1. Broken wire between the speed controller and the motor. B2. Bad motor capacitor. B3. Bad motor.

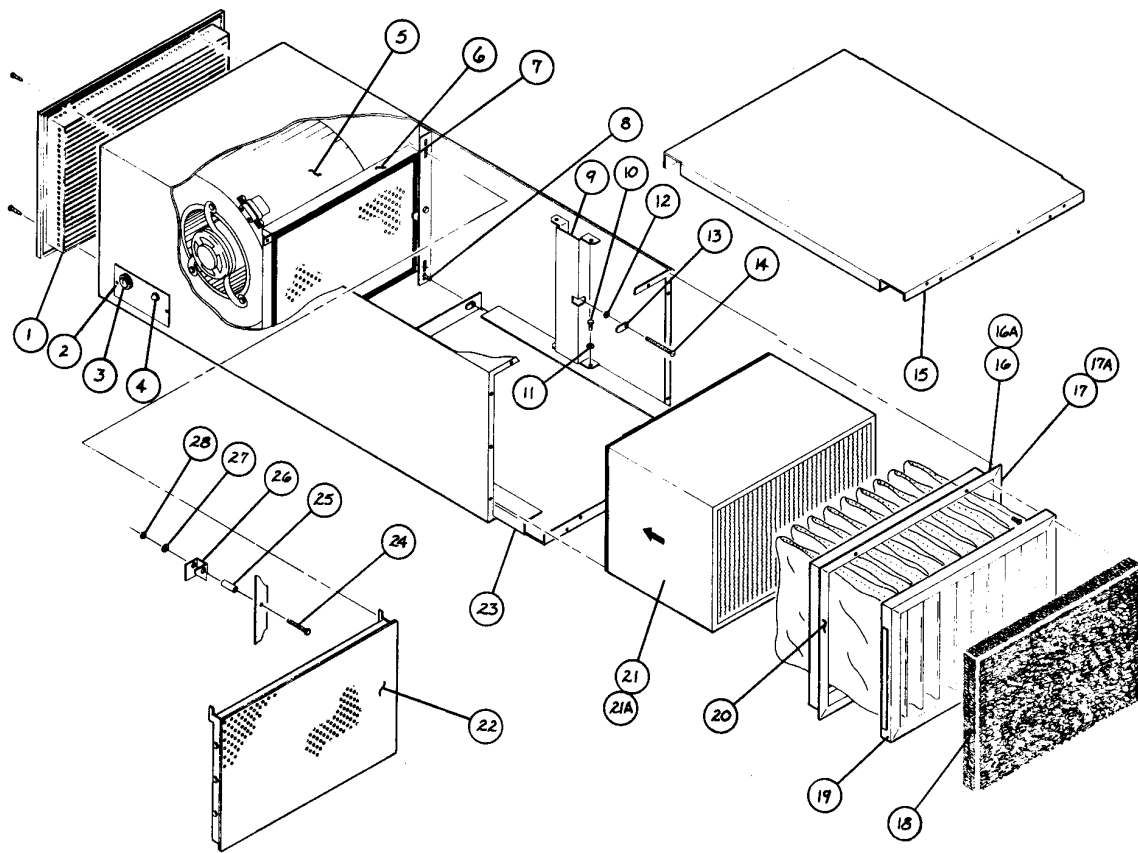
### X. WARRANTY

All Trion electronic air cleaners are warrantied for component failure and workmanship for a period of three years after purchase, provided the Warranty Card has been properly filled out and returned. Do not return defective parts without prior permission from the factory.

# XI. WIRING DIAGRAM



1100-1000-10 DWG



Item	Part Number	Description
1	750-8001-00	Register (outlet grill)
2	1100-1000-01	Label
3	72015-0000-0010	Speed control
4	73000-0001-03	Light 115 V
5	1100-1200-0001	Blower and motor ass'y
6	69000-0001-9910	Charcoal disposable filter, opt.
7	224779-012	Gasket, $\frac{3}{4} \times \frac{1}{8} \times 6'$
8	221235-304	Screw, hex. head
9	1100-9007-00	R/L side frame (opt.)
10	221235-304	Screw, hex. head
11	120033-009	Lockwasher
12	123149-001	Elastic stop nut
13	137564-001	Pawl (opt.)
14	120034-519	Screw
15	1100-9006-00	Side frame
16	750-9003-00	Top/bottom frame (opt.)
16A	137389-203	Screw
17	750-9002-00	Side frame (opt.)
17A	1100-9008-00	Prefilter frame
18	750-1000-03	Prefilter foam
19	1-750-3000-0002	Filter bag, long 65%, std.

Item	Part Number	Description
19A	1-750-3000-0001	Filter bag, long 95%, opt.
19B	1-750-3000-0004	Filter bag, short 65%, opt.
19C	1-750-3000-0003	Filter bag, short 95%, opt.
19D	1-750-3001-0001	Textwood bag, long, opt.
20	120034-406	Screw (4)
21	7650-8002-00	Adsorber module refillable(opt.)
21A	1100-8003-0000	HEPA filter, 95%, opt.
21B	1100-8003-0001	HEPA filter, 99.97%, opt.
22	750-8000-00	Final adsorber, refillable, opt.
23	1100-9006-00	Bottom frame (opt.)
24	220008-196	Screw, hex. head
25	220107-095	Spacer
26	1100-9005-00	Filter latch R & L
27	120033-009	Lockwasher
28	120036-008	Hex nut
29	224779-024	Gasket, $\frac{1}{2} \times \frac{1}{8} \times 6'$
30	138055-001	M1100 IOS manual
31	750-1000-02	Power cable (not shown)
32	55900-0004-01	Activated charcoal, opt.
33	55900-0004-02	Activated alumina, opt.
34	750-1000-09	Wall mounting kit, opt.

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