

INSTALLATION

INSTALLATION INSTRUCTIONS

WARNING

Single phase ECM motors are NOT suitable for use with solid state speed control. They already have speed control built into the motor electronics.

Moteurs d'une phase de l'ECM ne conviennent pas pour une utilisation avec regulateur de vitesse electronique. Ils ont déjà le contrôle de vitesse intégré dans le moteur électronique.

CAUTION

The TRC800 weighs 210 lbs. and the TRC800V weighs 207 lbs. It is the installer's responsibility to make sure that the screws or bolts used for securing the units are properly selected for the loads and substrates involved.

WARNING

Secure the TRC800 or TRC800V with straps or clamps so that it cannot fall or tip in the event of accident, structural failure or earthquake.

ELECTRICAL SPECIFICATIONS

Use conduit, strain reliefs, etc. as required by code to secure the field wiring. Electrical knockouts are provided for alternate line voltage and voltage control locations for field wiring to the internal electrical box. If the alternate sites are desired for field wiring then carefully remove the knockout plugs and foam insulating plugs from the alternate sites and install them in the open knockout locations.

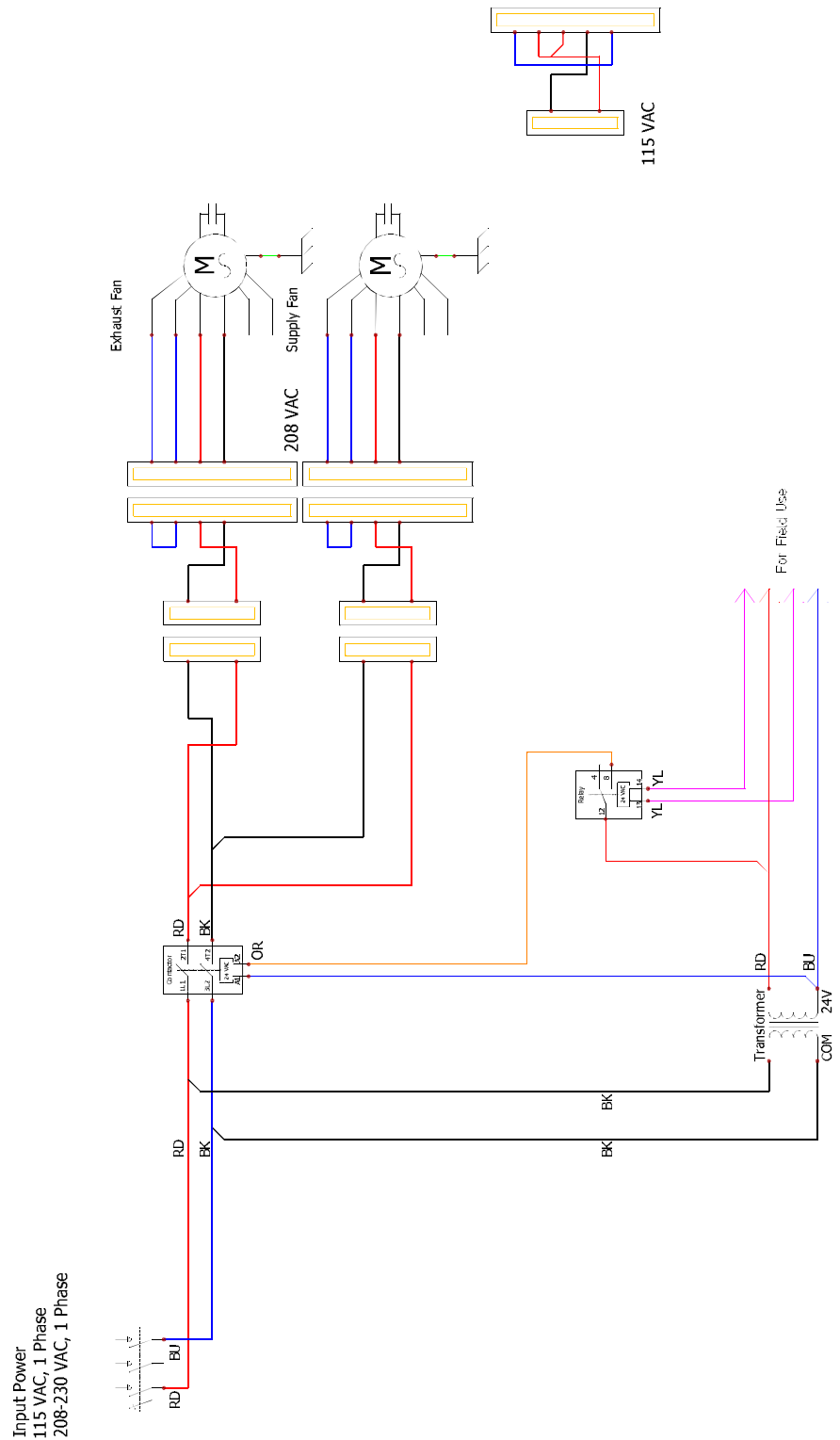
NOTE: If your unit is equipped with EC Motors, please refer to "EC Motor Manual Supplement" for more detail.

ERV TRC800 & TRC800V

INSTALLATION

TRC800 & TRC800V SINGLE PHASE

NOTE: Schematics shown are representative of standard units. See Unit Schematic label for detailed information.



TRC800 & TRC800V

ERV

INSTALLATION

LOW VOLTAGE CONTROL SYSTEM

This ERV is provided with a Class II 24VAC power supply system that operates the unit's contactor(s) for TRC800 & TRC800V. The ERV's 24VAC Power Supply can also be used to power the externally-installed controls system: up to 8VA of power is available.

The unit's power supply system includes isolation relay(s) so you can use external controls whose contact ratings are as low as 50mA (1.2VA). Also, it is possible to operate the isolation relays with 24VAC power from an external source (with proper wiring connections).

A built-in circuit-breaker prevents damage to the transformer and other low-voltage components in the event of a short-circuit or overload. In extreme cases, the transformer itself is designed to fail safely.

SPECIFICATIONS

- Nominal Output Voltage under load: 24VAC
- Typical Output Voltage at no load: 29-31V
- Minimum contact rating for connected control device: (50mA (1.2VA)
- Circuit Breaker Trip Point: 3A

CAUTION

1. Connect only to components intended for use with 24VAC power.
2. Do not undersize the low-voltage wires connected to this device. Observe the wire length and gauge limits indicated in this manual.
3. Do not overload this unit's 24VAC power supply system. Confirm that the power requirements of devices you connect to this power supply system do not exceed 8VA in total.
4. If an external source of 24VAC power is used to control the unit, consult the wiring schematics and connect the external power only to the specified terminals in order to avoid damaging the unit or external controls. Connect only CLASS II power to the control terminals of this unit.
5. Unit is not equipped to receive analog signals (such as 1-10vdc or 4-20mA).
6. Unit is not equipped to communicate directly with Building Management Systems (such as BACNET, LONWORKS, etc.). However, the unit can be controlled by powered or non-powered contacts operated by any kind of control system.

HOW TO RESET THE 24VAC CIRCUIT BREAKER

If the transformer is subjected to an excessive load or a short circuit, the circuit breaker will trip to prevent the failure of the transformer. When it trips the circuit breaker's button pops up. Shut off the primary-side power to the unit, and remove the excessive load or the short. The circuit breaker can be reset about fifteen seconds after it trips by pressing in the button.

LIMITS OF POWER OUTPUT

If limits on wire gauge and length are observed, you may connect control devices that draw up to 8VA to the blue and red wires. More than one device can be connected as long as total steady-state load does not exceed 8VA.

OBSERVE THESE LIMITS TO WIRE LENGTH AND GAUGE in order to ensure reliable operation of the control system.

Wire Gauge	#22	#20	#18	#16	#14	#12
Circuit Length	100'	150'	250'	400'	700'	1000'
"Circuit Length" is distance from ERV to Control Device.						

INSTALLATION INSTRUCTIONS

INSTALLATION NOTES

If primary-side voltage is 230VAC, move black primary-side lead from transformer's "208V" terminal to the transformer's terminal marked "240V" ("230V" in some units). Do not move the black primary-side lead that is connected to the transformer's "COM" terminal.

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TRC800 & TRC800V

INSTALLATION

CONTROL WIRING SCHEMATICS

NOTE: The simplified schematics below show only the relevant portions of the low-voltage control circuit in the ERV unit and representational external control approaches. See the complete unit schematics elsewhere in this manual.

CAUTION

Be careful if the external control system provides 24VAC power at its control output: make sure blue and red leads are separately capped and not connected to any other wires.

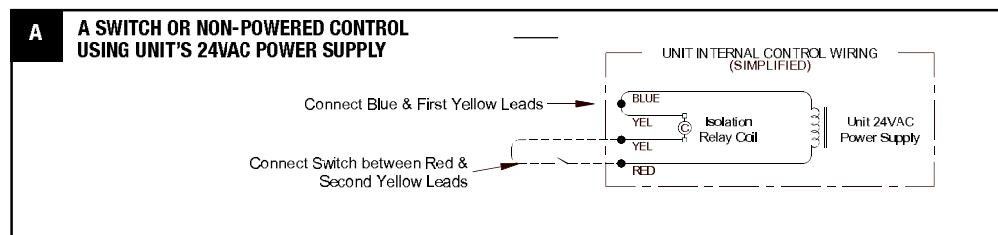
CONTROL WIRING EXAMPLES BY TYPE OF APPLICATION

A. Single 2-wire Control: Use this schematic if the control requires no power to operate and acts like a simple on/off switch. The control must not supply any power to the ERV unit. Connect the blue lead to one yellow lead. Connect the control's contacts to the red lead and the remaining yellow lead.

Control on separate Power Supply, no power present at Control Output:
Wire as shown for the Single 2-wire control.

CAUTION

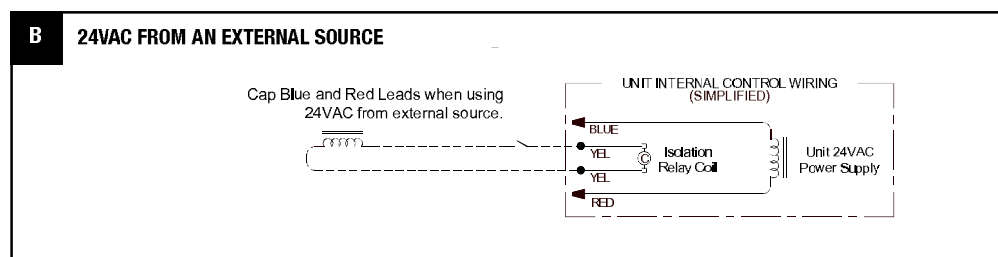
Make sure the control provides no voltage or current at its output terminals.



B. Control Sending 24VAC "On" Signal (from an external power source) to ERV: Make sure the blue and red leads are separately capped and not connected to any other wires. Now you safely can apply 24VAC to the two yellow leads to operate the ERV's isolation relay.

CAUTION

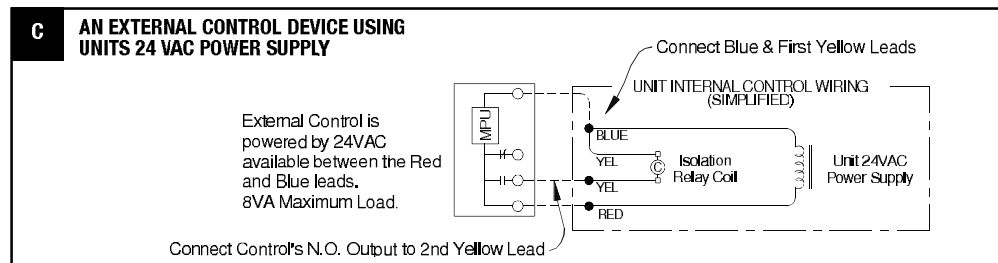
Supply only 24VAC (not VDC) from a Class II Power Source.



C. Control operating on Unit's 24VAC Power Supply: 24VAC power is available at the blue and red leads. Connect one of the yellow leads to the blue lead. Connect the switched output of the Control to the red lead to operate the ERV's isolation relay.

CAUTION

External control system should not draw more than 8VA.



TRC800 & TRC800V ERV

START-UP

EQUIPMENT REQUIRED

- A manehelic gauge or other device capable of measuring 0 to 1.5 in. water of differential pressure.
- 2 pieces of natural rubber latex tubing, 1/8" ID, 1/16" Wall works the best.

NOTE: Be sure to remove cap from pressure port before inserting tubing. Insure tubing is well seated in pressure ports.

NOTE: The tubing should extend in the pressure port approx. 1 inch.

MEASURING AIR FLOW

CROSS CORE STATIC PRESSURE MEASUREMENT INSTRUCTIONS

The individual differential static pressures (DSP) can be measured using the installed pressure ports located in the front of the units core access doors.

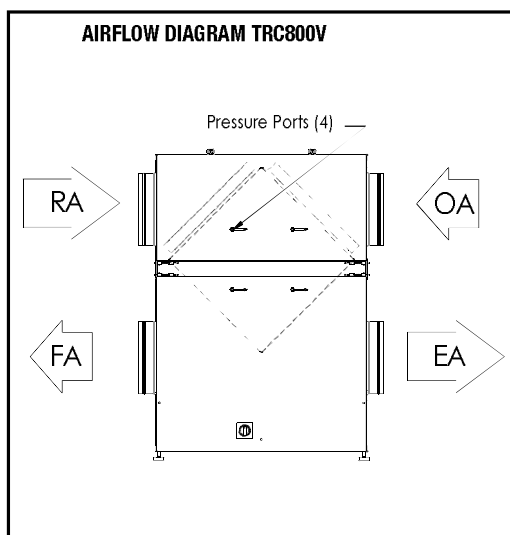
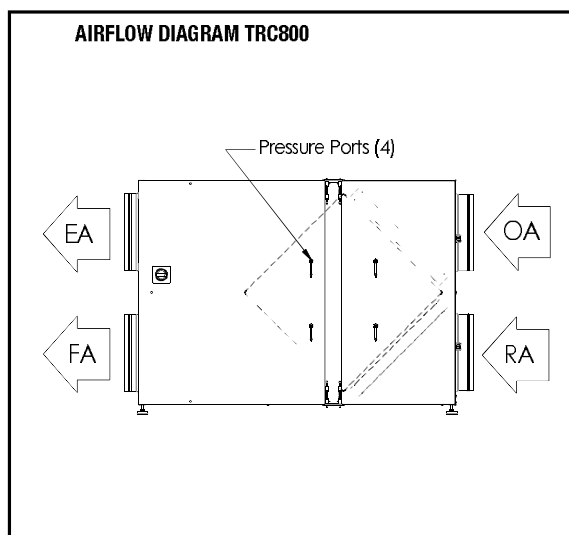
NOTE: These ports have been carefully located on the unit as to give you the most accurate airflow measurement. Do not relocate pressure ports.

- To read SCFM of Fresh Air (FA) install the "high" pressure side (+) of your measuring device to the Outside Air (OA) port and the "low" pressure side (-) to the Fresh Air (FA) port.

- To read SCFM of Room Air (RA) install the "high" pressure side (+) of your measuring device to the Room Air (RA) port and the "low" pressure side (-) to the Exhaust Air (EA) port.

- Use the reading displayed on your measurement device to cross reference the CFM output using the conversion chart.

NOTE: Be sure to replace cap into pressure port when air flow measuring is completed.



DIFFERENTIAL STATIC ACROSS CORE DSP VS. CFM

TRC800V		DSP	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10
	Fresh Air (FA)	CFM	280	380	470	570	670	770	860	960	1060	1160
	Room Air (RA)	CFM	220	320	430	530	630	730	840	940	1040	1140
TRC800		DSP	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10
	Fresh Air (FA)	CFM	260	360	470	570	670	770	870	970	1070	1180
	Room Air (RA)	CFM	240	340	440	540	640	740	840	940	1040	1140

ERV

TRC800 & TRC800V

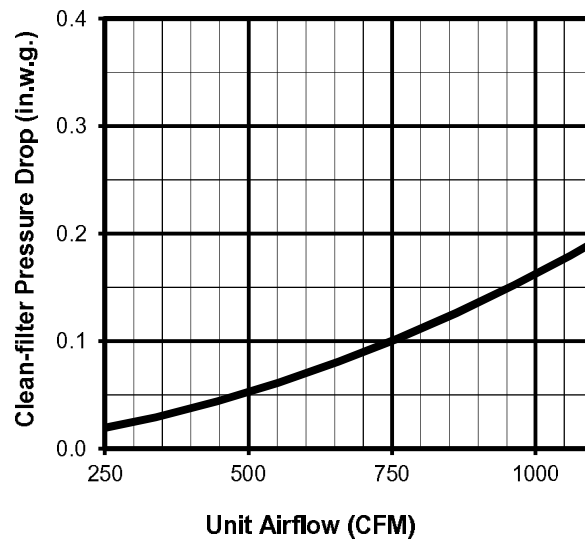
START UP

MEASURING AIR FLOW

FILTER SPECIFICATIONS

- (2) 20" x 20" x 2"(nominal) pleated filters. Actual size: 19.5" x 19.5" x 1.75"
- Unit shipped with MERV-8 Filters. Minimum recommended effectiveness: MERV-6

**INITIAL PRESSURE DROP OF
MERV 8 FILTERS - SUPPLIED WITH THIS UNIT**

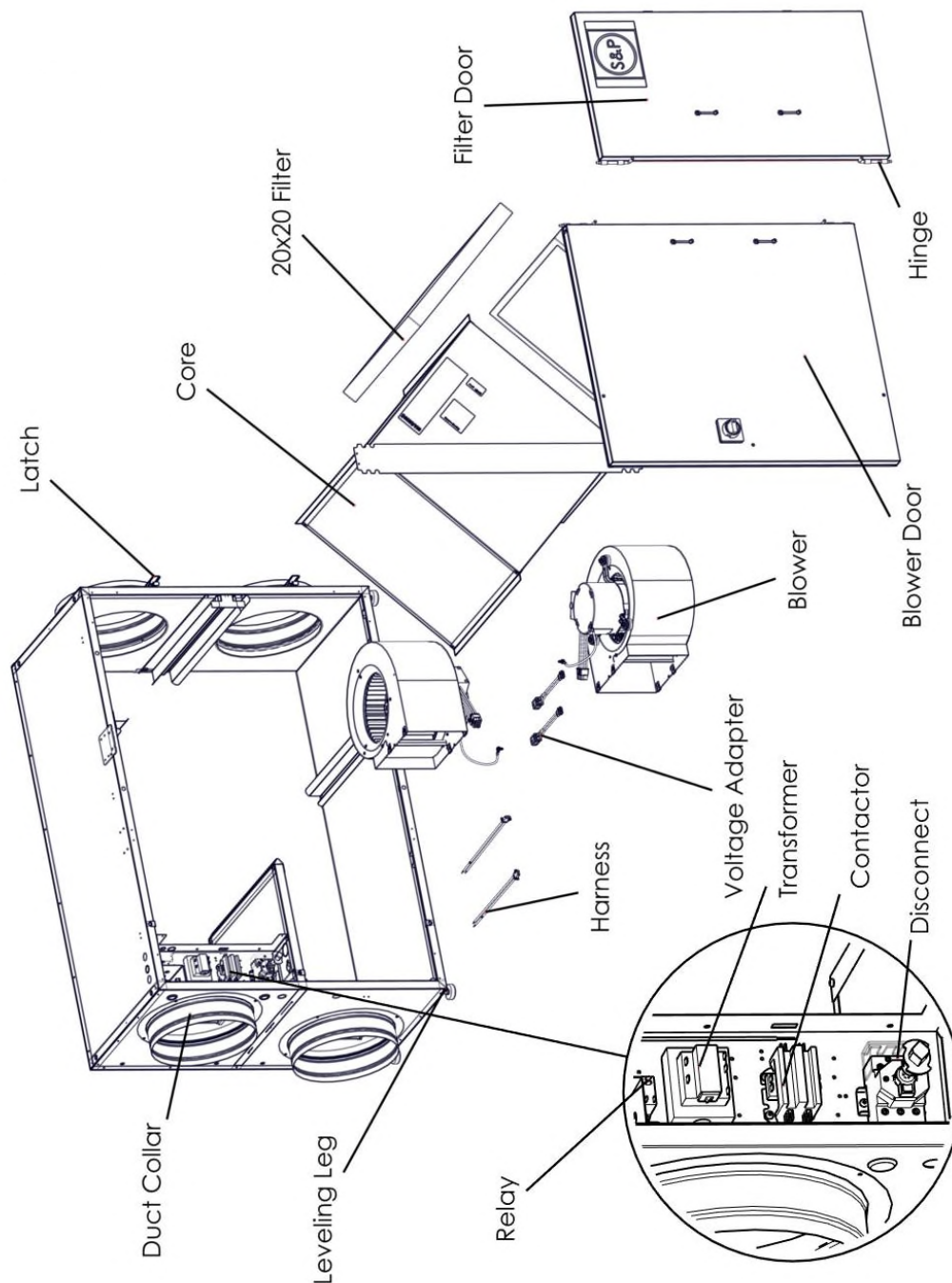


NOTE: clean filter pressure drop is included in unit airflow performance tables.

TRC800 & TRC800V ERV

MAINTENANCE

TRC800 Horizontal Unit SERVICE PARTS



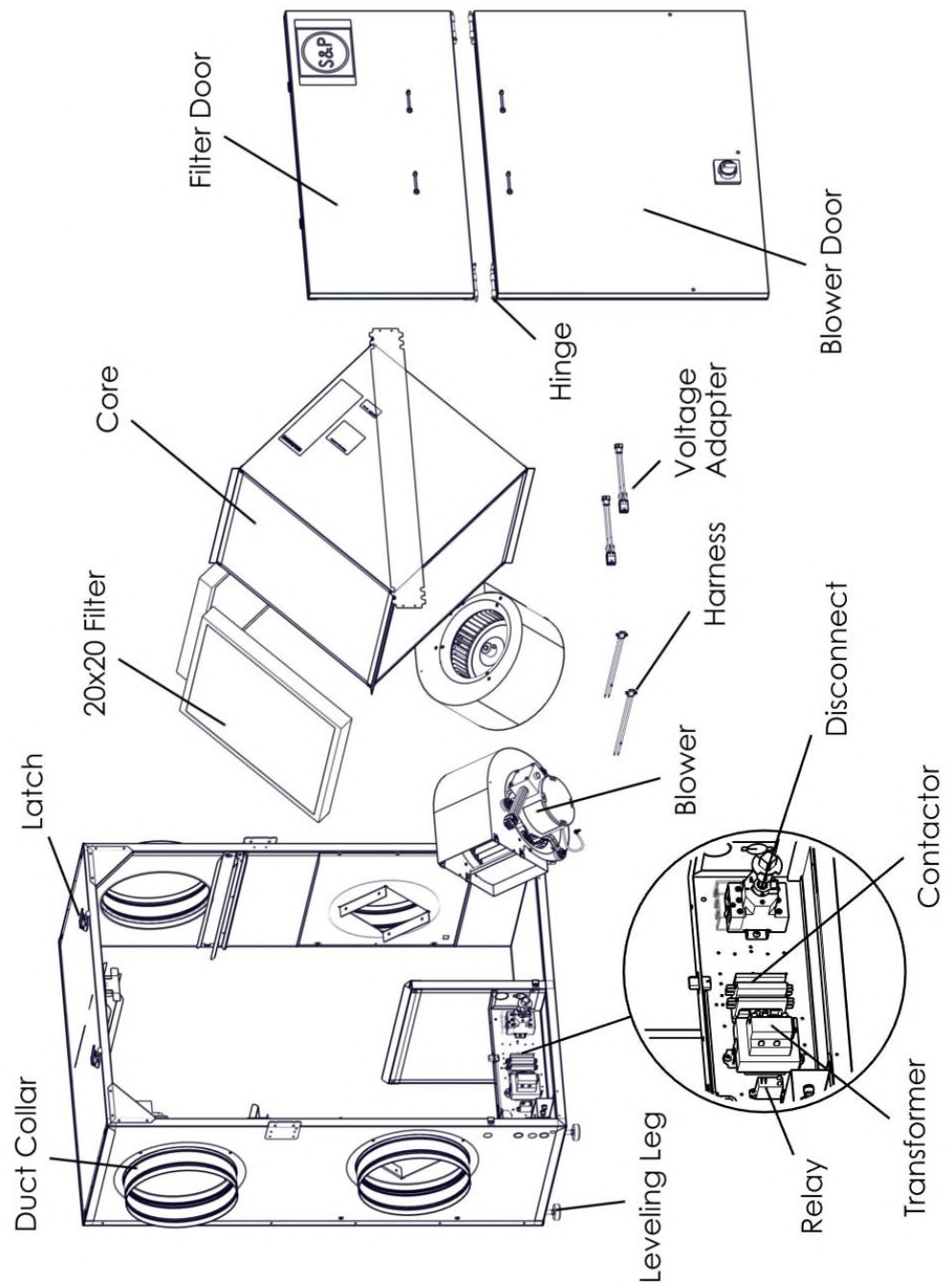
ERV

TRC800 & TRC800V

MAINTENANCE

SERVICE PARTS

TRC800V Vertical Unit



MAINTENANCE

REQUIREMENTS

WARNING

Danger of Electrical Shock when servicing an installed unit.

ALWAYS DISCONNECT POWER SOURCE BEFORE SERVICING! More than one disconnect switch may be required. Proper Wiring Size Selection and Wiring Installation are the Responsibility of the Electrical Contractor.

Keep your ERV performing at its best by cleaning it as described below:

TO CLEAN THE ENERGY EXCHANGE ELEMENT

Vacuum the face of the energy exchange element yearly. Dust collects only on the entering face of the energy exchange element, right where the filter sits. The interior of the energy exchange element stays clean even if the element faces are dust covered.

1. Remove the filters (see below)
2. Vacuum the exposed faces of the energy exchange element with a soft brush attachment
3. Vacuum out dust from the rest of the unit case
4. Install new filters

INSPECT AND CHANGE THE FILTERS REGULARLY.

Inspect and/or replace filters every two or three months when the TRC800/V is in regular use, or as needed. Filters must be used or the energy exchange core will become blocked by dust and the unit will not do its job. In extreme cases components may be damaged.

1. To access the filters unlatch the filter access door. The filter access door may be removed.
2. Remove filter keeper.
3. Pull the dirty filters out and replace with new filters.
4. Reinstall the filter keeper.

NOTE: The filters supplied in the unit are usually able to keep the energy exchange core clear for several months. Finer filters can be used but must be cleaned more often. If using finer filters, their increased resistance to flow must be allowed for in the system design.

MOTOR MAINTENANCE

The motor needs no lubrication. If necessary vacuum clean the blower wheels at the same time you clean the face of the energy exchange element (annually).

WARNING

RISK OF INJURY OR DAMAGE

Motor may have a manual reset thermal protector. Disconnect power before servicing or resetting motor thermal protector. Use caution, motor may be hot. Allow the motor to cool before resetting the thermal protector.

If the motor thermal protector tripped, correct the issue that caused the motor to overheat (e.g. over motor rated amperage or locked rotor).

If the motor has a manual reset thermal protector, the red thermal protector reset button is located on the motor body, on or near the lead end of the motor. If the button does not reset, the motor may still be too hot. Allow the motor to fully cool to reset the thermal protector, you should feel or hear a click when the thermal protector resets while pushing the reset button.

CAUTION

DO NOT WASH THE ENERGY EXCHANGE CORE.

Keep it away from water or fire to avoid damaging it. Always handle the core carefully.

WARNING

Don't allow the filter access door to drop when unlatched. Injury to personnel or damage to unit may occur.

Keep fingers away from between the filter access door and the blower access panel when unlatching and opening the filter access door. Potential PINCH POINT.