

# RESIDENTIAL KITCHEN HOOD OR BATHROOM EXHAUST FAN SPECIFICATION

The Chimney Design Solutions automated residential kitchen hood or bathroom exhaust system, manufactured by Exhausto, shall meet UL-705, 'Standard for Power Venters', and shall have a capacity as shown on the schedule. The automated residential kitchen hood exhaust system shall have a two-year factory warranty. The system shall be manufactured at an ISO9001 certified plant and be of highest quality workmanship and construction. The system shall have the following features:

- A. The box ventilator (BESB) shall be suitable for indoor and outdoor installation. The BESB's corrosion-resistant housing shall have duct connections and be designed so the entire impeller and motor assembly can be removed as a unit. The BESB shall have a hinged service door for easy cleaning and service. The BESB shall be designed as a Type B, Spark Resistant Construction in compliance with AMCA Standard 99-0401. The backward curved impeller shall be made in cast aluminum and be statically and dynamically balanced with permanently attached balancing weights. The motor shall be a totally enclosed, fan-cooled (TEFC) inverter-duty motor with pre-lubricated and sealed ball bearings requiring no further maintenance, and rated as shown on the fan schedule. The motor shall be factory warranted by the fan manufacturer to operate at frequencies as low as 8Hz for three-phase motors and voltages as low as 15V for single-phase motors. To assure motor longevity, the motor shall not operate at speeds above 1720 RPM or 60Hz for three-phase motors and 1600RPM for single-phase motors.
- B. The modulating fan control (EBC12) shall be able to maintain a constant pressure with a tolerance of 0.01"W.C., by modulating the BESB's speed via an external variable frequency drive (VFD) for three-phase motors or an integrated triac board for single-phase motors. The EBC12 shall include a pressure transducer (XTP), six feet of silicone tubing and a duct probe. The duct's pressure shall be referenced in the lower portion of the exhaust shaft while the building's pressure shall be referenced in the lower portion of the building. The EBC12 shall provide automatic pressure maintenance, pressure proving and lockout in addition to:
  - a. Potentiometer to set the required pressure and a LCD panel to display the value. The LCD panel shall also be able to show the actual pressure.
  - b. Electrical terminals monitored constantly via LED diodes for verification of proper operation.
  - c. LED diode to verify ventilator operation and cycling.
  - d. LED diode to indicate alarm.
  - e. Safety function to notify building management in case of insufficient pressure or ventilator failure, and indicate this with a visual alarm.
  - f. Integrated triac board for controlling the speed of a single-phase motor.
- C. For ventilators with three-phase motors, furnish a VFD, Danfoss Model VLT2800, factory-programmed for and approved to operate the ventilator. The VFD shall be immune to electromagnetic interference.
- D. Minimum performance requirements of the automated kitchen hood exhaust system:
  - a. The system shall be able to accelerate from no load to its highest load within 15 seconds.
  - b. The system shall be able to decelerate from its highest load to no load within 25 seconds.
- E. Contact Chimney Design Solutions of New York City at 212-685-7077 for a list of representatives and/or distributors.
- F. Contractor shall install structural, mechanical, electrical, and control connections as designed by the manufacturer and in accordance with the terms of the manufacturer's warranties.
- G. Follow all pertinent national, state, and/or local codes where applicable.

## SCHEDULE

Unit Tag	Serving	Manufacturer	Model	Electrical Data			RPM	HP	Capacity CFM	S.P. in WC
				Amps	Volts	Phase				
KXF-1	Kitchen Hoods	Exhausto	AKVS315 XXXXX	3.6	208-230	3	1720	1.0	2,100	1.0
TXF-1	Toilet Exhaust	Exhausto	AKVS250	5.8	120	1	1600	½	1,250	1.0

1. Contact Chimney Design Solutions of New York City.
2. EBC12 Modulating Pressure Control with Variable Frequency Drive

Model	Electrical Data			RPM	Output HP	Capacity CFM	S.P. in WC
	Amps	Volts	Phase				
AKVS250 F-XXXXX	5.8	120	1	1600	½	1,250	1.0
AKVS315 F-XXXXX	3.6	208-230	3	1720	1	2,100	1.0
AKVS400 F-XXXXX	6.5	208-230	3	1720	2	3,700	1.0
AKVS500 F-XXXXX	9.0	208-230	3	1720	3	5,500	1.0
AKVS315 F-XXXXX	1.7	380-480	3	1720	1	2,100	1.0
AKVS400 F-XXXXX	2.9	380-480	3	1720	2	3,700	1.0
AKVS500 F-XXXXX	4.0	380-480	3	1720	3	5,500	1.0