POWER VENTER SPECIFICATION

The packaged Chimney Design Solutions constant pressure mechanical draft system, manufactured by Exhausto, shall be tested and listed to UL-378, 'Standard for Draft Equipment' and shall have a capacity as shown on the schedule. The mechanical draft 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 power venter (RSIB) construction shall be Type B, Spark Resistant Construction in compliance with AMCA Standard 99-0401. It shall be of a high-temperature design with backward impeller. The stainless steel housing shall be resistant to corrosion with a min. thickness of 0.012" and be a direct drive design. The RSIB shall have a service door on the front to provide easy access to the impeller and the vents/stacks. The RSIB shall be rated for a continuous operating temperature of 575°F measured at the inlet point. The backward curved impeller shall be made in cast aluminum or other non-ferrous material to eliminate the possibility of sparks and the potential of igniting unburned fuel and/or explosive gases. The impeller shall be balanced statically and dynamically, and balancing weights shall be permanently attached. 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. To assure motor longevity, the motor shall not operate at speeds above 1720 RPM or 60Hz.

B. The modulating draft control (EBC30) shall be a true PID microprocessor-based control and shall maintain a constant draft, between 0.012"W.C. and 0.568"W.C with a tolerance of 0.004"W.C., by modulating the power venter's speed via an external variable frequency drive. The EBC30 shall a pressure transducer (XTP) and a stack probe with tubing as shown on the drawings and manufacturer's submittals. The system shall have these features:
    a. "Plug-and-Play" self-checks that detects connections, setting requirements, and accessories.
    b. User interface to set the required chimney system pressure to be provided and a LCD-panel to display the value. The LCD-panel shall also be able to show the actual pressure.
    c. Programmable microprocessor for selective programming of sensor sensitivity, alarm limits and delays, language, manual overrides, and manual functions. The programming shall be accessible via the user interface and/or via an RS-232 port.
    d. Choice of intermittent and continuous operation.
    e. A standard board that interlocks with up to six appliances (expandable to ten appliances) so a call-for-heat activates the EBC30 and allows appliance operation once the pre-set draft has been established.
    f. The proven draft function shall be an integral part of the control to avoid external wiring to separate switches.
    g. Priming feature that allows the chimney system to prime bypassing the base alarm for an adjustable amount of time.
    h. Operating priority feature, which allows one or more appliances to operate during period with reduced draft, provided the draft requirement can be met and safe operation assured.
    i. Alarm functions with fault code showing on LED-display as well as a visual alarm. The monitor shall maintain an error log so the last ten fault codes can be retrieved.
    j. Adjustable post-purge, to allow the chimney fan to operate up to three minutes after the appliances have shut down.
    k. Bearing cycle activation every seven days in case the chimney fan or actuator has not been operating during the past seven day period.
    l. Self-diagnostics panel with LED-diodes for verification of proper operation.

C. Furnish a variable frequency drive (VFD), Danfoss Model VLT2800, factory-programmed for and approved to operate the power venter. The VFD shall be immune to electromagnetic interference. Furnish a motor protection output filter to limit peak voltage and increase voltage rise time when the wire length between the RSIB's motor and the VFD exceeds one hundred linear feet.

D. Furnish an automatic vent damper for all atmospheric draft hood-equipped appliances.

E. Furnish a barometric damper for the appliances that are not draft hood-equipped.

F. Furnish a balancing baffle for each appliance's connector. The balancing baffle shall be placed downstream of any draft hood or barometric damper.

G. Furnish a thermal safety (spill) switch for all appliances with a draft hood or barometric damper.

H. Minimum performance requirements of the mechanical draft 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.

I. Contact Chimney Design Solutions of New York City at 212-685-7077 for a list of representatives and/or distributors.
J. Contractor shall install structural, mechanical, and electrical connections as designed by the manufacturer and in accordance with the terms of the manufacturer's warranties.
K. Follow all pertinent national, state, and/or local codes where applicable.
L. The power venter manufacturer shall verify that the shop drawings' proposed exhaust system complies with the appliance manufacturers' written requirements and that the installation will safely exhaust the connected equipment. The segment-by-segment draft calculation shall be based upon ASHRAE's Chimney Design Equation and submitted with the appliance manufacturers' requirements for review and approval by the engineer.

SCHEDULE

Unit Tag	**Servicing**	**Manufacturer**	**Model**	**Electrical Data**			**RPM**	**HP**	**Capacity**	**S.P.**
				Amps	**Volts**	**Phase**			**CFM**	**in WC**
PV-1	B-1, B-2	Exhausto	CASI 350 XXXXX	3.6	208-230	3	1720	1.0	2,100	1.0

1. Contact Chimney Design Solutions of New York City.
2. EBC30 Modulating Draft Control with Variable Frequency Drive

Exhausto	Voltage *	Amps	Voltage *	Amps	RPM	HP	Capacity	S.P. (in WC)
CASI 350	200-240/3/60	3.6	380-480/3/60	1.75	1720	1.0	2,100	1.0
CASI 400	200-240/3/60	6.5	380-480/3/60	2.90	1720	2.0	3,700	1.0
CASI 500	200-240/3/60	9.0	380-480/3/60	4.0	1720	3.0	5,500	1.0