



TJERNLUND

Modulating Combustion Air Systems

Featuring VSUB-Series Universal Blowers and the CPC-3 Controller



CPC-3
Controller



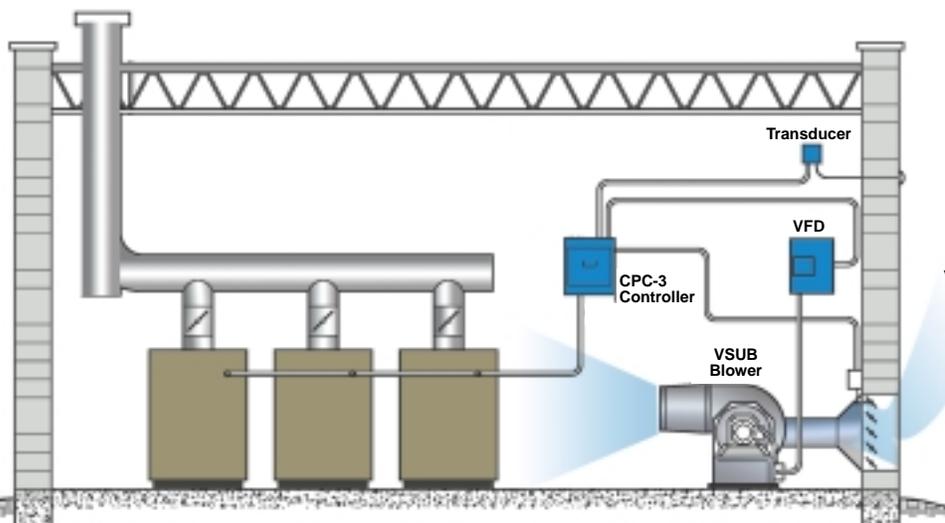
VSUB Universal
Blowers



Conventional combustion air louvers do not perform consistently:

- Simply having a large opening to the outdoors does not guarantee correct volumes of combustion air. Depending on wind speeds and direction, mechanical rooms may get significantly more or less air than is actually needed.
- As with chimneys, combustion air openings must be sized based on the combined firing rate of all heaters within the mechanical room. In reality, all heaters rarely if ever operate at the same time.
- Uncontrolled combustion air can cause problems ranging from frozen pipes to flue gas spillage and flame roll-outs.
- Tjernlund's modulating combustion air systems always ensure proper air supply, regardless of the number of heaters operating and regardless of outdoor conditions.

Typical Modulating Combustion Air System Components



TD-Series
Pressure Transducers



VFD-Series
Variable Frequency Drives



CPC-3—the ultimate combustion air and draft control

The CPC-3 Constant Pressure Controller monitors and automatically modulates the variable speed Universal Blower to maintain a combustion air set point. The CPC-3 can also simultaneously regulate draft by modulating a separate draft inducer.

Programming Options

- Combustion Air Pressure set point
- Draft Pressure set point
- Pre and Post Purge
- Automatic or Manual operation
- Combustion air modes of operation include "Open" room pressure or ducted "Sealed" pressure for sealed combustion burners
- Auxiliary Device Interface for motorized louver or CO detector



Features:

- Large lit display and easy to use soft touch keypad.
- Primary functions can be programmed via dedicated keys, eliminating scrolling through multiple screens.
- Four burner interlock terminal strips compatible with millivolt, 24 volt, 115 volt or 230 volt burner control circuits.
- Add up to 3 EXP-4E's for a total of 16 heaters.
- LED status indicators show which interlocked burners are calling for heat and when the CPC-3 safety circuit approves burner operation.
- Additional LED's indicate limit(s) status, VFD operation and fault status.
- Correct Inducer/Blower rotation is determined by display prompts and changed through DIP switches on the circuit board.
- System fault diagnosis readout and retrieval.
- Built-in alarm alerts building maintenance personnel if system faults. Alarm relay also allows interface with building management system.

VSUB-Series Universal Blowers adapt to your design requirements

VSUB blowers can be installed indoors or outdoors. They can be mounted on the floor, roof, or suspended from the ceiling.

Two modes of operation can be selected:

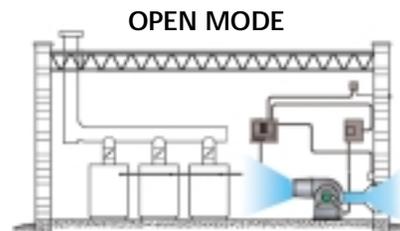
Open Mode:

- Maintains a fixed pressure within the entire mechanical room.
- Employs gradual modulation strategy based on "differential" from set point.
- Adapts to mechanical room size automatically.

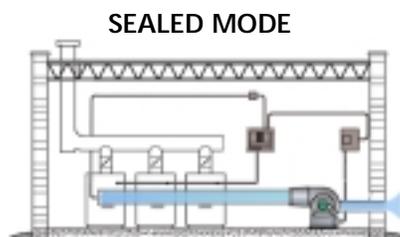
Sealed Mode:

- Maintains a neutral pressure in a common duct serving multiple sealed combustion heaters.
- Employs a very reactive modulation strategy to meet exact demands of modulating burners.

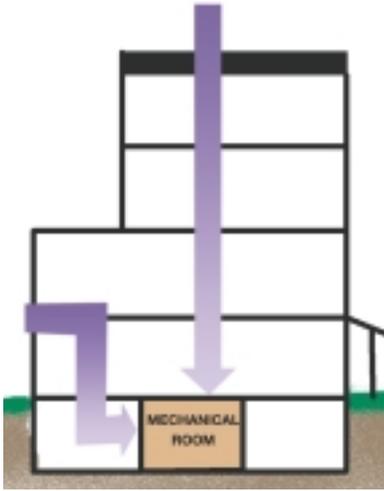
In both modes of operation, the CPC-3 can also control a motorized louver and incorporate a louver end-switch or CO detector contacts into the overall safety circuit.



(In open mode, mechanical rooms must be reasonably sealed, including sweeps on doors.)



Flexibility, money savings and increased mechanical room comfort



Duct combustion air to poorly located mechanical rooms.

- Use small diameter ducts to pull/push air hundreds of feet in any direction.
- Reduce wall opening dimensions by up to 80% compared to standard louvers.
- Save money by eliminating special engineering and construction costs associated with large openings through load bearing walls.
- Improve building appearance by ducting air from roof.
- Increase mechanical room comfort by strategically diffusing outdoor air at ceiling level.



Reduce wall openings up to 80%.

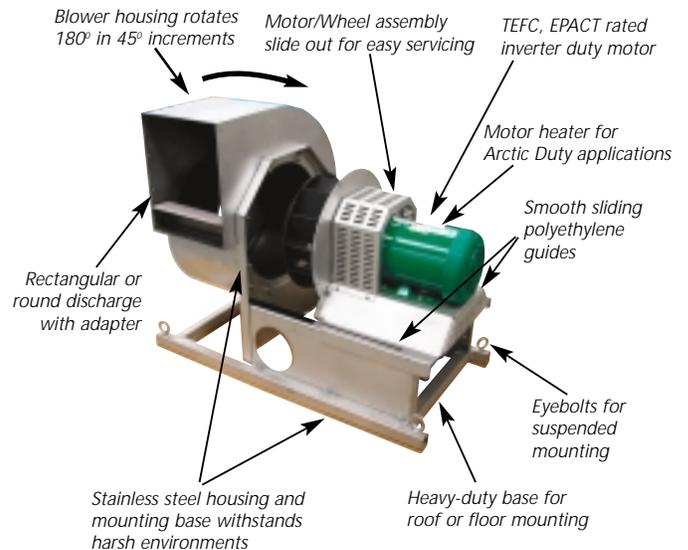
Specify CPC-3 controlled combustion air for these applications

- Mechanical rooms with large swings in combustion air requirements
- Interior or below grade mechanical rooms with no direct access to an outside wall
- Conversions from central steam plants or electric heat to gas or oil heaters
- Laundries, dry cleaners, indoor pools, etc. with chemically contaminated atmosphere
- Architecturally restrictive building designs



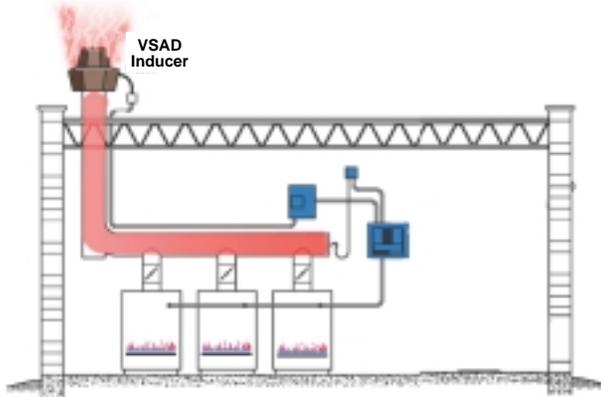
Designed and constructed for years of trouble-free operation

VSUB-Series Universal Blowers are the finest stock utility blowers available. They include many unique design and construction features that allow them to adapt to a variety of installations. Heavy-duty, stainless steel construction and quality motors provide years of trouble free operation for the building owner.



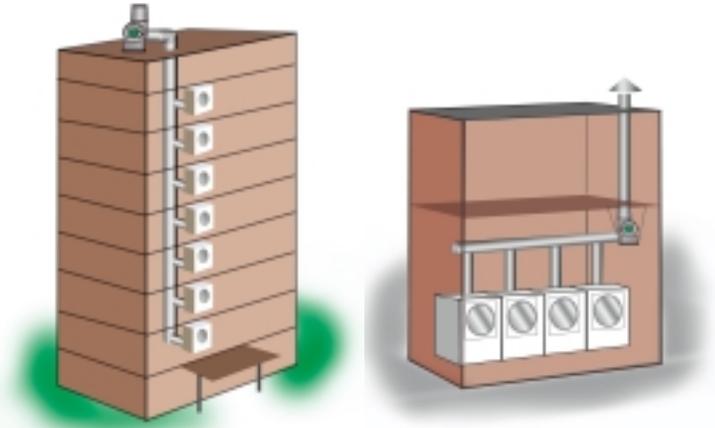
Specify Tjernlund Draft and Exhaust Systems

VSAD Inducers and VSUB Blowers for Draft and Exhaust applications



- Tjernlund's modulating systems are designed for the draft requirements of today's heaters.
- Variable speed Auto-Draft Inducers and Universal Blowers and Patented CPC-3 Constant Pressure Controller work together to monitor and regulate draft to maintain user set point.

VSUB Blowers can solve dryer and other exhaust problems



- Exhaust banks of dryers on multiple floors using a single vent.
- Common vent commercial dryers.
- Maintain constant negative pressure in exhaust shafts.

Count on Tjernlund for outstanding technical support

Assistance is available by phone:
800.255.4208, Email: fanmail@tjfans.com
or on the Internet at www.tjernlund.com

A key part of our products is the support that we provide throughout the specification, submittal, installation and operating life.

Typical value added support that we offer includes:

- Application assistance
- Inducer/blower selection calculations for draft and combustion air
- Vent and duct diameter selection
- Control and Interlock wiring diagrams
- System commissioning
- System troubleshooting
- Consistently stocked product and parts

Represented by:



Our Sales Engineers are available M-F 7:30 to 4:30 PM CST.

Tjernlund is represented by over 50 sales offices for local assistance.



TJERNLUND PRODUCTS, INC.

1601 Ninth Street White Bear Lake, MN 55110-6794
Phone: 651.426.2993 800.255.4208 Fax: 651.426.9547
Visit our web site: www.tjernlund.com