Laboratory Exhaust Energy Recovery Applications

Lower operating costs on lab ventilation systems with energy recovery plenums

Capture the energy being exhausted from your building

- Heat recovery systems by Strobic Air provide energy conservation on laboratory fume hood exhaust projects.
- Proven run around coil technology allows flexibility and minimal installation costs on new and retrofit projects.
- Modular construction minimizes installation time.
- Standard and custom designs available to meet specific project requirements.
Modular Construction saves installation time and assures on time completion

7:30 am  Trucks and cranes arrive on site. Installation begins after crane is in place.

9:30 am  First lift begins, modular construction minimizes field work and crane lifts. Components lifted directly from truck and set in place on roof.

2:30 pm  All components in place, crane and trucks have left job site. Only bolting off remains to finish installation.

One day, one crane, several trucks and a handful of men, that’s all that was required to install the energy recovery plenum and Tri Stack fans.
MULTIPLE PLENUM ARRANGEMENTS

**SMALL**

- 5,000-10,000 CFM
- Roof Top
- Side Inlet
- Redundant Fan

**MEDIUM**

- 20,000-50,000 CFM
- Two or Three Fans, Roof Top, Double Sided Inlets, Bottom Duct Connection, Internal Pipe Chase, Insulated Housing

**LARGE INDOOR**

- 50,000-180,000 CFM
- Three or Four Fans, Plenum, Fan Housing, Extension Spool Piece & Sound Attenuator Indoors, Discharge Nozzle Outdoors, Insulated Casing

**BENEFITS**

- Short payback periods
- Flexible plenum layouts to accommodate building requirements
- Most components accessible from outside reducing need to perform maintenance inside plenum.
- Double wall insulated casing minimizes heat loss and provides additional strength

**SMALL**

![Small Penum Arrangement](image)

**MEDIUM**

![Medium Penum Arrangement](image)

**LARGE INDOOR**

![Large Indoor Penum Arrangement](image)
SELECTION INFORMATION AND CONSTRUCTION DETAILS

**Plenum Selection Information Required:**
- Number of plenums required
- Tri Stack model number
- Number of fans per plenum
- Future fan requirement
- Total exhaust air volume
- External static pressure
- Plenum location
  - Outdoor
  - Curb mounted
  - Steel or dunnage
  - Indoor
- Exhaust duct configuration
  - Side inlet
  - One side
  - Two sides
  - Bottom inlet
- Run around coil requirements
- Exhaust air (DB/WB)
- Outside air design conditions
  - Winter
  - Summer
- Glycol type and percentage
- Internal pipe chase required
- Filtration
- Coil Pull
  - Side coil pull
  - Front access
- Bypass Damper
  - Is specific location required? (yes/no)
  - Sound attenuation required? (yes/no)

**Construction Details:**
**Casing**
- 2" double wall construction
- 16 gauge painted galvanneal exterior
- 20 gauge painted galvanneal steel or stainless steel interior
- Walls insulated with 2" 3# density rigid urethane foam insulation
- Structural support steel provided at all load bearing points
- Interior and exterior surfaces painted with matching paint system as Tri Stack fans.
- Stainless steel surfaces not painted.

**Floor**
- 2" double wall construction
- Uppers surface from 12ga. painted steel plate or stainless steel, with solid welded seams
- Floors insulated with 2" 3# density rigid urethane foam insulation

**Base**
- 6" or 8" structural steel base rails
- 6" or 8" structural steel intermediate supports
- 4 to 6 lifting lugs per shipping section
- 20 gauge galvanized under skin

**Equipment**
- Return air inlet opening
- 2" 30% pre-filters, side pull or front loading
- Magnehelic filter gauge
- Access doors provided matching unit construction
- Heat recovery coils
- 5/8" x .020 Cu tubes
- .008 Alum fins
- 304 Stainless steel casing
- 8 Row/12 FPI
- Electro fin baked epoxy phenolic coating
- Emergency drain pans provided (304 SS)
- Airfoil fan isolation dampers (low leakage aluminum construction with epoxy coating)
- Airfoil bypass dampers (low leakage aluminum construction with epoxy coating)
- Electronic actuators in NEMA 3R
- Bypass hoods provided with bird screens
- Optional: 120V electrical package
- (2) Incandescent marine lights wired to a (1) weatherproof light switch and a (1) single receptacle per section
- All wiring shall terminate in a fused disconnect for a “1 point” 120V field connection (by others)

**Tri-Stack Generation III Roof Exhaust Systems...**
First we invented the technology. Then we perfected it.

For design/applications tips, visit our web site:
www.strobicair.com or www.met-pro.com/strobic.html
E-mail: tristack@strobicair.com

A subsidiary of Strobic Air Corporation
160 Cassell Road, P.O. Box 144
Harleysville, PA 19438
Telephone: 1-215-723-4700
Toll Free: 1-800-SAC-FANS
Fax: 1-215-723-7401