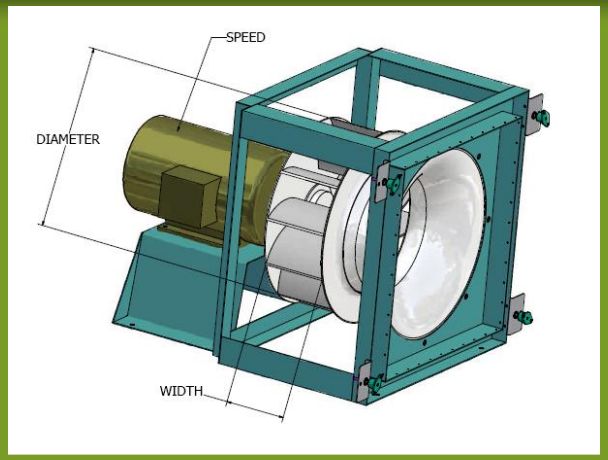
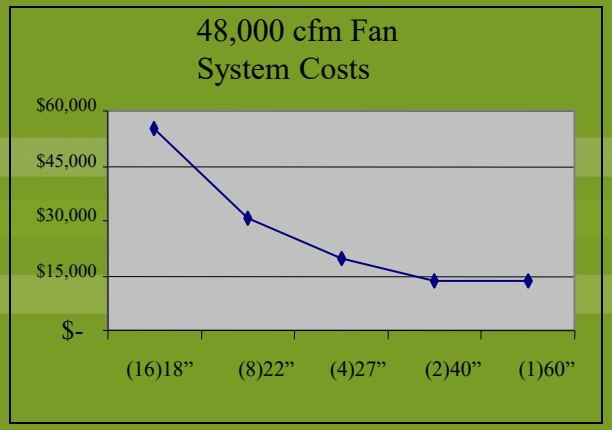
Cube Fans In Air Handling Systems

Cube Fans In Air Systems





Advantages of DDP Cube Fan Modules

Increased Energy Efficiency

Lower *System* Static Pressure

- eliminates high static duct elbows and fittings
- lessens size and need for duct silencers
- significant improvement in discharge flexibility

Reduces Fan Foot Print in Air Handler

Lower Sound Levels

Smaller Fans & Motors – Serviceability

Less Mechanical Complexity

- no belts, bearings, sheaves

Less Maintenance

Redundancy

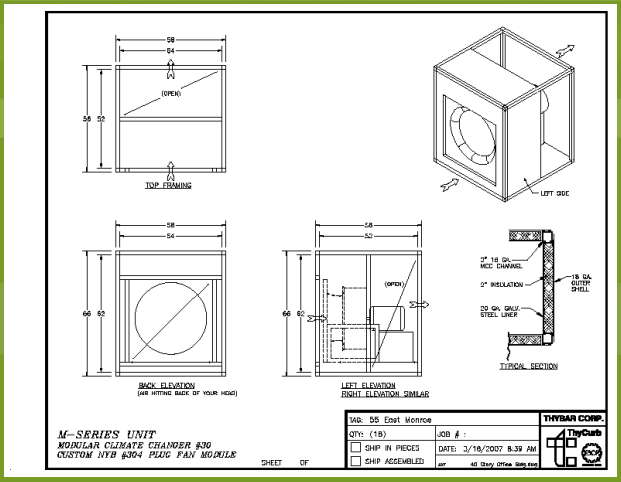
“Low-Stall” VAV Part-Load Operation

Dual fans can have advantages over single fans. If two fans are better than one why not three, four, or more?

What is a fan cube

What is a fan cube

- A direct drive plenum fan selected for the project requirements
- The fan assembly is mounted in a metal post constructed cube with the height and width dimensions sized to meet the recommended dimensions to assure catalogued fan ratings are achieved
- The inlet panel is perforated double wall construction
- The top ,side , and bottom panels are perforated double wall construction
- The fan assembly is mounted on spring isolations and the fan inlet has a canvas connection to the front wall



Advantages of a cube fan

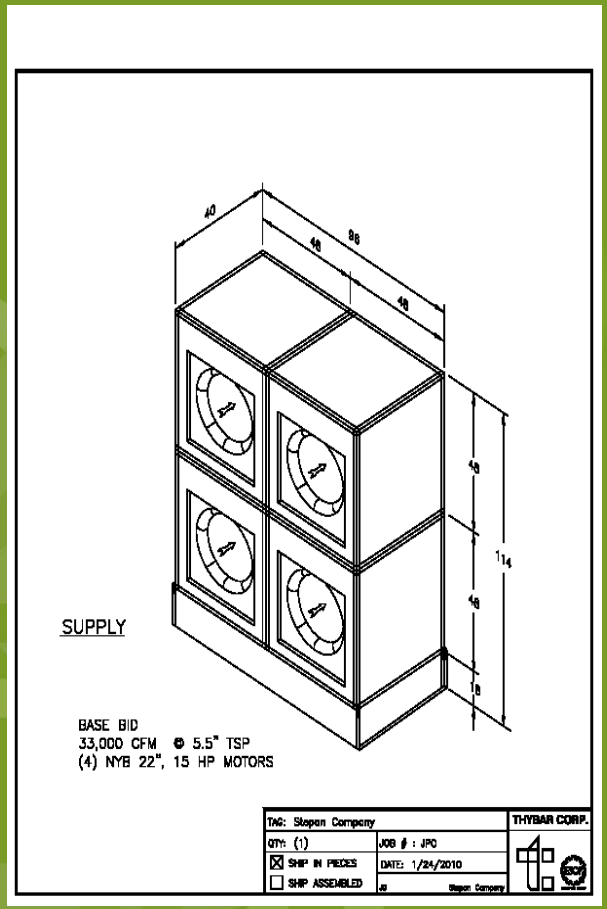
- Each cube is sized to meet all the engineering standards to assure the assembly meets catalogued ratings for the fan
- Each fan has a piezometer mounted in the fan bell mouth to accurately measure the CFM the fan is delivering
- The cubes can be stacked vertically ,or mounted side by side , or any combination the project requires
- With each fan mounted in perforated double wall side panels , the sound rating is lower. When they are mounted in clusters the honey comb effect makes the whole assembly even quieter.
- Since the cubes are smaller and sized for access into existing spaces, the installations cost is less
- The fans are sized so that if one motor fails the other fans pick up the load.

How to Determine the size and Quantity of Cubes

- Determine the path to move the cube into the space and plenum
- Measure the smallest width the cube has to pass through
- The smallest dimension for the cube is the length of the fan in direction of air flow
- Review the length dimensions of DDP fans in the fan catalogue
- Select the fan that can fit through that opening
- From the fan table determine the CFM for the system static
- Divide the existing system total CFM by the CFM of the fan selected. That gives you the number of cubes

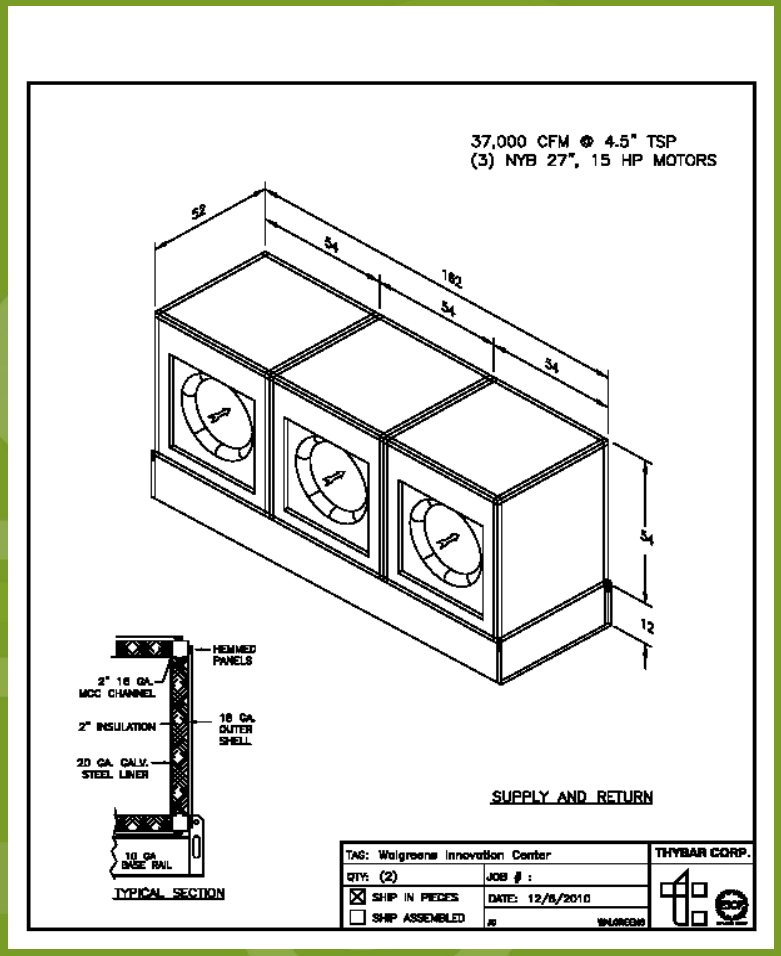
Applications for Existing Air Handlers

Replace Existing Single Fan Inside AHU



Replacing Vane Axial Fans in Side by Side Arrangement

Side by Side Cube Fans



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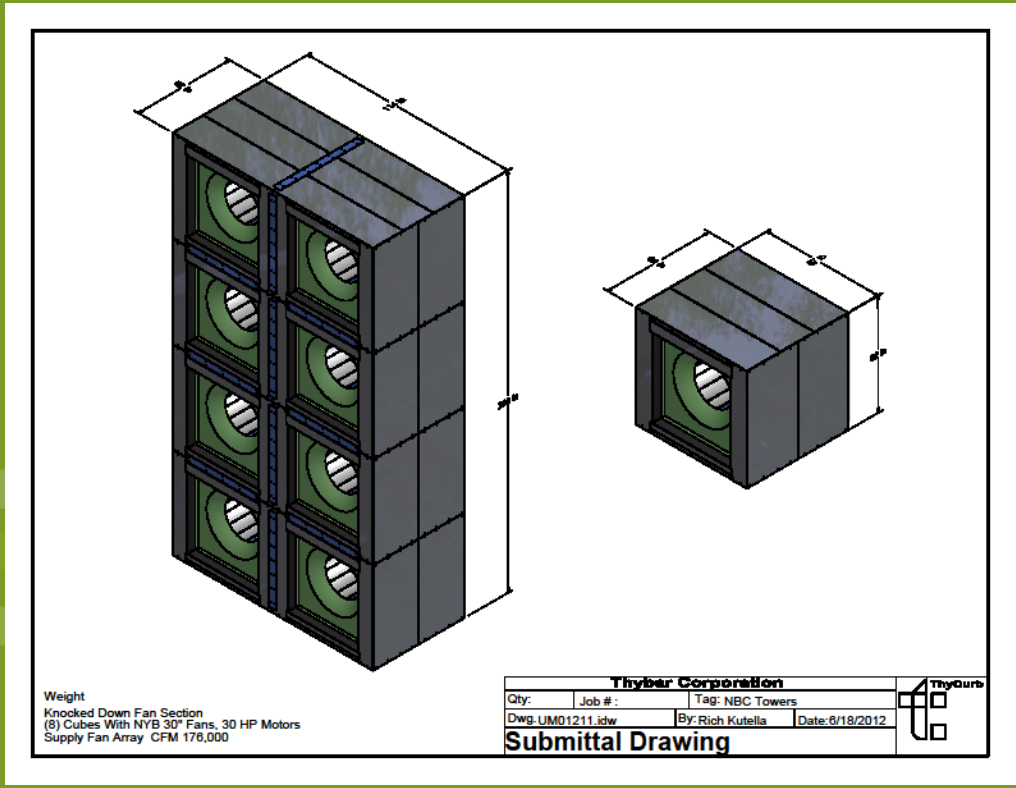
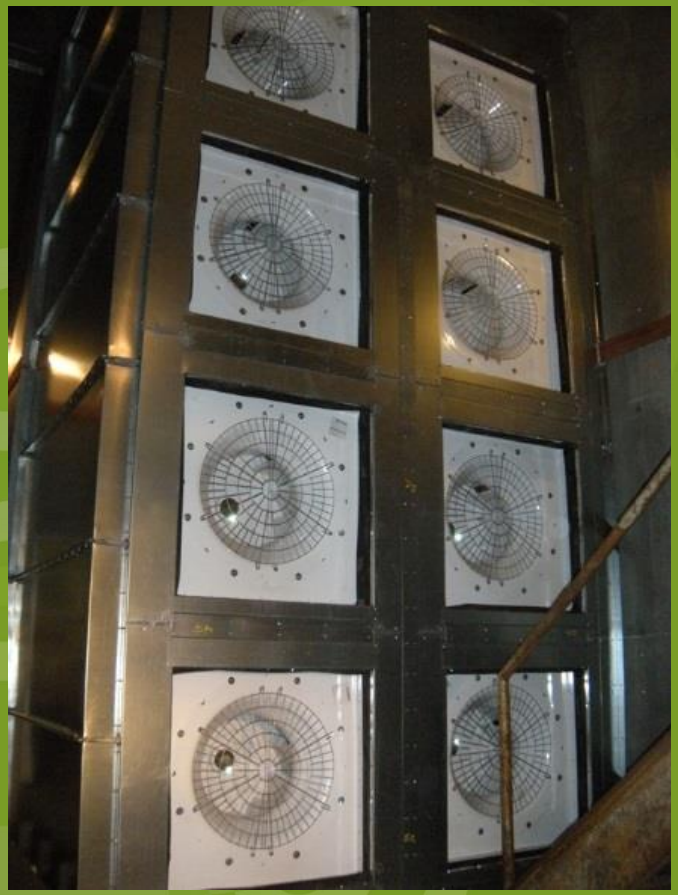
Replacing Vane Axial Fans in Top and Bottom Arrangement

Vertically Stacked Cube Fans





Chicago High Rise Television Studio– Supply and Return Plenums

Applications For Existing Air Systems

Retrofit Market with Cube Fans

- For replacement of existing fans in existing AHU housings
- Fan selections (size & quantity) based on installation accessibility
- New reduced fan footprint allows for addition of new elements in existing casing
  - Filters
  - Humidifiers
- Offers all the advantages of a multiple fan system