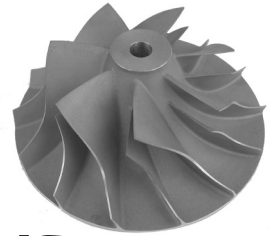




# Air Superiority News



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## Vortron's Technology In Review – Seize Energy Savings

By  
Eliminating Inappropriate  
Compressed Air Use

The Office of Industrial Technologies (OIT), USDOE in partnership with industry has developed technologies for increasing energy efficiency, renewable energy, and energy saving programs for industrial applications. One of these programs is the Compressed Air Challenge® formed in 1998 by representatives of utilities, energy service companies, compressed air equipment manufacturers and distributors, compressed air systems auditors and servicing groups, and end users.

Inappropriate compressed air (CA) use is the second largest waste of CA after system leakage. Quoting from the OIT document "Energy Tips" – "Users should always consider other cost-effective forms of power to accomplish the required tasks and eliminate unproductive demands." The OIT defines inappropriate uses as: "any application that can be done more effectively or more efficiently by a method other than compressed air".

### Some Inappropriate Compressed Air Use

- Clean-up, Drying
- Process Cooling
- Material Handling
- Sparging
- Aspirating, Atomizing
- Padding, Air-Preheat
- Vacuum Generation

### An Alternative to Compressed Air

Air knife systems, a non-contact method of removing unwanted liquid or particles from a product is the answer. Compact centrifugal blowers can supply

this low pressure/high mass-flow air. A blower-air knife system, using low pressure, high-mass flow air, can provide a high velocity air curtain to remove surface moisture, dust and waste material from almost any surface as well as spread coatings and cool material during the manufacturing process.

### Vortron's AirPower Blowers Assures Energy Savings

Say a plant is required to operate a 50 HP compressor on a two-shift schedule, six days a week, fifty weeks a year, to supply 225 CFM of air for drying machine parts. At an electrical cost of \$.08/kWh, this operator will spend about \$3.00/hr in electricity alone (neglecting efficiency losses). That's \$14,400 per year!

This same requirement of 225 CFM for air blow-off can be replaced by a 3.5 HP **AirPower™** Blower/Air Knife System that will provide better drying as well. The resulting energy/cost savings does not include the associated costs to run the refrigerated air dryers, oil separators and maintenance of the compressed air system.

Vortron's **AirPower™** line of blowers can attain peak efficiencies of up to 79%. This high efficiency plus their extraordinarily flat flow/pressure characteristic, absent the typical "drooping" curve of other blowers, enables a single AirPower™ blower, in some cases, to do the work of multiple competitive units.

Annual operating costs of air blow-off systems can range from \$23,000 for compressed air, to \$1,500 for a Vortron high-efficiency **AirPower™** system. This represents a 15-to-1 annual operating cost savings!

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## Air Knife System Applications

### DRYING POTATOES and other vegetables

The market for pre-washed potatoes has grown and many on-farm packers as well as larger wholesale suppliers are installing washing equipment.

After washing, the potatoes must be dried before packing. Drying is most commonly carried out using a system of sponge rollers. The rollers are configured to form a table across which potatoes are taken immediately after the washing process.

There are problems with this type of drying:

- Drying efficiency is low as the rollers soon become saturated;
- Sponge rollers are prone to wear and have to be replaced regularly;
- As the rollers remain wet and open to the air, there is a risk of bacterial build-up on their surfaces, a potential health risk.

Air knife drying is an alternative to the sponge roller that overcomes many of these problems.

The knives need to be positioned appropriately relative to the conveyor handling the potatoes. The most effective configuration has been to use a conveyor with an open belt, with single air knives above and below. In this fashion, moisture is "nipped" off the product as it passes between the two air curtains.

**Vortron** FDA compliant, air blow-off system components available include: "oil-less" blowers, air knives in anodized/non-anodized extruded aluminum or stainless steel, and clear PVC flex hose per Title 21.



### Vortron's Shows/Meetings

For a more extensive product information and show dates, refer to our WEB site at [www.vortron.com](http://www.vortron.com)

#### March 3-6

**CleanTech** will co-locate with National Manufacturing Week at McCormick Place Complex, Chicago, IL. So, mark your calendar to attend the 10th Annual **CleanTech 2003** Cleaning Technology Exposition - the only exposition dedicated to precision and parts cleaning applications. Vortron will be exhibiting its line **AirPower™** products, including the Mobile-Aire portable blower unit and air knife systems.

**Visit us at booth number CT316.**

**March 12-13** – 14th Annual Central Valley Engineering & Maintenance Show, Modesto, CA.