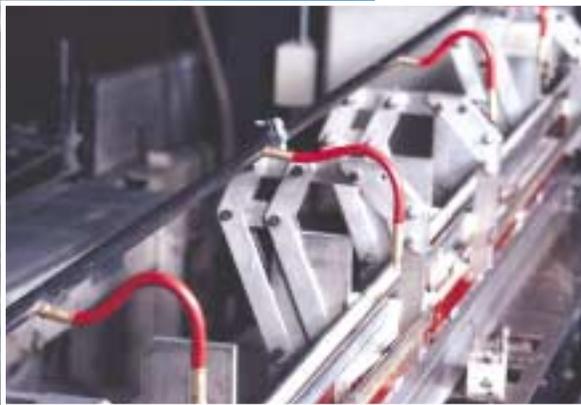
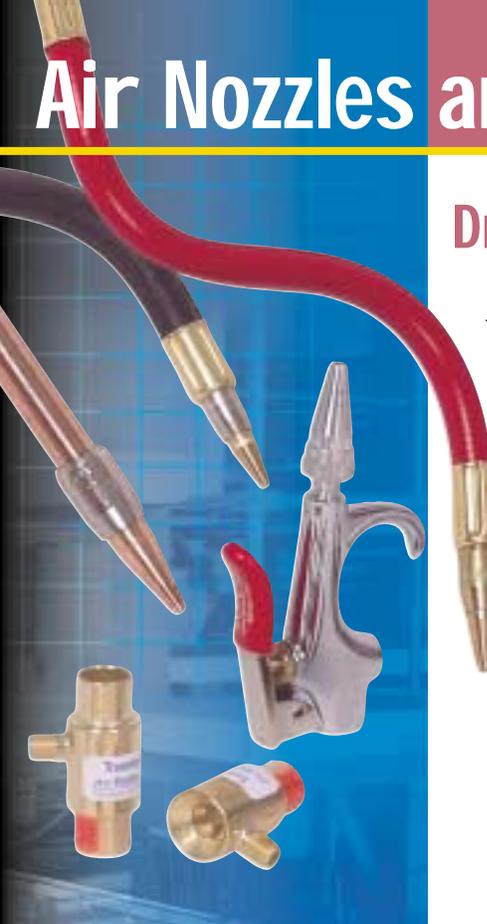


## Drastically Reduce Compressed Air Consumption

All air nozzles and jets are not the same. ITW Vortec's Energy-Saving Nozzles and Jets amplify airflow volume up to 25 times more than the compressed air supplied. The result is less compressed air usage to deliver the same or greater thrust performance.

ITW Vortec's blowoff nozzles and jets are designed to reduce compressed air consumption and noise drastically, compared to open jets.

Perfect for all types of blowoff, cooling and drying applications, these Nozzles and Jets are available in a variety of low and high thrust models. Use them to meet OSHA compliance as they meet OSHA specifications for noise and dead-end pressure. Additionally, Vortec Nozzles and Jets deliver a very precise airflow making them ideal for parts movement and ejection.



	VORTEC MODEL 1201 NOZZLE	1/4" X 1' LENGTH COPPER TUBE
Air Consumption	9 SCFM	42 SCFM
Annual operating cost/8 hour shift	\$324	\$1512
Annual cost savings	\$1188	

Data based on 100 PSIG operating pressure and \$0.30/1000 SCF compressed air cost.

**Reduce your operating costs significantly with our nozzles and jets.**

Lowers operating costs and saves energy

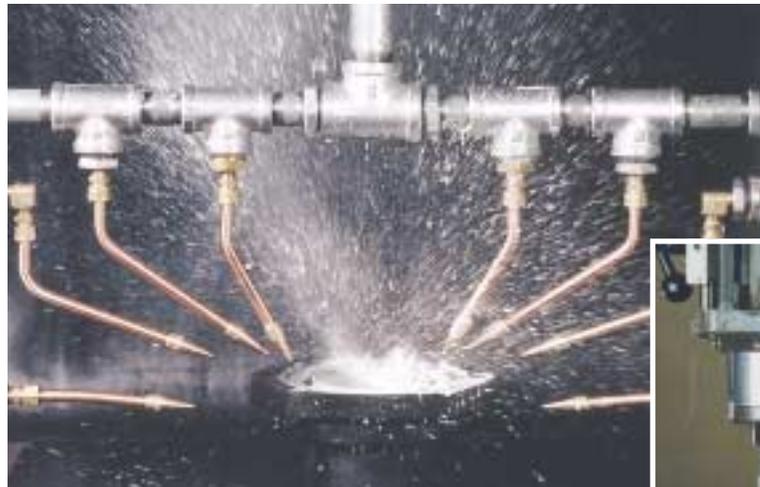
Helps meet OSHA noise specifications

Meets OSHA dead-end pressure specifications

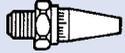
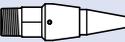
Wide range of styles and thrust performance

Patented design amplifies air

Big savings when replacing open copper tube jets



Nozzles are an excellent replacement for open copper tubes, flex-line and other nozzles not designed to save air. A full range of styles is available, with designs compatible to most installations.

MODEL NO.	DESCRIPTION	THRUST (POWER) OZ. AT 12"	AIR CONSUMPTION SCFM (SLPM)	FEATURES
1200 Nozzle 1200 SS Nozzle 	Adjustable output flow and thrust. 1/8" NPT(M) fitting	3 to 21	8 (226) to 26 (736)	Threaded connection – ideal for installing on blowguns and manifolds. Adjustable micrometer dial sets airflow and thrust. Available in stainless steel (1200 SS).
1201 Nozzle 	1/4" OD, copper tubing	6	9 (255)	Compact size. Permanently mounted on copper tubing – can be bent, flared, used with compression fittings or soldered.
1201F-12 	3/8" OD, flexible rubber shaft 1/8" NPT(M) fitting.	6	9 (255)	Compact size. Permanently mounted on flexible hose. Holds position under full line pressure. Perfect for areas with limited space.
1202 Nozzle 	1/4" OD, copper tubing, high thrust	20	23 (651)	Compact size. Permanently mounted on copper tubing – can be bent, flared, used with compression fittings or soldered.
1203 Nozzle 	3/8" OD, copper tubing.	9	13 (368)	Permanently mounted on copper tubing – can be bent, flared, used with compression fittings or soldered.
1204 Nozzle 	1/2" OD, flexible rubber shaft. 1/8" NPT(M) fitting.	9	13 (368)	Permanently mounted on flexible hose. Holds position under full line pressure. Excellent replacement for flex-line used for blowoff.
1205 Nozzle 	3/8" OD, copper tubing, high thrust.	28	31 (877)	Permanently mounted on copper tubing – can be bent, flared, used with compression fittings or soldered.
1206 Nozzle 	11/16" OD, high thrust, flexible rubber shaft. 1/4" NPT(M)	28	31 (877)	Permanently mounted on flexible hose. Holds position under full line pressure. Excellent replacement for flex-line used for blowoff.
1220 Nozzle 	3/4" NPT(M), maximum thrust	72	120 (3396)	Threaded connection – ideal for maximum thrust applications such as large surface blowoff. Perfect for paving, roofing and construction uses.

Specifications are at 100 PSIG (6.9 Bar) except 1220 Nozzle is at 40 PSIG (2.7 Bar).

### Airstream Size:

MODEL(S)	AT NOZZLE	12" FROM NOZZLE
1200, 1200 SS	5/8" (16mm)	3 1/2" (89mm)
1201, 1202, 1201F-12	3/16" (5mm)	3 1/4" (82mm)
1203, 1204, 1205, 1206	1/4" (6mm)	3 1/4" (82mm)

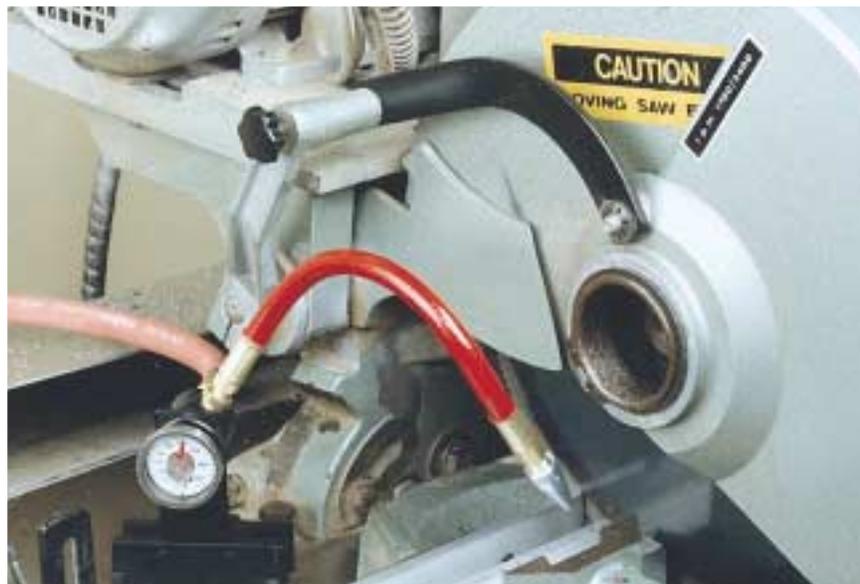
Jets are round-throated air amplifiers; one end provides a strong airflow while the other creates suction as free air is entrained. Since jets output a more concentrated, targeted volume of air than nozzles, they are ideal for water, solvents or light oil stripping applications.

#### Amplification 4:1

MODEL NO.	DESCRIPTION	THRUST (POWER) OZ. AT 12"	AIR CONSUMPTION SCFM (SPLM)
909 Jet	Adjustable output flow and thrust 1/8" NPT(M) fitting.	2 to 17	5 (142) to 21 (594)
901 Jet	1/8" NPT(M) fitting.	6	8 (226)
901B Jet	1/8" NPT(M) fitting, 3/4" diameter suction and discharge, for conveying	6	8 (226)
901D Jet	1/8" NPT(M) fitting.	14	17 (481)

Specifications are at 100 PSIG (6.9 Bar). All jets are brass and can be shimmed (except Model 909) to vary the thrust and air consumption.

**For assistance in selecting the appropriate model for your requirements, call our Technical Service Department at 800-441-7475.**



**ITW Vortec nozzles and jets deliver precise airflows and are ideal for cleaning, drying, cooling, parts movement or ejection.**

**Airstream Size:**

MODEL	AT JET	12" FROM JET
909	3/8" (10mm)	3" (76mm)
901	5/8" (16mm)	3 1/2" (89mm)
901B	5/8" (16mm)	3 1/4" (89mm)
901D	3/8" (10mm)	3" (76mm)



**Annual Blowoff Cost Calculation Guide**

Use these formulas to determine and compare the annual operating cost of your current blowoffs versus ITW Vortec alternatives.

**Quick method:**

Assuming:

- 100 PSIG operating pressure.
- \$.30 per 1000 SCF compressed air cost.
- 250 work days/year.

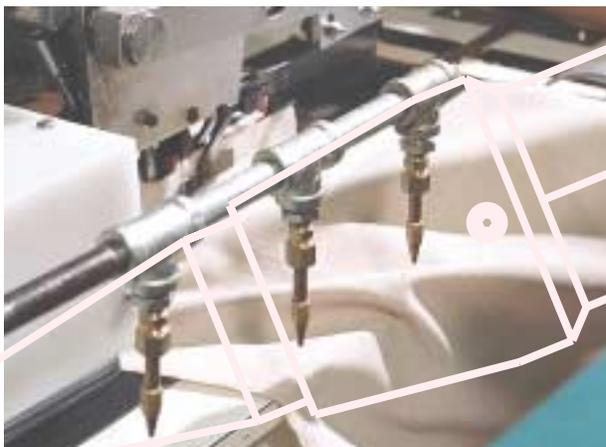
Calculate operating cost/shift by multiplying air consumption (SCFM) by 36.

Example:

9 SCFM (air consumption) x 36 = \$324 (annual operating cost/shift).

**For other operating conditions, follow these calculations:**

- \_\_\_ SCFM x 60 minutes = \_\_\_ SCFH
- \_\_\_ SCFH x \_\_\_ Hours of operation/day = \_\_\_ SCF/day.
- \_\_\_ SCF/day x \_\_\_ Days of operation/year = \_\_\_ SCF/year.
- \_\_\_ SCF/year x \$ \_\_\_ /1000 SCF = \$ \_\_\_ Annual operating cost.



**APPLICATION**

**notes**

Compressed air through open 1/4" copper tubes was the method being used by a wood slotwall manufacturer to clean each slot of excessive sawdust, until an OSHA inspection resulted in a noise violation. The company replaced the tubes with quiet #1201 Nozzles and saved \$10,800 in reduced air consumption.

After a die-punching step, an injection molder of plastic gas cans uses the powerful thrust of a #901D Transvector Jet to knock out the slug which creates the molded-in handle.

A company-wide conversion from open tube blowoffs to ITW Vortec Nozzles and Jets at the largest US producer of aluminum cans resulted in impressive compressed air savings. In one plant's aerosol can press department alone, annual savings of \$39,500 were achieved.

Styrofoam cups were being ejected from molds with continuous air from a blower motor until bearing replacements and ongoing maintenance proved too costly. The precise and instant airflow from #1201 Nozzles, set up in an on/off cycling, became the maintenance-free solution.

A Canadian facility machining aluminum extrusions reconfigured their automated lathe with #1204 Nozzles. The flexible hose mounting of the nozzles allowed them to easily reposition the blowoff to accommodate varying sizes of extrusions.



Whether the installation is for cooling, cleaning, drying or parts movement, there's an energy-saving Nozzle or Jet for your application. Various nozzle models come in low or high thrust versions with threaded or pre-mounted configurations. Nozzles mounted on copper tubing can be easily bent, and for adjustable positioning, our flexible hose mounted versions will maintain their position under full line pressure. Our nozzle Models #1200 and #1200SS have fully adjustable thrust performance and can be easily disassembled for cleaning if necessary. These threaded-end nozzles can be used in

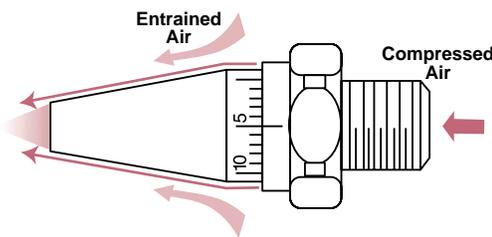
conjunction with a 12" positionable hose by specifying our #1204E Flexible Shaft Extension.

When the utmost air blowoff is needed, our largest nozzle, the Model #1220 Max Thrust, is a powerful cleaning and drying tool. While versatile for many uses, most popular applications involve the construction trades for clearing debris or moisture from large surfaces such as roofs and pavement.

## Meet OSHA specifications for noise and dead-end pressure

ITW Vortec Nozzles and Jets will significantly reduce compressed air usage and noise, but even further steps can be taken to conserve energy. Many conventional blowoffs use too much air, and consequently create excessive noise. For best results, pressure regulators are recommended to adjust to the minimum necessary air required to do the job. A regulator will isolate the blowoff Nozzle or Jet performance from the typical fluctuations in plant air pressure, and allows optimum blowoff adjustment setting for variations in parts.

## TECH notes



We incorporate the proven Transvector® amplification principle in our nozzle and jet designs. When compressed air enters the nozzle or jet, it fills a chamber with only one exit path - a .002" (.051mm) annular orifice. As air passes through this orifice, it accelerates to 1000 feet (304.8m) per second and entrains free surrounding air as it exits. The result is airflow volume up to 25 times more than the compressed air supplied.

Blowing at small targets with large air streams often wastes compressed air as well. Resulting blowby is useless and can be harmful when it is reflected backward carrying debris. Often, one large open tube jet can be replaced with a few small Nozzles or Jets. This set up takes full advantage of amplification and creates an opportunity to design an air spray pattern optimized to the shape of the target.

Our technical service personnel can provide additional suggestions and assist you with your project, from a single nozzle sizing request to designing a plant-wide, compressed air savings program.



### Model 9401 Blow Gun

The design of our blow gun makes it comfortable to hold and includes a convenient hang-up hook. Model 9401 has a 1/4" NPT (F) inlet thread and a 1/8" NPT (F) outlet thread. Includes a Model 1200 Adjustable Nozzle.