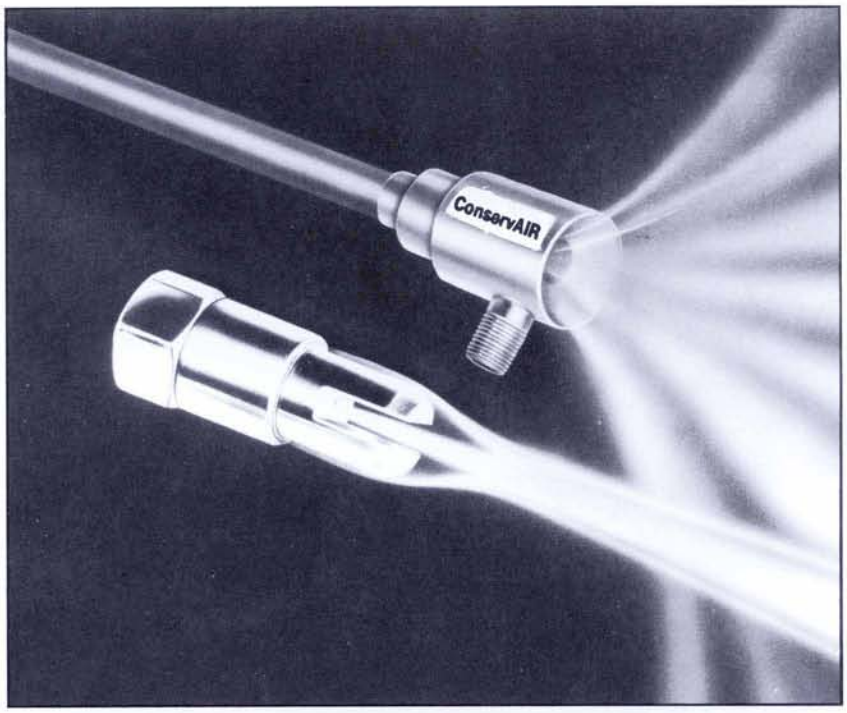
ConservAIR® Technologies Co. LLP
A Pneumatech® Inc. Company

Bulletin CA-330

CONSERVAIR-JETS & NOZZLES

Reduce noise level and air cost on blow off operations

Meet OSHA maximum dead-ended pressure requirements



CONSERVAIR-JETS AND NOZZLES are a simple solution to excessive air consumption and noise level on compressed air "blowoff" operations. Using a small amount of compressed air as a power source, CONSERVAIR-Jets and Nozzles produce outlet flows up to 25 times compressed air consumption. **Air savings, compared to open copper tubes or pipe nipples commonly used for blowoff, can be as high as 80%. Less compressed air means less noise — typical noise level reduction is 10 dBA.**

An open 1/4" copper tube, by contrast, ejects pure compressed air **at up to 40 standard cubic feet per minute, the entire output of a 10 horsepower compressor. Annual energy cost can exceed $1,000.00 per year. Noise levels in excess of 100 dBA are commonly produced.** When supply pressure exceeds 30 PSIG, an open jet violates OSHA static pressure requirements.

ADVANTAGES

- Reduced compressed air cost
- Improved blow-off performance
- Meet OSHA noise level requirements
- Meet OSHA pressure requirements

TYPICAL APPLICATIONS

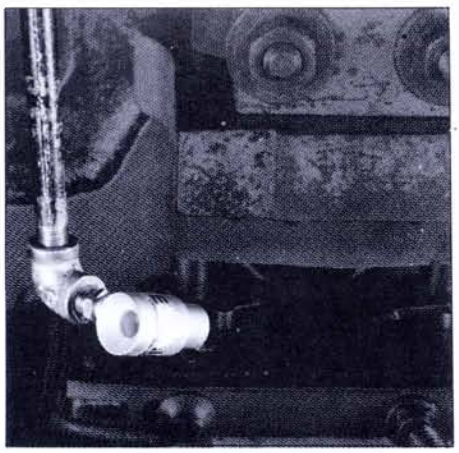
- Parts cleaning
- Chip removal
- Parts drying
- Parts cooling
- Material coveying
- Fiber conveying
- Liquid blowoff
- Air assist

HOW CONSERVAIR-JETS & NOZZLES WORK

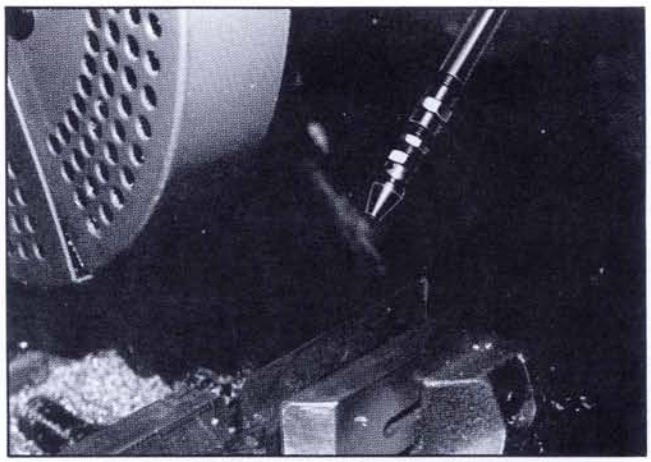
CONSERVAIR-JETS AND NOZZLES utilize the coanda effect (wall attachment of a high velocity fluid) to produce air motion in their surroundings. As illustrated at bottom right, a small amount of compressed air is throttled through an internal ring nozzle above sonic velocity. A vacuum is produced, pulling large volumes of surrounding, or "free" air, through the jet.

In-Line Air Jet Conveys Light Materials With No Moving Parts

CONSERVAIR-Jets produce the highest force to air consumption ratio of all CONSERVAIR blow-off products, making them the most economical choice for "tough" applications such as parts ejection or chip removal. Both the outlet and inlet can be ducted for remote positioning or material conveying. If the end is blocked, flow simply reverses at well below OSHA static pressure requirements.



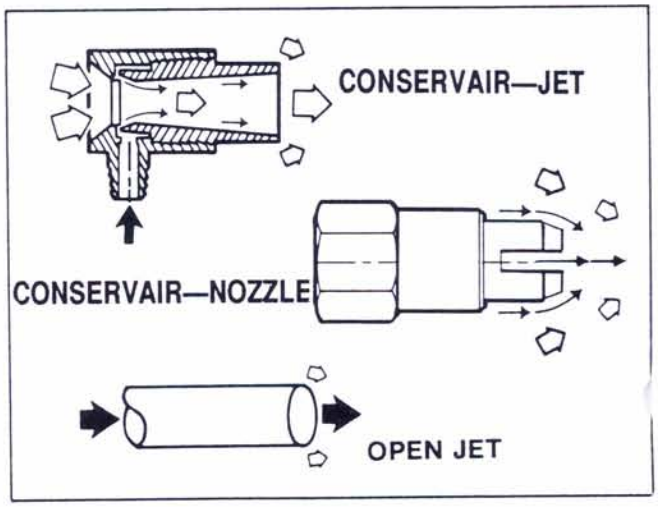
High Flow Air Jet Reduces Noise and Air Use On A Punch Press



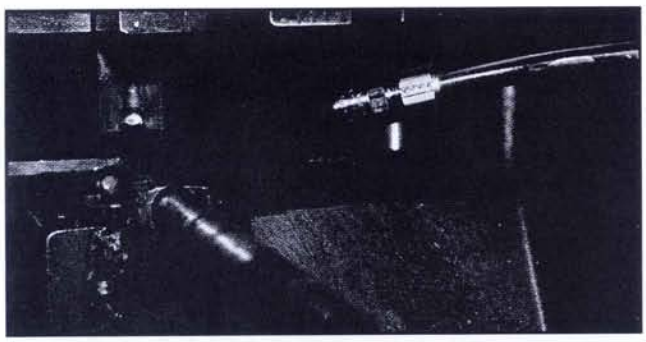
Adjustable Nozzle Safely Clears Chips From a Sawing Operation

CONSERVAIR-Nozzles also use the coanda effect to amplify compressed air flow twenty-five times or more. As illustrated below, compressed air is ejected through a thin ring nozzle. As this ring of air travels along the outer wall of the nozzle, surrounding air is entrained into the stream. This entrained air stream cobines with the air ejected from the center hole to produce a high volume, high velocity blast of air — at minimum consumption. The slotted end allows air to vent safely should the nozzle end be blocked.

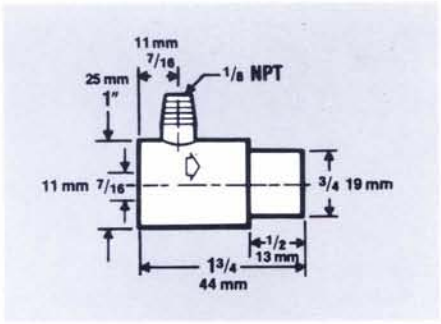
Both CONSERVAIR-Jets and Nozzles are easily retrofitted to existing blowoffs, and are available in adjustable or non-adjustable versions.



CONSERVAIR-JET PRODUCT SELECTION GUIDE



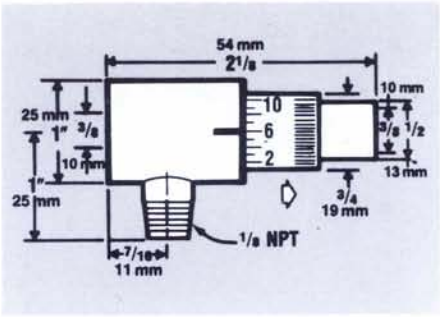
CONSERVAIR—Nozzle Reduces Noise And Air Use On A Stamping Die



6010 High Flow Air Jet

Provides maximum flow and moderate thrust at minimum air consumption. Best choice for light blow-off applications, parts cooling

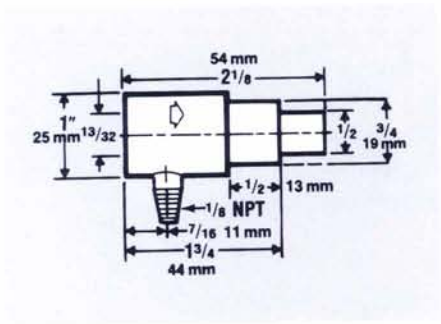
*Material: Brass. Force: 6.5 oz.**



6019 Adjustable Air Jet

Adjustable version of the 6013 High Velocity Air Jet. Air flow and thrust are easily adjusted using micrometer gap indicator.

Material: Brass. Force: 12.9 oz. (.006 Setting)*



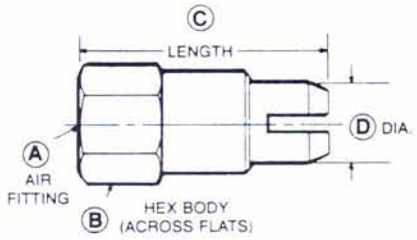
6013 High Velocity Air Jet

Provides maximum thrust. Confined, directed air stream. Best choice for parts ejection, chip removal, parts drying

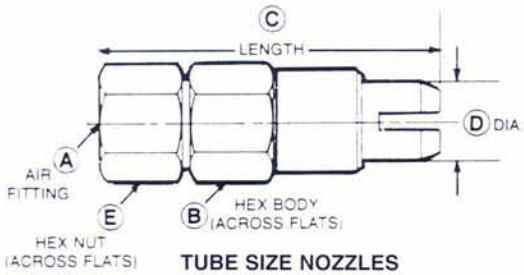
*Material: Brass. Force: 13.9 oz.**

**Force measured at 80 PSIG, 12" from target.*

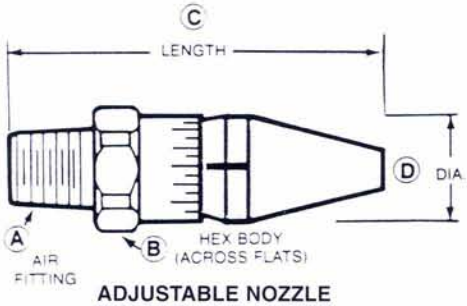
CONSERVAIR-NOZZLE PRODUCT SELECTION GUIDE



PIPE SIZE NOZZLES
MODELS 1001, 1002, 1003
MATERIAL-BRASS



TUBE SIZE NOZZLES
MODELS 1005, 1006
MATERIAL-BRASS



ADJUSTABLE NOZZLE
MODELS 1009, 1009SS
MATERIAL-ALUMINUM & STAINLESS STEEL

Pipe and Tubing Size Nozzles: CONSERVAIR-Nozzles are available in the three most popular pipe and tubing size connections, for easy retrofit to existing blowoffs. Simply select the nozzle with the same fitting size as your existing compressed air blowoff pipe or tube.

Adjustable Nozzle: The Model 1009 air gap is adjustable, making it suitable for a wide variety of blowoff applications. Adjustability allows you to "tune in" the force and flow to the application requirements, thereby minimizing air consumption. A micrometer-like dial indicates gap setting.

Air Consumption (SCFM) - Open Jets

Air Pressure (PSIG)	Copper Tube 1/4"	Copper Tube 5/16"	Copper Tube 3/8"	Open Pipe 1/8"	Open Pipe 1/4"	Open Pipe 3/8"
20	13	22	33	27	48	90
40	19	33	50	40	75	145
60	27	45	70	55	105	190
80	33	58	87	70	140	240
100	40	70	108	85	165	300

Air Consumption (SCFM) CONSERVAIR—JETS & NOZZLES

Air Pressure (PSIG)	Nozzle Models 1001 1005 1006 / 1002 1003 1007	1009*	Jet Models 6010	6013	6019**
20	3.7 / 6.3	4.8	2.4	4.8	4.8
40	5.8 / 9.8	7.5	3.8	7.5	7.6
60	7.9 / 13.4	10.3	5.1	10.3	10.3
80	10 / 17	13	6.5	13	13.1
100	12 / 20.6	15.7	7.9	15.7	15.9

*at .008" factory setting **at .006 factory setting

NOZZLE DIMENSIONS

Model No.	A Size	B Inch	B MM	C Inch	C MM	D Inch	D MM	E Inch	E MM	Force OUNCES	Force GRAMS
1001	1/8 NPTF	1/2	13	1-3/8	35	3/8	10	N/A	N/A	11	312
1002	1/4 NPTF	5/8	16	1-9/16	40	1/2	13	N/A	N/A	14.5	411
1003	3/8 NPTF	3/4	19	1-7/8	48	5/8	16	N/A	N/A	20	567
1005	1/4 Tube	1/2	13	1-3/4	45	3/8	10	1/2	13	11	312
1006	5/16 Tube	1/2	13	1-3/4	45	3/8	10	9/16	14	11	312
1007	3/8 Tube	5/8	16	1-3/16	46	1/2	13	5/8	16	14.5	411
1009	1/8 NPTM	5/8	16	1-3/4	45	5/8	16	N/A	N/A	12.5*	354*

*.008 (.20 mm) factory setting

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