

EXAIR®

MANUFACTURING INTELLIGENT COMPRESSED AIR® PRODUCTS SINCE 1983



COAT



CONSERVE



COOL



CONVEY



CLEAN



Super Air Knife™

- 1/4 & 1 NPT Back Blow Nozzles..... pg. 53
- 1/2 NPT No Drip Atomizing Nozzles... pg. 81

NEW



28
CATALOG



YOU REQUESTED THIS CATALOG AND PRICE LIST.
PLEASE SEE MAILING LABEL ON BACK COVER.

EXAIR[®] Corporation

MANUFACTURING INTELLIGENT COMPRESSED AIR[®] PRODUCTS SINCE 1983

Terms and Conditions	4
Efficiency Lab	5



EXAIR Optimization

Minimize compressed air use and detect wasteful leaks

6 Steps to Optimization	6
Electronic Flow Control	7
Digital Sound Level Meter	10
Ultrasonic Leak Detector	11
Digital Flowmeter	13



Air Knives

Blowoff, clean, dry and cool with less noise and air consumption

Super Air Knife	15
Compare Blowoffs	18
Explanation of Materials	21
Universal Air Knife Mounting System	24
Plumbing Kits	24
Long Super Air Knife	26
Standard Air Knife	28
Full-Flow Air Knife	31



Air Wipes

Blowoff, dry, clean and cool pipe, cable, extruded shapes and hose

Super Air Wipes	33
Standard Air Wipes	37



Air Amplifiers

Vent, exhaust, cool, dry and clean - with no moving parts

Super Air Amplifiers	41
Adjustable Air Amplifiers	45



Air Nozzles and Jets

Reduce noise levels and air costs on blowoff operations

Air Nozzles	47
Air Nozzle Comparison Chart	49
Super Air Nozzles	50
Flat Super Air Nozzles	52
Back Blow Air Nozzles	53
Safety Air Nozzles	54
Air Jets	55
High Force Air Nozzles	57
High Force Air Nozzle Comparison Chart	57
High Force Flat Super Air Nozzles	57
High Force Super Air Nozzles	58
Super Air Nozzle Clusters	61
Stay Set Hoses	61
Swivel Fittings	62



Atomizing Nozzles

All stainless steel construction for durability and corrosion resistance

1/4 NPT Atomizing Nozzles	65
Internal Mix Narrow Angle Round Atomizing Nozzles	65
Internal Mix Wide Angle Round Atomizing Nozzles	66
Internal Mix Flat Fan Atomizing Nozzles	67
Internal Mix Deflected Flat Fan Atomizing Nozzles	68
Internal Mix 360° Hollow Circular Atomizing Nozzles	68
External Mix Round Atomizing Nozzles	69

Atomizing Nozzles continued

External Mix Narrow Angle Flat Fan	70
External Mix Wide Angle Flat Fan Nozzles	71
Siphon Fed Round Atomizing Nozzles	72
Siphon Fed Flat Fan Atomizing Nozzles	73
1/2 NPT Atomizing Nozzles	74
Internal Mix Narrow Angle Round Atomizing Nozzles	74
Internal Mix Wide Angle Round Atomizing Nozzles	75
Internal Mix Flat Fan Atomizing Nozzles	76
Internal Mix 360° Hollow Circular Atomizing Nozzles	77
External Mix Narrow Angle Flat Fan	78
Siphon Fed Round Atomizing Nozzles	79



No Drip Atomizing Nozzles

Eliminate drips to conserve valuable liquids and improve product finishes.

1/4 NPT No Drip Atomizing Nozzles	81
No Drip Internal Mix Narrow Angle Round Atomizing Nozzles	81
No Drip Internal Mix Wide Angle Round Atomizing Nozzles	81
No Drip Internal Mix Flat Fan Atomizing Nozzles	81
No Drip Internal Mix Deflected Flat Fan Atomizing Nozzles	81
No Drip Internal Mix 360° Hollow Circular Atomizing Nozzles	81
No Drip External Mix Round Atomizing Nozzles	82
No Drip External Mix Narrow Angle Flat Fan Atomizing Nozzle	82
No Drip External Mix Wide Angle Flat Fan Atomizing Nozzle	82
No Drip Siphon Fed Round Atomizing Nozzles	82
No Drip Siphon Fed Flat Fan Atomizing Nozzles	82
1/2 NPT No Drip Atomizing Nozzles	81
No Drip Internal Mix Narrow Angle Round Atomizing Nozzles	81
No Drip Internal Mix Wide Angle Round Atomizing Nozzles	81
No Drip Internal Mix Flat Fan Atomizing Nozzles	81
No Drip Internal Mix 360° Hollow Circular Atomizing Nozzles	81
No Drip External Mix Narrow Angle Flat Fan	82
No Drip Siphon Fed Round Atomizing Nozzles	82
Droplet Size/Spray Angle Information	83

84

Safety Air Guns

Safety air guns use engineered air nozzles for high performance

Chip Shields	85
Precision Safety Air Guns	86
Soft Grip Safety Air Guns	86
Heavy Duty Safety Air Guns	89
Back Blow Safety Air Guns	90
Super Blast Safety Air Guns	91

93

Static Eliminators

Eliminate static electricity, dust and shock hazard

Super Ion Air Knife	95
Power Supplies	97
Standard Ion Air Knife	101
Ionizing Bars	103
Super Ion Air Wipes	105
Ion Air Cannon	107
Ion Air Gun	109
Ion Air Jet/Stay Set Ion Air Jet	111
Ionizing Point	113
Static Meter, AC Sensor	114

115

E-Vac® Vacuum Generators

Vacuums for lifting, clamping, mounting and placement

How to Build an E-Vac System	116
In-Line	117
Adjustable	120
Vacuum Cups	122

126

Air Operated Conveyors

Convey parts, materials and waste - with no moving parts

Line Vac	126
Threaded Line Vac	132
Heavy Duty Line Vac	135
Light Duty Line Vac	137

139

Industrial Housekeeping

Reliable vacuums for chip removal, liquid transfer and cleaning

Reversible Drum Vac	139
High Lift Reversible Drum Vac	141
Chip Trapper	143
High Lift Chip Trapper	145
Chip Vac	147
Heavy Duty Dry Vac	149
Heavy Duty HEPA Vac	151
Vac-u-Gun	153
Deep Hole Vac-u-Gun	155
Air Stik Window	157

159

Vortex Tubes & Spot Cooling

Cold air for industrial spot cooling problems

Vortex Tubes	159
Adjustable Spot Cooler	167
Mini Cooler	170

171

Cold Gun Aircoolant Systems

Cool machining operations with clean, cold air

175

Cabinet Cooler® Systems

Cool and purge NEMA 12, 4 and 4X electrical control panels

How it Works	176
Selecting the Right Model	176
Special Duty Cabinet Coolers	177
Calculating Heat Load	179
Cabinet Cooler Sizing Guide	180
NEMA 12 Models	182
NEMA 4 Models	183
NEMA 4X Models	184
Cabinet Cooler System Accessories	185

186


Accessories

Mufflers, filters, regulators, valves, swivel fittings and more

Filters	186
Regulators	187
Silencing Mufflers	188
Valves, Swivels, Thermostats	190
Magnetic Bases, Stay Sets, Hoses	191
Air Hoses	191
Fittings	192
Receiver Tank	192



Catalog item orders received before 3 pm EDT/ EST are generally shipped from Cincinnati, Ohio on the same day. You can expect delivery within 1-4 days depending on your location.



EXAIR®

EFFICIENCYLAB

EXAIR's Intelligent Compressed Air® products vs Your current installation

EXAIR's FREE Efficiency Lab service determines how much air and dollar savings you will achieve by installing one of our Intelligent Compressed Air products.

How does the Efficiency Lab work?

Our Efficiency Lab service begins with receiving a sample of the product(s) you currently use for your application. One of our qualified Application Engineers will use calibrated testing equipment to compare the performance of your existing product(s) to an EXAIR engineered solution. These tests will determine air consumption, noise levels and force. The test results will then be published in a comprehensive report, which includes a cost savings analysis, and be provided to you. For most applications, EXAIR products can help you improve application efficiency AND typically pay for themselves in a matter of weeks.

How can I get a product tested for free?

To participate in our FREE Efficiency Lab please contact one of our Application Engineers and get the details about sending us your product(s).

You may reach them by phone at (800) 903-9247 or (513) 671-3322. You can send an email to lab@exair.com or visit our website and take advantage of our live help at www.exair.com.

Unable to send your product to EXAIR's Efficiency Lab?

If it is not possible to send us your product, we have a one page Product Efficiency Survey on our website (www.exair.com/labdoc.htm) which will provide us the details about a current inefficient compressed air application. Fill in the information and click submit. You will hear from one of our Application Engineers within 24 business hours.

Okay, so what is the fine print?

This offer is available to all customers in the U.S. and Canada only. Some restrictions may apply.

What about confidentiality?

Yes, EXAIR will keep the results of our Efficiency Lab test and report confidential unless given permission to share that information with others.

Products must be shipped to EXAIR freight prepaid. EXAIR will pay the return shipping via UPS ground.



Cold Gun Aircoolant System

An **INTELLIGENT**
COMPRESSED AIR®
Product

Cold Gun Aircoolant System™



Replace messy mist systems - improve dry machining with clean, cold air!

What Is The Cold Gun Aircoolant System?



Watch the video!

www.exair.com/cgvideo.htm

A new solution to an old problem. Heat build up on dry machining operations reduces tool life and machining rates. The Cold Gun Aircoolant System produces a stream of **clean, cold air at 50°F (28°C) below supply air temperature. Operation is quiet and there are no moving parts to wear out.** It will remove heat to prolong tool life and increase productivity on machining operations when liquid coolants cannot be used.

The Cold Gun is also an alternative to expensive mist systems. It eliminates the costs associated with the purchase and disposal of cutting fluids and worker related health problems from breathing airborne coolants or slipping on wet floors.

EXAIR's Cold Gun is non-adjustable to prevent freeze-up during use. Cold airflow and temperature drop are factory set to optimize the gun's cooling capability.

Applications

- Tool sharpening
- Drill and cutter grinding
- Routing
- Plunge and form grinding
- Milling
- Surface grinding
- Drilling
- Tire grinding
- Band sawing
- Plastic machining
- Laser cutting
- Chill rolls
- Setting hot melt adhesives

Advantages

- Improves production rates
- Prevents burning
- Extends tool life - reduces breakage
- Improves tolerance control
- Prevents smearing of metal or plastics
- Finished part is dry
- Eliminates wheel loading
- Low cost
- Compact, lightweight, portable
- No moving parts - maintenance free
- Quiet
- No coolant cost
- No electricity



The Model 5215 Cold Gun keeps the part cool to the touch and prevents discoloration.



Cold air eliminates heat cracking of the carbide tool during sharpening.

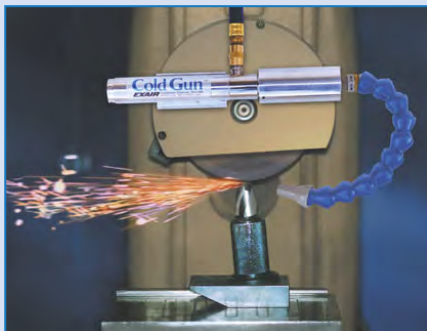


The Model 5315 Cold Gun cools a two flute 3/8" carbide cutter on a CNC, increasing tool life by 50%.

Cold Gun Air
Coolant System

Cold Gun Aircoolant System

Applications



Model 5215 Cold Gun System

Tool Grinding

Cold air eliminates heat cracking of carbide and tool edge burning during grinding and sharpening operations. Increased tool life between regrinds is the result.



Model 5215 Cold Gun System

Milling & Drilling

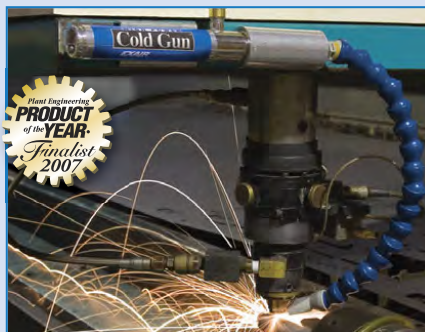
Fly cutters up to 460mm in diameter have been cooled with the Cold Gun. Dissipating heat with cold air extends tool life, increases speeds and feeds, and improves finishes.



Model 5315 Cold Gun System

Chill Roll

Cooling a roll with 20°F (-7°C) air keeps the material on the surface from bunching up, jamming or tearing. The metal surface transfers the cold temperature to the product.

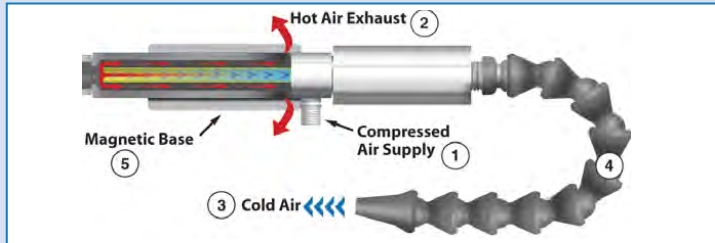


Model 5230 High Power Cold Gun System

Laser Cutting

Cold air cools a laser cut part so it can be handled seconds later. The High Power Cold Gun has twice the cooling capacity of the standard Cold Gun, cooling the part in less time.

How The Cold Gun Works

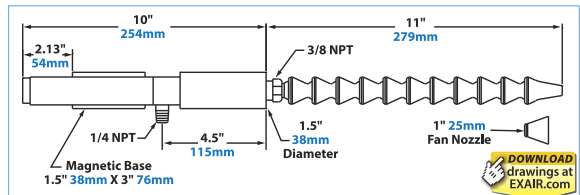


The standard Cold Gun and High Power Cold Gun incorporate a vortex tube to convert an ordinary supply of **compressed air** (1) into two low pressure streams, one hot and one cold. (For complete information on vortex tube operation, see page 160 of this catalog.) The Cold Gun's hot airstream is muffled and discharged through the **hot air exhaust** (2). The **cold air** (3) is muffled and discharged through the **flexible hose** (4), which directs it to the point of use. Easy mounting and portability are provided through the use of an attached **magnetic base** (5).

Specifications

Model #	Pressure Supply		Air Consumption		Sound Level
	PSIG	BAR	SCFM	SLPM	dBA
Cold Gun 5215, 5315	100	6.9	15	425	70
High Power Cold Gun 5230, 5330	100	6.9	30	850	82

Cold Gun Dimensions



Controlling the Cold Air

The EXAIR Cold Gun gives **instant cold air** when filtered compressed air is supplied to it. Cycling on and off is a good way to save air. **For on and off control**, use a Model 9012 Manual Shutoff Valve. To turn the Cold Gun on with the machine, the Model 9020 Solenoid Valve may be used and wired through the machine control switch. This method is ideal for hand grinders and drill sharpeners.

The Compressed Air Supply

The Cold Gun is designed to use full line pressure of 80-100 PSIG (5.5-6.9 BAR). Temperature drop and flow are reduced when lower input pressures are applied. The use of clean, filtered air is essential to the operation of the Cold Gun. A filter separator that removes moisture, dirt and other particulates from the compressed air is included with each Cold Gun System. An optional Oil Removal Filter is also available. (See page 186 for details.)

Need More Cooling?

EXAIR's High Power Cold Gun Aircoolant System™ produces twice the airflow of the standard Cold Gun, doubling the cooling capability. It produces cold air at 50°F (28°C) below the supply air temperature so the air is as cold as possible without freezing up. Two systems are available: the Model 5230 High Power Cold Gun with Single Point Hose Kit and Model 5330 High Power Cold Gun with Dual Point Hose Kit.

Selecting The Right Model

Cold Gun Aircoolant Systems are available with either a Single Point or Dual Point Hose Kit.



The Single Point Hose Kit (included with the Model 5215 Cold Gun and Model 5230 High Power Cold Gun) is recommended for applications where a concentrated airflow is needed such as drilling and grinding operations.

The Dual Point Hose Kit (included with the Model 5315 Cold Gun and Model 5330 High Power Cold Gun) is recommended for applications where the heat is generated over a larger surface area such as band sawing, milling, chill rolls and hot melt adhesives.

A Cold Gun System with the Model 5901 Single Point Hose Kit can be easily converted to a "dual point" system with the purchase of the Model 5902 Dual Point Hose Kit.

Cold Gun Aircoolant System

Purdue University Study Confirms Benefits Of The EXAIR Cold Gun

Tooling costs a lot of money to replace. That's only part of the problem. As the tools wear out, you can expect:

- Slowed production and downtime to change out the tooling
- Poor tolerances and decreased dimensional accuracy due to increased temperature
- Increased cutting force is required (generates more heat and uses more electricity)

If you could just make the tooling last longer, you'd not only cut the tool cost but could increase profits by reducing scrapped parts and downtime.

A long term study on the effect of refrigerated air on tool wear in wood machining was conducted at the Forestry Products Department of Purdue University by Ms. Judith Gisip. The project was under the direction of Dr. Rado Gazo (department professor) and Harold Stewart



Purdue's CNC router turns (22) 4'x8' sheets into sawdust.



EXAIR's Cold Gun is mounted under the protective guard.



Cold air from EXAIR's Model 5315 Cold Gun System keeps the tooling cool.

(professor at North Carolina State University with 35 years in wood machining research). Wood is brutal on tooling. In metalworking, most of the heat goes away with the machined chip. Wood is an excellent insulator and doesn't conduct the heat away, which keeps it all there at the tool. Temperatures can exceed 1472°F (800°C)!

The extensive tests at Purdue were conducted in a 70°F climate controlled room. They tested (4) 1/2" (12.7mm) two-flute cutters on a CNC router at 16,000 rpm. (22) sheets of 3/4" thick MDF (medium density fiberboard) were fed one at a time, cutting away 1/4" (6mm) depth of cut on each pass. Power consumption of the CNC was recorded (current draw increases as the tool starts to dull). When finished, the surface of the tools was examined using a scanning electron microscope. Machining with the Cold Gun's 20°F air reduced tool wear by over 21% compared to the results with no cooling.

For complete details of the Purdue study, visit our web site at www.exair.com/purdue.htm.

How Much Can You Save?

- A 1/2" two flute router bit for wood is approximately \$67.
- The 21% reduction in tool wear when using a Cold Gun is $\$67 \times 0.21 = \text{\$14.07 savings per bit}$.
- If you use (1) router bit per working day, the savings is $\$14.07 \times 5 \text{ working days} = \text{\$70.35 per week} / \text{\$3,658 per year For One Bit!}$

Cold Gun Aircoolant Systems



Model 5215 Cold Gun System (one cold outlet)

includes Cold Gun, Single Point Hose Kit, 3/8" (10mm) Cone Nozzle, 1-1/4" (32mm) Fan Nozzle, Manual Drain Filter Separator.



Model 5315 Cold Gun System (two cold outlets)

includes Cold Gun, Dual Point Hose Kit, (2) 1/4" (6mm) Cone Nozzles, (2) 1" (25mm) Fan Nozzles, Manual Drain Filter Separator.



Model 5230 High Power Cold Gun System (one cold outlet)

includes High Power Cold Gun, Single Point Hose Kit, 3/8" (10mm) Cone Nozzle, 1-1/4" (32mm) Fan Nozzle, Automatic Drain Filter Separator.



Model 5330 High Power Cold Gun System (two cold outlets)

includes High Power Cold Gun, Dual Point Hose Kit, (2) 1/4" (6mm) Cone Nozzles, (2) 1" (25mm) Fan Nozzles, Automatic Drain Filter Separator.

A Dual Point Hose Kit is recommended when heat is generated over a larger surface area.

Accessories and Components

Model #	Description	Model #	Description
5015	Cold Gun Only	9005	Oil Removal Filter, 3/8 NPT, 15-37 SCFM (425-1,048 SLPM)
5030	High Power Cold Gun Only	9012	Manual Shutoff Valve, 1/4 NPT
5901	Single Point Hose Kit (Included with 5215 and 5230)	9020	Solenoid Valve, 120V, 50/60Hz, 1/4 NPT, 40 SCFM (1,133 SLPM)
5902	Dual Point Hose Kit (Included with 5315 and 5330)	9021	Solenoid Valve, 200-240V, 50/60Hz, 1/4 NPT, 40 SCFM (1,133 SLPM)
9003	Manual Drain Filter Separator, 1/4 NPT, 27 SCFM (765 SLPM)	9031	NEMA 4/4X Solenoid Valve, 24VDC, 1/4 NPT, 40 SCFM (1,133 SLPM)