

EXAIR®

MANUFACTURING INTELLIGENT COMPRESSED AIR® PRODUCTS SINCE 1983



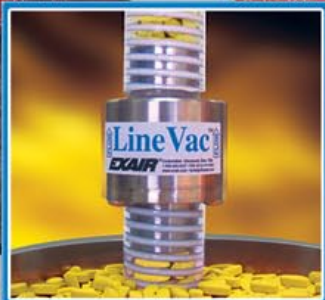
COAT



CONSERVE



COOL



CONVEY



CLEAN



Atto
Super Air
Nozzle



Liquid
Atomizing
Nozzles



25
CATALOG



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PLEASE SEE MAILING LABEL ON BACK COVER.

Terms and Conditions2

EXAIR Optimization 3

- Electronic Flow Control 4
- Ultrasonic Leak Detector 7
- NEW!** Digital Flowmeter 9
- Digital Sound Level Meter 10

Air Knives 11

- Super Air Knife 11
- PVDF Super Air Knife 17
- Universal Air Knife Mounting System 20
- Long Super Air Knife 22
- Standard Air Knife 24
- Full-Flow Air Knife 27

Air Wipes29

- Super Air Wipes 29
- Standard Air Wipes 33

Air Amplifiers35

- Super Air Amplifiers 37
- Adjustable Air Amplifiers 41

Air Nozzles and Jets43

- Air Nozzles 43
- NEW!** Super Air Nozzles 46
- Air Jets 50
- High Force Air Nozzles 52
- NEW!** Large Super Air Nozzles 53
- Super Air Nozzle Clusters 56
- Stay Set Hoses 56

Atomizing Nozzles59

- Internal Mix Narrow Angle Round Atomizing Nozzles 60
- Internal Mix Wide Angle Round Atomizing Nozzles 61
- Internal Mix Flat Fan Atomizing Nozzles 62
- NEW!** External Mix Round Atomizing Nozzles 63
- NEW!** External Mix Narrow Angle Flat Fan Atomizing Nozzles 64
- NEW!** External Mix Wide Angle Flat Fan Nozzles 65
- NEW!** Siphon Fed Round Atomizing Nozzles 66
- NEW!** Siphon Fed Flat Fan Atomizing Nozzles 67

Safety Air Guns.....68

- NEW!** Chip Shields 69
- NEW!** Precision Safety Air Guns 70
- Soft Grip Safety Air Guns 70
- Heavy Duty Safety Air Guns 72
- NEW!** Super Blast Safety Air Guns 73

Static Eliminators75

- Super Ion Air Knife 77
- Power Supplies 79
- Standard Ion Air Knife 83
- Ionizing Bars 85
- Super Ion Air Wipes 87
- Ion Air Cannon 89
- Ion Air Gun 91
- Ion Air Jet 93
- Stay Set Ion Air Jet 93
- Ionizing Point 95
- Static Meter, AC Sensor 96

E-Vac® Vacuum Generators....97

- How to Build an E-Vac System 98
- In-Line 101
- Modular 101
- Adjustable 103
- Vacuum Cups 105

Air Operated Conveyors109

- Line Vac 109
- Threaded Line Vac 115
- Heavy Duty Line Vac 117
- Light Duty Line Vac 119

Industrial Housekeeping.....121

- NEW!** Reversible Drum Vac 121
- NEW!** Chip Trapper 123
- NEW!** Chip Vac 125
- NEW!** Heavy Duty Dry Vac 127
- Vac-u-Gun 129
- Deep Hole Vac-u-Gun 131

Vortex Tubes & Spot Cooling 133

- Vortex Tubes 133
- Adjustable Spot Cooler 141
- Mini Cooler 144

Cold Gun Aircoolant Systems.145

Cabinet Cooler® Systems149

- NEMA 12, 4 and 4X 151
- Electronic Temperature Control 154

Accessories158

- Silencing Mufflers 158
- Filters 160
- Regulators 161
- Valves, Swivels, Thermostats 162
- Magnetic Bases, Stay Sets, Hoses 163
- Receiver Tank, Fittings 164

Page 3 EXAIR Optimization
Minimize Compressed Air Use and Detect Wasteful Leaks

Page 11 Air Knives
Blowoff, Clean, Dry and Cool With Less Noise and Air Consumption

Page 29 Air Wipes
Blowoff, Dry, Clean and Cool Pipe, Cable, Extruded Shapes and Hose

Page 35 Air Amplifiers
Vent, Exhaust, Cool, Dry and Clean - With No Moving Parts

Page 43 Air Nozzles and Jets
Reduce Noise Levels and Air Costs on Blowoff Operations

Page 59 Atomizing Nozzles
All Stainless Steel Construction for Durability and Corrosion Resistance!

Page 68 Safety Air Guns
Safety Air Guns Use Engineered Air Nozzles for High Performance

Page 75 Static Eliminators
Eliminate Static Electricity, Dust and Shock Hazard

Page 97 E-Vac® Vacuum Generators
Vacuums for Lifting, Clamping, Mounting and Placement

Page 109 Air Operated Conveyors
Convey Parts, Materials and Waste - With No Moving Parts

Page 121 Industrial Housekeeping
Reliable Vacuums for Chip Removal, Liquid Transfer and Cleaning

Page 133 Vortex Tubes and Spot Cooling
Cold Air for Industrial Spot Cooling Problems

Page 145 Cold Gun Aircoolant Systems
Cool Machining Operations With Clean, Cold Air

Page 149 Cabinet Cooler® Systems
Cool and Purge NEMA 12, 4 and 4X Electrical Control Panels

Page 158 Accessories
Mufflers, Filters, Regulators, Valves, Swivel Fittings and More

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OSHA and CE Compliance: EXAIR compressed air products comply with OSHA's Safety Requirements, the EU General Product Safety Directive (2001/95/EC) and meet the noise limitation requirements of the EU Machinery Directive (98/37/EC). They help companies comply with the Noise Directive (86/188/EEC) along with pending changes to the workplace noise requirements due to the implementation of the Physical Agents Directive (2003/10/EC). These directives are non-marking directives and do not allow display of the CE mark. Some EXAIR products display the CE mark where there are applicable directives. All sound level measurements are taken at 3 feet away.

RoHS: Electrical portions of EXAIR's static eliminators, EFC, ETC, solenoid valves, and thermostats comply with the RoHS (Restriction of Hazardous Substances) Directive 2002/95/EC, including the amendment outlined in the European Commission decision L 214/65.

Reach: Per Regulation (EC) No 1907/2006 Title I, Article 3, paragraph 3, the European Union has recently enacted legislation to register chemicals and substances imported into the EU to ensure a high level of protection of human health and the environment.

Per Title II, Article 7, paragraph 1, articles (products) must be registered when a substance is intended to be released under normal or reasonably foreseeable conditions of use and it is present in those articles in quantities totaling over 1 metric ton per producer or importer per year. Registration of EXAIR products is not required since they do not contain substances that are intentionally released.

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Intelligent Compressed Air® products are identified throughout this catalog that can help your plant save tens of thousands of dollars over the course of a single year. *The Best Practices for Compressed Air Systems* manual published by the Compressed Air Challenge® recommends products like the Super Air Knife™, Super Air Amplifier™, and the family of Super Air Nozzles™ for energy conservation. Many of the products shown offer unique ways to solve common industrial problems using compressed air. Compressed Air Challenge is a registered trademark of Compressed Air Challenge, Inc.



EXAIR has partnered with Energy Star, a voluntary program of the U.S. Department of Energy and the Environmental Protection Agency. Energy Star offers energy efficient solutions to help save money while protecting the environment for future generations. EXAIR has implemented improved energy management practices and technologies throughout our facility, including energy efficient lighting, HVAC systems, and electronic thermostats. EXAIR's participation in this program underscores our commitment to conserving energy.

EXAIR products are subject to ongoing development. Specifications are subject to change without notice.

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Warranty: 5 Year "Built To Last" Warranty against defects in workmanship and materials on all compressed air products*. Defective products must be returned freight prepaid for repair or replacement at our option. This warranty applies under conditions of normal use, but does not apply to defects that result from intentional damage, negligence, unreasonable use, wear or exposure.



*5 Year Warranty applies to compressed air products only.
A 1 Year Warranty applies to all accessories and electrically powered products.

EXAIR's Unconditional Guarantee: Extends to all U.S. and Canadian customers and includes invoiced U.P.S. Ground Service shipping charges. Products returned after the 30 day guarantee period are subject to a 15% restocking charge. Products must be returned freight prepaid.



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Cold Gun Aircoolant System™



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

What Is The Cold Gun Aircoolant System?



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.



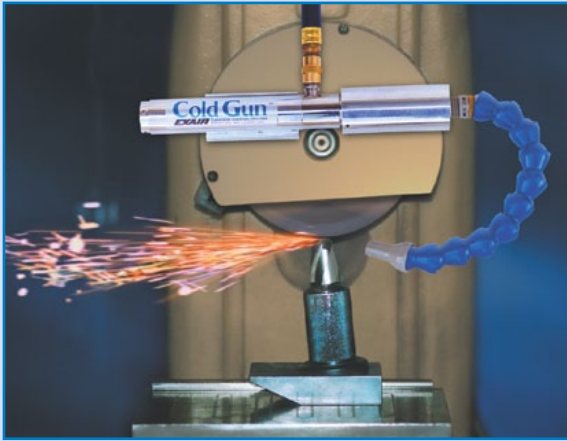
Cold air eliminates heat cracking of the carbide tool during sharpening.



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

Cold Gun 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.



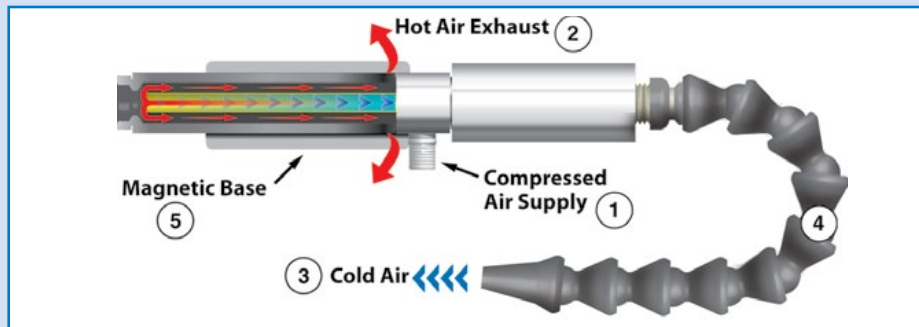
Model 5230 High Power Cold Gun System

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.

Cold Gun Aircoolant System

How The Cold Gun Works

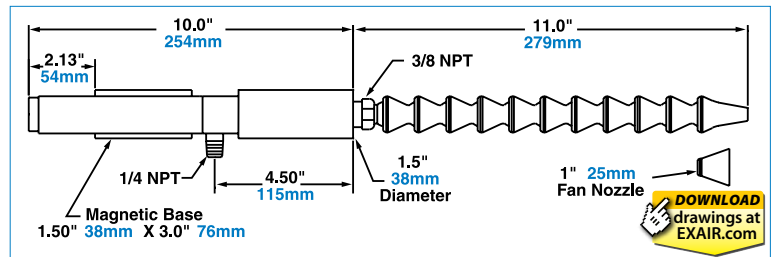


The standard Cold Gun and High Power Cold Gun incorporate a vortex tube to convert an ordinary supply of compressed air (1) into two low pressure streams, one hot and one cold. (For complete information on vortex tube operation, see page 134 of this catalog.) The Cold Gun's hot airstream is muffled and 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 160 for details.)

Need More Cooling?

EXAIR's High Power Cold Gun™ 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 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.

Recently, there was a long term study on the effect of refrigerated air on tool wear in wood machining 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

(professor at North Carolina State University and 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 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.



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.

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.

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	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	Solenoid Valve (24VDC), 1/4 NPT, 40 SCFM (1,133 SLPM)