

# GUARDAIR®

## MEETING OSHA STANDARDS






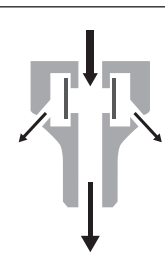
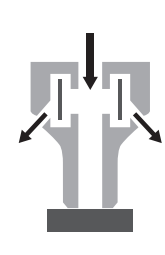








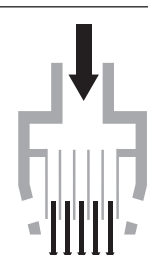



FOR CLEANING WITH COMPRESSED AIR

- **Output Pressure**
- **Chip Guarding**
- **Noise**



# MEETING OSHA STANDARD FOR OUTPUT PRESSURE

Factory compressed air systems typically run at pressures between 80 and 120 psi (pounds per square inch). Pneumatic tools, including safety air guns, require these high pressures to operate effectively. However, OSHA requires that if the tip of an air gun is “dead-ended”, the static pressure at the point of blockage “must be reduced to less than 30 psi.” All Guardair safety air guns meet the 30 psi requirement by incorporating nozzles that operate in the following manner:

Nozzle Type	Unblocked Nozzle Tip	Blocked Nozzle Tip	Recommended Guardair Safety Air Guns
<b>Venturi</b>			 <b>Thumbswitch 900</b>  <b>Lazer Series LZR600</b>  <b>Long John Series 75LJ</b>
<b>Air Cone</b>			 <b>Jet Guard 74S</b>  <b>Jet Guard 74SK</b>  <b>Booster 76S</b>
<b>Whisper Jet</b>			 <b>Thumbswitch 980</b>  <b>Whisper Jet 80</b>  <b>Whisper Jet Series 80LJ</b>
<b>Quiet Force</b>			 <b>Force 5 Quiet Force Series</b>  <b>Inforcer Quiet Force Series</b>

**Nozzles meet OSHA Standard:**  
**29CFR Part 1910.242 (b)**

Hand and portable powered tools and equipment, general.

**OSHA Instruction STD 01-13-001**

OSHA Program Directive #100-1  
 Reduction of Air Pressure below 30 psi for Cleaning Purposes.



Always wear eye and ear protection when operating air tools and related equipment.

SEE PAGE 3

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# OSHA STANDARD FOR OUTPUT PRESSURE

## 29CFR Part 1910.242 (b)

Hand and portable powered tools and equipment, general.

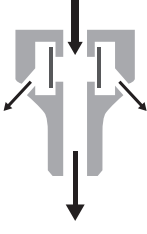
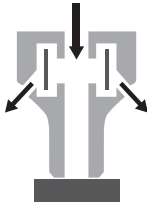



This standard requires the static output pressure of air nozzles when blocked be less than 30 psi.

For more information on these OSHA Standards, visit [www.guardair.com/oshakit](http://www.guardair.com/oshakit)



# MEETING OSHA STANDARD FOR CHIP GUARDING

When cleaning in close quarters with compressed air, workers are often subject to "chip fly-back". This term refers to the tendency of loose particles, or chips, to fly back into the operator's face, eyes, or skin. For such operations, OSHA requires that "effective chip guarding" be incorporated into the workplace. Many Guardair safety air guns provide chip guarding by incorporating nozzles that operate in the following manner:

Nozzle Type	Unblocked Nozzle Tip	Blocked Nozzle Tip	Recommended Guardair Safety Air Guns
<b>Air Cone</b>	 <p>As the main airflow exits from the nozzle tip, a portion of air exits from side slots around the periphery forming a protective air cone. This cone helps prevent chips and other debris from "flying back" towards the operator.</p>	 <p>An internal, pressure sensitive mechanism diverts 100% of the airflow through the side slots thereby reducing static pressure at the nozzle tip to less than 30 psi.</p>	 <b>Jet Guard 74S</b>  <b>Jet Guard 74SK</b>  <b>Booster 76S</b>

**Nozzles meet OSHA Standard:**  
**29CFR Part 1910.242 (b)**

Hand and portable powered tools and equipment, general.

**OSHA Instruction STD 01-13-001**

OSHA Program Directive #100-1

Reduction of Air Pressure below 30 psi for Cleaning Purposes.



Always wear eye and ear protection when operating air tools and related equipment.

SEE PAGE 3

SEE PAGE 5

# OSHA STANDARD FOR CHIP GUARDING

## OSHA Instruction STD 01-13-001

OSHA Program Directive #100-1  
Reduction of Air Pressure below 30 psi for  
Cleaning Purposes.

Because OSHA Standard 1910.242 (b) is often  
misinterpreted this directive was issued to provide  
clarification.

For more information on  
these OSHA Standards, visit  
[www.guardsair.com/oshakit](http://www.guardsair.com/oshakit)



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- Record Type: Instruction
- Directive Number: STD 01-13-001
- Old Directive Number: STD 1-13.1
- Title: Reduction of Air Pressure below 30 psi for Cleaning Purposes
- Information Date: 10/30/1978
- Standard Number: 1910.242(b)

U.S. Department of Labor  
Occupational Safety & Health Administration

OSHA Instruction STD 01-13-001 - STD 1-13.1 October 30, 1978 - Reduction of Air Pressure below 30 psi for Cleaning Purposes  
February 14, 1972

OSHA PROGRAM DIRECTIVE #100-1

To: National and Field Offices

SUBJECT: Reduction of Air Pressure Below 30 psi for Cleaning Purposes

Attachment: Acceptable Methods for Complying with 41 CFR 50-204.8 and 29 CFR 1910.242(b)

1. Purpose: To provide guidance and examples of what alternate systems will meet the requirements of this section, and to clarify its intent.
2. Background: A number of inquiries have been received requesting a clarification of the meaning of 1910.242(b) also known as 41 CFR 50-2048 under the Wash-Healey Act.
3. Interpretation: The phrase "reduce to less than 30 psi" means that the downstream pressure of the air at the nozzle (nozzle pressure) or opening of a gun, pipe, cleaning lance, etc., used for cleaning purposes will remain at a pressure level below 30 psi for all static conditions. The requirements for dynamic flow are such that in the case where dead ending occurs a static pressure at the main orifice shall not exceed 30 psi. The acceptable methods of meeting this requirement. Also, there is no intent to restrict the diameter of the nozzle orifice or the volume (CFM) flowing from it.
- "Effective chip guarding" means any method or equipment which will prevent a chip or particle (of whatever size) from being blown into the eyes or unbroken skin of the operator or other workers. Effective chip guarding may be separate from the air nozzle as in the case where screens or barriers are used. The use of protective cone air nozzles are acceptable in general for protection of the operator but, barriers, baffles or screens may be required to protect other workers if they are exposed to flying chips or particles.
4. Action: Inquiries about subject section should be handled in accordance with this instruction.
5. Effective Date: This instruction is effective immediately, and will remain in effect until canceled or superseded.

Director, of Program Operations

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For Attachment, see Printed Copy Acceptable Methods For Complying With 41 CFR 50-204.8 and 29 CFR 1910.242(b) Use of Compressed Air

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Occupational Safety and Health  
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200 Constitution Ave., NW,  
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TTY  
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# MEETING OSHA STANDARD FOR NOISE

To address excessive noise in the workplace, OSHA has developed permissible daily noise exposure specifications. Since air guns can potentially contribute to high levels of occupational noise, Guardair safety air guns incorporating noise suppression nozzles can be an important component in moving towards noise level compliance.

Nozzle Type	Unblocked Nozzle Tip	Blocked Nozzle Tip	Recommended Guardair Safety Air Guns
<b>Whisper Jet</b>	 <p>High-speed jets of air exit from narrow slots around the periphery of the solid conical nozzle. Airflow from these jets adheres to the nozzle surface, drawing in surrounding air and producing high-thrust at very low noise levels.</p>	 <p>Because of the solid conical nozzle tip, the slots cannot be blocked. Therefore the output pressure never exceeds 30 psi.</p>	 <b>Whisper Jet 80</b>  <b>Whisper Jet Series 80LJ</b>  <b>Thumbswitch 980</b>
<b>Quiet Force</b>	 <p>A circular array of 93 miniature nozzles are surrounded by a safety shroud. Spacing and geometry of these "nozzettes" maximize airflow and reduce noise-inducing turbulence, providing superior thrust at greatly reduced noise levels.</p>	 <p>100% of the airflow is diverted through the side ports of the safety shroud. Under this condition, static pressure at the nozzle tip measures less than 30 psi.</p>	 <b>Force 5 Quiet Force Series</b>  <b>Inforcer Quiet Force Series</b>

**Nozzles help meet OSHA Standard:**  
**29CFR Part 1910.95**

Occupational noise exposure



Always wear eye and ear protection when operating air tools and related equipment.

# OSHA STANDARD FOR NOISE

## 29CFR Part 1910.95

### Occupational noise exposure

This Standard governs noise exposure in the workplace. Because compressed air used for cleaning can sometimes generate excessive noise, users must meet specific requirements. Page 1 of this multi-page Standard is shown.

**For more information on these OSHA Standards, visit [www.guardair.com/oshakit](http://www.guardair.com/oshakit)**



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[Regulations \(Standards - 29 CFR\) - Table of Contents](#)

- Part Number: 1910
- Title: Occupational Safety and Health Standards
- Subpart: Occupational Health and Environmental Control
- Standard Number: 1910.95
- Title: Occupational noise exposure
- Appendix: A, B, C, D, E, G, H, I
- GPO Source: e-CFR

**1910.95(a)**  
Protection against the effects of noise exposure shall be provided when the sound levels exceed those shown in Table G-16 when measured on the A-weighted sound pressure level response. When noise levels are determined by octave band analysis, the equivalent A-weighted sound level may be determined as follows:

**FIGURE G-9**  
Equivalent sound level contours. Octave band sound pressure levels may be converted to the equivalent A-weighted sound level by plotting them on the graph and noting the A-weighted sound level corresponding to the point of highest penetration into the sound level contours. This point is the equivalent sound level, which may differ from the actual A-weighted sound level of the noise. It is used to determine exposure limits from Table G-16.

**1910.95(b)(1)**  
Noises are subject to sound exceeding those listed in Table G-16. Feasible administrative or engineering controls shall be utilized if such controls fail to reduce sound levels within the levels of Table G-16, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.

**1910.95(b)(2)**  
If the variations in noise level involve maxima at intervals of 1 second or less, it is to be considered continuous.

**TABLE G-16 - PERMISSIBLE NOISE EXPOSURES (1)**

Duration per day, hours	Sound level, dBA, slow response
8.....	90
6.....	92
4.....	95
3.....	97
2.....	100
1.5.....	105
1.....	110
1/2.....	115
1/4 or less.....	115

**FOOTNOTES (1)** When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions:  $C(1)/T(1) + C(2)/T(2) + C(n)/T(n)$  exceeds unity, then, the mixed exposure should be considered a continuous noise exposure.  $C$  is the actual noise exposure at a specified noise level, and  $T$  indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

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**1910.95(c)**  
Hearing conservation program.\*

**1910.95(c)(1)**  
The employer shall administer a continuing, effective hearing conservation program, as described in paragraphs (c) through (i) of this section, to all employees whose noise exposure is equal to or greater than a dose of 50 percent. For purposes of the hearing conservation program, employee noise exposures shall be based on the equivalent A-weighted sound level.

# SELECTING THE PROPER SAFETY AIR GUN

**STEP A** **Distance – Close-in or far-away application?**  
For maximum efficiency choose a safety air gun with a short or no extension for close-in work. Use an extended reach safety air gun for cleaning far-away surfaces.



**STEP B** **Thrust – Low or high thrust required to move debris?**  
Choose a safety air gun that delivers appropriate thrust for the surface to be cleaned; low thrust for light debris; high thrust for heavy or stubborn debris.



**STEP C** **Air Supply – Size of compressed air line?**  
Match the airline at the workstation with the safety air gun. Small diameter air lines (1/4" to 3/8" ID) power low-thrust models; larger diameter air lines (1/2" to 3/4" ID) power high-thrust models.



**STEP D** **Ergonomics – “Thumbswitch” or “pistol-grip” style handle?**  
Thumbswitch style safety air guns are often preferred for applications with overhead air line feeds. Pistol grip style safety air guns are generally preferred for air lines fed from below. Operator preference, including comfort and grip, is key.



**STEP E** **Additional Safety Features – Additional operator protection required?**  
Choose a safety air gun with blind-hole capabilities, or chip-fly-back protection where necessary. Choose a silencer nozzle where hearing protection is important.



**GUARDAIR**  
CORPORATION

47 Veterans Drive • Chicopee, MA 01022-1062  
Toll-Free: 800-482-7324 | Fax: 413-594-4884  
Email: [info@guardair.com](mailto:info@guardair.com) • [guardair.com](http://guardair.com)

