Manufacturing Intelligent Compressed Air Products Since 1983
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# AIR NOZZLES, AIR JETS AND SAFETY AIR GUNS INSTALLATION & MAINTENANCE

For all products covered in this "Installation & Maintenance" sheet, EXAIR recommends the compressed air supply include pressure relieving regulators, filter separators and oil removal filters rated for a pressure of at least 250 PSIG (17.2 BAR, 1.72 MPa). In addition, filter separators used with nozzles should have a minimum of 25 micron filtration. A minimum of 10 micron filtration is required with air jets. Oil filters should have a minimum 0.03 micron filtration. Blow dust and dirt from all lines between the filter and the Air Nozzle, Air Jet or Safety Air Gun. Make all connections with the appropriate fittings.

All models may be cycled with any type of valve. Pressure regulators are not usually required, but may be used. If the Air Nozzle, Air Jet or Safety Air Gun gives more blowoff force than is needed, regulate pressure down to match the force to the job. At lower pressures, less compressed air is used and sound levels are lower. Swivel Fittings are available that make it easy to adjust the aim of Air Nozzles and Jets. The EFC electronic flow control to limit compressed air use is also available.

## Safety Air Nozzles

**Model 1108SS and 1108-PEEK Atto Super Air Nozzles (M4x0.5), Model 1109SS and 1109-PEEK Pico Super Air Nozzles (M5x0.5), and Model 1110SS and 1110-PEEK Nano Super Air Nozzles (M6x0.75)** should be installed using soft jaw pliers.

**Model 1108SS-NPT and 1108-PEEK-NPT Atto Super Air Nozzles, Model 1109SS-NPT and 1109-PEEK-NPT Pico Super Air Nozzles and Model 1110SS-NPT and 1110-PEEK-NPT Nano Super Air Nozzles** have 1/2" (13mm) hex body with 1/8 NPT male threads and can be installed using a wrench or deep well socket.

**Model 1010SS Micro Air Nozzle** has a 7/16" (11mm) hex body and can be easily installed with a wrench or deep well socket.

**The Model 1100, 1100SS, 1100-PEEK, 1101 and 1101SS Super Air Nozzles** have a 5/8" (16mm) hex body. **Models 1102, 1102SS, 1102-PEEK, 1103 and 1103SS Mini Super Air Nozzles** have a 1/2" (13mm) hex body. All are easily installed with a wrench or deep well socket.
**If this Super Air Nozzle does not provide enough force for your application,** use additional Super Air Nozzles, a larger Super Air Nozzle or Super Air Nozzle Cluster. This can dramatically increase the force.

**Model 1126 and 1126SS 1" Flat Super Air Nozzles** have a .015" (0.38mm) air gap opening that is set with a stainless steel shim. Force and flow may be changed by installing a different shim thickness (use Model 1136SS Shim Set).

**Model 1122 and 1122SS 2" Flat Super Air Nozzles** have a .015" (0.38mm) air gap opening that is set with a stainless steel shim. Force and flow may be changed by installing a different shim thickness (use Model 1132SS Shim Set).

**Model 1001, 1002, 1002SS and 1003 Safety Air Nozzles** have a hex body and are easily installed using a wrench or deep well socket. Model 1001 Safety Air Nozzle has a 1/2" (13mm) hex body. Model 1002 and 1002SS Safety Air Nozzles have a 5/8" (16mm) hex body. Model 1003 Safety Air Nozzle has a 3/4" (19mm) hex body.
**If this Safety Air Nozzle does not provide enough force for your application**, the center hole may be drilled out to increase force. Be sure to drill from the hex end toward the slotted end. The drill will center and the chips will fall through the hole (not into the nozzle). We recommend that the hole be opened up in 1/64" (0.40mm) diameter increments and tested. The larger the center hole, the more noise and air consumption. The standard center hole size on these Safety Air Nozzles, as supplied, is 1/16" (1.6mm) diameter. The Model 1003 3/8 NPT Safety Air Nozzle center hole size as supplied is 5/64" (2mm) diameter. Do not drill hole larger than 3/32" (2.4mm).

**Model 1009 & 1009SS Adjustable Air Nozzles** have a 5/8" (16mm) hex body and are easily installed with a wrench or deep well socket.

**If this Safety Air Nozzle does not provide enough force for your application,** the force may be adjusted. The higher the number at the set mark, the higher the force. To change the setting, loosen the 3/32" (2.4mm) socket head set screw* in the end of the nozzle. Turn the conical nose to move the set mark to desired number. Re-tighten the set screw* to lock nose piece in position. When set at "8", air consumption is 13 SCFM (368 SLPM) when supplied at 80 PSIG (5.5 BAR, 552 kPa). Force is 12 oz (340 grams).

* (Note: A small amount of breakable adhesive is applied to the threads to keep set screw from vibrating loose. Use of soft jaw pliers or a cloth to hold the cone in position may be necessary.)

## Super Air Scraper

**Model 1144 2" Super Air Scraper** has a .015" (0.38mm) air gap opening above the scraper blade that is set with a stainless steel shim. Force and flow may be changed by installing a different shim thickness (use Model 1132SS Shim Set). If you bend or break the 2" Super Air Scraper blade, it can be replaced with a new one (use part number 902007).

## High Force Safety Air Nozzles

**Model HP1002 & HP1002SS High Power Safety Air Nozzles** have a 5/8" (16mm) hex body and are easily installed with a wrench or deep well socket. **DO NOT DRILL THE CENTER HOLE FOR ADDITIONAL FORCE.** The center hole has already been drilled to obtain the best performance while maintaining safe dead-ended pressure requirements that meet OSHA standards. Consider using additional High Power Safety Air Nozzles or large Super Air Nozzles if more force is required.

**Model HP1126 and HP1126SS 1" High Power Flat Super Air Nozzles** have a .025" (0.64mm) air gap opening that is set with a stainless steel shim. Force and flow may be changed by installing a different shim thickness (use Model HP1136SS Shim Set).

**Model HP1125 and HP1125SS 2" High Power Flat Super Air Nozzles** have a .025" (0.64mm) air gap opening that is set with a stainless steel shim. Force and flow may be changed by installing a different shim thickness (use Model HP1132SS Shim Set).

**The Model 1104, 1104SS, 1104-PEEK, 1105, 1105SS, 1106, 1106SS, 1107, 1107SS, 1112, 1112SS, 1113, 1113SS, 1114, 1114SS, 1115, 1115SS, 1116, 1117, 1118, 1119, 1120 and 1121 Large Super Air Nozzles** have the blowing capability of multiple air nozzles. Models 1104, 1104SS, 1104-PEEK, 1105 and 1105SS have a 13/16" (21mm) hex body; Models 1106, 1106SS, 1107 and 1107SS have a 1" (25mm) hex body; Models 1112, 1112SS, 1113 and 1113SS have a 1-1/4" (32mm) hex body; Models 1114, 1114SS, 1115 and 1115SS have a 1-1/2" (38mm) hex body; and Models 1116, 1117, 1118, 1119, 1120 and 1121 have a 2" (51mm) hex body. All are easily installed with a wrench or deep well socket.

Multiple Large Super Air Nozzles can be used together to provide stronger blowing force when necessary. The sound level of some Large Super Air Nozzles exceed 90 dBA. OSHA allows 3 hours of exposure per day without hearing protection for Models 1112, 1112SS, 1113 and 1113SS; 2 hours for Models 1114, 1114SS, 1115 and 1115SS; one hour for Models 1116 and 1117; and 1/2 hour for Models 1118, 1119, 1120 and 1121.

**Models 1111-4, 1111-7 and 1111-12 Super Air Nozzle Clusters** provide incredibly strong blowing force by assembling multiple Super Air Nozzles into a single aluminum body. Super Air Nozzle Clusters can be installed using a large adjustable wrench (flats are provided on the body) or a strap wrench. If particles clog the Super Air Nozzle Cluster, inspect and clean the unit by disassembling (unscrew the aluminum body using a pin wrench and clean).

## Air Jets

**Model 6013 and 6013SS High Velocity Air Jets** have a 1/8 NPT inlet. **If the Air Jet does not provide enough force,** a Model 6313 Shim Set can be used which includes (1) .006" (0.15mm) and (1) .009" (0.23mm) thick shim. The thicker the air gap, the more force, velocity and compressed air consumption. Use the smallest air gap possible that gives enough force for the application to conserve compressed air.

**Model 6019 and 6019SS Adjustable Air Jets** have a 1/8 NPT inlet. **If the Adjustable Air Jet does not provide enough force for your application,** the force may be adjusted. To set force higher, move the set mark (see knurled edge) to a higher number. Lower numbers give less force and less compressed air consumption. When set at "6", air consumption is 18 SCFM (509 SLPM) when supplied with 80 PSIG (5.5 BAR, 552 kPa). Force is 16 oz (453 grams).

# Safety Air Guns and Super Blast Safety Air Guns

All Safety Air Guns and Super Blast Safety Air Guns meet or exceed OSHA requirements by using EXAIR engineered air nozzles and jets. All are safe to be supplied with higher pressure compressed air and meet the OSHA standard CFR 1910.242(b) for dead ended pressures. The sound level of some TurboBlast and Super Blast Safety Air Guns exceeds 90 dBA. OSHA allows 3 hours of exposure per day without hearing protection for Model 1214, 1214SS, 1914, 1914SS, 1924, 1924SS; 2 hours for Model 1215, 1215SS, 1915, 1915SS, 1925, 1925SS; 1 hour for Model 1216, 1916, 1926; and 1/2 hour for Models 1217, 1218, 1917, 1918, 1927, 1928. Detailed information on the specific Air Nozzle can be found in the EXAIR Catalog and at www.exair.com.

## Chip Shields

Chip Shields are a durable polycarbonate shield that protects operators from flying debris often associated with blowing chips off machined parts. Chip Shields are also great for keeping coolant from spreading everywhere during drying operations. EXAIR's Chip Shields help meet the requirements of OSHA 1910.242(b) for safe use of compressed air. Chip Shields are available for VariBlast Compact and Precision Safety Air Guns, Soft Grip Safety Air Guns and Heavy Duty Safety Air Guns. Chip Shields can be used on Safety Air Guns with or without an Aluminum Extension. Chip Shields are not for use on guns that use a Stay Set Hose.

### Troubleshooting & Maintenance

If there is a reduction in flow or force from the Safety Air Nozzle, Air Jet or Safety Air Gun, check the pressure by installing a gauge at the compressed air inlet. Large pressure drops are possible due to undersized lines, restrictive fittings and clogged filter elements.

### Safe Operating Practices

**The following is a safety checklist for the proper use of Air Nozzles, Air Jets and Safety Air Guns.**

1. Inspect all of the components used in the compressed air system to make sure that all are tightened properly.

2. Inspect the Air Nozzle, Air Jet or Safety Air Gun to make sure there is nothing attached to the end that might become a flying projectile.

3. Always wear safety glasses with side shields when working in close proximity of the blowoff operation.

4. Always consider the direction you will blow the compressed air in to make sure the debris flies in a safe direction.

5. Always depressurize a compressed air line before attaching an Air Nozzle, Air Jet or Safety Air Gun. Repressurize the line once connected.

6. Never use compressed air to clean your clothing or dislodge particles. These particles can be embedded in your skin. High pressure air can also penetrate the skin and reach the bloodstream which can produce a serious or fatal injury.

7. Never engage in horseplay or point an Air Nozzle, Air Jet or Safety Air Gun at someone.

If you have any questions or problems, please contact:

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