Operator Manual AeRO 75 Series



| Voltage: | 100-130 Volts AC |
|--------------------------|------------------|
| Model No.: | AeRO 75 |
| Control No./ Diagram: | 2A0148-G1 |

Voltage:200-240 Volts ACModel No.:AeRO 75Control No./
Diagram:2A0148-G1

| Voltage: | 100-130 Volts AC |
|--------------------------|------------------|
| Model No.: | AeRO 75-DX |
| Control No./ Diagram: | 2A0148-G2 |

Voltage: 200-240 Volts AC Model No.: AeRO 75-DX Control No./ Diagram: 2A0148-G2

This manual illustrates the safety, operation, and maintenance features of the Cold Jet AeRO 75 Series.

The build and revision level is located on the machine's data plate.

All Machine diagrams are located on the inside of the electrical cover plate.

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General Safety Precautions



- NEVER OPERATE the unit without first reading the Operator Manual.
- NEVER EXPOSE bare skin to CO₂ ice.
- ALWAYS WEAR safety glasses, gloves, 32+NRR ear plugs & ear muffs.
- EVERYONE in the blast area must comply with all safety requirements.
- NEVER POINT the nozzle at anyone and ALWAYS exercise extreme caution when people are in the blast area.
- NEVER use a wire tie to hold the applicator trigger in the ON position. Doing so can damage it and void its warranty.
- NEVER USE the blasting unit for anything except the intended usage.
- ONLY USE dry ice pellets as the blasting media.
- NEVER OPERATE in a confined space without an approved ventilation system and a carbon dioxide monitoring device is recommended.
- NEVER mask the ventilation holes.
- NEVER ALLOW UNTRAINED PERSONNEL to operate the blasting unit.
- NEVER OPERATE a damaged blasting unit.
- ALWAYS turn the main power OFF and remove the applicator control cable BEFORE removing the blast hose.
- NEVER exceed recommended hose or blasting unit pressure levels.
- ALWAYS ground the material being cleaned.
- ALWAYS ENSURE that hoses are securely attached.
- KEEP hoses and power cord out of forklift traffic areas.
- CHECK hoses and cables for nicks and gouges.
- DO NOT kink the blast hose before or during operation.
- NEVER DISCONNECT the air supply hose without first shutting off the source air.
- ONLY COLD JET TRAINED service technicians are allowed to work on the unit's electrical components.
- DO NOT operate equipment with electrical parts exposed, jumpered or rendered inoperable.
- ALWAYS FOLLOW THE GUIDELINES of the governing codes of your local/national body as a minimum standard for ensuring safety.
- Please refer to Carbon Dioxide (CO₂) MSDS sheet for all safety precautions. (MSDS sheet available upon request.)

Electrostatic Discharge Safety Precautions



Electrostatic discharge can be hazardous to the operator and the equipment. The static charge of CO_2 varies with the amount of ice and humidity present. Follow these instructions to assure safe operation while blasting.

A) The power outlet must have a good ground

This is critical for electrostatic dissipation. If the ground is not connected a charge will build up on the unit or the applicator. As a secondary backup the unit's electrically conductive wheels will help bleed off any additional static charge.

B) The blasting unit's static ground cable must be attached to the target surface

If a target is on a non-grounded surface it will build up an electrostatic charge, which could injure the operator or damage the equipment. Wrap or clip the static ground cable to the target to dissipate the charge. Metal framing, that holds the target in place, can be used but the target and frame must be electrically connected. Use a conductivity tester for confirmation.

C) Know your environment

Electrostatic buildup changes as humidity levels change and will vary by location. Electrostatic discharge is higher at low humidity levels and occurs most often during cold weather.

Carbon Dioxide Safety Precautions



Carbon Dioxide (CO $_{\rm 2}$) is a naturally occurring gas and a normal by-product of breathing.

However caution MUST be exercised!

- This unit utilizes Carbon Dioxide (Dry Ice) as a blast media.
- Dry Ice is very cold -110°F (-79°C) and may freeze skin instantly.
- CO₂ is a heavy gas, which means it will settle to the ground.
- Always ventilate when blasting.
- When blasting in a confined space, use of a Carbon Dioxide monitoring device is recommended.
- CO₂ is nontoxic, non-corrosive, non-conductive and is approved by the FDA and USDA. While exposure to CO₂ gas is not harmful in low concentrations, CAUTION must be exercised when using any material that can DISPLACE OXYGEN.

WARNING

This product utilizes Carbon Dioxide (CO_2) as a blast media, EXTREMELY COLD, CAUSES SEVERE BURNS. CO₂ can freeze the skin instantly. Always use protective clothing (Thermal Gloves) and eye protection when handling CO₂ solids or when using the blasting unit.

WARNING

INCREASED LEVELS OF CO₂ WHEN BLASTING IN A CONFINED SPACE CAN DISPLACE BREATHABLE OXYGEN CREATING A RISK OF SERIOUS INJURY OR DEATH BY SUFFOCATION, THEREFORE USE OF A CARBON DIOXIDE MONITORING DEVICE IS RECOMMENDED WHEN USING IN A CONFINED SPACE.

Safety

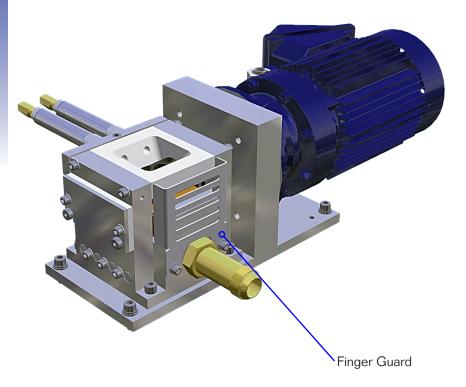
Blast Hose Safety Precautions

- ALWAYS tighten hose fittings with a wrench.
- NEVER USE hoses above the recommended working pressure. (see table)

| Part Number | Description | Working Pressure | Machine |
|-------------|-------------------------|-----------------------|---|
| 2N0177 | 3/4" Urebrade Hose | 140 psi (9.65 bar) | AeRO 75 AeRO 75-DX (Low Pressure) |
| 2N0178 | 1" Urebrade Hose | 140 psi (9.65 bar) | AeRO 75 |
| 2N0179 | 1-1/4" Urebrade Hose | 140 psi (9.65 bar) | AeRO 75 AeRO 75-DX (Low Pressure) |
| 2N0180 | 1" Kevlar Hose | 300 psi (20 bar) | AeRO 75-DX (High Pressure) |
| 2N0181 | 1-1/4" Kevlar Hose | 300 psi (20 bar) | AeRO 75-DX (High Pressure) |

- NEVER DISCONNECT the supply air hose without first shutting off the source air.
- BLEED the compressed air before disconnecting the hoses.
- NEVER OPERATE the equipment if the hose whip check is not installed.

Finger Guard Precautions



The finger guard on the Cold Jet AeRO 75 series protects from a potential personal injury site located inside the machine. The guard, over the air exhaust port, must remain installed at all times to serve its function.

Before You Begin

- For optimal performance it is recommended that the air supply dew point be -40°F (-40°C) or lower.
- For optimal performance make sure the air is clean and free from oil and grit.
- If needed, use an after-cooler and an air dryer with air filtration, to obtain desired air quality and dew point (air drying and filtration equipment may be purchased from Cold Jet).
- If you intend to provide your own air drying and filtration equipment, consult Cold Jet Customer Support for assistance in selecting the correct models.
- The length of blast time at higher dew points depends on relative humidity, temperature and excessive condensation in the hopper and on the pellets.
- At EVERY blasting start-up ALWAYS purge the Cold Jet AeRO 75 & 75-DX with compressed air before adding pellets to the hopper.
- ALWAYS shut the fill lid to avoid foreign objects falling in.
- ALWAYS avoid bad ice.

IMPORTANT

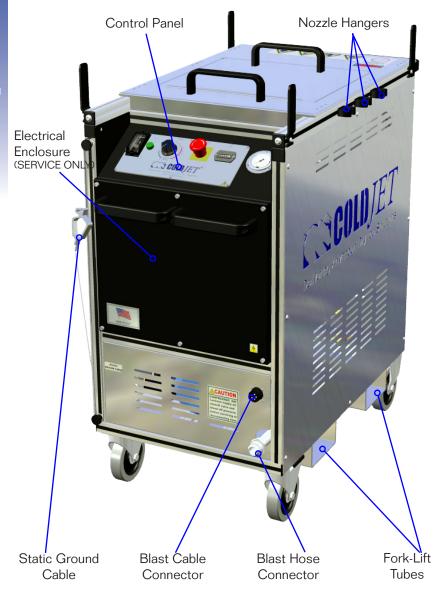
ALWAYS MAKE SURE THE HOPPER IS EMPTY AND BLAST WITH AIR ONLY, FOR 1 MIN. WHEN SHUTTING DOWN LONGER THAN 15 MIN. FAILURE TO DO SO MAY RESULT IN FEEDER AND/OR NOZZLE FREEZE-UP. Satety

Component Guide

Introducing the AeRO 75 & AeRO 75-DX

- The Cold Jet AeRO 75 & 75-DX are portable units providing easy access for difficult to reach cleaning applications.
- The Cold Jet AeRO 75 & 75-DX use dry ice pellets from either an onsite pelletizer or shipped in from a distribution center.
- The blast machine requires a source of compressed air and standard electrical power for operation.
- The blast machine contains an innovative, patented feeder and control system to maintain consistent pellet flow.
- During operation the feeder transfers the pellets from the hopper to a stream of compressed air at a rate determined by the feed control system.
- After exiting the nozzle and striking the surface, the CO₂ pellets sublimate into the atmosphere.
- The only residue left behind is the blasted contaminant.
- The Cold Jet AeRO 75 & 75-DX have the capacity to hold 75 lbs (34 kg) of CO₂ pellets.
- The delivery is variable from 0 7 lbs/min (0 3.2 kg/min).
- The Cold Jet AeRO 75 can blast from 30 140 psi (2 9.66 bar) and the AeRO 75-DX can blast from 30 - 300 psi (2 - 20 bar). Below 60 psi (4 bar) a regulator is required.

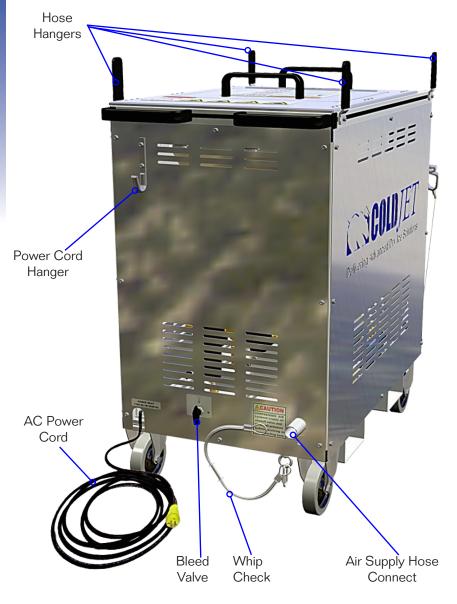
AeRO 75 Front View



AeRO 75-DX Front View



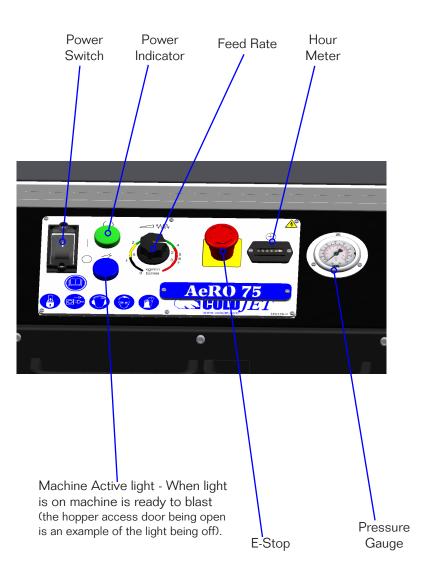
AeRO 75 Back View



AeRO 75-DX Back View



Control Panel



Component Guide

Hopper Access Door - Used for accessing hopper for ice or debris removal. Unit will not operate when door is open.

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Hopper

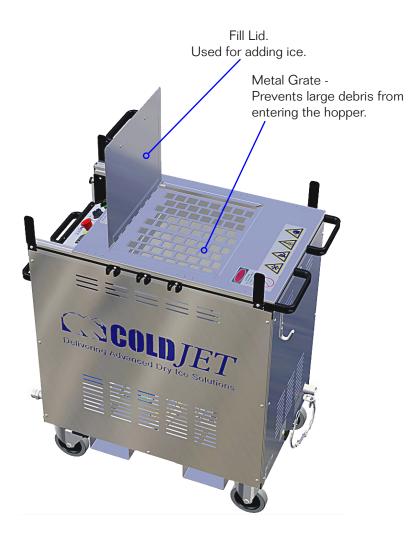
21

Slide Out Hopper (AeRO 75-DX Only)

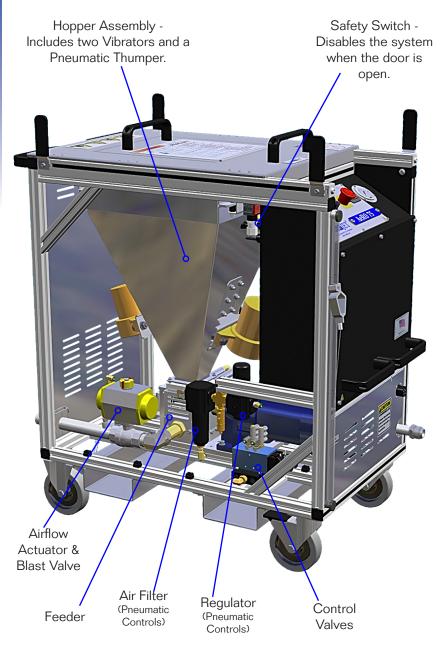
1. Rotate release handle counter-clockwise.



Тор



Inside (Standard Configuration)

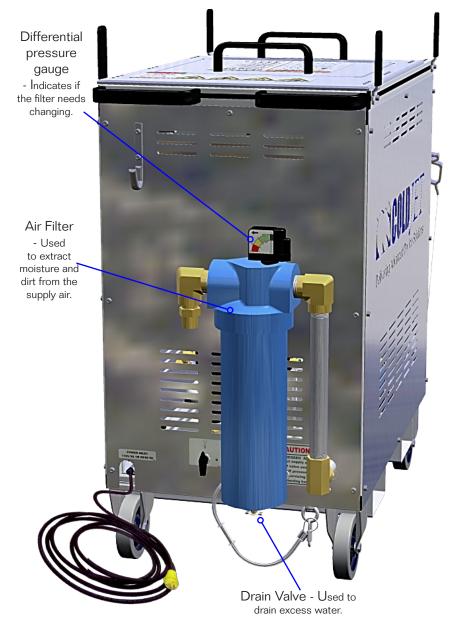


Inside (Optional Regulator Configuration)

Air Pressure Knob - Used to set the blast air pressure to the desired value by turning the knob prior to blasting.



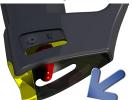
Optional (Coalescing/Particulate Air Filter)



Single Feed Blast Applicator (AeRO 75 Only)



Safety ON





Retention Collar Guide

Tri-Mode Blast Applicator (AeRO 75-DX Only)



Operation

Starting Up

1 Make sure the Power Switch and bleed valve are in the OFF (O) position.



2 Attach the blast hose and the control cable to the machine.



3 Securely attach the applicator to the blast hose and control cable. Make sure the Rotation Stop is facing UP.



Verify that a nozzle is locked into the Blast Applicator.

4 Attach the whip-check to the air supply hose and extend it as far as possible on the air hose.



Attach the Air Supply Hose to the inlet air pipe on the back of the machine. (Check the data plate for the operating pressure range).



5 Make sure the hopper is dry, clean, and free of debris.



- 6 Connect the Static Ground Cable to the material to be cleaned or to an electrically conductive supporting structure of the material.
- 7 Turn on the air compressor, and allow the air supply hose to pressurize. Check for leaks.
- 8 Plug the power cord into an electrical outlet. If an extension cord is necessary, it must comply with the power requirements of this unit and all governing electrical codes (Check the data plate for the operating voltage range).



9 Turn the Power Switch to the ON (I) position.



10 Turn the Bleed Valve ON (I) to drain water out of the filter, then turn it OFF (O) to close it.



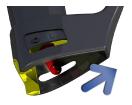
Blasting

- 1 Push the Applicator Safety Switch forward.
- 2 Purge the system by blasting with air for 1 min.

How to Purge: Before loading the pellets into the hopper, turn the feed control to its maximum setting and pull the trigger.

After purging, return the feed control to the desired blast setting.

3 Pour the pellets into the hopper.





lb/mir



4 Close the Fill Lid.

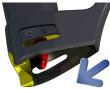
IMPORTANT LETTING THE SYSTEM RUN UNTIL IT EMPTIES KEEPS THE UNIT IN IDEAL CONDITION. IMPORTANT PRESSING AND RELEASING THE APPLICATOR TRIGGER MAKES THE THUMPER BREAK UP ANY ICE CLUMPS.



5 Squeeze the Applicator trigger to blast. If desired push the speed switch up to increase the feed rate to clean tough spots (AeRO 75-DX ONLY).

Shutting Down

1 Stop blasting and push the safety switch back. (This activates the safety).



2 For the AeRO 75 slide open the hopper access door and scoop out the remaining dry ice from the hopper. For the AeRO 75-DX, just slide the hopper out to empty any remaining ice.

- 3 Turn OFF the compressed air supply.
- 4 Turn the power switch OFF (O) to shut off the power.
- 5 Turn the Bleed Valve ON (I) to evacuate all remaining pressure.
- 6 If open, close the Fill Lid.
- 7 When the air hose is fully depressurized, disconnect all electric cables, then the hoses, and wrap them around the hose hangers.





GUJET

Maintenance

Troubleshooting

| Problem | Check This | Solution |
|--|--|---|
| Machine will | Is the unit plugged in? | If NOPlug Unit in. |
| not start GREEN light is not on | Is the power switch in the ON (I) position? | If NOPush power switch to I. |
| | It still will not start up? | Call Cold Jet for support. |
| Machine will not blast | Is the machine active light (the BLUE light) on? | If NO Close the hopper access door and reset the E- stop. Also make sure the slide-out hopper is latched closed (DX only). If the above doesn't work then check fuses FU1 & FU2 |
| | Is the applicator safety switch pushed back? | If YESFlip the switch forward. |
| | Is the optional Coalescing Filter gauge redlining? | If YESImmediately replace the filter element. |
| | Is the air supply connected and the air supply on? | |
| | Is the air supply gauge showing pressure? | If YESThe nozzle may be clogged, blast with air only to unclog it. |
| | Is the optional pressure regulator open and displaying pressure? | |
| | Is applicator cable connected to the machine and the applicator? | |
| Machine blasts AIR but NOT pellets | Set feeder speed and check the thumper for movement. | If no movement see below. |
| | Do Vibrator fuses FU3 and FU4 glow orange? | If YESReplace the fuse(s) that glows orange. |
| | The Hopper may be clogged. | Squeeze the trigger to break up ice clumps. |
| | A foreign object may be lodged in the feeder. | Call Cold Jet for support. |

For additional help contact our Customer Support hotline: +1-800-777-9101 (+1-513-576-8981)

Daily Maintenance



Make sure the gauge is in the GREEN. If not then change the filter element to avoid damage to the machine

Drain the water out of the optional Coalescing filter by opening the drain valve at the bottom of the filter.

Drain water out of the air filter before using the machine. (Turn the bleed valve ON (I) to drain the water).



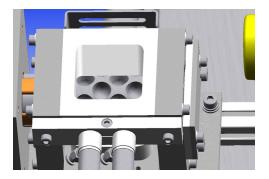
While in operation check the pressure gauge for damage.

Check the air and blast hoses for damage, like cuts or scuff marks.



Weekly Maintenance

Look through the hopper to check the rotor for nicks or gouges. (Use a flashlight).



Make sure the nozzle airflow exit end is not deformed or burred.



Monthly Maintenance

Check the thumper for worn or damaged parts and also check for loose fittings.

> Check the Vibrators for vibration. Also check the two mounting bolts, on each vibrator, to verify they are secure.

 Check the Air Filter by unscrewing the base a 1/4 turn clockwise.

Biannual Maintenance

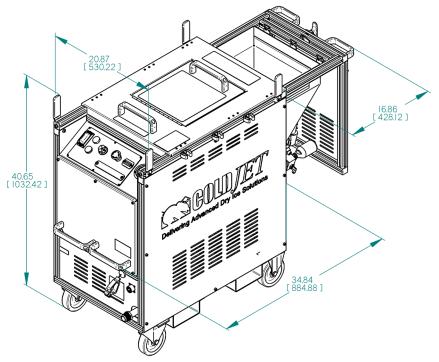
If you are not an authorized Cold Jet Service Technician, please call to schedule service. +1-800-777-9101 or +1-513-576-8981 or email: service@coldjet.com (Europe: 32 (0) 13 53 94 47, Office Hours: GMT +1.00 or email: service.eu@coldjet.com)

- 1 Check pads and rotor
- 2 Check pneumatic air lines
- 3 Check thumper and vibrator assemblies
- 4 Check condition of power cord
- 5 Check all lights
- 6 Check the pressure gauge
- 7 Check static ground cable
- 8 Inspect hoses for damage
- 9 Replace the air filter element
- 10 Check the accessories
- 11 Safety test the unit
- 12 Check all valves

Appendix

Specifications

| | AeRO 75 | AeRO 75-DX |
|----------------------------------|--|--|
| Weight (empty): | 295 lbs. (134 kg.) | 315 lbs. (143 kg.) |
| Pellet Capacity: | 75 lbs. (34 kg.) | 75 lbs. (34 kg.) |
| Pellet Delivery Rate: | Variable From: 0 - 7.1 lbs/min (0 - 3.2 kg/min) | Variable From: 0 - 7.1 lbs/min (0 - 3.2 kg/min) |
| Power Requirements: | 100 - 140 volts AC single phase (50/60 Hz) 9 amps or 200 - 240 volts AC single phase (50/60 Hz) 4.3 amps | 100 - 140 volts AC single phase (50/60 Hz) 9 amps or 200 - 240 volts AC single phase (50/60 Hz) 4.3 amps |
| Feeder Drive: | 1/2 Hp. AC Motor 1,750 RPM | 3/4 Hp. AC Motor 1,750 RPM |
| Available Blast Air Pressure: | 30 - 140 psi. (2 - 9.66 bar) | 30 - 300 psi. (2 - 20 bar) |



Blasting Techniques

- POSITION the blast hose for maximum maneuverability BEFORE blasting.
- DO NOT kink the blast hose.
- HOLD nozzles PERPENDICULAR to the surface for fastest cleaning (recommended for most applications).
- OPTIMUM STAND OFF DISTANCE is 2 in (5 cm) for most nozzles.
- NEVER ALLOW foreign objects to enter the hopper!
- DO NOT abuse the blast applicator or cable.
- BLAST with AIR ONLY for 1 minute after breaks (to melt any water ice build-up inside the blasting unit).
- SLIDE hopper access door open to empty pellets.
- HOPPER SHOULD BE EMPTY BEFORE REFILLING.



Appendi

Handling Pellets

- KEEP pellet boxes and fill lid CLOSED at all times.
- DO NOT use powdery or clumped pellets.
- USE a plastic scoop (not metal) to fill hopper.
- PELLET-BOX liner fragments should not enter hopper.
- DO NOT BREAK THE SEAL on pellet box until pellets are needed.
- USE pellets as soon as possible after opening the box.
- STORE pellet boxes out of direct sunlight.
- DO NOT use pellets larger than 1/8-inch (3mm) in diameter.



Blast Air Quality Up to 140 psi (9.6 bar)

The Cold Jet AeRO 75 series blast machine works best when the supply air is free of any debris and has a dew point of -40°F (-40°C).

If Using Plant Air (Central Compressed Air System)

Manufacturing plants, with central compressed air systems, should have an After Cooler and a 2-stage coalescing filter assembly downstream of the receiver tank. Hot metal pipes are an indication this is needed.

To verify that the plant air system is adequate for the AeRO 75 (75-DX) the air compressor needs to produce an air volume 10% greater than the blast machine's maximum air volume...in addition to the air volume consumed by normal plant operation.

To determine adequate air volume, blast while watching the pressure gauge.

- If the gauge drops slowly the compressor is insufficient.
- If the gauge drops quickly there is a restriction or the pipe is too small.
- If the gauge stays steady then the compressor and piping are adequate.

To maintain adequate pressure to the AeRO 75 (75-DX):

- From the air compressor to 50 ft (15 m) use a flexible 1 in (25 mm) air hose (preferably the hose supplied with the machine).
- From the air compressor to beyond 50 ft (15 m) make sure the pipe is 1 in (25 mm) in diameter before attaching the air hose.

If an air drop isn't used much, water and rust will collect in the line. Before plugging into the air supply, purge the line, to prevent contamination of the AeRO 75 (75-DX).

If Using Portable Air (minimum of 185 cfm - 5.6 m³/min)

Portable diesel air compressors are mainly used for shop tools, not dry ice blasting units and are therefore not able to cool or remove air moisture. An after cooler with a 15°F (-9°C) approach is required to reduce the discharge air temperature 180°F (82°C) to within 15°F (-9°C) of ambient air temperature.

Without the after cooler, the following will occur:

- Incoming air moisture will rapidly cool and freeze at the AeRO 75 (75-DX) feeder.
- 2 Water ice will accumulate in the feeder, distorting the air flow and seal.
- 3 Water ice buildup will continue inside the blast hose, to the nozzle.
- 4 Water ice will break off inside the hose and lodge in the nozzle, causing a jam.
- 5 Water ice, may exit the nozzle, and damage the target surface.

For the above reasons, an after cooler and moisture trap/filter <u>must</u> be used.

If blasting continuously, use an air dryer to further reduce the air moisture (dew point). Desiccant dryers produce a dew point of -40°F (-40°C), resulting in a dew point low enough for continuous blasting.

To verify the compressor is of adequate size for the AeRO 75 (75-DX) the air compressor needs to produce an air volume 10% greater than the blast machine's maximum permissable air volume.

To determine adequate air volume, blast while watching the pressure gauge.

- If the gauge drops slowly the compressor is insufficient.
- If the gauge drops quickly there is a restriction or the pipe is too small.
- If the gauge stays steady then the compressor is adequate.

To maintain adequate pressure, the hose size from the compressor to the AeRO 75 (75-DX) needs to be 1 in (25 mm) in diameter.

Cold Jet Services

- Equipment Upgrades
- Preventative Maintenance Repairs, and Refurbishing
- Training
- Parts and Accessories
- Spare Parts Kits
- Extended Service Plans
- Equipment Rental
- Contract Cleaning Services
- Engineered Solutions
- 24-Hour Technical Phone Support +1-800-777-9101 or 1-513-576-8981 (Europe: 32 (0) 13 53 95 47, Office Hours: GMT +1.00)
- Email Technical Support: service@coldjet.com (Europe: service.eu@coldjet.com)

Ordering Pellets

• Call +1-800-SEND-ICE (+1-800-736-3423)

or

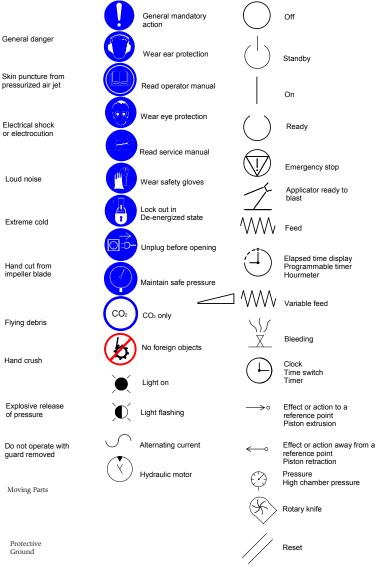
+1-877-437-9423

- RETURN empty ice boxes promptly after use.
- Pellets are made using FOOD GRADE QUALITY dry ice.
- Manufacturers of dry ice are located throughout the world for the recommended manufacturer in your area call +1-800-777-9101 (Europe: 32 (0) 13 53 47) or e-mail service@coldjet.com (Europe: service.eu@coldjet.com)





Machine Symbols



Appendix



Hand cut from impeller blade





Explosive release of pressure



Do not operate with guard removed







Ground Test Point

Warranty Information

Cold Jet[®] LLC ("CJ") warrants its products ("Equipment") provided under this Agreement to be free from defects in materials and workmanship for a period of 12 months, under normal use, maintenance and service as stipulated in the Operator's Manual. CJ warrants that the equipment will be in good working order on the Date of Shipment and will conform to CJ's official published specifications.

The warranty period is 12 months for CJ manufactured Equipment. Original Equipment Manufacturers' warranties provided by CJ on equipment purchased under this Agreement not manufactured by CJ will be passed through to the Buyer. The warranty period commences on the Date of Shipment of the Equipment.

CJ's liability is limited to repairing or replacing, at its option, any covered part of its Equipment, which CJ has determined to be defective. Said repair or replacement will be made by CJ or its authorized representative free of charge to the Buyer, except for any freight or travel expenses, during the warranty period. Any replaced part will become the property of CJ. If, after repeated efforts, CJ is unable to restore its Equipment to good working order, or to replace the defective parts as warranted, CJ may, at its discretion, replace the Equipment in its entirety. Any claim must be made to CJ, in writing, within 30 days of discovering the defect and any claim not made within that period shall be deemed waived or released, and thus denied.

Warranty service provided under this Agreement does not assume uninterrupted operation of the Equipment. The suitability of the equipment for the purpose intended is not included in the warranty.

This warranty shall not apply and CJ shall be neither responsible nor liable for: a) Consequential, collateral or special losses or damages;

- b) Equipment conditions caused by abnormal conditions of use, accident, neglect or misuse of equipment, improper storage or damages resulting during shipment as determined by CJ;
- c) The replacement of normal wear items, including but not limited to air, blast and whip end hoses;
- d) Deviation from the Equipment's prescribed maintenance programs, replacement parts, operating instructions, specifications or other terms of sale;
- e) Labor charges, loss or damage resulting from improper operation, maintenance or repairs made by person(s) other than CJ or CJ-authorized service representatives;
- f) Improper application of the product. In no event shall CJ be liable for claims in excess of the purchase price, whether there is a breach of contract or warranty claim of negligence or negligent manufacture.

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