

Aero 40FP

Operator Manual



Original Instructions [English] (Rev A)

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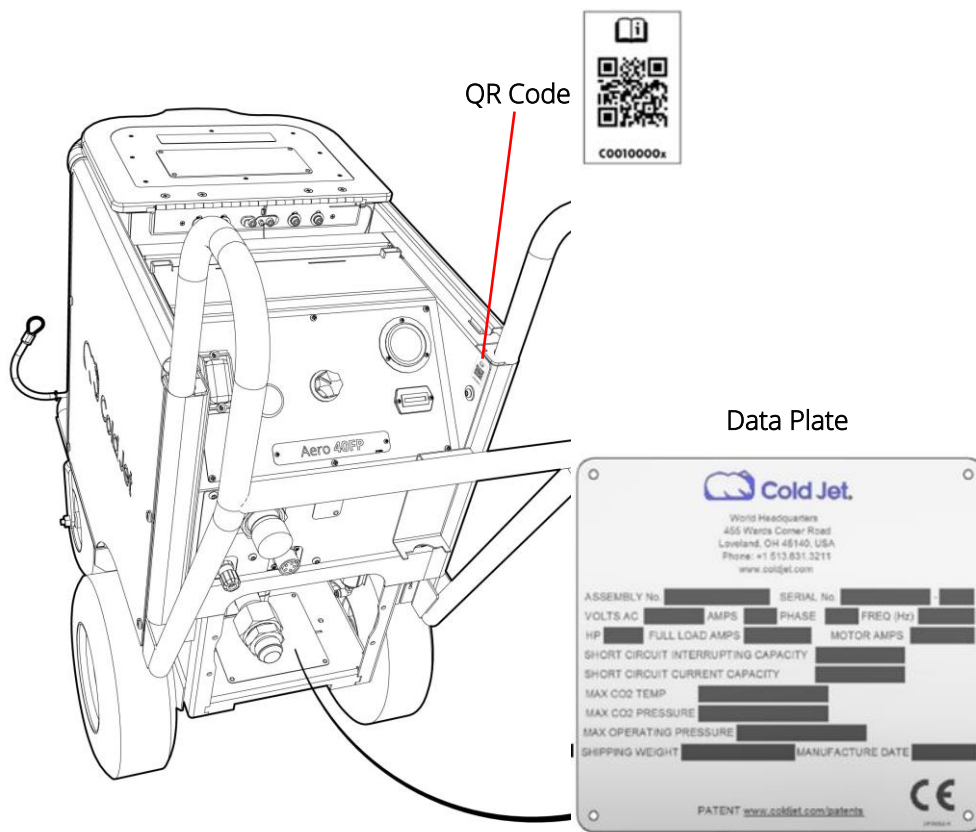
Contents

System Identification	3
Introduction	4
Safety	5
General Safety Guidelines	5
CO₂ Safety	6
Electrostatic Discharge	6
Electrical Grounding	7
Safety Labels	7
Cautions and Warnings	9
Steps for conducting a Lockout Tagout	10
System Description	12
Machine Data	12
Machine Components	12
Applicators	13
Control Panel	15
Nozzles	16
Operation	18
Unpacking the Machine	18
Transport, Storage, and Disposal	19
Machine Setup	20
The Compressed Air Supply	22
Starting the Machine	26

Shutting Down the Machine	29
Cold Jet CONNECT®	31
Maintenance	33
Troubleshooting	33
Warranty Policy	34
Declaration of Conformity	36
Contact Information	37
Schematic	38

System Identification

Locate the data plate for this machine and record the information provided in the spaces provided. To view documentation for your machine, scan the QR code:



ASSEMBLY No.	
SERIAL No.	
VOLTS AC	
AMPS	
PHASE	

FREQ (Hz)	
HP	
FULL LOAD AMPS	
MOTOR AMPS	
SHORT CIRCUIT INTERRUPTING CAPACITY	
SHORT CIRCUIT CURRENT CAPACITY	
MAX CO ₂ TEMP	
MAX CO ₂ PRESSURE	
MAX OPERATING PRESSURE	
SHIPPING WEIGHT	
MANUFACTURE DATE	

Supplier Responsible for the Equipment:	Cold Jet, LLC 455 Wards Corner Road Loveland, Ohio 45140 USA	Phone: 1-800-777-9101 Website: www.coldjet.com
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Introduction

About This Manual

- This manual should be kept with the machine and be readily accessible to machine operators and maintenance personnel.
- This manual contains information on the safety, transportation, operation, and maintenance of this machine.
- The graphics used in this manual may show machine details that may be different than the actual machine. Components of the machine may have been removed for illustrative purposes or the continuing improvement of the machine's design may cause changes that are not included in this publication.
- The owner of this machine is responsible for verifying the operator of this machine is properly trained and understands the contents of this manual.

About The Machine

- This machine is a full pressure dry ice cleaning system that includes radial feeding system technology.
- The radial feeding system technology:
 - Reduces wear on the pads and rotor.
 - Provides pulse-free blasting and precision feed rate control.
- This machine has an onboard pressure regulator.

Environmental Impact

Dry ice is a clean and non-toxic medium approved by the EPA, USDA, and FDA. The dry ice used in this machine is made from reclaimed CO₂ generated from other industrial processes.

Safety

General Safety Guidelines

- This machine is designed to comply with international design standards and the European Machinery Directives.
- Using the machine does not pose a risk to the operator when the instructions in this manual are followed. However, certain precautions must be followed during its use. To understand all the necessary precautions, the machine operator must read the entire manual before operating or performing maintenance on the machine.
- Operation should only be performed by trained personnel. Below are some basic safety guidelines:
 - Follow local governing codes to ensure a minimum standard of safety.
 - Wear protective gloves, eye protection, and hearing protection.
 - Operate the machine in a well-ventilated work area.
 - Follow the prescribed inspection schedule.
 - Start up and shut down the machine according to the instructions in this manual.
 - Do not operate a machine that is damaged or in disrepair.
 - Do not store objects on top of machine.

CO₂ Safety



WARNING - Ensure adequate ventilation when operating this equipment to prevent the build-up of carbon dioxide gas. If used indoors or other confined space, a CO₂ detector should be used to monitor for excessive unsafe levels of CO₂ gas and provide a suitable warning. The legal exposure limit by OSHA is a 0.5% average over an 8-hour workday.

- This machine uses dry ice (CO₂ in solid form). The temperature of dry ice is -109°F (-78.9°C).
- Avoid coming into direct contact with dry ice as it may cause severe tissue damage. Study the material safety data sheet (MSDS) of dry ice (CO₂) supplied with the delivery of dry ice and follow all the recommendations and guidelines listed therein.
- Operate the blaster in a well-ventilated work area with continuous CO₂ -level monitoring.
- The effects of CO₂ are entirely independent of the effects of oxygen deficiency.
- CO₂ concentrations at 3-5% causes headaches, fast breathing, and discomfort while higher concentrations may cause unconsciousness, suffocation, or respiratory arrest. The legal exposure limit set by OSHA is a 0.5% average over an 8-hour workday and the acute (15 minute) exposure limit is 3.0%.
- Always use a CO₂ monitoring/alarm system when working with machinery that emits CO₂ in a confined room/space.

Electrostatic Discharge



WARNING - Dry ice blasting may create electrostatic discharges which may harm personnel. Ensure that the surfaces being cleaned are properly grounded with the supplied grounding cable. This machine is fitted with effective electrostatic dischargers to prevent injury or damage. It is recommended to avoid operating the machine near explosive or flammable material. Also, use a non-metallic scoop when handling dry ice to eliminate any electrostatic discharge.

Electrical Grounding









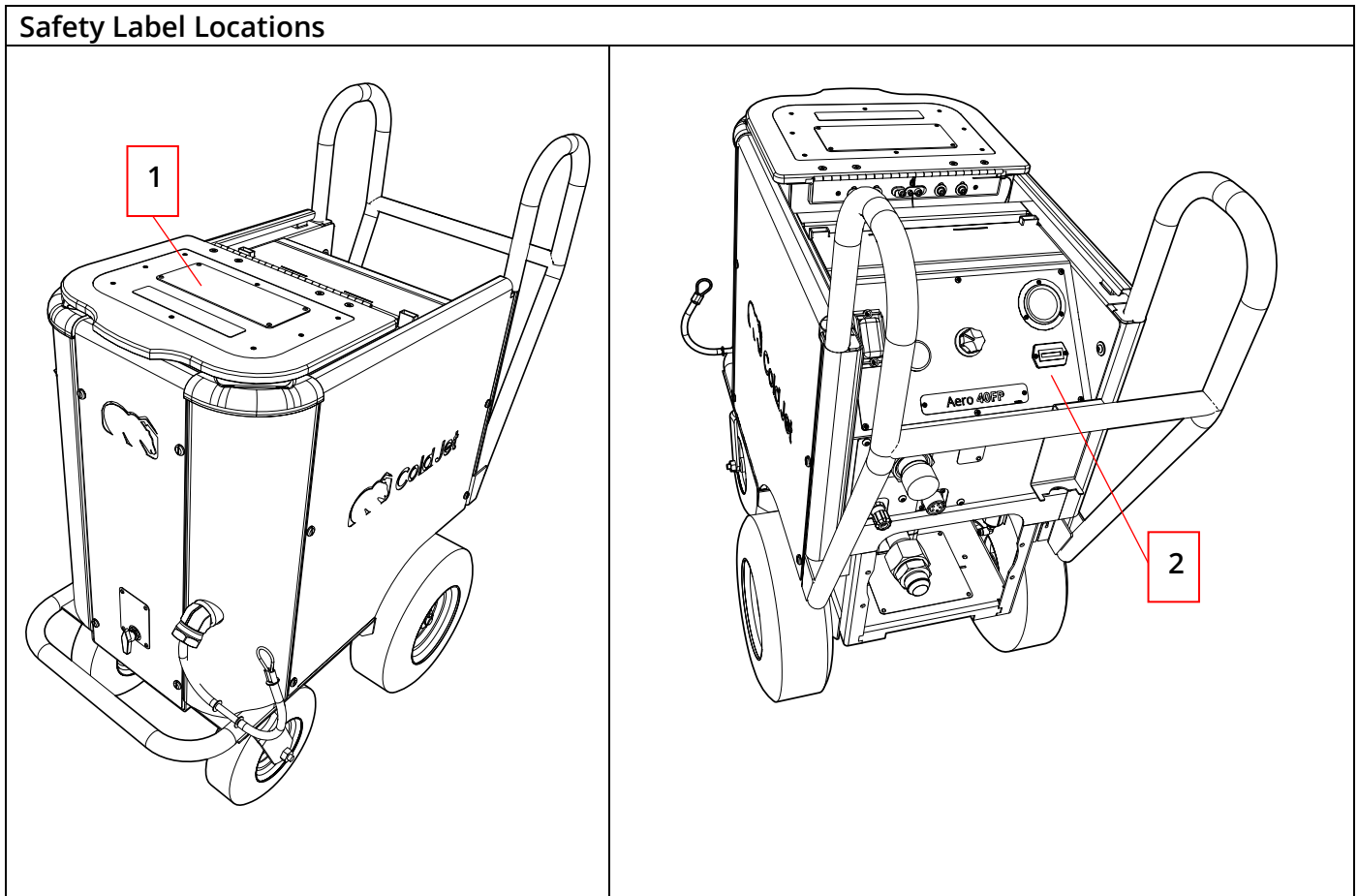
WARNING - To prevent electrical shock, the machine must be properly grounded using outlets and power cords that have a ground lug. The machine must be plugged into a properly grounded outlet. If there is no ground connection, **DO NOT USE**.

Safety Labels

- The symbols used on the machine were developed by the International Organization for Standardization (ISO) and are defined below. These symbols may include:
 - Yellow warning triangles
 - Blue mandatory action circles
 - Red prohibited action circles.
- Replace any safety labels or warning signs if they become damaged, missing, or illegible.
- [Contact](#) Cold Jet's customer service department to obtain replacement labels.

Symbol	Definition
	Attention
	Electrical Hazard
	Explosive Release of Pressure
	Debris
	Static Shock Warning
	Skin Puncture / Pressurized Jet
	Loud Noise Warning
	Wear protective gloves

Symbol	Definition
	Wear hearing protection
	Wear eye protection
	Consult operator manual
	Do not operate without safety grate in place
	No foreign objects allowed inside machine
	CO ₂ is in use



Cautions and Warnings

Please review the following cautions and warnings before operating or performing maintenance on the machine.

CAUTION	Read the entire operator manual before using the machine. Only qualified personnel should operate the machine.
WARNING	Ensure that expended dry ice pellet emissions are not in the vicinity of air ducts that could allow CO ₂ to enter another space.
WARNING	This machine is designed for use with 3mm dry ice pellets recommended by Cold Jet. The use of cleaning agents or chemicals may adversely affect the safety of the machine.
WARNING	Due to the nature of dry ice and atmospheric conditions, use caution when operating, storing, and cleaning the machine as condensate can build up and leave moisture on the ground near the machine and blast hose. It is recommended to wear appropriate non-slip work shoes and it is necessary to wipe up and dry any condensate from the work area that could cause a slip hazard.
WARNING	High pressure blast streams can be dangerous if subject to misuse. The blast stream must never be directed at persons, live electrical equipment, or the machine itself.
WARNING	Do not direct the blast stream of air or air and dry ice against yourself or others.
WARNING	This machine should not be operated by or left unattended around children or untrained personnel.
WARNING	High pressure hoses, fittings, and couplings are important for the safety of the machine. Use only hoses, fittings, and couplings supplied by Cold Jet.
WARNING	To ensure machine safety, use only original and replacement parts from Cold Jet.
WARNING	Only use Cold Jet applicators, nozzles, and hoses.
WARNING	Applicator and blast hose contain electrical connections. Do not immerse in water.

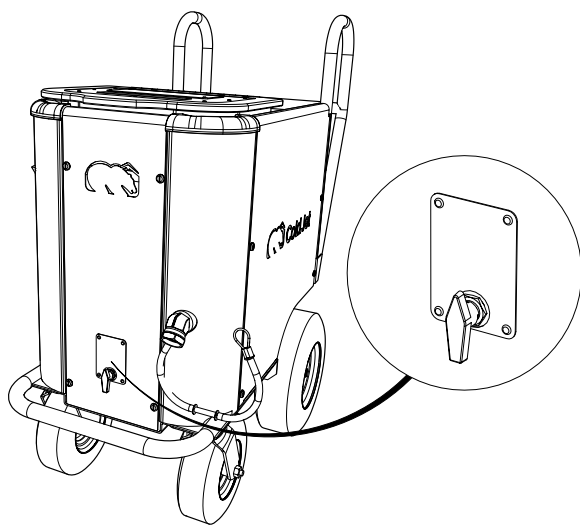
WARNING	Do not use the machine if an electrical supply cord or important parts of the machine are damaged or missing, e.g., safety devices, side panels, guards, high pressure hoses, applicator, hardware, nuts, bolts, screws.
WARNING	Ensure all safety grates and machine covers are in place before operating the machine.
WARNING	Never insert a foreign object into the hopper of the machine for any reason without the machine in Lockout Tagout (completely de-energized).
WARNING	Dry ice blasting may create electrostatic discharges which may harm personnel. Ensure that the surfaces being cleaned are properly grounded with the grounding cable.
WARNING	Always switch off the main disconnecting switch, or unplug the blaster power cord, bleed any pressure, and disconnect the air supply when leaving the machine unattended or shutting down. Reel the power cord up to the machine and place a locking device over the plug of the unit when Lockout Tagout is necessary.
WARNING	Inadequate extension cords can be dangerous. If an extension cord is used, it must be suitable for the environment in which it is used. If used outdoors the connection must be kept dry and off the ground. It is recommended that this is accomplished by means of a cord reel which keeps the socket at least 2.4 inches (60 mm) above the ground. Ensure that the extension cord is properly sized for the machine electrical requirements.

Steps for conducting a Lockout Tagout

- In this manual, “Lockout Tagout” will be referred to in instances when power must be removed from the machine.
- There are universally accepted basics to this procedure. The minimum steps are listed below but may not be limited to these steps; each individual entity owning and/or operating a machine may have their own additional procedures.

NOTE: There are two energy sources that supply the machine – an electrical supply and a compressed air supply. Both energy sources must be removed.

1. **Shut Down:** Use the machine's power switch to turn off power.
2. **Isolation:**
 - a. Unplug the power cord from the supply source.
 - b. Leave power cord within visual distance of the machine.
 - c. Turn off the compressed air supplying the machine.
 - d. Turn the air bleed knob on the front of the machine counterclockwise till the knob is in a vertical position to relieve pressure.



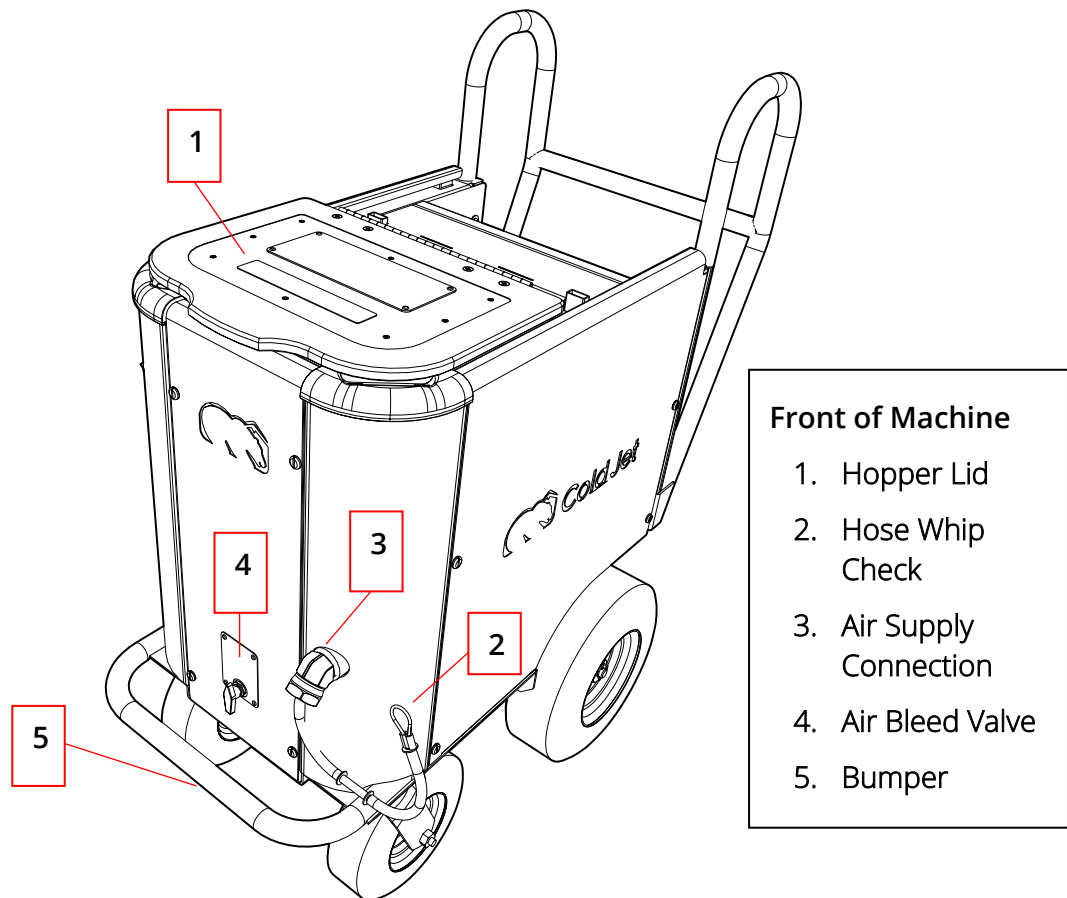
- e. Disconnect the air supply hose.
3. **Check for Stored Energy:** At the applicator, push the switch to the “Air-Only” (|) mode, pull the trigger. No activity should be present at the machine.
4. **Isolation Verification:** Does the machine have electric power or compressed air present? The power button should not be lit; it should be off. At the applicator, push the switch to “Air-Only” (|) mode, pull the trigger. No activity should be present at the machine.
5. **Verify the reason for using the procedure has been solved.** For example, if the reason for initiating the procedure was a screwdriver that fell into the hopper causing the doser to stop, verify that the screwdriver has been removed. Once verified that the problem is solved, follow the instructions in the [Starting the Machine](#) section of this manual.

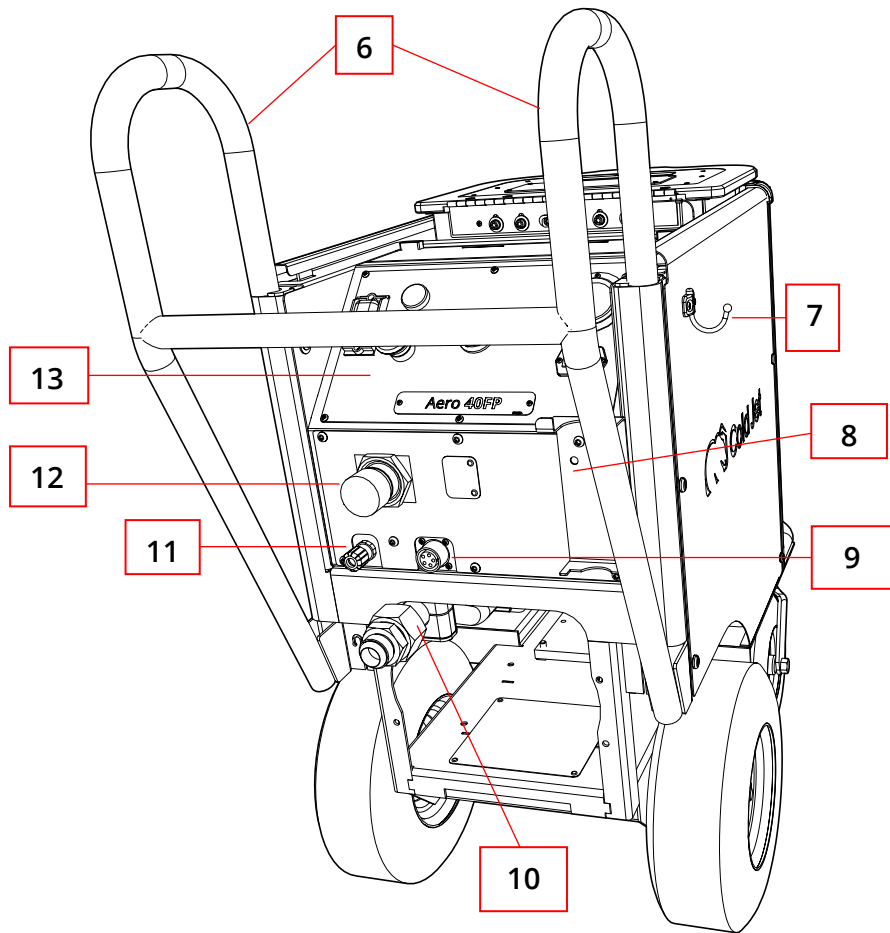
System Description

Machine Data

Dimensions	36 x 20 x 40 in (91 x 51 x 102 cm)
Weight	257 lbs. (117 kg)
Hopper (Dry Ice) Capacity	40 lbs. (18.2 kg)
Power Requirements	100 - 140 volts AC 1 Phase (50/60 Hz) 2.5 amps 200 - 240 volts AC 1 Phase (50/60 Hz) 1.2 amps
Feeder Drive	1/4 HP, AC Motor 1, 750 RPM
Air Supply Pressure Range	65-250 psi (4.5 – 17.2 bar)
Air Flow Range	50 -165 cfm at 80 psi (1.4-4.7m ³ /min at 5.5 bar)
Blast Pressure Range	20 - 250 psi (1.4 – 17.2 bar)
Variable Feed Rate	0-4.5 lb./min (0 – 2 kg/min)

Machine Components

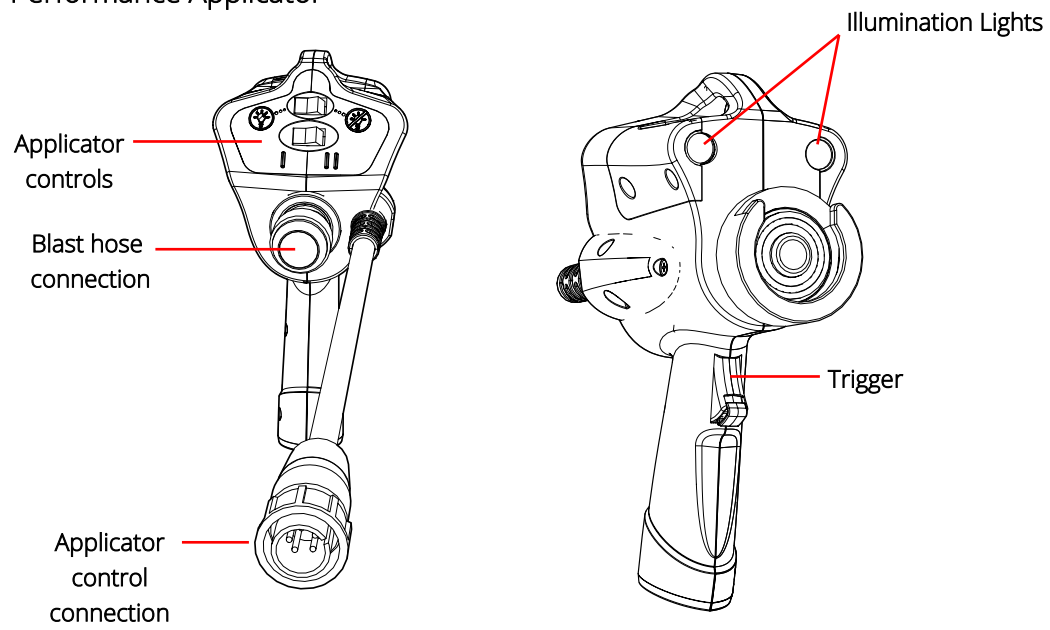




- Back of Machine**
- 6. Handles
 - 7. Applicator Hanger
 - 8. Nozzle Hanger
 - 9. Applicator Cord Connection
 - 10. Blast Hose Connection
 - 11. AC Power Cord Connection
 - 12. Blast Pressure Regulator
 - 13. Control Panel

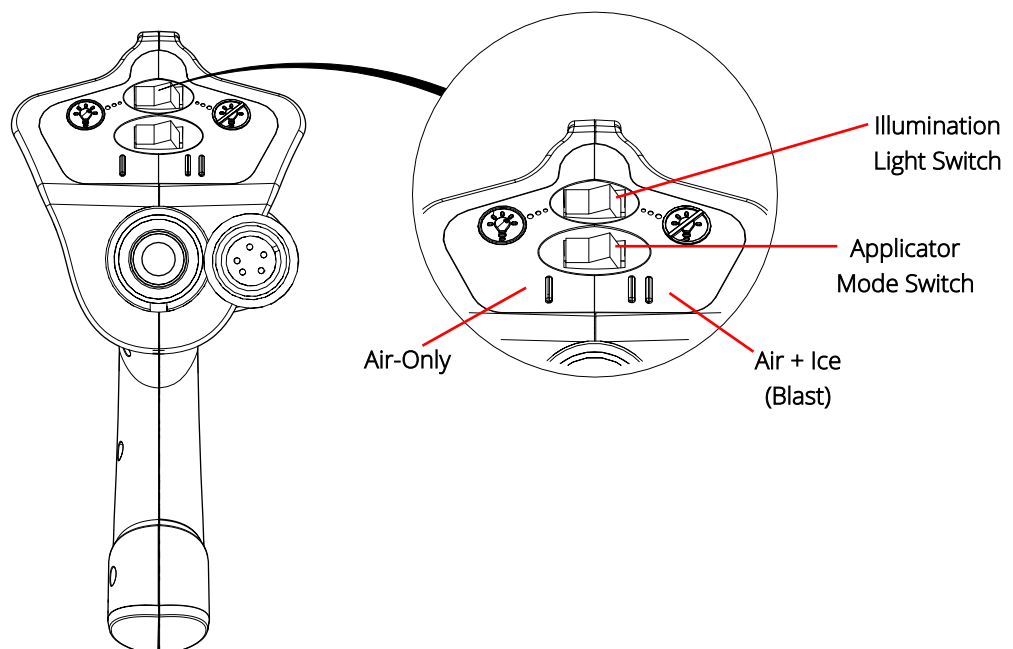
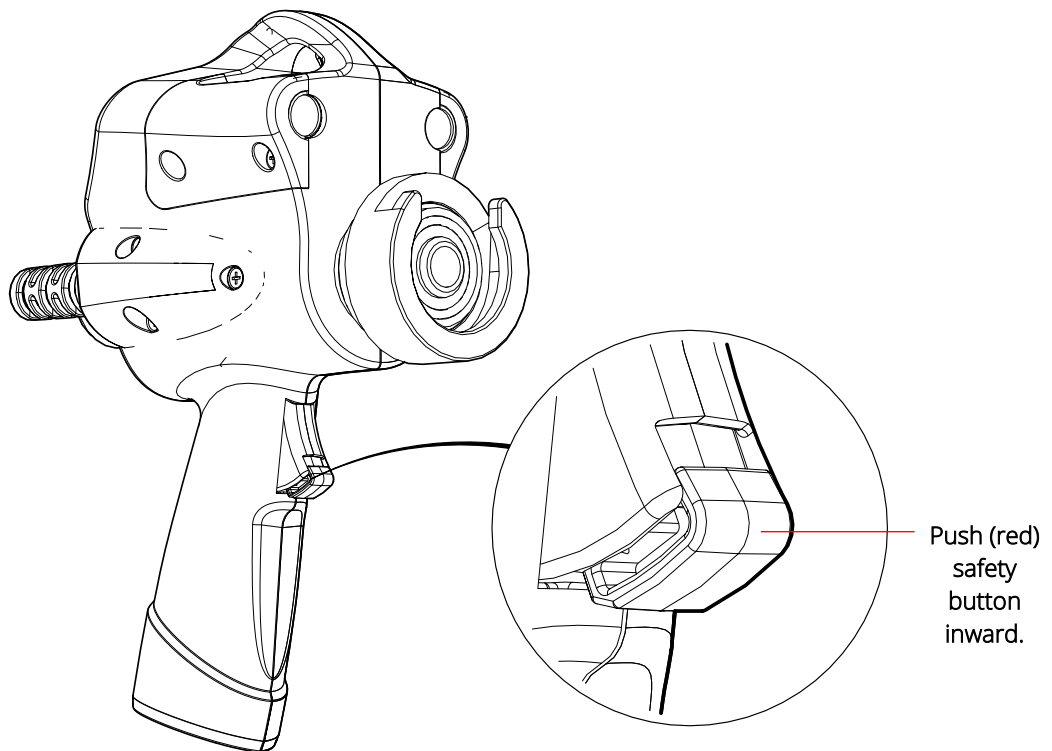
Applicators

Performance Applicator



Applicator Controls

The applicator trigger has a safety button that must be depressed first before the trigger will activate.



Control Panel



1. Power Switch (I = ON, O = OFF)
2. Power Indicator Light (Green light ON = power ON)
3. Feed Rate Control Knob
4. Incoming Air Pressure
5. Hour Meter
6. Disable Applicator
 - Push button in to disable applicator [Blue light ON] – Applicator will not work.
 - Pull button out to enable applicator [Blue light OFF] – Applicator will work.

NOTE: If the power indicator light is ON (green), then the machine has power. This is true even if the blue light is on (only the applicator is disabled).

Nozzles

- There are many different nozzles available, depending on what is being cleaned and how accessible it is. Specialty nozzles are also available. [Contact](#) Cold Jet's customer service department to determine the nozzle that may be most effective for your application.
- The tables below can be used to help with initial settings as you set up the machine for operation. Specialty nozzles are available on request.

Low and Standard Flow Nozzles and Handles

These straight nozzles have standard air consumption rate of 100 cfm or less at 80 psi.

Nozzle	Part #	Air Consumption	Blast Swath	Feed rate	Length	Material	Comfort Handle Part #
106S.6	5E0421	50cfm @ 80psi (1.4m ³ /min @ 5.5 bar)	0.6 in (1.5 cm)	1-3 lbs./min (0.5-1.4 kg/min)	6 in (15.2 cm)	Anodized Aluminum	n/a
110S.6	5E0180	50cfm @ 80psi (1.4m ³ /min @ 5.5 bar)	0.6 in (1.5 cm)	1-3 lbs./min (0.5-1.4 kg/min)	10 in (25.4 cm)	Anodized Aluminum	2E0209 *2E1180
123S.7	5E0179	50cfm @ 80psi (1.4m ³ /min @ 5.5 bar)	0.7 in (1.8 cm)	1-3 lbs./min (0.5-1.4 kg/min)	23 in (58.4 cm)	Anodized Aluminum	2E0209 *2E1180
310S.5	5E0233	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	0.45 in (1.1 cm)	2-4 lbs./min (0.9-1.8 kg/min)	10 in (25.4 cm)	Aluminum	2E0275 *2E1209
312S1	5E0156	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	1 in (2.5 cm)	2-4 lbs./min (0.9-1.8 kg/min)	12 in (30.5 cm)	Aluminum	2E0289 *2E1182
323S1	5E0175	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	1 in (2.5 cm)	2-4 lbs./min (0.9-1.8 kg/min)	23 in (58.4 cm)	Aluminum	2E0209 *2E1180
312S2	5E1201	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	1.8 in (4.6 cm)	2-4 lbs./min (0.9-1.8 kg/min)	12 in (30.5 cm)	Aluminum	2E0289 *2E1182

* Handles noted with (*) are recommended for use where blasting pressure is >140 psi (9.7 bar).

Specialty Nozzles

These nozzles have various configurations for special applications and operation.

Nozzle & Angle	Part #	Air Consumption	Blast Swath	Swath Orientation	Feed rate	Length	Material
112HK 160°	2E0361	70cfm @ 80psi (2.0m ³ /min @ 5.5 bar)	0.25 in (0.6 cm)	n/a	1-3 lbs/min (0.5-1.4 kg/min)	12 x 2 in (30.5 x 5.1 cm)	Polymer Coated SST
114P.5 straight	5E0183	70cfm @ 80psi (2.0m ³ /min @ 5.5 bar)	0.25 in (0.6 cm)	n/a	1-3 lbs/min (0.5-1.4 kg/min)	10.3 in (26.2 cm)	Polymer
307A135V.8 135°	2E0328	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	0.75 in (1.9 cm)	Vertical	2-4 lbs/min (0.9-1.8 kg/min)	7.3 X 6.3 in (18.6 x 16 cm)	Polymer Coated SST
307A45H1 45°	2E0349	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	1 in (2.5 cm)	Horizontal	2-4 lbs/min (0.9-1.8 kg/min)	7.3 x 5 in (18.6 x 12.7 cm)	Polymer Coated SST
307A90H.8 90°	2E0326	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	0.75 in (1.9 cm)	Horizontal	2-4 lbs/min (0.9-1.8 kg/min)	7 x 5.3 in (17.8 x 13.5 cm)	Polymer Coated SST
307A90V1 90°	2E0329	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	1 in (2.5 cm)	Vertical	2-4 lbs/min (0.9-1.8 kg/min)	7.3 x 7 in (18.6 x 17.8 cm)	Polymer Coated SST
308A45H.8 45°	2E0324	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	0.75 in (1.9 cm)	Horizontal	2-4 lbs/min (0.9-1.8 kg/min)	7.7 x 3.5 in (19.6 x 8.9 cm)	Polymer Coated SST
308A45V.8 45°	2E0325	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	0.75 in (1.9 cm)	Vertical	2-4 lbs/min (0.9-1.8 kg/min)	7.8 x 3.5 in (19.8 x 8.9 cm)	Polymer Coated SST
309A45H.8 45°	5E0094	120cfm @ 80psi (3.4m ³ /min @ 5.5 bar)	0.75 in (1.9 cm)	Horizontal	3-5 lbs/min (1.4-2.3 kg/min)	8.9 x 4 in (22.6 x 10.2 cm)	Aluminum
317A90H1 90°	2E0327	100cfm @ 80psi (2.8m ³ /min @ 5.5 bar)	1 in (2.5 cm)	Horizontal	2-4 lbs/min (0.9-1.8 kg/min)	16.6 x 3.4 in (42.2 x 8.6 cm)	Polymer Coated SST

High Flow Nozzles and Handles

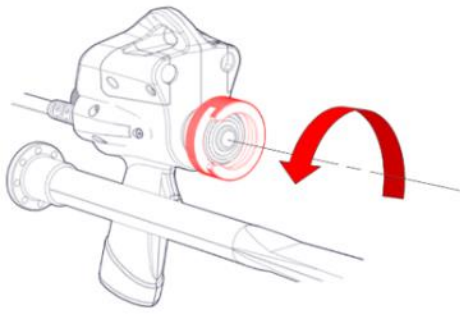
These straight nozzles have air consumption rate of more than 100 cfm at 80 psi.

Nozzle	Part #	Air Consumption	Blast Swath	Feed rate	Length	Material	Handle Part #
507S2	5E0141	165cfm @ 80psi (4.7m ³ /min @ 5.5 bar)	2 in (5.1 cm)	3-5 lbs/min (1.4-2.3 kg/min)	7 in (17.8 cm)	Aluminum	n/a
510S.6	5E0232	140cfm @ 80psi (3.9m ³ /min @ 5.5 bar)	0.6 in (1.5 cm)	2-4 lbs/min (0.9-1.8 kg/min)	10 in (25.4 cm)	Aluminum	2E0209 *2E1180
503M.8	5E0533	150cfm @ 80psi (4.2m ³ /min @ 5.5 bar)	0.6 in (1.5 cm)	3-5 lbs/min (1.4-2.3 kg/min)	3 in (7.6 cm)	Aluminum	n/a
508M.8	5E0535	150cfm @ 80psi (4.3m ³ /min @ 5.5 bar)	0.6 in (1.5 cm)	3-5 lbs/min (1.4-2.3 kg/min)	8 in (20.3 cm)	Aluminum	2E0209 *2E1180
523M1	5E0138	150cfm @ 80psi (4.3m ³ /min @ 5.5 bar)	1 in (2.5 cm)	3-5 lbs/min (1.4-2.3 kg/min)	23 in (58.4 cm)	Aluminum	2E0209 *2E1180
523P1	5E0167	150cfm @ 80psi (4.3m ³ /min @ 5.5 bar)	1 in (2.5 cm)	3-5 lbs/min (1.4-2.3 kg/min)	23 in (58.4 cm)	Polymer	2E0289 *2E1182
533S1	5E0161	150cfm @ 80psi (4.3m ³ /min @ 5.5 bar)	1 in (2.5 cm)	3-5 lbs/min (1.4-2.3 kg/min)	33 in (83.8 cm)	Aluminum	2E0209 *2E1180
533S2	5E0164	150cfm @ 80psi (4.3m ³ /min @ 5.5 bar)	2 in (5.1 cm)	3-5 lbs/min (1.4-2.3 kg/min)	33 in (83.8 cm)	Aluminum	2E0289 *2E1182

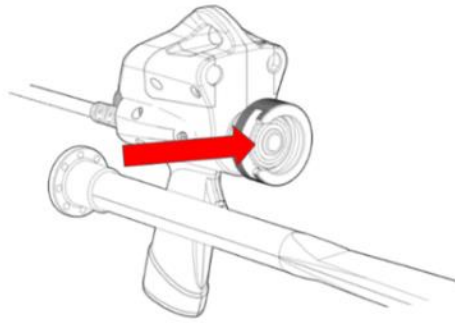
* Handles noted with (*) are recommended for use where blasting pressure is >140 psi (9.7 bar).

Attaching Nozzles

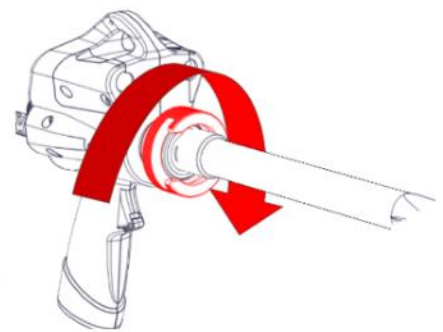
Always turn the machine OFF before attaching or detaching a nozzle.



Loosen the Nozzle Retainer



Insert Nozzle into Opening



Hand Tighten Nozzle Retainer

Operation

Unpacking the Machine

This machine has been assembled and tested as one unit prior to shipment. Follow the steps below to inspect and unpack the machine from the shipping container.

1. Examine the shipping container for any damages that may have occurred during transport.
2. Remove the machine. Recycle boxes and packaging.
3. Examine the machine for any external damage that may have occurred during transport.

Refer to the packing slip for a list of the components shipped with the machine. [Contact](#) Cold Jet if any damage has occurred to the shipping container or the machine.

Transport, Storage, and Disposal



WARNING Only trained and/or certified personnel should operate or rig the machine for shipment or movement.

The following instructions are for proper transport of the machine. Follow all instructions as illustrated to avoid damaging the machine. [Contact](#) Cold Jet's customer service department for proper disposal instructions at the end of the machine's life.

Transport Methods

- Do not strap over the control panel as this could damage components for operating the machine.
- Strap the machine as shown below.
- Strapping the machine for long periods of time is not advised.
- Always remove any straps or rigging equipment prior to operating the machine.




WARNING Do not lift the machine using the handle on the back or the lower bumper on the front as there will be no stability which could cause damage to equipment or harm to personnel.



To store the machine, go to the "[Shutting Down the Machine](#)" section of this manual.

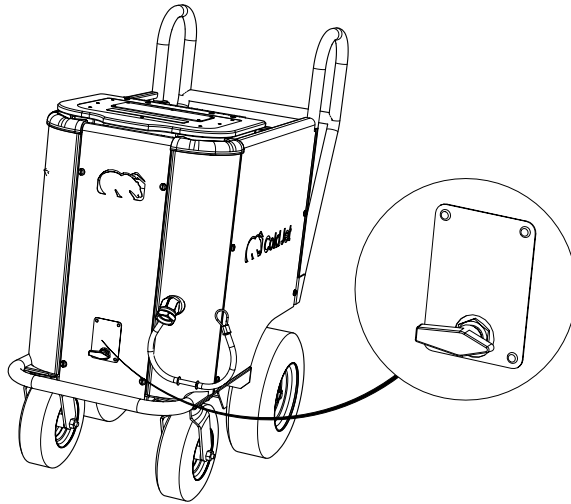
Machine Setup

 WARNING	Improper installation of the machine or the applicators could cause injury to the operator.
 WARNING	Follow Lockout Tagout procedures and always shut off the air pressure while attaching or disconnecting hoses or fittings to the machine. Prior to disconnecting the air supply hose, ensure the air pressure has been shut off and pressure bled from the hose. The air hose is normally pressurized while in idle or in operation.
 WARNING	Always use the supplied wheel chocks to lock the machine into place before operating to ensure it cannot move.
Do not use one wrench when tightening or replacing fittings. Always use two wrenches to install and remove hoses and accessories.	
 CAUTION	When attaching the blast hose, make sure to put a 1in wrench on the base connection of the rotary union. DO NOT rely on the polymer housing to keep it from rotating. Any connections that are frozen from operation should be thawed by running air-only through the applicator.
 CAUTION	Ensure that both the nozzle & blast hose are tight and secured to the applicator prior to operating the machine.

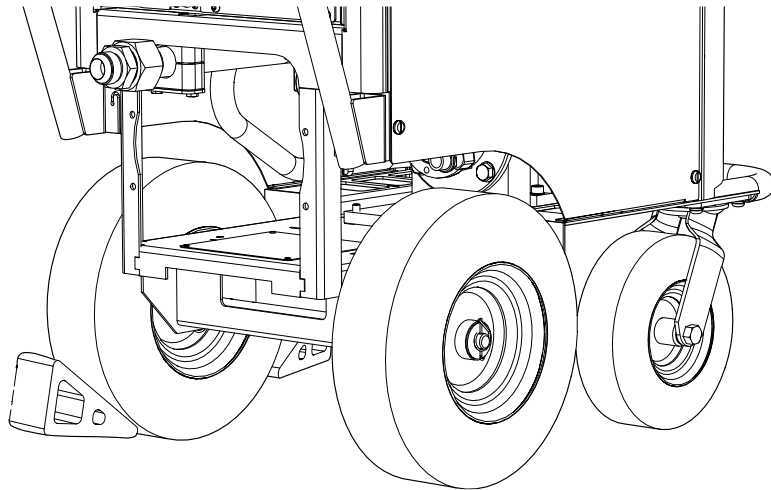
Machine Setup and Operation

1. Make sure the power switch on the control panel is off.

2. Make sure the air bleed valve on the front of the machine is in the horizontal (closed) position.



3. Place the supplied wheel chocks on the front and back of one of the rear wheels to prevent machine movement.



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



WARNING This machine's maximum pressure is 250 psi (17.2 bar). Do not exceed this pressure.

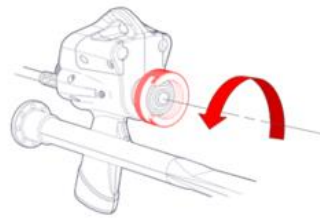
- **NOTE** - Each machine is shipped with (1) 20' Applicator Blast Hose. If additional hose length is needed, a "Machine Blast Hose" must be used. If further lengths are required, "Extension Blast Hoses" must be used. [Contact](#) Cold Jet's customer service department to order parts.

5. Attach an applicator to the blast hose and control cable using two wrenches.

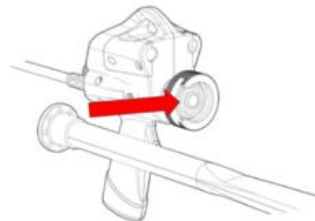


WARNING Do not use the applicator body or handle for leverage when tightening the applicator blast hose to the applicator. Always use two wrenches to prevent damaging the applicator and fittings.

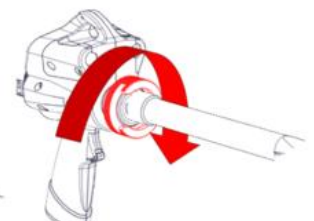
6. Attach a nozzle to the applicator.



Loosen the Nozzle Retainer



Insert Nozzle into Opening

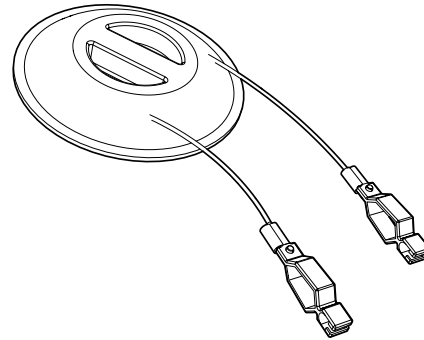


Hand Tighten Nozzle Retainer

7. Loop the whip check around the air supply hose and attach the air supply hose to the machine.

8. **Grounding:**

- a. Take the static bond cable that is supplied with the machine and clip one end to the material being blasted.
- b. Clip the other end to the frame of the machine.



9. Turn the air supply on and allow the air hose to pressurize.

NOTE: Maximum air supply pressure should not exceed 250 psi (17.2 bar).

10. Attach the power cord to the machine and then to a properly grounded electrical outlet.

11. Go to the [Starting the Machine](#) section of this manual.

The Compressed Air Supply

- Although Cold Jet dry ice equipment is designed and engineered to work under the most demanding environments and conditions, the incoming air supply must be as free of oil, dirt/foreign particles, and water/moisture as possible.
 - For example, oil-laden air will contaminate the entire system including any articles being dry ice blast cleaned.
- Contaminants such as dirt/foreign particles will score or even clog interior mechanical parts resulting in poor machine function.
- Dirt/foreign particles in the compressed air can strike the article causing damage to the surfaces being dry ice blast cleaned.

- The results of frozen water and/or moisture can be:
 - “Water-ice” - It is a very good adhesive; internal parts may freeze together and seize the machine.
 - Loose water-ice pieces could build up and cause clogs in the hose, particle control assembly, feeder and/or nozzle.
 - Water-ice is harder than dry ice and may cause damage to the article being dry ice cleaned.
 - When water-ice melts, water is left behind. (Dry ice sublimates, meaning it turns to a gas.) Water can be a slip hazard and may increase the speed at which corrosion may occur.
- Particular attention must be paid to water. Water or moisture laden air can be especially troublesome once it is introduced to dry ice. (In this case, “moisture” is referred to as water in vapor form.) For example, dry ice is -109F (-78C), water/moisture will immediately freeze and may cause problems.
- The incoming air quality must meet the standards in the chart provided on the next page. In addition, it is recommended that the incoming supply air and any associated filters and water separators that may be used are continuously monitored to ensure the machine receives the air required for proper machine function. If these air quality specifications are not met and are continued to be used with Cold Jet equipment, the warranty will be nullified.

Required Air Quality

ISO 8573-1:2010 Compressed Air Contaminants and Purity Classes								
Class	Particles				Water		Oil	
	By Particle Size (maximum number of particles per m ³) See Note 2			By Mass	Vapor Pressure Dewpoint		Liquid	Liquid, Aerosol, & Vapor See Note 1
	0.10 – 0.5 microns	0.5 – 1.0 microns	1.0 – 5.0 microns	mg/m ³	°C	°F	g/m ³	mg/m ³
0	As specified by the equipment user or supplier and more stringent than class 1							
1	≤ 20,000	≤ 400	≤ 10	-	≤ -70	≤ -94	-	≤ 0.01
2	≤ 400,000	≤ 6,000	≤ 100	-	≤ -40	≤ -40	-	≤ 0.1
3	-	≤ 90,000	≤ 1,000	-	≤ -20	≤ -4	-	≤ 1
4	-	-	≤ 10,000	-	≤ +3	≤ +37	-	≤ 5
5	-	-	≤ 100,000	-	≤ +7	≤ +45	-	-
6	-	-	-	0 – ≤ 5	≤ +10	≤ +50	-	-
7	-	-	-	5 – ≤ 10	-	-	≤ 0.5	-
8	-	-	-	-	-	-	≤ 5	-
9	-	-	-	-	-	-	≤ 10	-
X	-	-	-	> 10	-	-	> 10	> 5
Microbiological Contaminants					Other Gaseous Contaminants			
No purity classes are identified					No purity classes are identified Gases mentioned are: CO, CO ₂ , SO ₂ , NOX, Hydrocarbons in the range of C ₁ to C ₅			

One micron = .00003in. or .001mm	Symbol: μ	Example: Human hair = 70 μ
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- For *manual* blasting with start/stop - intermittent operation and using 0.12-inch (3mm) pellets (any density) - Class 4 or lower.
- For *automated* blasting or continuous blasting of 1 hour or more, with 0.12-inch (3mm) pellets (any density) - Class 2 or lower.
- The air-purity classification given in this part of the manual, ISO 8573.1:2010, is intended to provide a guide to the air-purity expected in the compressed air system. Achieving any given air-purity specification can be challenging but it is possible with the combination of proper equipment.
- Cold Jet offers equipment to help separate water from compressed air.
 - A Coalescent Air Filter, or CAF, (Part No. 2M0039) is a good entry level tool to help separate water from compressed air.
 - Cold Jet's aftercooler is the next best tool in separating water by cooling the compressed air. This causes moisture in gas or vapor form to change state to liquid water. The aftercooler's onboard coalescent air filter will then separate the water from the compressed air.
 - Air dryers are also available. These come in many forms.
- The purchase and use of these types of air treatment equipment is not a guarantee that the required air quality is met. Nor is it a substitute for precise testing of the air quality to ensure the requirements are met. Please contact your local Cold Jet representative or Cold Jet customer service if you have air quality concerns.

Understanding the effects of the surrounding environment

- Although Cold Jet dry ice equipment is designed and engineered to work under the most demanding environments and conditions, temperature, humidity, dust, and other contaminants present in the surrounding air can have an adverse effect on dry ice blasting equipment.
- Temperature and humidity: You may be familiar with a hot, sticky mid-summer day. These days have high temperatures and high humidity. How does this affect dry ice blasting equipment? Understanding "Dew Point" will answer this question.

- “Dew Point” - The temperature the air needs to be cooled to (at constant pressure) to achieve a relative humidity of 100%. At this point the air cannot hold more moisture in the gas form and water droplets form.
 - Air compressors generally draw air from its surrounding environment. Once the air passes through the compressor, it is warmed even further due to the mechanical friction of the compressor’s internal mechanisms.
 - As the compressed air travels through pipes or hoses towards its destination it starts to cool down. As it cools, it may reach its dew point, when moisture will change from vapor form to liquid form.
 - The specific dew point will vary based on temperature and humidity, but it is certain that this natural phenomenon will occur as warm, moist air cools. And, if it is possible to cool the air even further such as using a Cold Jet aftercooler, more moisture is turned to water that can be separated from the compressed air. The result is less moisture, in any form, to negatively affect the dry ice blasting equipment.

Signs of water/moisture in the compressed air stream.

- Water coming from the nozzle while blasting Air-Only and/or with dry ice.
- Water running out of any of the hose connections or the hoses themselves.
- Water-ice building up on the tip of the nozzle and getting longer as blasting continues.
- Periodic stopping of dry ice flow/blasting.
- “Sputtering” of water ice or dry ice coming from the nozzle.
- Complete feeder blockage.

Humidity in the surrounding air:

- The higher the humidity, the higher the moisture content in the surrounding air. This not only affects the compressed air quality on the internal surface of the equipment but on the dry ice itself.
- Humidity (moisture in the air) that seeps into the hopper will settle on the dry ice. The result is that the moisture freezes on the dry ice pellets causing them to stick together. A sign of this is dry ice that is not free flowing but rather presents itself as one or more large masses. The flow of dry ice from the hopper into the blast stream is stopped.

- **NOTE** – Do not use a foreign object such as a stick or metal rod to break up the ice.

[Contact](#) Cold Jet's customer service department.

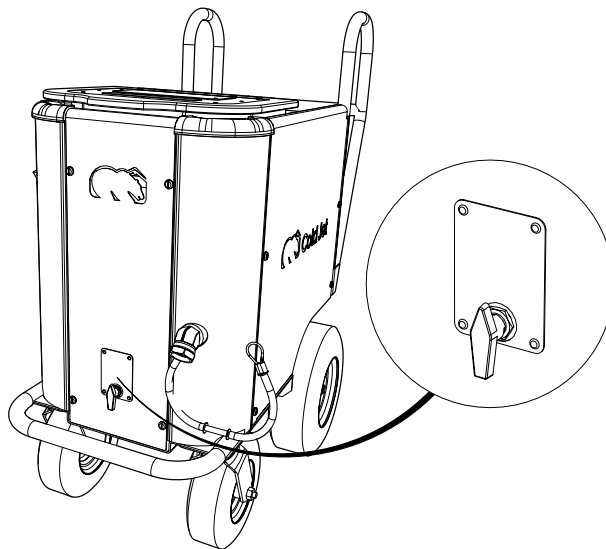
- It is important to keep the hopper lid closed as much as possible. Leaving it open on a regular basis allows the humidity to settle on the dry ice.

Starting the Machine

1. On the control panel, ensure the disable applicator trigger button is disengaged (blue light is off). If the blue light is on, pull the button to disengage (blue light will turn off).

2. Push the control panel power switch to the ON (I) position (green light on).

3. Turn the air bleed knob on the front of the machine counterclockwise till the knob is in a vertical position to relieve pressure. Leave the valve open for 30 seconds to remove accumulated moisture from the system.

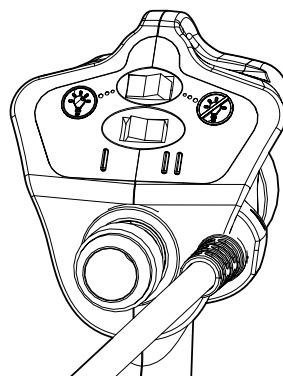


4. On the control panel, turn the feed rate knob clockwise to the highest setting.

5. Use the applicator to purge any standing water from the system.

- a. Set the switch to Air + Ice mode (II).
- b. Pull the trigger for (2) minutes to purge the system.

NOTE: Always purge the system with compressed air during start-up, after breaks, and before



loading dry ice. This will remove any accumulated moisture, water, and ice in the system.

6. Check the hopper for the presence of any foreign material or condensate and clean or remove, as necessary. Should it be necessary to remove objects or clean the hopper, follow proper [Lockout Tagout](#) procedures.

7. When the machine is in [Lockout Tagout](#) mode, open the safety grate. Remove objects if needed. Condensate should be wiped dry using a towel being careful not to come into contact with the doser rotor.



CAUTION Use only 3mm dry ice pellets for blast media. The use of any other media will lead to loss of warranty coverage.



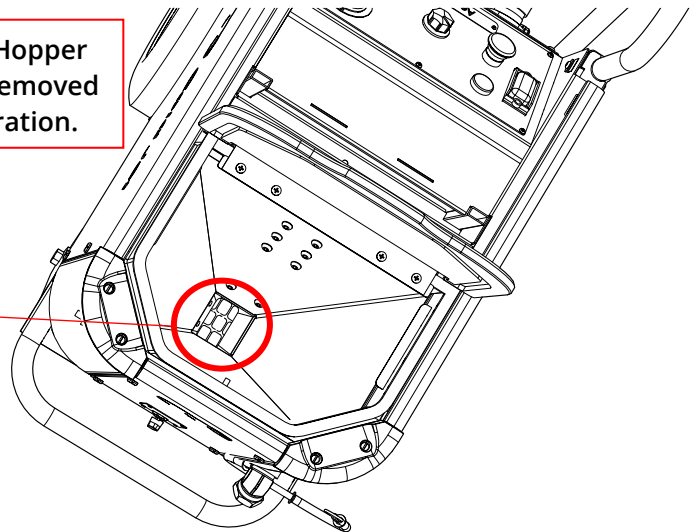
WARNING Do not use any type of item to break up ice in the hopper by jamming through the safety grate.



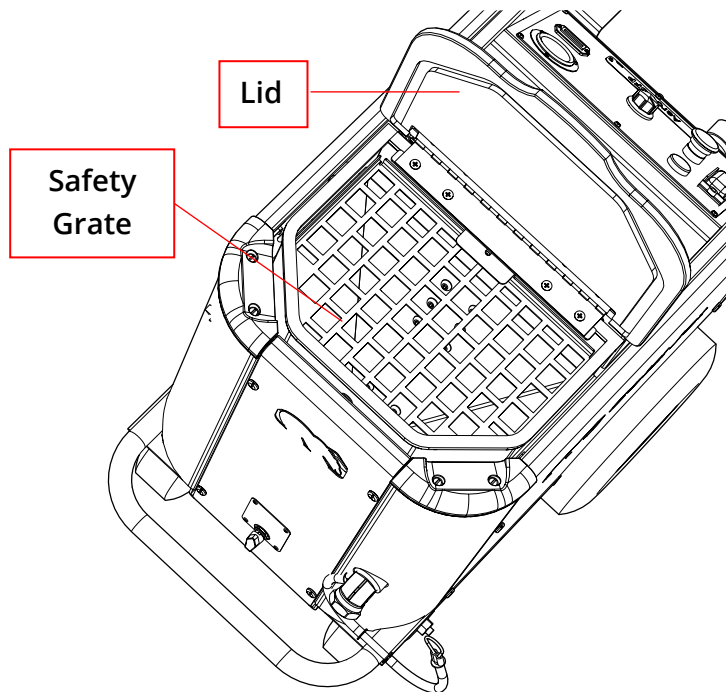
WARNING Never defeat the safety grate safety interlock.

Top View of Hopper
Safety grate removed
in this illustration.

Doser
Rotor



8. Lift and open the hopper lid.
9. Load the hopper with 3 mm dry ice pellets to the bottom of the closed grate. Do not over fill the hopper; any ice above the closed grate is considered over-filling.
10. Close the lid.

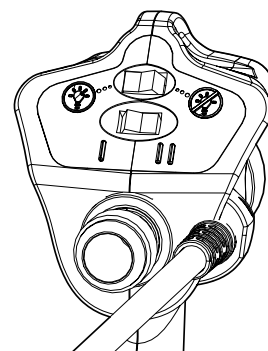


Blasting Dry Ice

For optimum performance:

- Position the machine and blast hose to prevent kinking and allow for maximum maneuverability.
- Hold the nozzle perpendicular to and about 2 – 6 inches (5 cm to 15 cm) from the article being cleaned.
- To find the optimum feed rate: start at 0 and gradually increase until the desired cleaning result and/or cleaning performance is achieved.
- Use a lower feed rate (example: 0.1 lbs./min) when the air pressure is below 50 psi (3.4 bar).

1. On the applicator, push the switch to the Air+Ice mode (II).



2. It is recommended to start blasting next to the target (but in a safe place) and move onto the target.
3. Move the nozzle back and forth keeping it perpendicular to the surface being cleaned.
4. Monitor the hopper level and reload dry ice pellets when the hopper is empty.

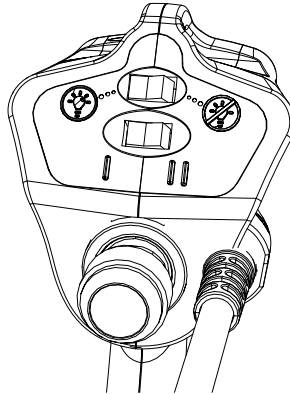
Shutting Down the Machine



CAUTION When shutting the machine down for more than 15 minutes, always make sure the hopper is empty and blast in air-only (I) mode for 1 minute. Failure to do so may result in feeder and/or nozzle freeze-up.

1. Lift the hopper lid to confirm that the hopper is empty and close the lid.

2. On the applicator, push the switch to Air-Only mode (I) and blast for 1 minute.

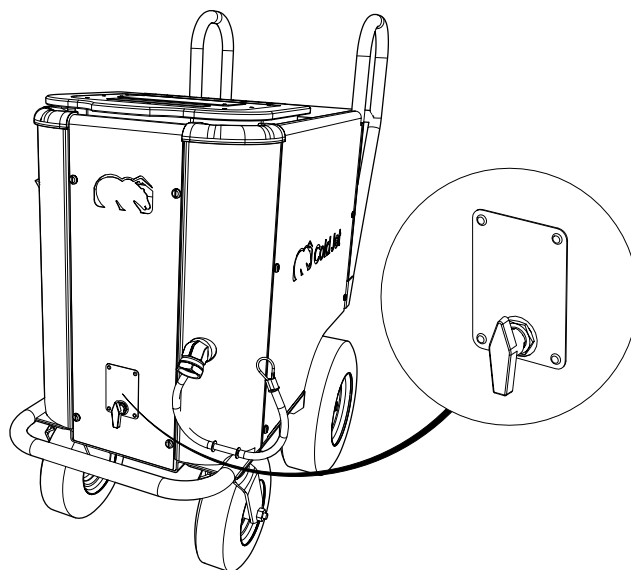


3. On the control panel, push the power switch to the OFF position (O).

4. Turn off the compressed air supply.

NOTE: Each air supply is unique to the user. Turning off the air supply may require closing air lines, shut-off valves, disconnection of power through an electrical switch(es) and/or shutting down mobile gasoline/diesel compressors. This process should follow any recommended procedures of the compressed air supplier including any [Lockout Tagout](#) procedures.

5. Turn the air bleed knob on the front of the machine counterclockwise till the knob is in a vertical position to relieve pressure.



6. When the air hose is fully depressurized, disconnect the air hose from the machine.

7. Remove nozzle from applicator.



CAUTION Do not touch nozzle with bare hands during or immediately after use. Always wear protective gloves.

8. Unplug the power cord from the machine, roll up all cords and hoses and properly stow.

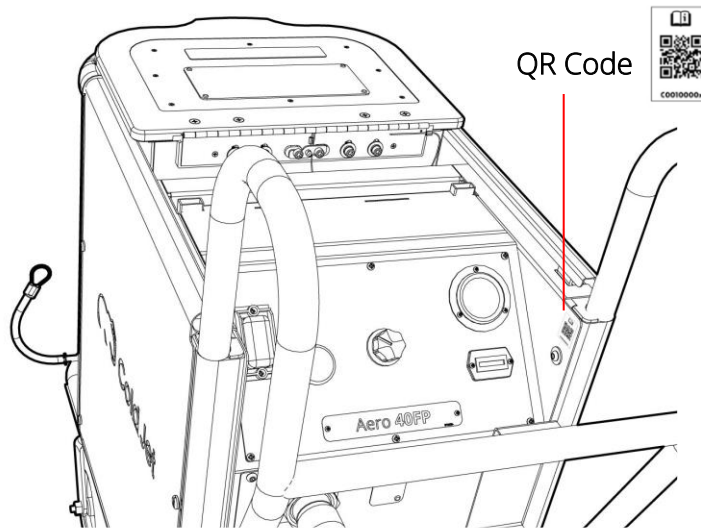
- **Transporting the Machine:** Disconnect all cables and hoses and stow them on the machine's onboard hose hangers.
- **Storing the Machine** –Disconnect all cables and hoses and stow them on the machine's onboard hose hangers. Store the machine in a dry space, free of dirt and debris. Keep out of direct sunlight.

Cold Jet CONNECT®


- As part of our commitment to the support of your dry ice blasting machine, it comes with its own personal support site through coldjetconnect.com.

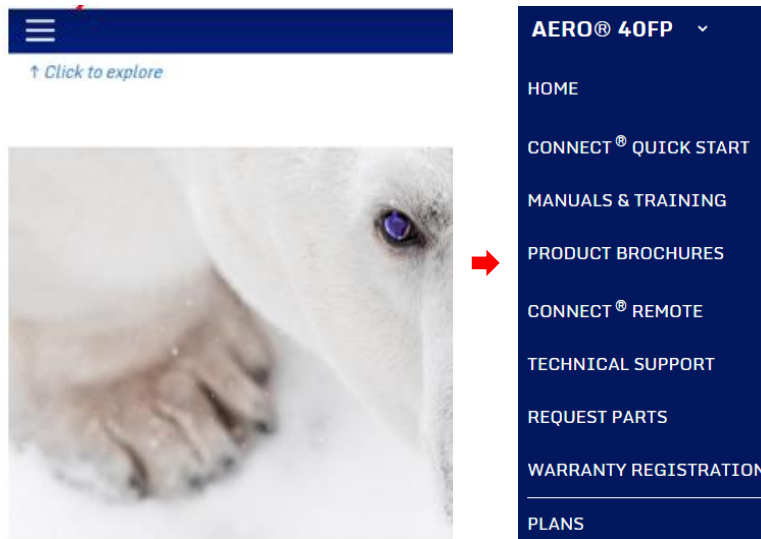
How to Access Cold Jet CONNECT®

To access your machine's unique personal support page, scan the QR code located on your machine as shown.



HOME Page

Clicking the  menu icon in the upper left corner will allow you to access items such as on-line manuals, warranty information, and technical service contacts.



Optional Service Agreements

Connect Basic is complementary; users can also subscribe to Connect Care described below.

CONNECT BASIC * Included with ALL Cold Jet Equipment



MACHINE DOCUMENTATION AT YOUR FINGERTIPS

- + Operator Manuals
- + Parts & Accessory Catalog



MACHINE & APPLICATION TRAINING

- + Videos On-Demand



SERVICE & SUPPORT ANYWHERE

- + Standard 1 Year Warranty

CONNECT ANALYTICS * Smart (IoT Enabled) Blasters ONLY



IoT DATA & REMOTE SUPPORT

- + Machine Utilization & Dry Ice Usage / Feed Rates
- + Pre-Configured & Custom Job Reporting
- + Historical Service Records & Maintenance Notifications
- + Remote Support Capabilities



CONNECT CARE * BOTH Smart & Standard Blasters



CARE ASSURANCE

- + Additional Year of Standard Manufacturer Warranty (Renew for up to 3 Years Total)



ONSITE PREVENTATIVE MAINTENANCE

- + Performed by Certified Cold Jet Technician
- + One Annual Onsite Service Call



REMOTE ASSISTANCE

- + Certified Cold Jet Technicians Accessible Via Phone, Messenger, or Video Call



CONNECT ENTERPRISE * Smart (IoT Enabled) Blasters ONLY

Get the most out of your smart dry ice blasting equipment by combining both

CONNECT ANALYTICS and **CONNECT CARE**.

- + Data. Information. Insights.
- + Comprehensive Customer Care




CONNECT CUSTOM

- + Custom Service Agreements Available Upon Request

- + Tailored Solutions To Meet Your Needs

Maintenance

 <p>WARNING</p>	<p>Prior to any maintenance, ensure that the machine is turned off and the power source is disconnected. Follow all Lockout Tagout procedures.</p> <p>Ensure that the air supply is closed, bled off, and the air supply hose is disconnected from the machine.</p>
<p>Daily</p> <ul style="list-style-type: none"> • Inspect the hopper area for any dirt or debris. • Inspect the blast hose for damage such as cuts or kinks and replace, as necessary. • Inspect power cords for cuts, worn surfaces and proper ground. Repair or replace, as necessary. • Inspect fittings on the applicator for loose or improper connections and correct, as necessary. • Inspect applicator blast cable for wear or improper connections and correct, as necessary. • Inspect the applicator for any damage or loose parts and correct, as necessary. 	
<p>Weekly</p> <ul style="list-style-type: none"> • Inspect the inside of the hopper for dirt and inspect rotors for cracks, gouges, or broken surfaces. • Verify the nozzle airflow exit end is not deformed or burred. 	

Troubleshooting

Problem	Possible Reason	Solution
Machine does not start	Machine's power cord is not plugged into properly grounded electrical outlet.	Connect power cord to properly grounded outlet
	Power switch is in the off position.	On the control panel, push the power switch to the ON (I) position
		If problem is still not resolved Contact Cold Jet for support

Problem	Possible Reason	Solution
Machine will not blast	Air supply not connected / air supply not on	Check the air supply hose connections and make sure the air supply is on
	Incoming air pressure gauge is not showing a pressure reading	Check the air supply hose connections and make sure the air supply is on
	Applicator control cable not connected to the machine or the applicator	Check control cable connections between the machine and the applicator
	Blast pressure is not sufficient	The pressure control regulator must be adjusted to control the blast pressure
Machine blasts air but not pellets	The switch on the applicator set to Air-Only (I) mode.	Set the Air / Ice Control Switch to Air and Dry Ice (II)
	The hopper is clogged.	Contact Cold Jet for support
	A foreign object is lodged in the feeder assembly.	Contact Cold Jet for support

Warranty Policy

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 (90 days for used equipment), under normal use, maintenance and service as stipulated in the Operator’s Manual, Commissioning, and Operator Training. At the discretion of CJ, failure to complete Installation, Commissioning, and Operator Training shall result in forfeit of warranty rights. 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 (90 days for used equipment) 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 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, all as warranted, CJ may replace the Equipment in its entirety at its discretion. Any claim must be made in writing to CJ within 30 days after the defect is discovered and any claim not made within that period shall be deemed waived or released and 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 not be 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 supply & blast hoses, knives, filter elements, rotors, pads, & applicators; which need replacement due to normal wear and tear or user abuse, at Cold Jet's discretion
- 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, whether arising from breach of contract or warranty of claims of negligence or negligent manufacture, in excess of the purchase price.

THIS WARRANTY IS THE SOLE WARRANTY OF CJ AND ANY OTHER WARRANTIES, EXPRESS, IMPLIED IN LAW OR IMPLIED BY FACT, INCLUDING ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR USE, ARE HEREBY SPECIFICALLY EXCLUDED.

Declaration of Conformity



EC Declaration of Conformity

Original [EN]

We as the manufacturer:

Cold Jet, LLC
455 Wards Corner Road
Loveland, OH 45140 USA

Hereby declares that the following product:

Product Designation: Aero 40FP
Type/Serial no.: 4296

Is in compliance with the following European directives:

Directive 2006/42/EC [Machinery Directive]
Directive 2014/30/EU [EMC Directive]
Directive 2014/35/EU [Low Voltage Directive]

Harmonized standards applied:

EN ISO 12100:2010	EN ISO 4414:2010 EN	EN ISO 13857:2008
EN ISO 14120:2016-03	ISO 13732-3:2008 EN	EN 60204-1:2006/AC:2010
EN ISO 14119:2014-03	ISO 13849-1:2016-02	

Person in the European Community authorized to compile the technical documentation:

Cold Jet Sp.zo.o, Product Development Manager Maciej Doczekala, Lukowska 12, Oborniki 64-600, Poland

Place and Date of Issue: Loveland, US on June 7, 2018

Arvid Nielsen
Head of Technology & Engineering, VP

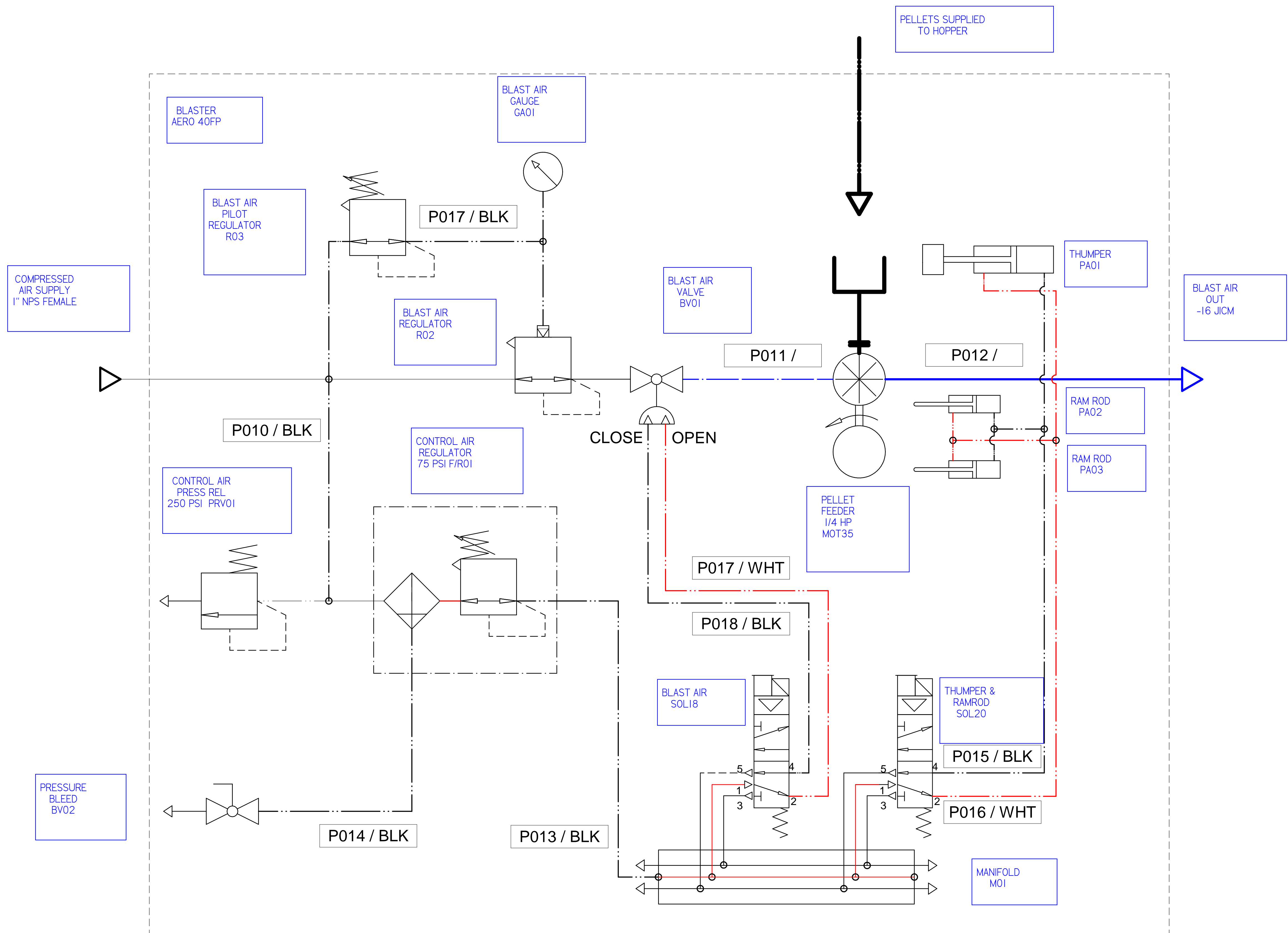
Compliant with Directive 2006/42/EC Annex II A

Contact Information

<p>Cold Jet – World Headquarters Address: 455 Wards Corner Road Loveland, Ohio 45140, USA Phone: +1 513-831-3211 Fax: +1 513-831-1209 Customer Service: +1-800-777-9101 After Hours: +1-513-832-3211</p>	<p>Spain (Iberian Peninsula) Cold Jet S.L. Address: C/ Oporto, Portal, 3 Pol.Ind. Europolis 28232 Las Rozas de Madrid, Madrid, Spain Phone: +34 91 426 79 63</p>
<p>Cold Jet Canada Address: 1727 Industrial Road, Unit 1 Cambridge, Ontario, N3H 5G7, Canada Phone: +1 800-337-9423 Fax: +1 513-831-1209</p>	<p>Japan - Asia Headquarters Cold Jet Japan Address: 1-20-4 Ishiwara, Sumida Tokyo 130-0011 Phone: +81 3 6869 2665 Fax: +81 3 6869 2666</p>
<p>Belgium - Europe Headquarters Cold Jet BV Address: Zone 1 Researchpark 330, B-1731 Zellik, Belgium Phone: +32 13 53 95 47 Fax: +32 13 53 95 49</p>	<p>China Cold Jet Dry Ice Equipment (Shanghai) Co., Ltd. Address: Room 111, Building 1 Jindu Road No. 1199 Minhang District, Shanghai, 201108 Phone: +86 21 5296 7161</p>
<p>Germany - Cold Jet GmbH Address: Obere Industrie Strasse 1 54595 Weinsheim, Germany Phone: +49 6551 9606-0 Fax: +49 6551 9606-26 Customer Service: +49 65519606-14</p>	<p>Denmark - Cold Jet ApS Address: Industrivej 68, DK-6740 Bramming, Denmark Phone: +45 7656 1500 Fax: +45 7656 1509</p>
<p>Poland - Cold Jet Sp. z o.o. Address: ul. Łukowska 12 Oborniki, Poland 64-600 Phone: +48 798 33 88 00</p>	<p>Mexico - Cold Jet Latinoamérica S. de R.L. de C.V. Address: Calle Sinaloa, 901-3. Colonia: Nuevo Repueblo Monterrey, NL, Mexico CP: 64700 Phone: +52 (81) 1097-0445</p>

LEGEND	
LINE/ DEVICE LABEL	DEFINITION
BV	BALL VALVES
PRV	PRESS RELIEF VALVES
FC	FLOW CONTROL VALVES
PS	PRESSURE SWITCHES
TS	TEMPERATURE SWITCHES
LS	LEVEL SWITCHES
R	REGULATORS
F	FILTERS
GA	Gauges
M	MANIFOLDS
PA	PNEUMATIC ACTUATORS
SA	SOLENOID ACTUATORS
FLT	FLOAT SWITCH
SV	SOLENOID VALVE
F/R	FILTER /REGULATOR

HOSE LEGEND	
	BLASTING PELLETS, MANUAL FEED
	-20 TUBING, 304 SST
	-16 TUBING, 304 SST
	-16 FLEXIBLE HOSE
	.25" NYLON TUBING, BLACK
	.25" NYLON TUBING, WHITE
	MECHANICAL FITTINGS
	FIELD CONNECTIONS



UNLESS OTHERWISE SPECIFIED
 .XX ± 1/64
 .X ± .1
 .XX ± .01
 .XXX ± .005
 .XXXX ± .0005
 ANGLES ± .5°
 SURFACES 125/

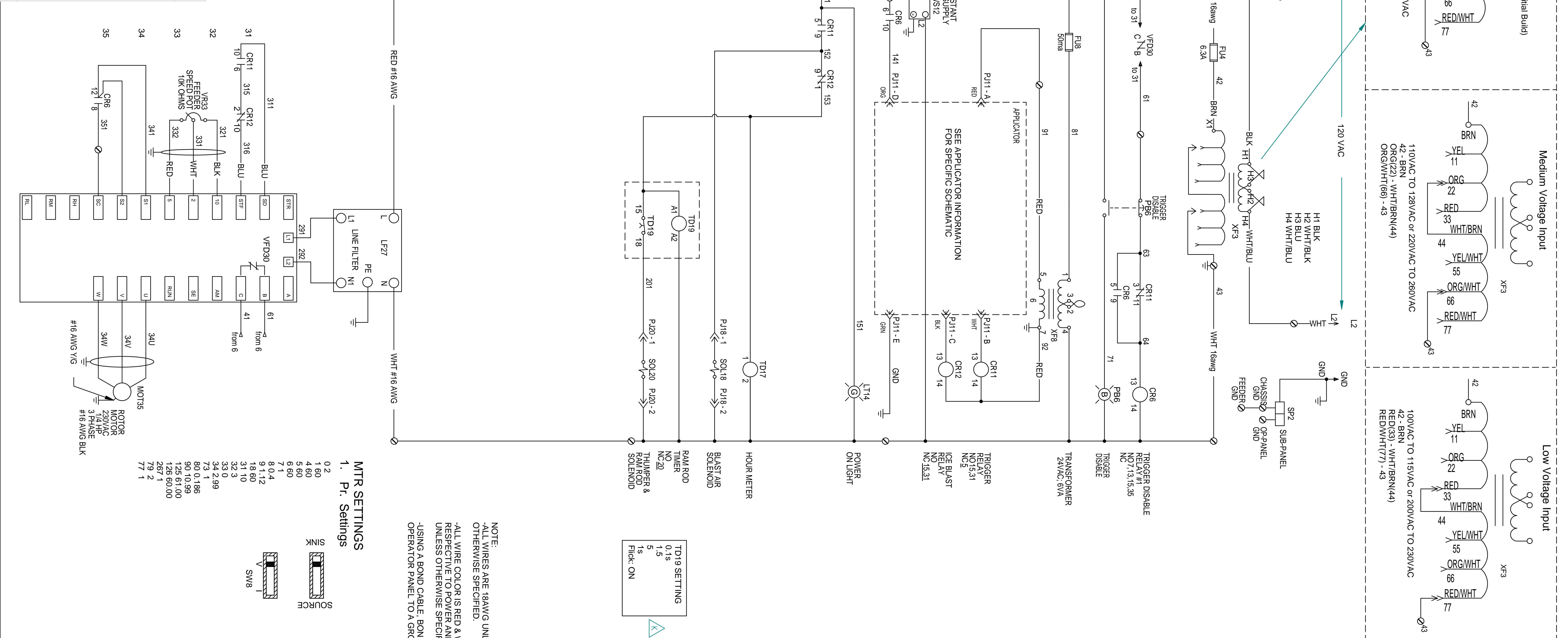
Cold Jet.

D TYPE: ASSEMBLY
 TITLE: BLAST UNIT, AERO 40FP

MANUFACTURABILITY REVIEW	DATE:	DERIVED FROM:	DATE:	STOCK SIZE:	PROJECT:
FIRST ARTICLE INSPECTION	DATE:	-	-	-	P00572P
FUNCTIONAL VERIFICATION	DATE:	CHANGED BY:	DATE:	PART NUMBER:	SHEET
VAULT ENTRY	DATE:	M. BISHOP	8/3/2021	-	3 OF 3
		CREATED BY:	DATE:	REVISION:	
		MRVIR	3/27/2015	N	

2A0290

REV	DESCRIPTION	DATE
A	UPDATE BOM TO MATCH AS BUILT	6/10/2015
B	P1: ADD LINE 7 TRIGGER DISABLE LIGHT, REMOVE APPLICATOR. P3: ADD 4G1259 & 4G1557, ADD TAG NUMBERS	6/23/2015
C	FIRST ARTICLE BUILD: P1: ADD TERMINAL LINE 14, TD19 SETTING 1.10 WAS 6.60, P2: ADD GROUND LABELS, ADD TRIPPLE-STACK TERMINAL CHART, ADD END CAP, P3: ADD 4G0063, 13488, WO-M4, UPDATED QTY'S	7/8/2015
D	P1: MOVE POWER ON LIGHT FROM LINE 5 TO LINE 14, NOW TURNS OFF WHEN TRIGGER DISABLED	7/21/2015
E	P3: REMOVE (1) HOLE PLUG 4G0366, ADD (2) SOLENOID COILS 40279	9/10/2015
F	P1: VFD30 WAS VFD51, PWS12 WAS PWS24, LINE 19 REMOVE 'SET @ 15 SEC, 10K OHMS WAS 1K, P2: PWS12 WAS PWS24, ADD HARDWARE. P3: UPDATE QTY 4G0063 & 4G1358, REMOVE 4G0709, 4G0495, 4G1358, 4G1127, UPDATE TAG NUMBERS	10/7/2015
G	P3: 4G0063 QTY 1 WAS 2, ADD RNB-C QTY 1	2/19/2016
H	ADDED INITIAL BUILD TRANSFORMER TAPPING	8/22/2018
J	P1-LINE 20: 15 WAS A1, P3: CHANGED QUANTITIES 4G1007 & 4G1008 QTY 4 WAS 2, 4G1358 QTY 5 WAS 11, 4G0081 QTY 54 IN WAS 50 IN, RNR-E QTY 5 WAS 7, WHE QTY 10 WAS 8, WL-M4 QTY 9 WAS 12, PP-M4-010 QTY 9 WAS 10, W106 QTY 1 WAS 4 AND 4G0743 QTY 9 WAS 7, REPLACED 4G1039-A WITH 5G0056-A, 4G1108-A WITH 4G2542-A AND PP-M3-008 WITH PP-M4-005, REMOVED PP-M4-012 AND WF-M4, ADDED NL-M4, WF-08, WL-M3, 4G1127, 4G0495 AND 4G0645	7/15/2021
K	P1: UPDATED TD19 SETTINGS, P2: UPDATED HARDWARE REFERENCE D, ADDED ANNOTATION	9/22/2021



REV	DESCRIPTION	DATE
A	UPDATE BOM TO MATCH AS BUILT	6/10/2015
B	P1: ADD LINE 7 TRIGGER DISABLE LIGHT, REMOVE APPLICATOR. P3: ADD 4G1259 & 4G1557, ADD TAG NUMBERS	6/23/2015
C	FIRST ARTICLE BUILD: P1: ADD TERMINAL LINE 14, TD19 SETTING 1.10 WAS 6.60, P2: ADD GROUND LABELS, ADD TRIPPLE-STACK TERMINAL CHART, ADD END CAP, P3: ADD 4G0063, 13488, WO-M4, UPDATED QTY'S	7/8/2015
D	P1: MOVE POWER ON LIGHT FROM LINE 5 TO LINE 14, NOW TURNS OFF WHEN TRIGGER DISABLED	7/21/2015
E	P3: REMOVE (1) HOLE PLUG 4G0366, ADD (2) SOLENOID COILS 40279	9/10/2015
F	P1: VFD30 WAS VFD51, PWS12 WAS PWS24, LINE 19 REMOVE 'SET @ 15 SEC, 10K OHMS WAS 1K, P2: PWS12 WAS PWS24, ADD HARDWARE. P3: UPDATE QTY 4G0063 & 4G1358, REMOVE 4G0709, 4G0495, 4G1358, 4G1127, UPDATE TAG NUMBERS	10/7/2015
G	P3: 4G0063 QTY 1 WAS 2, ADD RNB-C QTY 1	2/19/2016
H	ADDED INITIAL BUILD TRANSFORMER TAPPING	8/22/2018
J	P1-LINE 20: 15 WAS A1, P3: CHANGED QUANTITIES 4G1007 & 4G1008 QTY 4 WAS 2, 4G1358 QTY 5 WAS 11, 4G0081 QTY 54 IN WAS 50 IN, RNR-E QTY 5 WAS 7, WHE QTY 10 WAS 8, WL-M4 QTY 9 WAS 12, PP-M4-010 QTY 9 WAS 10, W106 QTY 1 WAS 4 AND 4G0743 QTY 9 WAS 7, REPLACED 4G1039-A WITH 5G0056-A, 4G1108-A WITH 4G2542-A AND PP-M3-008 WITH PP-M4-005, REMOVED PP-M4-012 AND WF-M4, ADDED NL-M4, WF-08, WL-M3, 4G1127, 4G0495 AND 4G0645	7/15/2021
K	P1: UPDATED TD19 SETTINGS, P2: UPDATED HARDWARE REFERENCE D, ADDED ANNOTATION	9/22/2021

REV	DESCRIPTION	DATE
A	UPDATE BOM TO MATCH AS BUILT	6/10/2015
B	P1: ADD LINE 7 TRIGGER DISABLE LIGHT, REMOVE APPLICATOR. P3: ADD 4G1259 & 4G1557, ADD TAG NUMBERS	6/23/2015
C	FIRST ARTICLE BUILD: P1: ADD TERMINAL LINE 14, TD19 SETTING 1.10 WAS 6.60, P2: ADD GROUND LABELS, ADD TRIPPLE-STACK TERMINAL CHART, ADD END CAP, P3: ADD 4G0063, 13488, WO-M4, UPDATED QTY'S	7/8/2015
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K	P1: UPDATED TD19 SETTINGS, P2: UPDATED HARDWARE REFERENCE D, ADDED ANNOTATION	9/22/2021

MTR SETTINGS

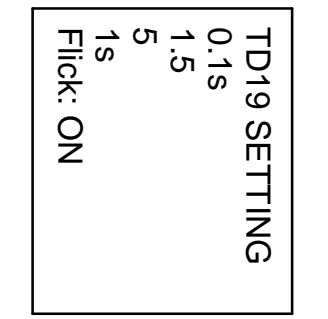
1. Pr. Settings

0.2
1.60
4.60
5.60
6.60
7.1
8.0.4
9.1.12
18.60
31.10
32.3
33.0
34.2.99
73.1
80.0.186
90.10.99
125.61.00
126.60.00
267.1
79.2
77.1



NOTE:
-ALL WIRES ARE 18AWG UNLESS OTHERWISE SPECIFIED.
-ALL WIRE COLOR IS RED & WHITE RESPECTIVE TO POWER AND COMMON UNLESS OTHERWISE SPECIFIED.
-USING A BOND CABLE, BOND THE OPERATOR PANEL TO A GROUND.

SCHEMATIC



UNLESS OTHERWISE SPECIFIED

XX	+ 1/64
X	+ .1
.XX	+ .01
.XXX	+ .005
.XXXX	+ .0005
ANGLES	+ .5°
SURFACES	125

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MANUFACTURABILITY REVIEW	DATE	DERIVED FROM:	DATE:	STOCK SIZE:	PROJECT:
FIRST ARTICLE INSPECTION	DATE:	-	-	-	P00572P
FUNCTIONAL VERIFICATION	DATE:	CHANGED BY:	DATE:	PART NUMBER:	SHEET 1 OF 3
VAIANTG ENTRY	DATE:	M. BISHOP	9/22/2021	6G0310	REVISION: K

CREATED BY: M. BISHOP DATE: 05/17/2015

