



2026



Euroseal Operations

Section 1

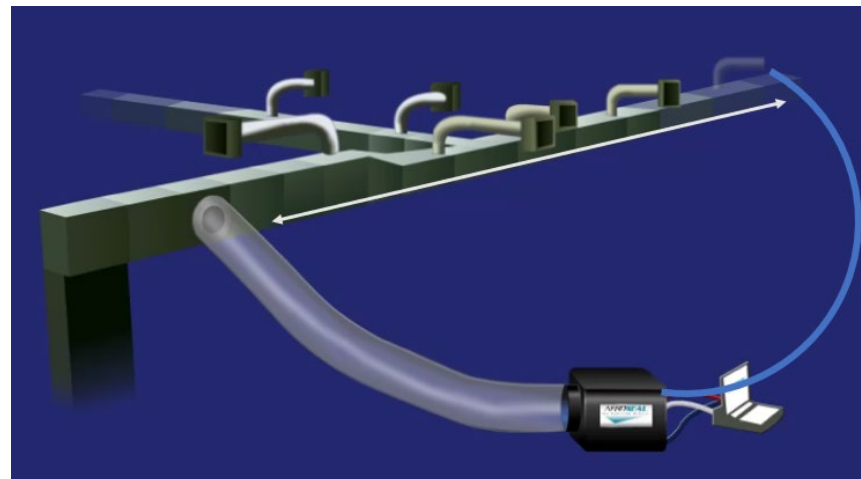
Introduction to Aeroseal Technology



PROCESS OVERVIEW

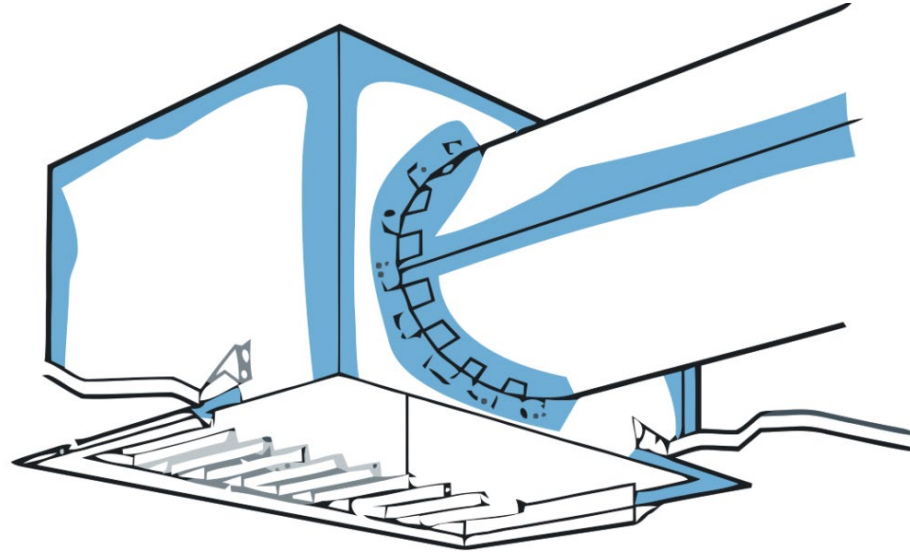


Aeroseal duct sealing technology is a cutting-edge solution for improving HVAC efficiency by sealing leaks from the inside of the ductwork. It is widely used in commercial applications to reduce energy waste, improve indoor air quality, and meet regulatory standards. This manual provides a comprehensive guide to implementing Aeroseal technology in commercial settings, ensuring safe and effective operations.



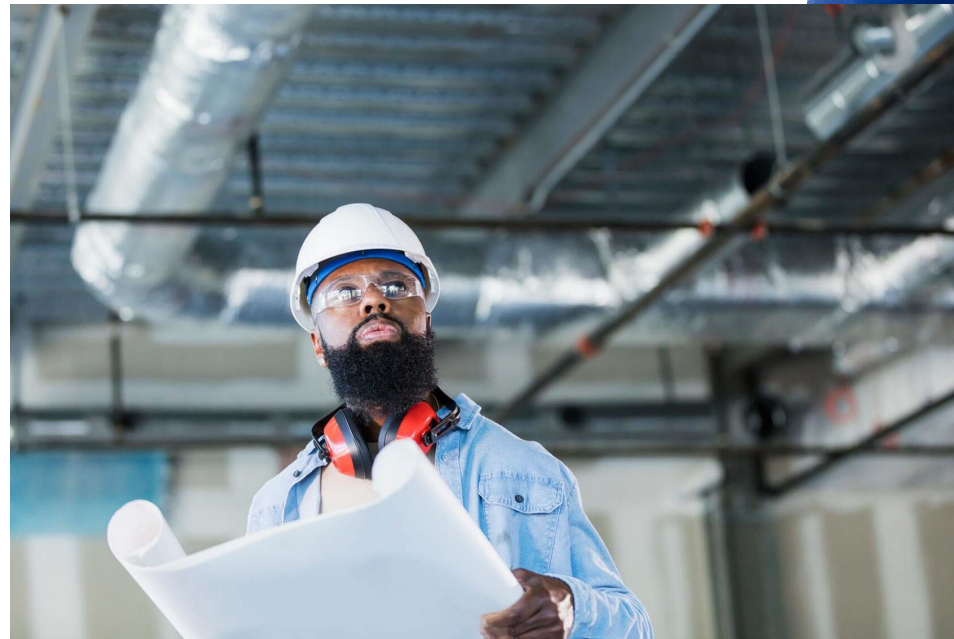
SHOWS A GEN2 IN USE

TYPICAL LEAKS

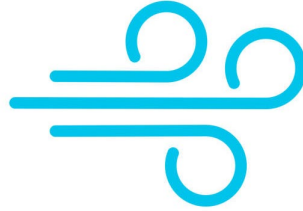


Leakage IMPACTS:

- Uneven Temps
- Uneven Airflow
- Energy Waste
- Pressure Imbalances
- Infiltration/Exfiltration



DUCT AIRFLOW BAS



FLOW RATE: Duct flow rate is **the volume of air that passes through a duct's cross-section in a unit of time**

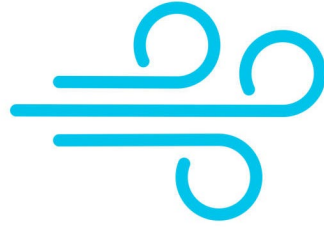
CFM: Is a volume of air measurement. Cubic Feet Per Minute @400CFM per Ton of air

NORMAL RANGES IN DUCTS

For proper operation, HVAC systems need 400 cubic feet per minute (cfm) of airflow per ton of air conditioning

For example, a 2-ton system needs about 800 cfm of airflow, and a 2.5-ton system needs around 1000 cfm, ETC.

DUCT AIRFLOW BAS



VELOCITY: Duct velocity, also known as air flow velocity, is the speed at which air moves through a duct system's air supply and return grilles. It's usually measured in feet per minute (FPM) or meters per second (m/s)

NORMAL RANGES IN DUCTS

Generally, duct velocities are less than 1,500 fpm. 2. Medium Pressure: The term medium pressure applies to systems with fan static pressures between 3 to 6 inches WC. Generally, duct velocities are less than or equal to 2,500 fpm

DUCT SYSTEMS



COMMERCIAL DUCT SYSTEMS CAN BE COMPRISED OF VARIOUS DUCT MATERIALS AND INSULATION TYPES

- SHEET METAL
- FLEX DUCT

MAY ALSO INCLUDE A VARIETY OF DUCT ACCESSORIES

- VAV, ERV, HRV
- FIRE PROTECTION DEVICES
- REHEAT COILS
- BOOSTER FANS
- ETC.



PRESSURES

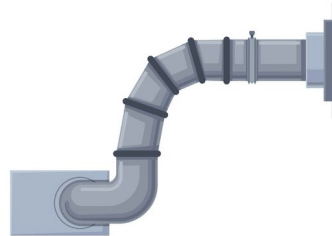
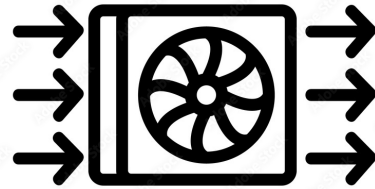


DIFFERENTIAL PRESSURES:

The pressure inside a space compared to outside.

ABSOLUTE PRESSURES:

Absolute pressure is the pressure of a space that has no matter in it, or a perfect vacuum, as its reference point. It's the true pressure value, including atmospheric pressure, and is different from gauge pressure, which compares the measured pressure to atmospheric pressure



PRESSURE MEASUREMENTS:

HIGH PRESSURES

PSI (POUNDS PER SQUARE INCH)

- TIRES, PIPES, COMPRESSED AIR

LOW/MEDIUM PRESSURES

WC (INCHES OF WATER COLUMN)

- DUCTS

LOW PRESSURES

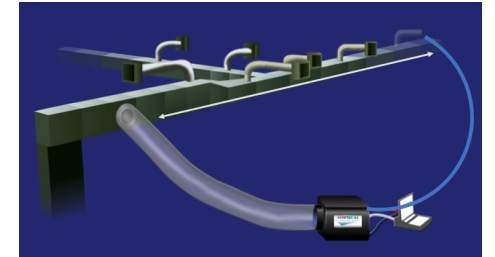
PASCAL

- BUILDINGS

DUCT SEALING BASICS



1. BLOCK ALL DESIGNED OPENINGS (GRILLES/DIFUSSERS/REGISTERS) OF THE DUCT SYSTEM YOU ARE SEALING
2. ISOLATE AND/OR BYPASS ANY HVAC EQUIPMENT OR ACCESSORIES NECESSARY
3. CUT INJECTION HOLE(S) & ATTACH AEROSEAL EQUIPMENT
4. PRESSURIZE THE DUCT SYSTEM
5. PERFORM A PRE-SEAL LEAKAGE TEST
6. INJECT SEALANT – AIRBORNE SEALANT WILL FIND AND PLUG LEAKS/GAPS IN THE DUCTS WHERE THE PRESSURE DROPS, AND AIR IS ESCAPING
7. PERFORM A POST-SEAL LEAKAGE TEST – CERTIFICATE OF RESULTS FOR EACH SEAL EVENT



Section 2

Mechanical Drawing Review (Estimating)



- Introduction to Mechanical Drawings review
- Review and Breakdown of Injection Points
- Schedule of HVAC Units
- Identifying and Documenting Key Areas
- Blocking Upstream of VAV Boxes
- Handling Smoke/Fire Alarm Systems and Sensitive Equipment



Mechanical Drawing Review

Software

- **Drawing Review:** Use mechanical plans and schedules to accurately assess duct layout and identify key locations for sealing.
- **Block Count:** Leverage software to determine the exact number and placement of blockages needed.
- **Preparation for Success:** Ensuring thorough analysis of the plans before arriving on-site guarantees efficient setup and smooth execution of the Aeroseal process.

Review Unit Schedule



- Identify all units in the scope of work from the schedule
- Identify CFM and External Static pressure from schedule for input into Aeroseal software for unit information
- If schedule is not available obtain information from the unit while onsite (look up any model #s for more detailed information)

VAV AIR HANDLING UNIT SCHEDULE (SEABOARD)

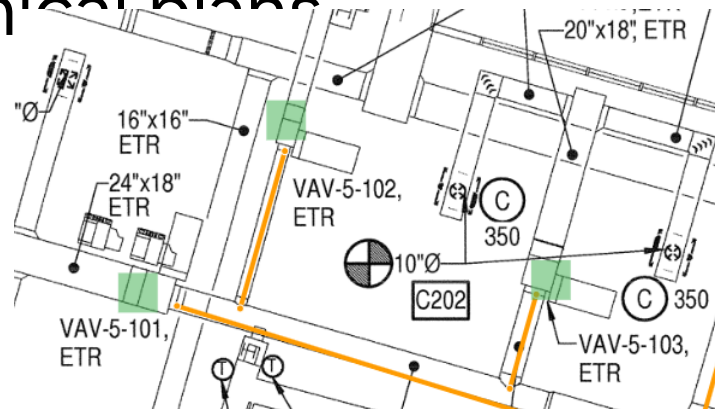
TAG	TYPE	SUPPLY FAN DATA							RETURN FAN DATA							HOT WATER HEATING COIL DATA							CHILLED WATER COOLING COIL DATA												
		S.A. C.F.M. (MAX./MIN.)	O.A. C.F.M.	E.S.P. (IN. WG.)	T.S.P. (IN. WG.)	H.P.	ELECTRICAL DATA			AIR C.F.M.	E.S.P. (IN. WG.)	T.S.P. (IN. WG.)	H.P.	ELECTRICAL DATA			TOTAL CAPACITY M.B.H.	E.D.B. (°F)	L.D.B. (°F)	E.W.T. (°F)	G.P.M.	L.W.T. (°F)	MAX. A.P.D. (IN. WG.)	MAX. W.P.D. (FT. WG.)	TOTAL CAPACITY M.B.H.	SENS. CAPACITY M.B.H.	E.D.B. (°F)	E.W.B. (°F)	L.D.B. (°F)	L.W.B. (°F)	E.W.T. (°F)	L.W.T. (°F)	G.P.M.	MAX. A.P.D. (IN. WG.)	MAX. W.P.D. (FT. WG.)
		FAN TYPE	VOLTS	PHASE	FAN TYPE	VOLTS	PHASE	VOLTS	PHASE	VOLTS	PHASE	M.B.H.	(°F)	(°F)	(°F)	(°F)	(IN. WG.)	(FT. WG.)	M.B.H.	M.B.H.	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)
AHU-2	MODULAR	10845	1800	2.00	2.99	15	AF	208	3	9045	0.50	0.54	7.5	208	3	84.6	19.0	55.0	180	5.7	150	0.1	0.3	400.9	200.1	76.9	66.1	55.0	54.1	45	55	80.2	0.5	22.8	
AHU-3	MODULAR	4010	405	2.00	2.93	5	AF	208	3	-	-	-	-	-	-	16.4	19.0	55.0	180	1.1	150	0.1	0.1	137.2	114.2	84.3	66.0	55.0	54.9	45	55	27.5	0.5	7.7	
AHU-4	MODULAR	3915	390	2.00	3.45	5	AF	208	3	-	-	-	-	-	-	16.0	19.0	55.0	180	1.1	150	0.1	0.1	155.3	128.9	83.5	67.1	55.0	52.4	45	55	31.0	1.0	15.5	
AHU-5	MODULAR	4705	835	2.00	3.10	7.5	AF	208	3	-	-	-	-	-	-	72.2	19.0	55.0	180	4.8	150	0.2	0.4	157.6	105.9	75.0	64.7	55.0	53.7	45	55	31.5	0.6	14.1	
AHU-6	MODULAR	3835	720	2.00	3.57	7.5	AF	208	3	-	-	-	-	-	-	32.9	19.0	55.0	180	2.2	150	0.2	0.1	135.8	90.1	76.0	65.4	55.0	53.9	45	55	27.2	1.1	9.9	

Review and Breakdown of Injection Points



- Identify VAV box locations for blocking
- Identify Injection points and blocks from the mechanical plans

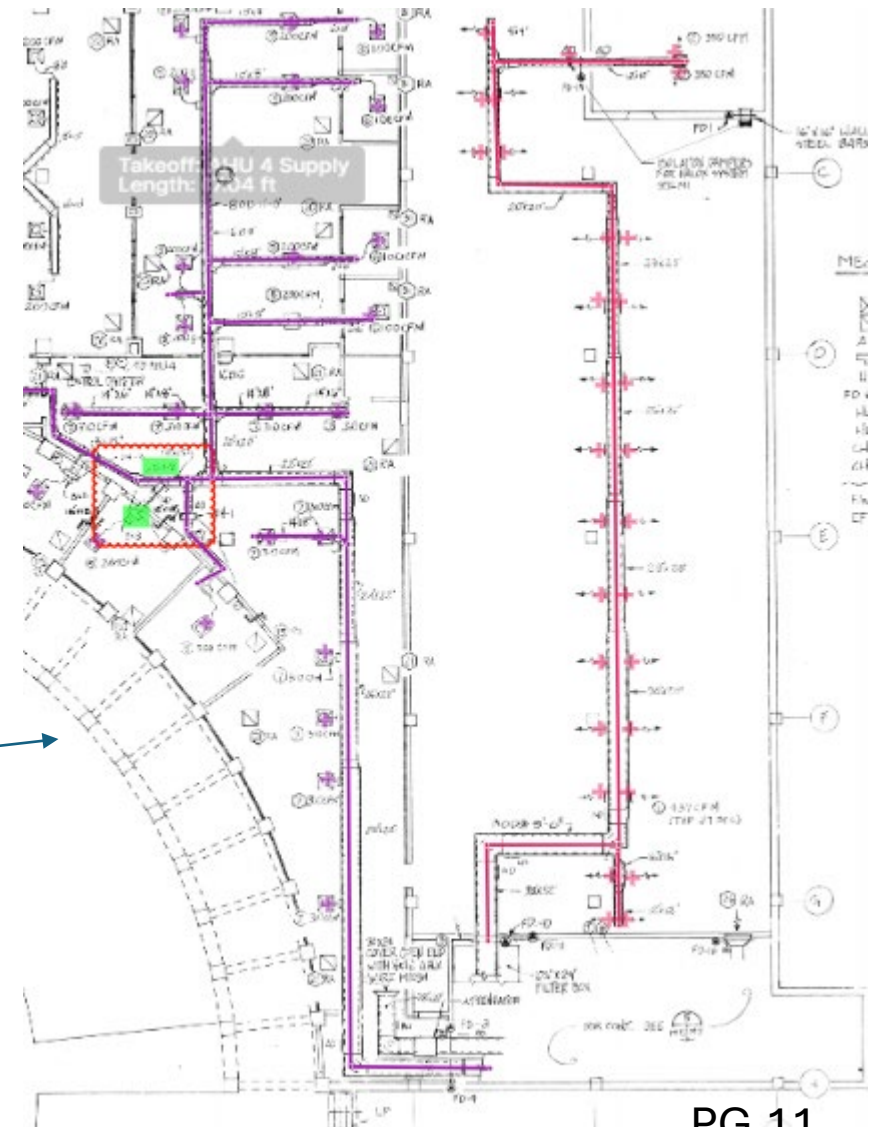
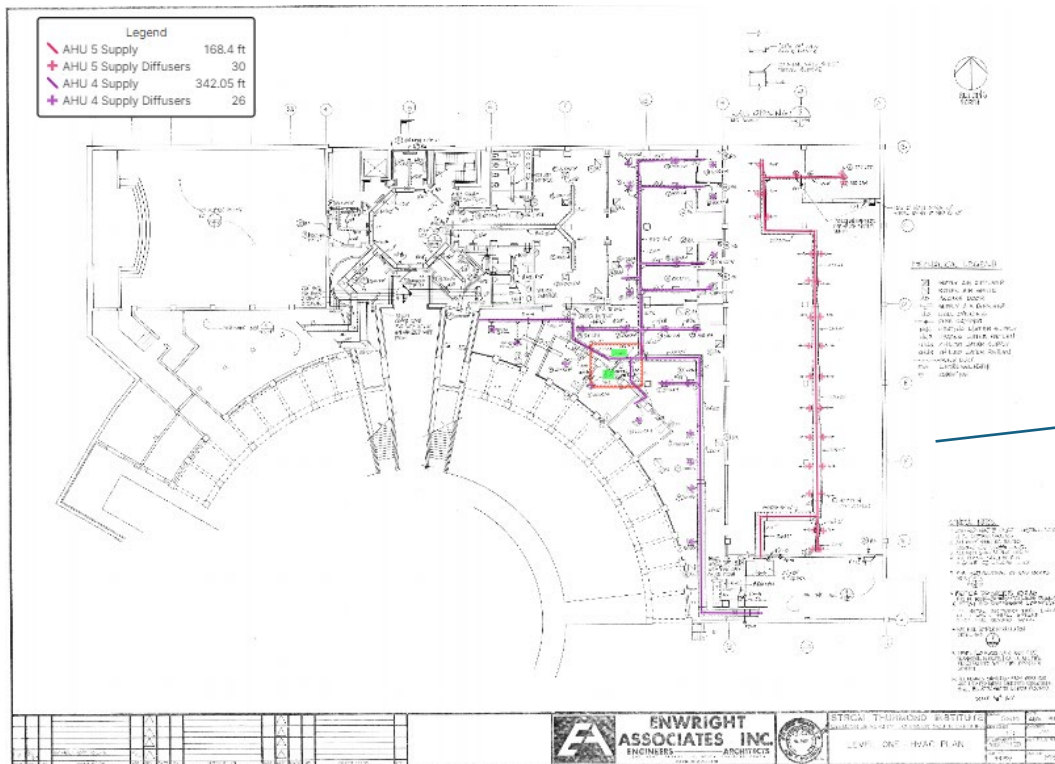
Legend	
Injection Block w/Injection	1
AHU-5 Supply Ductwork	101.18 ft
AHU-5 VAV Block w/Manual Seal	4



Review and Breakdown of Injection Points



Properly analyzing the mechanical drawings will help identify all critical injection points to ensure precise application of sealant material.



VAV vs CAV vs Exhaust



- **VAV System:** For Variable Air Volume (VAV) systems, blockages will be installed upstream of the VAV boxes on the high-pressure ductwork to isolate sections for testing and sealing.
- **CAV System:** For Constant Air Volume (CAV) systems, blockages will be placed at the diffusers or along the main trunk line, depending on system configuration, to facilitate proper isolation for sealing.
- **Exhaust System:** For exhaust systems, vents will be blocked at their termination points (e.g., registers, grilles) to ensure proper isolation of the ductwork during sealing.

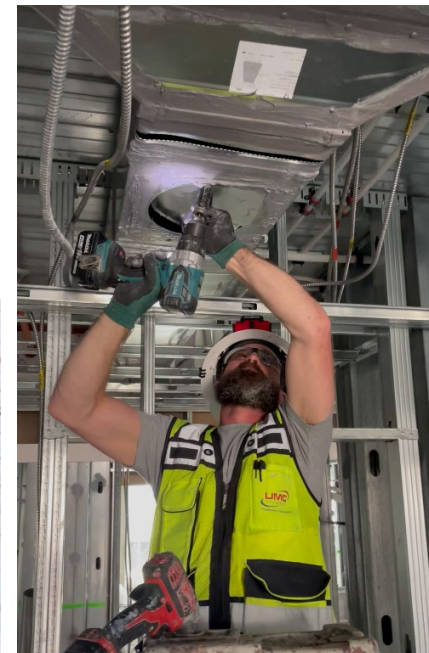
INJECTION POINTS

The Largest Injection Area (Flange size)- the more efficient the seal

Critical areas should be discussed and have action plan in place to manage overspray in/around critical areas.

Use remediation fans/blowers to create positive pressure area keeping overspray out of the area or create negative pressure area to keep overspray contained to that area.

A good rule of thumb for scrubbing is as follows. 4800 cubic foot of space will require a scrubber with a minimum of 600cfm to exchange the air 5 times an hour.



Section 3

Safety

Equipment

- Proper Shutdown of Air Handling Units (AHUs) and Rooftop Air Handling Units (RTUs)
- Lockout/Tagout (LOTO) Procedure
- Timing of Work (2nd and 3rd Shift Operations)

Personal

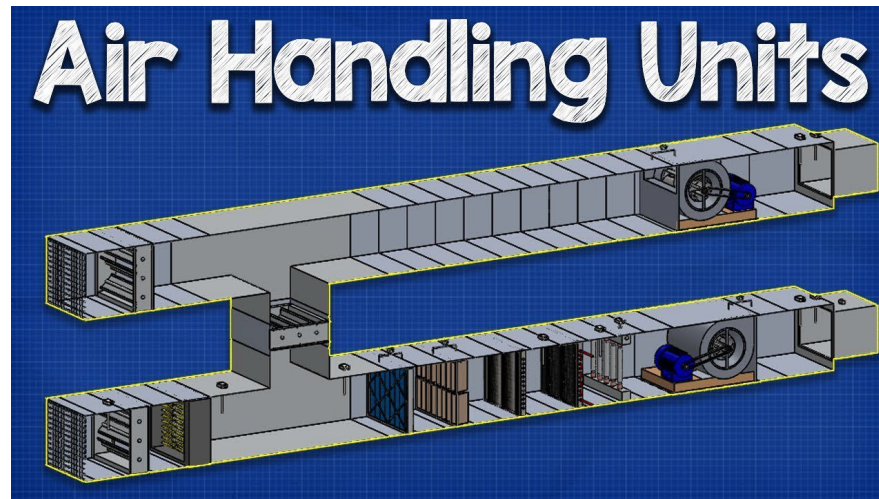
- Personal Protective Equipment (PPE)
- General Job Safety Guidelines



Proper Shutdown of Air Handling Units (AHUs) and Rooftop Air Handling Units (RTUs)



Before initiating the sealing process, it is crucial to follow the appropriate shutdown procedure for all AHUs and RTUs connected to the system. This ensures both safety and the integrity of the equipment.



Shutdown Procedure



1. Identify Units:

- Identify all AHUs and RTUs that service the ductwork where sealing will take place.

2. Communicate with Building Management:

- Notify building management about the planned shutdown and the areas that will be affected.
- Coordinate the timing of the shutdown to align with building occupancy schedules.



Lockout/Tagout (LOTO) Procedure



To prevent accidental reactivation of the units during maintenance, technicians must strictly adhere to the Lockout/Tagout procedure. This involves isolating all energy sources and applying lockout devices, with a step-by-step verification process to ensure complete safety.



Killswitch – Emergency Cut-off



The Emergency Switch is wired in series with the main power input and operates in a normally closed state during normal operation, allowing power to flow to the system.

Activation occurs when the operator rotates the rotary switch to the OFF position. This action opens the switch contacts, immediately interrupting the power path and removing electrical power from the entire circuit.

Once in the OFF position, the system remains fully de-energized until the switch is manually returned to the ON position.



An emergency situation that would require an immediate shutdown includes any condition that could cause harm to the operator, damage the equipment, or create a safety hazard, such as electrical faults, Fire, overheating, mechanical failure, or unexpected malfunction of the system. The E-switch allows the system to be quickly turned off to prevent injury or damage

Timing of Work (2nd and 3rd Shift Operations)



The Aeroseal duct sealing process often involves work during times when the building is largely unoccupied, such as the 2nd and 3rd shifts. This timing minimizes disruptions to building occupants and allows for safer and more efficient completion of the work.

1. Plan Scheduling:

- Coordinate with building management to schedule the work during these off-peak hours.

2. Ensure Proper Access:

- Confirm that all necessary access points will be available during these times, and arrange for any required supervision or security.

3. Communication:

- Inform all team members of the work schedule and ensure that they are prepared to work during these shifts.

Personal Protective Equipment (PPE)



All technicians must wear appropriate PPE, including gloves, hard hats, safety glasses, and respiratory protection, to comply with safety protocols and prevent injury.



General Job Safety Guidelines

Maintain a clean work environment, follow site-specific safety protocols, and have emergency procedures in place to ensure technician safety throughout the project.

Follow all **OSHA-30** Rules and Guidelines



Section 4

Sensitive Equipment Blocking & Isolation

- Purpose of Blocking
- Methods and Materials
- Ensuring Seal Integrity



Purpose of Discharge Blocking



Effective discharge blocking is essential to ensure the sealant remains within the ducts and does not escape during the sealing process.

Unblock



Block



Unblock



Block



Methods and Materials



Depending on the duct size and configuration, foam plugs, balloon devices, or custom sheet metal covers may be used.



Use of sheet metal at supply air discharge from rooftop packaged unit to block off sealant from the coils and fans.



Use of sheet metal at return air intake for rooftop packaged unit to block off sealant. Note that the opening had a damper that was closed, but which is not appropriate to serve as a block on its own. Also note the use of a pole to support the block on the low pressure side

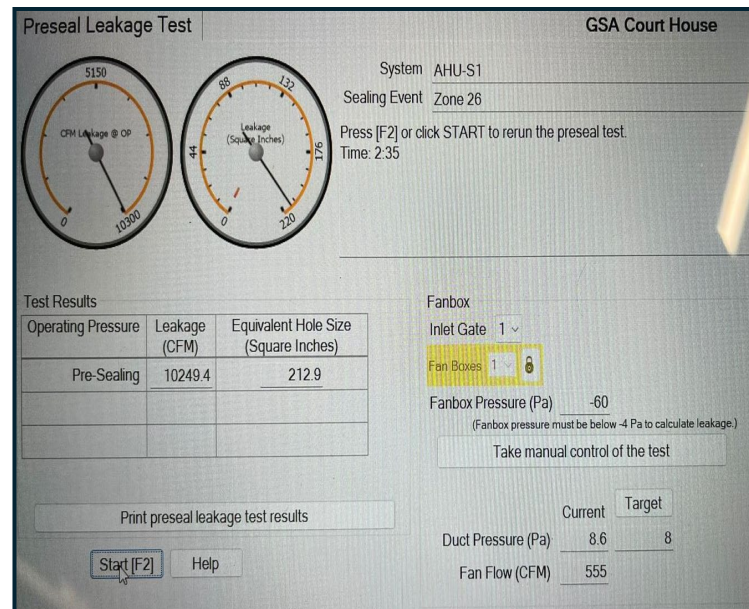


Ensuring Seal Integrity



After installing the blocking devices, perform pressure testing with fog and visual inspection to confirm that all discharge points are sealed securely.

Pressure Test



The 5 F's



FOG – IT

Inject fog through the fanbox into the duct system you are sealing



FIND – IT

- Missing or leaking blocks
- Damaged or disconnected ductwork
- Areas of significant overspray



FEEL – IT

Perform preseal leak test prior to making any repairs or manual sealing



FIX – IT

Proceed to making any necessary duct repairs



FINISH – IT

Inject sealant

Section 5

Diffuser Blocking

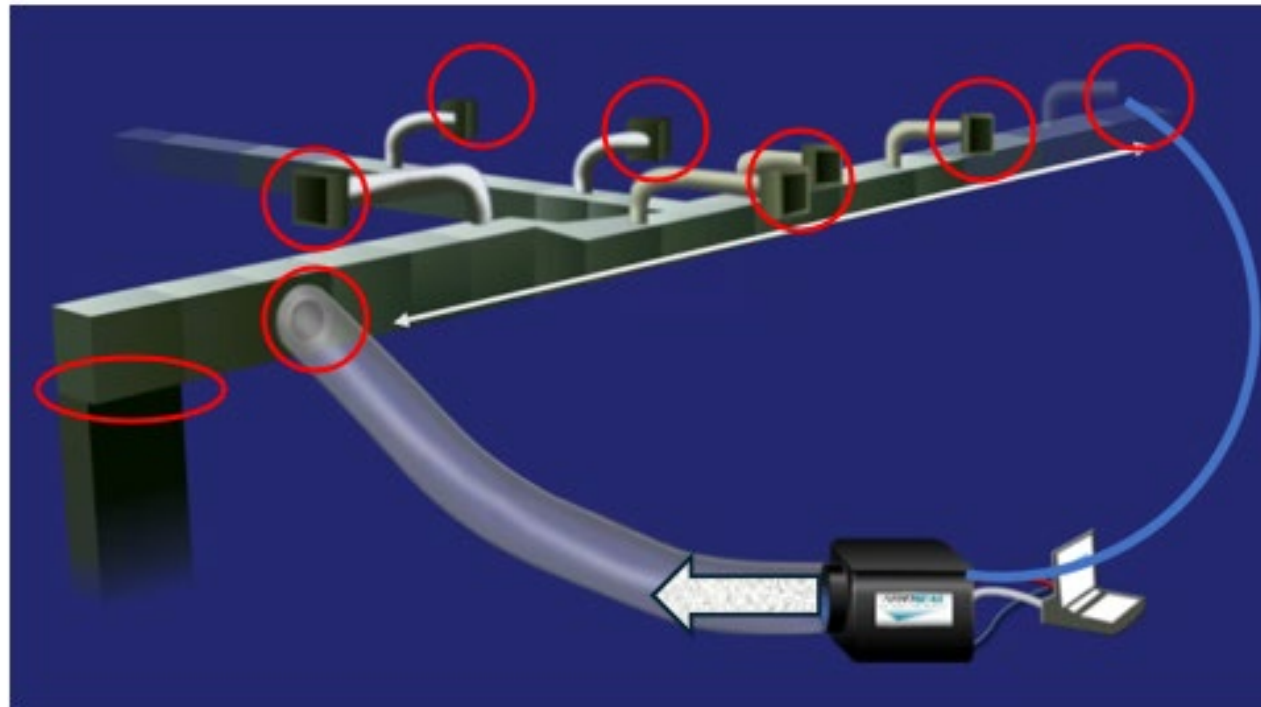
- Importance of Diffuser Blocking
- Step-by-Step Blocking Process



Importance of Diffuser Blocking



Blocking diffusers is crucial to containing the sealant within the duct system, preventing it from escaping into occupied spaces or unnecessary areas.



Importance of Diffuser Blocking



Balloons



Foam

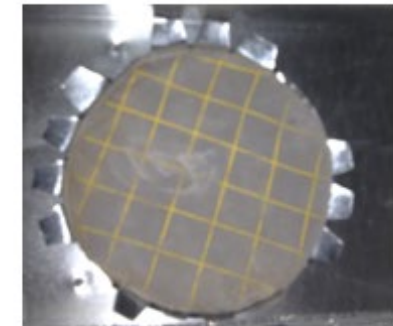


Blue Tape



Step-by-Step Blocking Process

- 1. Locate diffusers using mechanical drawings.**
- 2. Install appropriate foam plugs to block each diffuser securely.** (Foam is cut $\frac{1}{2}$ " larger than the area to be blocked to "expand in place" providing an air-tight seal.)
- 3. Verify the effectiveness of the blocking with pressure testing.**
 - Run up the fanbox to create pressure in the ducts
 - Look, feel, and listen for air escaping



Blocking Upstream of VAV Boxes



VAV REHEAT COILS



Materials and Methods



Foam



White Board



Balloons



Coil Block / Unblock



Handling Smoke/Fire Alarm Systems and Sensitive Equipment

DUCT SMOKE DETECTORS



FIRE/SMOKE DAMPERS



ERV / HRV UNITS



Section 6

Aeroseal Equipment Setup and Breakdown

- Overview
- Setup Procedure
- Software program
- Equipment Breakdown and Storage



EURO 4.0 – SPEC/DATA SHEET



Specification / Data Sheet for Equipment

Product Name	Euro Seal Connect	Euro Booster Fan
Part #	HS 1003 (Kit) / 82ASF6023EU	Euro Booster Fan
Description	Patented Aeroseal duct sealing system with built in wireless and GSM modules suitable for residential applications. The unitary system includes 'SmartSeal' software that controls the machine and provides a user friendly interface for monitoring sealing process measuring pre and post seal leakages and printing certificates	Booster Fan Box
User Interface	Laptop with Commercial SmartSeal software	N/A
Specification		
Supply Voltage	Single phase, 230V	Single phase, 230V
Frequency	50 Hz	50 Hz
Power	4000W (2 separate 15A circuits)	400 W
# of separate circuits	2 x 15A circuits for main machine 1 x 15A for Electric Compressor (Not included) 2 x 10A for scrubbers (Not included)	1 x 15A circuit for main machine N/A N/A
Communication	USB, Wifi	N/A
Wifi Range	200ft*	N/A
Operating temperature	40F to 140 F	N/A
Storage temperature	-4 F to 160 F	-4 F to 160 F
Weight	87 lbs	79 lbs
Dimensions	26"(l) x 21" (w) x 18.5" (h)	26"(l) x 21" (w) x 18.5" (h)
Technical Parameters		
Sealing range	upto 1600 CFM ₂₅ (P _{duct} > 10 Pa)	N/A
Measurement range	15 to 2000 CFM ₂₅ (P _{duct} > 5Pa)	N/A
accuracy	+/- 5%	N/A
Fan Capacity	500 CFM	500CFM
Add-ON fan capacity	N/A	
Fan static (max)	660 Pa	660Pa
Sealant injection	Single speed pump (50ccm)	N/A
Notes	*wifi range is dependent on ambient weather conditions, home construction materials	

Other Utilities / Accessories needed for Aeroseal process

	<u>Required Accessories</u>
Dry Compressed Air (Required)	Continuous duty aircompressor (Not included) with atleast 90 PSI pressure and maximum 125 PSI, Flow - 6.5SCFM@100PSI, Oil and moisture filters and an Output pressure regulator
Air Scrubber (Required)	Air scrubber (not included) with minimum MERV 13 filtration (3-10 micron particles) capability
Generator (optional)	Generator (not Included) 5kW/ 5.5kVA (for operating the machine) 10kW/12.5kVA (for operating machine, compressor and accessories)
Oil and Moisture filter (Recommended)	Dessicant drier (Not included) 7SCFM flow / 125PSI minimum. Regenerative drier with a Oil coalescent filter to deliver clean oil free and dry air Local equivalent of: Suburban Make: Pure3 filter : 2199-1138 10SCFM/ 120V (Aeroseal P/N: FR00149)



EQUIPMENT KIT



Description	Quantity
Euroseal 4.0 Core System	1
Euroseal Low Seal Vent Box	1
Blue Duct Mask	6
Fiberglass Filter, 16 x 20 x 1 in.	1
Sealant	2
Euro Booster Fanbox (accessory)	1
37" mobile job box	1
5-Micron Air Filter with Adapter Fitting to Air Hose	1
Air Compressor Filter Assembly	1
12" Diameter Modified Clamp with Black Handle	3
12" Clamp	2
12" Diameter Flange	1
75 ft. Blue Tubing	1
Spare Parts Kit	1
WYE Kit 12-10-10 60 degrees	1
Power cords	2
50' Blue Tube	1
Blue tube t-assembly, 25 ft	1
Pickup tube	2
32 oz spray bottle	1
14" flange	1
10" Clamp	2
14" Clamp	2
Flush bottle	1
Fre-thane 95a polyurethane tube	1



SUPPORT EQUIPMENT



- Air Compressor
 - Portable air compressor- Gas, 1.5hp, 6.5 CFM @ 100psi, 8 gallon tank, at least 125 psi cut-out
 - Recommend: Jenny model: K5HGA-8P
 - Aeroseal Manufactured Scrubber Fan(s)
- FIVE Ultra-Allergen Disposable Filters – Merv 14
- Start-up supplies (sealant, ductmask, clamps, cleaning solvent, foam)



RECOMMENDED TOOLS AND SUPPLIES



Tools

- TWO 50 ft. extension cords
- TWO step ladders: 8 ft. to 12 ft.
- Measuring tape
- Screw gun with self-taping screws
- Tin shears
- Round-injection-hole cutter (e.g. Malco hole cutter, nibbler, snips, reciprocating saw, 3" hole saw)
- Flashlight, razor knife
- Standard box of hand tools
- Shop vac, dustpan, clean-up materials
- Vice mounted in truck
- Circuit breaker finder
- Voltmeter AC/DC for testing/troubleshooting
- 9 V dc battery for testing/troubleshooting

Safety Equipment

- GFCIs for all circuits
- Double strap type particulate masks at a minimum
- Respirator with organic-vapor/particle canisters (e.g. North Model 7700-30 or 5500-30 half-mask respirator, fitted with particulate/organic-vapor (Black/Magenta) cartridges 7581P100 (Grainger 6T452 2004))
- Eye wash
- Safety glasses
- Rubber gloves

Supplies

- THREE tarps or 3 ft x 12 ft runner tarps
- Sheet metal for injection-hole repairs (12-inch, 14-inch and 16-inch diameter)
- Duct insulation, spray adhesive
- Mastic and mesh
- Extra print cartridges, paper

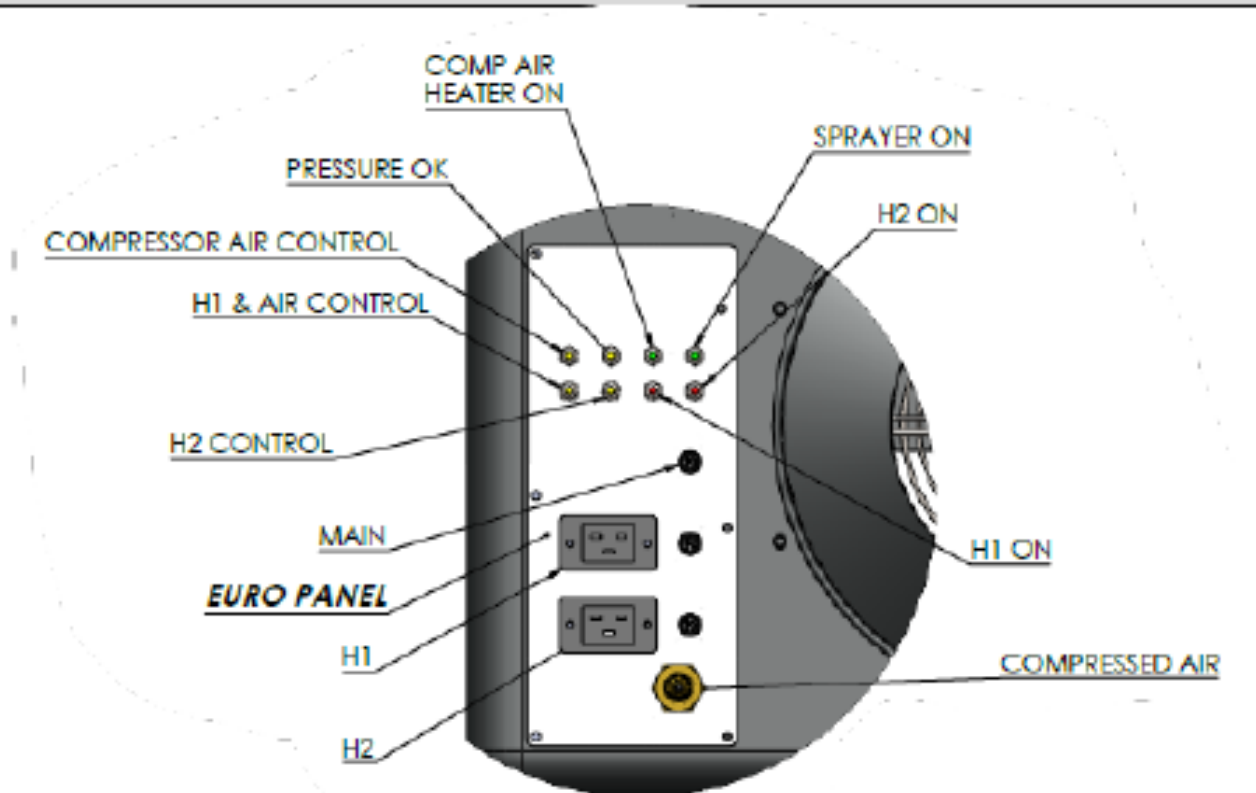
EQUIPMENT OVERVIEW



Assembly	Image
Exterior	
Nozzle Assembly Connection Point (Only for rolling on flat surfaces - not intended for stairs)	
Air Outlet Layflat Connection Point	
Luggage Handle	
Rear/Fixed Carrying Handle	
Single Axle Wheels	
Exterior Rear	
Rear fixed handle	
Adjustable inlet gate	

EQUIPMENT OVERVIEW



Front	
Amber - Relay Lights	 A detailed diagram of the front panel of the equipment. The panel is cylindrical and features a central control area with several indicator lights and buttons. Labels with leader lines point to various components: 'COMPRESSOR AIR CONTROL' (top left), 'H1 & AIR CONTROL' (middle left), 'H2 CONTROL' (bottom left), 'EURO PANEL' (bottom left, pointing to two electrical outlets), 'H1' and 'H2' (bottom left, pointing to two ports), 'COMP AIR HEATER ON' (top center), 'PRESSURE OK' (middle top), 'H1 ON' (middle right), 'H2 ON' (bottom right), 'SPRAYER ON' (top right), and 'COMPRESSED AIR' (bottom right, pointing to a yellow port).
Green & Red - Component/Energized Lights	
15A Popper/Breaks	
Power Connections	
Main Power Indicator LED = 3 amps	
Main + H1 = 10 amps (A) H2=6.5A	

EQUIPMENT OVERVIEW

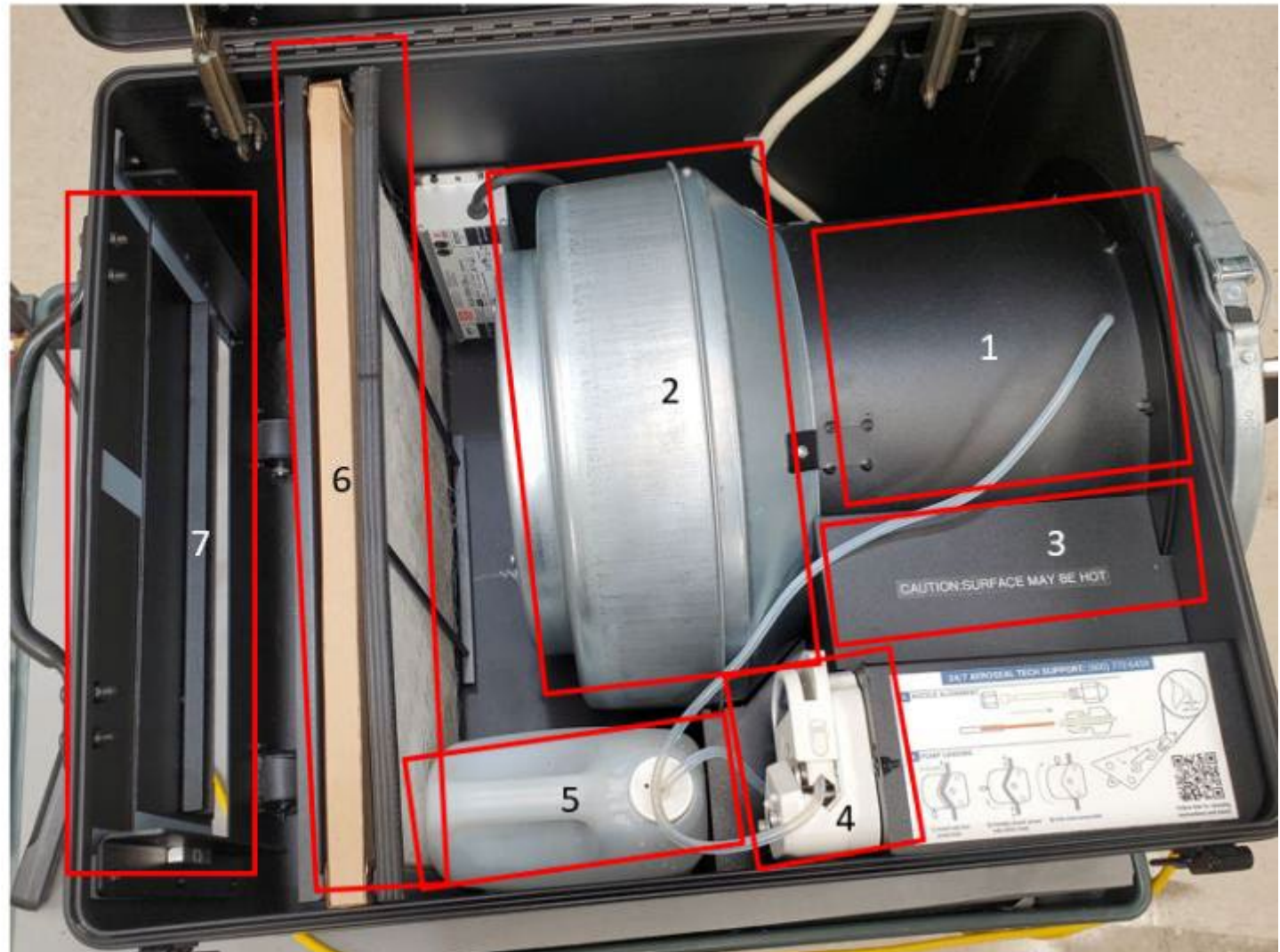


Interior	
Filter	
Fan	
Heater Cylinder Assembly	
Triangle Assembly with Nozzle	An exploded view diagram of the HSC 4.0 equipment interior. The diagram shows a black rectangular housing with its lid open. Inside the housing, a 14" x 20" filter is positioned. A fan is located at the bottom of the housing. A heater cylinder assembly is attached to the front of the housing. A triangle assembly with a nozzle is shown detached from the front of the heater cylinder assembly. Labels with leader lines identify the following components: HSC 4.0 LID ASSEMBLY, 14" X 20" FILTER, FAN, HEATER CYLINDER ASSEMBLY, and HSC 4.0 TRIANGLE ASSEMBLY W/ NOZZLE.

EQUIPMENT OVERVIEW



1. Heater Cylinder
2. Fan
3. Nozzle Heater
4. Pump Head
5. Flush/Water Jug
6. FanBox Filter (Merv1)
7. Inlet Gate



EQUIPMENT OVERVIEW



Lid	<p>The diagram shows a 3D cutaway of a rectangular lid. On the top surface, there are two Wi-Fi antennas, a humidity sensor, a temperature sensor, a GSM antenna, and a USB-B bulkhead. On the right side, there are three pressure ports: Outside Pressure Reference, Reference Pressure, and Duct Pressure. A negative fanbox pressure port is also shown. A Digiman manometer is connected to the negative fanbox pressure port. On the bottom edge, there is an internet status indicator, a power indicator, and a Wi-Fi-IOT-IO control board connection. The control board is located inside the lid.</p>
WiFi-IOT-IO control board	
WiFi-IOT-IO control board connection	
Main Power Indicator Lights (Blue)	
Internet Status (Green/Flashing when actively communicating)	
USB-B Bulkhead Laptop Cable Connector (Backup to wireless connections)	
WiFi Antenna (2)	
LTE/GMS Network Antenna	
Humidity Sensor	
Temperature Sensor	
Outside Pressure Reference	
Reference Pressure Port	
Duct Pressure Port (Blue Tube Connection)	
Negative Fanbox Pressure Port	
Manometer	

NOZZLE ASSEMBLY



Euroseal uses a standard air compressor to atomize the liquid with a high-pressure, high-velocity jet. This patented atomization nozzle uses no moving parts within the Aeroseal equipment and has high level of reliability as long as the appropriate air compressor is used. The nozzle uses an air gap to reduce heating of the liquid until after atomization, thereby reducing clogging. (See Figure 1)

When using this compressed-air atomizer, it is important to utilize an effective dryer system to treat the compressed air. The atomization Nozzle contains an in-line compressed-air heater that shorts out if water condenses in the line.

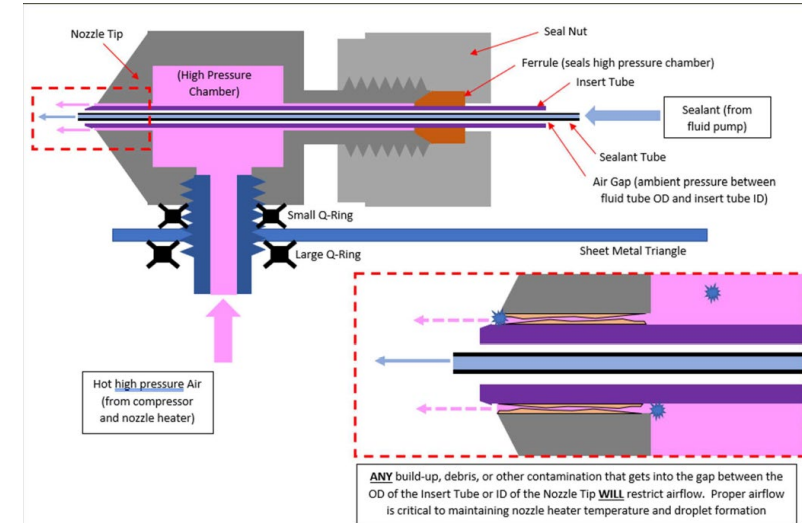
When this heater shorts, sealing rates decrease significantly, and liquid deposition will occur either in the duct system or in the layflat tubing.

For the dryer to be effective, it must be a system that is rated for continuous use. The provided 5-micron filter removes most moisture from the air line and needs to be installed at the machine.

If using a refrigerated dryer, **CONNECT THE AIR LINE FROM THE COMPRESSOR TO THE DRYER BEFORE TURNING ON THE DRYER** to avoid freezing of the air line in the dryer.



Figure 1: Nozzle



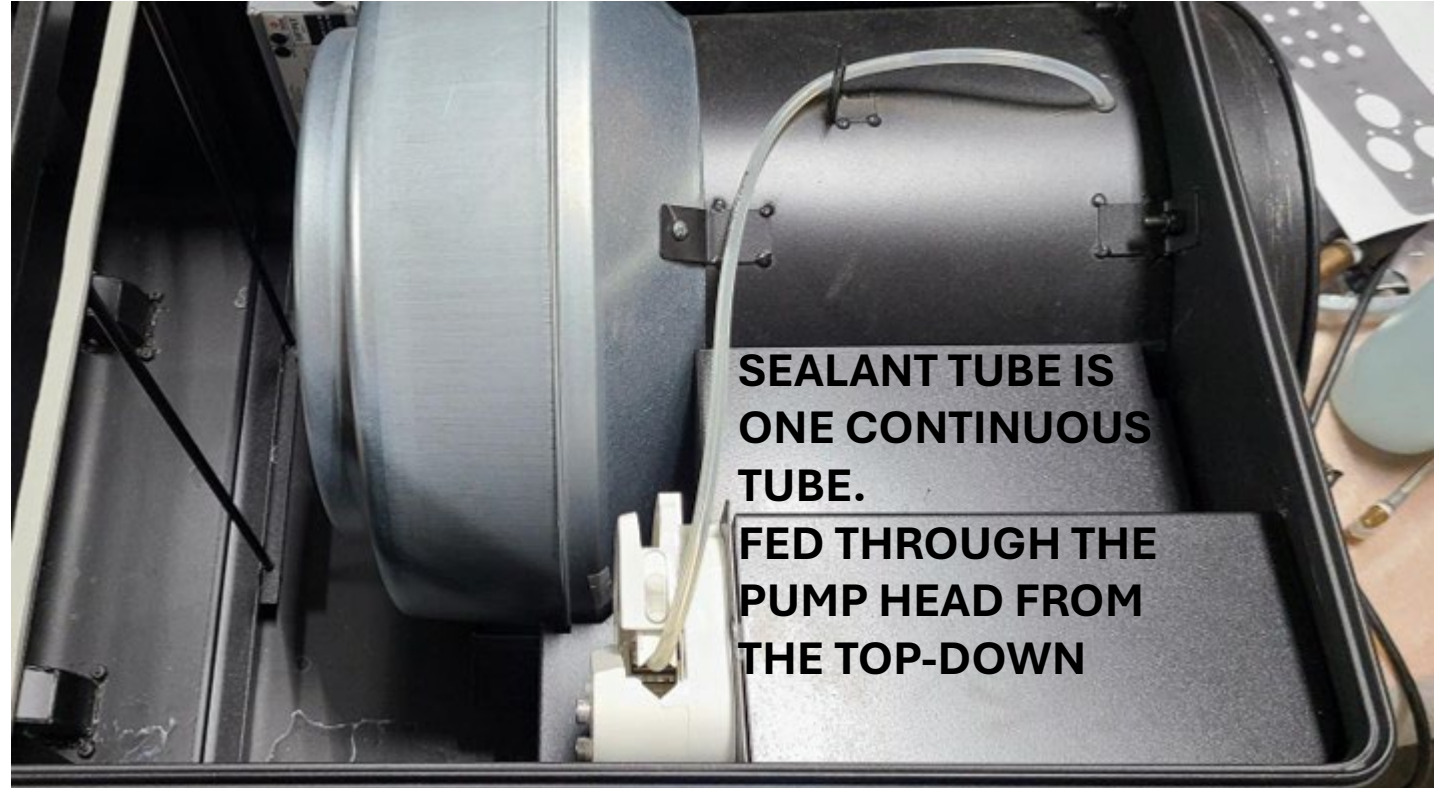
COMPRESSED AIR FITTINGS



NOZZLE ATTACHMENT



PUMP CONNECTION



SEALANT TUBE & PUMP CONNECTION

LAYFLAT ATTACHME

No twists in lay flat
between FanBox and
Flange Connections



MANOMETER – BLUE TUBE



CONNECTS FANBOX MANOMETER TO DUCT SYSTEM

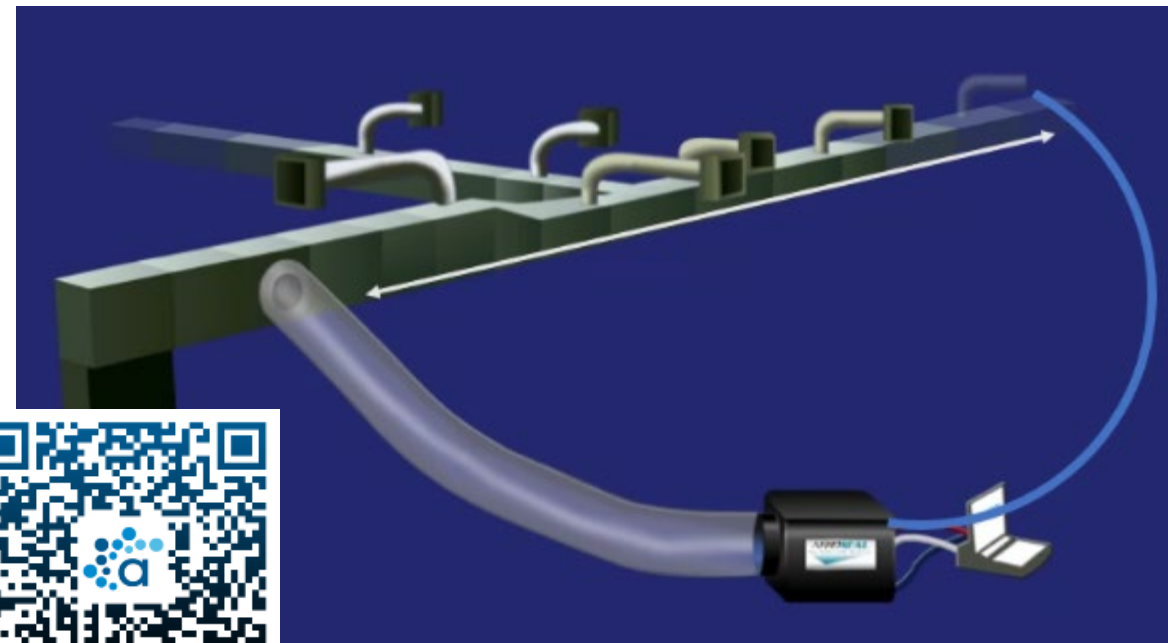
MEASURES AND MONITORS POSITIVE DUCT PRESSURE (PA)

CALCULATES / MONITORS LEAKAGE - THROUGHOUT TESTING AND SEALING

PLACED INTO THE DUCTS AT THE FURTHEST POINT - FROM THE INJECTION POINT POSSIBLE

ENSURE CLEAR PATH – NO KINKS/RESTRICTIONS/DAMAGE TO THE TUBING

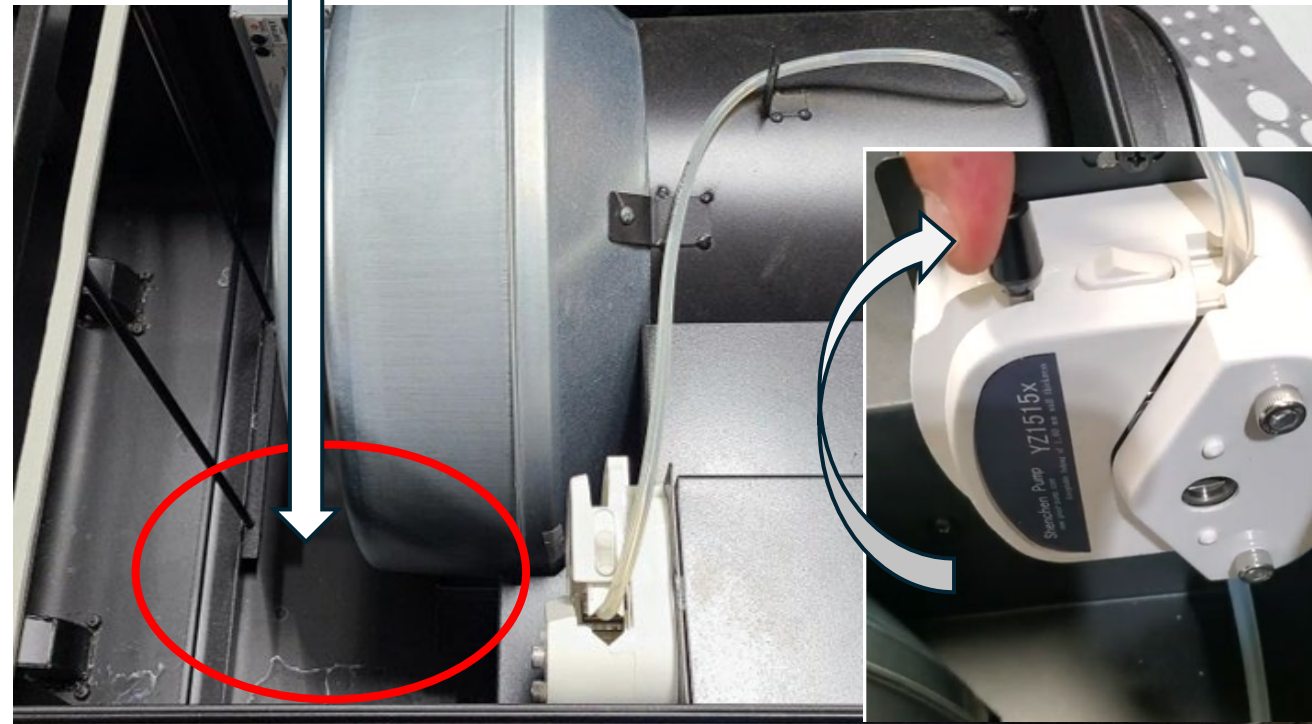
THERE IS NO LENGTH LIMIT ON MANOMETER TUBING



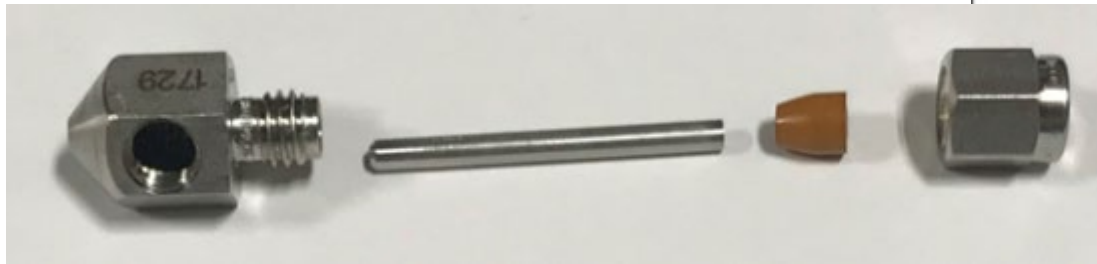
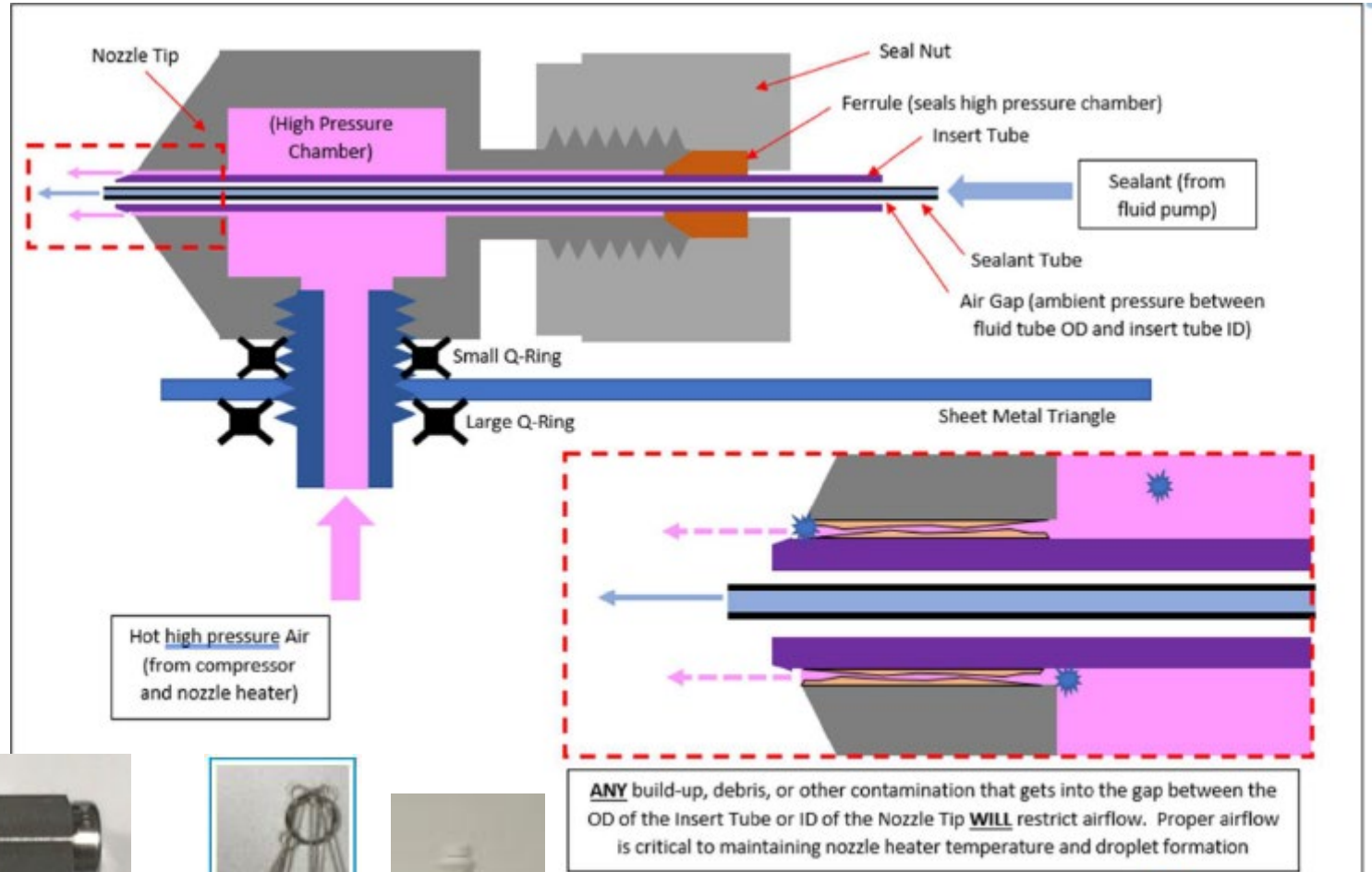
SEALANT INSTALLATION



1. SHAKE SEALANT BOTTLE
2. CHECK FOR COAGULATION
3. REPLACE CAP WITH THE PICK-UP TUBE
4. PLACE IN THE FANBOX IN THE SPACE SHOWN
5. CONNECT TO FANBOX SEALANT TUBE
6. CLOSE/ENGAGE PUMP HEAD



NOZZLE CLEANING INSTRUCTIONS



Section 7

SmartSeal Software



INITIAL SETUP



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Select Customer]

File View Just the Facts Maintenance Help

HOME SCREEN

Euro4.0 - Commercial License

Create New Customer Choose Existing Customer Help

MONTHLY UPLOAD REMINDER

Date of next upload required by license 3/2/2026

TOTAL CFM LEAKAGE SEALED (ODOMETER)

Lifetime CFM leakage recovered 49

WI-FI CONNECTION

•Connected to Fanbox via Wi-Fi•

STATUS Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

5°F Mostly sunny Search 11:20 AM 1/30/2026

To **UPLOAD** to Aeroseal, connect to an internet source

The screenshot shows the SmartSeal(4.4.6.14) interface for CaseID 6501 Commercial. The menu includes File, View, Just the Facts, Maintenance, and Help. A 'Time to Upload' dialog box is open, displaying the message: "This machine (6501) has not been uploaded for 87 days. You must upload to Aeroseal now to continue using the SmartSeal software." Below this message is an 'Upload to Aeroseal' button and a 'Cancel' button. A yellow note states: "NOTE: Internet connection is required for upload. You have earned an upload credit by doing a previous upload. You can claim this credit to unlock the software for the next six hours." Below the note is a 'Claim Upload Credit' button. Another 'Time to Upload' dialog box is partially visible behind it. In the background, the 'Maintenance' tab is active, showing a 'Create New Customer' button and a 'Date of next upload required by license' set to 3/2/2026. Below that, 'Lifetime CFM leakage recovered' is shown as 49. At the bottom of the software window, a status bar indicates 'Connected to Fanbox via Wi-Fi'. The Windows taskbar at the bottom shows the system tray with weather (5°F, Mostly sunny), search, and system icons (time: 11:23 AM, 1/30/2026).

Maintenance Help
Upload to Aeroseal

YOU CAN ALSO UPLOAD ANYTIME FROM THE MAINT TAB

The screenshot shows the Windows network and system settings panel. It includes options for 'No internet', 'Not connected', and 'Airplane mode'. Below these are 'Rotation lock', 'Energy saver', and 'Accessibility'. At the bottom, there are sliders for brightness and volume, and a battery indicator showing 100%.

ENTER YOUR CONTRACTOR INFO FROM THE MAINT TAB



SmartSeal(4.4.5.11) CaseID 7023 Commercial And Residential - [Select Customer]

**MAINTENANCE
TAB**

CONFIGURATION

CONTRACTOR INFORMATION

- Maintenance
- Help
- Upload to Aeroseal
- View Hardware
- System Flush
- Registry
- Language
- Units of Measurement
- Configuration
 - Configure Hardware
 - Contractor Info**
 - Change License
 - Change Hardware
 - Change Case ID
 - Low



Create New Cl

Date of r
Lif

Menu Cust

Contractor Information

Billing Contractor Name	<input type="text"/>
*Certificate Contractor Name	Aeroseal Commercial Duct
Logo File	<input type="text"/> Browse
	Best Size - 1800 x 400 pixels
*Address 1	225 Byers Rd
Address 2	<input type="text"/>
*City	Miamisburg
State/Prov/Terr	OH
*Postal Code	45342
Country	USA
Phone	877-349-3828
Fax	<input type="text"/>

Edit Billing Name Save Changes Help Cancel

**UPLOAD YOUR LOGO TO A
LOCAL FILE TO APPEAR ON
SEAL CERTIFICATES
(JPG/PNG FILES)**

Next [F9] >

CONNECT LAPTOP TO FANBOX WIFI ROUTER



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Select Customer]

File View Just the Facts Maintenance Help

Euro4.0 - Commercial License

Create New Customer Choose Existing Customer Help

Date of next upload required by license 3/2/2026

Lifetime CFM leakage recovered 49

Connected to Fanbox via Wi-Fi

Menu Customer System/Sealing Preseal Seal Postseal Certificate

5°F Mostly sunny Search 11:20 AM 1/30/2026

Wi-Fi settings panel showing:

- Wi-Fi (toggle on)
- AerosealGuest (Connected, secured) [Disconnect]
- aeroseal6501** (highlighted)
- AERO4IOT
- AERO4OFFICEB
- More Wi-Fi settings

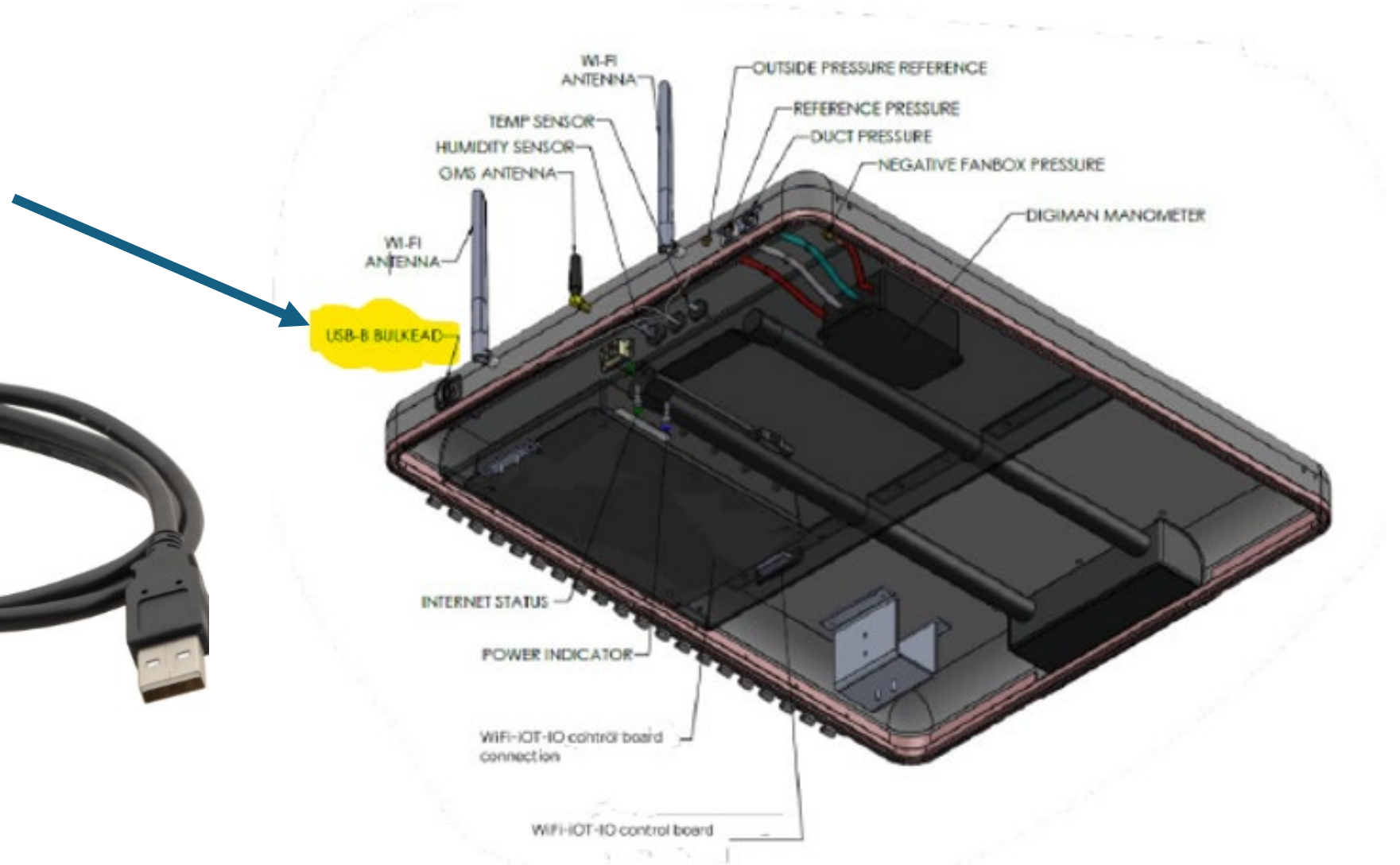
FANBOX - WI-FI CONNECTIONS STATUS



- If you go out of range,
 - Clang sound (~20s)
 - Note: If back in range within 10s after clang sound, you can resume regular operation in the seal screen without interruption
 - Boat Horn sound(~30s)
 - Fan Box goes into safe mode
 - In safe mode, only the fan will be “on”. Pump and compressed Air will be turned “Off”. Operator will have to press “Start” button to resume operation.
- When back in Range,
 - a “Connection Tone” will sound.



HARD-WIRED USB CONNECTION (optional)



CREATE NEW CUSTOMER / PROJECT



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Select Customer]

File View Just the Facts Maintenance Help



Euro4.0 - Commercial License

Create New Customer

Choose Existing Customer

Help

Date of next upload required by license 3/2/2026

Lifetime CFM leakage recovered 49

•Connected to Fanbox via Wi-Fi•

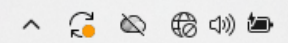
Menu Customer System/Sealing Preseal Seal Postseal Certificate

Next [F9] >

4 5°F
Mostly sunny



Q Search



11:24 AM
1/30/2026



ALL (*) FIELDS ARE REQUIRED-select Project Type

SmartSeal(4.4.6.14) CaselD 6501 Commercial - [Commercial Project]

File View Just the Facts Maintenance Help

Project Name	Date Created
Final Test	11/25/2024 9:45:28 AM

*Project Name Building B Corporate Office

Customer Name Aeroseal llc

Project Description Duct System Seal

*Address 1 225 Byers rd

Address 2

*City Miamisburg

*State/Prov/Terr OH

*Postal Code 45342 Country USA

Project Type Plan Spec

Specifying Engineer Mike Lembel Architect Kent Summers

General Contractor Ohio's Contrating Corporation

Building Type Commercial Building

Phone Number 877-349-3828

SMACNA
 EN 12237 / EN 1507 / EN 16798-3
 DW 144

Edit Customer Save Customer Cancel Changes Help

Fields marked with * are required fields.

Add New Project

EXAMPLE: EN12237



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Existing Project]

File View Just the Facts Maintenance Help

Building B Corporate Office

System

Add System

*Description of System *Technician name

Main equipment model *Operating Pressure *Units

*A/C tonnage Type of HVAC unit

*Fan capacity (CFM)

Edit System Save System Cancel System Changes Help

Sealing Event

Add Sealing Event

*Description of sealing event

*Supply/Return Edit CFM

*Maximum duct pressure

Status

Supply air system

*Operating Pressure

Edit Event Save Event Cancel Sealing Changes Help

EN12237

Duct Class

*Surface Area (ft²)

*Air Tightness Class

Allowable Leakage (CFM) 0.0

Note: Allowable leakage will calculate on save

Connected to Fanbox via Wi-Fi

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

5°F Mostly sunny Search 11:32 AM 1/30/2026

ADD SYSTEM AND SEAL EVENT DATA



SmartSeal(4.4.6.14) CaselD 6501 Commercial - [Existing Project]

File View Just the Facts Maintenance Help

Building B Corporate Office

System

Roof Top Unit

Add System

*Description of System: Roof Top Unit *Technician name: Rafael Perez

Main equipment model: Trane *Operating Pressure: 875 *Units: Pa

*A/C tonnage: 40 Type of HVAC unit: Air Handler

*Fan capacity (CFM): 16000

Edit System Save System Cancel System Changes Help

Sealing Event

Add Sealing Event

*Description of sealing event: Mechanical Room 2

*Supply/Return: Supply 16000 Edit CFM

*Maximum duct pressure: 1000 Pa (Concrete/Masonry, Metal with flanged and gasketed connections)

Status: Ready for Preseal Test

Supply air system: Constant volume supply

*Operating Pressure: 875 Pa

Edit Event Save Event Cancel Sealing Changes Help

EN12237

Duct Class: Med Pressure

*Surface Area (ft²): 20000

*Air Tightness Class: ATC1

Allowable Leakage (CFM): 106.2

Note: Allowable leakage will calculate on save

Connected to Fanbox via Wi-Fi

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

5°F Mostly sunny Search 11:39 AM 1/30/2026

SEAL EVENT- SET MAXIMUM DUCT PRESSURE



SmartSeal(4.4.6.14) CaselD 6501 Commercial - [Existing Project]

File View Just the Facts Maintenance Help

Building B Corporate Office

System

- Roof Top Unit

Sealing Event

***Maximum duct pressure**

- 100 Pa
- 150 Pa
- 200 Pa
- 250 Pa
- 300 Pa
- 350 Pa
- 400 Pa (Building Cavity, Drywall, DuctBoard)
- 450 Pa
- 500 Pa
- 550 Pa
- 600 Pa (Metal Flexduct, Wood, Flex)
- 650 Pa
- 700 Pa
- 750 Pa (Metal, Metal joined with slip and drive connections)
- 800 Pa
- 850 Pa
- 900 Pa
- 950 Pa
- 1000 Pa (Concrete/Masonry, Metal with flanged and gasketed connections)**

*Description of sealing event

*Supply/Return

Status Ready for Preseal Test

Supply air system Constant volume supply

*Operating Pressure 875 Pa

EN12237

Duct Class Med Pressure

*Surface Area (ft²) 20000

*Air Tightness Class ATC1

Allowable Leakage (CFM) 106.2

Note: Allowable leakage will calculate on save

Connected to Fanbox via Wi-Fi

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

5°F Mostly sunny 11:39 AM 1/30/2026

SELECT SEAL EVENT TO EXECUTE



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Existing Project]

File View Just the Facts Maintenance Help

Building B Corporate Office

System

Roof Top Unit

Add System

*Description of System Roof Top Unit *Technician name Rafael Perez

Main equipment model Trane *Operating Pressure 875 *Units Pa

*A/C tonnage 40 Type of HVAC unit Air Handler

*Fan capacity (CFM)

Edit System

Verify selected sealing event

You have selected the following:

- Customer: Building B Corporate Office
- System: Roof Top Unit
- Sealing Event: Mechanical Room 2

Continue?

Yes No

Sealing Event

Mechanical Room 2 Preseal

Add Seal

*Description of sealing event Mechanical Room 2

*Supply/Return Supply

*Maximum duct pressure 1000 Pa

Status Ready to

Supply air system Constant volume supply

*Operating Pressure 875 Pa

Edit Event Save Event Cancel Sealing Changes Help

EN12237

Duct Class Med Pressure

*Surface Area (ft²) 20000

*Air Tightness Class ATC1

Allowable Leakage (CFM) 106.2

Note: Allowable leakage will calculate on save

Connected to Fanbox via Wi-Fi

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

5°F Mostly sunny 11:41 AM 1/30/2026

PRESEAL LEAK TEST – SELECT # OF FANS AND TARGET PRESSURE



SmartSeal(4.4.6.14) CaselD 6501 Commercial

File View Just the Facts Maintenance Help

Preseal Leakage Test Building B Corporate Office

System Roof Top Unit

Sealing Event Mechanical Room 2

Please select an inlet gate setting, then press [F2] or click START to begin the preseal test.
Time: 0:00

Test Results

Operating Pressure	Leakage (CFM)	Equivalent Hole Size (Square Inches)
Pre-Sealing		

Fanbox

Inlet Gate

Fan Boxes 1

Fanbox Pressure (Pa)

Take manual control of the fanbox

Duct Pressure (Pa)

Fan Flow (CFM)

Target Pressure

Enter a new target pressure between 5 and 750, and then press [Continue].

7

8

9

4

5

6

1

2

3

0

.

✕

SEE: MULTI-FAN OPERATION IN APPENDIX SECTION OF THIS MANUAL

•Connected to Fanbox via Wi-Fi•

< Previous [F8]Menu Customer System/Sealing **Preseal** Seal Postseal CertificateNext [F9] >

5°F Mostly sunny Search 11:41 AM 1/30/2026

TEST RESULTS



SmartSeal(4.4.6.14) CaseID 6501 Commercial

File View Just the Facts Maintenance Help

Preseal Leakage Test

Building B Corporate Office

System

Sealing Event

If you want to rerun the test, please select an inlet gate setting then press [F2] or click START to rerun the preseal test.
Time: 0:00

Test Results		
Operating Pressure	Leakage (CFM)	Equivalent Hole Size (Square Inches)
Pre-Sealing	539.1	10.1

Print preseal leakage test results

Start [F2] Help

Fanbox

Inlet Gate

Fan Boxes

Fanbox Pressure (Pa)

Take manual control of the test

	Current	Target
Duct Pressure (Pa)	<input type="text" value="0.0"/>	<input type="text" value="438"/>
Fan Flow (CFM)	<input type="text" value="----"/>	

Connected to Fanbox via Wi-Fi

< Previous [F8] Menu Customer System/Sealing **Preseal** Seal Postseal Certificate Next [F9] >

4 5°F Mostly sunny Search 11:56 AM 1/30/2026

SEAL SCREEN



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Smart Seal]

File View Just the Facts Maintenance Help

Building B Corporate Office System Roof Top Unit Sealing Event Mechanical Room 2

Sealing Process

0:00:00
The system is idle.
You must select the inlet gate value that matches the gate setting on the fan box in order to continue.

A TEST WILL BE PERFORMED TO CHECK FOR POSSIBLE SPRAYER OVERHEATING (SPRAYER HEATER WILL TURN ON AND OFF DURING TEST)

Sealing Elapsed 0:00:00

Sealant/Water Pump
Fluid Left --:-- Hr:Min
Fluid Level
Pump Setting OFF CC/M -
Best Setting - V -

Emergency Stop [Esc]

- Duct Leakage (Square Inches) 73 Inlet Temp (°F)
The Duct Leakage (CFM @ 875Pa) 13 Inlet Humidity (%)
fan Duct Leakage (%Sys CFM) 84 Wand Temp (°F)
is Duct Flow (Fan CFM) 73 Cylinder Temp (°F)
off Duct Pressure (Pa)
- Fanbox Pressure (Pa)

Heaters
0.00 V
SPRAYER
HEATER 1
HEATER 2

Fan
Inlet Gate Help
Number of Fans 1
Fan Speed 0%
Auto Control Slower Faster

2000l *Surface Area (ft²)
1 ATC
106.2 Allowable Leakage (CFM)

Connected to Fanbox via Wi-Fi

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

SELECT SEALANT LEVEL TO START



SmartSeal(4.4.6.14) CaselD 6501 Commercial - [Smart Seal]

File View Just the Facts Maintenance Help

Building B Corporate Office System Roof Top Unit Sealing Event Mechanical Room 2

Sealing Process

0:00:00
The system is idle.
Click [Start] or press [F2] to start sealing.
Click [Next] or press [F9] to go to the postseal test screen.

A TEST WILL BE PERFORMED TO CHECK FOR POSSIBLE OVERHEATING (HEATER WILL TURN ON AND OFF DURING TEST)

Sealing Elapsed 0:00:00

Sealant/Water Pump
Fluid Left [] Hr:Min []
Fluid Level []

Pump Setting OFF CC/M []
Best Setting [] V []

Emergency Stop [Esc]

2000l *Surface Area (ft²)
1 ATC
106.2 Allowable Leakage (CFM)

Connected to Fanbox via Wi-Fi

< Previous [F8] Menu Customer System/Sealing Preseal **Seal** Postseal Certificate Next [F9] >

4 5°F Mostly sunny 12:00 PM 1/30/2026

Liquid Level

- 100% - full Select the amount of SEALANT in the container then press [Continue].
- 75% The system estimates 0% of SEALANT in the container.
- 50%
- 25% You must fill the container and indicate how full it is to continue.
- unchanged

Continue

AS SEALING PROGRESSES, WATCH FOR ALARMS



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Smart Seal]

File View Just the Facts Maintenance Help

Building B Corporate Office System Roof Top Unit Sealing Event Mechanical Room 2

Sealing Process

0:02:33
The system is idle.
Click [Start] or press [F2] to start sealing.
Click [Next] or press [F9] to go to the postseal test screen.

SPRAYER PASSED OVERHEATING TEST

3.2 Duct Leakage (Square Inches)	78
168 Duct Leakage (CFM @ 875Pa)	18
1.1 Duct Leakage (%Sys CFM)	136
123 Duct Flow (Fan CFM)	95
536.2 Duct Pressure (Pa)	
-10.1 Fanbox Pressure (Pa)	

Warning!

Watch for backflow of sealant into the fan.
Flow readings may be inaccurate during low-sealing protocol.
Click [OK] to continue sealing.

OK

Sealing Elapsed 0:02:33

Sealant/Water Pump
Fluid Left 04:09 Hr:Min
Fluid Level

Pump Setting OFF CC/M -
Best Setting - V -

Emergency Stop [Esc]

sealing Help
Start [F2] Pause Stop [F3]

Fan
Inlet Gate 2 Number of Fans 1
Fan Speed 100%
Auto Control Slower Faster

2000l *Surface Area (ft²)
1 ATC
106.2 Allowable Leakage (CFM)

•Connected to Fanbox via Wi-Fi•

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

5°F Mostly sunny 12:05 PM 1/30/2026

ATTENTION TO DIALOG BOX FOR STATUS UPDATES



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Smart Seal]

File View Just the Facts Maintenance Help

Building B Corporate Office System Roof Top Unit Sealing Event Mechanical Room 2

Sealing Process

Sealing Time (min)	CFM Leakage (Red Line)	CFM Leakage (Green Line)
0	550	100
1	550	100
2	450	100
3	250	100
4	180	100
5	150	100
10	150	100
15	150	100
20	150	100
25	150	100
30	150	100

2.1 Duct Leakage (Square Inches)	76 Inlet Temp (°F)
114 Duct Leakage (CFM @ 875Pa)	13 Inlet Humidity (%)
0.7 Duct Leakage (%Sys CFM)	165 Wand Temp (°F)
88.1 Duct Flow (Fan CFM)	111 Cylinder Temp (°F)
587.2 Duct Pressure (Pa)	
-4.6 Fanbox Pressure (Pa)	

Heaters

1.96 V
SPRAYER
HEATER 1
HEATER 2

Sealing Elapsed 0:04:53

Sealant/Water Pump

Fluid Left	04:07 Hr:Min
Fluid Level	<div style="width: 100%;"></div>
Pump Setting	ON(00) CC/M 15.0
Best Setting	1 V 4.74

Emergency Stop [Esc]

0:04:53
The system is sealing.
Next graph plot in: 07

SPRAYER PASSED OVERHEATING TEST

CYCLING PUMP TO AVOID RAINING SEALANT

sealing Help

Start [F2] Pause Stop [F3]

Fan

Inlet Gate 2 Number of Fans 1

Fan Speed 100%

Auto Control Slower Faster

2000l *Surface Area (ft²)

1 ATC

106.2 Allowable Leakage (CFM)

Connected to Fanbox via Wi-Fi

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

5°F Mostly sunny 12:08 PM 1/30/2026

PRESSING STOP, WILL STOP SEALING PROCESS



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Smart Seal]

File View Just the Facts Maintenance Help

Building B Corporate Office System Roof Top Unit Sealing Event Mechanical Room 2

Sealing Process

0:07:27
The system is sealing.
Next graph plot in: 33

SPRAYER PASSED OVERHEATING TEST

Sealing Elapsed 0:07:27

2.0	Duct Leakage (Square Inches)	79.1	Duct Flow (Fan CFM)
109	Duct Leakage (CFM @ 875Pa)	14.1	Duct Pressure (Pa)
0.7	Duct Leakage (%Sys CFM)	174	Fanbox Pressure (Pa)
79.1	Duct Flow (Fan CFM)	126	
535.5	Duct Pressure (Pa)		
-38.2	Fanbox Pressure (Pa)		

Leaving Sealing

Do you mean to leave the sealing sequence? This will take you to the flushing sequence.
Press [Yes] to leave, [No] to continue.

Yes No Help

sealing [Help]

Start [F2] Pause Stop [F3]

Fan Inlet Gate 3 Number of Fans 1

Fan Speed 100% Auto Control Slower Faster

2000l *Surface Area (ft²)

1 ATC

106.2 Allowable Leakage (CFM)

Sealant/Water Pump Fluid Left 04:04 Hr:Min Fluid Level Pump Setting ON CC/M Best Setting 1 V

Emergency Stop [Esc]

Connected to Fanbox via Wi-Fi

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

5°F Mostly sunny 12:10 PM 1/30/2026

SEE: LOW-SEAL PROTOCOL IN THE APPENDIX SECTION OF THIS MANUAL

FLUSH SEQUENCE – REPLACE SEALANT FOR WATER JUG



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Smart Seal]

File View Just the Facts Maintenance Help

Building B Corporate Office System Roof Top Unit Sealing Event Mechanical Room 2

Sealing Process

0:07:40
The system is idle.
Click [Start] or press [F2] to start flushing.
Click [Next] or press [F9] to go to the postseal test screen.

SPRAYER PASSED OVERHEATING TEST

Sealing Elapsed 0:07:40

Sealant/Water Pump
Fluid Left 04:04 Hr:Min
Fluid Level

Pump Setting OFF CC/M -
Best Setting - V -

Emergency Stop [Esc]

2.1 Duct Leakage (Square Inches) 80
112 Duct Leakage (CFM @ 875Pa) 13
0.7 Duct Leakage (%Sys CFM) 62
81.1 Duct Flow (Fan CFM) 26
531.5 Duct Pressure (Pa)
-41.0 Fanbox Pressure (Pa)

Flush
Remove the container of sealant and replace it with water, select the number of minutes you want to flush the system, and then press [Continue].

3
2
3
4
5
6
7

Fan
Inlet Gate 3 Number of Fans 1
Fan Speed 100%
Auto Control Slower Faster

1 ATC
106.2 Allowable Leakage (CFM)

flushing Help
Start [F2] Pause Stop [F3]

Connected to Fanbox via Wi-Fi

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

5°F Mostly sunny 12:11 PM 1/30/2026

COOLDOWN SEQUENCE



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Smart Seal]

File View Just the Facts Maintenance Help

Building B Corporate Office System Roof Top Unit Sealing Event Mechanical Room 2

Sealing Process

9.3 Duct Leakage (Square Inches)	81 Inlet Temp (°F)	Heaters
496 Duct Leakage (CFM @ 875Pa)	12 Inlet Humidity (%)	1.15 V
3.1 Duct Leakage (%Sys CFM)	176 Wand Temp (°F)	SPRAYER
86.1 Duct Flow (Fan CFM)	114 Cylinder Temp (°F)	HEATER 1
59.2 Duct Pressure (Pa)		HEATER 2
-44.2 Fanbox Pressure (Pa)		

Sealing Elapsed 0:09:41

Sealant/Water Pump

Fluid Left	04:04	Hr:Min
Fluid Level	<div style="width: 100%; height: 10px; background-color: green;"></div>	
Pump Setting	OFF	CC/M -
Best Setting	-	V -

Emergency Stop [Esc]

•Connected to Fanbox via Wi-Fi•

< Previous [F8] Menu Customer System/Sealing Preseal **Seal** Postseal Certificate Next [F9] >

5°F Mostly sunny 12:13 PM 1/30/2026

0:09:41
 The system is cooling down. (57)
 =====
 Unplug the lower power cable.
 =====
 SPRAYER PASSED OVERHEATING TEST

POST-SEAL LEAKAGE TEST



SmartSeal(4.4.6.14) CaseID 6501 Commercial

File View Just the Facts Maintenance Help

Postseal Leakage Test

Building B Corporate Office

System: Roof Top Unit
Sealing Event: Mechanical Room 2

Use the slider to adjust the duct pressure or click [Target] and enter a different target pressure.

Target Pressure

Enter a new target pressure between 5 and 2000, and then press [Continue].

Operating Pressure	Leakage (CFM)	Equivalent Hole (Square Inches)
Pre-Sealing	539.1	10.1

Stop [F3] Help

100.0%

	Current	Target
Duct Pressure (Pa)	447	362
Fan Flow (CFM)	64	

•Connected to Fanbox via Wi-Fi•

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

5°F Mostly sunny 12:20 PM 1/30/2026

TEST RESULTS



SmartSeal(4.4.6.14) CaseID 6501 Commercial

File View Just the Facts Maintenance Help

Postseal Leakage Test

Building B Corporate Office

System: Roof Top Unit
Sealing Event: Mechanical Room 2
Time: 6:38

Operating Pressure	Leakage (CFM)	Equivalent Hole Size (Square Inches)
Pre-Sealing	539.1	10.1
Post-Sealing	100.4	1.9
Improvement	438.7	8.2

Fanbox Inlet Gate: 4
Fan Boxes: 1 (locked)
Fanbox Pressure (Pa): -20
(Fanbox pressure must be below -0.5 Pa to calculate leakage.)
Take manual control of the test

	Current	Target
Duct Pressure (Pa)	54	447
Fan Flow (CFM)	21	

Start [F2] Help

< Previous [F8] Menu Customer System/Sealing Preseal Seal Postseal Certificate Next [F9] >

•Connected to Fanbox via Wi-Fi•

PROCEED TO SEAL CERTIFICATE RENDERING SCREEN



SmartSeal(4.4.6.14) CaseID 6501 Commercial - [Sealing Is Complete]

File View Just the Facts Maintenance Help

Building B Corporate Office

Certificate

Run additional seals for current customer


New/Existing customer

Help

options

Certificate Options

Format



Print certificate in: English

Include pre-seal test results

Ink saver

Certificate Cancel

Connected to Fanbox via Wi-Fi

< Previous [F8]

Menu Customer System/Sealing Preseal Seal Postseal Certificate

VIEW/PRINT SCREEN – PRINT TO PDF AND SAVE CERTIFICATE



Certificate of Completion (Press F12 to print)

Printing

Save Print Output As

Documents

Search Documents

Organize New folder

Home Gallery OneDrive Desktop Downloads

Name Date modified Type

Final Test 6501-IHSC-1393 11/25/2024 1:02 PM Microsoft Edge

File name: Save as type: PDF Document (*.pdf)

Save Cancel

DUCT SEALING REPORT

01
Roof Top Unit
Mechanical Room 2

Print/Save Certificate

Close

Help

Overall Sealing Results:

BEFORE SERVICE	AFTER SERVICE
539.1 CFM of Leakage, equivalent to 10.4 Square Inch Holes	Less than 100.4 CFM of Leakage, equivalent to a

Aeroseal Sealing Progress:

600

Graph showing sealing progress with a red line indicating a sharp drop in leakage.

5°F Mostly sunny

Search

12:24 PM 1/30/2026

Section 8

Practical Application and Troubleshooting

Most common

- Vertical Ventilation Shafts
- RTU
- AHU

Special Application Notes

- Common Issues and Solutions
- Best Practices for Optimal Sealing
- Special Protections
- Sealant Capabilities

Common Issues and Solutions



Common Issues and Solutions

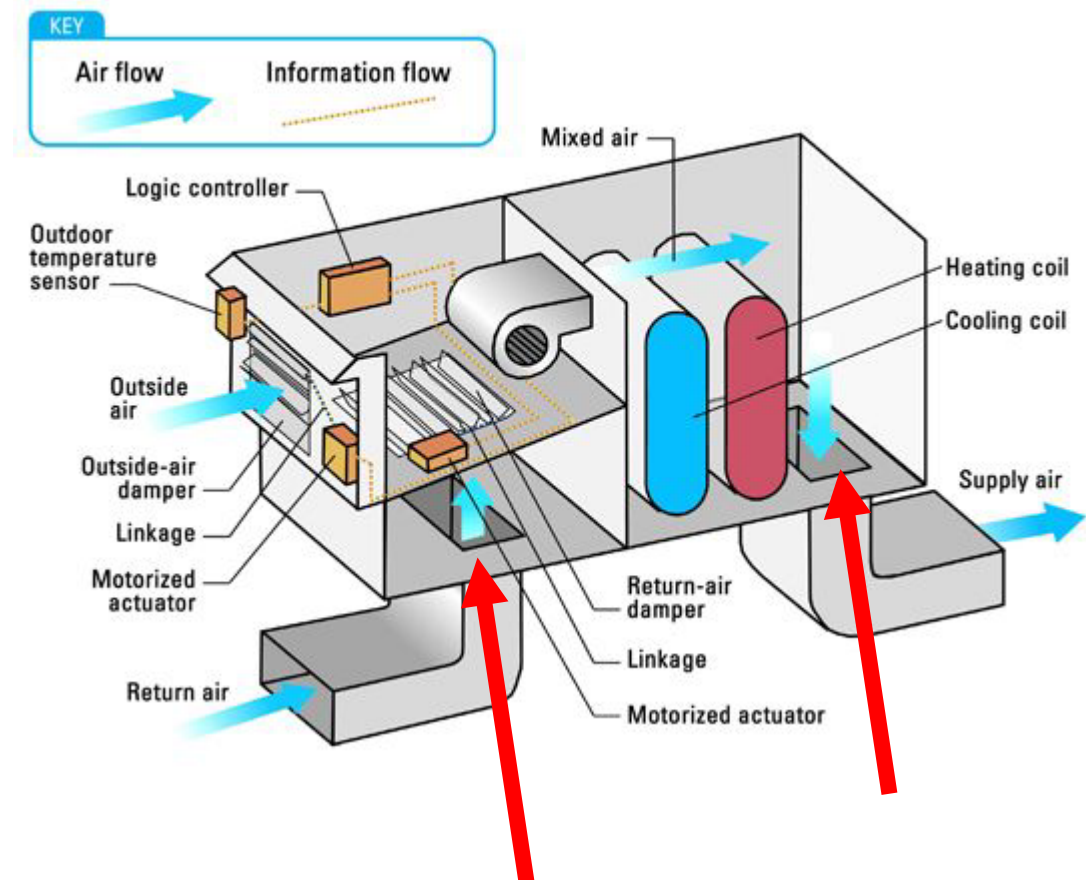
Technicians may encounter various challenges, such as sealant leakage (overspray) or equipment malfunctions. The manual outlines effective troubleshooting steps for each potential issue.



Most Common RTU



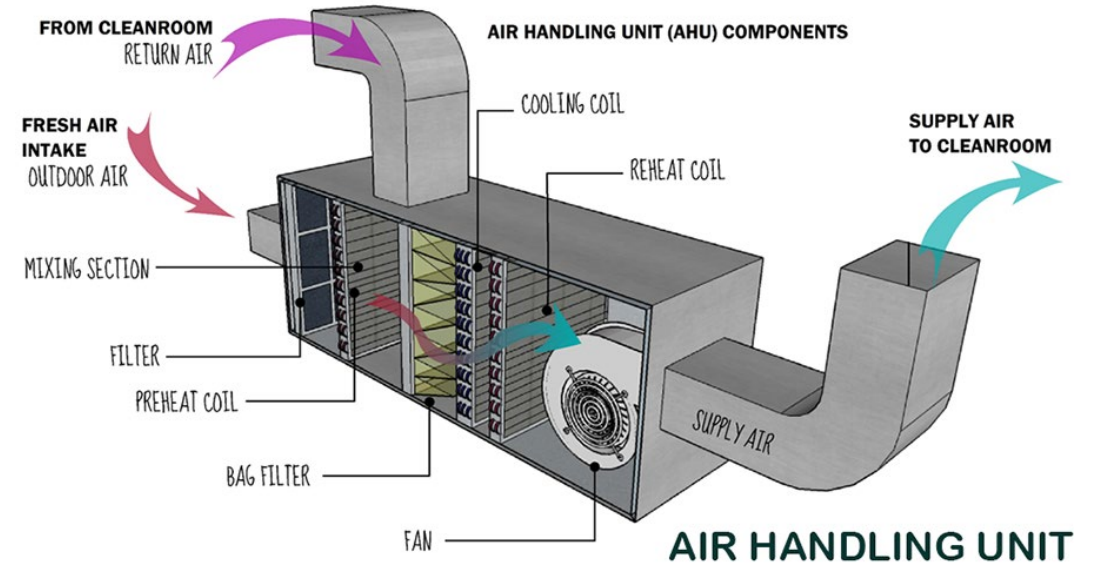
- If accessible place large block on rooftop just below the fan
- Locate supply ductwork below for equipment hook up
- If not accessible on the rooftop locate supply ductwork below for equipment hook up and large block



Most Common AHU



- Locate supply ductwork for large block and equipment hook up



Best Practices for Optimal Sealing



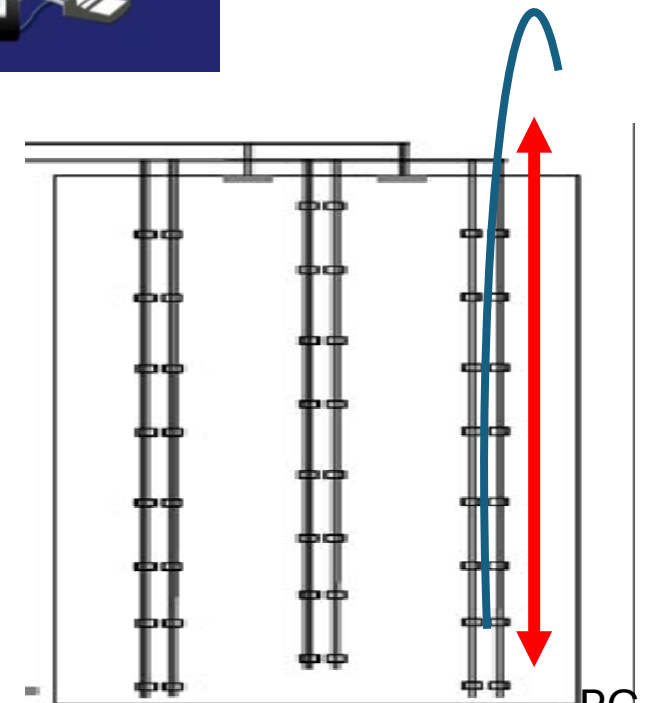
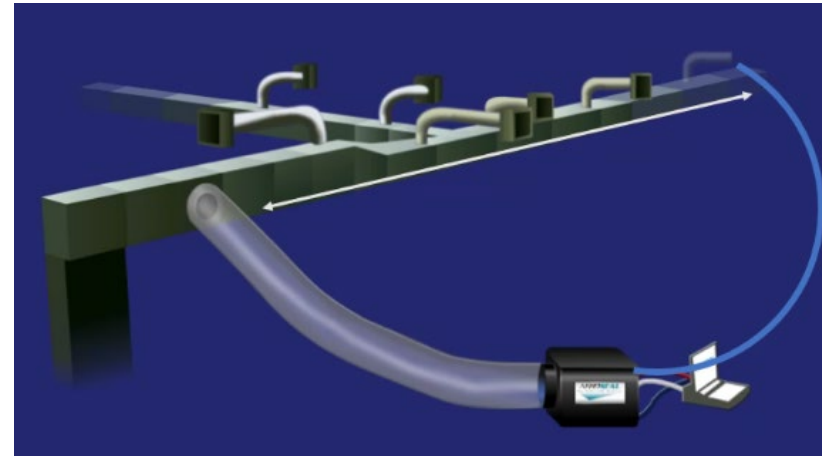
1. **Thorough preparation before the sealing process.**
2. **Continuous monitoring during sealing to address any issues promptly.** Overspray mitigation steps
3. **A final post-sealing inspection to ensure complete and effective duct sealing.**



BLUE TUBE PLACEMENT



- **IN ORDER TO ACCURATELY MEASURE DUCT PRESSURE AND CORRESPONDING LEAKAGE, PLACE THE END OF THE BLUE TUBE AS FAR AS POSSIBLE FROM THE INJECTION POINT(S)**
- ❖ **IF AN EXTERNAL PATHWAY DOES NOT EXIST (IE: VERTICAL VENT SHAFTS) – RUN THE BLUE TUBE THROUGH THE INJECTION POINT AND DROP TUBING DOWN INTO THE LOWEST POINT IN THE DUCT AS POSSIBLE**
- ❖ **THERE IS NO LENGTH LIMIT ON MANOMETER TUBING – YOU CAN ADD LENGTHS OF TUBING USING THE WHITE BARBED FITTINGS TO EXTEND REACH**

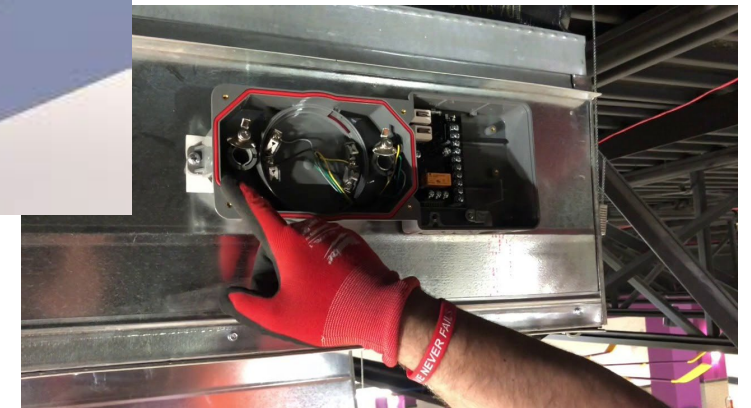
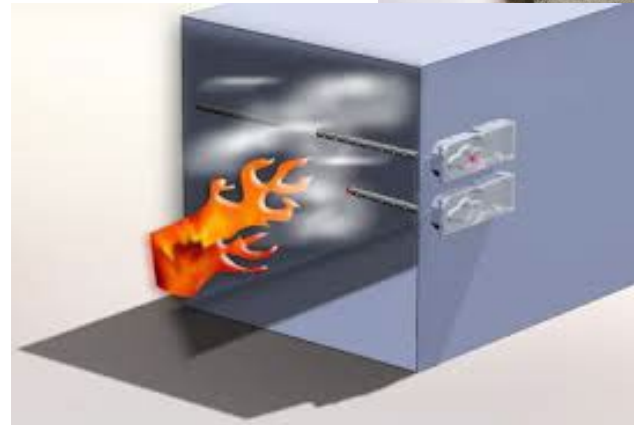


ISOLATION AND PROTECTION

VAV REHEAT COILS



DUCT SMOKE DETECTORS



ISOLATION AND PROTECTION

FIRE/SMOKE DAMPERS



AIRFLOW DAMPERS



Electrical Fire Damper



Electrical FD with Door



Manual Fire Damper



Manual Volume Damper



Electrical Volume Damper



Check Valve



Round Fire Damper



Round Volume Damper

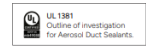


Round Volume Damper

LT-DUCT SEALANT

Acrylic-polymer

- Safe/Non-Toxic (very low VOC)
- Water Soluble in liquid state
- Store between 32F – 120F
- Mold & Mildew resistant
(has anti-microbial properties)
- Tested/Warranty for 10 years
- Conservative Precautions
When aerosolized
- SDS sheet can be accessed at www.aeroseal.com/sds



Aeroseal Duct Seal LT

Aeroseal Duct Seal is a stable, non-toxic, non-flammable emulsion of water-based acrylic polymer that is aerosolized into 4-10 micron-sized particles and distributed under pressure throughout the inside of the duct system. The particles deposit only at the leak sites and build to form a tenacious and tight air seal, remaining firmly in place for years while staying completely pliable and flexible. Seal remains effective over a wide range of operating pressures, temperatures and humidity levels found in residential, commercial and industrial air duct systems.

Preparation:
First, manually repair any leaks found during duct inspection >5/8" span, and remove accumulated dust/dirt build-up in ducts if >18". NOTE: Ducts can be cleaned after Aeroseal application.



Technical Data

Part number	AERO-006B
Packaging	4 x 1-gallon plastic bottles per case
Color	Milky white (wet); Clear (dry)
Base	Acrylic polymer
Dispersion	Water
Weight	8.2-8.8 lb. per gallon
Solids content	35%-40% max
Viscosity	>1 centistoke @ 68°F
Coverage	0.4 to 2 gal/hr seal rate
Flexibility	Remains flexible indefinitely
Time to test	Dry to the touch upon application Can test within 10 min. of application
Service temp.	Approximately -20°F to 480°F
Moisture resistance	Very good
Mildew resistance	Mold & mildew resistant
VOC	<0.35%
Pressure	SMACNA: Up to 10 inches w.g.
Seal Class	Meets SMACNA Seal Class A
Storage	
Temperature	32° to 120°F; DO NOT FREEZE
Shelf Life	24 months (2 years)
Flammability	Non-flammable

Application

Temperature	>40°F
Method	Aeroseal SmartSeal or HomeSeal machines only
Rate	Internal coverage at all joints, seams and penetrations: 0.4 to 2 gal/hr seal rate (Liquid) Mid sump and hot water (Dried) Citrus-based cleaner or Buckeye Workout
Clean Up	

Packed 4 one-gallon bottles per case.

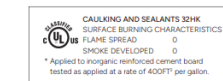
Specification/Standards Compliance

PROPERTY	TEST METHOD	RESULTS
Mold Growth	UL1381	No evidence of growth
VOC	CDPH 1.2 (2017)	Pass (≤ 0.5 mg/m ³)
Accelerated Aging	ASTM E2342-10	Pass
Leakage Reduction	ASTM E2342-10	Pass
Erosion	UL1381	Pass
Burning	UL1381	Pass
Durability	UL1381	Pass

Precautions:

Use only in well-ventilated areas. Installers should wear dust or fume respirator if inhalation exposure is possible. Fume respirator should have organic vapor-type breathing cartridge if full, prolonged exposure to aerosol is necessary.

Keep out of reach of children. Refer to full SDS sheet for health hazard information. (aeroseal.com/sds) For use and application by trained Aeroseal professional installers only.

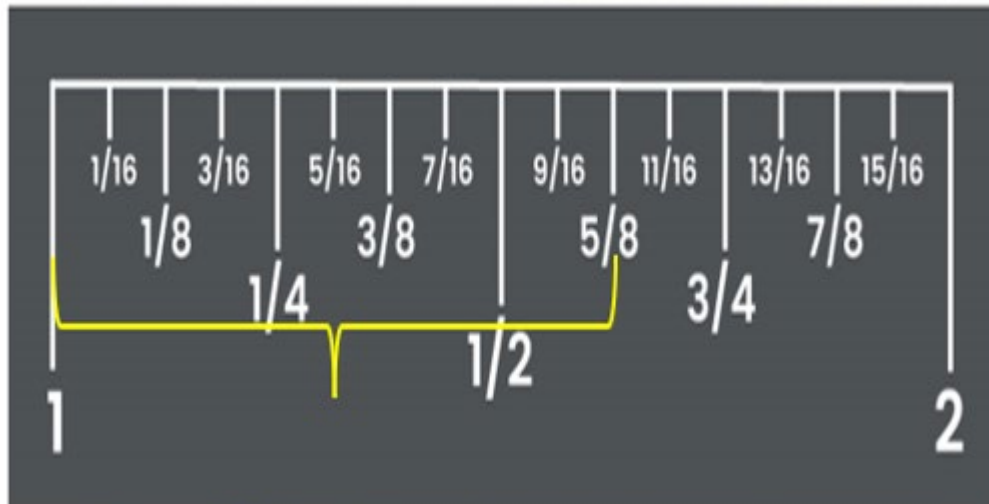


DSLTL- Has undergone UV testing and passed ASTM standard

AIRBORNE SEALANT CAPABILITIES

SEALS GAPS UP TO 5/8" IN SIZE

THE AVERAGE PARTICLE SIZE IS 4-10 MICRONS



VERTICAL EXHAUST/VENTILATION SHAFTS



Optimal Injection:

Seal from the Top down – Utilize Gravity to assist in the flow of sealant.



Section 9

Certification and Compliance

- Industry Standards and Compliance
- Certification Process for Technicians



Industry Standards and Compliance



The Aeroseal process must adhere to all local, state, and federal regulations. Technicians should remain informed of the latest industry standards.



Certification Process for Technicians



Technicians must undergo certification, which includes completing Aeroseal training courses, passing evaluations, and maintaining ongoing education to stay updated with new techniques and regulations.



2026

| APPENDIX

APPENDIX



Tech Support: *support-europe@aeroseal.com*
(800)-772-6459



Step-by-Step LOTO Procedure



1. Preparation:

- Identify all energy sources that power the AHUs and RTUs.
- Gather all necessary LOTO devices (locks, tags, etc.).

2. Shut Down Equipment:

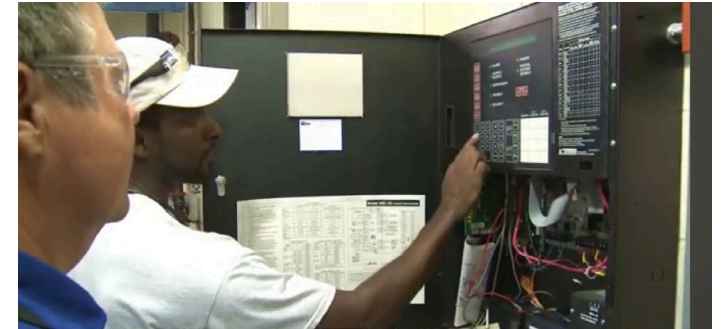
- Power off the AHUs and RTUs as described above.

3. Isolate Energy Sources:

- Locate and disconnect all energy sources, including electrical breakers and control panels.

4. Apply Lockout Devices:

- Attach a lockout device to each energy isolation point. Ensure the lock is secure and cannot be removed without a key.



Lockout/Tagout (LOTO) Procedure



5. Tagout:

- Attach a tag to each lockout device indicating the technician's name, the date, and the reason for the lockout. The tag should clearly state that the equipment is not to be operated.

6. Verify Isolation:

- Attempt to restart the equipment using the normal controls to ensure that all energy sources have been effectively isolated. The equipment should not operate if properly locked out.

7. Completion of Work:

- After the sealing process is completed, remove all lockout devices and tags, restore the energy sources, and restart the AHUs and RTUs according to the manufacturer's instructions.



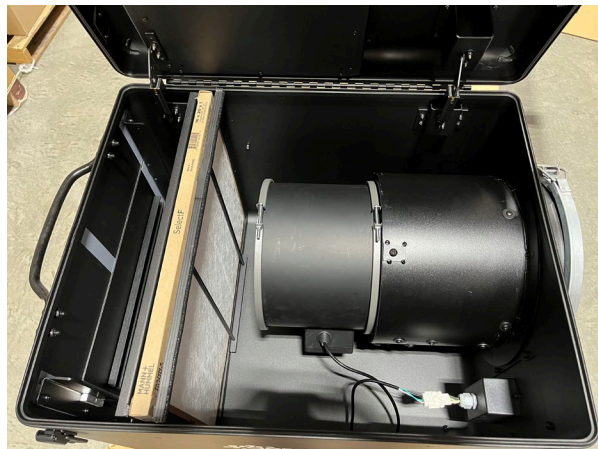
USE OF BOOSTER FANS



Additional fan or fans may be required when sealing large shafts or duct sections. Remember the 10pa minimum.

Larger shafts and duct sections require higher pressures. Adding additional fans will help you reach that goal.

Connecting the **Euro-Booster fanbox** using the WYE



LOW SEAL PROTOCOL



Low level leakage protocols are designed to prevent sealant back flow into your machine, which may cause sealant to coat the internal components of your equipment.

For low flow protocol mode, use 15cc sealant tube.

- Sealant deposition on the heater coils may cause a smoke/ odor issue when using the machine.
- Deposition on the fan blades will cause it to jam up, unbalanced rotor and result in accelerated failure.

Follow these steps to keep the machine clean, even while sealing to low levels.

Standard sealing stops once leaks have been sealed to a certain cfm. This is achieved when the duct pressure has increased beyond desired 'safe' levels or if the air flow has reduced below 150 CFM (71L/s).

Sealing stops once the graph reaches point where it is no longer decreasing but has gone flat. If the graph has gone flat, it may not be possible to seal any lower due to the size of the holes being sealed. The largest possible opening that can be sealed efficiently is 5/8th of an inch. Often, the duct has been sealed to a desirable level by this point, but in certain circumstances additional sealing may be necessary to achieve specifications or standards.

The following protocol should be followed when getting to a very low leakage level is necessary:

1. Connect the Euroseal vent box to the farthest point in the duct work. Install the MERV 14 filter and close the lid. Install the 8.5" plug in it.

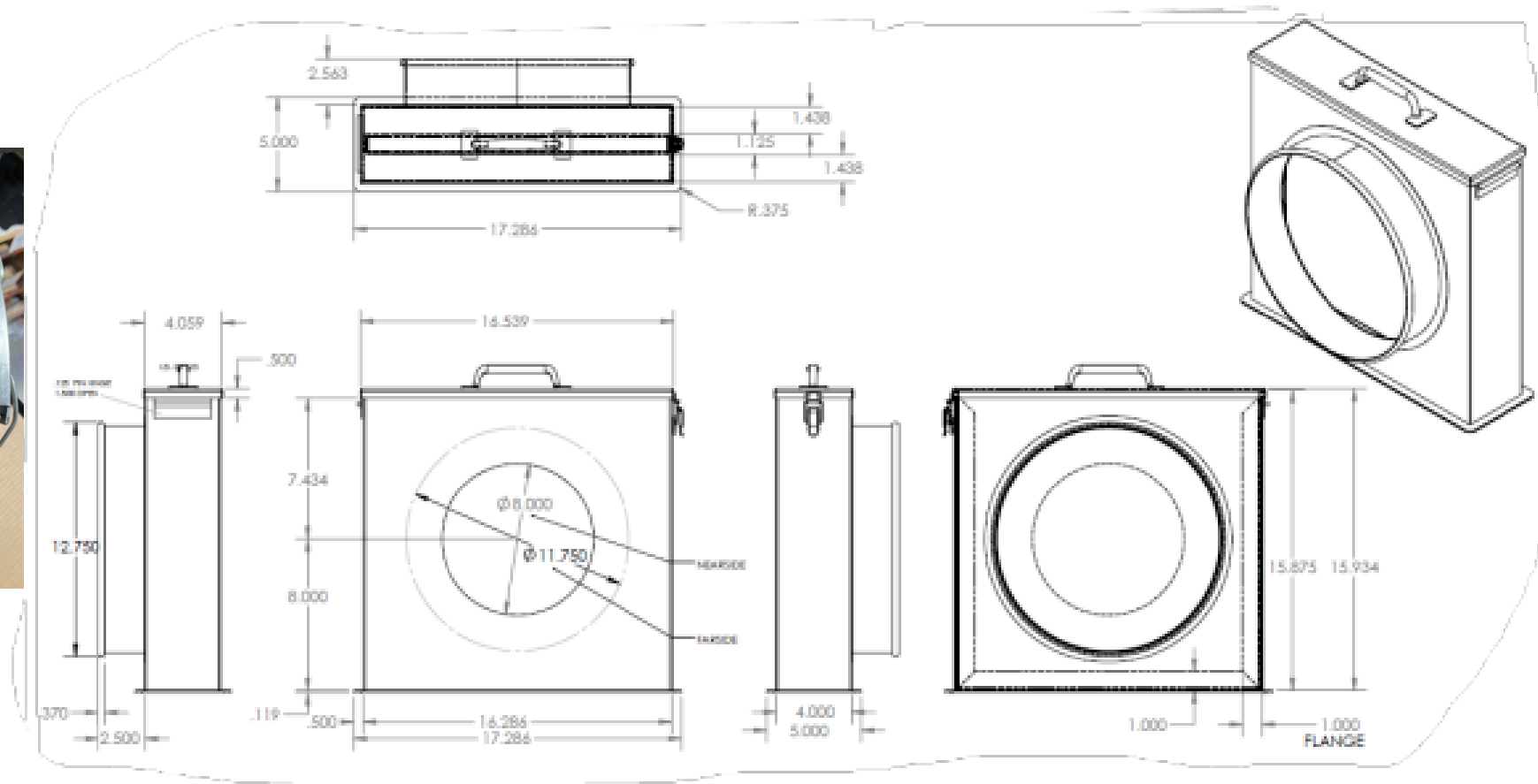


Figure 5: Euro Vent Box

2. Proceed with operational set-up steps. The steps defined below are necessary to keep sealant overspray from backflowing into the machine.
3. Run Pre-Seal and Seal operations.
4. Follow software prompts for gate changes, as needed.
5. When leakage is at 150 CFM (70L/s), the software prompts 'Low Flow protocol' mode.
6. Option #1: Click **Yes**. (See Figure 6)
7. Acknowledge the alarm to proceed.
8. Continue seal process. **Note:** "Danger of raining sealant" alarm is active during the process. "No flow detected" alarm occurs when fan box pressure goes to 0 or positive.
9. To preview leakage numbers, pause the sealing process, change the gate setting to 3 or 4, and document the numbers. Return to gate setting 2 to restart the seal. This is the best chance of reducing any alarms – and keep the spray moving forward inside the ductwork (+ve flow).

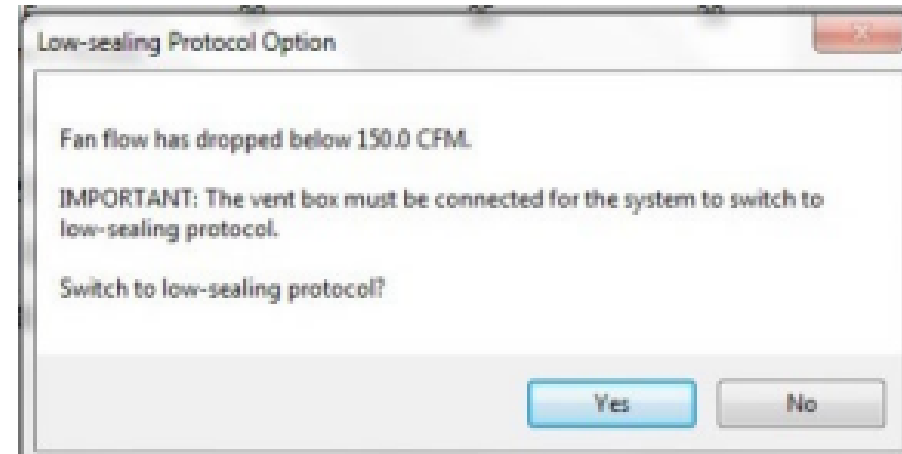


Figure 6. Low Sealing Protocol Pop-Up

10. Proceed to Flush mode.
11. Replace sealant bottle with a water bottle.
12. Click **Start**. In the event of a Raining Sealant alarm, acknowledge it to continue more flushing or exit out if the tubing is clean.
13. After flush, the system will automatically go into the cool down mode. After cool down, the software will keep the fan running. **Note:** disconnect the bottom heater to quicken the cool down process. Click **Stop** to manually interrupt the cooldown process.
14. Flush the ductwork by removing the foam plug (8") on the Vent box. The Merv14 filter will catch the spray particles.
15. After the duct is filled with fresh air, put back the foam plug and get ready to do the post seal test.

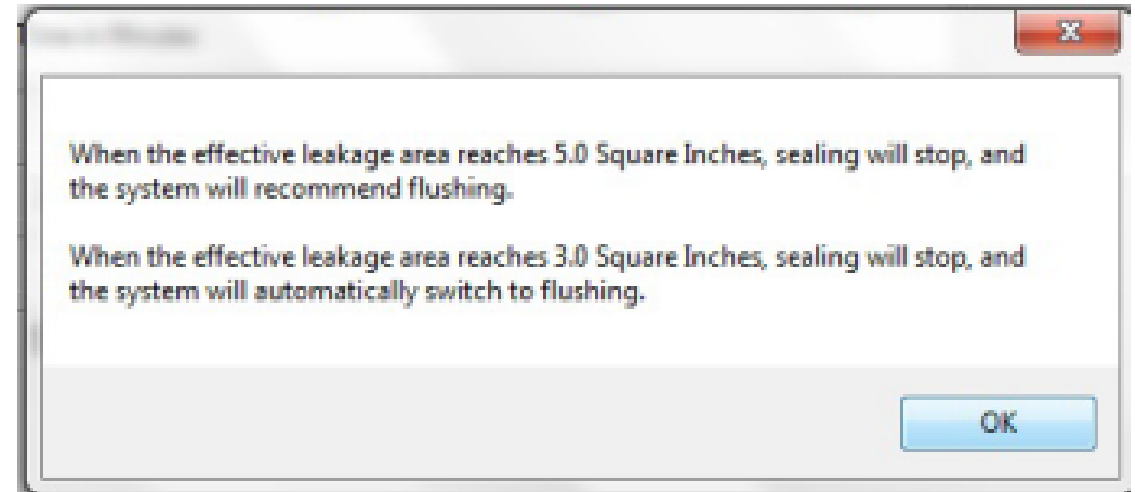


Figure 7. 5.0 sq.in. and 3.0 sq.in. Pop-Up

16. Option #2: Use this option for sealing down to ELAs of 3 sq in (20sqcm) or if you cannot connect the vent box. Click **No**.

17. At the pop-up alarm(s), click **OK** to acknowledge.

18. Software alerts you when ELA reaches 5 sq.in. (32sqcm) (See Figure 7)

19. Click **Start** to restart sealing or select **Flushing** from the dropdown menu.

20. If **Start** selected, software continues to monitor for leakage. The seal pauses when it reaches 3 sq. in (20 sqcm). The software autoselects **Flushing**. (See Figure 8)

21. When Flushing is selected, replace sealant bottle with a water bottle. (See Figure 9)

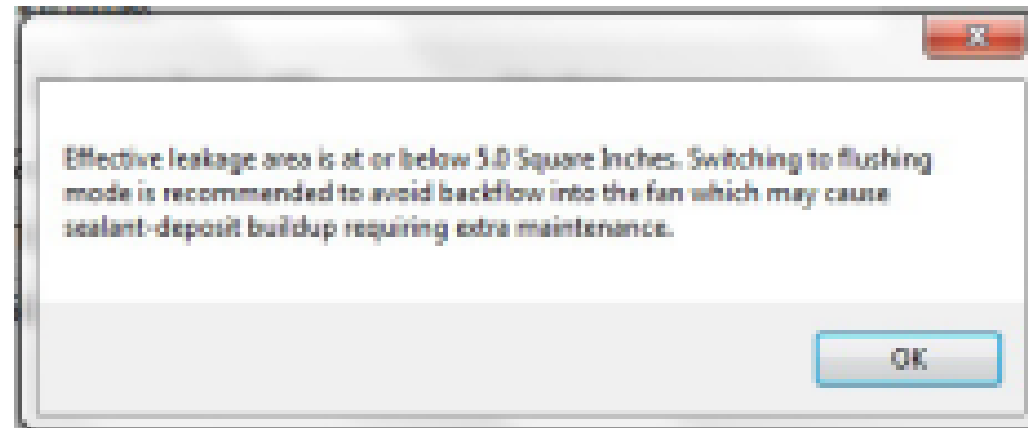


Figure 8. Flush Recommendation Alert

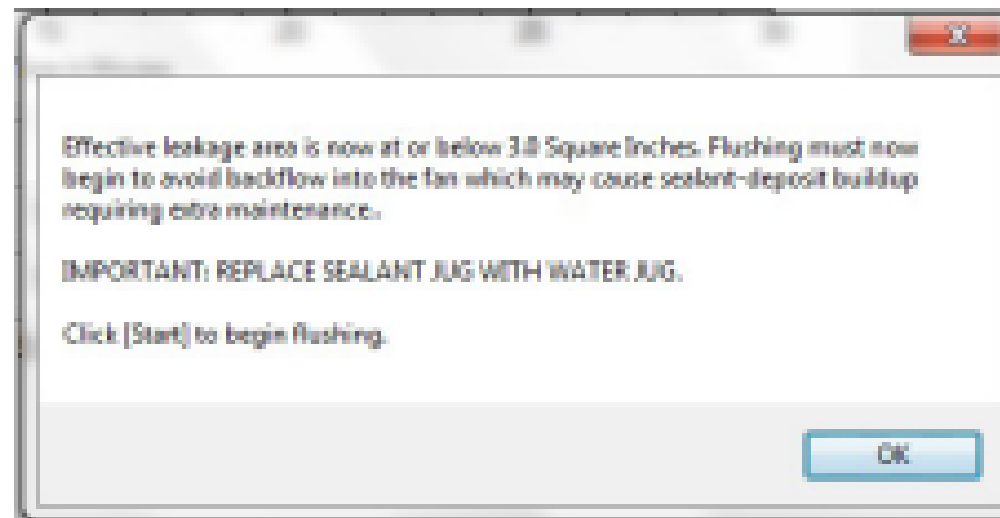


Figure 9. Flush Alert

22. Click **Start**. In the event of a Raining Sealant alarm, acknowledge it to continue more flushing or exit out if the tubing is clean.
23. After flush, the system will automatically go into the cool down mode. After cool down, the software will keep the fan running. **Note:** disconnect the bottom heater to quicken the cool down process. Click **Stop** to manually interrupt the cooldown process.
24. Proceed with Post Seal. **Note:** If there is No flow (or no leakage), the fan box pressure will be positive. The software will NOT have any reading to measure.
 - Tip #1: Try testing with 100% fan speed and going down to Gate# 3 (preferred) or 4.
 - Tip #2: As a last option, put a small hole in the layflat (for air to flow so that fanbox measures at least 0.5Pa (3.5L/s)
 - Tip #3: Click **T** to change the target pressure to the actual duct pressure.
25. Redo the post seal if needed.
26. Proceed with Certificate.



Aeroseal Duct Seal LT

Aeroseal Duct Seal is a stable, non-toxic, non-flammable emulsion of water-based acrylic polymer that is aerosolized into 4-10 micron-sized particles and distributed under pressure throughout the inside of the duct system. The particles deposit only at the leak sites and build to form a tenacious and tight air seal, remaining firmly in place for years while staying completely pliable and flexible. Seal remains effective over a wide range of operating pressures, temperatures and humidity levels found in residential, commercial and industrial air duct systems.

Technical Data

Part number	AERO-006B
Packaging	4 x 1-gallon plastic bottles per case
Color	Milky white (wet), Clear (dry)
Base	Acrylic polymer
Dispersion	Water
Weight	8.2-8.8 lb. per gallon
Solids content	35%-40% max
Viscosity	> 1 centistoke @ 68°F
Coverage	0.4 to 2 gal/hr seal rate
Flexibility	Remains flexible indefinitely
Time to test	Dry to the touch upon application Can test within 10 min. of application
Service temp.	Approximately -20°F to 480°F
Moisture resistance	Very good
Mildew resistance	Mold & mildew resistant
VOC	<0.35%
Pressure	SMACNA: Up to 10 inches w.g.
Seal Class	Meets SMACNA Seal Class A
Storage	
Temperature	32° to 120°F, DO NOT FREEZE
Shelf Life	24 months (2 years)
Flammability	Non-flammable

	CLASSIFIED
CAULKING AND SEALANTS 32HK	
SURFACE BURNING CHARACTERISTICS	
FLAME SPREAD	0
SMOKE DEVELOPED	0
* Applied to inorganic reinforced cement board tested as applied at a rate of 400FT ² per gallon.	



Certified Low
VOC Product



Preparation:

First, manually repair any leaks found during duct inspection >5/8" span, and remove accumulated dust/dirt build-up in ducts if >1/8". NOTE: Ducts can be cleaned after Aeroseal application.

Application

Temperature	> 40°F
Method	Aeroseal SmartSeal or HomeSeal machines only
Rate	Internal coverage at all joints, seams and penetrations, 0.4 to 2 gal/hr seal rate
Clean Up	(Liquid) Mild soap and hot water (Dried) Citrus-based cleaner or Buckeye Workout
Packed 4 one-gallon bottles per case.	

Specification/Standards Compliance

PROPERTY	TEST METHOD	RESULTS
Mold Growth	UL1381	No evidence of growth
VOC	CDPH 1.2 (2017)	Pass (≤ 0.5 mg/m ³)
Accelerated Aging	ASTM E2342-10	Pass
Leakage Reduction	ASTM E2342-10	Pass
Erosion	UL1381	Pass
Burning	UL1381	Pass
Durability	UL1381	Pass

Precautions:

Use only in well-ventilated areas. Installers should wear dust or fume respirator if inhalation exposure is possible. Fume respirator should have organic vapor-type breathing cartridge if full, prolonged exposure to aerosol is necessary.

Keep out of reach of children. Refer to full SDS sheet for health hazard information. (aeroseal.com/sds) For use and application by trained Aeroseal professional installers only.