



HOW TO SMOKE TEST DWV PLUMBING SYSTEMS

Procedures & Tips for Residential
and Commercial Buildings



Smoke Test Training
Video [Available Here](#)

Includes Operating Procedures for Blowfish
F and P Series Plumbing Smoke Blowers



IMPORTANT NOTICE

This document is provided for general informational purposes only. Smoke testing must be performed only by trained professionals using equipment designed specifically for plumbing smoke testing. Blowfish Smoke Test Solutions assumes no responsibility for improper use of equipment, failure to follow applicable codes, or damages resulting from deviation from manufacturer instructions or local regulations. This procedure does not replace professional judgment or site-specific safety planning.



Rev. 1.0



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Site Prep

1. Notify the owner and occupants of the building being tested. Ensure no disabled persons or confined pets are on-site who cannot actively avoid smoke. Building should be vacated during smoke testing, except for inspection personnel.
2. Ensure no wastewater will flow through the plumbing system during the smoke test.
3. Locate the best attachment point. (Figure 1)

The objective is for smoke to travel from the blower, past the defect, and exit through the roof vent. To achieve this, position the blower downstream of the plumbing section being tested. Exterior or basement cleanouts are preferred attachment points. Other interior cleanouts and toilet flanges may also be used. As a last resort, the roof vent itself may serve as the attachment point, with smoke exiting into the sewer or through an exterior cap. Use extreme caution when accessing a roof.

4. If necessary, use pipe plug(s) to isolate the smoke test to a specific area or to prevent smoke from traveling downstream or in unintended directions.
5. Review venting layout. If attempting to test a system with multiple vents and smoke is not emitting from one or more vents, you may need to:
 - a. Relocate your blower attachment point.
 - b. Use pipe plug(s) to segment the plumbing and run multiple tests.
 - c. Partially restrict vents that are emitting smoke, to direct more smoke to other vents.

Never fully block roof vents – this may prevent smoke from flowing throughout the entire plumbing system and create smoke “blow back” at the blower. The goal of a smoke test is NOT to create high pressure, but to allow smoke to flow freely throughout the system. Smoke will naturally escape through defects even under very low pressure. During smoke testing, the total area of smoke egress should be at least equal to the area of ingress.

6. Disable central station fire alarms to avoid false alarms.



Figure 1

Basement or exterior cleanouts downstream of the test area are ideal attachment points. It is sometimes beneficial to use a pipe plug to ensure all the smoke travels up through the building plumbing and not downstream.

Equipment Setup

1. Place the smoke blower on a stable, level surface and attach the hose to the blower.

(F Series Only) Fill blower fluid reservoir with Blowfish F Series Smoke Fluid ONLY. It is recommended to leave at least a 1" air gap to the top of the fluid reservoir.

2. Connect the hose to the plumbing (Figure 2):
 - a. Cleanouts: Detach the 4-in-1 Cleanout Adapter from the hose elbow. Screw the adapter into the cleanout (Teflon tape can be used to prevent leaks). Connect hose elbow to adapter.
 - b. For other connections, a rag or even tape can be used as needed to achieve a good seal.
3. Verify the blower is turned OFF and plug in blower

(F Series Only) Turn master power switch ON – Within a few seconds the green indicator light will start to flash. This indicates the blower is warming up (approx. 2 minutes). Light will turn solid green when warm up is complete and blower is ready for use.

(P Series Only) Place one Blowfish Encased Smoke Pellet in the forward most area of the smoke chamber (right side, toward the hose). Pellet can be stood up or placed on its side.

4. (optional) Position assistant(s) inside the building.
5. **Important! - Verify unrestricted airflow:** Turn on the blower WITHOUT initiating any smoke. Verify that air is flowing freely. You should be able to feel the air being drawn into the blower intake. If the system is not flowing air, there is a restriction in the system which must be cleared before doing a smoke test. Smoke testing a restricted system will be ineffective and will create heavy smoke blow-back at the blower. Note that a restriction in the plumbing may itself be the defect you are attempting to locate.



Figure 2



Correct Setup

Performing the Smoke Test

Note: A good rule of thumb is to use the least amount of smoke necessary to accomplish the task. While F Series blowers can be run indefinitely, there is rarely a reason to run it for more than a few minutes. "Over smoking" a system can result in excessive smoke accumulation in unintended areas. Smoke is used only as a visual indicator of plumbing defects and is not intended for inhalation. Brief incidental exposure is acceptable, but do not enter a space with excessive smoke accumulation.

1. Initiate Smoke

(F Series Only) With the "Master Power" and "Blower" switches already ON; turn the "Smoke" switch ON.

(P Series Only) Turn the blower OFF. Open the blower lid. In quick succession: ignite the smoke pellet, close & latch the lid, and turn blower ON.

2. Observe roof vents. Within a few seconds, smoke should be emitting from all roof vents– this indicates a proper test. Lack of smoke may indicate a blockage or smoke flowing in an unintended direction.
3. Inspect the building plumbing. The presence of visible smoke confirms a defect. Once defect is located, turn the Smoke Blower OFF.
4. Ventilate the building as needed before reoccupation. Smoke used for plumbing smoke testing is non-toxic when used as directed.
5. Stow Equipment

(F Series Only) After the test, detach the hose from the blower and tilt the blower forward to pour out condensation that may have accumulated in the barrel. Wipe barrel dry before storage.

(P Series Only) Allow smoke pellets to cool fully before discarding. Scrub barrel interior with nylon brush as needed to prevent buildup.

Wipe down blower housing before storage. Store blower and consumables cool and dry.