

PYRO-CLEAN ADVANTAGE

What really sets the Pyro-Clean system apart from ordinary ovens/furnaces manufactured by Barnstead International or other companies?

1. Most ordinary high temperature ovens/furnaces are simply Hot Boxes designed to operate at a certain temperature, and are not engineered for the cleaning process

PYRO CLEAN systems are specifically designed for removing organic contaminants from lab glassware and are engineered to carry out this process with complete safety.

2. Common muffle furnaces are designed to achieve temperatures up to the 2000 F. range (temperatures high enough to melt glassware). Consequently, most muffle furnace chambers are quite small, usually measured in cubic inches. Although chemists often turn to small muffle furnaces in desperation, muffle furnaces are over-designed for the temperature range required.

PYRO CLEAN systems are measured in cubic feet and can hold substantial volumes of glassware, yet are designed to minimize the footprint of the oven suitable for the bench top. The systems are designed to operate at temperatures between 800-900F.

3. Because muffle furnaces are designed to reach temperatures up to 2000 F., their interior must be constructed of high temperature refractory insulating material.

The Pyro Clean interior is constructed of grade 304 Stainless Steel. This means no maintenance, easy cleaning, and virtually unlimited lifetime under normal use conditions.

4. Most ordinary ovens/furnaces operate at neutral or slightly positive pressures, which allows the oven's atmosphere (smoke and odor) to enter the lab environment.

PYRO CLEAN systems deliberately operate at a slight negative pressure to prevent this. They also have a special dual, gasket door design and exhaust system to maintain the slightly negative atmosphere.

5. Ordinary muffle furnaces and high temperature ovens rarely have pressure relief capabilities should the oven/furnace be overloaded with organic material that can create a combustible atmosphere. This is one of the most dangerous concerns.

For complete safety, all PYRO CLEAN systems are equipped with a hinged top, pressure relief door. Furthermore, our systems provide less chance of an explosion because we are vaporizing off the organic material in an oxygen-deprived atmosphere.

6. Ordinary ovens and furnaces are primarily just Hot Boxes and have no means of inerting the atmosphere to prevent ignition in case of over-loading the oven with too much organic contaminants. Consequently limiting the cleaning to small amounts of organic contaminants.

PYRO CLEAN systems have a proprietary patented catalytic method of consuming any combustibles arising from the organic contaminants on the glassware. This technique actually allows the cleaning chamber to become "self-inerting" in event excessive amounts of pyrolysis gases are produced during the cleaning process. This allows the system the capability of cleaning large amounts of organic contaminants.

THIS IMPORTANT SAFETY FEATURE IS UNIQUE TO BARNSTEAD INTERNATIONAL CLEANING SYSTEM.

7. For glassware contaminated with more than trace levels of organics, Barnstead offers systems with built-in thermal oxidizers, which assure a pollution-free cleaning process.
8. PYRO CLEAN systems are specifically engineered to address the specialized needs of high temperature cleaning. Special attention to safety has given the system an advantage over typical muffle furnaces and burn off ovens.
9. Heavy grade 304 stainless steel has made this system a virtual battle ship with virtually no maintenance required.

PYRO CLEAN systems are designed to operate efficiently, costing less than .50 cents and hour to operate.