DB Series Nitrogen Generators in HVAC and Refrigeration

Nitrogen is widely used in the HVAC and refrigeration industries for testing refrigerant tubing for leaks.

On site nitrogen is an ideal choice for testing refrigerant tubing for leakage, as it can be generated on demand without relying on deliveries from a third party supplier. Nitrogen's inertness and dryness also makes it an ideal candidate for leakage testing. In HVAC and refrigeration the presence of oxygen during leakage testing can present a safety hazard. Using dry nitrogen generated from a Parker on site nitrogen generator eliminates these complications.

DB Series Dual Bed PSA Nitrogen Generator

Parker Balston PSA dual bed nitrogen generators produce between 95% - 99.999% pure, compressed nitrogen at dewpoints down to -58°F (-50°C) from nearly any compressed air supply. They are designed to continually transform standard compressed air into nitrogen at safe, regulated pressures without operator attention.

Product Features

- Fully enclosed (steel) with casters
- High efficiency coalescing and sterile air filters
- Oxygen analyzer available
- PLC controls
- High oxygen alarms and dry contacts available
- Stand by mode
- Purity easily adjusted between 95%-99.999% with flow control valve
- Outlet pressure regulator
- 60 gal. vertical storage tank

Contact Information

Parker Hannifin Corporation
Industrial Gas Filtration and Generation Division
4087 Walden Avenue
Lancaster, NY 14086
phone **716 868 6400**
www.parker.com/igfg

Parker Balston

ENGINEERING YOUR SUCCESS.

Benefits of Using Nitrogen Generators

- Improves testing by eliminating moisture and oxygen from tubing
- Promotes corporate responsibility and compliance as an environmentally safe manufacturing process
- Reduces operating and maintenance costs
- Maintains consistent part quality and eliminates product defects
- Eliminates the need for hazardous cylinders or dewars
- Compact design frees up valuable floor space
- Very little maintenance or monitoring required
- Simple and straightforward operation
- Proven technolgy that provides long, stable N2 costs
- Operates continuously without unexpected shutdowns

The Manufacturing Process of a Household Refrigerator and the Use of Nitrogen Gas During Testing

First, the outer cabinet and door are formed by clinching pieces of sheet metal together. Clinching is a process where two pieces are crimped together under pressure without adding additional pieces or hardware. Any part of the outer cabinet that is to be visible will be welded to appear as one piece. Once completed, the outer cabinet is then painted (unless purchased in pre-coated form).

Next, the inner cabinet if formed. Depending on the manufacturer, the inner cabinet will be made from sheet metal, similar to the outer shell, or vacuum formed from plastic. The inner cabinet is then inserted into the outer cabinet, and the two are snapped together before the fixtures are inserted. Before filling the gap between the inner and outer cabinets with insulation, some tubes and wires are run through the two pieces.

A dispensing device injects a polyurethane foam between the walls and placed in an oven. Once heated the polyurethane foam expands to add firmness and insulation to the cabinet. A similar process is also used for the cabinet doors.

Once the cabinet it assembled, refrigeration components (compressor, evaporator and condenser) are installed into the cabinet.

Next, the tubing is soldered together and a protective coating is sprayed onto the joints. The refrigerator door require a seal, which is created by means of magnet laden gaskets Lastly, handles and hinges installed onto the door before being mounted onto the cabinet. Now that the refrigerator is complete, all subassemblies of tubing that will contain refrigerant are pressure tested with nitrogen. This test will reveal any flaws in the tubing and in the soldering that joins it. The entire unit is also leak tested prior to charging with Freon. Once charged, the unit is tested as a whole to ensure that it is capable of reaching design temperatures.

Once all tests are run and the unit passes, the refrigerator and all its accessories are packaged for shipping.