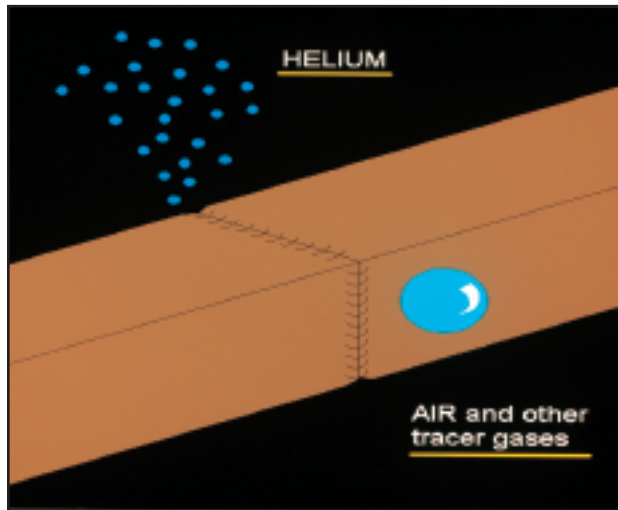


HOTLINE



Helium Testing Technical Update



EMSCO Helium Testing minimizes downtime of your induction furnace coils

Most induction coils require water-cooling to remove heat that is generated by the electrical circuit and from the molten bath. While this water-cooling is required, it also poses potential problems for the operation of the equipment. Since electricity is also present in the coils, water leaks can cause interturn arcing that, if severe enough, can seriously damage your melting equipment.

Conventional methods of testing for leaks included air pressure or air pressure with water. To properly ensure that coils and other water-cooled components do not leak, **EMSCO** realized a test beyond the conventional pressure tests was needed.

Over twenty years ago, **EMSCO** concluded the safest and most practical method of proper leak testing was helium. Helium was selected because the molecule of helium gas is the smallest size that can be used practically and safely for leak testing, and unlike other gases used by repair companies, helium is completely non-toxic to employees and non-reactive to equipment.

ALL **EMSCO** facilities perform several levels of helium tests. Our helium pressure test utilizes high accuracy Ashcroft pressure gauges. Once a leak is determined, an ultrasonic leak detector, which can detect holes the size of a human hair in diameter, is used to locate and repair the leak. Helium sniffers are also routinely used to detect even smaller leaks found during the repair process.



BULLETIN M16/1M/0408



For special applications like vacuum environments, special atmosphere heating and melting, and larger size coils with heavy copper cross sections; **EMSCO** uses state of the art helium mass spectrometer leak detection.

Helium mass spectrometry technology ionizes gasses and separates them by passing them through a magnetic field. By flooding the test areas, helium will be drawn through the leak and its presence indicated by the mass spectrometer. By using this method of testing, a 10^{-9} leakage rate can be detected quickly and accurately resulting in a repair that would not have been thought necessary by conventional testing systems.

A history of your coil is maintained including a full record of leak testing. This history is available at all times. Job history and test results can be vital to you during downtime situations. **EMSCO's** years of team experience can help you during these times.

Your equipment is important. Your investment in repair should include the proper type of testing for your application. Make sure that your coils and other water-cooled furnace components are being tested with the proper gases and equipment to ensure detection of the smallest failure for your application. **EMSCO** has the technology and the experience to determine the right test for you.

EMSCO is ready when you need us...every day.

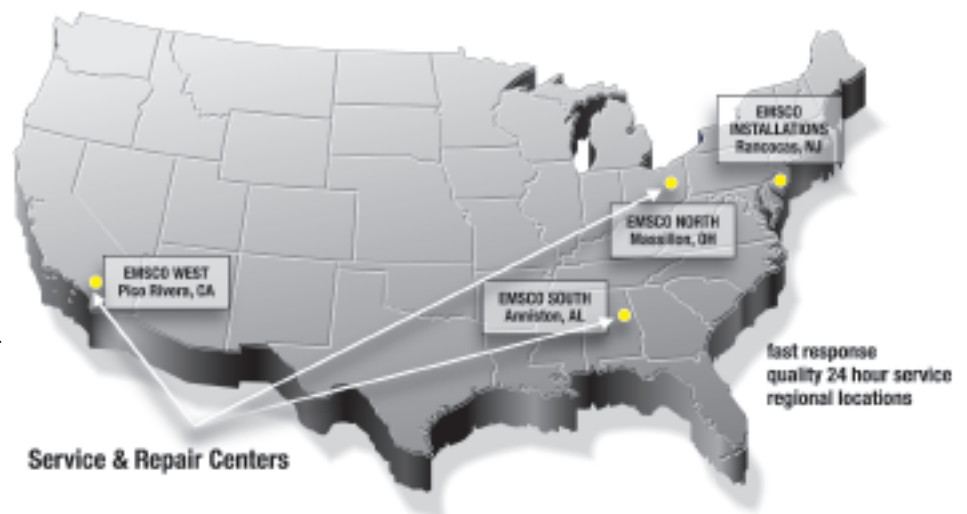
EMSCO's Commitment to you

KNOWLEDGE: EMSCO will begin each project with a customer-focused understanding of the problem to be solved and a soundly engineered approach to the solution.

COST: EMSCO will, when possible, offer more than one level of service and will explain the costs and compromises associated with each. Every option we propose will meet industry standards for safety.

QUALITY: EMSCO will understand and meet the quality expectations agreed to at the start of the project. Warranties will be explained and will set the standard for the industry.

OUR GOAL: EMSCO will provide quality services at reasonable prices so that our customers have the competitive edge in their markets.



NATIONWIDE TOLL-FREE NUMBERS

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www.emsco.com