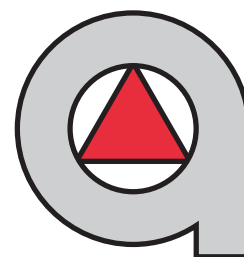


# Rotary Degassing Equipment

- ▶ Ladle Stations
- ▶ In-Line Units
- ▶ Custom Units
- ▶ Flux Injection



Molten  
Metal  
Equipment  
Innovations



## Description

MMEI offers a complete range of rotary degassing equipment featuring the latest advancements in technology to meet your metal treatment needs. Our degassing line includes fully automatic ladle degassing stations, in-line units with single and multiple spinning rotors, portable units, and customized units for degassing over-the-road ladles and other large vessels. Each degassing unit is engineered to exceed the difficult demands of the harsh foundry environment and can be custom built to meet your requirements for performance or space limitations. It's all part of our effort to provide you with the right equipment for your process.

Our units are available with complete electric and gas controls. Our electric controls are easy to operate and can be programmed to ensure repeatable results. Timers, temperature sensors, digital readouts and other enhancements are incorporated into our control package and are designed to be operator friendly. Our gas controls include separate flow meters for both the purge and main gas. Gas flow is integrated into the electric controls for optimum operation. Gas controls are available for either inert gas or chlorine use.

All of our units are designed and built extra-tough to provide many years of trouble-free service with minimum maintenance. Feature for feature, you will find that our degassing units are built tougher and stronger and yet are simple to operate. You won't find a better rotary degassing unit. Contact us for more information.



*When you look under the hood, you'll find the powerful heart of our rotary degassing unit is a rugged electrical drive system. Our drive system uses a premium, severe duty, energy efficient electric motor to power a heavy duty gear box which spins our advanced coupling. This system eliminates shaft wobble while providing many years of trouble-free operation.*

## Product HighLIghts

- ◆ Our degassing equipment offers the latest in degassing technology and is engineered to meet your metal treatment needs while operating in the harsh foundry environment.
- ◆ All of our rotary degassing units feature rugged construction throughout for long, trouble-free service life. They're built solid to minimize vibration and to prevent wobbling of the degassing shaft and rotor.
- ◆ Shaft rotation is achieved through an electrically driven heavy duty gear box for precise, accurate rotation and long, trouble-free service life.
- ◆ Our units are powered by premium, energy efficient, extra-tuff severe duty rated electric motors.
- ◆ An innovative coupling allows easy installation and removal of the degassing shaft while providing a secure, pressure-tight fit and true-spinning of the shaft and rotor.
- ◆ Degassing is achieved with our advanced QUAD-Zilla rotor design.
  - Superior shearing of gas bubbles for maximum metal treatment.
  - Pumping action of rotor eliminates dead spots in bottom of well for complete treatment of metal.
  - Fast, efficient degassing reduces treatment time and gas usage while improving metal quality.
- ◆ Degassing shaft is protected with our new RHINO Sleeve.
  - Protects shaft from oxidation and wear at metal line.
  - Can increase service life by 3 times or more.
  - Tight concentricity minimizes turbulence at metal surface level to reduce dross formation.
- ◆ Insulated enclosure and external blower protect the motor and gear box from excessive heat.
- ◆ For ladle degassing stations and other units which require vertical movement, we build a solid foundation around a heavy wall, steel I-beam for maximum support and rigidity.
  - Fast, reliable vertical movement is achieved through a dual chain lift that provides smooth movement, lower maintenance and additional safety.
  - Separate limit switches can be easily adjusted for raised and lowered settings.
- ◆ All units shipped pre-wired, pre-plumbed, and fully tested.
- ◆ Includes on-site installation training and support for initial startup and continued technical support as long as you operate the equipment.



## Custom Built to Meet Your Requirements



### Ladle Degassing Stations

Solid, heavy-duty construction throughout eliminates vibration and wobble for superior performance.

The fully programmable operation is completely automatic with the push of a single button and ensures repeatable results for consistent metal treatment, ladle after ladle.

Easy controls minimize operator training and eliminate operator error.

Separate flow meters for purge gas and main gas.

Digital timer and RPM readouts.

Can be integrated with thermocouple to ensure metal temperature is within specified range for proper treatment.



### In-Line Degassing Units

In-line degassing units are available with single or multiple spinning rotors to meet your requirements for metal treatment.

We offer units for new installations or for retrofitting and upgrading existing in-line degassing equipment. Existing air driven units can be upgraded to electric for enhanced performance while reducing operating cost.

Insulated covers help reduce heat loss and are made to fit your application. Optional skim doors provide easy access for skimming well.

Available with a reliable chain-driven powered lift and pivoting mechanisms for easy access.



### Custom Units

We also offer customized units for degassing large ladles and over-the-road containers.

Manual or motorized pivoting arm allow degassing shaft and rotor to be moved out of the way when not in use or to be pivoted to treat multiple ladles or crucibles.

Shaft diameters from 3" to 6" are available in a variety of lengths for optimum degassing in various metal depths.

Flux injection units are available with all units for enhanced metal treatment.

Standard units are designed for use with inert gases. We also can provide units for use with chlorine.



## Advanced Degassing Coupling

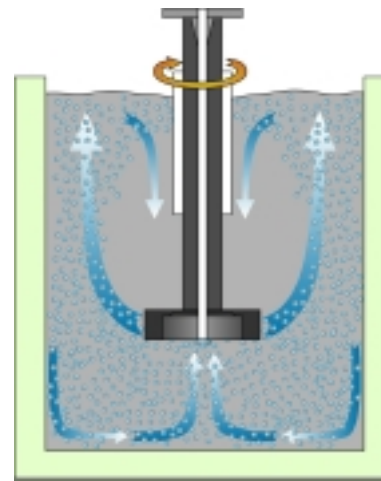
All of our degassing units use our advanced degassing coupling. The features and benefits of this coupling include:

- ◆ Engineered with a tapered top to provide a secure, leak-free connection to prevent wasteful leakage of injection gas.
- ◆ Taper at top ensures the shaft spins true to reduce vibration while minimizing disturbance of metal surface.
- ◆ Course thread requires only one revolution to lock shaft in place. Allows easy installation and removal of shaft.
- ◆ Secures on outside of graphite shaft to provide maximum strength.
- ◆ Holes on four sides of coupling make it easy to hold coupling in place while changing the shaft.
- ◆ Made from stainless steel for long, maintenance free service life.
- ◆ Coupling is precision machined to ensure concentricity.
- ◆ Available for 3" through 6" diameter graphite shafts to meet your degassing requirements.
- ◆ This advanced coupling is also available to retrofit and upgrade your existing degassing equipment. Can be modified to fit many types of units. Please contact us for more information.



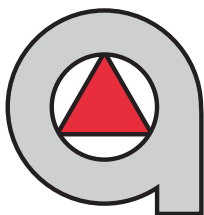
## Superior Metal Treatment

All of our degassing equipment feature our innovative QUAD-Zilla Rotor to achieve superior metal treatment. Most rotor designs only shear the gas and provide very little subsurface metal movement. As a result, the metal below the rotor receives very little treatment. The QUAD-Zilla is unique in its ability to shear the gas into many tiny bubbles at lower RPM's while also providing metal movement to ensure complete treatment of the metal throughout the ladle or well. The pumping action of the QUAD-Zilla draws the metal from the bottom of the ladle, eliminating dead zones while allowing the metal surface to remain quiescent. Bottom line - the QUAD-Zilla will treat your metal more thoroughly, providing better metal in less time while using less inert gas.



*The above picture demonstrates the dramatic improvement in the dispersion of the inert gas bubbles and metal movement. Metal from the bottom of the ladle or well is drawn upward by the rotation of the rotor, eliminating untreated dead spots.*

## Who to Contact for More Information



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