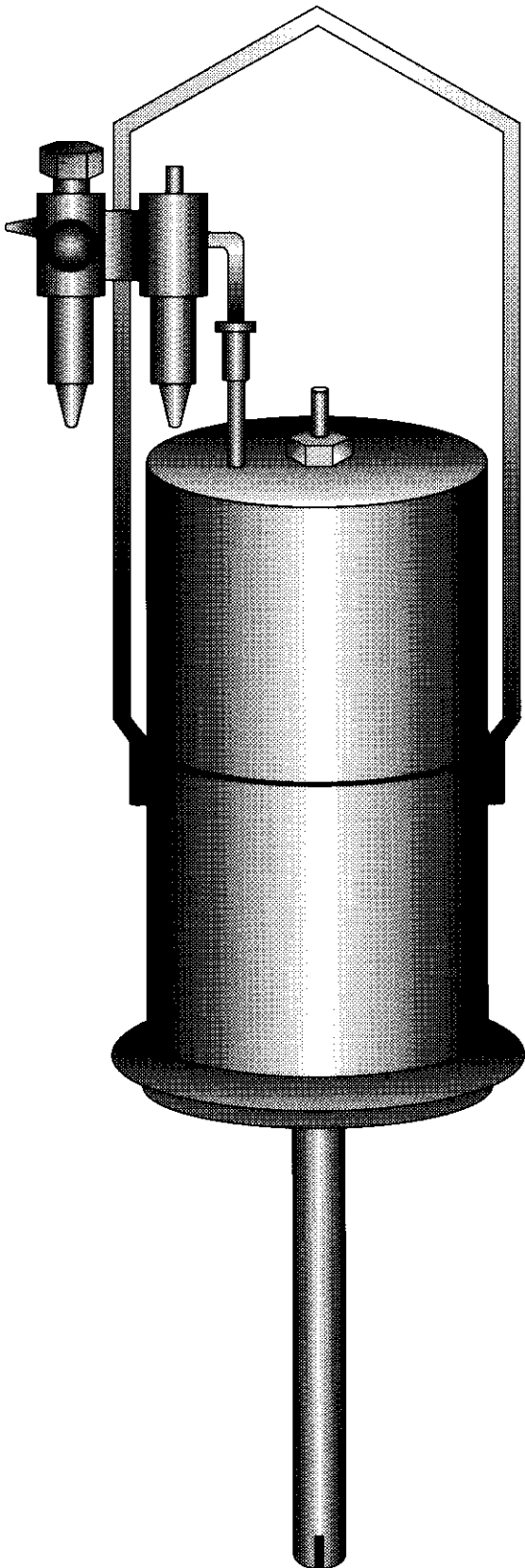


Portable Rotary Degasser

For Aluminum Degassing



- Low-cost
- Stainless construction
- Variable speed air motor
- Portable and lightweight — under 50 pounds
- Versatile, can be used in dip-out or crucible furnaces, 40-3000 lb. melt
- Unique, one-piece, **low-profile** lance design reduces cost and eliminates turbulence in the melt created by two-piece shaft impeller (rotor) designs
- Eliminates the use of hazardous degassing tablets and chlorine or freon gases

Designed by Brumund Foundry, Inc. as a portable, low-cost alternative aluminum degasser. Stainless steel construction enables this unit to withstand the corrosive and abusive high-temperature environment of the foundry. It can be used with argon or dry grade nitrogen gas for a safe working environment.

BF Brumund Foundry, Inc.

4400-4412 Carroll Ave. • Chicago, IL 60624
773-287-9250 • Fax 773-261-5855

Visit our web site <http://www.mindspring.com/~brumund>

PORTABLE ROTARY DEGASSER

Thank you for your interest in our Portable Rotary Degasser. Our unit provides low cost degassing equipment previously unavailable to foundries. If you have any additional questions, please call.

Background:

The portable rotary degasser was designed for use in foundries that melt Aluminum in batches of 70 to 500 lbs. It has been used effectively in crucible, dip-out, tilt and reverb furnaces on melts ranging from 40 to 3000 lbs. We have been using the portable rotary degasser for six years to degas our 90 lb. crucibles and 200 lb. ladles. Degassing times for these melts have ranged from 1 to 3 minutes. To date, we have more than 100 units in the field.

Operation:

The portable rotary degasser uses a one piece low profile expendable graphite lance/Impeller available in 24" & 36" lengths. The lance/Impeller portion of the degasser is submerged in the melt. A purge gas (dry nitrogen or argon) travels down through the rotating lance/Impeller. The rotation is provided via a 3/4 h.p. variable speed air motor. The speed of the motor is controlled by a combination regulator/filter/lubricator.

The following items are included with the Portable rotary degasser

- Degas unit

- Air regulator/filter/lubricator combination unit

- 4 Graphite degas lance/Impellers (your choice of length 24 or 36")

Customer Requirements

- Compressed air source (90-100 psi)

- Overhead hoist

- Dry nitrogen or argon cylinder with regulator

- Reduced pressure tester (optional)

Unit Dimensions:

- Main Body, 8" diameter x 17" long with a 12" diameter flange on bottom

- Suspension hook 14" above body

- Overall length 31"

- Length of lance below degasser

 - 24" Lance - 12"

 - 36" Lance - 24"

DEGASSING PRINCIPLES

Hydrogen degassing of aluminum is based on the principle that the hydrogen gas will move from an area of high pressure (in the melt) to an area of low pressure (the inert gas). Hydrogen gas disperses in the molten metal as it would if it were released in any confined space. It will maintain a constant pressure throughout the melt. When you introduce the inert gas, the hydrogen throughout the melt will flow into the inert gas. As Hydrogen gas is removed, it will equalize its pressure throughout the melt. The ability of hydrogen gas to move through and equalize its pressure in liquid metal is almost as fast as it is in air. It is there for unnecessary to bring all of the metal in contact with the inert gas. How well and how fast a heat of aluminum can be degassed is determined by two factors, the transfer rate across the metal/gas interface and the surface area of gas exposed to the metal.

Gas bubbling hydrogen degassing systems work on the principle of using speciality gasses (chlorine, Freon or SF6) to speed up the hydrogen transfer across the metal/gas interface to large bubbles of gas in the metal. There was a practical limit to the hydrogen removal on humid days because the large bubbles broke the surface and exposed metal to the humid atmosphere where more hydrogen was picked up. Chlorine was the original gas of choice but due to its hazardous nature most foundries switched to other gasses. What most foundries have not considered are the hazardous materials released by the breakdown of any speciality gas used.

Rotary degassing works on the principle of increasing the surface area of an inert gas exposed to the metal. The greater the surface area the faster the degassing. For a given volume of gas the smaller the bubble size the greater the surface area and the faster the degassing. For example a 1" square bubble of gas has a surface area of 6 square inches. If you divide this bubble into 1/16" square bubbles, the total surface area increases to 96 square inches. In other words for the same volume of gas the surface area and transfer rate has been increased 16 times. In addition the small bubbles do not disturb the surface of the molten metal so there is very little hydrogen pickup from the atmosphere.

We have only used our rotary degassing equipment with Dry Nitrogen and Argon gas and we do not guarantee compatibility with specialty gases or gas mixes. With the exception of the graphite lance all internal parts exposed to the degassing gasses are type 304 stainless steel and the seal's Buena-N. Experience has shown that dry nitrogen used in a rotary degasser will degas 400 lbs. of aluminum in four minutes or less. There is no practical reason to use a speciality gas that may cost \$500.00 per cylinder when dry nitrogen can be purchased for \$15.00 per cylinder. In addition there are no toxic emissions from nitrogen gas.

The American Foundrymen's Society has put together a binder with most of the research literature published on gas porosity in aluminum castings. The literature is very technical but quite detailed and informative. If you have any further questions, please call

Brumund Foundry Inc.

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PORTABLE ROTARY DEGASSER PRICING

Degassing unit with combination air regulator/filter/lubricator and 4 graphite lances.
\$2,200.00 each, plus shipping.

Extra Lances

24" Lance	\$50.00 each, plus shipping
36" Lance	\$62.50 each, plus shipping

CUSTOM UNITS

The above pricing is for our standard portable rotary degasser. We have constructed several custom units for continuous use in dip out wells and holding furnaces. We will design and build a unit to meet your specific requirements. Custom units purchased in quantity often cost less than the standard unit. Contact us with your needs.

Satisfaction guarantee- If not completely satisfied with the performance of this unit, return for a full credit.

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The following is a partial list of foundries using our Portable Degasser.

AFS Cast Metals Institute, Inc.
505 State St.
Des Plaines, IL 60016-8399
U. S. A.
1-800-537-4237
Wayne Rasmussen

University of Alabama
212 15th St. South
Birmingham, Al 35294
U. S. A.
205-975-8461
John Griffin

Fairfield Aluminum Casting Co..
P. O. BOX 907
Fairfield, IA 52556
U. S. A.
515 472-2191
Dennis Johnson

Cabrain Ltd
Kibbutz
Cabri Israel 25120
Israel
972-4-6652611
Ido Rosolio

Globe Foundry Ltd.
7647 Willard St.
Burnaby, BC V3N-2W2
Canada
604 524-3881
Robert Ewasiuk

Max Castings Co. Inc.
P.O. Box 1326
Benton Harbor, MI 49022
U. S. A
616-925-8081
Rich Graebel

Spindler Brothers
188 Market Street
Kenilworth, NJ 07033
U.S.A.
908-245-0945
Don Clark

Arizona Castings, Inc.
115 N. Perry Lane
Tempe, AZ 85281
U.S.A.
602-967-6332
Phil De Silva