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Innovative Solutions for Aluminium Foundry

NITROGEN DEGASSING UNIT

FEATURES

- Auto Cover Flux (granules) Feeder
- Baffle Plate Auto Up-dwon Movement
- Mobile Cum Piller Unit
- Operation Cycle Data Print And Recording
- Rotor Shaft Coating Reminder
- Cover Flux And Nitrogen Consumption Data

PERSPECTIVE ON PERFORMANCE

- Provides A Platfrom To Perfrom All Necessary Melt Treatment In A Single Operation
- Improves Efficiency Of The Various Treatments
- Reduces Operator Involvement
- Reduces Emissions

PROCESS PARAMETER

CONSUMABLES INTRODUCTION:
shaft, rotor and baffle plate are first lowered into the melt.

VORTEX FORMATION:
the baffle plate is deactivated and rotor speed is increased to a point at which a vortex is created around the shaft.

ADDITION OF TREATMENT AGENTS:
the required amount of flux is then dispensed directly into the vortex and drawn down into the melt.

VORTEX TERMINATION AND DEGASSING:
after the flux addition the baffle plate is activated again to terminate the vortex and initiate the degassing phase.

DEGASSING

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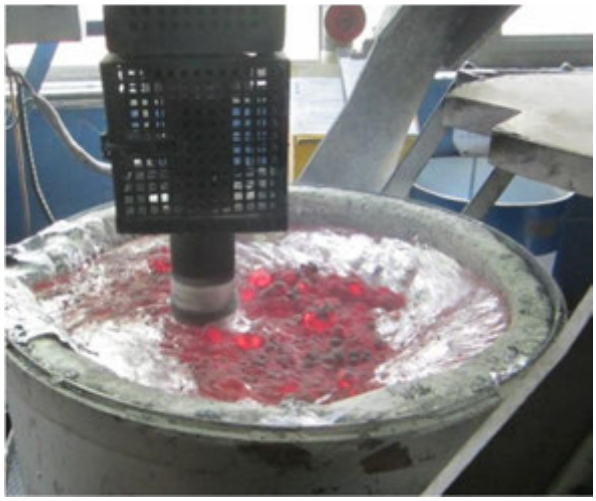
SiC DEGASSING ROTOR



FEATURES

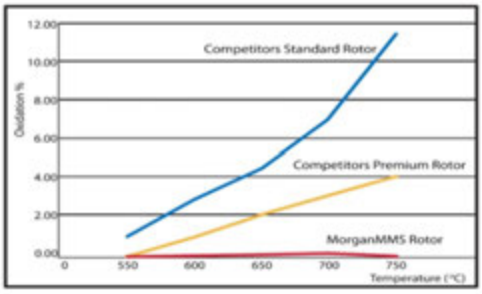
- One piece shaft and rotor
- Wear resistant silicon carbide material
- Excellent oxidation resistance
- Rotor designed for good gas dispersal
- Six vane rotor to reduce bubble size for better hydrogen removal

ADVANTAGES

- Efficient removal of hydrogen and unwanted particles
- Quick change over of rotor
- One piece construction
- Cost effective
- Long life

COMPARISON

Tests show significantly lower oxidation levels at operating temperatures for the Morgan MMS silicon carbide rotor than for leading competitive products in other materials.

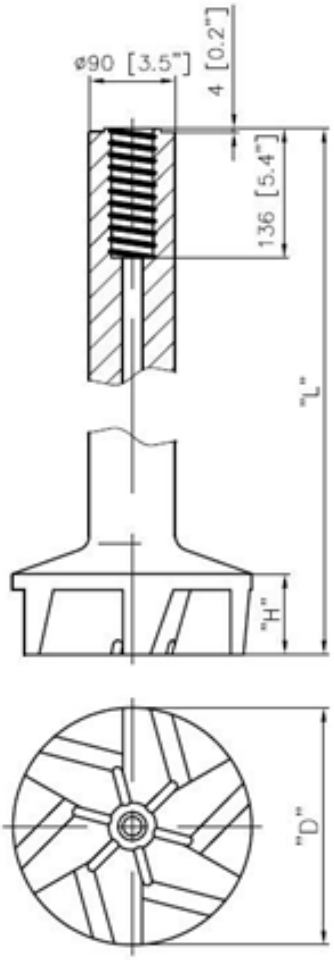


PRODUCT DIMENSIONS

Threaded coupling :

S020T

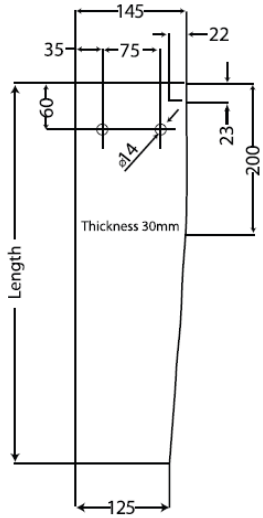
Length (mm)	Depth (mm)	Height (mm)
600 [23.6”]	150 [5.9“]	45 [1.7“]
650 [25.6”]	180 [7“]	65 [2.5“]
700[27.6”]	200 [7.8“]	80 [3.1“]
750[29.5”]		
780[30.7”]		
800[31.5”]		
850[33.5”]		
900[35.4”]		
950[37.4”]		
1000[39.4”]		
1050[41.3”]		
1100[43.3”]		
1150[45.3”]		



ANTI VORTEX PLATE

To complement our degassing rotor, Morgan MMS also produces a clay graphite anti vortex plate. This plate is manufactured in a proven wear and oxidation resistant material. It will help stop the reintroduction of hydrogen and aluminium oxide particles into the treated molten aluminium by reducing the circular metal flow caused by the rotation of the degassing rotor.

REFERENCE NUMBER	LENGTH
1580388	420
1580395	450
1580400	500
1580510	650



Disclaimer : All dimensions are subject to normal manufacturing tolerances.
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PERFORMANCE BENCHMARKING

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Discovering Superior Degassing Performance

Morgan switched to a silicon carbide degassing rotor after the performance of its machined pure graphite degassing rotor proved less than satisfactory.

Testimonials Customer A :

Graphite rotors were found to wear quickly and their degassing performance deteriorated as head geometry became distorted. Consequently, nitrogen gas dispersal suffered. Graphite rotors had to be replaced after about 300 cycles, even when flux additions were withheld. That equated to just 2-3 days of production. The Morgan rotor, however, was normally changed after 800 cycles, cycles that included 100 grams of flux additions. We noted that the flux treatment did not negatively affect the performance of the silicon carbide rotor. Overall they pointed to financial advantage accruing from less frequent rotor replacement and the higher level of production that could be achieved through less downtime

Customer B:

The gas content in our alloy [AlSi Cu] is on a low level by 9 3 using Morgan rotors. Until the end of life (five to ten times more than conventional graphite rotors) the gas content is very stable because of high erosion resistance of silicon carbide rotor.

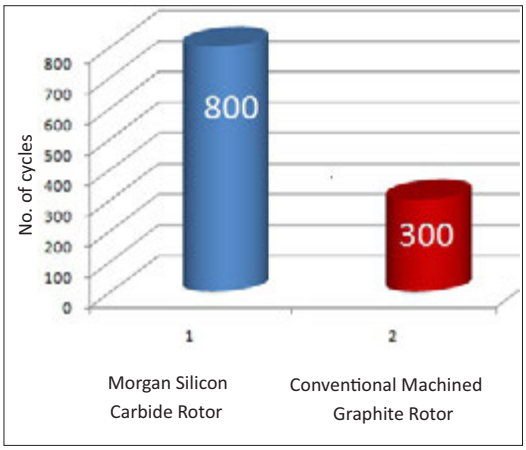
Customer C:

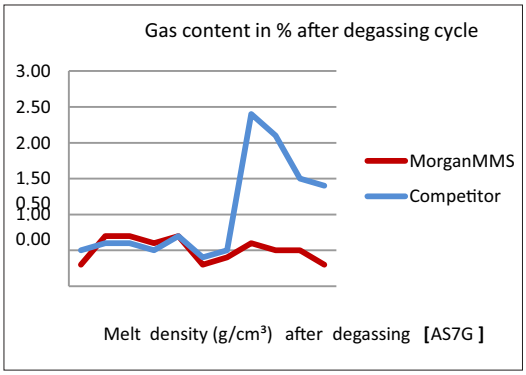
We were surprised about Morgan degassing rotor performance in case of degassing result. The density of our alloy [AS7G] reached 2.69-2.70g/cm³ which is an excellent value.

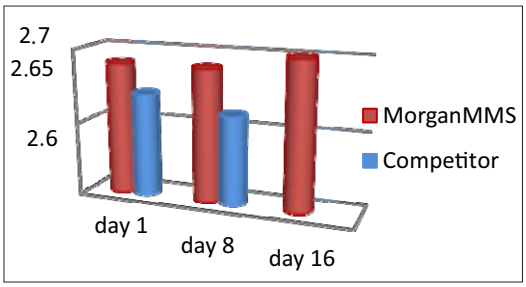
Customer D:

Due to high resistance to wear, service lifetime increased from 40 cycles (graphite rotors) up to more than 100 cycles by using Morgan rotors [copper alloys]. Also we reduced our stock of degassing rotors because of the high performance of Morgan rotor we are also using Ø150mm head for 850kg melt instead of Ø210 mm with the same degassing result.

This degassing rotor has been used 20 cycles at 1250°C and shows no erosion at shaft and head.







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