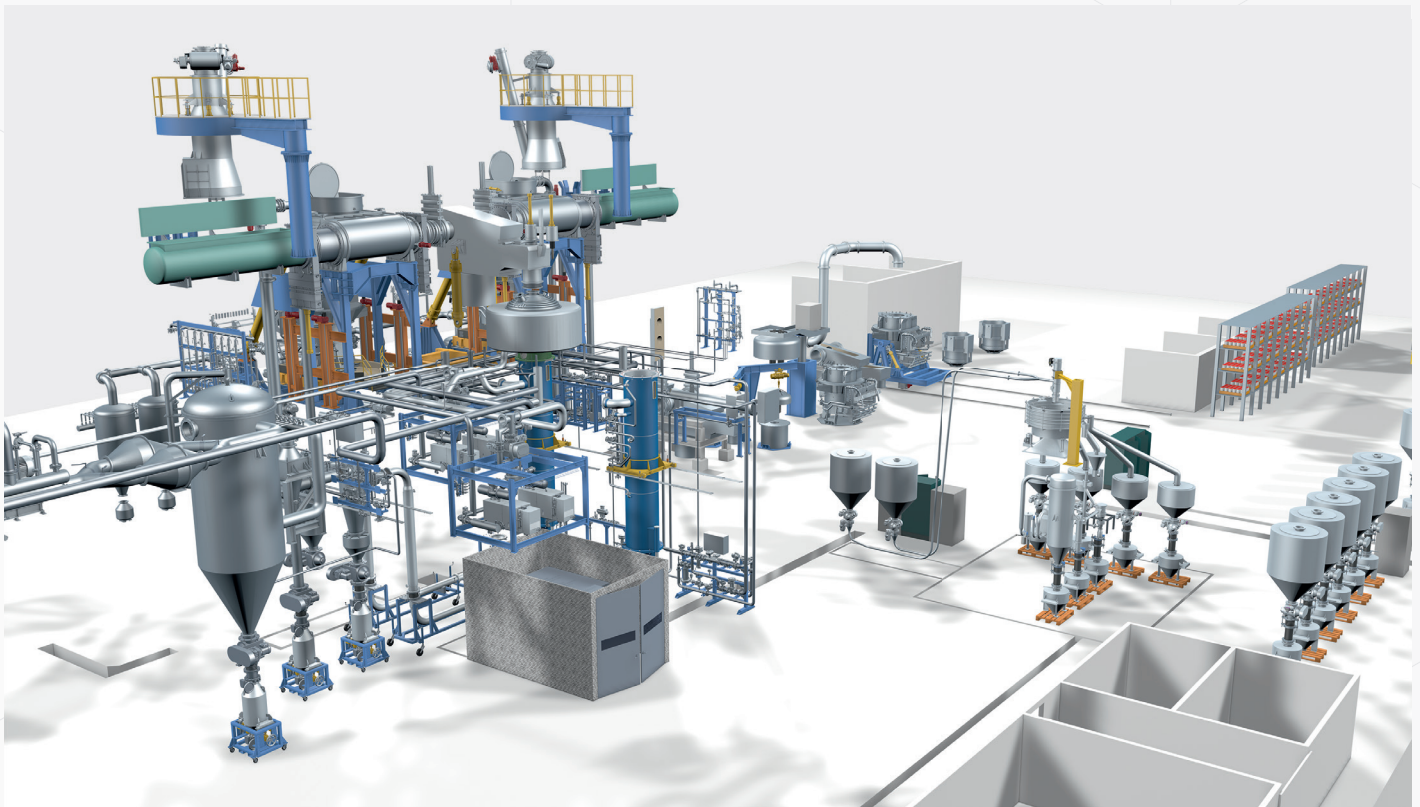


CONTINUOUS POWDER PRODUCTION

We have reinvented powder manufacturing –
Let's revolutionize the market



Our newly developed continuous powder production process enables the highly cost-effective and large-scale production of 4,000 tons metal powder per year and secures competitive advantages for you as a market leader. Production costs for spherical, high-quality metal powders are significantly reduced by this disruptive innovation. Think big to meet the rapidly growing demand for metal powders.



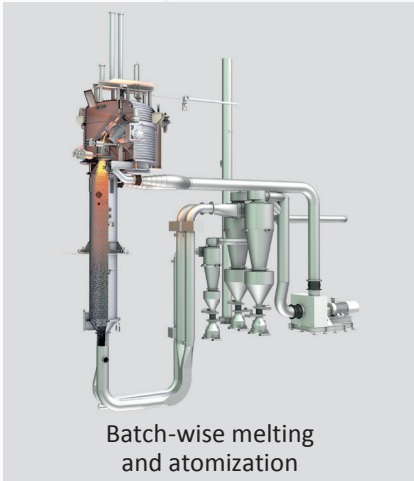
YOUR COMPETITIVE ADVANTAGES:

- Integrated plant solution with intelligent factory layout – from the scrap handling to shipping area
- Significant CAPEX and OPEX reductions
- Market-ready technology – way beyond just a concept
- Be the first to revolutionize the powder market and gain a leading competitive edge
- New process enables large-scale production of up to 4,000 tons per year
- High quality levels and high yields in fine fractions guaranteed – like with the conventional VIGA process

Revolutionary Continuous Powder Production Process

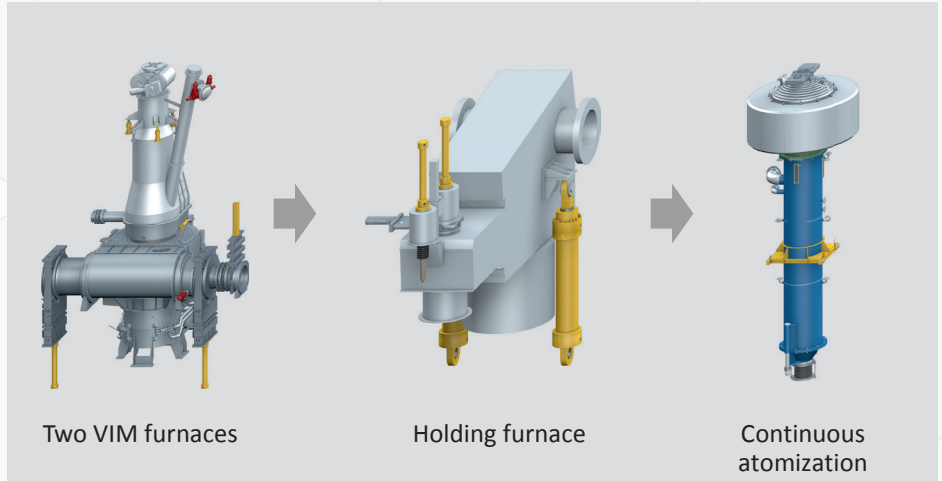
In the conventional gas atomization process, a small melting furnace melts sufficient material for just one batch, which is fed into a single nozzle system. By contrast, with our new developed continuous production method, two large vacuum induction melting (VIM) furnaces continuously hold a liquid melt, which is atomized successively through the nozzle. The nozzles can be exchanged during operation. Like with the conventional VIGA process, melting is performed under vacuum. In addition to the VIM route, where pure scrap is used as feedstock, the new process can also work with an existing liquid metal supply. A metallurgical route with basic scrap as feedstock is also possible.

Gas atomization (VIGA)

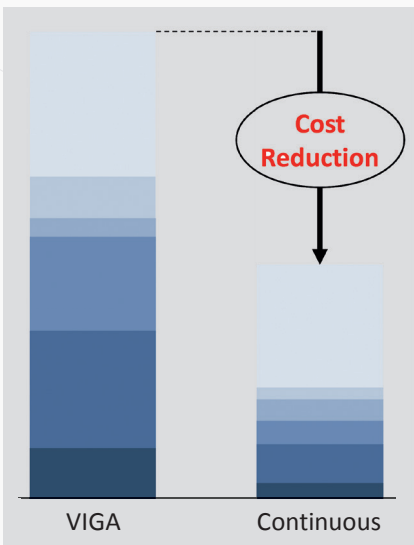


vs.

Continuous Powder Production Process



Production costs



The significant increase in capacity creates huge economies of scale. Set-up times, melting, and cooling times are reduced. Overall, this results in tremendous reductions in CAPEX and OPEX costs per ton of powder. The CAPEX costs in relation to capacity are significantly lower compared with a VIGA system. What's more, you benefit from reduced labor costs and lower energy consumption during production.

Discover more:
<https://www.sms-group.com/plants/powder-atomization-plant>



SMS group GmbH

Ohlerkirchweg 66

41069 Mönchengladbach, Germany

Phone: +49 2161 350-1656

additive.manufacturing@sms-group.com

"The information provided in this brochure contains a general description of the performance characteristics of the products concerned. The actual products may not always have these characteristics as described and, in particular, these may change as a result of further developments of the products. The provision of this information is not intended to have and will not have legal effect. An obligation to deliver products having particular characteristics shall only exist if expressly agreed in the terms of the contract."