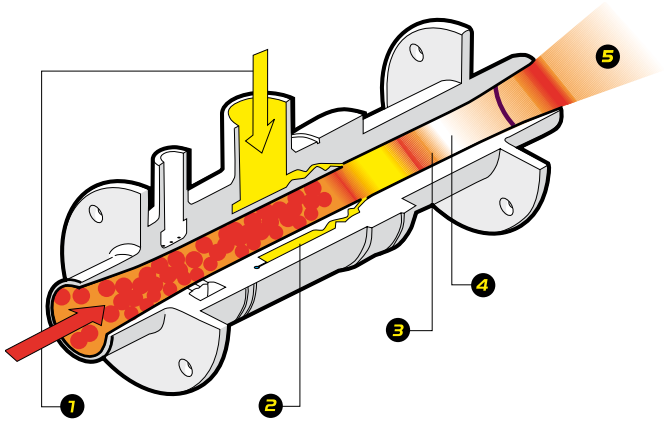
PDX® Platform Technology

How it Works

The PDX® Reactor utilises a supersonic vapour flow and condensation shockwave, which is generated by the injection of high velocity steam. Steam is introduced into a specially designed annular “conditioning” chamber that wraps around the core of the PDX Reactor unit. From here it is injected into the process fluid at supersonic conditions generating high levels of shear and turbulence within the process fluid, leading to the creation of a controllable, cross bore condensation shockwave. This combination provides unsurpassed homogenous mixing, agitation and heating of the process fluid.



1. STEAM IS INTRODUCED INTO AN ANNULAR CONDITIONING CHAMBER THAT IS WRAPPED AROUND THE CORE OF THE PDX® UNIT.
2. THE STEAM IS THEN INJECTED INTO THE PROCESS FLOW THEREBY CREATING MOMENTUM TRANSFER.
3. THE PDX® GEOMETRY FORCES THE STEAM TO BECOME SUPERSONIC FORMING A CONTROLLABLE SHOCKWAVE.
4. MIXING AND HEAT TRANSFER TAKES PLACE IN THE CONTROLLABLE LOW-PRESSURE, LOW-DENSITY SUPERSONIC REGION.
5. THE PDX® UNIT ALLOWS CONTROL OF THE SUPERSONIC ZONE, AND HENCE CONTROL OF THE SYSTEM’S UNIQUE CAPABILITIES.

With its flexibility and scalability the PDX technology can entrain, mix, separate, atomise, heat, pump and homogenise. The unique combination of these characteristics is enabling the PDX technology to revolutionise industries across the world by providing fast, energy saving alternatives to traditional processing systems.

PDX Benefits

- Fast processing times
- Proven energy savings due to the speed, intensity and flexibility of the system
- Reduces traditional multi-step processes into a minimal number of production stages
- The unique design of the clear bore mechanics result in significantly reduced Clean In Place (CIP) times
- Reduces the carbon footprint of products and processes
- Retrofittable or new installation available. Fits into existing footprint where required.
- No moving parts, intrinsically safe
- Fully scalable, giving options for small and large businesses alike

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PDX® Platform Technology

POWDER ENTRAINMENT HOPPER

Taking the Technology to Industry

The flexibility and adaptability of the PDX technology provide benefits to a wide range of different industries. The technology is already proven to be scalable in size (both upwards and downwards) and is routinely providing customers with process time compression, energy savings, yield improvements, ingredient reduction, productivity increase and improved utilisation of floor space. The technology consistently provides performance levels unattainable by other technologies.

Manufacturers in the Food and Drinks industries have seen products such as beer, smooth and particulate sauces, dairy products and soft drinks all reap the benefits of the PDX technology. Not only does the PDX technology deliver fast and cost effective production, it also preserves the product quality, consistency and look.

Great Taste, Less Waste

In a world where reducing CO_2 emissions is increasingly important, reducing the carbon footprint of products and manufacturing processes is a priority. Driven by consumer demand being greener and cleaner is now a key business driver for manufacturers, suppliers and buyers alike.

Cleaner and Greener Manufacturing

- Increased energy savings
- Reduced chemical usage in the CIP system – due to the unique clear bore design
- Fully cleanable in place – reducing time in maintenance and downtime
- Cleaner recipes in food – no hot or cold spots during operation, therefore no burn-on
- Healthier recipes – less starches and salt needed to enhance flavours
- Software drives repeatable, consistent products – less waste
- Reduced wastage - due to the improved mixing and dispersion of ingredients
- Less contamination – no burn-on therefore less contamination of products

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