Introduction of the AF Technology

Orenda's AirForce Technology was first introduced in 2014 and as of today, we have in excess of 50 units operating in three different continents. Not only has our technology been tested in high and low ambient temperatures but it has also gone through testing with low and high density materials, as well as with polymers that previously challenged the pulverizing process.

The following is a report we've compiled based on the results collected from our AirForce users.

AirForce benefits reported to Orenda include:

- Reduced energy consumed per Kg of material pulverized.
- Reduced maintenance cost.
- Increased average weekly operating hours (less down time, no meltdowns).
- Optimized ease of operation.
- Versatility (able to pulverize a wider spectrum of material).
- Exceptional quality of finished material.
- Machine design is compact and operator friendly.
- Easy to operate, clean and maintain.
- Clean operation (no contamination).

Energy Consumed per Kg of Material Pulverized

Competitors' pulverizers, with single or dual mills, have a total energy available of 110-120 kW and their production rates range from 450-550 kgs/hr. Our AF H1D500, on the other hand, is a single mill system that produces in the range of 800-900 kgs/hr on a 115 kW system. This is incredibly more beneficial as a single mill design requires much less maintenance when compared to a multiple mill system, with our blades lasting 3X as long as conventional blades. Based on customer testimonials, this factor increases the average production rate and decreases the blade expense by 1/3.

Further maintenance cost savings:

- Bearings and seals are air cooled as well, doubling their lifespan.
- No water cooling or related maintenance.
- Remote troubleshooting.
- No melts in the mill and no wasted time cleaning pulverizing discs from melted plastic.

Average weekly operating hours increased as result of:

- Reduced downtime.
- Simplicity of operation.
- Long lasting and high performance discs.
- Ease of operation optimized.
- Remote troubleshooting.
- One mill operation.
- AirForced cooling

Demonstration of Versatility

Pulverized:

- Low density polyethylene – Marlex Chevron Philips
- EVA – Ampacet
- P.P – Clariant
- P.P PMPP141 – Rotoworks

These customers' materials were pulverized at rates and quality never seen before. Our customers found that the finished material was of exceptional quality. They observed the following:

- The P.M particle morphology is homogenous, providing exceptional flow properties and bulk density.
- The material is pulverized at an extremely high temperature but the blades remain cold, thus preventing the pulverized particles from fusing together and creating a meltdown.
- The extremely hot particles enter the air stream where they cool down, creating homogenous round particle morphology.
- Compact design, operator friendly.
- Easy to operate, clean and maintain.

At 2159 x 5588 mm, the Orenda pulverizer is one of the most compacts designs. A quick clean option is offered, which includes:

- New metric sifter
- Easy to open gate
- Cyclone whose bottom swivels out, while all piping remains in place.

Cleaning of the whole machine is reduced to less than half an hour, a very useful time saving tool when pulverizing multiple colours. Remote troubleshooting is a standard option.

The AirForce pulverizer has been designed to prevent material from escaping the bottom of the mill, which is not the case with other pulverizer designs. This eliminates the chances of contamination while creating a clean environment around the pulverizer. Thus, Orenda pulverizers optimize your operating and maintenance cost and increase production whereas with our competitors machines, after the initial investment to purchase, the costs to operate and maintain these units becomes a lifetime unprofitable investment.

The latest AirForce models are available in two options for adjusting the disc gap --- one features a manual Quick Adjust design, which allows the operator to simply turn a dial and the disc gap adjusts as required, to produce the powder quality desired; the second, a fully automated Smart Adjust system, which incorporates artificial intelligence for maximum efficiency. Both represent significant advancements that eliminate costly downtime. Operators no longer need to stop the machine for time consuming adjustments.