**BACKGROUND / REQUIREMENT**

An internationally renowned API manufacturer of over 200 molecules needed to replace their existing Pin Mills/Hammermills, and substitute them with a more cost effective and efficient fine grinding alternative. Because of the large number of products and different physical grades, it was a requirement that the mill be versatile (provide a wide PSD spectrum with the same machine). Product changeover downtime and overall lengthy maintenance procedures were contributing factors to increased production costs, resulting in diminished profitability. Furthermore, excessive noise characteristic of Pin Mills/Hammermills was an added factor considered in their decision to source an alternate fine grinding technology. Typically, a PSD Range of 20 - 40 microns is considered in the API industry to be difficult to obtain. Very few mills can obtain a narrow PSD in this range without generating too many fines or over-sized particles.

**FINE GRIND PERFORMANCE**

To meet the criteria set by the customer, Quadro offered the Fine Grind F10 Mill. The F10 is a self-contained, fine grinding milling plant. It operates without the need for additional expensive auxiliary equipment, which was of great interest to the customer. The F10 platform included a product feeder, PLC control panel, milling chamber and product collector, all of which are supported by a portable frame which houses the motor, blower and ancillary mechanical components. The API manufacturer took possession of one of our rental F10 units and proceeded to test a variety of products, comparing the results with those existing Pin Mills/Hammermills.

The advantages of the F10 quickly became apparent to the operators. Since all the milling components can be taken apart in a minimal amount of time, without the use of any specialized tools, cleaning time was greatly reduced from 9 hrs to only 1 hr (Pin Mills would require approximately 9 hrs of cleaning due to product build-up between pins). The Fine Grind F10 Mill design greatly reduced the noise level with readings in the 78 - 79 dB range, well-below that elicited from their existing Pin Mills/Hammermills. Finally, the milled output obtained with the Quadro® Fine Grind F10 Mill either equaled or exceeded the customer’s expectations in both capacity throughput and particle size distribution (PSD).

(Refer to graphs for actual distribution).

**SUMMARY**

Overall, the customer was extremely pleased with the F10 and proceeded to purchase their rental unit and have since successfully implemented it into their production runs, validating several existing products and introducing new ones. The F10 met all their requirements for a more compact, cost effective, maintenance-friendly and quieter mill, while still producing the customer’s desired capacity and PSD targets.