gMAX® Cyclones for WFGD

With decades of experience and a rich history of excellence, KREBS® is the industry leader in hydrocyclones and separators for wet flue gas scrubbers in power generation.

Benefits
- Low capital cost and no moving parts
- Interchangeable parts between reagent preparation cyclones and gypsum dewatering cyclones
- High capacity in a small footprint
- Efficient separation with KREBS® gMAX® cyclone technology

- Wide range of KREBS cyclone sizes are available; diameters of 2-in, 4-in and 6-in are most common in WFGD applications
- Cyclones with steel housings are available with replaceable wear liners in gum rubber and synthetic elastomer or ceramic
- Cyclones are also available in molded urethane
- An epoxy paint is standard for corrosion resistance in a high-chloride environment
Growing demand for dewatering cyclones

The use of hydrocyclones to dewater gypsum from wet flue gas desulfurisation (WFGD) systems in coal-fired power plants is becoming more significant, as the opportunity has increased to substitute this gypsum for natural gypsum in traditional applications such as cement, wall board and soil conditioners. Our KREBS® hydrocyclones, using gMAX® cyclone technology, are an ideal solution for classification of the ball mill discharge in the reagent preparation area of wet FGD scrubbers.

In wet FGD systems, limestone (calcium carbonate) is ground to a powder in a wet ball mill and sent to reagent preparation hydrocyclones. The hydrocyclone underflow is returned to the mill for further grinding, and the overflow reports to reagent storage, from which it is pumped through spray nozzles into the scrubber.

In the scrubber’s forced oxidation process, the limestone reagent reacts with absorbed SO2 from the power plant boiler exhaust, and forms gypsum as a byproduct. Gypsum slurry from the absorber is pumped to dewatering hydrocyclones, and is dewatered from about 15%–20% solids by weight to approximately 50% solids by weight. This thickened slurry feeds a vacuum filter to produce a filter cake that is used as commercial-grade wallboard gypsum, or is sent to a landfill as non-hazardous material.