Auto-PSD-Control System

Controlling by “Rotating Speed”?
Wait! Control the “Particle Size Distribution” directly.

The significance of measuring in real time.

By measuring particle size distribution in real time, you can see various changes in the process. Even if raw materials, recipes, and operating conditions are already fixed, the quality of the spray-dried powder changes constantly during the process. This means that the fixed atomizer rotating speed may not achieve a stable particle size distribution. With our new technology, you can control not only the rotating speed but also the particle size distribution.

![Example of Dv50 particle size distribution automatic tracking](image)

Understand the real process

“Insitec” is Malvern’s real-time particle size distribution measurement system. The system can monitor flowing particles in real time with high accuracy in the process.

![Recognize and control automatically](image)

Coanda Effect Disc  PATENT PENDING

Innovative disc shape dramatically improves your yield rate.

In centrifugal atomization, the liquid material is fed and the droplets are atomized toward horizontal direction by centrifugal force. In general, it is necessary to design a drying chamber bigger in order to prevent adhesions of undried material droplets on the inner wall. To solve this issue, we developed a brand new type of disc shapes named Coanda Effect Disc (the coanda effect is the tendency of a fluid to keep attaching to a convex surface). With this phenomenon, sprayed droplets go downwards and can be taken more fall-down time inside the chamber. This allows to enhance the drying efficiency and reduce the material adhesion loss compared to the process operation by conventional disc, and even design a drying chamber size smaller without sacrificing the production yield rate.

![Conventional disc vs Coanda effect disc](image)

Swirl Flow Classifier  PATENT PENDING

High yields from the drying chamber.

By dual collection method which is generally used for inorganic materials such as fine ceramics, granulated powder which has a large particle size and is excellent in fluidity is collected from the drying chamber, and fines are collected from the cyclone. Granules collected by the cyclone may be broken into fines due to the friction impact on the inner cyclone wall, and therefore are often returned to raw materials. To increase the collection yield from the drying chamber we developed the swirl flow classifier at the inlet of the cyclone. By attaching the classifier, it is possible to improve the collection efficiency from the drying chamber.

![Conventional disc vs Swirl flow classifier](image)