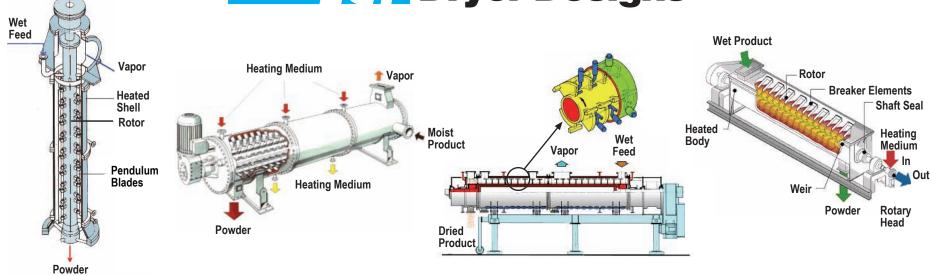
Dryer Designs



| | Vertical CP Dryer | Horizontal D Dryer | Combi Dryer | Reactotherm [®] Dryer | Rovactor [®] Dryer |
|---------------------------|---|--|--|---|---|
| Feed Characteristics | Solutions Pumpable slurries | Wet powders or cakes | Solutions Pumpable slurries | Slurries and solutions Cakes and wet powders | Wide range of feeds |
| Powder Characteristics | Free flowing Must be shear stable | Free flowing Must be shear stable Produces dry powders | Free flowing Must be shear stable Produces dry powders | Produces dry powders Handles crumbs | Produces dry powders Requires free flowing powders |
| Residence Times | Approximately 1 minute | Approximately 4 minutes | Approximately 6 minutes | 1 - 8 hours | 1 - 8 hours |
| Back Mixing | Virtually NONE | Limited back mixing | Limited back mixing | High | High |
| Special Features | Easy to control High heat transfer Short heat history | Fouling materials okay Heats and cools in one machine | Easy to control Can cool in same system | Batch or continuous Low shear history Viscous, pasty, fouling materials Breaks up lumps Largely self-cleaning | Batch or continuous Low shear history |