

## Kneader Extruder

**Kneader extruder** is the unique technology **extruder** range that builds on the proven Umang technology and its benefits. The machine has rotating sigma blades above and a **screw cone extruder** below, the blades and screw are carefully coordinated so that process and validation wise there is no difference to the **extrusion process** from machine to machine. This unique design of the **Kneader extruder**, screw and meshes makes the not only a perfect **wet granulator** but also an ideal machine for very difficult products with solvent as an integral part of the formulation, these machines are used majorly where there is not much time between the mixed powder which may be dried due to high alcohol content in the mixture, it needed immediate or very **fast extrusion**, the machine is ideal for such applications.



The outstanding feature of the **mixer extruder** / mixer cum extruder or **kneader extruder** range is the integrated and CIP optimized design. Connections, cabling and supplies are completely integrated, covered and sealed so the outside of the machine is smooth and very easy to clean. The innovative discharge blade design and optimized seals inside the **extrusion** assembly allow for CIP. As a result of this the our **mixer extruder** is highly flexible, quick product changeover increases productivity and cost effectiveness.

The **Kneader extruder** ranges from 200 - 500 Kgs/ batch, for large scale production the design operation with platform and dust-free discharging via a linked mill directly into an IBC. The **Kneader extruder** can be stand-alone or linked to a **spheroinizer** or a **Fluid Bed Wurster** or **fluid bed dryer** to form an integrated system.

### Standard Features for Kneader Extruder :

- Standard meshes from 500 - 1500 microns.
- Twin counter rotating mixing Blades and cams rotating in counter directions : perfect seals in direct contact with the product on both ends of the blade.
- Perfect cGMP-design: smooth covering, no external tubing and piping allowing easy cleaning.
- Screw for extrusion of the material out to a spheroinizer or a fluid bed dryer bowl.
- Variable perforation meshes ideal for perfect discharge of difficult products
- User-friendly operator-machine interaction via graphical operator panel 12" Industrial PC software with PROCESS + range of software which helps interlinking all plant equipments to a single system.
- Flexibility (processes and products) for wet granulation.

### Optional Features for Kneader Extruder :

- Explosion proof design
- Automatic cleaning (WIP/CIP) of entire system
- 21 CFR part 11 certified controls.
- ADVANCE PROCESS + for easy and automated plant control
- Jacketed / insulated bowl
- Total containment through up- and downstream split valves and flexible isolation systems.
- Integration with fluid bed processor possible: perfect closed link for dust-free operation
- Video monitoring of the process
- Product feeding both by gravity or vacuum loading system directly from the containers
- Validation documentation and assistance based on GAMP

### Technical Specifications for Kneader Extruder :

Model	Kneader Extruder – 5	Kneader Extruder – 30	Kneader Extruder – 100	Kneader Extruder – 300	Kneader Extruder- 500
Batch Cap./Kgs.	1-4	5-50	30-150	50-400	100-900

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