

Extrusion Spheronization

Extrusion spheronization is the new pelletization range that builds on the proven Umang's proven technology and its benefits.

The pelletization system ensures various designs of extrusion like screw extrusion, radial extrusion, cone extrusion, dome extrusion, basket extrusion, die roller extrusion or mixer extruder to be fitted on top of the twin spheronization system ensures that process and validation wise there is no difference to the extrusion design and operation parameters and design. This unique design of machine, meshes and pressing cams with chequered plate design makes the not only a perfect wet granulator but also an ideal pelletization machine.

The outstanding feature of the combined extrusion and spheronization, combined pelletization system 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 valve design and optimized seals inside the bowl allow for CIP. As a result of this the our Extrusion and spheronization is highly flexible, quick product changeover increases productivity and cost effectiveness.

The Extrusion spheronization ranges from 50 Kgs. / batch to 400 Kgs./ batch featuring through the wall design and movable head, allowing operation with platform and dust-free discharging via a linked mill directly into an IBC. The Extrusion spheronization can be stand-alone or linked to a fluid bed to form an integrated system. A high shear mixer can also be connected to the Extrusion spheronization system.

Standard Features for Extrusion Spheronization :

- Various extrusion designs possible like radial extrusion, cone extrusion, dome extrusion, axial extrusion, mixer extruder, pressure extruder or basket extruder configurations.
- Various mesh sizes possible depending on the design of extrusion starting from 300 microns upto 7500 microns.
- Vast experience of more than 2500 products being processed on our systems.
- Complete flexibility in choosing the right equipment for your product and process due to a vast range of extrusion equipments available with us.
- Twin spheronizer with bucket assembly is fitted below the extrusion module.
- Chequered plate clean design with no seals in direct contact with the product.
- Various configurations of chequered plate like 1mm / 2mm / 3.25 mm / 6.5 mm plate configurations.
- Perfect cGMP-design: smooth covering, no external tubing and piping allowing easy cleaning
- Completely integrated full opening side discharge: perfect discharge of difficult products



- Through the wall installation: minimum space required in GMP area
- 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.

Standard Features for Extrusion Spheronization :

- Explosion proof design
- Automatic cleaning (WIP/CIP) of entire system
- 21 CFR part 11 certified controls.
- ADVANCE PROCESS + for easy and automated granulation control
- Jacketed / insulated bowl and extrusion chamber.
- Total containment through up- and downstream split valves and flexible isolation systems.
- Integration with a high shear mixer is also possible for uniform mixing of blends for further Extrusion and spheroization operations.
- Integration with fluid bed possible: perfect closed link for dust-free operation
- Video monitoring of the process
- Liquid addition system (peristaltic pump / pressure vessel)
- Product feeding both by gravity or vacuum loading system directly from the containers
- Validation documentation and assistance based on GAMP

Technical Specifications for Extrusion Spheronization :

| Model | Extrusion Spheronization LAB | Extrusion Spheronization – 30 | Extrusion Spheronization – 100 | Extrusion Spheronization – 250 |
|----------------|------------------------------|-------------------------------|--------------------------------|--------------------------------|
| Batch capacity | 20 – 500 kgs/Batch | 20 – 30 kgs/hr. | 30 – 100 kgs/hr. | 50 – 250 kgs/hr. |

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