

# Lab Scale Process Systems



- Complete Granulation Suite
- Flexible capacities
- Choice of OEB 5 containment
- Explosion proof variants



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Tapasya Engineering Works Pvt. Ltd. is a 54 years old Granulation Solution Company, based in Mumbai, India, offering advanced technologies for the processing for Oral solid dosage forms.

Over the years we have evolved our products to meet the ever changing needs of our customers with a large pool of design capabilities and 4 state of the art manufacturing facilities.

With installations across the globe, Tapasya partners you at every level of your requirement.

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## Granulation System

Granulation is the heart of the Oral Solid Dosage form and Tapasya offers a wide range of capacities for Laboratories, Pilot scale & Production scale.

With deep understanding of the process, integrated systems installed worldwide and over 54 years of experience every system is designed for specific applications, right from Conceptualization to Execution.

All systems are designed for a scale-up to production machines and in line with cGMP

### Our R&D product range includes:

- Lab Model SAIZONER® High Shear Mixer Granulator with R2T technology
- Lab scale modular Fluid Bed dryer
- Mini Model Tap Cone Mill & Under Driven Cone Mill
- Universal Blender



SHIELD 12 : Explosion proof pilot line

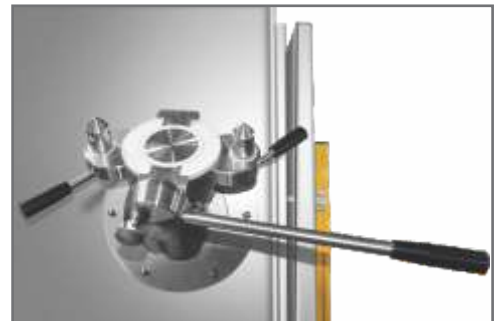
## SHIELD 5

The potential environment issues associated with Pharmaceutical manufacturing projects includes Air emission, Hazardous material handling, threats to biodiversity and bioethics.

Design of Granulation suite should manage the environmental risk aspects and human safety.

The wet granulation of potent drugs in which exposure to Active Pharmaceutical ingredient can affect the user and environment.

For such integrated granulation and drying suites with OEB 5 containment is highly effective design. Keeping this need in sight, Tapasya introduces SHIELD5 – an OEB 5 compliant containment suite.





OEB 5 compliant Complete Granulation line

- OEB 5 compliant complete granulation line
- Swiss isolator technology from our partner **micromachinazione**
- Defined intermittent exposure level (docking / charging / discharge) for OEB 5 compliance
- Analyzed permanent exposure level (dispensary / process unit)
- Integrated CIP system



## Granulation

The SAIZONER® mixer Granulator is the most versatile process equipment with a wide range of capacities for Laboratories, Pilot scale & Production scale. Standard capacities for the bottom-driven Granulators are set at 2, 5, 10, 15, and 25, 50 liters with each unit being geometrically scalable. This level of flexibility offers you complete solutions at every stage of your operation.

The Laboratory scale SAIZONER® is designed for use with different capacities bowls. This gives customers optimum flexibility for the future.



TAP-HSMG-10 Laboratory Saizoner®



Bowl size from 2, 5, 10, 25 & 50 liters



The installation of the HMI is beneficial for laboratory and pilot scale machines.

This offers a user-friendly visualization as well as extensive batch data logging and documentation.

## Salient Features

- User-friendly bench top version, simple to clean
- Compact and ergonomically designed
- Bowls are optionally available with jacket and temperature sensors
- Interchangeable bowls 2 / 5 / 10 and 25 / 50 liters with tool less changeover
- Variable speed drives - to adjust the speed to the relevant bowl size to maintain the scale up factor.
- PLC with touch screen panel
- Current and Torque measurement for granulation end point detection.
- Intelligent recipe management
- Keeping all inherent benefits of SAIZONER® Tapasya has introduced revolutionary R2T technology in wet granulation process for Torque based End Point Detection.



## Specification

- Capacities offered: 2, 5, 10 & 25, 50 liters
- **Scalability upto 1800 liters**

The background of the slide features a close-up, high-magnification photograph of granules. These granules are irregular in shape, ranging from small, fine particles to larger, more rounded clumps. They have a light beige or off-white color with some darker, greyish-brown spots, suggesting a porous or textured surface. The granules are scattered across the frame, with a higher concentration in the upper right and lower right areas, leaving the left side more open for text.

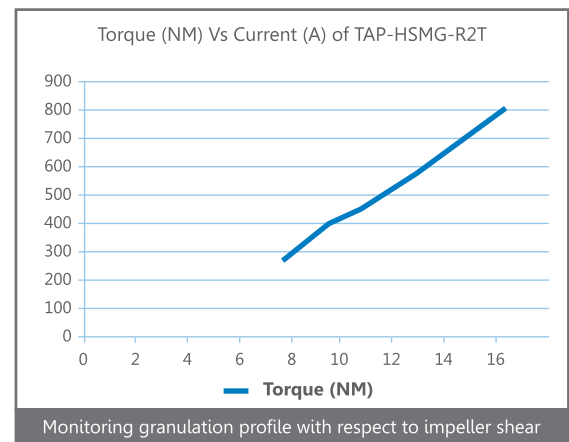
## TAP-HSMG-R2T-10

### **Distinct edge over Conventional Granulators**

- Greater accuracy in determining and validating granulation end point.
- Superior performance of machine with 100% accuracy due to direct drive motor.
- Improved efficiency as minimal maintenance needs, due to elimination of conventional machine components such as, belts, pulley drives, gearbox etc.
- Reduced number of batches for validation of product to commercial level, due to precise Granulation endpoint.
- Major savings and cost containment due to absence of drive elements, improved efficiency of 85% and saving in power bills upto 12%.



- Torque based end point detection
- High energy efficient and environment friendly
- A compact gearless model means almost noiseless run
- Flexibility of interchangeable bowls
- Maintenance friendly drive unit
- Increase in productivity in commercial batches due to R2T technology



TAP-HSMG-R2T Technology

## Drying

The TAP-FBE-10 is a multifunctional Fluid Bed equipment designed for research and development of drying and top spray agglomeration process.

The Lab model fluid bed dryer processes minimal quantity with maximum quality. This feature makes it an ideal machine for drying trials on a small scale.

Feasibility studies can be extensively conducted on TAP-FBE-10. This innovative small machine is easy to handle and extremely easy to clean. These detailing makes it perfect for use in pharmaceutical research and development laboratories.



TAP-FBE-10



## Salient Features

- Inlet Airflow and Temperature Control
- Variable process control of airflow, temperature.
- Dehumidification of inlet air
- Ergonomically arranged connections
- Easy to handle cartridge filters
- Removable Filters Chamber and Filters
- Control: By PLC monitor with printing facility for complete batch reporting
- Integrated recipe handling and Batch reports

## Specification

- Capacities offered: 1.5-3 Kg, 3-5 Kg, 5-10 Kg, 20-30 Kg

**Scalability upto 500 kgs**



User friendly swivel bowl design



Cartridge filters with automated pulse jet cleaning

## Milling

The TAP Cone Mill has conical sieve which is particularly well suited for deagglomeration and sizing of granular products. This design considerably increases efficiency. It sets new benchmarks with regards to modularity handling and maintenance in dry powder as well as wet powder milling.

Every Tapasya Sieves & Mills are made of high grade stainless steel with polished product contacting surfaces.



TAP-TCM-50

## Salient Features

- Direct over driven & Under driven models: for lab and production sizes
- Minimal product loss and Low fines
- Dust free containment
- Easy-clean and low maintenance
- Product contact parts are easy to disassemble.
- Portable with castor wheels
- Unit is complete with controls that include a digital speed indicator, motor load indication and variable speed adjustment system.
- Provision for vacuum milling

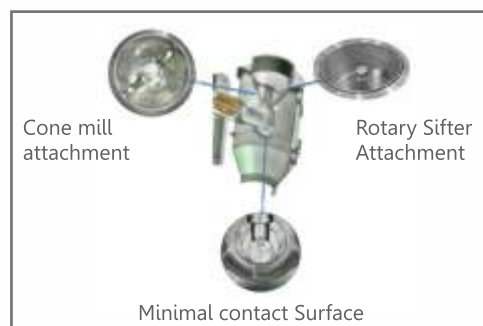
## Specification

- Capacities offered: 20 kg/hr, 50 kg/hr

**Scalability upto 1800 kgs/hr**



TAP-UDCM-50





## Blending

The Universal Blender is an all in one blending solution for your pharmaceutical research and development laboratories.

The universal blender consists of single drive unit and 4 different interchangeable blending containers:

V type, Square Bin, Octagonal, Double Cone

Designed to suit every single type of container, it offers maximum flexibility taking care of your entire Blending needs in R&D.



Universal Blender



Octagonal



V type



Square bin



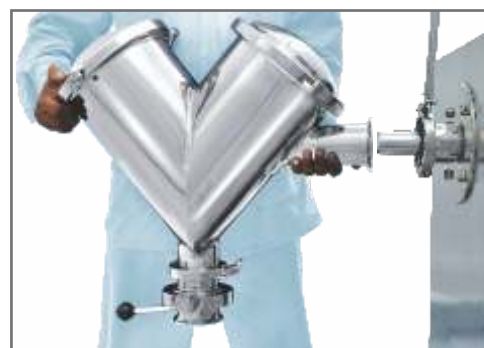
Double cone

## Salient Features

- Universal Blender with Octagonal, Square Bin, 'V' type (Twin Shell Blender) & Double cone shaped containers
- Single drive system for all the Blenders
- Brake motor for zero degree positioning
- Direct drive system ensures low noise & lower drive losses
- Tool less container changeover
- Cantilever type design occupies lower foot space
- Safety Railing with Interlocking
- Butterfly valve at the discharge end ensuring total containment



Butterfly valve



## Specification

- Capacities offered: 2, 5, 8, 12, 20 liters

**Scalability Data on request**



Safety railing



**Tapasya Engineering Works Pvt. Ltd.**

*Plot A / 212, Road No.30, Wagle Industrial Estate, Thane - 400604, India.*

*T: +91 22 6157 9400 | F: +91 22 2582 5243*

*E: [sales@tapasyaindia.net](mailto:sales@tapasyaindia.net)*



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