THE SINGLE STOP SOLUTION PROVIDER, PAR EXCELLENCE

Tapasya is renowned for its contribution to the Pharmaceutical, Nutraceutical, Food, Chemical, Cosmetics and other allied industries as a Single Stop Solution Provider for Solid Formulations and much more. Started in 1962, its experience, spanning over 5 decades has added immense value to the granulation, drying, milling, blending, micronising, coating and pelletising processes of innumerable companies in India and world over. Its products, are utilised by the top Pharma companies of India and its granulation system, Saizoner, is the market leader among ‘High Shear Mixer Granulators’.

Tapasya’s distinction lies in its ability to offer individual solutions tailored to varied requirements, ranging from a lab scale production of a few grams to a commercial scale output of many tonnes a day.

Backed by deep-rooted values of, ‘Integrity, Ownership, Passion, Achievement orientation, Adaptability, Innovation and Team spirit’, it is Tapasya’s vision to be a ‘World class enterprise providing Integrated Solutions to the Pharma and allied industries.’

Tapasya, in collaboration with distinguished international partners, also provides novel technological solutions in the following specialised areas:

- Containment material handling system, through our German partner Andocksysteme G.
- Comprehensive assortment of liquid filling and packing systems for pharma and beveage industry from Fill Technic, Turkey
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Wet agglomeration processes have traditionally been considered an empirical art, the three key areas of wet granulation processes are wetting and nucleation, consolidation and growth, and breakage and attrition.
HIGH SHEAR MIXER GRANULATOR

Tapasya’s High Shear Mixer Granulator is designed to meet special needs of tablet formulation technology. This is achieved by reducing processing time, homogeneous mixing, even distribution of binder, wetting, nucleation and granule size growth with sampling provision for in process analysis and proven safety during processing, compliant to cGMP norms.

Tapasya’s High Shear Mixer Granulator is designed to meet the special needs of drying of Pharmaceuticals (Formulations and Bulk Drugs). It offers a controlled, channelised process in a quest to achieve product homogeneity, fluidity, stability by lower heat transfer, clean & hygienic air medium using pneumatics, superior MOC, proven manufacturing expertise and application of cGMP at all stages.
Features:

- Unique design incorporating Impeller, Granulator, Online Co-mill, Side discharge valve & dryer
- Internal and External surfaces of Mixing Bowl, Mixing Bowl cover, Impeller, Granulator, and Discharge Chute constructed in SS 304/316L
- Specially mounted torque sensor arrangement for critical parameters of granulation like end point determination & desired granule profile
- Impeller Lifting Options:
  - Pneumatically Operated Bottom Impeller Lifting for ease of cleaning
  - Electromechanical impeller lifting and removing mechanism
- Hydraulically operated Lid lifting
- Parts easy to dismantle, clean and re-assemble
- Pneumatics pre-tubed
- Gaskets of Teflon / Silicon
- Bowl surface finish of 0.3RA (inside / outside)
- ATEX Compliant option available
- Customised capacities available
- Optional features of Jacketed models, Vacuum / Gravity Charging, Mechanical Seals, Binder spraying systems, CIP / WIP systems, Vacuum drying, Scada Solutions available
- Drying under vacuum, at lower temperature with solvent recovery system
- Optional features for dryer include PLC control with printer, Turnkey with hearing, vacuum and solvent recovery system
## Features:
- Multiple options available for Impeller blade, Chopper and Co mill blade and screen
- In-house pressure tested 2 Bar HSMG

## Level of Instrumentation:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Indication</th>
<th>Record</th>
<th>Control</th>
<th>Alarm</th>
<th>Interlock</th>
<th>Export</th>
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<tbody>
<tr>
<td>Impeller Speed</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
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<td>√</td>
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<tr>
<td>Chopper Speed</td>
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<td>Product Temperature</td>
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<tr>
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<td></td>
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</tr>
</tbody>
</table>
Benefits For You:

- Single equipment for Mixing-Granulating-Drying
- Uniform distribution of all formulation ingredients
- Short mixing and granulation time to achieve desired granules profile
- Useful working capacity of upto 80% to 30% of bowl volume
- Uniform granules by gentle processing
- Wide range of applications
- Easy scale up & Scale down between machine sizes
- Bowl shape designed to have no dead spaces
- Fully Automated System for QBD compliant
- Standard documentation package provided
- Designed to meet cGMP requirements
- Designed to check leakages & prevent cross-contamination & also designed with inbuilt safety checks
- Final product of superior quality due to low attrition, lower drying temperature and time

Granulator - Dryer

Vacuum rated bowl

Mimic Display for Process Monitoring and Control
### Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
</tr>
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<tbody>
<tr>
<td>TAP-HSMG-MINI</td>
<td>1</td>
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</tr>
<tr>
<td>TAP-HSMG-10</td>
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<td>4200 4100 5900</td>
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</tbody>
</table>

*OBEBS compliant containment models from our SHIELD 5 Series are available
12 Bar Explosion proof models from our SHIELD 12 Series are available

### High Shear Mixer Granulator used in Industries:

- Pharmaceutical
- Nutraceutical
HIGH SHEAR MIXER GRANULATOR – R2T

Tapasya’s HSMG enjoys the trust and confidence of customers, the world over, for its unparalleled quality, unique features and reliable performance. Being the world leader in ‘High Shear Mixer Granulators’, Tapasya’s quest for continuous improvement of the product was constantly fuelled by its competent ‘Design & Development Team.’

Tapasya, the leader in HSMG, never rested on its laurels and worked purposefully towards enhancing the product for its customers. Improvement is design coupled with innovation in technology, the hallmark of Tapasya, has lead to the launch of ‘HSMG – R2T’, the only one of its kind in the world today.

In HSMG-R2T, Tapasya has, for the ‘1st Time in the World’, introduced the feature of ‘Direct Drive Technology’ in Granulators. It is the only Granulator that not only meets all the stringent quality requirements of the FDA / cGMP, but also meets the specific needs of customers, with its distinct ‘Torque-based’ granulation end-point determination.
**R2T: Distinct Edge over Conventional Granulators:**

- Increase in productivity due to unique R2T technology (Upto almost 50%, as per data shared by customers)
- Greater accuracy in determining and validating granulation endpoint
- Superior performance of the 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, worm & worm wheel 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 savings in power bills upto 12%
- Meets all requirements of cGMP
### Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>SPECIAL R2T Technology</th>
<th>APPROX. WEIGHT (in kg)</th>
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<td>3300</td>
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<td>3400</td>
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<td>4100</td>
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<td>4200</td>
<td>4100</td>
<td>5900</td>
</tr>
</tbody>
</table>

OEBS compliant containment models from our SHIELD 5 Series are available
12 Bar Explosion proof models from our SHIELD 12 Series are available

### High Shear Mixer Granulator – R2T used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Cosmetics
BINDER PREPARATION VESSEL

Tapasya’s Binder Preparation Vessel (Paste Preparation Kettle) has been designed uniquely for optimal mixing efficiency so as to ensure a homogeneous mix. The special stirrer in the vessel has been designed to create vortex inside the solvent which enhances the desired solubility of pharmaceutical binder solute into the various solvents.

Due to its unique design the binder solution can be directly transferred into the processing equipment such as high shear mixer granulator, planetary mixers or fluid bed processor.
Features:
- Designed uniquely for optimal mixing efficiency
- Special stirrer included for homogenous mix
- Controlled temperature exposure with special jacketed bowl
- Variable rotation rate possible
- Custom-made capacity
- Integration of flow rate control assembly into system
- Direct transfer of binder solution to granulation processing equipment
- Cleaning & maintenance easy

Benefits For You:
- Optimal mixing efficiency to ensure a homogeneous mix
- Easy handling
- Easy maintenance
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
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<td>2600 2800 2900</td>
<td>7.5</td>
<td>300</td>
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</tbody>
</table>

Customised sizes available on request

Binder Preparation Vessel used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Cosmetics
Drying involves diffusion of water through the material into the passing steam air, uniformity in drying enhance the robustness of the formulation and processes.
FLUID BED EQUIPMENT

Tapasya’s Fluid Bed Equipment (FBE) is specially designed unit for agglomeration and simultaneous drying for top spray granulation conforming to the international quality norms and with all latest features incorporated. Built with a working pressure of 2 Bar at 80 degree C, the drying capabilities of our FBDs are enhanced by 18 - 20%, resulting in lesser drying time and uniform fluidization. Air Handling System is specially designed for evenly distribution of Heat to the material to be dried in order to supply the latent heat required for vaporization of the moisture. The fully automated system is designed to achieve robust formulation and stringent cGMP compliance.
Features:

- FBE suitable for granulation and drying for accurate process parameters
- Online charging from HSMG into FBE using vacuum. Inlet feed port with SS gas tight pneumatic actuated valve
- Closed loop discharged system from FBE into mill using pneumatic conveying systems
- Temperature control with a ±/- 1°C (process accuracy)
- Humidity control over entire operating range ± 5% (process accuracy)
- Technical support in critical areas of validation at different levels of scaleup
- Process accessibility for selection on critical parameters such as inlet air temperature in drying and product temperature in top spray granulation
- Recipe storage for auto operation
- System provides Alarm Log

Level of Instrumentation:

<table>
<thead>
<tr>
<th>Type of control</th>
<th>Purpose</th>
<th>Operation range</th>
<th>Desired Least Count</th>
<th>Extent of Instrumentation</th>
</tr>
</thead>
<tbody>
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<td>Temperature</td>
<td>Inlet</td>
<td>0°C to 100°C</td>
<td>0.1°C</td>
<td>Y Y Y Y Y</td>
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<tr>
<td>Temperature</td>
<td>Exhaust duct</td>
<td>0°C to 100°C</td>
<td>0.1°C</td>
<td>Y Y Y Y Y</td>
</tr>
<tr>
<td>Temperature</td>
<td>Product bed</td>
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<td>0.1°C</td>
<td>Y Y N Y Y</td>
</tr>
<tr>
<td>Humidity</td>
<td>Inlet</td>
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<tr>
<td>Time</td>
<td>Cycle time</td>
<td>On real time basis</td>
<td>1 Sec</td>
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<tr>
<td>Differential Pressure</td>
<td>Across the HEPA filter</td>
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<tr>
<td>Differential Pressure</td>
<td>Across the Dry type dust collector</td>
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<td>1mm of WC</td>
<td>Y Y N Y Y</td>
</tr>
<tr>
<td>Differential Pressure</td>
<td>Across product bowl</td>
<td>**</td>
<td>1mm of WC</td>
<td>Y Y Y Y Y</td>
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<tr>
<td>Differential Pressure</td>
<td>Across Bag filter</td>
<td>(Vendor to recommend)</td>
<td>1CFM</td>
<td>Y Y Y Y Y</td>
</tr>
</tbody>
</table>
Features:

- Control System compliant to GAMP 4/5 and 21 CFR Part 11
- 5 distinct levels for operation of control system
- Alarm for interlocks and process abnormalities integrated with system, with acknowledgement for respective alarms by operating personnel
- Manual back-up system in case of PLC failure
- Specially designed Conidur mesh for mechanism of Vortex formation ensuring uniform core drying
- Twin shaking finger bag system (European make) to assist continuous fluidization and spraying
- Option of providing SS multilayers sintered filter with integrated air cleaning mechanism
- All filters provided with DP gauges with Integration with HMI for HEPA, Fine filter, Product container and Finger bag
- Inlet / Exhaust Location with several alternatives to suit individual customer requirements
- Specially designed explosion flaps
- Inflatable Silicon Seals used in the system
- 2 Pneumatic Cylinders - For Bag Up and Down movement and for Impact Bag Shaking
- Sampling provision of inline analysis of granulation profile such as moisture content and particle size analysis
**Features:**

- Fully automated system for quality by design to correlate statistically
- Specially designed system for light sensitive products
- View port in filter housing and in expansion area of machine tower and product container
- Unique wiring schematics and position numbers for devices
- Inlet and exhaust system provided with a Quick acting safety valves (optional) valve to isolate the supporting ductwork and ancillary equipment should a deflagration in the machine tower occur
- Tri level filtration in Inlet AHU using 10 micron for Pre Air filtration, 3 micron for Secondary Air filtration and 0.3 micron for Final Air filtration using HEPA (99.997 efficiency)
- Humidification and dehumidification system to enable better control on RH (5% to 80%)
- Double skinned SS 304 AHU with a built in Face and --By Pass damper for ± 1o Temperature control
- Specially designed anti-static anti sparking blower
- High static high efficiency FLP blower installed
- Completely Tool less AHU
- Broken bag detector system to indicate broken bag fault with a provision for adjustable sensitivity
- Filter bag unit with rapid doping control to avoid the personnel injury during the assembling and disassembling of filters
- Food grade gaskets with test certificates
- CE Certified
- In-house pressure tested 2 Bar FBE

**Benefits For You:**

- ‘State of Art’ FBD with all latest features
- Easy operations
- Faster and uniform drying
- Easy maintenance
- Overcomes typical problems associated with drying, such as, Improper drying, Fine generation, Excessive drying time
- High quality and better shelf life of the product
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>BLOWER (in CFM)</th>
<th>APPROX. WEIGHT (in kg)</th>
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TAP-FBE models are provided with Drying and Top spray processing
TAP-FBP models are available with bottom spray Wurster processing

OEBs compliant containment models from our SHIELD 5 Series are available
12 Bar Explosion proof models from our SHIELD 12 Series are available

Fluid Bed Equipment used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
TRAY DRYER

The Tray Dryer from Tapasya assures you of rapid, high-quality and convenient drying technology, with the added Edge of cGMP feature, viz., rounded contours in all internal surfaces. Our multi-capacity tray dryers find wide applications in Pharmaceutical, Nutraceutical, Food, Chemical, Cosmetic & other allied industries.
Benefits For You:
- Designed for easy operations
- Faster drying
- Easy maintenance
- Easy Hygiene maintenance
- High quality and better shelf life of the product

Features:
- Covered drives
- Two tier trolley with SS Rollers
- Advanced Controls
- Improved design with double door provision
- Enhanced performance by total insulation
- HEPA Filtered Inlet Air
- Rounded corners and angles
- Easy accessibility of internals for Hygienic cleaning
- Even thermal distribution internally all over the chamber with a variation of just ± 2˚C
Technical Specifications:

<table>
<thead>
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<th>MODEL</th>
<th>No. of trays</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
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</tbody>
</table>

Customised sizes available on request

Tray Dryer used in Industries:
- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
ROTO CONE VACUUM DRYER

The improved technology in Tapasya’s Roto Cone Vacuum Dryer integrates drying operation under vacuum. It facilitates enhanced drying efficiency for heat labile or heat sensitive products, low temperature operation and economy of process by total solvent recovery. It also helps cGMP - based working by achieving optimum dust control, while offering the advantage of efficient charging and discharging of material. The dryer is also available with an optional thermal medium system and is ideal for meeting the drying needs across various industries such as API, chemical, Food etc.
Features:

- Total cGMP finish construction
- All contact parts in SS 316L
- Jacket fabrication to accept varied heating sources
- Optimum and continuous vacuum maintenance during processing
- Working cone totally leak proof during operation
- Easy loading with quick discharge
- Uniform Material shuffling over the heated contact surface of cone
- Suitable size condensers and receivers for solvent collection
- Preventive controls on Energy heads to maintain operational efficiency
- Mechanical seals for vacuum and heating sides
- Vacuum / Gravity & Bin loading system for Minimal Material handling
- Can be offered in Nickel, Hastalloy, Titanium and Tantalum
- All rotating parts are provided with - SS Guards for Operator Safety
- Interlocking with Drive through Proximity Switch

Benefits For You:

- Enhanced drying operation
- Total solvent recovery
- Economy of process
- cGMP compliant process
- Varied drying applications
### Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
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</table>

Customised sizes available on request

### Roto Cone Vacuum Dryer used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
MILLING

Milling is the mechanical process of reducing the particle size of solids. Mechanism involved are cutting, attrition, impact and pressure. Uniform particle size results in better compressibility and dissolution rate.

- TAP CONE MILL 30
- UNDER DRIVEN CONE MILL 33
- MULTI MILL 36
- SIFTER CUM MULTI MILL 39
- OSCILLATING GRANULATOR 42
- VIBRATORY SIFTER 45
- DELUMPER 48
Milling

**TAP CONE MILL**

Tapasya’s Tap Cone Mill is used for High Speed Shredding, Sizing, and Grinding of Powders, Granules, Tablets and a wide range of wet and dry materials, without special attachments. As compared to the four common principles of size reduction i.e. cutting, attrition, impact and pressure, which often do not produce controlled size reduction, this machine utilises the principle of Centrifugal Shearing force. It has wide applications in the Pharmaceutical and Nutraceutical industry for shredding of rejected tablets, Dry Milling, Wet Milling, Shredding of oversized material (De lumping), etc.
**Features:**

- Material of construction SS 316L
- Compact size online model also available
- Imported Laser Driller Mesh for Dry application
- Safety Standards with no outside cables
- Vacuum Loading option
- Bin charging Loading system option
- Dust free closed system for charging and discharging of powders or granules
- Easy to clean
- Minimum maintenance
- Different profile of blade and sieve available

**Benefits For You:**

- High speed shredding, sizing & grinding
- High safety standards
- Dust-free closed system
- Minimal maintenance
- Varied applications
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Kg/Hr)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
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<tbody>
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<td>TAP-TCM-500</td>
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<td>1700 1900 3200</td>
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</tbody>
</table>

OEB5 compliant containment models from our SHIELD 5 Series are available
12 Bar Explosion proof models from our SHIELD 12 Series are available

Customised sizes available on request

Tap Cone Mill used in Industries:

- Pharmaceutical
- Nutraceutical
Tapasya’s Under Driven Cone Mill meets all your requirements for achieving uniform size reduction, sieving, de-agglomeration, dispersion and mixing of dry and wet products, with optimum process efficiency and product consistency. It offers all the benefits of Tapasya’s underdriven Cone mill with additional advantages including inline integration and can be used in multiple industries for higher outputs.
Features:
- Uses Centrifugal force for both Milling and Sifting
- Gentle grinding action with close particle size distribution
- Minimal fines generation
- Charging of material- either gravity fed or vacuum transferred
- Increased throughput with 50% more capacity than conventional mills
- Adaptable & flexible design with interchangeable Cone mill and Rotary sifter and through the wall design
- Customised options for feeding and handling
- Readily available scale up from lab to production scale
- Material of construction : SS 316 / SS 316L / Food grade materials
- Easy to clean

Benefits For You:
- High efficiency
- Multi-purpose utility as Cone mill or Rotary sifter
- Uniform sized output
- Suitable for milling dry, wet, fatty or sticky materials
- Low heat generation, low noise and low dust levels
- Easy maintenance
- Versatile application in varied industries
Technical Specifications:

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<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in kg/hr)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
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OE85 compliant containment models from our SHIELD 5 Series are available
12 Bar Explosion proof models from our SHIELD 12 Series are available

Customised sizes available on request

Under Driven Cone Mill used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
MILLING

Tapasya’s Multi-mill is ideal for high speed Granulating, Pulverising, Mixing, Shredding and Chopping of a wide range of wet and dry materials without special attachments. This machine utilises the principle of variable force swing hammer blades, having both knife and impact edges, rotating with a carefully selected screen to control size reduction. The product enjoys wide applications in the Chemicals, Pharmaceuticals, dyestuff, colours, ceramics, food products, cosmetics, pesticides, fertilizers, plastics, spices, bakeries, resins, insecticide and other industries.
**Features:**

- Efficient Dust contained Multi mill
- Machine Portable on Castor wheels
- High output with Process uniformity
- All contact parts are in SS 316L
- Direction of the Blade rotation can be changed using a Reversing switch for Hammer or Knife operation for various product type
- Multiple combinations of Screens / Speeds / Number of Blades available for every Product type
- Higher Screen opening area for Higher Throughput
- Easy Dismantling and Cleaning of all Components reducing Production Downtime and increasing Productivity
- Additional perforated screen at the bottom of pulverising chamber ensuring Higher Fineness and Controlled Size of Granules
- Built in Variable Frequency Drive for multiple speeds

**Benefits For You:**

- High speed operations
- Minimal material handling
- Dust-free operations
- Easy to handle
- Higher throughput
- Easy maintenance
### Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Kg/Hr)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
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<td>TAP-MM-500</td>
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*OEB5 compliant containment models from our SHIELD 5 Series are available
12 Bar Explosion proof models from our SHIELD 12 Series are available

Customised sizes available on request

### Multi Mill used in Industries:

- Pharmaceutical
- Nutraceutical
SIFTER CUM MULTI MILL

Tapasya’s Uni-Granulator is a revolutionary granule sifting cum milling system, that redefines traditional granule or powder sifting process. It ensures uniform sizing of dried granules and enables processing with negligible product loss.
Features:

- High productivity with an output capacity of 4 to 10 Kgs / minute
- Portable and compact design, mounted on a sturdy SS frame
- Sieve drums available in 4 to 40 mesh sizes
- Continuous Feed and Product discharge for Dust free transfer
- Vibration free and Soundless design
- Tool less design for easy handling
- Meets latest cGMP Standards
- Easy Dismantling, Cleaning and Reassembling within 10 to 15 min
- Turbo Sifter with 10 bar compliance for specialised process available

Benefits For You:

- Assured Output of Granules of Uniform size
- High output
- Easy to handle
- Easy Maintenance
- Dust-free operations that meet cGMP requirements
- Advanced design with no vibration and noiseless
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Kg/hr)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
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</table>

12 Bar Explosion proof models from our SHIELD 12 Series are available

Customised sizes available on request

Sifter Cum Multi Mill used in Industries:

- Pharmaceutical
- Nutraceutical
OSCILLATING GRANULATOR

Tapasya’s Oscillating Granulator is ideal for meeting the multiple needs of Dry Granulation, Wet Granulation, Screening, Crushing, Breaking lumps, etc for the Pharmaceutical and Nutraceutical industry. The oscillating motion of the rotor with uniform speed and force applied to the material, improves the granulating process and enhances the compressibility of the product.
Features:

- Oscillating rotor with back and forth motion for even distribution of material
- SS construction (AISI 316 / 316L)
- Inside polished Ra = 0.8 micron, outside ground (grain 220)
- Maintenance free design, GMP execution
- Multiple varieties of sieves, fine sieves & perforated plates available to suit all your needs
- Range 0.5 mm to 10 mm
- Robust, Simple & Compact Design
- Easy Installation in Production Line
- Low noise level as per international norms
- Easy for Cleaning

Benefits For You:

- High output with uniform sized granules and less fines
- Easy maintenance

Automated Control System

Precision Design for Uniform Granules and Less Fines
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Kg/HR)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
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<td>1800</td>
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</tbody>
</table>

Customised sizes available on request

Oscillating Granulator used in Industries:

- Pharmaceutical
- Nutraceutical
VIBRATORY SIFTER

Based on the ‘Gyro’ principle, Tapasya’s Vibratory Sifter meets the requirements of ‘Dust-free Sifting’ of the Pharmaceutical, Nutraceutical, Food, Chemical, Cosmetic and other allied industries. The complete vibrating assembly has a specially designed gyro motor that is fitted with top & bottom eccentric weights designed as per required centrifugal force. The sifter is designed for convenient usage & maintenance.
**Features:**

- cGMP Model with contact parts in SS 316 & Non-Contact Parts in SS 304
- Amplitude of Vibratory Motion adjustable
- SS 316 Hood with 200 mm dia Nozzle for dust free charging of Powders
- Easy dismantling, cleaning & assembling through quick opening SS 316 clamps
- Portable mounted on sturdy Castor Wheels
- Vibrating assembly isolated by rugged springs
- Dust-free design
- Independent Jacks for lifting the machine off the floor for effective sifting
- Silicon Bonded Integrated Mesh and Silicon Balls for Lump Breaking & Mechanical cleaning
- Provision for advanced Ultrasonic mesh cleaning attachment
- CE Certified

**Benefits For You:**

- Dust-free sifting
- Design compliant with cGMP requirements
- Easy to handle
- Multiple mesh size available to suit your individual processing needs

Food Grade Gasket for Dust Free Charging

Antistatic Mesh

Eccentric Motor for Controlled Vibration
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
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</table>

Customised sizes available on request
Laboratory model design available

Vibratory Sifter used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
Tapasya’s Delumper is designed to handle through processing applications in varied industries including, chemical, plastics, food, nutraceuticals and pharmaceutical industry. It is a versatile size reduction equipment suitable for wet, dry, hard, soft, resinous, brittle or sticky material that renders them free flowing.
Benefits For You:

- Enables cost-effective, rapid de-agglomeration of variety of material
- Easy maintenance
- cGMP compliant

Features:

- Cost effective, rapid de-agglomeration for varied industries
- Ultra sanitary design for Pharmaceutical and Nutraceutical applications
- Handles homogeneous or heterogeneous materials, dry powders, resinous, hard or soft agglomerates without degrading the product or overheating the product or producing fines
- Powerful crushing capabilities, with option of increasing shaft length and number of blades
- Engineered to fit into open or close systems
- Material loading by gravity or integrated with vacuum transfer line for cost efficient high throughput
- Specially designed delumper blades driven using cantilevered drive to execute positive once-through chopping action
- Eliminates blockages in further processing of material.
- Easy cleaning & maintenance
- Highly polished surfaces
- cGMP compliant design
- Can be installed on a platform or mobile structure
### Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Kg/Hr)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAP-DL-250</td>
<td>250</td>
<td>1000 1600 1600</td>
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<tr>
<td>TAP-DL-500</td>
<td>500</td>
<td>1250 1600 1800</td>
<td>5</td>
<td>900</td>
</tr>
</tbody>
</table>

Customised sizes available on request

### Delumper used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
It has been generally accepted that solids mixing proceeds by a combination of one or more mechanisms. A) Convective mixing  B) Shear Mixing  C) Diffusive mixing

Blend Uniformity in Critical processes like Dry mixing or intra and extra granular blending can be achieved for even distribution and superior compressibility.

<table>
<thead>
<tr>
<th>BLENDING</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>‘V’ BLENDER</td>
<td>52</td>
</tr>
<tr>
<td>CONTA BLENDER</td>
<td>55</td>
</tr>
<tr>
<td>OCTAGONAL BLENDER</td>
<td>58</td>
</tr>
<tr>
<td>DOUBLE CONE BLENDER</td>
<td>61</td>
</tr>
<tr>
<td>RIBBON BLENDER</td>
<td>64</td>
</tr>
<tr>
<td>PLOUGH SHEAR MIXER</td>
<td>67</td>
</tr>
</tbody>
</table>
‘V’ BLENDER

Tapasya’s ‘V’ Blender is an intensive mixing system designed specially to handle ordered dry mixing of excipients such as cohesive as well as adhesive powder. This rotating shell V-type blender with no packing glands around the shafts entering the chamber ensure total elimination of cross contamination. The special design ensures minimal attrition when blending fragile granules and is suitable for Pharmaceutical, Nutraceutical, Food & Cosmetic industries.
Features:

- Rotating V-Type Shell with large capacity
- Easy loading & unloading
- Special baffles to increase mixing shear
- Integrated Vacuum loading option available
- Material of construction SS 316L
- Wide Capacity options available from 5 - 1200L, with custom made capacities up to 10000L
- Intensifier bar for special applications available
- Dust-free operations when combined with Bin charging system
- Near complete discharge of product material
- No shaft projection; hence no product contamination
- Easy to clean with internal attachments like lump breakers and liquid dispensers

Benefits For You:

- Ideal for blending dry powders and granules, including fragile material
- Designed for dust-free processing, complete discharge of material with no contamination
- Easy to clean
- Minimum maintenance
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAP-UB-10</td>
<td>Interchangeable bowl up to 7 L working capacity</td>
<td>Length 1280 Width 1150 Height 1550</td>
<td>1.5</td>
<td>500</td>
</tr>
<tr>
<td>(Universal model for Lab Blenders)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAP-UB-20</td>
<td>Interchangeable bowl up to 14 L working capacity</td>
<td>Length 1280 Width 1150 Height 1550</td>
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</tr>
<tr>
<td>(Universal model for Lab Blenders)</td>
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<td></td>
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<tr>
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<tr>
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<tr>
<td>TAP-VB-2000</td>
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</tr>
<tr>
<td>TAP-VB-5000</td>
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<td>Length 5900 Width 3000 Height 7000</td>
<td>25</td>
<td>7000</td>
</tr>
</tbody>
</table>

Customised sizes available on request

‘V’ Blender used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
Developed by Tapasya’s Design Team, the Conta Blender represents a major advance that enables dust free transfer of powders and granules from Drying to Compression / Filling equipments with reduced material handling. The unique design ensures rotation in a diagonal axis and in an eccentric plane resulting in a homogeneous blend within a short time. It finds varied applications across multiple industries.
Features:

- Designed for dust free blending and transfer of powders and granules
- 0º stopping for easy docking and undocking of the bin
- Fencing around the cage with an entry point for the bin on detachable trolley
- Limit switch on entry door to prevent accidental operation of the cage
- Flexibility of accepting variable bin sizes providing wide range of batch volumes
- cGMP construction with cladded polished S. S. Sheets
- Containers of Varying size for varying batch size
- Built-in Butterfly valve (150 mm dia) at the bottom for discharge
- Suitable leak proof vent on top

Benefits For You:

- Single step transfer from Drying to Compression / Filling equipments
- Superior mixing efficiency
- Reduced material handling
- Highly effective for low volume active blending with as low as 1% active
- Processing of different sizes of production batches with scale up data
- Dust-free operation
- No risk of segregation on extended processing
- No Cleaning down time as the product container is mobile
**Technical Specifications:**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAP-UB-10</td>
<td>Interchangeable bowl upto 7 L working capacity</td>
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<td>500</td>
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<tr>
<td>TAP-UB-20</td>
<td>Interchangeable bowl upto 14 L working capacity</td>
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<td>1.5</td>
<td>650</td>
</tr>
<tr>
<td>TAP-PB-75</td>
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</tr>
<tr>
<td>TAP-PB-100</td>
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<tr>
<td>TAP-PB-150</td>
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<tr>
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<td>2600</td>
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<tr>
<td>TAP-CB-10000</td>
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</tr>
</tbody>
</table>

Customised sizes available on request

**Conta Blender used in Industries:**
- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
OCTAGONAL BLENDER

Tapasya’s Octagonal Blender, the unique octagonal shape is designed to process larger volume of material for efficient angular momentum of the powder to achieve blend uniformity. It is ideal for gentle blending of dry granules or for powder mixing and has wide applications range across many industries. Tapasya has successfully installed over 1800 octagonal blenders world-over.
Features:

- Material handling through Bin charging or Vacuum charging
- Dust free closed system in Bin charging
- Lower Power consumption than other tumble blenders
- Slow speed Blender with Gentle blending of Dry granules and powder
- Maintenance free design
- Rectangular opening Lid with Removable Baffle mounted inside
- Optional in built in Vacuum design with no external PTS required
- Zero Jerk Load as machine is both dynamic and statically balanced
- Baffles are eliminated with blending profile analysis available
- Complete Design engineering along with the Extrapolation data available
- Detailed torque calculation for the Bin loading Model available
- Pneumatically actuated valves for dust free transfers
- Bins with Level sensory for automatic cut off
- Mechanical Seals on shafts for Pneumatic connections
- cGMP design for ease of cleaning
- CE Certified

Benefits For You:

- Ideal for all your ‘Gentle Blending’ needs
- Designed for total dust-free handling
- Maintenance free design
- Occupies less space
- Lower power consumption
- Easy to wash in place with cGMP design
- Documentation support available
**Technical Specifications:**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAP-UB-10 (Universal model for Lab Blenders)</td>
<td>Interchangeable bowl upto 7 L working capacity</td>
<td>Length: 1280</td>
<td>Width: 1150</td>
<td>Height: 1550</td>
</tr>
<tr>
<td>TAP-UB-20 (Universal model for Lab Blenders)</td>
<td>Interchangeable bowl upto 14 L working capacity</td>
<td>Length: 1280</td>
<td>Width: 1150</td>
<td>Height: 1550</td>
</tr>
<tr>
<td>TAP-OB-100</td>
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<tr>
<td>TAP-OB-150</td>
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<tr>
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<td>TAP-OB-500</td>
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<td>Width: 1000</td>
<td>Height: 2400</td>
</tr>
<tr>
<td>TAP-OB-750</td>
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<td>Height: 2400</td>
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<td>TAP-OB-1000</td>
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<td>Width: 1000</td>
<td>Height: 2400</td>
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<td>TAP-OB-1200</td>
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<td>Length: 3300</td>
<td>Width: 1200</td>
<td>Height: 4500</td>
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<tr>
<td>TAP-OB-1500</td>
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<td>Length: 3200</td>
<td>Width: 1800</td>
<td>Height: 4500</td>
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<tr>
<td>TAP-OB-2000</td>
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<td>TAP-OB-5000</td>
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<td>Height: 5200</td>
</tr>
</tbody>
</table>

Customised sizes available on request

**Conta Blender used in Industries:**

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
DOUBLE CONE BLENDER

Tapasya’s Double Cone Blender is an efficient and versatile equipment for mixing of powder such as pharmaceutical excipients, various chemicals, food products homogeneously. With an effective volume for optimum homogeneity between 35-70% of gross volume, and a SLANT double cone design that eliminates dead spots, this Double cone blender is ideal across various industries including pharmaceutical, food, chemical, cosmetics, etc.
Features:

- Conical shape and elongated plane at both ends enables uniform mixing and easy discharge
- The cone is statically balanced which protects the gear box and motor from any excessive load
- Powder is loaded into the cone through a wide opening and discharged through a butterfly or a Slide valve
- Depending upon the characteristic of the product, paddle type baffles can be provided on the shaft for better mixing, uniform blending and de-agglomeration
- Contact parts are made of SS 304 or SS 316L
- Flame proof electricals can be provided
- ‘Slant’ design
- Variable speed option available 70%~
- Dust free bin charging system

Benefits For You:

- Homogenised blending of solid components
- Advanced design with custom made additional features for varying speed, safety (flame-proof) and varying capacities
- Minimal material handling
- Ideal for various applications in solid mixing
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAP-UB-10</td>
<td>Interchangeable bowl up to 7 L working capacity</td>
<td>1280 1150 1550</td>
<td>1.5</td>
<td>500</td>
</tr>
<tr>
<td>TAP-UB-20</td>
<td>Interchangeable bowl up to 14 L working capacity</td>
<td>1280 1150 1550</td>
<td>1.5</td>
<td>650</td>
</tr>
<tr>
<td>TAP-DC-75</td>
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<td>1200 950 1650</td>
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<td>TAP-DC-150</td>
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<td>TAP-DC-300</td>
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<td>TAP-DC-500</td>
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<td>2350 1500 2500</td>
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<td>4400 3000 4800</td>
<td>20</td>
<td>5000</td>
</tr>
</tbody>
</table>

Customised sizes available on request

Double Cone Blender used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Cosmetics
RIBBON BLENDER

Tapasya’s Ribbon Blender is a light duty, compact blender is designed to achieve convection mechanism of blending powder components which are pre-processed like dried granules, pre-sieved powders etc. It is a LOW SHEAR mixer and ideal for SOLID / SOLID Mixing. Solid / Liquid mixing can also be achieved when high shearing force is not desired.
**Features:**

- Available in two shapes - U & W
- U-for Low to Medium volume Capacity (single shaft)
- W-for Large to Mega volume Capacity (double shaft)
- Batch size based on 65% of Blender volume
- All contact parts in SS 316L
- Designed to avoid Cross contamination with Monoblock Design
- Bearing mounted on lanterns out of mixing zone
- Air purge on the side entry seals
- Meets all cGMP/cGEP standards
- Continuous Ribbon design for complete discharge
- Variable frequency drive for fine tuning the Shear energy
- Belt driven power transmission
- Reduced material handling with Top mounted charging port and Side discharge arrangement
- Paddle style agitator instead of Ribbon for Blending fragile materials
- Lance type injectors for liquid spraying

**Benefits For You:**

- Homogenised blending of solid components
- Specially designed to avoid cross contamination
- Low maintenance
- Low noise blender
- Occupies less space
- Minimal material handling
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
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<td>TAP-RB-1000</td>
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<td>3250</td>
<td>3600 1500 2500</td>
<td>25</td>
<td>4500</td>
</tr>
</tbody>
</table>

Customised sizes available on request

Double Cone Blender used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
PLOUGH SHEAR MIXER

Tapasya’s Plough Shear Mixer is designed for ordered heavy duty mixing of both Dry and Wet materials. The special design of shovels with broad ends and pointed tips facilitates good penetration and shuffling of the mass within. Penetration followed by agitation of the mass in quick succession of the specially designed blades results in homogeneity of powder mass both in dry and wet stages. Appropriate dough formation is reached in later process. Centrally mounted chopper will then operate to obtain wet granules of uniform size. Mixed homogeneous mass can be easily discharged from bottom of the mixing drum which is provided with a flush fit discharge port.
Features:

- Batch size based on 70% of blender volume
- Cross Contamination is completely eliminated by mounting
- Bearings on lanterns out of mixing zone
- Removable bolt arrangement of Plough Shovels providing easy accessibility to all inside parts of the mixer
- Feeding through a charging port mounted on top of the mixer
- Inspection Doors with safety interlocks
- Reduced material handling due to bottom discharge facility of processed materials
- Choppers provision as an optional feature
- Fully welded plough shovels can also be provided
- Lance type injectors for liquid spraying

Benefits For You:

- Homogenised blending for dry and wet material
- Capacity custom made to your requirements
- Specially designed to eliminate cross contamination & for easy discharge
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
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<tr>
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<td>3600 1500 2500</td>
<td>75</td>
<td>4500</td>
</tr>
</tbody>
</table>

Customised sizes available on request

Plough Shear Mixer used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
Material handling is the movement, storage, control and protection of materials, goods and products throughout the process of manufacturing, distribution, consumption and disposal.
Tapasya’s Elevator device is custom designed to lift and position any type of container involved in solid dosage manufacturing and also for liquid compounding operation. This system ensures dust free transfer of in-process materials enhancing cGMP standard, and simultaneously eliminating laborious manual operation.

Elevator operates by engaging the container to a semi-circular / single hook / fork type / platform, lift arm attached to a column. The container is then raised or lowered by hydraulic system with built in safety parameters. The four point contact bearing on the column base with a low resistance factor makes it possible to position loaded container by hand radially, to discharge the contents in the process equipments.
Features:

- Closed Column construction with floor and ceiling fastening
- Also available in self standing pivoted execution
- Material of construction is SS clad MS column/SS column
- Adjustable mount stop
- Double acting in-house manufactured Hydraulic Cylinder with 3 stage Fail safe seals
- Cylinder designed for an operating pressure of 100 BAR & has a Hose burst protection system
- Solid Machined trolley made out of 30 MM Machined Frame
- 2 no’s 8 MM Ø SS 304 Wire ropes instead of chain
- Lift Lock for safety provided
- Imported Mono Block Power Pack
- Control Cabling and rigid piping included
- CE Certified meeting 19 EN specifications
- Built-in provision for the Vibratory Sifter/ Mill to be electrically connected
- Mechanical & Pneumatic locking for Safety

Benefits For You:

- Dust-free & leak-free transfer operations
- Eliminates manual handling & tedious scooping
- Low maintenance
- Designed to European Safety Standards & cGMP standards
- Varied applications including charging of Sifters, RMG, Compression machine, Packing machine, blenders, etc.
- Variety of Optional features available including full stainless steel construction, Height > 4 mtrs, Rigid design, Mobile design upto 100 kgs load
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
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<tr>
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</table>

Customised sizes available on request

Elevator used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
TIPPER

Tapasya’s Tipper, a Hydraulically or mechanically operated equipment is used for lifting and tipping granules from the FBE Bowl to granulating equipment and through it to a BIN or an IPC container. The Tipper provides a dust free operation and eliminates tedious scooping or manual handling and is fabricated with high quality SS to impart a cGMP finish.
Material Handling without Human Interference

Benefits For You:

- Dust-free transfer operations
- Eliminates manual handling & tedious scooping
- Low maintenance
- Designed to European Safety Standards & cGMP standards
- Variety of Optional features available including
  - Free standing unit
  - Hydraulic / Mechanical design
  - Adjustable stop
  - Additional lift column height
  - Double Column for heavier loads
  - Hydraulic arrangement for tilting
  - 180° SWIVEL column
  - Pneumatically actuated valve
  - Single cone for 2 sizes of FBE Bowl with adaptor

Features:

- High Quality SS for lift yoke & discharge cone clamps
- Water tight Control cabinet with hydraulic power pack & electric controls
- Stable Design conforming to cGMP/cGEP Standards
- Hydraulic Cylinder with 3 stage Fail safe seals designed for an operating pressure of 100 BAR
- Solid Machined trolley made out of 30 MM Machined Frame
- 2 no.s 8 MM Ø SS 304 Wire ropes instead of chain
- Lift Lock for safety
- Imported Mono Block Power Pack
- Control Cabling and rigid piping included
- CE Certified meeting 19 EN specifications
- Built-in provision for the Vibratory Sifter/ Mill to be electrically connected
- Hydraulic Tilting arrangement for maintenance free operation
- Limit switches for up & down movement
- Limit switches for stopping the cone in 0 degree & 180 degree
- M.C.B. and overload relays for electrical faults
- Pilot operated Hose Burst Valve on the hydraulic cylinder for hydraulic safety
- Single cone for 2 sizes of FBE Bowl with adaptor
- Timer control for discharge valve
- Mechanical & Pneumatic locking for Safety

180° Tilting

Material Handling without Human Interference
### Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
<th>APPROX. WEIGHT (in kg)</th>
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</table>

Sizes suitable for all TAPASYA FBE are available

### Tipper used in Industries:

- Pharmaceutical
- Chemical
- Nutraceutical
- Cosmetics
- Food
Tapasya’s Powder Transfer System (PTS) represents an ideal solution for meeting the easy transfer of material by generating and maintaining vacuum in the system. The 100% material can be easily transferred from one process to another in time with minimum engagement of human resources. The yield to yield correlation can be maintained easily with minimum travel time of particles for higher batch sizes in the Pharmaceutical, Nutraceutical, Food and other allied industries. This pneumatically operated system offers safety and hygiene hence cGMP compliant.
Features:
- Pneumatically operated transfer system for powder and granules
- Closed system for dust free operations
- Buffer vessel provision to avoid choking & assist in continuous feeding of product
- Considerable reduction or elimination of operator exposure
- Reduction in manpower required for charging
- Improved agitation and thus reduced batch time, through controlled material addition
- Reduces solids handling and eliminates hoists and handling equipment
- Easier to clean than conventional vacuum conveying equipment; CIP available
- Automatic pulse filter cleaning mechanism for improved process efficiency
- Integrated HIM system for automated process
- Multiple options available for different applications: Fixed, Mobile & Wall mounted
- Existing process steps can be linked to each other

Benefits For You:
- Effective and reliable system for transfer of powders and granules
- Dust free operations
- Batch time reduction
- Time savings
- Manpower savings
- Easy cleaning and maintenance
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Kg/Hr)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>MOTOR HP</th>
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</table>

Customised sizes available on request

Powder Transfer System used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
IN-PROCESS BATCH CONTAINER (IBC)

Tapasya offers a variety of containers for your ‘In-Process’ material handling and storage needs. Each of these containers can be custom designed to meet your specifications of volume / weight to be contained within and transfer of material.

Tapasya offers Circular Conical IBC, Circular Drums & Conta Bin / Blending IBC of varying capacities.
Features:

Circular Conical IBC:
- Hermetically sealed intermediate Product Container
- Ergonomically designed handles and 60° angle of response for easy of material flow and handling
- P.U. Wheels and an inside / outside surface finish of <0.3 Ra

Circular Drums:
- Perfect dimensions for loading / unloading operations for to & from blenders
- Built-in level-sensing port
- P.U. Wheels and an inside / outside surface finish of <0.3 Ra

Conta Bin / Blending IBC:
- Square Hermetically sealed bins with loose detachable trolley
- Ideal for size 50L to 800L
- P.U. Wheels and an inside / outside surface finish of <0.3 Ra

Benefits For You:
- Convenience in Production units
- Durable & Safe Storage Option
- Easy handling & Movement of Raw materials and In-Process Materials
## Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in Liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
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</table>

Customised sizes available on request

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### In-Process Batch Container used in Industries:

- Pharmaceutical
- Chemical
- Nutraceutical
- Cosmetics
- Food
PALLET WEIGHING TRUCK

Tapasya’s Mobile Weighing System, a compact and portable system, is a superior option to the typical fixed weighing platforms in the production area. Widely used in the Pharmaceutical, Nutraceutical and other allied industries, this system eliminates the need for to & fro movement of ingredients and finished products for merely weighing purposes as it enables online weighing facility.
Features:

- Top Quality
- Stable Design
- High load bearing capacity
- New Rapid action lift
- Battery operated
- FLP design for explosive areas
- Constructed using SS 304 making it corrosion resistant

Benefits For You:

- Accurate Online Weighing
- Compact & Portable
- Convenient in Production units
- Durable & Safe Weighing Option
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WORKING CAPACITY (in liters)</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>APPROX. WEIGHT (in kg)</th>
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</table>

Pallet Weighing Truck used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
CLEANING

Equipment should be cleaned, maintained and sanitized at appropriate intervals for the sustaining safety, identity, strength, quality, or purity of the drug product beyond the official or other established requirements.
BIN WASHING SYSTEM

Tapasya’s Bin Washing System comes as a stand-alone or a completely integrated system designed to clean all sizes of IBC’s with minimum human intervention. The system is specifically designed for Cleaning & Drying the Bins in a pre-validated manner and comes with an efficient telescopic arm enabled spray nozzle for cleaning the internals of the Bins and multiple nozzles for external cleaning.
Features:

- Single system for Wash & Dry operation with an Option of Open & Closed type Bin Wash system
- Turntable arrangement for lower platform
- Complete enclosure through the provision of Inflatable seal
- 10 bar pressure design for maximum cleaning
- Air handling unit in Closed type Wash System for drying operation
- Infrared arrangement in the Open type Wash System
- Easy integration with a Tapasya CIP skid to provide a systematic cleaning operation through Recipe control
- Automated operation through PLC system
- Systematic drainage arrangement for proper collection of liquids
- Automatic loading and unloading options for completely Automated operation
- Options available for ‘Through the wall’ design, Sight glass, Electronic opening of Upper & Lower valves of Bins

Benefits For You:

- Provides Quick Clean Operation with Minimum Water Consumption
- Maximum Cleaning of IBC of Every Size & Type
- Fully Automated With Minimal Human Intervention
- Custom Made for Your Requirements
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>APPROX. WEIGHT (in kg)</th>
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</tbody>
</table>

Customised sizes available on request

Bin Washing System used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
CIP / WIP SKID

Clean-in-place (CIP) / Wash-in-place (WIP) technology from Tapasya offers reliable cleaning of process equipment and piping with fully-automated, State-of-art' technology.

Tapasya’s CIP / WIP system is designed to achieve efficient circulation of cleaning medium such as purified water, hot water, detergent solution with special provision of sanitization to emphasize purity. From Tapasya means you can trust that your stainless steel tanks, pumps, valves and controls have been selected with special attention for - attention that minimizes costs, maximizes productivity and efficiency, and emphasizes purity.
**Features:**

- Complete Clean system
- Proper CIP design with regulated time, flow & temperature to thoroughly remove residue
- Custom designed to suit individual plant & application requirements along with its control systems
- Complete automated process through PLC system for Recipe type functions
- User-friendly Maintenance design for Ergonomics
- Multiple options available for Heating, Mobility & Material of construction

**Benefits For You:**

- Reduced Operating time & costs
- Customised Design as per Your Requirements
- Documentation support to comply with Regulatory & Validation Requirements
- Easy Maintenance & Low Maintenance Costs
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>OVERALL DIMENSIONS (in mm)</th>
<th>APPROX. WEIGHT (in kg)</th>
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</tbody>
</table>

Customised sizes available on request

CIP SKID used in Industries:

- Pharmaceutical
- Nutraceutical
- Food
- Chemical
- Cosmetics
AUTOCOATER

Tablet coating is the last critical step in the tablet production cycle. Uncoated compressed tablets containing API are placed into perforated drum. Then aqueous or solvent based material solution is sprayed onto them to form a thin film coat.

“TAPASYA COATER” utilizes the principle of spraying of coating liquids with optimum atomization with maximum even distribution of coating solution on the tablet surfaces with properly heated clean Process air through the bed to provide rapid drying and control of dust and coating liquid. Thus, the efficient and uniform coating and drying takes place between coats.
Objective:
- To mask odour, taste or colour of the drug
- To provide physical and chemical protection to the drug
- To control release of the drug from tablet
- To protect acid sensitive drug from gastric environment of the stomach
- To avoid chemical incompatibility

Features:
- Compact design
- Suitable for both sugar and film coating
- 316 L Product contact surface
- Sealed access doors
- Quick release plenums
- High performance mixing baffles
- Atomizing air and Pattern can be controlled independently
- Spray nozzles are Anti-boarding type
- PLC based HMI based recipe control
- Fully perforated drum standard
- WIP available. Easy to clean modular design
- Option of both fixed drum and interchangeable drum design
- Tailored Air treatment units specific to the project

Benefits for you:
- State of the art coater with perforated drum technology
- Single unit is compatible for sugar and film coating
- Easy operation
- Faster and uniform coating
- Uniform surface finish giving good logo clarity
- Easy maintenance
- To avoid chemical incompatibility
Technical Specifications:

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY (in Kg)</th>
<th>PAN DIAMETER (in mm)</th>
<th>PAN SPEED (in RPM)</th>
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</tr>
</tbody>
</table>

Interchangeable drum options:
- TAP-AC-18: with 12", 14" & 18" perforated drums
- TAP-AC-26: with 24" & 26" perforated drums
- TAP-AC-30: with 24" & 30" perforated drums
- TAP-AC-36: with 24" & 36" perforated drums

Auto coaters used in Industries:
- Pharmaceutical
- Nutraceutical
- Food
- Chemical
GRAVITY TRANSFER SYSTEM

The most traditional yet the most robust system in Granulation suites which utilizes material handling system for product transfer. The system is particularly beneficial where the ingredients are dosed individually with good flow rate. The particles follows the integrated granulation track and hence results in minimal human intervention with qualitative improvement.
MULTI-LEVEL TRANSFER SYSTEM

Downstream approach with smaller footprint every floor, this Suite best suited for much specialised operation where the ordered process is the requirement for larger capacity range. The equipments are integrated with each other through the levels with automated systems for automatic operation of the Suite. The particles follow the integrated granulation track with minimum travel distance to achieve and maintain the integrity of the process. Critical parameters like cleaning validation can be achieved easily.
VACUUM TRANSFER SYSTEM

Vacuum transfer suite is the Quick, direct & the most efficient system which utilizes vacuum system to transfer product. Equipments in the suite are Integrated with each other with special fitments to achieve and maintain the media (Vacuum) of material transfer which ensures shorter batch times & more productivity.
In a cGMP environment documentation needs to meet certain requirements to ensure product quality and product safety. The cGMP regulations from FDA, PIC/S and EU all include mandatory sections on documentation.

**Documentation provides both:**
- Information on when, where, who, why, and how to complete tasks, and
- Evidence proving that the tasks have been completed as they should be

Documents provide the information or evidence or may serve as an official record.

**Tapasya’s documents includes:**

**Drawings**
- Assembly and Erection Drawings
- Equipment Support Drawings
- Drawing of schematic and piping arrangements
- Drawings for Air Handling Unit Instrument
- Data sheets loop diagrams
- General Assembly drawings
- Electrical and Pneumatic drawings
- Process & Instrumentation diagrams & necessary layouts
- Final As-built Drawing
- Contact surface area drawing

**Certificates**
- Material of construction reports
- Certificates for all direct / indirect product contact surfaces
- Instrument calibration reports or certificates
- Integrity test certificate
- Guarantee / warranty certificates for the equipment and bought-out items

**Operation manuals**
- Operation and maintenance manuals for the main equipment as well as all the bought out items
- Operation and maintenance manuals for the major components Software ladder logic / operation and controls
- Software manual
- Instrument manual
- Equipment manual and trouble shoot guide manuals
- Interlock description flow charts for operation and maintenance

**Protocols and qualification documents**
- Factory Acceptance Test protocols
- Design Qualification
- Installation Qualification
- Operation Qualification
- Installation instructions/ guidelines
- Recommended SOP’s for operation, cleaning and maintenance

Tapasya assures quality product with good documentation practices.
“Shield 12” Granulation Suite

With pharmaceutical fraternity innovating new chemical entities (NCEs); safety standards for oral solid dosages (OSDs) have come in intense focus. Keeping up with needs to deliver solution Tapasya introduces SHIELD-12 with synergy of latest technology – a suit with tolerance for 12 bar explosion and through the wall designed close loop containment manufacturing.

Need in Previous Design:

A. Safety for integrated granulation and drying suites
   - Safety of integrated systems with respect to pressure enhancement is not confirmed by the conventional design as the line has been designed for low pressure tolerance i.e. approximately 2 Bar
   - The creation of static charges or the use of organic solvent in the process may lead to explosion
   - The explosion leads to increase in pressure in the processing area or closed loop of machine, if the machine design is not according to capacity of pressure tolerance, the explosion may affect the user or the nearby area
   - It leads to major accident in processing area
   - The main objective of the integrated granulation and drying suites is the safety of the operator and the area
   - Contamination of the product due to conventional granulation suites is also one of the factor which induces need/challenges for innovation of this technology

B. Safety and the environment
   - The exposure of oncology products to the environment leads to its adverse effects on human being as well as to the environment
   - The main risk of material escaping into the environment exists whenever a connection between those pieces of equipment needs to be made or broken, when a sample needs to be taken, and last, but not least, when the machines need to be cleaned after the end of a manufacturing campaign
**Key Features:**

A. **Improved safety for integrated granulation and drying suites**
   - Extensive safety confirms pressure enhancement effects and identifies safe design limits for integrated systems
   - This research has shown conclusively that if an explosion occurs during the transfer operation in an integrated system where a granulator is connected directly to a fluid bed dryer without an explosion isolation valve, the secondary explosion pressures in the granulator can be significantly higher than in the fluid bed

B. **Safety when using organic solvents**
   - Explosion pressure in the granulator is dependent on the volumes of the two vessels and that the length and diameter of the interconnecting duct is critical in ensuring that the pressure remains within safe limits

C. **Safety and the environment**
   - Full compliance with national, local and in-house regulations, 12 Bar Systems offers a range of emission control options including solvent recovery systems, outlet filters and full containment plants
   - Equipment can be supplied to meet explosion-proof and pressure shock standards as required

D. **Integrated granulation and Drying suites:**
   - Special integrated system for sampling of the product during formulation of oral solid dosage form has been introduced
   - Special provisions for cleaning operation have been introduced

**Quantitative Results:**

- Improved safety for integrated granulation and drying suites
- Safety when using organic solvents
- Safety to the user as well as environment
- Integrated granulation and Drying suites (Containment)
OUR PARTNERS
Access Special Technology, with our International Partners

ANDOCKSYSTEME, GERMANY
Andocksysteme specializes in containment interfaces and accompanying components. With experience, creativity and expertise ANDOCK has become a trendsetter for future oriented containment solutions. Based on our proven versatile product portfolio, ANDOCK can offer the appropriate containment system for every need. This applies to conventional stainless steel components, advanced single-use components as well as combinations thereof.

*Tapasya partners with Andock in India for sales support.*

FILL TECHNIC, TURKEY
Fill Technic is specialised in manufacturing and supply of advanced technology machinery to produce machines for beverage industry. Fill technic gives turn-key solutions in bottling lines.

*Tapasya partners with Fill Technic for bottling lines and packing systems in India for Sales support*
OUR PRESENCE

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Specification & Technical Data are subject to change without prior notice.