

UMANG[®]
encapsulation solutions

LABORATORY & PRODUCTION MACHINERY



INTRODUCTION

At Umang Engineering, a proud subsidiary of [Umang Global Group Pvt. Ltd.](#), we specialize in providing cutting-edge machinery tailored to the needs of diverse industries such as Pharmaceuticals, Nutraceuticals, Personal Care, Food, and Agrochemicals. As pioneers in encapsulation technology, our comprehensive range of machinery is designed to optimize production processes and enhance product quality for encapsulation applications. From [extruders and spheronizers](#) to [pelletization lines](#), [granulation systems](#), and [film casting machines](#), our innovative solutions are engineered to meet the highest standards of efficiency and precision.

Backed by decades of experience, our equipment ensures reliable performance across a wide range of formulations, enabling businesses to achieve greater profitability and product consistency. Whether you're seeking [advanced technology for encapsulation](#) or [cutting-edge solutions for complex processing needs](#), Umang Global Group Pvt. Ltd. is your [trusted partner in machinery innovation](#).

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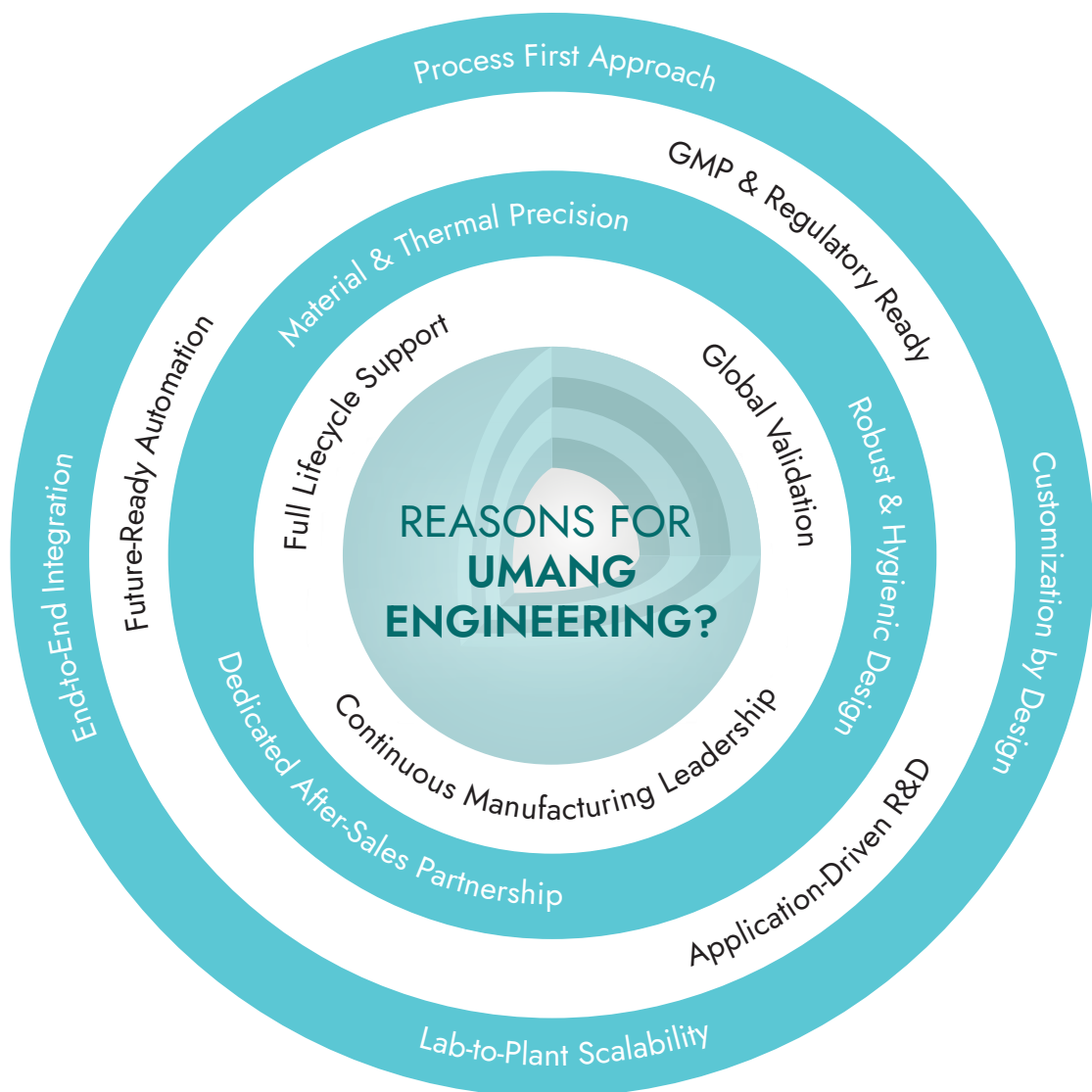


What We Do?

At Umang Engineering, we design and build precision-engineered process machinery that powers modern manufacturing across pharmaceuticals, nutraceuticals, food, and specialty chemical industries. We don't just supply equipment, we deliver integrated, scalable, and compliant processing solutions that transform raw materials into high-performance finished products with unmatched consistency, efficiency, and control.

From twin-screw extruders and roller compactors to fully automated pelletization lines and fluid bed multi-processors, our machines are engineered for robust performance, regulatory compliance (GMP/FDA), and seamless integration into both batch and continuous manufacturing environments.

Why Umang Engineering?





Our Expertise

Granulation:

High Shear Mixing & Top Spray granulation.

Extrusion:

Single, twin, basket, and die-roller systems for pellets and granules.

Spheronization:

Precision rounding for uniform, high-quality pellets.

Coating & Layering:

Advanced seal coating and solid drug layering for controlled release.

Compaction & Densification:

Granules with suitable density, drug content uniformity.

End-to-End Integration:

Seamless continuous lines for water-dispersible granules (WDG), pharmaceuticals, and nutraceuticals.

Every system is built on decades of process expertise, validated through real-world applications and global co-development partnerships. Whether you need a standalone machine or a fully integrated production line, our engineering team works closely with you to maximize yield, ensure scalability, and future-proof your operations.

Our Services

Technical Support:

Technical assistance for all our machines with well-trained technicians with hands-on support as well remote assistance.

Spare Parts:

Umang's well-stocked warehouse where you can find accessories and original spare parts, even for machines over 20 years old

Testing & Training:

Testing services like Factory acceptance tests, virtual FAT or SAT are offered with all our machines.

Rapid Mixer Granulator



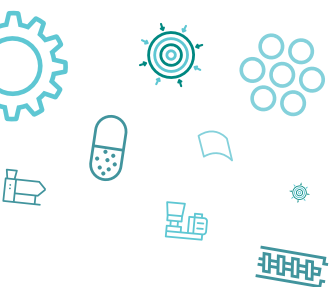
Umang's Rapid Mixer Granulator is an ideal mixer for pharmaceutical, chemicals and food products, dry mixing and wet granulation. Designed to achieve excellent uniform mixing & consistent granules at lower operating cost.

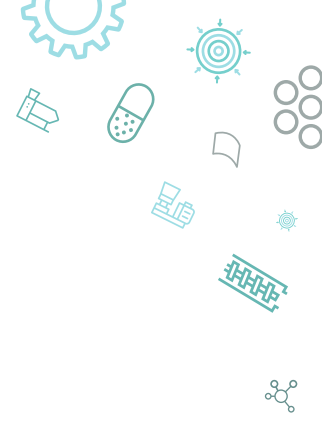


Spinning of material closed to the bottom of the mixing bowl and chopper blade sets the entire mixing in tumbling motion. Chopper blade assembly breaks the lumps formed during mixing. Mixing time consumed in processing depends upon the ingredients quantity & their Particle Size.



Pneumatically operated bottom side discharge valve. Complete unit is mounted on rigid structure covered by S S Sheet.





Special Features

- Stainless steel 316 construction contact parts rest Stainless steel 304.
- A high speed granulator is inserted horizontally through the wall of the bowl to assist uniform Mixing.
- High speed side choppers are placed in machine.
- Complete process Automation with PLC controls & HMI.
- Lid consists of charging Port, Air Filter with special silicon gasket sealing, liquid port & chopper assembly.
- Uniform mixing by Impeller.

Advantage

- Unique design incorporating Impeller, Chopper & Side discharge valve.
- Single equipment for Mixing- granulating.
- Parts easy to dismantle, clean and re- assemble.
- Minimum Clearance between Bottom Surface & Impeller allows scrapping & mixing.
- Complete inside of the Drum is machined giving uniform clearance of between Drum & impeller.

Optional Features

- 21 CFR Part II compliance & SCADA
- UL & CE Certification.
- CIP provision.
- FLP Motors.

Model	URMG-10	URMG-50	URMG-100	URMG-200	URMG-400	URMG-600
Capacity	4 Kg	20 Kg	40 Kg	80 Kg	160 Kg	250 Kg

Single Screw Extruders

Single Screw Plug & Play Extruders are Designed to suit Simplicity & Flexibility in optimizing the process in Application Labs. This innovative technology is available in four Variables i.e. Cone, Axial, Dome & Radial attachment to suit different pharmaceutical applications for R&D.

Special Features

- Compact Plug & Play design acquires limited amount of table space and GMP Suites for production of 250 gms - 6 Kg.
- Hassle free Dismantling, Cleaning & Assembling.
- Interchangeable extruder attachments - Cone, Axial, Dome & Radial, allows evaluation of four types of different pressure extrusion techniques.
- VFD Driven Motor for variable speed of rollers.
- Complete process Automation with PLC controls & HMI.
- Jacketed Extrusion Chamber to provide continuous cooling during process.

Advantage

- Easily convertible into Cone, Axial & Radial Extruder
- Variable speed of extruder (10-100 rpm).
- Easy Cleaning & Maintenance Switch from one product to another with minimal downtime, reducing the costs of labor and tooling replacements.
- Low fine generation so efficient product processing for nearly 98% product recovery.
- Cooling & heating provision through Jacketing of Extrusion Chamber.

Optional Features

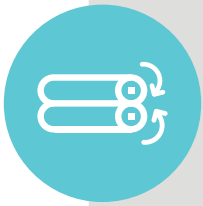
- Stainless steel 316 L construction contact parts rest Stainless steel 304.
- 21 CFR Part II compliance
- Interchangeable extruder attachments for Cone, Axial, Dome & Radial mesh.
- Meshes 0.3, 0.4, 0.5, 0.6, 0.8, 1.0, 1.2, 1.5, 2.0 mm
- CE Approved Components
- DQ, IQ, OQ Documents.



Twin Screw Extruder



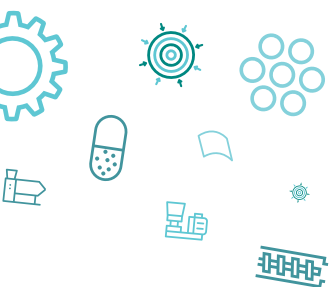
The Innovative technology is the outcome of 40+ years Experience in Pelletization machinery. Twin Screw is specially designed for scale up and validation process.



Making it suitable for scale-up studies also allows evaluation of four types of Different pressure extrusion techniques for production from 15 to 400 Kg. Easy to dismantle and clean, thus Minimum maintenance is required. It is the Flexible choice towards process optimization - thanks to its interchangeable components.



This is Developed maintaining the operating principals of the larger pilot and production machines. A wide range of extrusion screen sizes and configurations are offered for optimization of pellet diameter, surface quality and size distribution.





Special Features

- Compact design acquires limited amount of space and GMP Suites for pellet production upto 400 Kgs processing.
- System components easily accessible for cleaning and maintenance.
- Interchangeable extruder attachments - Cone, Axial, Dome & Radial.
- VFD Driven Motor for variable speed of rollers.
- Fully integrated with Allen Bradley PLC controls & HMI.
- Jacketed Extrusion Chamber.

Advantage

- Fully Qualified & Documented.
- Lab cum Pilot scale production Feasibility.
- All the m/c components are precisely machined by CNC , hence interchangeability is assured.
- Allows evaluation of four types of different pressure extrusion techniques - Axial, Cone, Dome & Radial.
- Complete scalable model to large scale pellet production.
- Circle Feeder for uniform feeding to extruder Hopper.
- Variable speed for extruder (20-100 rpm)

Optional Features

- Stainless steel 316 L construction contact parts rest Stainless steel 304.
- 21 CFR part II
- Can be Integrated with Spheronizer for Automated operations.
- Solid block processed Mesh for consistency & long Life.
- Interchangeable extruder attachments for Cone, Axial, Dome & Radial mesh.
- Meshes 0.4, 0.5, 0.6, 0.8, 1.0, 1.2, 1.5, 2.0
- CE Approved Components

Model	UTCE-35	UTCE-70	UTCE-110	UTCE-140
Capacity	Upto 15 kg/hr	Upto 70 kg/hr	Upto 180 kg/hr	Upto 400 kg/hr



Special Features

- Moderate Compaction - Low fine generation.
- Complete process Automation with PLC controls & HMI.
- Larger & Efficient production Light pressure & Dense Extrusion Compatible
- VFD Driven Motor for variable speed of rollers.
- Minimum Roller Clearance.
- Capable to produce Bigger granule sizes upto 3.0 mm.

Advantage

- Dense Extrusion & Light pressure Extrusion feasibility.
- Various Bore (1 mm, 2 mm, 3mm)of Perforated Roller for product suitability.
- Circle Feeder for uniform feeding to extruder Hopper.
- Easy cleaning & maintenance allows change over with minimal downtime, labor & tooling replacements.
- Suitable for different applications like pharmaceuticals, chemicals, nutraceuticals etc.

Optional Features

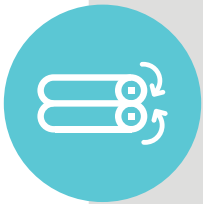
- Stainless steel 316 L construction contact parts, rest Stainless steel 304.
- 21 CFR part II
- Can be Integrated with Spheronizer for Automated operations.
- Perforated rollers 0.8, 1.0, 2.0 & 3.0 mm
- CE Approved Components
- FLP Motors.

Model	UDRE-65	UDRE-100	UDRE-130	UDRE-200
Capacity	Up To 15 kg/hr	Up To 100 kg/hr	Up To 180 kg/hr	Up To 600 kg/hr

Basket Extruder



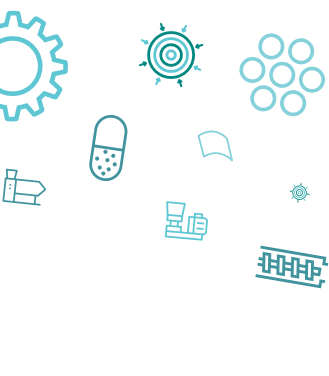
Basket type design Ideal for Low Shear Extrusion with high production capability. Mostly used in agro chemical industries due to its consistent wet mass compression into an extrudable paste and eliminate dusting.



Basket Extruders have many applications, in particular the manufacture of drug pellets and water dispersible granules. Extrusion take place centrifugally, and the mesh is of basket type in vertical position, The material is wiped through perforated screens by extrusion blades to produce well-formed cylindrical extrudates of a controlled diameter.



Extrudates then fall onto a rotating table for discharge to the next processing step or slide down as per picture shown.





Special Features

- Modular, Compact, Cost efficient & GMP design.
- Continuous operation.
- Gentle product treatment results in low product temperature.
- VFD Driven motor for variable speed of extruder.
- Various mesh configuration with different perforation / area / thickness for product suitability.
- Complete process Automation with PLC controls & HMI.
- Larger & Efficient production.

Advantage

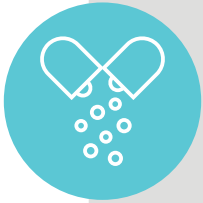
- Zero black particle generation.
- Built in Electrical controls.
- Proven design for effective operation.
- Pressing Roll with simple Radial construction.
- Low pressure extrusion for heat sensitive products.
- Ease of cleaning, and access to process components
- Mass production

Optional Features

- Stainless steel 316 L construction contact parts.
- Different mesh sizes
- Auto discharge turn table
- UL & CE Certification

Model	UBRE-75	UBRE-150	UBRE-300	UBRE-450	UBRE-600
Capacity / hr1	Upto 10 kg	Upto 100 kg	Upto 300 kg	Upto 500 kg	Upto 800 kg

Spheronizer



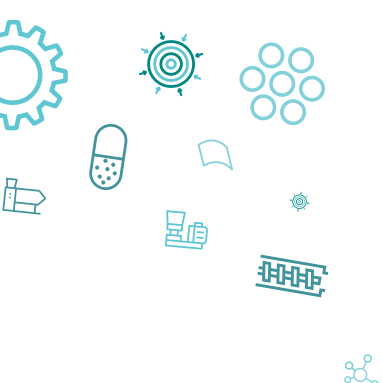
Spheronization is the necessary step of Granulation by extrusion. Its a self contained compact machine designed to deliver Spherical Pellets at fast production rates.



It is a process where the preformed Vermicelli once dropped in the bowl & exposed to rotating Chequered Plate, are fragmented into pieces equal length of diameter of Extrudes, because of the tangential & centrifugal force, they collide with the cylindrical walls of the Spheronizer. Finally the rope type movement of the extrudes at the outer border give a rolling action on the fragmented extrudes & convert them into spheres.



The size distribution and surface characteristics of the spheres are controlled by the batch size, speed, process time and, most importantly, by the characteristics of the extruded mass & pitch of chequered plate.





Special Features

- Compact design acquires limited footprint and GMP Suites pellet production.
- System components easily accessible for cleaning and maintenance.
- Interchangeable Chequered Plate attachments, allows to produce Different Sizes of Spheres/Pellets.
- Complete process Automation with PLC controls & HMI.
- Minimal Radial Clearance between Plate & Bowl.
- Pneumatically controlled Auto Discharge.

Advantage

- Batch Process.
- Radial Clearance & Air purging for maximum yield.
- VFD driven motor for infinite variable speed.
- Concentricity of Plate with Drum maintained.

Optional Features

- Stainless steel 316 L construction contact parts rest Stainless steel 304.
- 21 CFR Part II compliance.
- Jacketed Spheronizer Drum.
- Jacketing for Temperature control.
- Cooling / Heating jacket for heat sensitive product.
- Various pitched (1, 2, 3, 3.2, 6.5 & 10 mm) Checkered Plate for product suitability.
- UL & CE Certification
- Radial plate can be provided.

Model	USPH-150	USPH-250	USPH-380	USPH-500	USPH-700	USPH-900	USPH-1100
Capacity / hr	50 - 100 gm	250 - 500 gm	1 - 2 kg	2 - 5 kg	7 - 8 kg	11 - 15 kg	25 - 50 kg

Integrated Extruder & Spheronizer



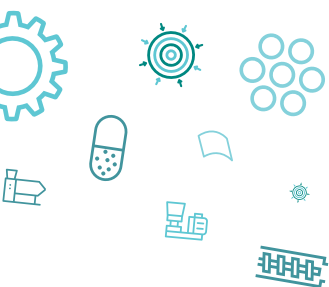
Umang's Integrated Extruder & Spheronizer is the outcome of 40+ years of Know how experience in pelletization, in special applications where Solvents are the only adhesives, suitable for both Batch & continuous operations.



The process has a very low Exposure to Environment which eliminates the evaporation of Solvents & contamination during transfers.



For Improved productivity through automation, increased yield, efficient cleaning and most importantly uninterrupted process. This Innovative technology provides Interlocks for safety, Plug Flow - First in, First out - with negligible product hold up.





Special Features

- Compact design acquires limited amount of space and GMP Suites for pellet production from 1k upto 400 Kgs processing.
- Interchangeable extruder attachments - Cone, Axial, Dome & Radial.
- VFD Driven Motor for variable speed of rollers.
- Fully integrated with Allen Bradley PLC controls & HMI.
- Jacketed Extrusion Chamber & Spheronizer Drum

Advantage

- Combines extrusion and spheronization for continuous pellet production.
- Fully Qualified & Documented.
- Eliminates cross contamination.
- Control the residence time by determining process time and RPM.
- Ideal Choice for Validation Batches.
- Recipe based process.

Optional Features

- Stainless steel 316 L construction contact parts rest Stainless steel 304.
- 21 CFR Part II compliance
- Interchangeable extruder attachments for Cone, Axial, Dome & Radial mesh.
- Meshes 0.3, 0.4, 0.5, 0.6, 0.8, 1.0, 1.2, 1.5, 2.0 mm.
- Solid block processed Mesh for consistency & long Life.
- CE / UL / Atex compliance.

Model	UICE - 25	UICE - 31	UICE - 71	UICE - 101	UICE - 201	UICE - 251
Capacity / hr	Upto 15 kg	Upto 40 kg	Upto 70 kg	Upto 120 kg	Upto 180 kg	Upto 300 kg

Solid Drug Layering



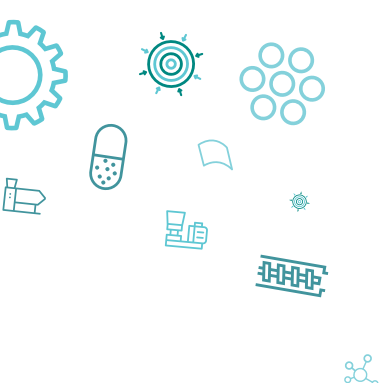
Powder layering is similar to the solution or Suspension layering. Instead of these method the layering is performed using a drug powder. The process involves the deposition of successive layers of drug or excepients or both on preformed nuclie or cores (Non pareil seed) with the help of a binding liquid.



It is a centrifugal processing of single unit operation resulting in the formation of uniform size pellets. The operation is carried out using a Drug layering rotating plate, Dry powder dusted on nonpareils adheres seeds, increasing their size and forming larger pellets as per requirements. Growth occurs by a process of blending of powder / liquid binding and consolidation. After liquid addition and layering of active creates the correct diameter pellets & with formation of rope movement uniform pellet size happens.



The requirements of process validation is simplified as the complete spheroid production process is restricted to a single processor.





Special Features

- Unique Layering plate with zero crushing arrangement for starter cores.
- Minimal radial clearance between plate & drum and air purging from bottom.
- Tangential Spray gun with peristaltic pump and ml/min. flow rate controls along with Loss in weight powder feeder controls.
- Complete process Automation with PLC controls & HMI.
- Pneumatic Lifting of Layering plate.

Advantage

- Micronized liquid spraying system on weighing control.
- Variable speed of rotating plate.
- Pneumatic plate lifting for easy cleaning & maintenance to switch from one product to another with minimal downtime.
- Negligible process loss of drug.
- Special design powder feeder with complete control on HMI.

Optional Features

- Stainless steel 316 L construction contact parts.
- Vacuum suction powder feeder system on weighing control
- Various nozzle sizes.
- Jacketing on product bowl.
- UL & CE Certification.
- 21 CFR Part II
- FLP Motor
- Moving Trolley for Layering plate cleaning.

Model	USDL - 220	USDL - 400	USDL - 730	USDL - 930	USDL - 1130	USDL - 1330
Capacity / hr	Upto 600 g	Upto 3 kg	Upto 30 kg	Upto 45 kg	Upto 90 kg	Upto — kg

Fluid Bed Dryer



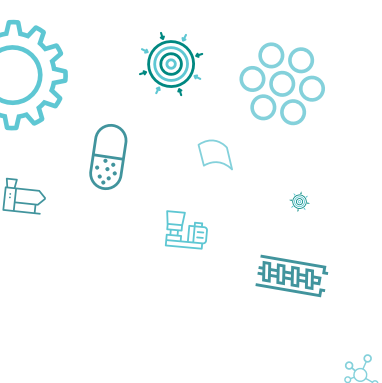
Fluid bed drying is an efficient method to remove residual moisture. During the process, the moist spheres are fluidized, dried and carried through each section of the fluid bed using hot air blown through specially designed bottom perforated plate.



Umang's Mini Dryer is perfectly designed to acquire limited amount of bench space. It consists of an Inlet chamber, Product chamber & filter assembly.



This turbulence inside the bed assists in the transportation of the material over the length of the dryer. Due to fluidization, the particles get surrounded by hot air, which leads to quick & uniform heating and drying.





Special Features

- Compact design acquires limited footprint and GMP Suites processing of 2 Kgs
- System components easily accessible for cleaning and maintenance.
- Plug & Play Model
- Special Mesh for Uniform Air Distribution.
- RTD Sensors to monitor & control flow & bed temperatures.

Advantage

- Interchangeable bowl for variable batch size.
- Fluidization with homogeneous temperature distribution.
- Can integrate granulation, coating, drying in one unit.

Optional Features

- Stainless steel 316 L construction contact parts.
- Provision for top spray granulation.
- Different meshes.
- UL certification, CE Components.
- 21 CFR Part II
- FLP Motor

Model	UFBD-1	UFBD-3	UFBD-5	UFBD-15	UFBD-30	UFBD-120	UFBD-300	UFBD-750
Capacity / hr	1 kg	1.5 kg	2 kg	6 kg	12 kg	60 kg	120 kg	300 kg

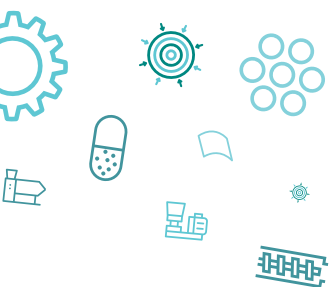
Fluid Bed Multi Processor



Umang's Fluid Bed Multiprocessor is an Ideal Stand alone multipurpose model for different applications like Drying, Granulation & Coating with Different Options in single Unit Top Spray & Bottom Spray.



Fluid Bed Processors are versatile and indispensable tools in industries requiring efficient and controlled processing of powders and granules. Their ability to perform drying, granulation, coating, and pelletization processes with precision and efficiency makes them essential for achieving high product quality, consistency, and productivity in pharmaceutical, chemical, food, and cosmetic manufacturing.





Special Features

- Single Machine with Multiple Processing Inserts.
- Standalone Compact & Modular Design complying cGMP Standards.
- Unique Distribution plate with Air Barrier for uniform coating.
- Rotor Stator Gap allows efficient process air volume to apply lifting force of granules.
- Stainless steel 316 L construction contact parts rest Stainless steel 304.

Advantage

- Range of application – Drying, Granulation, Coating.
- Fluidized state ensures uniform contact between particles and fluidizing medium → consistent granules with controlled release and Enteric coating.
- Excellent solubility, dust-free, free-flowing, porous structure, lower fine generation
- PLC controls air flow, temp, spray rate. Temp/humidity sensors, pneumatic damper 0–100%

Optional Features

- Stainless steel 316 L construction contact parts.
- Various nozzle sizes.
- UL certification, CE Components.
- 21 CFR Part II
- FLP Motor

Model	UMLC	UFBM 1	UFBM 3	UFBM 5	UFBM 15	UFBM 30	UFBM 120	UABM 300	UABM 750
Capacity (per hr)	750 gm	1 kg	1.5 kg	2 Kg	6 Kg	12 Kg	60 Kg	120 Kg	300 Kg

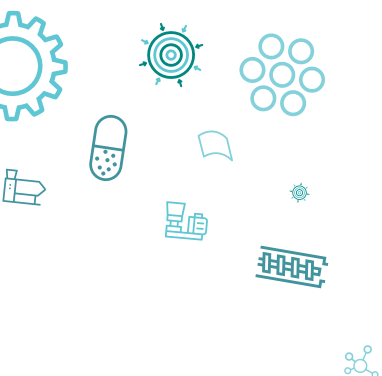
Pellet Processor



Umang's Pellet processor is dynamically designed to achieve excellent centrifugal drug layering with conical rotor insert to produce pellets or granules from powder with the use of Liquid Binder, allows achieve highest payload of API in smallest granule. Which results in Extremely fast process for high weight gain coatings, larger batch sizes.



The minimized rotor-stator gap provides fine air flow control that allows large amount of air for Drying. In a Nut Shell Pellet Processor is a One-Pot Operation for Drying, Layering with high sphericity on high RPM.





Special Features

- Special design Solid, Truncated Cone Type Rotor Insert.
- Top filter chamber & Pneumatic Discharge Door in SS316
- Conditioned bottom purging air & top air supply system
- Micronized liquid spraying system on weighing control
- Precision powder feeder system on weighing control to deliver Very fine or micronized powder directly into the product bed.
- Dust-free Closed system.
- Swivel construction for expansion chamber for ease of cleaning & charging.
- Reduced process time - increases yield.
- Complete process Automation with PLC controls & HMI.
- Hot air supply from the top (adjustable in height) helps Efficient Drying.

Advantage

- One-pot Operation for Layering & Drying.
- Conical Rotor design & small curvature of plate, pushes WKH material downwards for efficient coating.
- Closed Structure eliminates Dusting.
- Tangential Liquid spraying nozzle delivers micronized Liquid into Product bed for efficient coating.
- Precision Powder Feeder with Vacuum suction technology delivers mist to the product bed for Excellent layering.
- Low - cleaning & restart time.

Optional Features

- Stainless steel 316 L construction contact parts rest Stainless steel 304.
- 21 CFR Part II
- UL Certified, CE Marked components.
- FLP Motors

Model	UPPR-300	UPPR-1200
Capacity / Batch	Upto 2 Kg	Upto 60 Kg

Roll Compactor



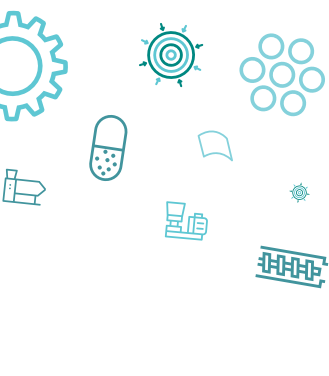
Roll Compaction is a dry granulation process used to force fine powders between two counter rotating rolls and presses the raw materials into a solid compact (flakes, sheets, strips) granules prior to final compression.



The process is used if the ingredients to be granulated are sensitive to moisture or heat. Typical excipients used in Roller compaction are lactose, Micro-crystalline Cellulose & Magnesium Stearate etc. as the lubricant.



Umang's Roll Compactor machine is ideal for increased bulk density, making granules, dust free processing and reducing packing size of pharmaceutical ingredients in pharmaceutical industry, in food as well as chemical industry for densification and granulation of powder.





Special Features

- Maximum pressure gives Desired Grain Size
- Low fine Generation
- Hydraulically operated Uniform force distribution system to produce granules of equal quality.
- Power pack motors with 1 HP capacity
- Roller diameter 100mm, variable speed (20 - 150 rpm).
- Cleaning & maintenance made easy with Hydraulically operated Feeder assembly.
- Specially designed Screw Operated Powder feeder.

Advantage

- In compliance with cGMP guidelines
- All covers are designed to obtain dust-free operation
- Feed screw is steplessly driven through variable frequency drive.
- Hydraulic Power Pack system
- Limit switch for chamber, Slip clutch at drive of auger, Overload relay & Emergency stop.
- The hopper and auger/ feeder assembly is lifted by hydraulics for easy cleaning & dismantling.
- Gravity feed to funnel & pressed into compacting roller by pressing screw.

Optional Features

- Stainless steel 316 L construction contact parts.
- 21 CFR part II.
- Various mesh size milling merge.
- UL certification, CE Components
- Flame Proof Motors.

Model	URCP - 30	URCP - 200
Capacity / Batch	Upto 30 Kg	Upto 150 Kg

Film Casting Machine



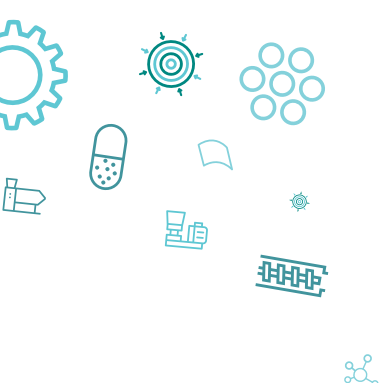
Film Casting Assembly is the heart of this process. Compact, clear and flexible design, the lab machine is ideally suitable for research and development as well as for the production of stability and clinical patterns. Technical highly sensible components regulate feeding & casting of materials within the machine. Dancers, web edge controls, and winding and rewinding devices are the basic technologies for producing Film Casted Rolls.



cGMP compatible Cantilever Design consists of a set of roller arrangement for holding and smooth movement of substrate and casted film, Coating assembly to coat continuously on a substrate film with solutions or dispersions in variable thickness with accuracy 500-900 microns. Thickness adjusting mechanism by viewing a built in thickness indicating micrometer dial.



Set of cartridge heaters inside drying chamber to heat air flow system which dries the film. Winding rollers to roll back the casted film for next step of Slitting & Packing.





Special Features

- Compact, Modular & cGMP Design.
- Cantilever type design for complete unwinding and winding process.
- VFD Driven motor for infinite variable speed
- Servo Motors for Linear Speed & Speed sensors with Automatic Web Aligner.
- Automatic Web tension alignment through Force sensor.
- Precise closed coating system & High efficient drying zones with double skin
- RTD sensors and temperature controls for individual zones.

Advantage

- Continues Automated Process
- High Coating accuracy.
- Uniform air flow throughout the machine for Efficient Drying & Product performance.
- Liquid dosing system there by minimal human interference.
- Cantilever type design for winding and unwinding, hence substrate and product rolls can be simply inserted from front.
- Insulated Drying Chambers for Efficient Drying without Heat Dissipation.

Optional Features

- Stainless steel 316 L construction contact parts.
- 21 CFR part II.
- Various mesh size milling merge.
- UL certification, CE Components
- Flame Proof Motors.

Model	URCP - 30	URCP - 200
Capacity / Batch	Upto 30 Kg	Upto 150 Kg

Hot Melt Extruder



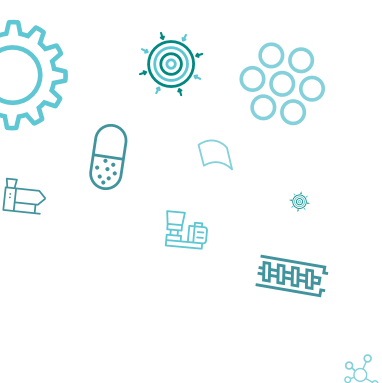
Hot Melt Extrusion is the upgraded version of Twin screw Extruder with heating as an element, it is the robust, Novel technique to make solid dispersions to provide extended, modified & targeted drug delivery, as well as taste masking of bitter API. Hot melt Extrusion applies heat & pressure to melt a polymer & force it through an extruder in a continuous process.



In an Umang Hot Melt extruder a number of processing steps are combined, including Uniform feeding, melting, mixing, venting, discharge and chilling. The control unit facilitates online monitoring and accurate adherence of the set process parameters. Specifically designed Heating and cooling plate with cartridge heaters, RTD sensors and thermic fluid cooling system heat the product to the required temperatures at different zones. Pair of segmented screws, which will be co rotating in anti-clockwise direction inside the segmented long barrel push forward the blended powder through different heating and mixing zones to the extruder die plate.



By these a compressive force will be applied on the semi-solid mass. When the force on the semi-solid mass exceeds the minimum force for penetrating the orifice of the die plate, extrudes starts coming out. During the process the product get melted and mixed thoroughly.





Special Features

- Contact part hardened steel SS440, SS316, non contact part Ss304
- Complete process Automation with PLC controls & HMI allows integration of several process steps in one machine
- Nitride hardened SS 316 Specially Designed Mixing Elements
- Efficient Heating & cooling circulating system with modulating control

Advantage

- It Yields high product Density.
- Small footprint, even for high throughput rates
- Short processing time with excellent mixing capabilities (distributive and dispersive)
- Uniform Powder Feeder to extruder hopper
- Chilling Roller cum Cutter Unit to cool & crush extrudes into cylindrical granules.

Optional Features

- 21CFR part II.
- Different Diameter of extrusion heads (1, 2, 3 & 5 mm).
- UL Certification, CE Components.
- Chiller.

Model	UMSE-25/30	UMSE-40/30
Capacity / Batch	2-5 Kg	15-20 Kg

Cold Extrusion Machine



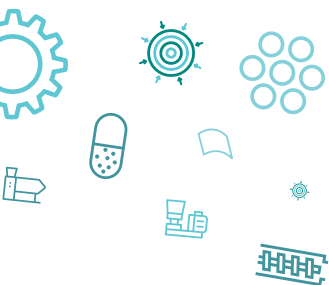
The Cold Extrusion Machine is specially designed for producing veterinary tablets by operating at lower temperatures to handle delicate materials used in pet food. It features customized larger dies for precise shaping and automatic sensors that cut the extruded material at regular intervals, ensuring uniform size and quality for each tablet. This advanced technology is ideal for achieving the specific requirements needed in pet food production.



Uses a plug-flow (first-in, first-out) screw feed system with concentric counter-rotating screws that continuously press material through a die. Material exits through custom dies, then is cut or formed to a uniform size. Integrated systems like mixers, binders, chillers, and cutters are part of the process flow.



Designed for high-quality, low-temperature production (especially pet food tablets). Built with automation, hygiene, and efficiency in mind. Scalable and modifiable through screens, controls, and optional systems. Part of a manufacturing domain where cold extrusion offers strong material control and productivity advantages.





Special Features

- Low-Temperature Extrusion System
- Twin Concentric Counter-Rotating Screw Mechanism
- Interchangeable Customized Die Assembly
- Integrated Automated Cutting Mechanism
- Uniform Feed Control for Challenging / Sticky Formulations

Advantage

- Suitable for Heat-Sensitive Formulations
- Uniform Product Quality
- Minimal Product Hold-Up
- Enhanced Process Flexibility
- Improved Operational Efficiency

Optional Features

- Stainless steel 316 L construction contact parts.
- 21 CFR part II.
- Various mesh size milling merge.
- UL certification, CE Components
- Flame Proof Motors.

Model	URCP - 30	URCP - 200
Capacity / Batch	Upto 30 Kg	Upto 150 Kg



Pelletization Line (Layering Process)



Sifter

To maintain uniform granule size.

We have single & twin deck models with validated sieved in mesh & microns size as per BSS or ASTM standard.



Lifting & Positioning Device

For lifting bowl



Granulation (Wet/ Dry)

Dry powder are mixed and binder solution is spread on the powder mixture causing agglomeration of the particles and hence granules are form.



Fluidbed Multi Processor

For drying & coating of pellets



Solid Drug Layering

material collecting bin will be placed at the discharge point of the sigma mixer and will be lifted to be at the feeding position of wet mass dispenser



Lifting & Positioning Device

For lifting bowl



Lifting & Positioning Device

For lifting bowl



Sifter

Material from the basket extruder will be collected in the FBD bowl and it will be further assembled with the FBD.



Transfer Process

Material from the sifter will be collected to Intermediate Bulk Container (IBC) & shifted to blender for blending process.



Blending

After drying, the same FBD bowl will be connect to the tippler system and the tippler will lift the bowl and will be placed at the feeding positing of the shifter

Capsule Filling

For separating the oversized, actual sized & lower sized extrudes.



Pelletization Line (Extruder Spheronizer Process)



Sifter

To maintain uniform granule size.

We have single & twin deck models with validated sieved in mesh & microns size as per BSS or ASTM standard.



Lifting & Positioning Device

For lifting bowl



Granulation (Wet/ Dry)

Dry powder are mixed and binder solution is spread on the powder mixture causing agglomeration of the particles and hence granules are form.



Fluidbed Multi Processor

For drying & coating of pellets



Spheronizer

Extruders from extruder will be collected in the bin and discharged in the drum of sphero to make pellet.



Extruder

For preparing extrudes



Lifting & Positioning Device

For lifting bowl



Sifter

Pellet from FBD/FBF will be discharged in the sifter



Transfer Process

Material from the sifter will be collected to Intermediate Bulk Container (IBC) & shifted to blender for blending



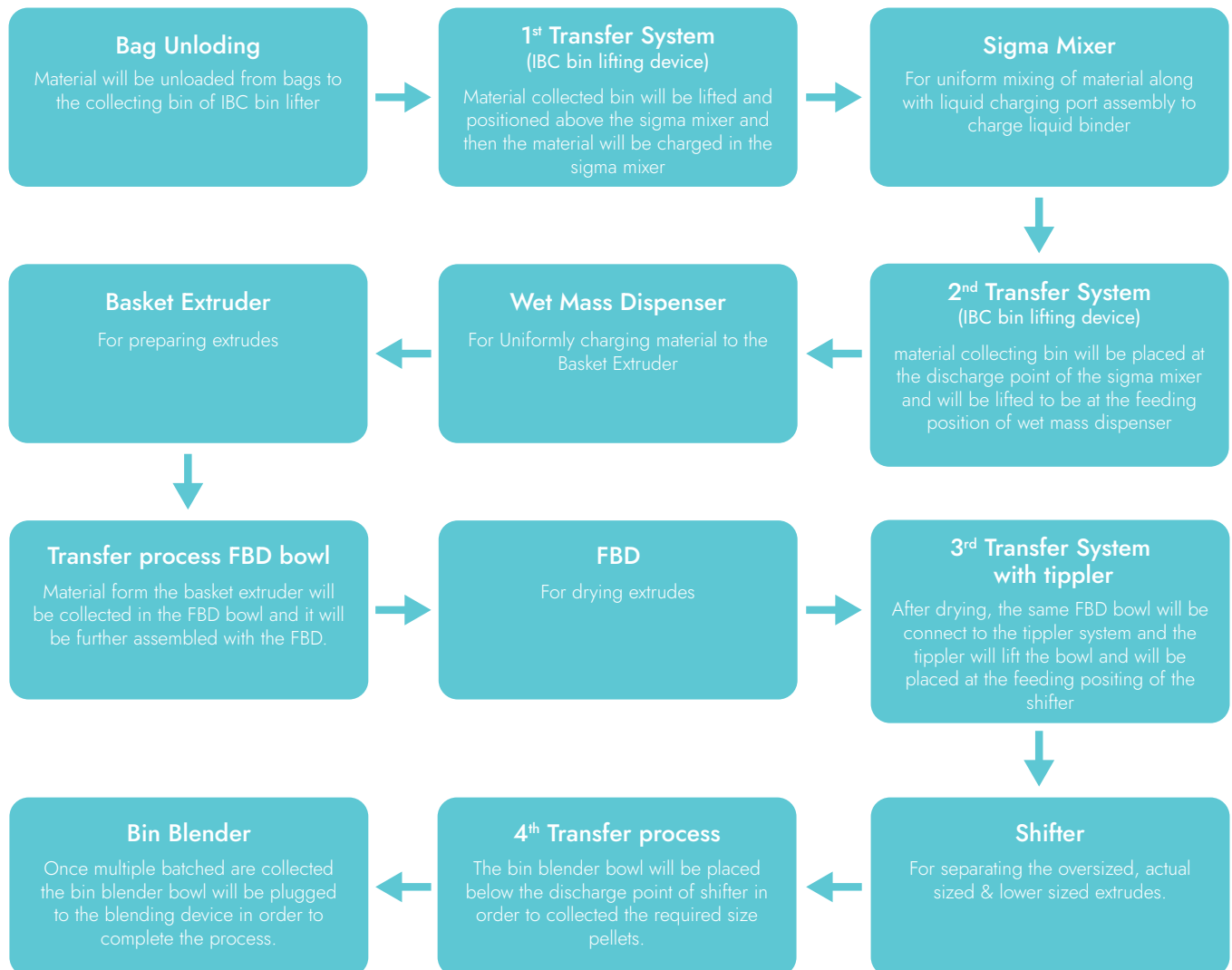
Blending

After drying, the same FBD bowl will be connect to the tippler system and the tippler will lift the bowl and will be placed at the feeding positing of the shifter

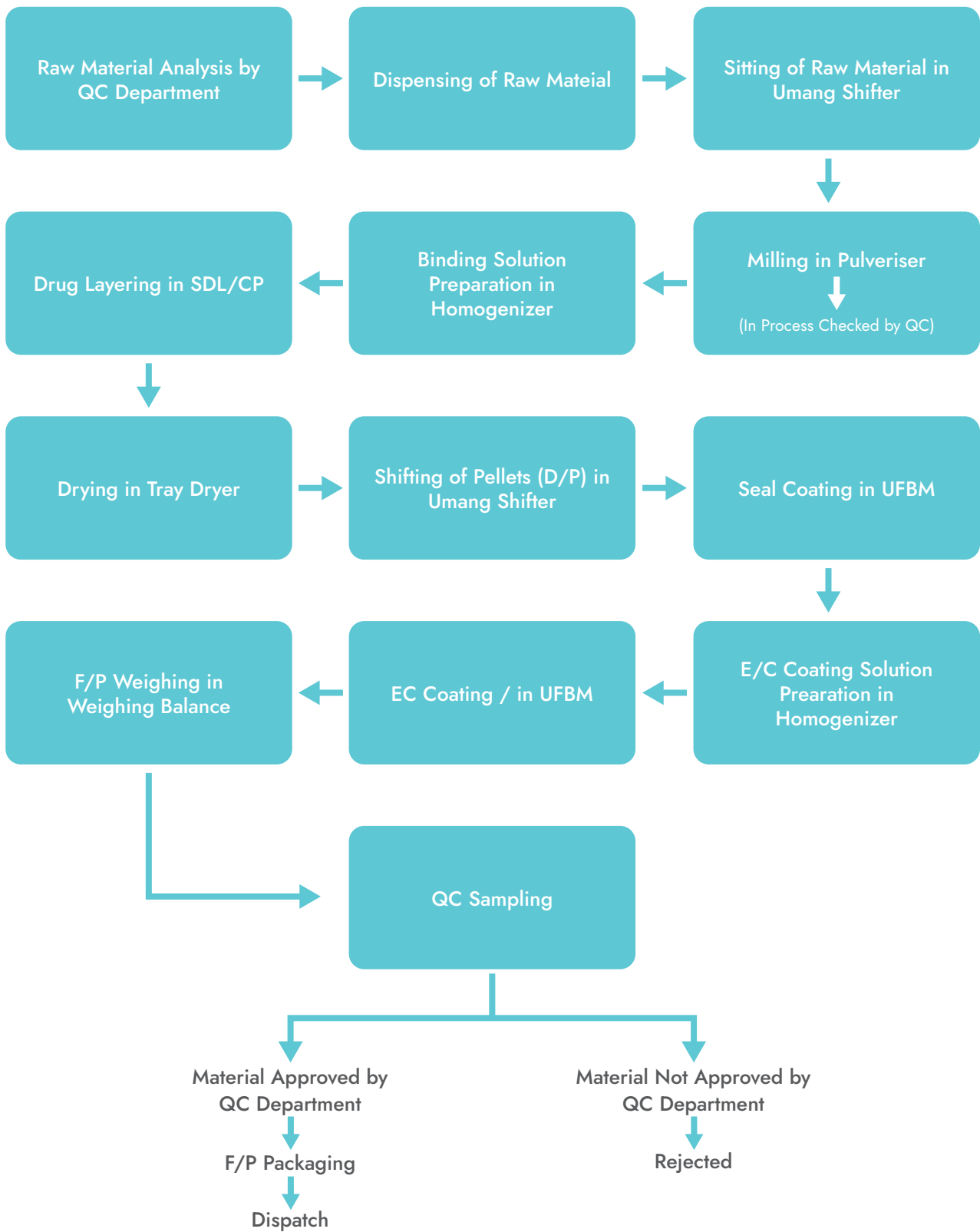
Capsule Filling

For separating the oversized, actual sized & lower sized extrudes.

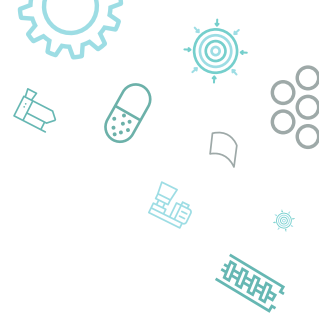
Water Dispersible Granules (WDG) Line



Manufacturing Flow Chart...



Brand Associated With Us.....



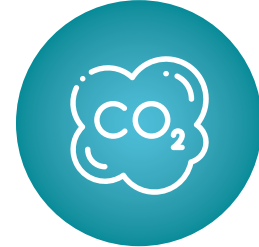
Engineering Performance Across Industries



PHARMACETICAL



CHEMICAL



CARBON CAPTURE



FOOD



NUTRACEUTICAL



COSMETIC



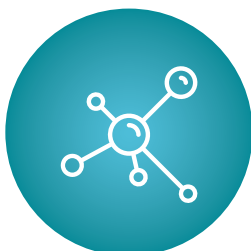
AQUACULTURE



CATALYST



AGRICULTURE



CERAMIC

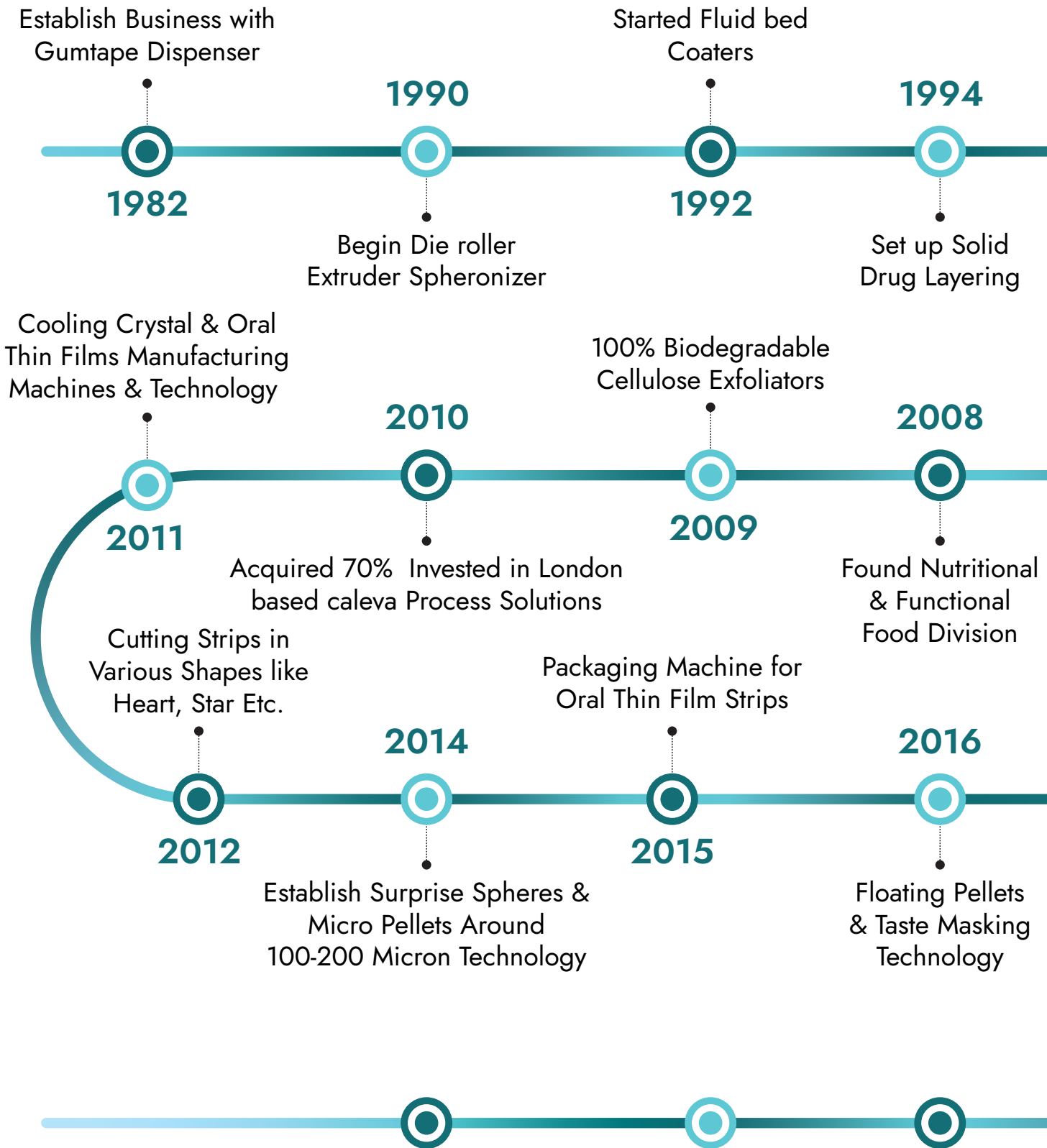


EDUCATION



SUSTAINABLE FUEL

Umang Milestones.....



Our Global Reach



Umang Global Group Pvt. Ltd.
(Engineering)

Umang Encapsulation Solutions Pvt. Ltd.
(Pharma, Nutraceuticals & Food)

Umang Particle Science Pvt. Ltd.
(Personal Care)

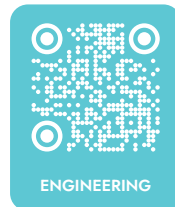
Lab Ultima Process Technologies Pvt. Ltd.
(Spray Drying)



PERSONAL CARE



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FOOD & BEVERAGES



PHARMACEUTICALS

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