

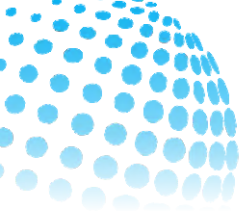
## Pellet Processing Granulation Line & Particle Processing



**100% Customer delight at all touch points**

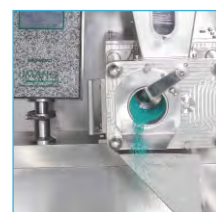
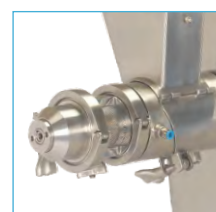
**Umang Pharmatech Pvt Ltd.**

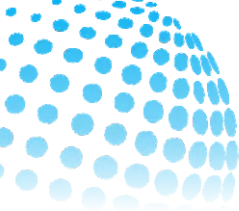
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## PRODUCTS

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# RAPID MIXER GRANULATOR

## Brief Description and Main Properties

Rapid Mixer Granulator is designed to achieve excellent mixing and consistent granules at lower operating cost along with higher productivity. Better mixing and closed control of granule size leads to faster tableting speeds with improved quality and least rejections.

**Axial of Agitator and Chopper :** - Both have double sealing structure: teflon packing and air sealing over it. It prevents the axles from the inflow of the powder and other particles. Washing of the air sealing tube is possible.

**Impeller :** - The surface is specially polished so that it can prevent powder sticking. Separable impellers are simple in construction and come to be disassembled and re-assembled easily and quickly.

**Chopper Device :** - Chopper shaft is connected straight with driving motor. It reduces vibration and noise.

**Binder Feeding Device :** - Binder is fed in the way of down-fall from the tank placed on the top of the vessel. feeding quantity is control by opening and shutting valve with the handle.

## Standard Features

- Stainless steel 316 construction contact parts rest Stainless steel 304.
- Top driven.
- Spray nozzle for liquid addition.
- Machine bowl and blade 0.3mm.
- Chopper height can be adjusted for lower batch size.

## Advantage & Benefits

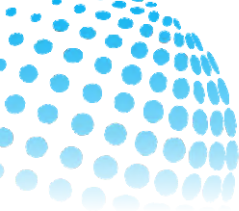
- Drum inner body is machined cleaning enabling clearance of 0.3mm.
- Impeller blade design is upward enabling, scratching of material of the wall for efficient granulation.
- CIP nozzle can be provided.
- Top driven chopper reduces chances of block particle lifting arrangement.
- DQ / IQ / OQ / PQ



## Technical Specification

Model	Full Cap	Work Cap	Agitator		Chopper	
			Drive Motor	Speed (RPM)	Drive Motor	Speed (RPM)
URMG - 30	70	30	5.5kw	0-150	2.2kw	0-3400
URMG - 50	120	50	7.5kw	0-220	3.7kw	0-3400
URMG - 100	240	100	11kw	0-120	5.5kw	0-3400
URMG - 200	455	200	15kw	0-120	7.5kw	0-3400
URMG - 300	670	300	22kw	0-105	11kw	0-3400
URMG - 400	850	400	30kw	0-90	11kw	0-3400
URMG - 500	1050	500	37kw	0-80	11kw	0-3400
URMG - 600	1280	600	45kw	0-75	11kw	0-3400





# EXTRUDER - AXIAL, CONE & RADIAL

## Brief Description and Main Properties

UICE is an integrated machine for the uninterrupted process for making granules, the innovative technology is the outcome of 35 years of know how experience in pelletization machinery. The integrated Extruder - Sphero-dizer is designed to suit the pharmaceutical application of producing spherical pellets. The machine fully complies with cGMP norms and easy to use. It is suitable for scale-up studies. The machine is delivered with an Cone Extruder (UTCE - 110) & Single Sphero-dizer (USPH - 900). The porosity of the mesh is as per customer requirement and it a format part. The size of the spheres is mainly depended on the diameter of extrudes and the cross hatched disc grove on the chequered plate of the Sphero-dizer. In this machine, Extruder output to be collected in bucket & load into Sphero-dizer.

### Standard Features

- Stainless steel 316 / 316L construction contact parts rest Stainless steel 304.
- PLC Automated touch screen controls.
- Siemens / Allen Bradley based automated controls.
- Pellet processing efficiencies ensure highest level of product performance.
- Efficient product processing for nearly 100% product recovery.

### Advantage & Benefits

- Cone mesh with pressing cams and screws with feed hopper.
- Variable speed of extruder (40-100 rpm). Touch screen controls with traceability.
- Easy Cleaning & Maintenance Switch from one product to another with minimal downtime, reducing the costs of labor and tooling replacements.
- Minimal Capital Investment Single platform with interchangeable extrusion design heads permits selection of the optimal pellet processing technology.
- Low fine generation.
- DQ / IQ / OQ / PQ

### Optional Features

- Stainless steel 316 / 316L construction contact parts rest Stainless steel 304.
- 21 CFR part 11.
- Interchangeable extrusion design attachments for Axial & Radial mesh.
- Meshes 0.4, 0.5, 0.6, 0.8, 1.0, 1.2 mm
- Chequered plate 1.0 mm, 2.0 mm, 3.2mm & 6.5 mm

## Throughput/Output:

Model	UICE - LAB	USSE - 60
Capacity	50gms - 1kgs / hr	250gms - 6kgs / hr



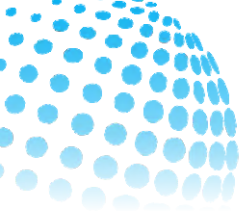
Axial Extruder



Cone Extruder



Radial Extruder



# EXTRUDER - DIE ROLLER EXTRUDER

## Brief Description and Main Properties

For moderate compaction, Die Roll Extruder is the best option. Extrusion takes place through the perforation of a hollow cylindrical roll by the compressing of another roll in Die Roll Extruder. Any size of extrusion from 1 mm to 3 mm are possible in this machine. Output capacity depends on size of machines. Die roller extruder is being the standard range widely accepted by all the industries. This is being continuously upgraded and standardized by proven Umang Technology.

### Standard Features

- Stainless steel 316 / 316L construction contact parts rest Stainless steel 304.
- Modular, Compact, Cost efficient & GMP design.
- Continuous operation.
- All the m/c components are precisely processed in CNC, hence interchangeability is assured.
- Low pressure Screw extrusion with cooling jacket for heat sensitive product.
- Shaft assemblies are being provided with thrust and radial bearings.
- Special Tie Bar Design for ease of removal for cleaning and quick refit except for USSE 60
- VFD Driven motor for infinite variable speed of extruder (20-100 rpm).
- Fully integrated with Standard HMI / VFD controls, thereby by consistent Extrudes.
- Fully integrated with Standard ( AB / SIEMENS ) PLC / IPC controls.
- Fully qualified and documented.

### Advantage & Benefits

- Fully Qualified & Documented.
- All the m/c components are precisely machined by CNC, hence interchangeability is assured.
- Batch Process.
- Auto wet mass dispenser to extruder.
- Built in Electrical controls.
- DQ / IQ / OQ / PQ

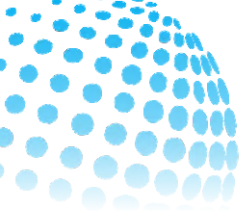
### Optional Features

- Stainless steel 316 L construction contact parts rest Stainless steel 304.
- 21 CFR part 11.
- Different Die Roller sizes 1, 1.2, 1.5, 2 & 3 mm.



## Throughput/Output:

Model	UDRE - 65	UDRE - 100	UDRE - 130	UDRE - 200
Capacity	0.1-15 kgs / hr	60-100 kgs / hr	200-300 kgs / hr	350-500 kgs / hr



# HOT MELT EXTRUDER

## Brief Description and Main Properties

Hot Melt Extrusion is the upgraded version of Twin screw Extruder with heating as an element, the whole process involves hopper for feeding the raw material along with waxes which is pre mixed in solid form. The outstanding feature of the Hot Melt Extrusion range is the the twin screw segmented barrel and twin screw feeders attached to it for uniform and continuous product feeding. Connections, cabling and supplies are completely integrated, covered and sealed so the outside of the machine is smooth and very easy to clean. Our system Melt extruder is a result of high level of engineering expertise and product technology knowledge, quick product changeover increases productivity and cost effectiveness. The Hot Melt Extrusion capacity ranges from few 100 gms. to 150 kgs / hr featuring through the wall design and movable head, allowing operation In this continuous production process, polymers are mixed with binding materials, carrier materials and active pharmaceutical ingredients. This innovative, flexibly applicable process has recently become increasingly important.

### Standard Features

- Contact part hardened steel SS440, SS316, non contact part Ss304.
- PLC Automated touch screen controls.
- Siemens / Allen Bradley based automated controls.
- Efficient product processing for nearly 100% product recovery.
- Heating & cooling zones.
- CE marking.

### Advantage & Benefits

- Elements.Zone.
- Temp. control.
- DQ / IQ / OQ / PQ
- Split bowl.
- Feader twin screw cutter assembly.

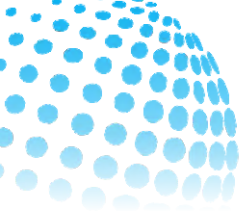
### Optional Features

- Stainless steel 316 L construction contact parts rest Stainless steel 304.
- 21CFR part 11.
- Different Diameter of extrusion heads (1, 2, 3 and 5mm).
- UL Certification.



## Throughput/Output:

Model	UMSE - 16	UMSE - 25
Capacity	50gms - 1kgs/ hr	200gms - 2kgs/ hr



# EXTRUDER - BASKET EXTRUDER

## Brief Description and Main Properties

For less compaction and large output **basket extruder** is the best option. Mostly used in agro chemical industries. For large scale production in pharmaceutical industries this equipment can be adapted since umang make is of gmp design and can be validated. Extrusion take place centrifugally, and the mesh is of basket type in vertical position, hence called basket extruder. This extruder range is of proven umang technology. In basket extruder, wet mass to charge manually in to the top cone hopper.

### Standard Features

- Modular, Compact, Cost efficient & GMP design.
- Continuous operation.
- All the m/c components are precisely processed in CNC, hence interchangeability is assured.
- Shaft assemblies are being provided with thrust and radial bearings.
- VFD Driven motor for infinite variable speed of extruder (20-100 rpm) .
- Various mesh configuration with different perforation / area / thickness for product suitability.
- Fully integrated with Standard HMI / VFD controls , there by consistent Extrudes.
- Fully integrated with Standard ( AB / SIEMENS ) PLC / IPC controls.

### Advantage & Benefits

- Zero black particle generation.
- HMI Touch screen operation.
- 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.
- Stainless steel 316 construction contact parts rest Stainless steel 304.
- DQ / IQ / OQ / PQ

### Optional Features

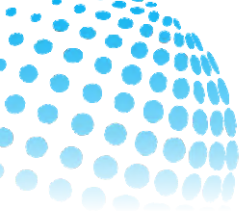
- Stainless steel 316 / 316 L construction contact parts rest Stainless steel 304 .
- 21CFR controls.
- Different mesh sizes of (1mm , 1.2mm, 1.5mm).



## Throughput/Output:

Model	UBRE - 150	UBRE - 300	UBRE - 450	UBRE - 600
Capacity	10 - 30 kgs / hr	100 -150 kgs / hr	300 - 500 kgs / hr	1000 - 1200 kgs/hr





# SIGMA MIXER EXTRUDER

## Brief Description and Main Properties

Cone extruder is widely used for making pellets of different sizes starting from minimum 400 microns to maximum 2000 microns.

Cone Extruder gives mild compaction and is ideal for most of the Pharmaceutical formulation related to pelletization.

Cone extruder consist of Hopper for loading of wet mass, Hopper as internal blades connected to gear to rotate and push material in a systematic manner in to the feed hopper of Extruder Chamber, Extrusion chamber is Jacketed from outside for circulation of cold water to maintain temperature of the product in case the product is sensitive in nature.

Extrusion chamber consist of twin screws which transfer the material towards the pressing cam and out from the perforation of the screen of desired dia.

Cone extruder is available from R&D to Production batches with minimum output of 250 gms and maximum 500 kgs/hr.

Cone Extruder are cGMP complied equipments with self standing model for Production scale & table top model for R&D scale HMI control operation with built in electrical panel for ease in maintenance.

Higher version of Cone Extruder comes along with Scada & 21 CFR Part 11 module with report options and online printing of day to day activity carried on the equipment.

## Standard Features

- Modular, Compact, Cost efficient & GMP design.
- Batch operation.
- Different Cone size are available in the range 0.4, 0.5, 0.6, 0.8, 1.0, 1.2, 1.5 & 2mm.
- VFD Driven motor for infinite variable speed of extruder (20-100 rpm).
- Various mesh configuration with different perforation / area / thickness for product suitability.
- Fully integrated with Standard HMI / VFD controls , there by consistent Extrudes.
- Fully qualified and documented.

## Advantage & Benefits

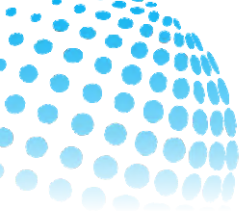
- Batch process,
- Combination of Mixer & Extruder.
- DQ / IQ / OQ / PQ



## Throughput/Output:

Model	USGM - 600	USGM - 1200
Capacity	600 ltr / batch	1200 ltr / batch





# SPHERONIZER

## Brief Description and Main Properties

The function of a spheronizer is to convert extrudes into spheroids. Spheronization is the necessary second step of granulation by extrusion - spheronization process where pharmaceutical products are made into small spheres or spheroids.

### Spheronizing Process :-

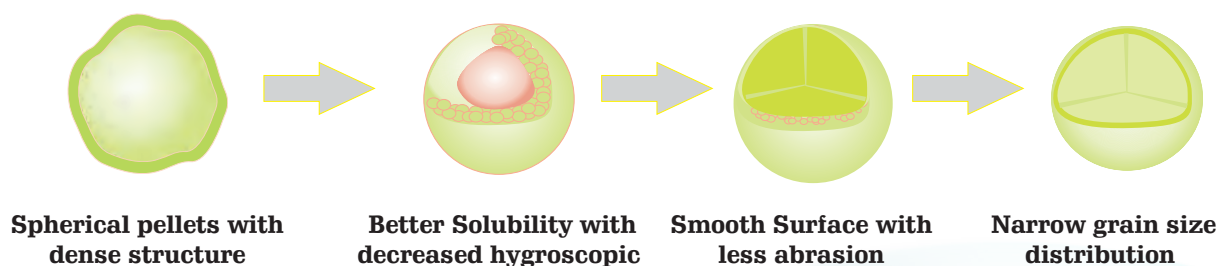
Spheronizer consists of a plate, which is having a special cross hatched grooves, known as chequered plate. This plate rotates inside a cylindrical bowl. The radial clearance between the plate and the bowl is kept minimal ( $<0.3$  mm) to reduce the powder leakage. Purging air is supplied in this gap to prevent the falling of powder beneath the chequered plate. This air also helps for the evaporation of excess moisture from extrude and prevent particle agglomeration. The manually loaded preformed extrudes on the chequered plate rotates along with the plate and centrifugal & tangential movement of the product to get a torus motion. While rotating in the grooved plate with pre-desired groove size, the vermicelli will be fragmented into pieces with length equal to the diameter of extrudes. Broken extrudes, because of the tangential force and centrifugal force, collide with the cylindrical wall of the spheronizer. The rotating rope type movement of extrudes at the outer border of the bowl give a rolling action on the fragmented extrudes and it will be converted to spheres.

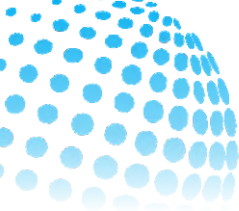
When the particles attain required spherical shape they are centrifugally discharged through the discharge door which pneumatically opens into the discharge hopper at the predetermined time.

### Extrudes -



### Let's Understand the process:-





# SPHERONIZER

## Standard Features

- Stainless steel 316 construction contact parts rest Stainless steel 304.
- Modular, Compact, Cost efficient & GMP design.
- Continuous operation.
- All the m/c components are precisely processed in CNC, hence interchangeability is assured.
- Cooling / Heating jacket for heat sensitive product.
- Shaft assembly is being provided with thrust and radial bearings.
- Lifting arrangements for ease of removal of Checkered Plate for cleaning and quick refit.
- VFD Driven motor for infinite variable speed for Checkered Plate.
- Fully integrated with Standard HMI / VFD controls, there by consistent spheroids.
- Fully integrated with Standard ( AB / SIEMENS ) PLC / IPC controls for 21 CFR Part 11 compliance (optional).
- Fully qualified and documented.

## Advantage & Benefits

- Batch Process.
- Air purging from below to avoid material falling down.
- Built in Electrical controls.
- Safety grill and interlocks.
- Drum built in a single piece to avoid contamination.
- Since Shaft assembly is being provided with thrust and radial bearings, the concentricity of checkered plate with drum is maintained.
- Auto discharge and discharge hopper is special design so that pellet cannot be damaged during discharge.
- DQ / IQ / OQ / PQ

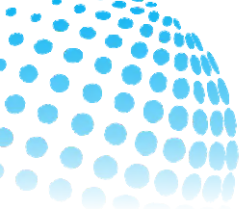
## Optional Features

- Stainless steel 316 L construction contact parts rest Stainless steel 304 .
- 21CFR controls.
- Jacketing for heat sensitive product.
- Various pitched ( 1 mm, 2 mm, 3.2 mm, 6.5 mm ) Checkered Plate for product suitability.
- Radial plate also provided if needed.



## Throughput/Output:

Model	USPH - 500	USPH - 700	USPH - 900
Batch Cap./Kgs.	5	7	15



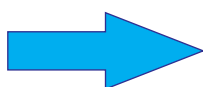
# COMBINED EXTRUDER & SPHERONIZER UICE

## Brief Description and Main Properties

### Continuous Technology –



**Extruder**



Process



**Spherodizer**

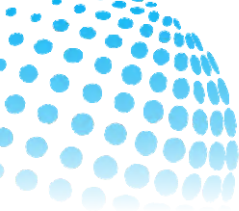
UICE is an integrated machine for the uninterrupted process for making granules, the innovative technology is the outcome of 35 years of know how experience in pelletization machinery , and being one of the largest supplier of Extruders & Spherodizer we provide best technology solutions to our customers.

The integrated Extruder - Spherodizer is designed to suit the pharmaceutical application of producing spherical pellets. The machine fully complies with cGMP norms and easy to use. It is suitable for large scale production of spheres from the wet mass. It is also suitable for scale-up studies. The porosity of the mesh is as per customer requirement and the size of the spheres is mainly depended on the diameter of extrudes and the cross hatched disc groove on the chequered plate of the Spherodizer. In this machine, Extruder output to be collected in bucket & load into Spherodizer.

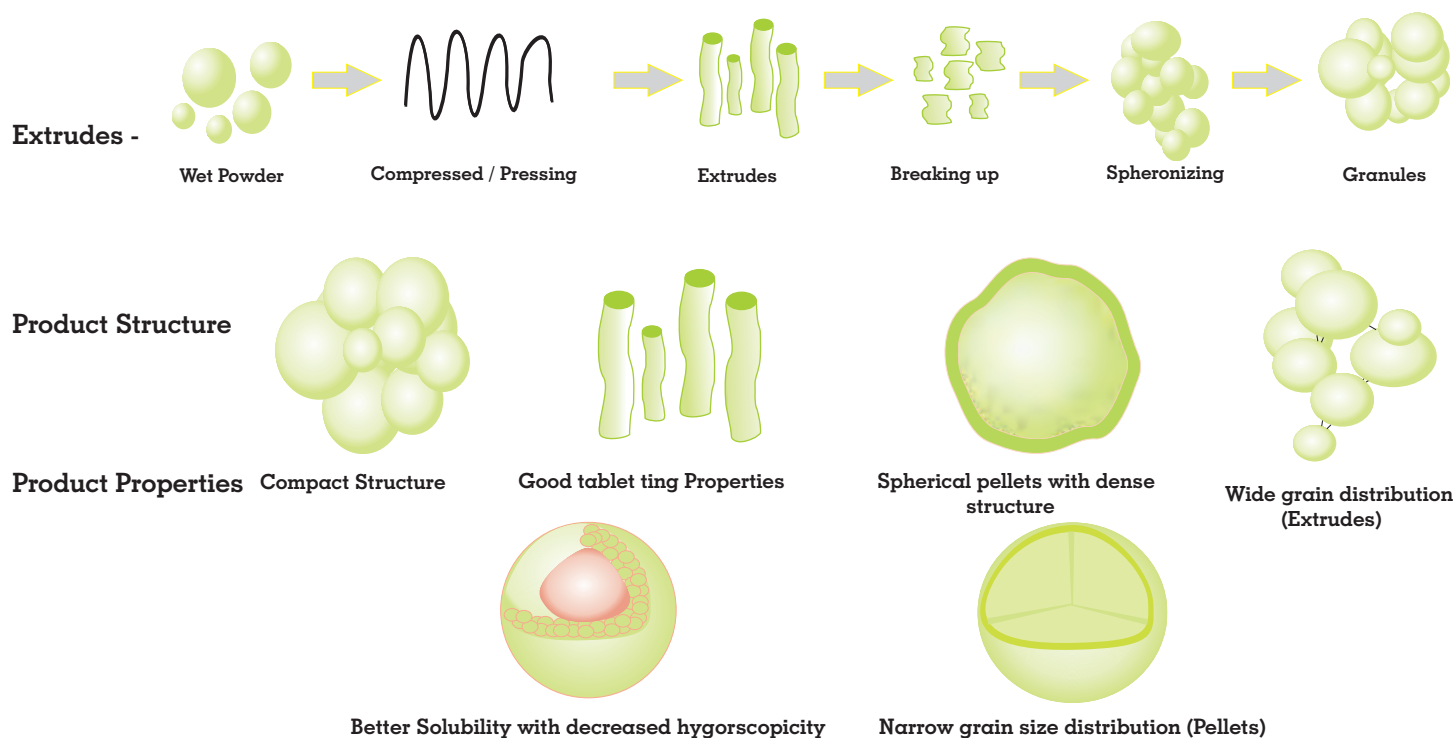


### Throughput/Output:

Model	UICE - 22	UICE - 41	UICE - 70	UICE - 101	UICE - 250
Batch Capacity	6 - 10kgs / hr	30 - 40kgs / hr	40 - 50kgs / hr	150 - 160kgs / hr	80 - 150kgs / hr



## COMBINED EXTRUDER & SPHERONIZER UICE



### Standard Features

- Compact design and GMP Suites for continuous pellet production
- System components easily accessible for cleaning and maintenance.
- Fully integrated with Allen Bradley PLC controls 21 CFR certified
- Spheronizer equipped with wash in place nozzle.
- Integrated Plate lifting device for twin Spheronizer plate
- Stainless steel 316 GMP design with high polish finish.
- Standard cone extruder setup 1.00 mm with feed hopper. Standard chequered plate 3.2mm.
- Variable speed for extruder (20-100 rpm), twin Spheronizer (50-1500 rpm).
- Twin bucket assembly with Load cell measurement for exact Spheronization volume per batch.
- Recording of critical process data in software.
- Controls by 12.1 IPC by a touch panel control with trends. (21 CFR part 11 Certified).
- Report can be transferred to USB to view on computer.
- Safety Grills, Interlocks.

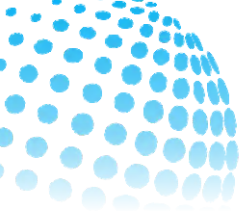
### Advantage & Benefits

- Transfer bucket on load cell and it's PLC controlled auto discharge ensures uniform weight for every transfer and there by quality pellets
- Fully automatic there by standardized consistent pellets.
- Fully Qualified & Documented.
- All the m/c components are precisely machined by CNC, hence interchangeability is assured.
- Clarence between checkered plate and shell reduced to 0.2 to 0.3 mm instead of 0.5 previously.
- Shaft assemblies are being provided with thrust and radial bearings, special bearing housing and proper sealing.
- For complete draining through drain port, shell bottom being provided with internal slope.
- Spheronizer shell and bottom plate welded together to eliminate cross contamination.
- Various extrusion designs possible like radial extrusion, cone extrusion, axial extrusion or die roller extrusion.
- DQ / IQ / OQ / PQ

### Optional Features

- Stainless steel 316 L construction contact parts rest Stainless steel 304 .
- 21CFR controls.
- Different mesh sizes of (0.4, 0.5, 0.6, 0.8, 1.0, 1.2, 1.5 2.0 & 3.0 mm) for different extruders.
- Jacketed spheronizer drum.
- Different chequered plates 1mm, 2mm, 3.2 & 6.5mm.





# FLUID BED DRYER

## Brief Description and Main Properties

The function of a Dryer is to convert wet granules/powder in to dry ones. Drying is the necessary an essential step of pelletization.

**Lets Understand the Process :-** The fluid bed dryer is used for drying granules / pellets in / powder fluid bed. It consists of an Inlet chamber, Product chamber & filter chamber. The material is charged into the product chamber. Air distribution plate assembled in the product chamber ensures uniform distribution of air. As per the material to be charged different meshes options are available. Drought is induced inside the chamber by means of a blower and fresh hot air is sucked from AHU into the bottom inlet chamber. This hot air stream passes through the bed of the material and gets fluidized the product particles by creating the turbulence in the product chamber. 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 quick & uniform heating and drying. Moist air is carried away by the hot air through the Filter chamber provided at the top where the air can be recycled and used in case of closed loop process.

### Standard Features

- Stainless steel 316 / 316L construction contact parts rest Stainless steel 304.
- Modular, Compact, Cost efficient & GMP design.
- Batch type operation.
- VFD Driven motor for infinite variable speed of Blower.
- Fully integrated with Standard HMI / VFD controls, there by consistent Extrudes.
- Fully integrated with Standard (AB / SIEMENS) PLC / IPC controls.
- Fully qualified and documented.
- Air purged efficient filter bags.

### Advantage & Benefits

- Batch Process.
- 2 bar construction design.
- Rupture disc for safety.
- Uniform distribution of air through distribution plate.
- Online sampling port is available.
- Inlet air Hepa filtered. Auto Reverse air purging system for top filter cleaning to avoid filter chocking.
- Built in Electrical controls for lab equipments / separate Epoxy coated for service area.
- DQ / IQ / OQ / PQ.

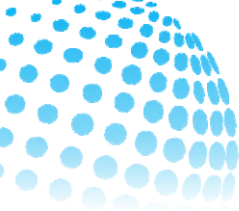
### Optional Features

- Stainless steel 316 / 316 L construction contact parts rest Stainless steel 304.
- 21 CFR part 11.
- Reverse air purging for effective cleaning.
- Top Spray nozzle as per bowl configuration.



## Throughput/Output:

Model	Mini Dryer	UFBD - 15	UFBD - 30	UFBD - 60	UFBD - 120	UFBD - 300	UFBD - 500
Batch Capacity	4 Ltr	15 kgs	40 kgs	60 kgs	120 kgs	300 kgs	500 kgs



## CONTINUOUS VIBRATORY FLUID BED DRYER WITH SOLVENT RECOVERY

### Brief Description and Main Properties

Umang Pharmatech Pvt Ltd's UVDSR-600 is a Continuous Vibratory dryer designed for continuous & rapid drying process. Drying is certainly one of the most energy-intensive operations in industries, and as most dryers operate at low thermal efficiency, the development of models and control systems offers an opportunity to improve dryer operation and efficiency. It is a process in which an unbound and/or bound volatile liquid is removed from a solid by evaporation. Traditional method for drying is a time consuming process whereas the Vibratory dryer enhances the drying speed and ensures uniforming drying of materials.

The dryer consist of a vibrating perforated bed. The material to be dried is fed from top on the vibrating bed. The dryer is mounted on suspension springs and is vibrated by an eccentrically loaded drive, which imparts a sinusoidal motion to the dryer. The dryer has a perforated plate, with a plenum chamber for drying the material. The drying air is blown into this plenum after heating to the required temperature through heat exchangers. This hot air uniformly spreading across the cross-section and heating the bed of material on the plate.

The material, because of the twin actions of vibrations and upward air flow is fluidized, move forward & gets dried, due to the hot air flow. Dried material is discharged through the discharge valves at the delivery end to the container. Drying air is being filtered by a battery of filter bags & sucked out by fans from the top, maintaining a constant pressure inside the drying chamber. The filters are being cleaned continuously by reverse air purging.

The discharged air can be thrown out through a filter or can be treated for solvent recovery.

### Standard Features

- Base frame in MS Epoxy painted, to take care of vibratory load.
- Vibratory Frame in MS , Epoxy painted with Vibratory motors & systems.
- Product Chamber Assembly with mesh/ conidur plate. SS 304.
- Drying Chamber SS 304.
- Filter Chamber SS 304.
- Inlet air blowers SS 304. Inlet air heaters SS 304.
- Exhaust blowers SS 304. Separate MS Powder coated electrical panel
- Operator interface terminal display panel SS 304. Built in Pneumatic controls.

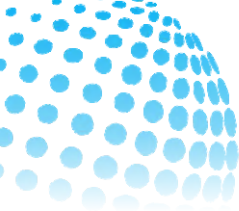
### Advantage & Benefits

- Modular, Compact, Cost efficient & GMP design.
- Continuous operation. PLC based control system.
- VFD Driven motors for infinite variable speed. Fully Qualified and documented.
- DQ / IQ / OQ / PQ

### Optional Features

- Activate the machine. Pre formulated wet Extrudes / Granules is loaded into the machine.
- The material is leveled by vibratory motion of the product chamber and move forward. Hot air is blown continuously from the Bottom.
- The flow of air can be regulated by a simple regulating flap.
- The hot air fluidizes the product on the bed enhancing the drying operations.





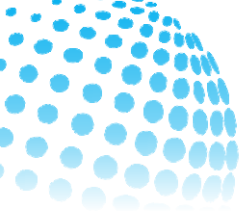
## CONTINUOUS VIBRATORY FLUID BED DRYER WITH SOLVENT RECOVERY

### Specification of Machine

Description	Specification
Feed	400 to 600 Kg/hr, depends on the formulation.
Production	260 to 400 Kg/hr, depends on the formulation.
Dryer bed area	4.86 m <sup>2</sup>
Temperature	50°C to 80°C
Product	Any Aqua based or solvent based formulation.
Machine overall Dimension	Length: 6300 mm Width: 3450 mm Height: 3800 mm.

### Standard Scope of Supply

Description	Specification
Heating	4 Steam / Thermic fluid heating type.
Bottom Mesh	# 100
Filter Bags	Fine cloth filter with SS 304 cage
Electrical Accessories	415 V $\pm$ 10% , 3 Phase, 50/60 Hz, 63 Amps
MOC Contact Parts	SS 304
MOC of Base frame/Vibratory Frame	MS epoxy painted.
Hardware	Standard make (Bearing , Shaft seal of SKF make etc).
Surface Finish	Outside surface - Mat finish. 0.5 $\mu$ m Machine parts - Machine finish 0.19 $\mu$ m Contact surface - Mirror finish 0.05 $\mu$ m



# FLUID BED MULTIPROCESSOR

## Brief Description and Main Properties

Fluid Bed Multi Processor for bottom spray coating, top spray granulation & drying, It is ideal for handling fine powders, pellets, granules, crystals. A suitable binding agent is sprayed from the top into the fluidized product causing controlled agglomeration. The agglomerates formed are subsequently dried. The Umang Fluid Bed Multiprocessor has been developed to meet the pharmaceutical industry's requirements for flexibility in unit operations and is based on the principle that one basic unit can be used for numerous processes simply by interchanging a module is optional supply.

Drying.

Top spray granulation.

Bottom spray wurster coating.

Fluid Bed - Bottom spray is the new FAST COATING WURSTER range that builds on the proven Umang technology

Reversed air purging filters ensures inline cleaning at regular interval on automatic basis thereby ensuring

Non choking of filters. This unique design of the distribution plate and nozzles make it ideal machine for the fast and uniform coating application on Pellets, Micro Pellets and granules.

## Standard Features

- Stainless steel 316 / 316L construction contact parts rest Stainless steel 304.
- PLC Automated touch screen controls.
- Siemens / Allen Bradley based automated controls.
- Pellet processing efficiencies ensure highest level of product performance.
- Efficient product processing for nearly 100% product recovery.
- Low noise level.

## Advantage & Benefits

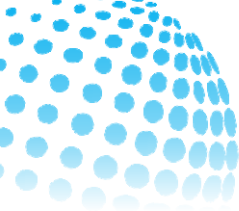
- Process air filter for inlet air. Variable speed for exhaust blower ( 0-3000 rpm ).
- Touch screen control with traceability. Easy cleaning and maintenance switch from one product to another with minimal downtime, reducing the costs of labor and tooling replacement.
- High performance distribution plate for efficient and fast cooling reverse air purging for efficient air flow.
- Rupture disc to insure safety.
- Online sampling port.
- DQ / IQ / OQ / PQ

## Optional Features

- Stainless steel 316 L construction contact parts rest Stainless steel 304.
- 21 CFR part 11.
- MES Integration.







# FLUID BED ROTOR

## Brief Description and Main Properties

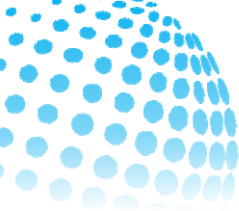
Fluid bed rotor process by principle is essentially a horizontal wurster process, because it fully utilizes the 3 main features below.

- Concurrent spraying takes place below the product bed without premature droplet evaporation.
- High centrifugal energy is created inside the product bed by the rotating disc. The process air which enters the process chamber vertically at the periphery of the rotating disc reinforces the products helical motion, so that practically every particle is permanently rolling around its own axis.
- Regular, statical reproducible exposure of the particle of the spray nozzle by means of defined disc rotation speed.
- Analysis have shown that the rotor induced centrifugal forces move the entire product bed creating a denser film deposition. i.e. To be obtain wurster identical drug release profile, one would have to apply little less coating agent with the rotor.
- Our Rotor is not limited to film coating only, but permits a number of processing options.
- Rotor granulation can be accomplished by spraying a suitable binder suspension on powders. Both granulate production and spher'odization is completed by the spherical rope motion of the formulation. The final stage drying can be rapidly achieved as the large free area around the rotor disc allows the throughput of large air volumes.
- Pelletization, such as the production of non-pareils, is accomplished by rapid powder and binder addition onto dummy seals through a single, combined bottom spray nozzle (in this case tangential spray). This process allows weigh gain of approximately 250% per hour.



## Throughput/Output:

UFBR	Unit	380	500	700	900	1100
Batch Capacity	Ltrs.	7	20	70	130	200



# LIFTING POSITIONING DEVICE

## Brief Description and Main Properties

UICE is an integrated machine for the uninterrupted process for making granules, the innovative technology is the outcome of 35 years of know how experience in pelletization machinery. The integrated Extruder - Sphero-dizer is designed to suit the pharmaceutical application of producing spherical pellets. The machine fully complies with cGMP norms and easy to use. It is suitable for scale-up studies. The machine is delivered with an Cone Extruder (UTCE - 110) & Single Sphero-dizer (USPH - 900). The porosity of the mesh is as per customer requirement and it a format part. The size of the spheres is mainly depended on the diameter of extrudes and the cross hatched disc grove on the chequered plate of the Sphero-dizer. In this machine, Extruder output to be collected in bucket & load into Sphero-dizer.

## Standard Features

- Stainless steel 316 construction contact parts rest Stainless steel 304.
- Compact design and GMP Suites for continuous pellet production.
- System components easily accessible for cleaning and maintenance.
- Fully integrated with Allen Bradley PLC controls.
- Stainless steel 316 GMP design with high polish finish.
- Standard 1mm cone mesh extruder with feed hopper.
- Variable speed for extruder (20-100 rpm), twin Spheronizer (50-1500 rpm).
- Standard chequered plate 3.2mm.
- Recording of critical process data in software.
- Report can be transferred to USB to view on computer.

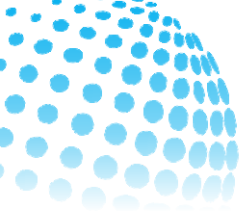
## Advantage & Benefits

- Fully Qualified & Documented.
- All the m/c components are precisely machined by CNC, hence interchangeability is assured.
- DQ / IQ / OQ / PQ

## Optional Features

- Stainless steel 316 L construction contact parts rest Stainless steel 304.
- 21 CFR part 11.
- Interchangeable extruder attachments for Axial & Radial mesh.
- Cone meshes 0.3, 0.4, 0.5, 0.6, 0.8, 1.0, 1.2, 1.5, 2.0 mm
- Chequered plate 1.0 mm, 2.0 mm & 6.5 mm





# BIN BLENDER

## Brief Description and Main Properties

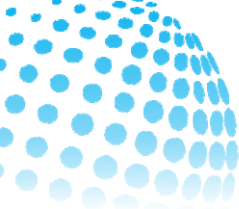
Conta Blender or Container tumbler are used mainly for blending of dry powders for capsule plant, for blending and homogenizing of dried granules for tablet production.

This is a closed and contained system where by a single step transfer material from container of the Conta blender is transferred to the tablet press hopper.

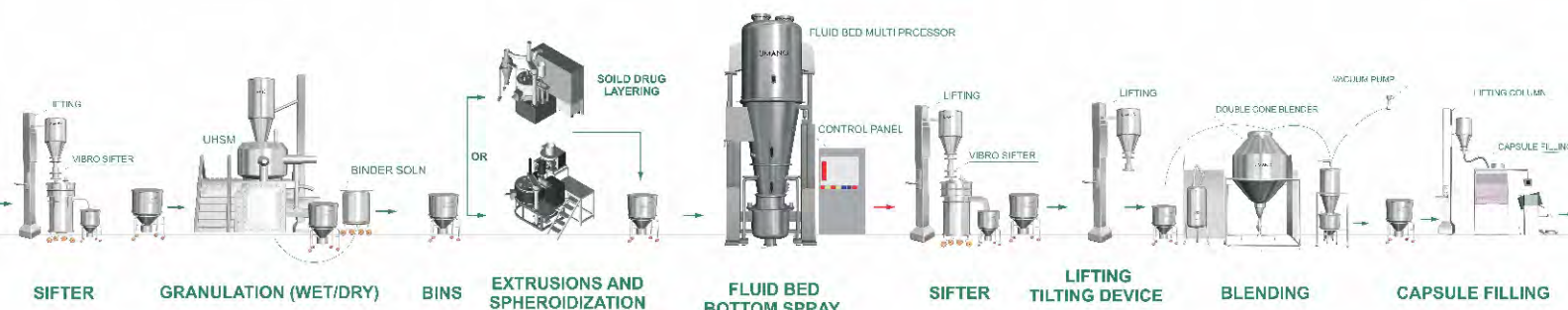
In granulation room the dry granules enter to the container for blending through a dust free connection and the same container is loaded over to the blender for blending. This same container after blending raised over the tablet press for unloading in to the tablet press hoppers.

These granules can be mixed and lubricated in this blender, Main advantage of this conta blender or container tumbler system is that it is totally dust free. Also another advantage is adaptability of this conta blender to handle more than one sizes of bunkers or containers. This adaptability makes conta blender a very useful.





## PELLETIZATION LINE / GRANULATION LINE

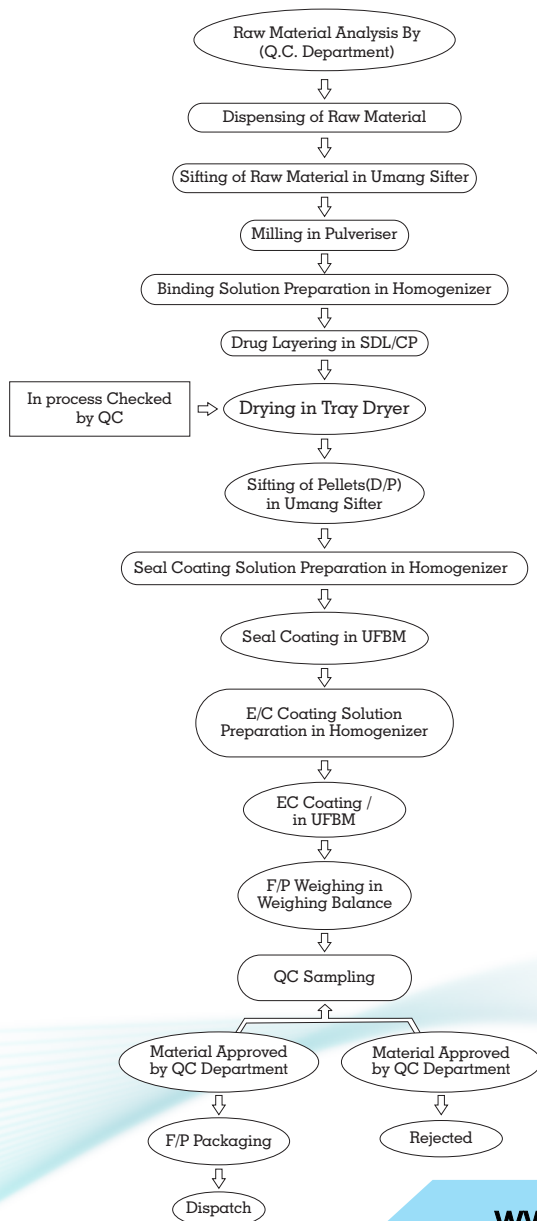


\* Photo shown in the Banner is not the Accurate Dimension, Design & Position

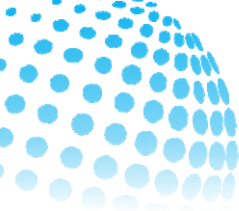
### TECHNOLOGY WITH PRODUCT FLOW CHART

**PRODUCT NAME** - OMEPRAZOLE EC PELLETS, LANSOPRAZOLE EC PELLETS, RABEPRAZOLE EC PELLETS, ESOMEPRAZOLE EC PELLETS, PANTAPRAZOLE EC PELLETS, DEXRABEPRAZOLE EC PELLETS, DEXLANSOPRAZOLE EC PELLETS

### MANUFACTURING FLOW CHART







# PELLETIZATION LINE / GRANULATION LINE

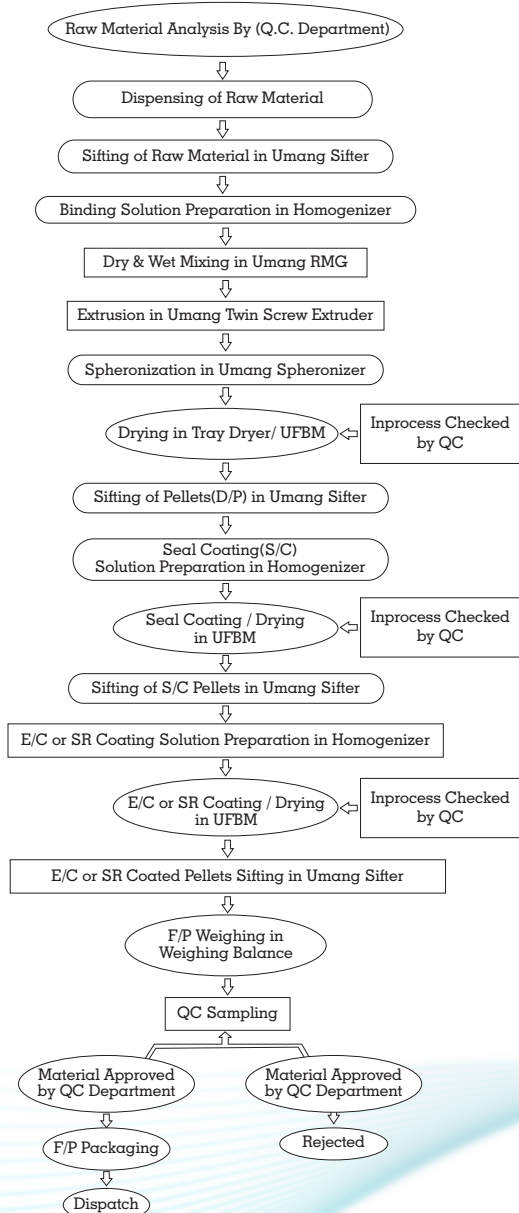
## TECHNOLOGY WITH PRODUCT FLOW CHART

### MANUFACTURING FLOW CHART

#### PRODUCT NAME

PANCREATIN EC PELLETS, DICLOFENAC SODIUM EC PELLETS, IBUPROFEN EC PELLETS, FLUCONAZOLE EC PELLETS, VENALAFAXINE EC PELLETS, PROPANALOL EC PELLETS, LEVOSULPRIDE EC PELLETS, AMBROXOLOL EC PELLETS, TRAMADOL EC PELLETS, ITOPRIDE EC PELLETS

### MANUFACTURING FLOW CHART

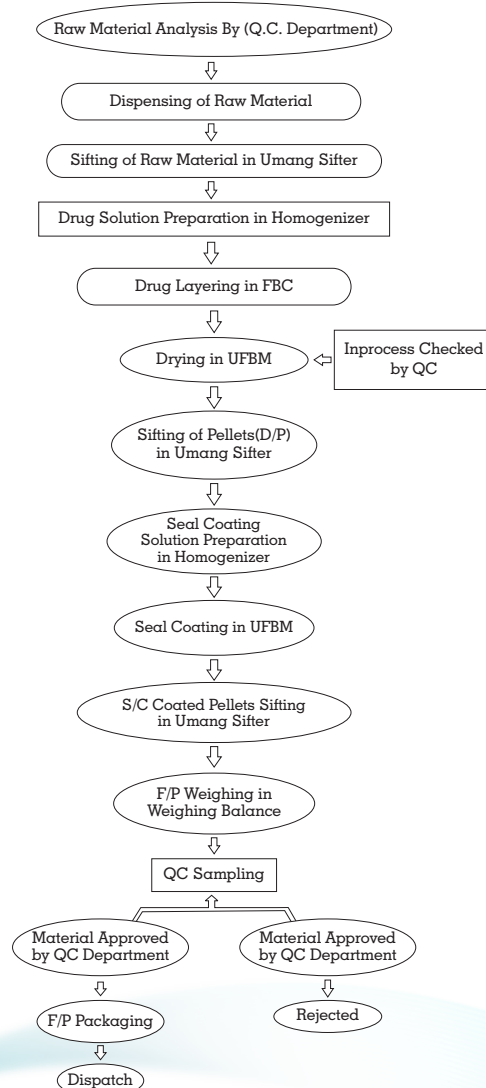


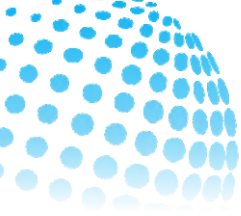
### MANUFACTURING FLOW CHART

#### PRODUCT NAME:-

ITRACONAZOLE IR PELLETS, VENELAFAXINE IR PELLETS, DULOXETINE IR PELLETS, FLUOXETINE IR PELLETS, LORATIDINE IR PELLETS, MONTELUKAST IR PELLETS, LEVOCITRIZINE IR PELLETS, FOLIC ACID IR PELLETS, TADALAFIL IR PELLETS

### MANUFACTURING FLOW CHART





## GLOBAL PRESENCE



## Connect With Us

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