



**Umang Granulation Technologies**

High Shear Mixer  
Cone Mill  
Vacuum Tray Drying  
Continuous Mixer  
Fluid Bed Processor  
Tablet Coating System  
Melt Extruder  
Spray Dryer

Welcome to the world of  
**Granule Processing**



Innovative Solutions from last 25 years...

## Rapid Mixer Granulator

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.



URMG-200



### Main Components

#### Axles 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.

### Technical Specification (BOTTOM-DRIVEN)

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

## High Shear Mixer

Umang's High shear mixer is an effective means for turning powders into dense granules for tableting or coating. Umang's high shear mixer granulator allows the processes of dry mixing, wet mixing, granulation, and drying in a totally contained environment.

UHSM-100



### Technical Specification (TOP-DRIVEN)

MODEL	FULL CAP	WORK CAP	AGITATOR		CHOPPER	
			DRIVE MOTOR	SPEED (RPM)	DRIVE MOTOR	SPEED (RPM)
UHSM-30	70	30	5.5kw	0-150	2.2kw	0-3400
UHSM-50	120	50	7.5kw	0-220	3.7kw	0-3400
UHSM-100	240	100	11kw	0-120	5.5kw	0-3400
UHSM-200	455	200	15kw	0-120	7.5kw	0-3400
UHSM-300	670	300	22kw	0-105	11kw	0-3400
UHSM-400	850	400	30kw	0-90	11kw	0-3400
UHSM-500	1050	500	37kw	0-80	11kw	0-3400
UHSM-600	1280	600	45kw	0-75	11kw	0-3400

## Cone Mill

Sieves and mills play a key role in the areas of pharmaceutical industry, food, feed and fine chemicals. Umang offers the know-how for a wide range of different requirements.

- Sizing of products after fluid bed processing or after wet granulation.
- Crushing/milling of agglomerates, lumps and compacted products to a desired maximum particle size
- Additional for some type Dosage, Classification and separation modes.

All Umang sieves and mills are basically made of high grade SS with a ground surface finish.



UTCM-200



TOP-DRIVEN CONE MILL



UBCM-200



BOTTOM-DRIVEN CONE MILL



### Technical Specification

MODEL	UTCM-150 UBCM-150	UTCM-200 UBCM-200	UTCM-250 UBCM-250	UTCM-300 UBCM-300
OUTPUT	100-150 KG/HR	200-300 KG/HR	500-800 KG/HR	1000 KG/HR
MOTOR (HP)	1	2	3	5

## Vacuum Drying

Vacuum drying can be applied in a range of processes in several industries, including chemical, pharmaceutical, food, plastics, and metal powders.



UVTD-48

### Trays

- Tray size is 16 x 32 x 1.25 (h) inches
- Tray volume is 10 litres
- Tray height can be increased to a maximum of 2 inches
- Center to center distance between any two shelves is 4 inches

### Special Features of Vacuum Drying

- All stainless steel 304 / 316 / 316L CGMP externals with stainless steel internals (vapor and product contact parts)
- Hollow pad type heating shelves which are easily removable for maintenance
- Condensor and condensate receiver fitted on the dryer body or stand alone for remote installation
- Fully welded skirt on vacuum dryer body for flush mounting through the wall
- External insulation of dryer with protective panels in stainless steel or mild steel powder coated
- Dedicated fluid heating and circulating systems. These can be steam or electrically heated. Fluid heating systems are available for water as well as thermic fluid ( for temperature requirements above 95 degree centigrade )
- Validation ports and nitrogen purge nozzles
- Can be designed to customers specific requirements
- Steam sterilisable models available
- Double door loading available for larger models

### Technical Specification

MODEL	UVTD 8	UVTD 12	UVTD 24	UVTD 48	UVTD 96
CAPACITY IN TRAYS	6	12	24	48	96
NO OF SHELVES	6	8	8	16	16
OUTSIDE SHELF	1	1	1	1	1
TRAYS PER SHELF	1	2	3	3	6

## Fluid Bed Processor

Fluid Bed Processor is widely used for coating, granulation & drying.

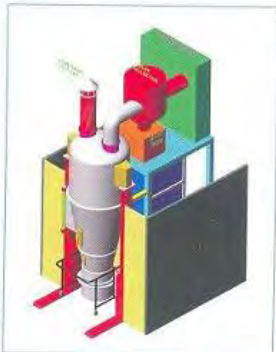
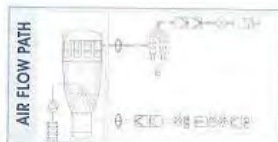
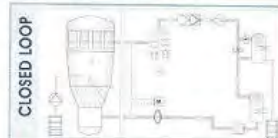
UFBP-500



### Technical Specification

MODEL	UFBP-25	UFBP-50	UFBP-125	UFBP-250	UFBP-500	UFBP-750	UFBP-1000	UFBP-1500
Batch Capacity (Ltrs.)	27	50	125	265	525	800	1110	1640
Power (H.P)	7.5	13.5	20	25	33	53	66	91

- Hot melt options available.
- 21 CFR certified controls.
- 2 bar & 10 bar designs available.
- Side discharge & bottom discharge available.
- Through wall design available.



## Tablet Coating System

Tablet Coating System is designed with the latest machine concepts to have simple construction but superior efficiency. It realizes the coating economy of various user friendly control device dynamically responding to all the necessities of adjustment and controls whenever film coating, sugar coating, is carried out. Variety of models are on offer, from laboratory scale upto tonnage capacity. All models are in compliance with GMP requirements.



UTCS-130

### Main Features

- Pan construction with air tight cover provides the best condition for mixing and drying
- For sugar-coating, the hot air supply and the exhaust can be automatically controlled by the Auto Damper and the sequence spray-pause1, pause2, dry is automatically operated by the preset timer.
- Reverse rotation discharge system can be discharged with simple operation without any damage of tablet.
- Both the film coating and sugar coating can be achieved by one machine.

### Technical Specification

MODEL	PAN DIA (mm)	BLM VOLUME (L)	OUTPUT CAPACITY (kg)	DRIVE MOTOR	SPEED (RPM)
UTCS-30	300	15	0.2-4.5	0.4kw	FREE
UTCS-50	500	18	7-12	0.75kw	FREE
UTCS-100	1000	108	50-70	2.2kw	0-16
UTCS-130	1300	225	120-150	3.7kw	0-16
UTCS-150	1500	350	200-230	5.5kw	0-14
UTCS-170	1700	500	320-340	7.5kw	0-12
UTCS-200	2000	800	500-650	10kw	0-12

## Continuous Mixer

The Umang Granulator instantly mixes and granulates dry powder ingredients in a continuous process. Pre-blended powders are dispersed on a high speed wheel and mixed with an atomized granulating fluid. Less than 100g of product is in the mixing stream at any one time, so scale-up depends only on process time. The same machine can produce a few kilograms on a laboratory scale or volume production up to 500kg/hr. The unique compact design ensures that powder hold-up is minimal and cleaning is quick and easy. Discharge may be direct into the Umang's extruder.

The Umang's Granulator can also be used for dispersing and coating of powders and can be set up to discharge directly into a batch or continuous fluid bed dryer.

- Instant processing
- Contained operation
- Simple, time-dependant scale-up
- Small foot-print
- Easy to clean



UCM-250

The unique modular concept of the Umang's Pelletizing System facilitates optimized solutions to meet process needs exactly. Mixer / granulator, extruder and spheronizer modules are combined to create a complete integrated pellet production plant, or selected individually to suit specific requirements. Modules can be operated in either batch or continuous mode, for maximum flexibility of operation, and can be used stand-alone, or integrated with other up- or down-stream equipment such as fluid bed processing systems. Ideal for both product development and full-scale production applications, process scale-up of the Umang's Pelletizing System is easy – it's simply a factor of processing time.

### Technical Specification

MODEL	UCM-50	UCM-250	UCM-500
OUTPUT	100 KG/HR	250 KG/HR	500 KG/HR
MOTOR (HP)	2	5	10

## Melt Extruder

The major potential in the pharmaceutical industry resides with the processing of active or excipient material to produce product such as

- Thermal Binders.
- Sustained release tablet.
- Transdermal Drug Delivery System.
- Granule preparation / Immediate release dosage forms.
- Hot melt mixed solid dosage forms.

### Screw Elements



### Lab Melt Extruder

UMSE-25



### Production Melt Extruder

UMSE-45



### Technical Specification

MODEL	UMSE-25	UMSE-45	UMSE-55	UMSE-65	UMSE-75
OUTPUT	1-5 KG/HR	40-60 KG/HR	75-100 KG/HR	120-140 KG/HR	170-190 KG/HR
MOTOR(H.P.)	5	25	40	60	80

## Vibratory Dryer

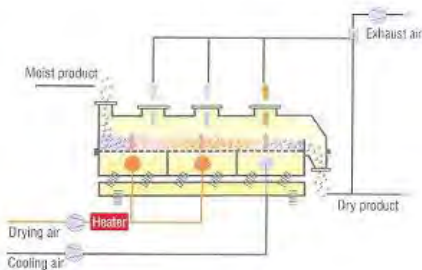
### Features:

- Low temperatures of the dried materials.
- Careful drying of sensitive products such as granules and pellets.
- Exhaust-air heat recovery systems available.
- Simultaneous dust removal from the fluid bed.
- The product residence time and the quality can be adjusted by regulating the height of the fluidised bed.



UCVD-1000

### Block diagram of a fluidised-bed-dryer



## Laboratory Spray Dryer

Pilot scale spray dryers are used for testing spray drying feasibility, producing customer samples, for developing optimum spray drying conditions and production of small powder batches. Umang offers a wide range of accessories to complete a lab or pilot scale system tailored to your requirements.



UMSD-1



UMSD-3

### Features:

- Mini Spray Drying from 0.1 ltr. batch.
- Max evaporation 1 ltr. / hr & 3 ltr./hr.
- Spray congealing.
- Two fluid spray nozzle.
- Flame proof heaters.
- Flame proof motor.
- PLC controls.
- Option for fitting ultra sonic nozzle for fine droplets.
- Rotary atomiser possible in large dryers.
- Nitrogen Inert Loop, for solvent processing.

## Production Spray Dryer

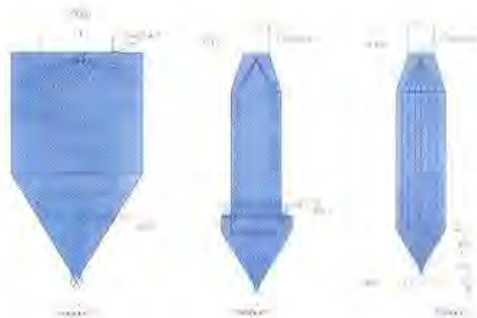
Spray drying is a very widely applied, technical method used to dry aqueous or organic solutions, emulsions etc., in industrial chemistry and food industry. Pharmaceutical actives, dry milk powder, detergents and dyes are just a few products which are spray dried.

### ROTARY ATOMISER

Umang with its in-house design capabilities has built and supplied a wide range of Rotary Disc Atomiser. These are belt driven units with standard electrical motors. A number of models are available with wheel diameters of 100mm to 350mm and are suitable for capacities from 5litre/hr to 10,000 Litre/hr. Various configuration such as orifice, pin, vane with stainless steel and ceramic wear parts are available. A variety of lubrication systems starting from continuous drip to fully automatic force lubrication systems can be provided. Speed variations are achieved by changed pulleys or variable frequency drives.

### TEST FACILITY

Fully equipped dedicated Pilot Spray Dryers are available for conducting trials on customers samples and simulation of ideal drying parameters for individual products. Assessment of their physical properties such as moisture content, approximate particle size distribution and bulk density. Testing is an ongoing process and Umang has, over the years, built up a large database for a wide variety of products.



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TabletProcessor  
MeltExtruder  
SprayDryer



## Our Global Presence



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