



## **ALL PURPOSE EQUIPMENT**

Orchid's All Purpose Solution for  
pilot scale mixing, size reduction,  
tablet coating and granulation  
research work



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## ALL PURPOSE EQUIPMENT

### AP-01 PLUS :

Orchid's All Purpose Solution for pilot scale mixing, size reduction, tablet coating and granulation research work

- Ideal for R & D and small scale production in the pharmaceutical, chemical & cosmetic industry.
- Modular design - one drive unit and various attachments for different applications.

Orchid's All-purpose system is based on a powerful main drive unit. The various attachments can be easily and quickly connected by means of a universal gear box or directly. The AP-01 Plus is equipped with a single phase AC motor. The sturdy ball bearing worm gear drive is completely maintenance free. The unit features electronic speed control variable between 10rpm to 300rpm, a digital speed controller regulates the speed.

### Optional :

- Pilot spraying gun with ¼ HP compressor
- Pilot spraying gun with ¼ HP compressor and peristaltic pump.

### Main Drive :

#### Features :

- Digital Speed Indicator: 10 – 300rpm
- Digital Temp. Controller for Coating pan (5 °C above ambient to 150 °C)
- Emergency Switch
- Digital Timer: 999min
- Hot air gun arrangement for coating pan
- Auto and Manual Mode

#### Accessories :

- Universal Gear Box
- Ball Mill
- Coating Pan
- Polishing Pan
- Double Cone Blender
- Cube Mixer
- V- Blender
- Homogenizer
- Pelletizer(Pan type)
- Planetary Mixer
- Dry Granulator
- Triple Roller Mill

The All - Purpose equipment is ideal for research and small scale production in the pharmaceutical, chemical, cosmetic & food industries. It fits perfectly in to research & developments of tablets, ointments, creams & more. The modular design is compact, economical & offers a powerful motor drive with a wide range of easily interchangeable attachments for various applications. The different possibilities are as follows :

- Stirring
- Mixing
- Granulating
- Coating
- Polishing
- Grinding
- Homogenizing

**Technical Specifications :**

Model	AP-01 PLUS
Voltage / Frequency	230 Volt AC. / 50 - 60 Hz
Width	280 mm
Length	600 mm
Height	540 mm
Motor Type	24 Volt DC, AC, 37 Amp, 1 HP
Speed (Min-Max)	10 to 300rpm
Tolerance RPM (Coasting)	± 1rpm
Gear Type	Planetary Gear
Output Speed	10 to 300rpm
Timer	1 to 999min
Temperature Controller	Digital
Temperature Range (Min-Max)	5° C (above ambient) to 150° C

**Benefits :**

- High Quality
- Modular Design - Less space needed
- Economical capital cost - one drive, many attachments
- Constant product quality - improved production

**Technical Specifications :**

Attachment	Connectivity	Net Weight	Cap. Output Max.(Approx.)	Dimensions (mm)	Material
Ball Mill	Through Universal Gear Box	3.35 Kg.	40%(200-500g)	125 x 175	S. S. 304
Coating Pan		4.50 Kg.	30%	170 x 145	S. S. 304
Polishing Pan		3.00 Kg.	40%	170x180	S. S. 304 & Canvas Liner
Triple Roller Mill	Directly to Main Drive	9.50 Kg.	2-5kg/h	190 x 290 x 220	Rollers of S. S. 304 & Remaining M. S.
Dry Granulator		12.70 Kg.	2-5kg/h	285 x 210	Roller, Hopper of S. S. & Remaining M. S.

Attachment	Connectivity	Net Weight	Cap. Output Max.(Approx.)	Dimensions (mm)	Material
Double Cone Blender	Through Universal Gear Box	3.20 Kg	50%(200-500g)	150 x 250	S. S. 304
V - Blender		4.00 Kg.	40%(200-500g)	240 x 90 x 230	S. S. 304
Cube Mixer		3.35 Kg.	40%(200-500g)	200 x 200 x 180	S. S. 304
Pelletizer		5.50 Kg.	40%	OD:330, ID:324 x 100	S. S. 304
Homogenizer	Directly to Main Drive	7.20 Kg.	2-7kg/h	460 x 330 x 220	S. S. 304 & Aluminium
Planetary Mixer		16.00 Kg	60%	330 x 330 x 450	S. S. 304 & M. S.

\*capacities mentioned depends on the sample used and varies accordingly

#### Attachments :

**ORCHID'S UGB (Universal Gear box)** : The universal gear box is required for adjusting the angle of operation 0 °- 60 °and for speed reduction (1:6)

The UGB is required for the connecting following accessories to main drive and their operation :

- Ball Mill
- Coating Pan
- Polishing Pan
- Double Cone Blender
- Cube Mixer
- V- Blender
- Pelletizer

#### Ball Mill :



Ball mill can be used for crystalline material. Ball mill is useful for mixing dry materials and under certain conditions wet material. The ball mill jar is made of complete stainless steel 304. The diameter of S. S. ball varying between 10 mm to 30 mm are provided with ball mill. Ball mill can be attached to main drive through universal gear box.

### Coating Pan :



Coating pan is used for coating tablets. Coating Pan can be mounted on the main drive at any angle up to 45 ° through universal gear box.

For drying the coated tablets, a hot air gun is built in provided in the main drive which blows the hot air to the pan through an adjustable pipe provided and temperature can be controlled through digital temperature controller. The coating pan is provided with baffles inside.

### Polishing Pan :



The canvas lined drum is designed for polishing the coated tablets. All canvas linings can be easily removed and cleaned. The cover is fitted with perspex window, which permits the observation of the polishing process. The polishing pan can be attached to the main drive through universal gear box.

### Cube Mixer :



The Cube mixer is based on a movement, which through its tumbling effect produces a homogeneous mixture in the shortest time possible. The powders to be mixed are treated very gently. The cube mixer can be attached to the drive easily through universal gear box. The mixing rods are made of S. S. 304 with diameter of 10 mm.

### Triple Roller Mill :



This attachment is used in the preparation of ointments, salves, pastes, dough and similar products. The rolling action is produced by three hard S. S. rollers, which are 120 mm long and 42 mm diameter. The roller mill can be directly attached to the main drive.

### Double Cone Blender :



It is useful for free flowing products or granules. It operates on free flow principal. Operational capacity is 50 % to 60 % of total. The double cone mixer can be attached to main drive through universal gear box.

### V- Blender :



The V blender is self contained tumble blender intended for laboratory, pilot plant and scale up applications. It is suitable for processing variety of materials including pharmaceuticals chemicals, foods, cosmetics, and synthetics fibers. V blender can be attached to main drive through universal gear box.

## Homogenizer :



This unit is suitable for mixing of different types of liquids like emulsions (oil in water & water in oil). A piston pump produces homogenization. The vessel is made of S.S. 304 material and the vessel is jacketed with heating element which controls the temperature of material inside vessel thermostatically. By the forward & backward movement of the piston homogenization takes place. A vacuum is created during the backstroke of the piston, which sucks the liquid back. During the forward movement of the piston, the liquid is pushed against the tip of the nozzle. This unit is suitable to be attached directly to Main Drive.

## Planetary Mixer :



This mixer is designed to be used for mixing for pastes, ointments & creams in vessel which is jacketed by heating elements to maintain the temperature of material inside vessel thermostatically. It can also be used for wet powders. This mixer is provided with a mixing paddle & scraper, which is shaped in such manner so that there is minimum clearance with the mixing kettle. This unit is suitable for attaching directly to main drive.



### Pelletizer (Pan type) :



The unit is equipped with a tilting and locking device, which is easy to operate. This permits adjustment of the infinitely variable setting of the pan angle, over its whole range. Parts coming in to contact with the material to be processed are made of polished stainless steel. The material to be processed is fed manually, or with a metering device, if continuous operation is required. The material is brought to practically the highest point of the pan and then rolls down in the even scrim, to the lower half of the pan.

In accordance with the nature of the material the necessary quantity of liquid to form the pellets is added in certain places. The rolling movement and the addition of moisture cause pellet form. Due to the tilted pan and the movement of the material the larger pellets are carried to the top surface. The size of the pellets can be influenced by the tilting angle of the pan by the amount of liquid added and the method, which it is introduced. As soon as the pan is full the pellets will continuously roll over the edge of the pan. This attachment is suitable to attach through universal gear box to main drive.

### Dry Granulator:



It is used to granulate tablet slugs and pellets. Two power drive rollers with teeth force the material against breaking combs. The dry granulator can be directly attached to main drive.

#### Note

- Orchid's continuing product development makes specifications subject to change without prior notification.



## ALL PURPOSE EQUIPMENT

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