



MAKE IN INDIA

ALPHAMAC PHARMA MACHINERY

Manufacturer & Exporter of Pharmaceutical Machinery

Register Office:

♦ 88, Krishnapark, Vastral, Ahmedabad - 382418, Gujarat, India

Factory Office:

♦ Vatva Ahmedabad - 382445, Gujarat, India

✉ mkt@alphamacpharmamachinery.com

🌐 www.alphamacpharmamachinery.com

📞 +91 78029 34487

LABORATORY, PILOT & PRODUCTION Scale Process Technik for
POWDER, LIQUID & SEMI LIQUID



WE ARE HERE TO MAKES THE WORLD
BETTER WITH OUR PRODUCTS

ALPHAMAC PHARMA MACHINERY

Manufacturer & Exporter of Pharmaceutical Machinery

INDEX

S. N.	Name of the Machine	Page No.
01.	Preparation vessel reactor & storage tank	03
02.	Vaccum homogenizer mixer/ultra mixer	04
03.	Ointment cream paste gel manufacturing plant	06
04.	Preparation Vessels, Oral syrup manufacturing plant	08
05.	Agitator Stirrer	10
06.	Homogenizer	12
07.	IBC - Bin Loader	13
08.	BIN - Intermediate process container	14
09.	Vaccum Transfer System	15

01

PREPARATION VESSEL, REACTOR & STRORAGE TANK



Alphamac has been designed & manufacturing preparation vessels, reactor an storage tank and has consolidated a process as customer needs.

PREPARATION VESSELS, REACTOR & TANK :

- ▲ Design compliance with cGMP
- ▲ Capacity up to 25,000 Liter.
- ▲ Product contact AISI 316L/316/304.
- ▲ Vertical & horizontal design
- ▲ Atmospheric, vacuum or pressure operation.
- ▲ Plain, jacket for heating & cooling.
- ▲ Option for heating by steam, hot water tharic fluid oil & electric.
- ▲ Thermal insulated.
- ▲ Mechanicals or electro polishing of internal surface.
- ▲ Wlded, flanged or hinged type cover
- ▲ Integrated cleaning in place-CIP.
- ▲ Sterilizing in place-SIP as an option.
- ▲ Option for mounting on legs or flange.
- ▲ Protable execution on request.
- ▲ Validation protocols & instrumentation celebration.



VARIABLE SPEED AGITATION :

- ▲ Agitator can be top or bottom driven or mangnetically driven.
- ▲ Propeller tuple, anchor type provided with high speed disperser or rotorstator homogenizer.
- ▲ Single or double mechanical seal.

Automation Available, Appropriate for The Intended Process Function, Including CIP And SIP :

- ▲ Controls of all function by PLC controls with HMI touch screen.
- ▲ Level controls by means of capacitance probe or electronic load cells.
- ▲ Digital indication an control of all process parameters for agitator speed, temperature, pressure & level.
- ▲ Optinal IPC with SCADA system 21 CFR part 11 compliance.
- ▲ Optional 4 point load cell for weight measurement.



TURN KEY PROCESS LINE:

- ▲ For production, filtration, transfer and storage solution.
- ▲ Pre preparation vessels.
- ▲ Inline homogenizer.
- ▲ Inter connecting system.
- ▲ Working platform.



Vacuum Homogenizer mixer is applicable for a wide variety of viscosity product, i.e. emulsions and semisolid. it integrates with pressure, heating cooling and vacuum for agitating, mixing, emulgating, dispersing, suspending, homogenizing & agglomeration function in single machine.

AGITATOR MIXER:

Two low speed agitator, counter rotating mixer with outer anchor stieer with self pressure teflon scrappers and controls rotating inner paddle blade.

Ultra Mixer is a combination of counter rotating inner paddle agitator and outer anchor agitator, generating a distrubance in the normally circular flow pattern and dampens vortex formation. The blades of paddles are pitched to promote top to bottom flow. In addition, self adjustable scrapper are utilized to prevent the build-up of a stagnant film between the agitator and the vessel, and assure efficient heat transfer to product heating and cooling steps.

HIGH SPEED HOMOGENIZER :

Toothed rotor/stator type homo disperser, locates at the bottom of the vessel, accomplishes emulsification by physical action and centrifugal force created by high speed rotation of the rotor. These action break up oil phase/aqueous phase liquid stream into tiny and discrete droplets.

DESIGN FEATURES :

Design compliance with cGMP

▲ integrated cleaning in place-CIP.

▲ Sterilizing in place-SIP as an option.

BATCH SIZE :

▲ Available model 10 Liter to 6000 Liter working capacity.

MATERIALS :

▲ Product contact AISI316L.

▲ Food grade silicon rubber for seal.

VESSEL DESIGN :

▲ Jacket for heating & cooling

▲ Vacuumize process.

▲ Vessel inside pressure (-1/+2 Bar)

▲ Heating jacket pressure (-1/+6 Bar)

▲ Tilting vessel up to 500 Liter.

▲ Heating by steam or hot water circulation.

▲ Direct cooling with water.

▲ Temperature controller & safety pressure value.

▲ Bottom discharge with valve.

AGITATOR MIXER WITH SCRAPER:

▲ Mixing flow top to bottom in vertical axis.

▲ Outer anchor agitator with paddle with 45°C.

▲ Inner paddle agitator with 45°C.

▲ Teflon scrappers on outer agitator.

▲ Scraper cleanly working on both side.

▲ Optimize heat transfer.

▲ RPM steplessly with variable speed drive.

HIGH SPEED HOMOGENIZER :

▲ Toothed rotor-stator type.

▲ RPM steplessly with variable speed drive.

▲ High shear & pressurization of the homogenizer.

▲ Thus homogenization of high viscosities up to 400.000 mPas.

▲ Homogenizer mounted on lower position in the centre of vessel.

▲ Can be homogenization in circulation.

TOP LID :

▲ Motorized top lid for lifting & lowering.

▲ Safety interlock process with limit switch.

▲ Connection for vaacuum, charging, eye glass window, light glass, CIP, SIP, pressure gauge & safety valve.

VACUUM SYSTEM :

▲ Vacuum pump.

▲ Vacuum gauge.

MACHINE STRUCTURE :

▲ Rigid modular structure with AISI 304.

▲ Mounting on anti vibration pad so, no foundation require.

CONTROLS & VISUALIZATION :

▲ Electric controls with digital display.

▲ Optional PLC controls with HMI touch screen.

▲ RPM and process time entries.

▲ Temperature controls-heat/cool.

▲ Vacuum start-stop.

▲ Integrated data recording for batch.

▲ SCADA System with 21 CFR part 11 compliance.

▲ Optional 4 point load cell for weight measurement.

SAFETY FEATURES :

▲ Emergency stop button.

▲ Safety pressure valve.

▲ Limit switch at top lid.



OINTMENT / CREAM / TOOTH PASTE / GEL MANUFACTURING PLANT

Semi solid manufacturing Plants are ideal tools for the pharmaceuticals & cosmetics industries for the production of ointment, cream, lotion, gel, tooth paste & emulsions & homogenization.

Fully automatic ointment, cream, tooth paste, gel manufacturing plant consisting of :

- ▲ Pre Determined water phase vessel.
- ▲ Pre determined oil, wax, petroleum jelly phase vessel.
- ▲ Vacuum homogenizer mixer vessel.
- ▲ Vacuum pump.
- ▲ Storage vessel.
- ▲ Interconnecting pipeline.
- ▲ Transfer pumps (bump pump, lobe pump & metering pumps).
- ▲ Integrated automatic control panel.
- ▲ Working platform.

DESIGN FEATURES:

Design compliance with cGMP

- Integrated cleaning in place-CIP
- Sterilizing in place-SIP as an option.



BATCH SIZE:

- ▲ Available model 50 Liter to 5000 Liter working capacity.

MATERIALS :

- ▲ Product contact AISI 316L.
- ▲ Food grade silicon rubber for seal.

WATER PHASE VESSEL :

- ▲ Jacket for heating & cooling.
- ▲ Heating jacket pressure (6 bar).
- ▲ Heating by steam or hot water circulation.
- ▲ Propeller stirring with top mounting.
- ▲ Temperature controller & safety pressure valve.
- ▲ Bottom discharge with valve.

WAX PHASE VESSEL :

- ▲ Jacket for heating & cooling.
- ▲ Heating jacket pressure (4 bar).
- ▲ Heating by steam or hot water circulation.
- ▲ Propeller stirring with top mounting.
- ▲ Temperature controller & safety pressure valve.
- ▲ Bottom discharge with valve.

MANUFACTURING VACUUMIZE HOMOGENIZER VESSEL :

- ▲ Jacket for heating & cooling.
- ▲ Vacuumize process.
- ▲ Vessel inside pressure (-1/+2 Bar).
- ▲ Heating jacket pressure (-1/+6 Bar).
- ▲ Heating by steam or hot water circulation.
- ▲ Agitator mixer with self pressure teflon scrapper.
- ▲ Scrapper cleanly working on both side.
- ▲ High speed homogenizer with toothed rotor-stator type.
- ▲ Steplessly variable speed drive for agitator homogenizer.
- ▲ High shear & pressurization of the homogenizer.
- ▲ Thus homogenizer of high viscosities up to 400.000 mpas.
- ▲ Homogenizer mounted on lower position in the centre of vessel.
- ▲ Top lid with motorized top lid for lifting & lowering.
- ▲ Safety Interlock process with limit switch.
- ▲ Connection for vacuum, charging, eye glass window, light glass, CIP,SIP, pressure gauge & safety valve.
- ▲ Temperature controller & safety pressure valve.
- ▲ Bottom discharge with valve.

VACUUM SYSTEM :

- ▲ Vacuum pump.
- ▲ Vacuum gauge.

STORAGE VESSEL :

- ▲ Skid type storage vessel.
- ▲ Bottom cone is jacket for heating.

INTER CONNECTING PIPE :

- ▲ Inter connecting pipe line of all vessel for transfer water, wax & products & recirculation in manufacturing vessels.
- ▲ Vacuum connecting pipe.

WORKING PLATFORM :

- ▲ Rigid structure with anti slipping embossed plat.
- ▲ Made from AISI 304.

CONTROLS & VISUALIZATION :

- ▲ Electric controls with digital display.
- ▲ Optional PLC controls with HMI touch Screen.
- ▲ RPM and process time entries.
- ▲ Temperature controls-heat/cool.
- ▲ Vacuum start-stop
- ▲ Integrated data recording for batch.
- ▲ SCADA System with 21 CFR part 11 compliance.
- ▲ Optional 4 point load cell for weight measurement.

SAFETY FEATURES :

- ▲ Emergency stop button.
- ▲ Safety pressure valve & gauge.
- ▲ Limit switch at top lid.



OINTMENT / CREAM MANUFACTURING PLANT CONSIST OF THE FOLLOWING

1. Water heating vessel.
2. Wax melting vessel.
3. Main manufacturing vessel.
4. Storage vessel.
5. Interconnecting pipeline.
6. Pumps (bump pump & metering pumps).
7. Integrated automatic control panel.
8. Working platform.

LIQUID SYRUP MANUFACTURING PROCESS

Alphamac has been designed & manufacturing preparation vessels and has consolidated a process knowledge concerning sterile injectable solution, dispersions, ophthalmic products, syrup and suppositories.

PREPARATION VESSELS & TANK :

- ▲ Extremely hygienic processing.
- ▲ Least manual handling.
- ▲ Design compliance with cGMP.
- ▲ Capacity up to 10,000 Liter.
- ▲ Product contact AISI 316L.
- ▲ Atmospheric, vacuum or pressure operation.
- ▲ Jacket for heating & cooling.
- ▲ Vessel inside pressure (-1 / +2 Bar).
- ▲ Heating jacket pressure (-1 / +6 Bar).

- ▲ Heating by steam or hot water circulation.
- ▲ Thermal insulated.
- ▲ Mechanical or electro polishing of internal surface.
- ▲ Welded, flanged or hinged type cover.
- ▲ Integrated cleaning in place-CIP.
- ▲ Sterilizing in place-SIP as an option.
- ▲ Portable execution on request.
- ▲ Validation protocols & instrumentation celebration.

VARIABLE SPEED AGITATION :

- ▲ Agitator can be top or bottom driven or magnetically driven.
- ▲ Propeller type, anchor type provided with high speed disperser or rotor-stator homogenizer.
- ▲ Single or double mechanical seal.


FULLY AUTOMATIC LIQUID SYRUP MANUFACTURING PLANT & CONSISTING OF AS FOLLOWING DIAGRAMS:

1. Sugar charging / transfer system.
2. Sugar melting vessel with mixing stirrer.
3. Basket filter & transfer pump.
4. Syrup manufacturing vessel with stirrer.
5. Inline homogenizer.
6. Zero hold up filter press.
7. Storage tank with stirrer.
8. Interconnecting pipeline.
9. Transfer pumps.
10. Integrated automatic control panel.
11. Working platform.

TURB KEY PROCESS LINE :

- ▲ For production, filtration, transfer and storage solution.
- ▲ Preparation vessels.
- ▲ Inline homogenizer.
- ▲ Inter connecting pipe.
- ▲ Solid or sugar charging system.
- ▲ Working platform.


Automation Available, Appropriate for The Intended Process Function, Including CIP And SIP :

1. Controls of all function by PLC controls with HMI touch screen.
2. Level controls by means of capacitance probe or electronic load cells.
3. Digital indication and control of all Process parameters for agitator speed, temperature, pressure & level.
4. SCADA System with 21 CFR part 11 compliance.
5. Optional 4 point load cell for weight measurement.

DISPERSING, SUSPENDING, EMULSIFYING & HOMOGENIZING TECHNIK FOR LIQUID AND PASTE

APPLICATION & PROCESS :

Alphamac designs and manufacturing a wide range of agitators for liquids and paste for process in the pharmaceutical, chemicals, foods, cosmetics and similar industries. Agitators are provided with different type of agitation components for process such as mixing, blending, dissolution, dispersion, homogenization, reaction, fermentation, oxidation, digestion and emulsification of liquid, paste, ointment, solution, viscous material and solid-liquid.

Agitators are designed and adapted to any vessel and can be implemented with or without lower support. Different types of blades can be combined depending on the process requirements. The sealing system are designed and adapted depending on the requirement of the various process and start from simple retainers to double mechanical seals. Agitators are available with different type of mounting as per suitability of the process and users requirements.



DESIGN FEATURES :

- ▲ Design compliance with cGMP
- ▲ Available capacity from 5 Liter to 25,000 Liter.
- ▲ Product contact AISI 316L/316/304.
- ▲ Available blade: propeller, anchor, paddle, dispersing, flat, umbrella, turbine and rotor-stator homogenizer.
- ▲ Available drives with direct, housing coupled & gear drive.
- ▲ Available mounting with stand, telescopic stand, flange mounting, direct on vessel/tank.
- ▲ Option for rotating speed of blade.

Different types of blades can be combined depending on the process requirement and various condition including the stirring objective, tank shape, rotating speed, viscosity, mixing blades of different configurations should be applied for different operating objectives. Different mixing blades follow various specifications to design and select the configurations of the blades. The ratio of the blade to the inner diameter of the tank, angular speed of the blade top, viscosity change during mixing process and the range of flow volume are the factors to be considered. There are various types of blade mixer and can be categorized into axial flow and radial flow according to the flow pattern of the fluid in the tank. The main factors affecting mixing performance are as below and the commonly used configurations are listed for reference :

1. Shape, diameter, sweep back angle and slant angle of the mixer blade
2. Number of layers and the vertical position of the mixer blade where it is installed
3. Rotating speed of the mixer blade
4. Shape, inner volume, number of baffles and outline dimensions of the mixing tank
5. Batch operation or continuous operation

Agitators available with different type of drives and speeds with direct motor and with gear drive as per process requirements.

Agitators are suitable for mixing volumes 5 Liters to 25,000 Liters.



Blade Paddles



Paddles Blade



Ribbon Blade



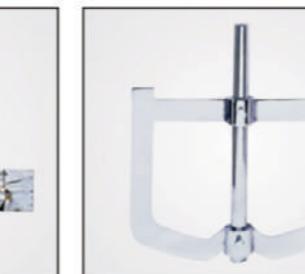
Turbine Vortex Blade



Umbrella Blade



Flat Blade Turbine



Anchor Blade



Spiral Propeller Blade



Ruvastar Cyclo



Dispersing Homogenizing Blade



Open Blade



High Shear Revers Flow



High shear Homogenizer

LIQUID HIGH SHEAR HOMOGENIZE MIXING AND DISPERSING INLINE PROCESS

The homogenizer is often necessary to mix one or more substances within a liquid. This device allows to micronized and scatters the particles suspended in the fluid, So that the product become highly stable, no matter the following treatments and stockings the products may undergo. The homogenizer delivers unparalleled consistency and control of high shear process applications such as, immiscible phase emulsifying, homogenizing, wet grinding, texturing, deagglomeration and fine dispersing.

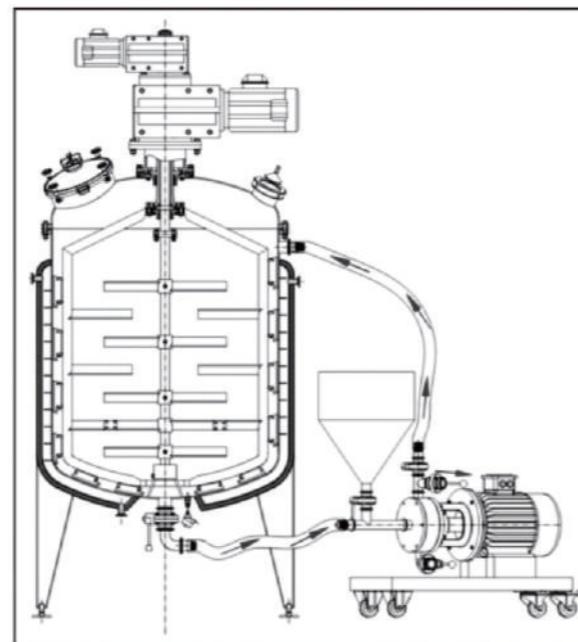
The product arrives to the homogenizing at a low speed and at high pressure (cause by the little gape between the passing head and collision head). Durig the passage the product is subjected to numerous forces which cause the particles micronizatio : a violent acceleration followed by an immediate adeceleration that produces cavitation and then the globules explosion. Strong turbulence united to high frequency vibrations. Collision cutting strengths derived from the lminar passage between the homogenizing valve Surfaces and the following impact with the collision ring.

Incorporating up to single sets of toothed rotor-stator heads, engineered to extremely fine radial tolerances, the emulsifier processes product at high differential velocities, as many as 18 times in a single-pass. The result is consistent, repeatable quality at capacities exceeding those of conventional multiple-pass technology, such as in-tank high-shear mixers, colloid mills and shear pumps.



SALIENT FEATURES :

- ▲ Design is cGMP with all contact parts AISI 316.
- ▲ Capacity up to 5,000 Liters.
- ▲ Single-pass processing results in reduced batch times by up to 80% and repeatability batch-after-batch.
- ▲ Energy savings when compared with in-tank mixers, colloid mills and homogenizers.
- ▲ Increased capacity when compared with colloid mills and homogenizers.
- ▲ Improved product quality and shelf-life stability.
- ▲ High differential velocities.



EASY DUST FREE LOADING AND UNLOADING & INLINE PROCESS OF MATERIAL : APPLICATION & PROCESS :

An IPC bin loader is used for transferring and discharging the material dust free and without human touch in pharmaceuticals industries for load power in to HSMG bowl, hopper of tablet press, container of blender, load tablet in to hopper of blister pack & coating machine and as well as used for online sifting and milling.

An IPC bin loader consists of a main frame, bin fixing arm, hydraulic lifting device and pivot base. This main frame move 360 degree on axis and bin fixing arm move upward and downward in the freame by hydraulic cylinder and power pack system. The moveable container / bin bringing placed beneath the fixing arm, operate the hydraulic drive system which lifts arm with the container and it raises the container till it gets stop exactly in a position, slew the column to swivel the bin over inet of the next processing euipment, then it could be unload by opening of butterfly on the whatever next processing equipment.

SALIENT FEATURES :

- ▲ Design is cGMP with all contact parts AISI 316 & non contact parts AISI 304.
- ▲ Suitable for inline process with milling & sifter granulator.
- ▲ Suitable for load material on high shear mixer, blending, tablet press, auto coater, blister pack and inline milling & sifting process.
- ▲ Eliminates tedious and unhygienic manual handling of products.
- ▲ Pillar is grouted bottom & top with bearing to easy roteate 360
- ▲ Bin is lock in arm for lift for loading.
- ▲ Hydraulic power pack can be mounted over the service floor so the column of the losader acts as pendent and through pivot shaft.
- ▲ If the power gose off, the loader remains where it was.
- ▲ Limit switchesns are provided to stop the hydraulic drive when the stroke is completed.



STORAGE AND DUST FREE TRANSFER PROCESS
APPLICATION :

The IPC Bin loader is used for handling, storing, transfers and mixes the materials dust free and without human touch in pharmaceuticals & foods & chemicals for loads power in to mixer, tablet press & Load tablet to blister pack & coating machine and online sifting and milling process with loader. Bin (IPC) is designed and manufactured to be handled through their own trolley and offer the advantage to leave the trolley at floor when the container is raised up to be positioned onto process machines.

Bin (IPC) is a container made from S.S. 316 sheets having square / cylindrical body and taper bottom. A lid is provided on top with lock. And lid is big so that complete washing of IPC is easy. The bin is seated on a detachable stand or fixed leg made of S.S. bracket (2 nos. fixed and 2 nos swiveling). Bottom discharge is provided with butterfly valve.


SALIENT FEATURES :

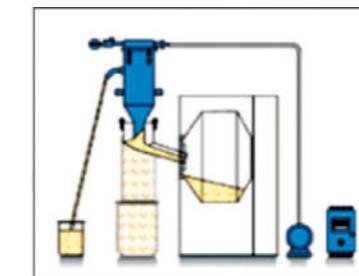
- ▲ Design is cGMP with products contact parts AISI 316.
- ▲ Capacity available from 30 kg to 1200 kg.
- ▲ Universal bin handling and stacking system for easy handling and stacking of bins.
- ▲ Charging through the top opening lid.
- ▲ Discharging through bottom discharge butterfly valve.
- ▲ Without any nooks and corners for easy cleaning with food grade silicon gaskets.
- ▲ Mirror finish from inside and adequate hopper angle for easy and complete discharge of products.
- ▲ Available with fix legs with wheel as well as separate on detachable trolley.
- ▲ Option for various type of IPC Bin as per customer requirement.

EASY DUST FREE CONVEYING WITH LINE PROCESS
APPLICATION & PROCESS :

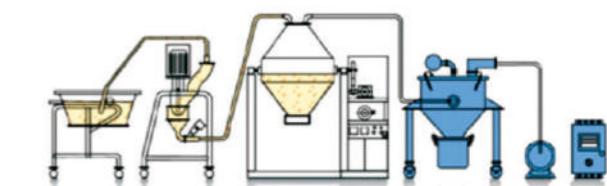
The vacuum transfer system is unique dry material transfer system for dust free and avoid to human touch. The vacuum transfer system is used in pharmaceuticals, food, agro chemicals, sugar industries and chemicals. The system is used full for inline milling, sifting, blending & loading and unloading.

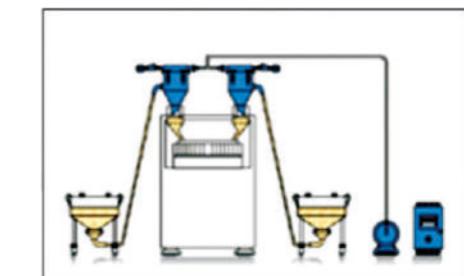
The principle of vacuum transfer has been proven to be a better way to move many types of material and a giant step over manual handling. The technology exists for moving virtually any material that can be pulled through a hose or tube. The system is consisting of blower, vacuum receiver system with filter, cyclone filter and pipe.

The vacuum conveying systems designed specifically for the direct charge loading of blenders, mixer, sifter, milling, reactors or any vessel capable of withstanding a vacuum. The vacuum system can be provided mobile type with lifting provided mobile type with lifting provision to move one room to another room for loading and loading any machine.


Loading of autoclave
SALIENT FEATURES :

- ▲ Design is cGMP with products contact parts AISI 316.
- ▲ Available capacity 250 Kg to 3000 Kg.
- ▲ can be used for transfer of products having bulk densities up to 1.0 gm/cc.
- ▲ Transfer can be completely dust free & automatic to avoid the manual handling of the material.
- ▲ Fully auto system, with timing controls and automatic air blow back system for filter cleaning.
- ▲ Vacuum system and cyclone filter can be installed in out of side production area.
- ▲ Total discharge no retention.
- ▲ No tool required for opening & cleaning.
- ▲ Avoids product waste, loss and contamination.
- ▲ Easy to clean and wash of contact parts.
- ▲ Can be attach no. of machine for inline milling, sifting with blender & mixer machine.
- ▲ Suitable for load powder on tablet press, tablet in to auto coater powder & sugar charging in to vessel, bin and unload FBD bowl.


Blender Charging with inline milling

IPC Loading with inline sifting

Loading of tablet press