

# PHARMA SPRAY SOLUTIONS PVT. LTD.

**ENRICHED BY  
EXPERIENCE**

**EMPOWERED BY  
RESEARCH**





## ABOUT US

*As the specialist in manufacturing pharmaceutical spray gun, process equipment & systems, Pharma Spray Solutions has good accumulated know-how excellence in making high quality and innovative technological product. Our products are made with thorough research and technological advancement to satisfy our client's needs.*

*Being the supplier of high-quality pharmaceutical equipment & guns around the world, we believe that trust of our customers come first. We keep focusing on continuous training for technical excellence and product development. Our top priority is to provide best quality and innovative products that optimized best available technology to our customer. Customer satisfaction is our greatest achievement and pride.*

*Pharmaceutical equipment & guns manufacturing is a very competitive business that demands continual productivity improvements and cost reductions.*

*Being a leading supplier helps Pharma spray solutions understand the complexity and competitive nature of the global pharmaceutical industry.*

*This understanding is the driving force behind our creative idea and innovate product development.*

















## MISSION

*To provide integral solutions for productive processes based on the value and development of human resources placing ourselves at the forefront of technological innovation.*

## VISION

*Customer satisfaction is and will always be our greatest achievement and pride.*

# TABLE OF CONTENT

	<i>Spray Gun</i>	
	<i>Pump</i>	
	<i>Process Equipment</i>	
	<i>Process Automation</i>	
	<i>Optimization/Refurbishment of Process Equipment</i>	
	<i>Office/Lab Interior &amp; Furniture</i>	
	<i>Cleaning Nozzles</i>	
	<i>Accessories</i>	



# SPRAY GUN – SG DIVISION

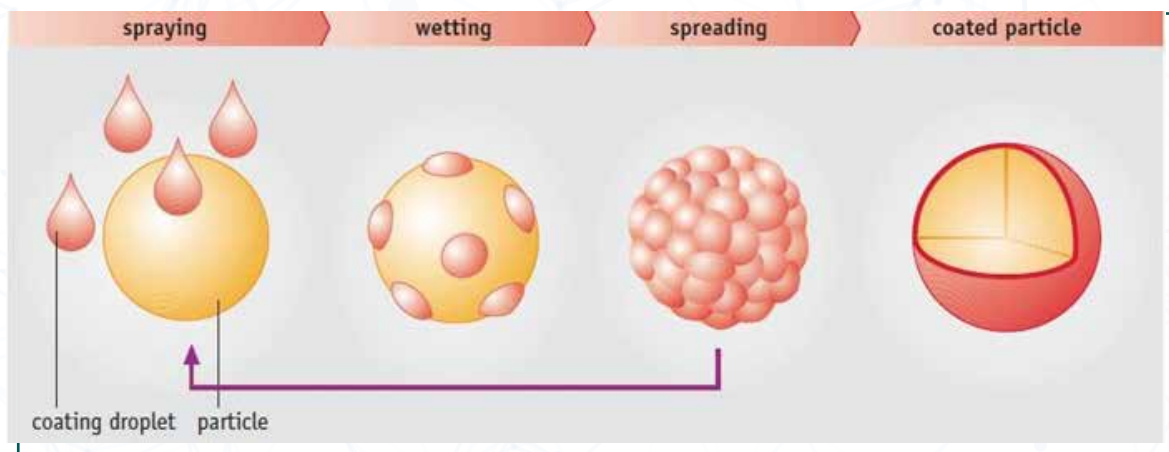
Pharmaceutical coating is a technique in which an outer dry film of the coating composition is applied on the desired dosage form (mainly tablet and granules) to attain specific advantages (taste masking, environmental protection).

The spray guns use high-pressure air to atomize the coating solution into fine droplets during spraying. The amount of air pressure determines the droplet size—higher atomizing air pressure results in smaller droplets, and lower atomizing air pressure results in larger droplets.

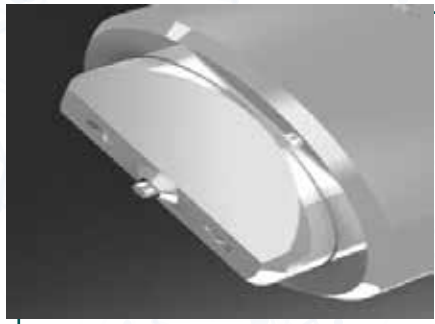
We at Pharma spray Solutions with our research & experience have developed different spray gun for different process such as tablet coating, wurster coating, pellet coating, RMG binder spray, Spheronizer spray etc.

## Tablet Coating

Tablet coating is a process by which an essentially dry, outer layer of coating material is applied to the surface of a dosage form in order to confer specific benefits over uncoated variety.



## Anti-Bearding Air Cap Advantage



Frequent shutdowns to clean coating material from air atomizing spray gun components have a serious impact on productivity.

Anti-bearding Flat Spray Air Cap can help to improve process quality, volume, and profitability in these situations.



Anti-bearding Flat Spray Air Cap does not allow negative pressure to build at the upper surface in compare to Cap with Horns creates negative pressure & results in clogging of Fan air Port & subsequently Liquid port as well.

Currently this process is done in two method or we can say by two different tech.

Manual coating machine & auto coater machine. At Pharma Spray Solutions we have developed spray guns to optimise both the process of coating with different models

## ABH Spray Nozzle Assembly

The ABH is External Mix Nozzle, means liquid & Air are mixed externally to produce a complete atomizing spray. The liquid atomizing is control by varying the atomizing air & Fan air pressure without changing liquid flow rates. The flat spray pattern is controlled by varying the fan air pressure in conjunction with the atomizing air. This is effective for higher viscosity liquid, coating & suspension.

Anti-bearding Flat Spray Air Cap can help to improve process quality, volume, and profitability.

## Benefits

**Modular design offers the flexibility to fit various unique spray applications**

**Reduces maintenance costs**

**Maximizes uniform spray distribution**

**Easy access dramatically cuts cleaning and maintenance downtime**

**Minimizes overspray**

**High performance, with higher flow**

**Energy savings in adjustable fan air settings**

**Improves spray and product quality**

**Decreases seal failure, bearding and plugging**

**Easy change-over from any model-to-model ABH**

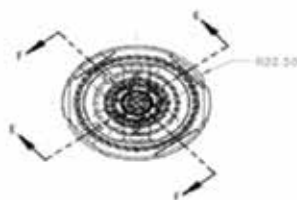
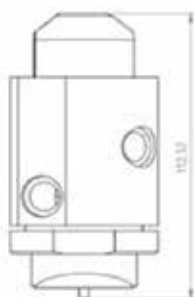
**Thread less sanitary design with no internal threads in the liquid chamber**





## Specification

Spray Nozzle	Type	ABH 1030/40, 1031/1041
Spray Pattern	Oval Flat	Air Atomizing
Liquid Nozzle Orifice Size Range	mm	0.8 – 1.5 (1.0, 1.2)
Flow Rate(For Coating Application)	gm / min	20-220 g/min
Atomizing Air Pressure	bar	0.7 – 4
Spray Angle	deg	10 – 60 deg
Maximum Compressed Air Pressure	bar	5.5
Compressed Air Consumption (@ 2 bar)	Nm <sup>3</sup> / hour	11.5
Seal Material Standard Approvals	FDA	Approved



### THREAD SIZES:-

CYLINDER-1/4" BSP THREAD

AUTOMIZON G-1/4" BSP THREAD

LIQUID-1/4" BSP THREAD

PATTERN AIR-1/8" BSP THREAD

# ABG Spray Nozzle Assembly

The ABG variable automatic spray nozzle Assembly is designed with modular components to provide solutions to even the most demanding spray application challenges.



## Features & Benefits

*Uniform spray distribution*

*Easy to clean – User Friendly*

*Anti - Bearding (Non-Clogging)  
designed spray Nozzle Assembly*

*Low Maintenance*

*Anti-Dripping*

*Compatible in all Coating Machines*

*Liquid Flow adjustment*

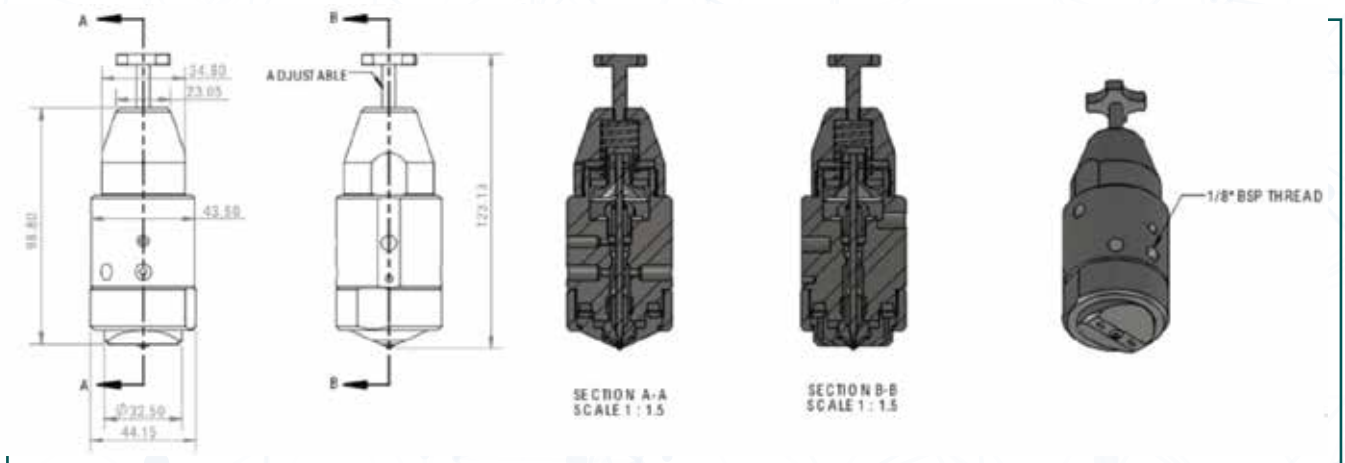
*Unique Pan Pattern with angle  
adjustment option*

## Specification

Spray Nozzle	Type	ABG 1040/1041/1042
Spray Pattern	Oval Flat	Air Atomizing
Liquid Nozzle Orifice Size	mm	0.8 - 1.5 (1.0, 1.2)
Flow Rate(For Coating Application)	gm / min	20-150 g/min
Atomizing Air Pressure	bar	0.7 - 3
Spray Angle	deg	10 - 70 deg
Spray Nozzle	Type	ABH 1030/40, 1031/1041
Maximum Compressed Air Pressure	bar	5.5



Compressed Air Consumption (@ 2 bar)	Nm <sup>3</sup> / hour	10.0
Seal Material Standard Approvals	FDA	Approved



## ABGS Spray Nozzle Assembly

The ABGS variable automatic spray nozzle Assembly is compact in size to provide solutions to even the most demanding spray application challenges for main scale production as well as for Lab Coaters.



## Features & Benefits

**Compact Size**

**Uniform spray distribution**

**Anti - Bearding (Non-Clogging)  
designed spray Nozzle Assembly**

**Easy to clean – User Friendly**

**Anti-Dripping**

**Low Maintenance**

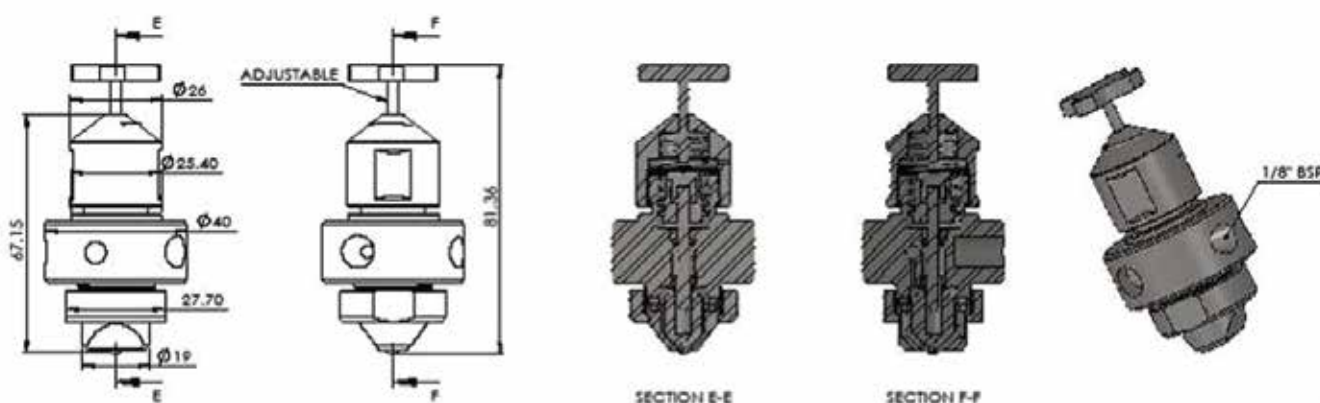
Liquid Flow adjustment

Compatible in all Coating Machines

Compatible in all Coating Machines Unique  
Pan Pattern with angle adjustment option

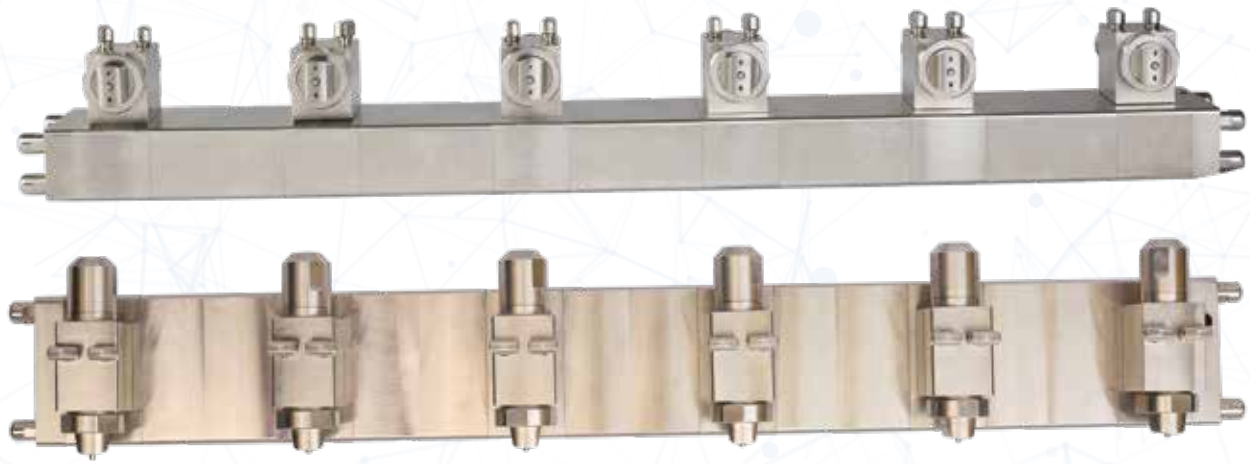
## Specification

Spray Nozzle	Type	ABH 1030/40, 1031/1041
Spray Pattern	Oval Flat	Air Atomizing
Liquid Nozzle Orifice Size	mm	0.8 – 1.5 (1.0, 1.2)
Flow Rate(For Coating Application)	gm / min	15–120 g/min
Atomizing Air Pressure	bar	0.7 – 3
Spray Angle	deg	10 – 60 deg
Maximum Compressed Air Pressure	bar	5.0
Compressed Air Consumption (@ 2 bar)	Nm <sup>3</sup> / hour	8.0
Seal Material Standard Approvals	FDA	Approved

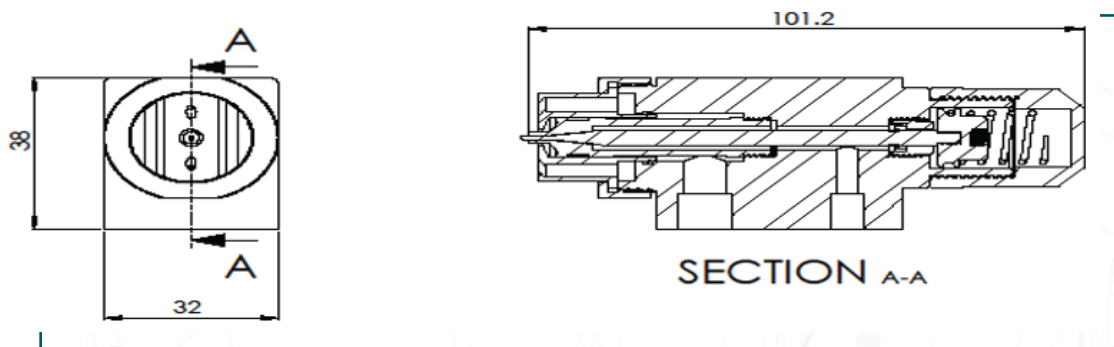




# ABH-3000 Modular Spray Arm

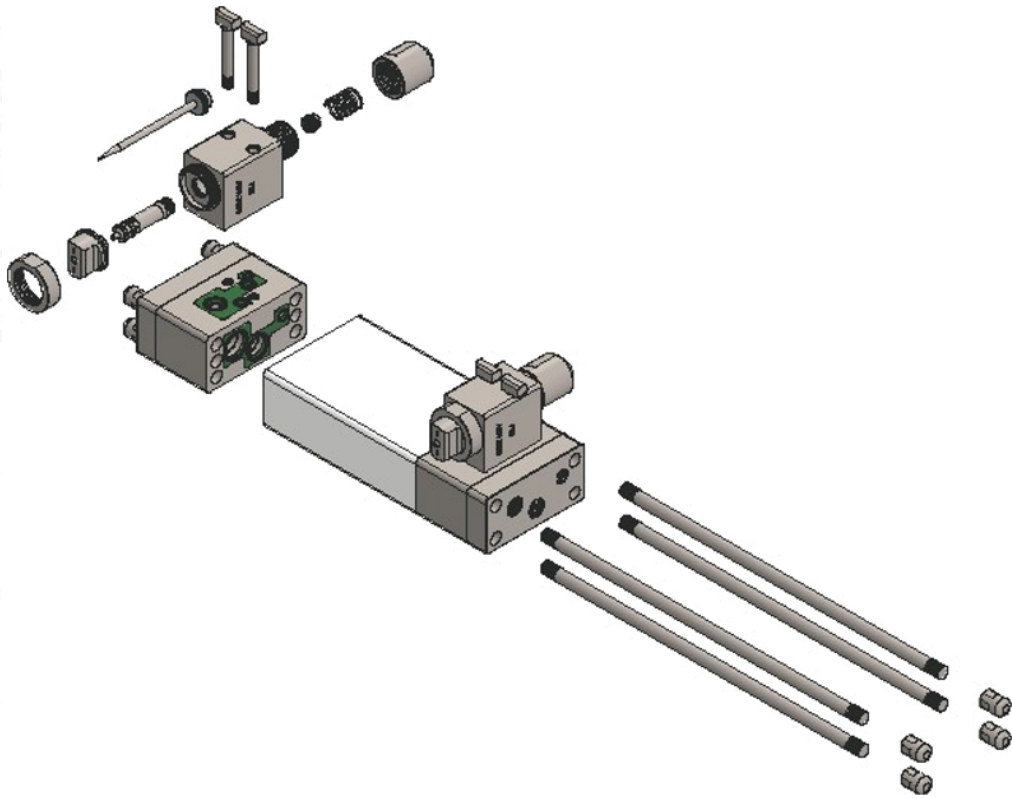


The ABGS variable automatic spray nozzle Assembly is compact in size to provide solutions to even the most demanding spray application challenges for main scale production as well as for Lab Coaters.



## Specification

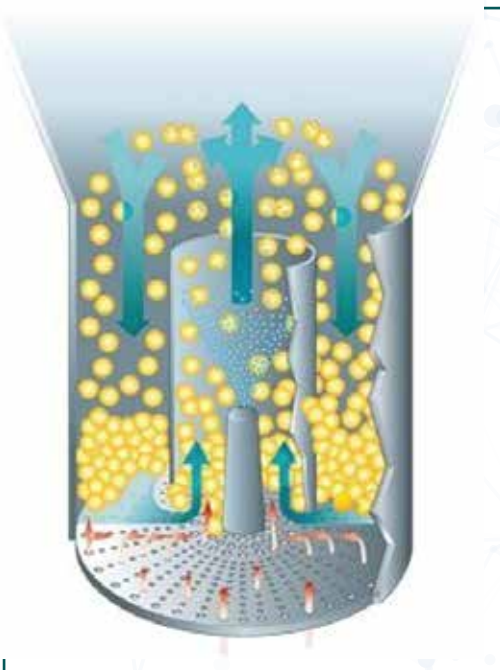
Spray Nozzle	Type	ABH 3000
Spray Pattern	Oval Flat	Air Atomizing
Liquid Nozzle Orifice Size Range	mm	0.8 - 1.5 (1.0, 1.2)
Flow Rate(For Coating Application)	gm / min	20-220 g/min
Atomizing Air Pressure	bar	0.7 - 4
Spray Angle	deg	10 - 60 deg
Maximum Compressed Air Pressure	bar	5.5
Compressed Air Consumption (@ 2 bar)	Nm <sup>3</sup> / hour	11.5
Seal Material Standard Approvals	FDA	Approved



## Wurster Coating

Wurster coating, synonymous with fluid bed microencapsulation, is the encapsulation of discrete particles in a fluidized bed using differential air flow to create a cyclic movement of material.

The Wurster coating process can be applied to a range of core materials in numerous particle sizes and shapes.



# Flow Chart

Pressure Liquid	1.5 mm orifice	1.8 mm orifice	2.0 mm orifice	2.2 mm orifice	2.5 mm orifice
1 Bar	1.4 lpm	2 lpm	2.47 lpm	2.95 lpm	3.65 lpm
1.5 Bar	1.75 lpm	2.45 lpm	3 lpm	3.6 lpm	4.2 lpm
2 Bar	2 lpm	2.84 lpm	3.6 lpm	4.3 lpm	5.1 lpm
3 Bar	2.45 lpm	3.35 lpm	4.4 lpm	5.08 lpm	5.7 lpm

## Top Spray Coating Gun

An atomizing spray gun with tri-axial wand is the standard spray gun used with for fluid bed top spray coating. Solution, atomization air and cylinder air are supplied through the spray gun assembly, creating a non-cluttered, easy to use spray gun. The number of nozzles vary depending on the batch sizes.

Generally Standard head used for coatings are single.

### . Single Head



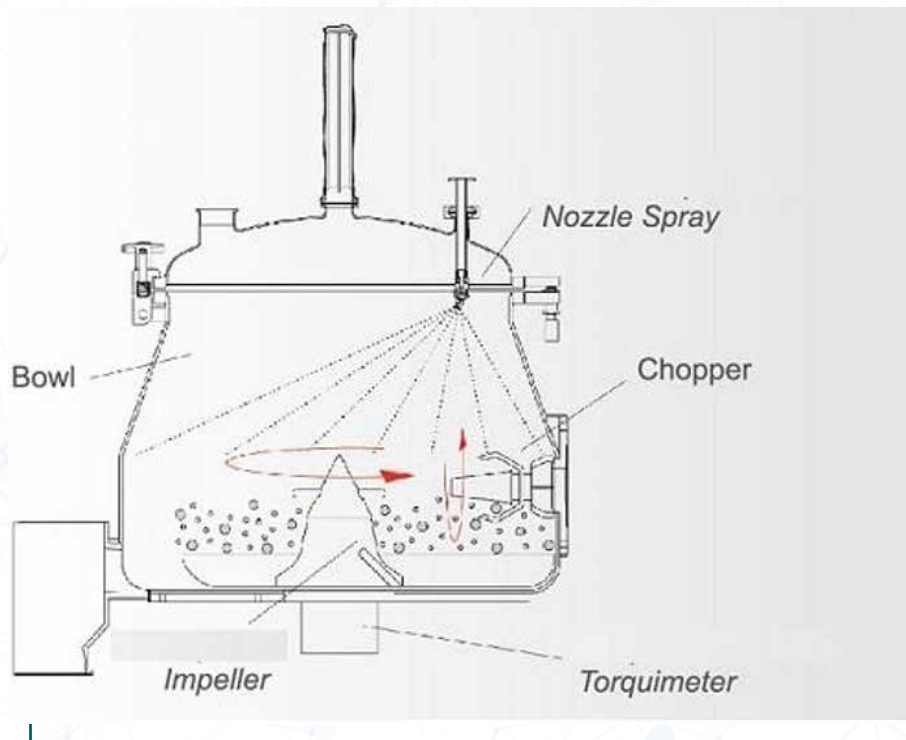
### . Multi Head





# RMH / HSG Spray Gun

Spray Gun is very important for binder spray & mixing of liquid in side RMG/HSG. It helps reduction of lumps during process & decrease the load capacity of equipment. For this purpose we designed different top spray center mounted Or side mounted with designated spray pattern & multiple heads.



# PERISTALTIC PUMPS

Some applications require precise dosage at precise time gaps.  
Turn over to know how to manage.

## PSS100



## Features

*Microcontroller based control circuits*

*Precise PWM based DC stepper motor drive*

*Membrane keypad with Menu driven LCD*

*Advanced EEPROM technology for Memory storage*

*Provision for external ON / OFF control*

*Operates on 230v, 50Hz, single phase AC*

*Pump with PC Interface (optional)*

Model	Flow Rate	Tubing ID
PSS. 100. VS. 100. 0	6 ml to 6 lts/hr	1 – 3 mm
PSS. 100. S. 100. 0	6 ml to 12 lts/hr	1 – 5 mm
PSS. 100. S. 200. 0	6 ml to 30 lts/hr	1 – 5 mm
PSS. 100. L. 100. 0	6 ml to 60 lts/hr	3 – 8 mm
PSS. 100. L. 200. 0	6 ml to 120 lts/hr	3 – 8 mm
PSS. 100. LS. 100. 0	6 ml to 150 lts/hr	5 – 12 mm
PSS. 100. LS. 200. 0	6 ml to 250 lts/hr	5 – 12 mm

## PSS110



## Features

**Microcontroller based control circuits**

**Precise PWM based DC stepper motor drive**

**Membrane keypad with LED display for RPM readout**

**Provision for Auto ON / OFF and Speed Control (4-20mA)**

**Accepts 1 mm to 3 mm ID tubing**

**Operates on 230v, 50Hz, single phase AC**



Model	RPM	Flow Rate
PSS. 110. S. 01. 0	0.01 – 1.00	0.12 ml to 60 ml/hr
PSS. 110. S. 10. 0	0.01 – 9.99	0.12 ml to 600 ml/hr
PSS. 110. S. 25. 0	0.1 – 25.0	1.2 ml to 1.5 lts/hr
PSS. 110. S. 50. 0	0.1 – 50.0	1.2 ml to 3 lts/hr

## PSS120



## Features

*Microcontroller based control circuits*

*Precise PWM based DC stepper motor drive*

*Membrane keypad with Menu driven LCD*

*Advanced EEPROM technology for Memory storage*

*Provision for external ON / OFF control*

*Operates on 230v, 50Hz, single phase AC*

*Pump with PC Interface (optional)*

Model	RPM	Flow Rate	Tubing ID
PSS. 120. VS. 0	10 – 100	90 ml to 5 lts/hr	1 – 3 mm
PSS. 120. S. 0	10 – 200	120 ml to 30 lts/hr	1 – 5 mm
PSS. 120. L. 0	10 – 200	1.2 lts to 156 lts/hr	3 – 10 mm
PSS. 120. LS. 0	20 – 200	6 lts to 300 lts/hr	5 – 12 mm



## Features

***Continues duty Geared 3 Phase AC motor drives***

***Detachable VFD for Speed Control with 230v, 50Hz***

***Single Phase AC Input***

Model	Flow Rate	Tubing ID
PSS. 120. EL. 0	1000 ltr/hr (Max)	20 mm
PSS. 120. ELS. 0	3000 ltr/hr (Max)	25 mm
PSS. 120. ELS. MT. 0	6000 ltr/hr (Max)	50 mm



# PROCESS EQUIPMENT

PE division (Process Equipment) is the division of Pharma Spray Solutions specializing in solid dosage processing equipment for the pharmaceutical industry, including Tablet Coating Machines, fluid bed dryers/granulators, Rapid Mixer granulators, Blenders and process control software for batch-type equipment.

Available in a full range of sizes from R&D to production scale, our equipment is designed to provide superior performance and batch uniformity for solid dosage processing applications while maintaining important process parameters from one size system to the next, making it easy for users to predict scale-up results. Configurable with a wide variety of optional features, each system is completely customizable to fit your exact specifications and process requirements, ensuring the perfect fit--no matter how challenging the application.

Our equipment is manufactured under GMP guidelines, complying with CE, 21CFR part 11 standards, together with all the documentations needed for further validation.

## Tablet Coating Machines



The PSS-PE film coaters are productive process equipment which have been developed through the continues innovative research & ideas to improve product quality by reducing production time.

**Film Coating:** Coat with thin protection layer on the tablets. (Aqueous or organic solvent are applicable)

**Enteric Coating:** Coat with a uniform protection layer on the tablets to protect against the gastric acidity (PH2)

**Sugar Coating:** Coat with sugar protection layers on the tablets.



# Auto Coater - PSS-PE-Cota



Technical Specifications	Model - PSS - PE - Cota						
	660mm (26")	940mm (37")	1070mm (42")	1220mm (48")	1525mm (60")	1675mm (66")	1830mm (72")
Working Capacity	10-20	40-70	60-100	80-150	200-350	300-750	600-1000
Pan Month Diameter-mm	250	380	380	400	520	520	600
Pan Speed-RPM	2-10	2-10	1-10	1-10	1-10	0.5-8	0.5-8
Main Drive FLP Motor-KW	0.75	1.5	1.5	2.25	3.75	7.5	11-24
Hot Air Inlet Blower - KW	0.75	2.25	2.25	3.75	7.5	7.5	11-24
Exhaust Blower - KW	1.5	5.6	5.6	5.6	7.5	11.25	22.5
Hot Air Fan Capacity - CFM	350	1300	1600	2500	4000	5500	12000
Steam Consumption at Pressure 2 - 4 bar (Kg/Hr)	15-20	40-60	50-70	80-100	120-140	160-180	250-350
Compressed air (CFM) at pressure 6 (Bar)	20	30	30	55	95	110	160

# Fluid Bed Dryers/Granulators

## PSS-PE-FDRAYA



FLUID BED DRYER is designed to introduce the hot air stream at the base of the product container which is filled with the material. Induced draught is created by means of blower and fresh air is sucked in to the unit. The fresh air is heated by means of electrical heaters or steam or thermic fluid heaters.

This hot air stream expands the bed of material at certain velocity & rating turbulence in the product. The phenomenon is known as fluidisation and offer conditions which are almost ideal for drying. Fluidisation produces full agitation of solid particles and since each particle gets surrounded by hot air, heat transfer is extremely high and uniform. The product is dried fast without appreciable loss of heat. Filter bags prevent particles escaping from the dryer.

Electrically / Steam & Thermic Fluid Heated in which general structure, made out of mild steel & coloured in Standard Model & made out of S.S.304 quality material & polished to the matt finished in GMP Model, but contact parts i.e., Product Container and Retarding Chamber, are made out of S.S. 316 quality material, with Non-Flameproof blower motor, (Flameproof motor provided on demand) suitable to dry wet material.

The capacity ranging from 10 / 30 / 60 / 120 / 150 / 200 / 250 / 500 / 650 / 1300 Kgs., with Steam heating / electrical heating & thermal Heating facility.

## Special Features

**1**

**Uniformity in drying and reduction in drying time.**

**2**

**Atmospheric inlet air is filtered by means of non-woven filter cloth. PRE /MICRO V & HEPA filters can be provided on demand on extra cost to prevent any fine dust to pass through the products.**

**3**

**Digital temperature indicator cum controller for inlet air & Digital temperature indicator for outlet air, are provided for electrically heated model.**

**Digital temperature indicator is provided for inlet & outlet air, in steam / thermic fluid heated model.  
(Temperature controlling valves will be in customer scope of supply)**

**4**

**5**

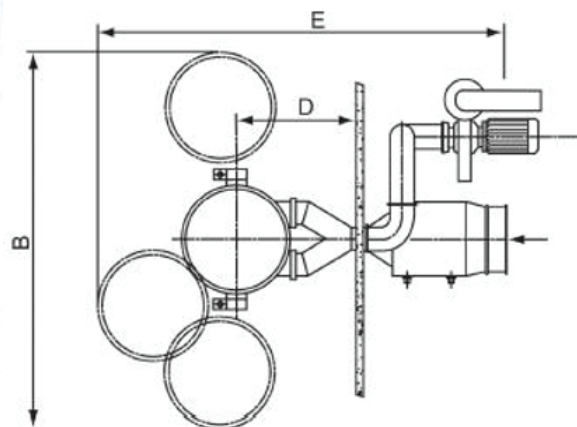
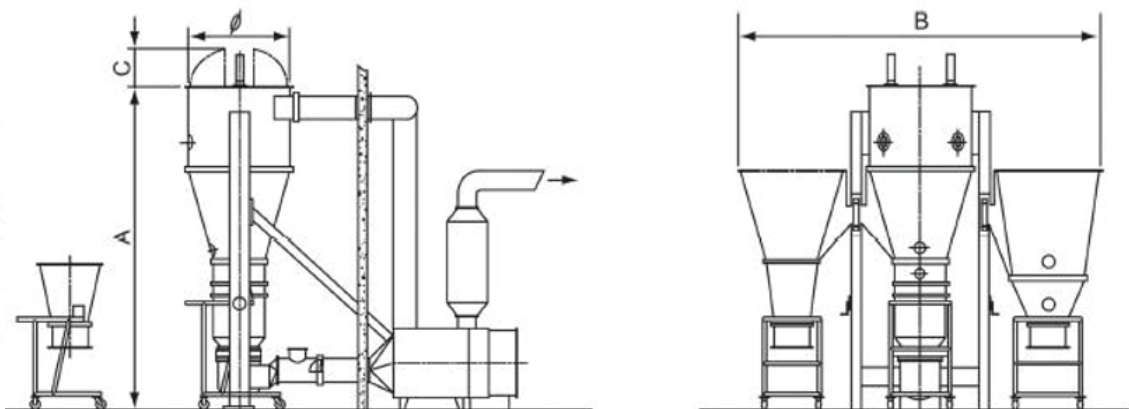
**Manually operated air dampers provided to control the inlet and outlet air flow.**

**An explosion safety flap of adequate capacity at the rear of dryer and an earthing point to prevent static charge in the machine.**

**6**

**7**

**Contact parts RETARDING CHAMBER & PRODUCT CONTAINER are made out of SS304 & polished to the mirror finished and other parts are made out of SS 304 and polished to the matt finished in Gmp model & made out of m.s. & coloured in standard model.**





# **Rapid Mixer granulator**

## **PSS-PE-RMG**

Rapid mixer granulator is used for granulation in pharmaceutical manufacturing. It is used to mix the pharmaceutical ingredients and make the granules before compression and also called a high shear mixer. Impellers and chopper are mainly responsible for wet granulation in the rapid mixer granulator.



## **Advantages**

*Granulation process requires less bind*

*Granulation is achieved within a short time*

*Greater densification and production of less friable granules*

*It comes with binder spray arrangement & controlled by smart operating system.*

*Saving 25% of Binder and drying time*

*It can be equipped with cone mill or swing granulator*

*Connect with fluid bed dryer by vacuum conveying by vacuum conveying*

*The granulator produces reproducible less friable granules with a uniform particle size distribution*



#### TECHNICAL SPECIFICATIONS

MODEL	RMG25	RMG100	RMG150	RMG250	RMG400	RMG600	RMG1000
Gross Volume in Ltrs	25 L	100 L	150 L	250 L	400 L	600 L	1000 L
Working Volume in Ltrs	20 L	75 L	120 L	200 L	320 L	480 L	800 L
Main Motor HP	3/5HP	7.5/10HP	10/15HP	20/30HP	30/40HP	40/50HP	63/85HP
Main Motor RPM	750/1500	750/1500	750/1500	750/1500	750/1500	750/1500	750/1500
Chopper Motor HP	1/2HP	2/3HP	3/5HP	3/5HP	5/7.5HP	5/7.5HP	10/15HP
Chopper Motor RPM	1400/2800	1400/2800	1400/2800	1400/2800	1400/2800	1400/2800	1400/2800
Weight in Kg (Approx)	500Kg	1000Kg	1250Kg	1500Kg	1800Kg	2000Kg	2700Kg
A	1440	2350	2500	2510	2760	3040	3400
B	1000	1100	1250	1700	2000	2200	2800
C	1345	1900	2100	2450	2750	2950	3250
D	1310	1750	1920	2050	2100	2300	2610

## Blenders PSS-PE-BLND

A blender is a very important equipment in the pharmaceutical industry, as a medicine is manufactured by mixing a number of drugs and chemicals. This mixing is required to be undertaken in either dry or wet state depending upon the chemical composition and the reactions allowed.



## Octagonal Blender



Octagonal Blender, due to its octagonal shape is designed to process larger volume of material. It occupies less space compared to other similar blenders like 'V' and Double Cone. Octagonal Blender, due to its octagonal shape is designed to process larger volume of material. It occupies less space compared to other similar blenders like 'V' and Double Cone. Power consumption is also less. The blending takes place at low speed during operation. It is well balanced even in higher capacities. It is very useful for pharmaceutical industries wherein gentle blending of dry granules of powder is to be done. It is a slow speed blender and has removable type

baffles mounted on a rectangular shell. The important feature of the machine is easy to wash in place. Octagonal blender is supplied with a bin charging system or can be designed for vacuum charging. Dust free charging system is also incorporated, which is a completely closed system for charging and discharging of powders or granules. Some of the Standard Units of Octagonal Blender as per GMP. Please note the design, Power consumption, selection of gearbox depends upon the material bulk density of the customer.

No.	Cap in Ltrs	Gross Volume	Motor	Gear-box	Discharge	Overall Dimension
1	25 / 75 ltrs	100 ltrs	1.5HP	22	100 mm	1000 x 1200 x 1500 mm
2	225 ltrs	300 ltrs	2HP	30	200 mm	1800 x 1200 x 1700 mm
3	450 ltrs	600 ltrs	3HP	40	200 mm	2100 x 1500 x 1900 mm
4	1000 ltrs	1200 ltrs	5HP	50	250 mm	2450 x 1900 x 2600 mm
5	1650 ltrs	2000 ltrs	7.5HP	80	300 mm	2700 x 2800 x 3250 mm
6	2250 ltrs	3000 ltrs	10HP	80	300 mm	2800 x 2900 x 3500 mm

## V Blender



The "V" BLENDER is an efficient and versatile blending machine for mixing and lubrication process of dry powders homogeneously. Approximate two third of the volume of the Blenders filled to ensure proper mixing. The "V" Blender gives best result for powders due to suitable medium speed and "V" shape of container. It can be used for Pharmaceutical, Food, Chemical and Cosmetic products etc. In "V" Blender the powders comes from all sides due to the "V" shape of the product container, hence requirement of RPM is medium. Suitable mainly for powder & granules type material.



This type of material gets sufficient continuous movement. Due to the “V” shape of container, even medium movement will result in good quality of blending/lubrication of granules.

Some of the Standard Units of V Blender as per GMP. Please note the design, Power consumption, selection of gearbox depends upon the material bulk density of the customer. Limitation of Design in V blender is Higher capacities are low efficient in mixing.

No.	Cap in Ltrs	Gross Volume	Motor	Gear-box	Discharge	Overall Dimension
1	75 ltrs	100 ltrs	2HP	30	100 mm	1400 x 900 x 1375 mm
2	225 ltrs	300 ltrs	3HP	40	200 mm	1625 x 1100 x 2450 mm
3	450 ltrs	600 ltrs	5HP	50	200 mm	2000 x 1100 x 2770 mm
4	1000 ltrs	1200 ltrs	7.5HP	80	250 mm	2000 x 1250 x 3500 mm

## Double Cone Blender



SS Double Cone Blender with central cylindrical section and two conical frustums at the top and bottom with dimensions to suit required capacities. The cone is having two opening at the top and bottom and it is of suitable diameter. Charging opening provided with SS hinge able lid with wing nuts for bolting and 'C' rubber ring. Discharge opening provided with butterfly/iris valve with suitable dead plate. Drive consisting of suitable HP, TEFC, 3 Phase, 440VAC, suitable rpm motor with suitable rating worm reduction type gearbox, coupled by means of belt-pulley drive. Shafts mounted on suitable Plummer blocks. Entire assembly mounted on 'A' shaped MS stand, motor and gearbox duly covered with protection covers. Limit switch

provided along with guard railing to maintain safe distance of operator from the rotating cone. Note: Lab model machine is mounted as a cantilever with shafting at one end only. All joints are argon arc welded and all SS parts are polished to mirror finish, required of pharmaceutical equipment. MS parts are painted to smooth finish.

No.	Cap in Ltrs	Gross Volume	Motor	Gear-box	Discharge	Overall Dimension
1	75 ltrs	100 ltrs	2HP	30	100 mm	1400 x 800 x 1500 mm
2	225 ltrs	300 ltrs	3HP	40	200 mm	2000 x 1100 x 2000 mm
3	450 ltrs	600 ltrs	5HP	50	200 mm	2100 x 1200 x 2000 mm
4	1000 ltrs	1200 ltrs	7.5HP	50	250 mm	2300 x 1400 x 2300 mm
5	1650 ltrs	2000 ltrs	10HP	80	300 mm	2800 x 2100 x 2700 mm
6	2250 ltrs	3000 ltrs	12.5HP	80	300 mm	3200 x 2300 x 3100 mm

## IPC Bins



IPC Bins are the accepted industry standard for powder handling & Processing application where Containment is required. Ease of Cleaning, Provide Containment, work-in-progress storage & testing, quick batch changing & repeatedly homogeneous blending. Store the dry powder / Granules and transfer material to another equipment Vertical, Cylindrical, Circular, Conical bottom, loose Top Lid. Design is a cGMP Current Good Manufacturing Practices compliance. Product contact parts AISI 316/ 316L & non-contact

parts AISI 304. IPC bins or integrated process bins are particular types of containers used in handling special chemical powders, dust, and granular materials, mainly in the pharmaceutical industries. This process is done to create a dust-free operation and ensure no human contamination occurs. There is total control of containment, and cross-contamination is not possible. Bin Blender is a free fall blender to meet the need if a container's volume is not good enough for the batch. It is also useful as a fixed clamped blending container. It can be custom designed as per the requirements. The bin blender can perform the installation & extension function no matter the bin's shape, like square, rectangular, round, or double cone.

An IBC Blender (Intermediate Bulk Container) is a highly efficient blending and mixing container. This container's advantage is the irregular shape and that they can be charged or discharged away from the mixer. The blender will not be contaminated with the product during the process hence saving valuable time.

## Design Features

The equipment is designed with a cylindrical body and tapered bottom with a large-sized lid for an easy cleaning process. They are made from stainless steel material such as SS 316 and mounted onto detachable stands designed according to the user requirements.

## Range

- Rectangular shaped IPC bins are available from 50 ltrs to 1000 ltrs.
- Round shaped IPC Bins are available from 50 ltrs to 1000 ltrs

IPC bins are available in rectangular shaped type, which can also be used in conta bin blender and round types. IPC Lifting & Positioning device can also use it. All IPC Bins have a conical bottom with a butterfly valve for discharge.

## Different designs of bins are available as per clients' requirements.

Externals of the bins are polished to matt finish (Mirror finish if required) & Internals. All contact parts are polished to mirror finish.



## Conta Bin Blender

*These are typically conventional Bin Blenders with the only difference being the way it is being clamped.*

*In these kinds of blenders, the Blending bin has got two cavity lugs on each side of the body.*

*The blending arm has got a fork with split type openings at each end. When the bin is inserted into the arm and the two forks enters the lugs respectively, after complete insertion the end of the fork opens like a flower thereby completely locking the bin from getting out the arm during blending operation.*

*The opening of the split end of the arm happens through a hydraulic cylinder (50mm stroke). The split end is connected by a tensile spring.*

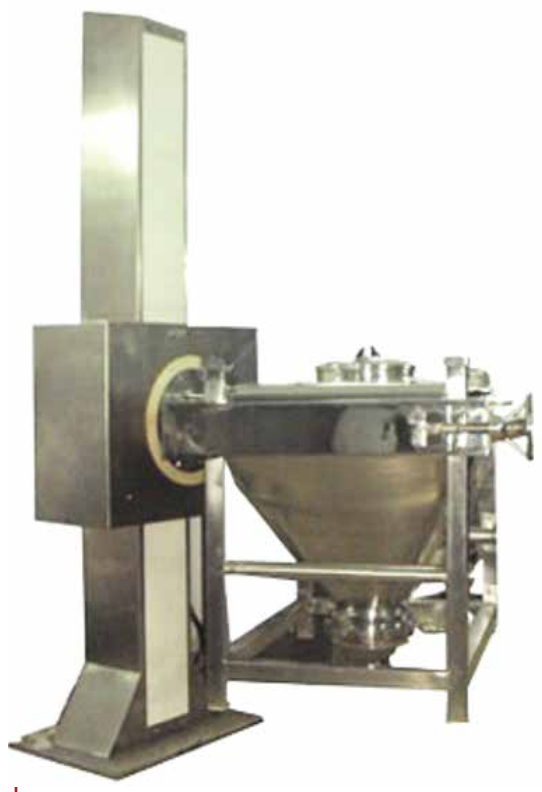
*To ensure the spit arm does not collapse during blending there is a hydraulic pressure switch available which stops the main motor in case the pressure drops against the set pressure.*

*A pneumatic also as an additional safety limit switch is provided for the completion of the stroke. In case the 50mm stroke is incomplete, the main drive motor would not start.*

*In addition to all the advantages of a conventional bin blender, there is something more to add:*

- 1. Hydraulic Locking of the bin with feedback to the PLC ensuring that there is no manual intervention whatsoever.*
- 2. The same cavity arrangement is used for the blending cycle as well as the lifting of the bins on top of the compression machines.*
- 3. Very easy and hassle-free arrangement ensuring compactness of the entire machine.*

*Ideally suited from 500 Ltrs to 1500 Ltrs.*





# PROCESS AUTOMATION

Established with purpose to provide leading edge engineering service & product to Pharma manufacturing industries to minimize operational hurdles & to optimize production capacity. We Pharm Spray Solutions Pvt Ltd with dedicated team of professionals & innovative ideas bond to give the best quality product & service to Industry.

We serve in different sector such as Pharma formulation, API, Beverage Ind., Food Ind., Chemical Ind. etc. Our Products are in sync with Industrial quality norms & tested as per industrial guidelines. Our manufacturing facility is designed to produce high quality standard product with trained workforce.

## Auto Clean PSS-PA-AC

Equipment cleaning is often thought to be one step in the production process, however upon taking a closer look, it is an entire process to be developed and optimized on its own to maintain product quality and production output. There are many variables that impact equipment cleaning procedures for fluidized bed coaters, coating pans, and various blending equipment. This guide sheds light on cleaning procedure challenges for this equipment and how to address them.

Manufacturing and Production is the beating heart of any pharmaceutical company. These critical teams are responsible for meeting often demanding market needs and adhering to strict regulations, all without compromising productivity and product quality. These tasks can often be demanding and overtly complicated to maintain, and the threat of an extended shutdown could mean loss of significant generated revenue. Having an incorrect cleaning procedure for any piece of pharmaceutical equipment can often be a root cause of these expensive shutdowns, specifically when it comes to the cleaning processes put into place for this equipment.

Every pharmaceutical cleaning procedure is unique and should be created based on the unique residues created and your cleaning capabilities. Without consideration of these variables:

**Incorrect cleaning procedures can cause manufacturing challenges – such as unnecessary use of excess resources.**

**Optimal Cleaning is not taken into consideration during product development.**

**Understanding capabilities of your equipment is the most important thing before cleaning.**

*Different types of equipment pose unique challenges- you can't always expect one thing to work for everything.*

*The main reasons that knowledge of cleaning is essential to any manufacturing company:*

*To ensure operator, environmental and equipment safety*

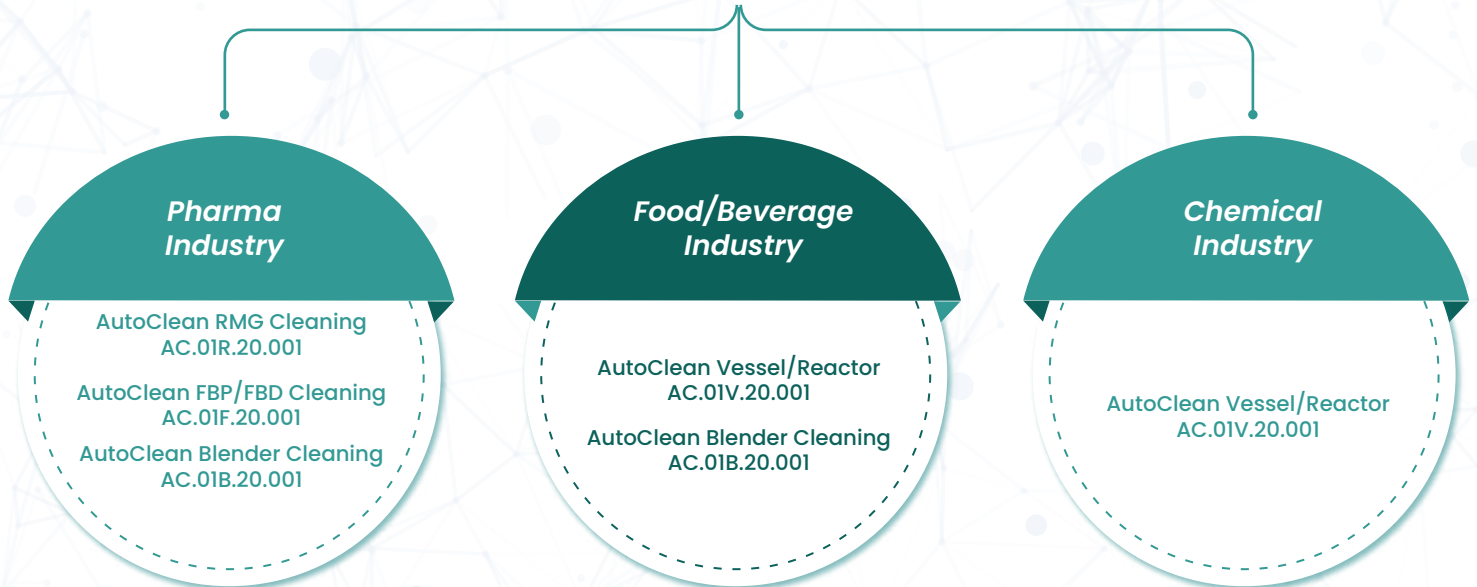
*Downtime reduction*

*Maximum equipment utilization (equipment longevity)*

*Savings – Resource and labour costs*

*AutoClean is automated cleaning system custom designed & manufactured to clean all types of vessels, FBE/FBP, RMG, Blenders with minimum human intervention.*

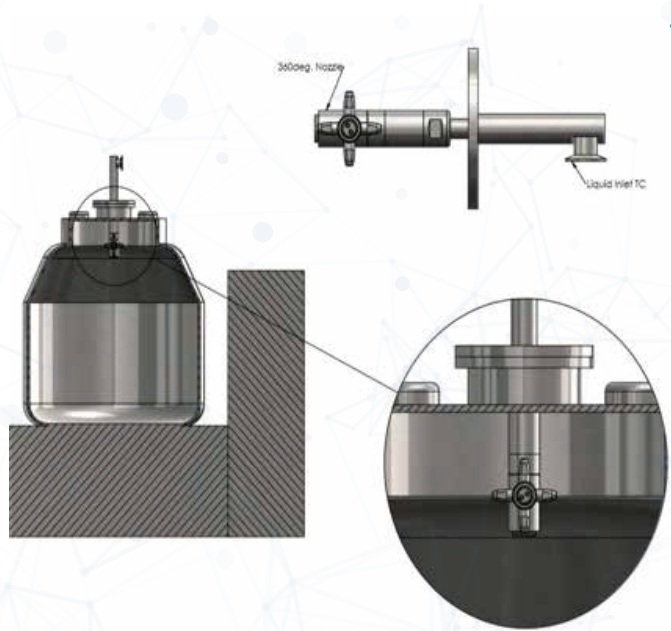
## **Auto Clean**



## **1.AutoClean RMG cleaning AC.01R.20.001**

*AutoClean RMG cleaning system – AC.01R.20.001 is designed & programmed to give best industry cleaning solutions for RMG/HSG. System along with different accessories enables itself to clean different types of RMG/HSG. This system is 21CFR compliance. System can give accurate pressure, flow rate, cycle time & different operating pressures for different sizes of RMG/HSG. Cleaning accessories designed to fit in different sizes of equipment.*

*This system consists of Mother Unit & Accessories.*



Pump Pressure	5 kg – 20 kg 4.9 bar – 19.61 bar
Flow Rate	15 Lpm – 200 Lpm
Rated Electricity Consumption	
Cleaning Cycle Time	Minimum 20 mins to requirement of customer
Type	Portable Type
Nozzle Type	360-degree Jet type
Cleaning Diameter	Maximum 5 meters

## 2. AutoClean FBP/FBD cleaning AC.01F.20.001

AutoClean FBP/FBD cleaning system – AC.01F.20.001 is designed & programmed to give best industry cleaning solutions for FBP/FBD. System along with different accessories enables itself to clean different sizes of FBP/FBD. This system is 21CFR compliance. System can give accurate pressure, flow rate, cycle time & different operating pressures for different sizes of FBP/FBD. Lance for Cleaning fabricated specially to fit different size of equipment.

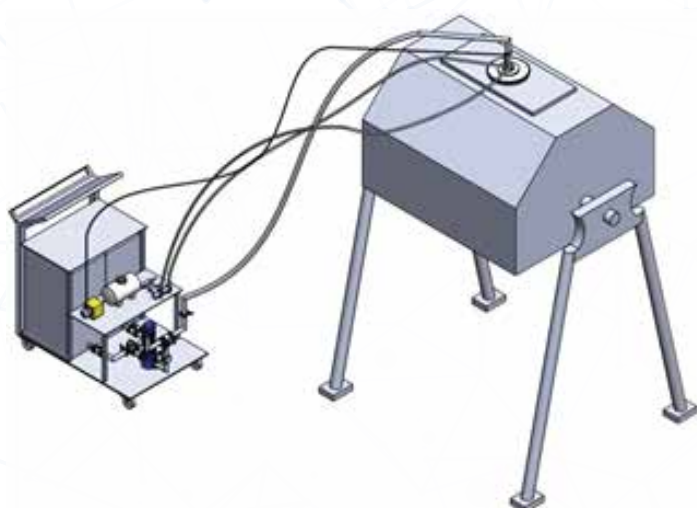
This system consists of Mother Unit & Accessories.





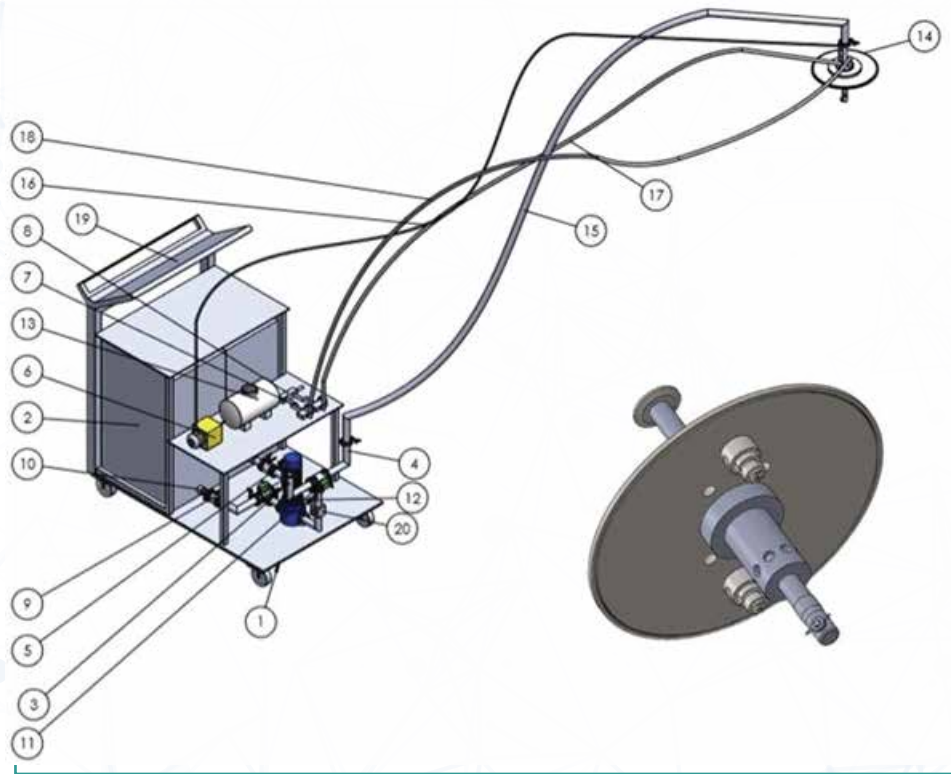
Pump Pressure	5 kg - 20 kg 4.9 bar - 19.61 bar
Flow Rate	15 Lpm - 200 Lpm
Rated Electricity Consumption	
Cleaning Cycle Time	Minimum 20 mins to requirement of customer
Type	Portable Type
Nozzle Type	360-degree Jet type
Cleaning Diameter	Maximum 5 meters

### 3. AutoClean Blender Cleaning AC.01B.20.001



*AutoClean Blender cleaning system – AC.01B.20.001 is designed & programmed to give best industry cleaning solutions for Blenders. System along with different accessories enables itself to clean different size & types of blenders. This system is 21CFR & IPC Scada compliance. System can give accurate pressure, flow rate, cycle time & different operating pressures for different sizes of Blenders. Lance for Cleaning fabricated specially to fit different size of equipment.*

*This system consists of Mother Unit & Accessories.*



## ***Auto Spray PSS-PA-AS***



We design and manufacture spray System for precision food processing operations – such as flavour and food safety applications, coating with liquids of various viscosities. We manufacture products that innovate equipment and tank washing, humidification, disinfecting, cooling, lubrication, and more. Our designs feature food- grade materials, connectors, and spray patterns, ideal for clean-in-place and sanitary requirements.

Products may be moistened by water, for example, to allow the adhesion of seeds in a bread roll production line. Or more complex coatings of heated viscous fluids like chocolate or peanut butter may be sprayed. We offers a tailored selection of precision spray process solutions designed for uniform coating of products and equipment in the food industry. AutoSpray coating systems and nozzles are designed to spray evenly with no dripping, whether they are applying a thin egg wash or spraying thick glaze onto a product. We have experience in recommending coating spray technology for all types of food processing solutions, such as conveyor coating and drum-mixing systems. A wide selection of direct pressure nozzles and air-assisted nozzles, combined with electric or pneumatic control options, allows us to tailor a solution to your needs.

Spray nozzles are capable of providing the accurate application of a wide variety of lubricants and release agents in the precise amounts and coverage densities necessary in critical applications including lubricating pans, molds or conveyors with release agents. In addition, we team of expertise for selecting nozzles to apply lubricants of all densities and viscosities with the throw and coverage necessary to cover critical machinery parts, tooling, and products during manufacturing processes.

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## **AutoClean Bin Cleaning.– AC.01C.20.001**

### **Salient Features**

- Design is cGMP – Current Good Manufacturing Practices compliance.
- All contact parts SS 316 & non contact parts SS 304.
- CIP (Cleaning-In-Place) is a system designed for automatic cleaning by Plain water
- Hot Water, detergent, D.M.Water and rinse solutions without major disassembly and assembly work.
- Closed cabinet type washing system for washing of Bin.
- Capacity is Customized as per customer requirement.
- The Clean-In-Place Systems can be provided with reservoirs for detergent and rinse solutions as well as pumping and heating capabilities for the Water.

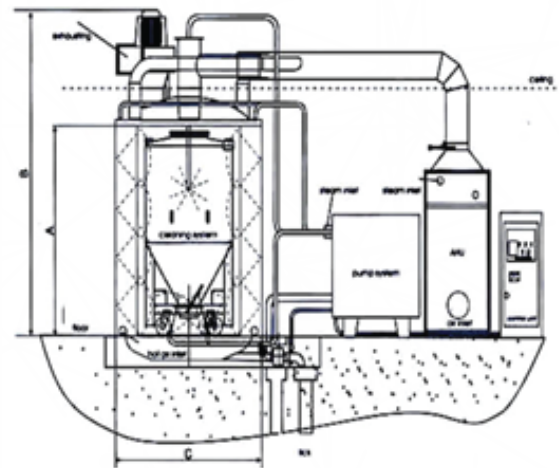




- The washing process consists of several cycles in which rinsing material is recycled through the bin, pumps, valves and other process equipment in the flow system.
- The cleaning can be carried out with automated or manual systems.
- All the operation processes take place in sealed pipe line, which is easy to operate saving work and meets high sanitary requirement.
- It has advantages such as energy-saving, high work efficiency, perfect cleaning effect, operator safety and easy to operate and maintain.

## Key Features of PSS Bin Washing Stations:

- Easy to operate & maintain
- No protruding screws & dead angles
- CE & cGMP compliant
- Cost competitive
- Offers all - in - one cleaning solution



## Semi-Automatic Bin Washing Machine

- This type of bin washing station requires human assistance in carrying out some functions efficiently.
- The bin washing system does the internal cleaning and drying processes automatically, while external processes are manual.
- When working with this equipment, the operator inserts a bin into the loading chamber, shuts the safety gate, and push the load button.
- The machine does the cleaning and rinsing processes automatically.
- After finishing, the worker presses the unload button, which, as a result, will eject the bins or intermediate containers from the semi- automatic pharmaceutical bin washing station.

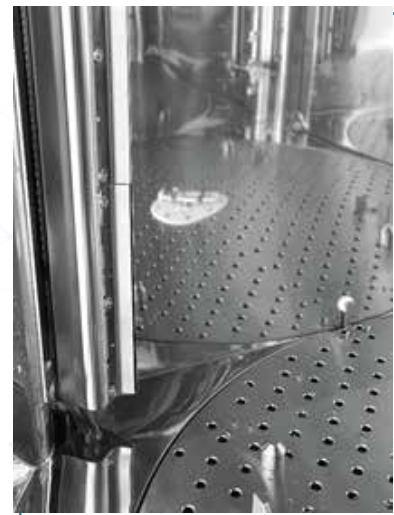
## Fully Automatic Bin Washing Machine

- It is a type of bin washing station which needs minimal to no human assistance in washing, rinsing, and drying of pharmaceutical equipment.
- The machine comes with PLC that enables fully automatic control and easy and efficient operation.

- Typically, you will find single and double-chamber fully automatic pharmaceutical bin washing systems.

They facilitate automatic loading and unloading of equipment, ensuring an entirely automated operation.

- Also, you can fully program the cleaning cycles and print out washing process data using optional printing software.



## Auto Spray

### Pharma Industry

AutoSpray RMG  
AS.01R.20.001  
AutoSpray Coating  
AS.01C.20.001

### Food Industry

AutoSpray Coating  
AS.01C.20.001

### General Industry

AutoSpray Glue  
AS.01G.20.001  
AutoSpray Lubrication  
AS.01L.20.001  
AutoSpray Total Solution  
AS.01Z.20.001

# OPTIMIZATION/REFURBISHMENT OF PROCESS EQUIPMENT

## *Process Overview*

*In addition to new equipment, PSS offers a range of services to make your used machines feel like new again. Update your process with the latest in technology, process controls, retrofit services etc. provided by our trained sales and support personnel.*

*Refurbished equipment advantages include:*

- ***Significant cost savings compared to new equipment prices.***
- ***Remanufactured, upgraded, tested, and certified to GMP specifications.***
- ***Increased energy efficiency resulting in production cost savings.***
- ***Environmental friendlier process.***
- ***Improved containment.***
- ***Improved product quality.***
- ***Increasing the production efficiency.***





# Features & Benefits

*Provides direct access to manual machine control and optional features for increased automation*

*Equipped with a graphical user interface which provides current status information of critical machine functions through animation and text.*

*Runs on HMI & IPC SCADA Process*

*Recipe control feature allows batches to be easily created, stored, and reproduced*

*21 CFR Part 11 Capability*

*Offers convenient electronic batch record data logging and report creation services*

*Increased product lifecycle through virtualization technology package flexibility*

*Upgrade almost any type and brand of pharmaceutical batch-type processing equipment*

*Choose complete system or individual upgrades*

*Convert equipment to perform new functions, like fluid bed granulating or Wurster coating*

*Add new features to existing equipment*

*Update your existing control system to robust, recipe driven Batch process control software*



## Product Overview

*Replacing a costly tablet coater, coating pan, RMG, FBD & FBP is not the only way to improve process results. Designed to upgrade only the core components of your existing equipment can improve the performance & quality of the equipment, the new Optimization/ Refurbishment of Process Equipment – OPE system is a flexible solution for improving the performance of aging process equipment.*

*OPE system run on Batch Architect process control software, a flexible solution for controlling virtually any batch-type equipment. The easy-to- use software allows users to control complex pharmaceutical processing equipment with little to no training, and is available in either standard or Pro versions wit 21 CFR & IPC SCADA.*



# OFFICE/LAB INTERIOR & FURNITURE

We have come up with a new dimension and a vertical of consultation, design & turnkey installation of the interiors & furniture for pharma manufacturing Industries. We as an Industrial designer use our engineering, artistic and digital skills to create concepts and products based on our customer's demands. Our designing solutions are very practical, safe, user-friendly, reliable, and aesthetically pleasing.

**We have divided  
this into  
two categories**

**Pharma SS Interiors**

**Clean Room, Lab Room,  
Production Room & Quality Room  
Furniture**

## Pharma SS Interior

For new civil project and expansion in existing project.



## Clean Room, Lab Room, Production Room & Quality Room Furniture

We have well laid infrastructural setup with latest technology advancement to meet the voluminous demands of our customer worldwide.

PSS designer aims to create working spaces that are aesthetically pleasing, functional, and safe for people. To achieve this, PSS has a team of professionals who has innovative thinking to create products that make people's work space easier, safer, and more enjoyable.





# CLEANING NOZZLE

## Rotating Nozzle

Basically, Tank Cleaning Nozzles are divided in two categories, which are as follows.

### 1. Slotted rotating Spray Ball

#### Features

The innovative balanced slotted design makes effective cleaning. This nozzle is made of stainless steel 316L. This nozzle is self-draining. Tailor made design, size and flow rate also available for different process tanks.



### 2. Static Spray Ball



#### Features

The new Flat spray design is used High effective cleaning in larger process vessel above 2 metre in diameter. Taylor made design, size and flow rate also available.

# Retractable Spray Nozzle Features

The new Flat spray design is used High effective cleaning in larger process vessel above 2 metre in diameter. Taylor made design, size and flow rate also available.



## Rotary Tank Washer Nozzle MICAN-05

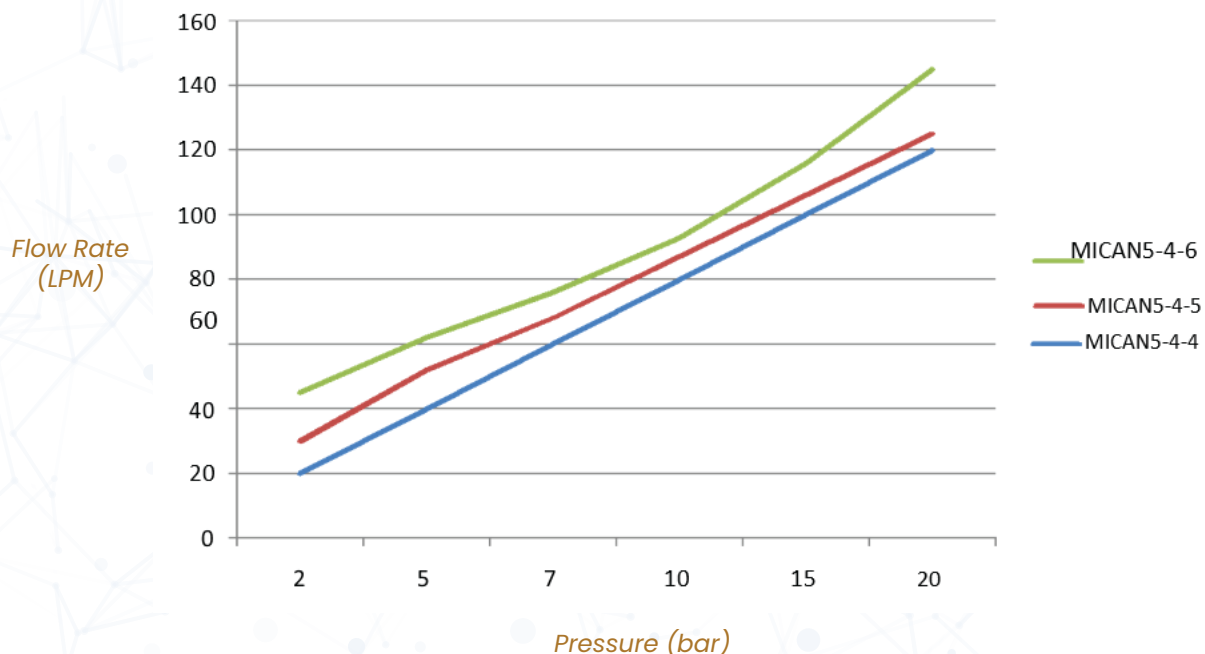
### MICAN-05 Specification




Material : 316LSS PEEK  
Lubrication: Self-lubricating through cleaning fluid Working  
Pressure : 3-30 bar  
Recommend Pressure : 4-25 bar  
Max working Temperature : 95°C  
Max Temperature : 140°C  
Clean angle : 360°  
Clean Diameter : 5m Min  
cut size : 110mm  
Connection : 3/4"BSPP Female  
Weight : 2.6 kg  
Clean cycle : 3-5 min

## Technical Data

### Performance Curve



## MICAN5-4 data sheet

Model	MICAN5-4	Type	Impeller reducer drive	Weight	2.6 Kg	
Work Pressure	4-20 bar	Recommend Pressure	5-8 bar	Clean Cycle	4-8 min	
Material	316L	Clean Angle	360°	Clean Diameter	5m	
Minimum mounting caliber	100mm	Connection	3/4 BSPP Female customized connection optional			
Theory	The rotary tank washer nozzle drives the turbine to actuate the internal deceleration mechanism by cleaning liquid. The gear mechanism operates according to the set trajectory to achieve revolution and rotation, thus achieving 360 ° and no dead angle cleaning.					
Application	It is suitable for three-dimensional cleaning of medium and small tanks and for tanker trucks and underground tanks, such as tank cleaning, beer, pharmaceutical, chemical, industrial fermentation, and occasions where high impact cleaning is required.					
Characteristics	Independent deceleration gear box mechanism, good seal, strong impact water flow.					

## Performance Feature

Optimized structure design, and can produce more impact water flow.

Excellent sealing design, leakage of water only 3 %, thus more economical cleaning solution.

The design of independent gearbox is adopted to protect the interior gear from damage and can work in poor water quality



# ACCESSORIES

## *O Rings*



## *Gaskets*



## *Silicone Pipe*



## *PU Pipe & PU / SS Connectors*



## Liquide Connectors



## QRC (Coupling)



## Wash Gun SS / Brass



## Trading Products



WAXV



WA 100



Binks 460



# OUR CLIENTS

**Cipla**

**INTAS**

**Zydus**  
dedicated  
to life

**Cadila**  
Healthcare Limited

**RPG LIFE SCIENCES LIMITED**  
Inspired by Challenge

**ipca**  
A dose of life

**Indoco**  
INDOCO REMEDIES LIMITED

**GRANULES**

**MICRO LABS**  
MICRO LABS LIMITED

**Glenmark**  
A new way for a new world

**MEDREICH**

**SUN**  
PHARMA

**HETERO**

**HETERO**

**MACLEODS**

**LUPIN**  
PHARMACEUTICALS, INC.  
Research Driven. Quality Committed. Customer Focused.

**TEVA**  
TEVA PHARMACEUTICAL INDUSTRIES LTD.

**WINDLAS**  
Biotech Ltd.

**Recipharm**  
good for business

**SANDOZ**  
a Novartis company

**UNICHEM**  
LABORATORIES LTD.

**Indchemie**

**NATCO**

**torrent**  
PHARMA

**LARSEN & TOUBRO**

**Akums**

**AUROBINDO**  
Committed to Healthier Life



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