



**TP S**  
FLUID BED DRYER



YOUR PARTNER FOR PROCESS

[www.stetecpharm.com](http://www.stetecpharm.com)

## DRYING PROCESS TECHNOLOGY

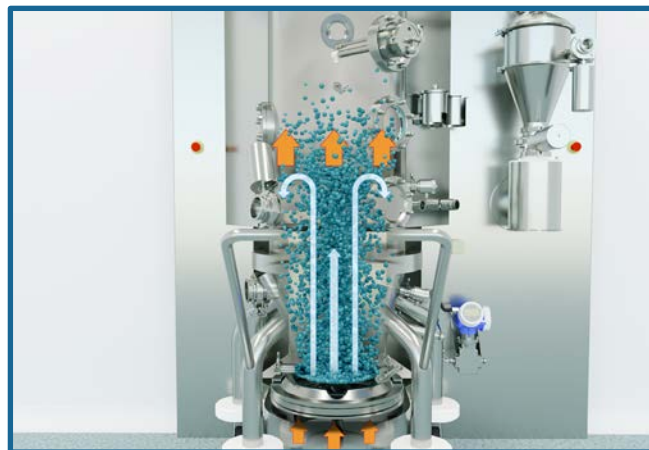
The TPS equipment can work with the 3 following processes:

### DRYING

In the TPS equipment the drying process is carried out to reduce the humidity in the granule.

Hot dry air is introduced through a vacuum generated inside the equipment. The wet solids rise from the bottom and are suspended in a current of air, remaining in a fluidized state.

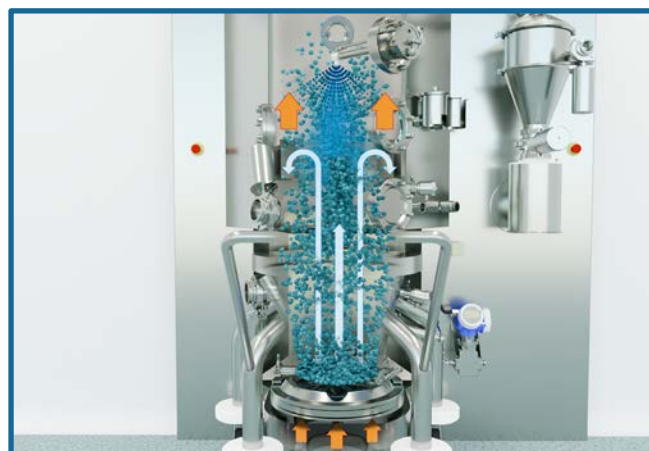
The heat transfer and the low humidity of the air in direct contact with the wet granulate allow the evaporation of the water or solvents, reducing their humidity.



### TOP SPRAY

The process of granulation by top spray in the TPS equipment allows to carry out the granulation process inside a fluid bed.

The movement of the powder in a fluidized state is combined with the spraying of a binder solution. This combination allows to increase the particle size generating a granulate.

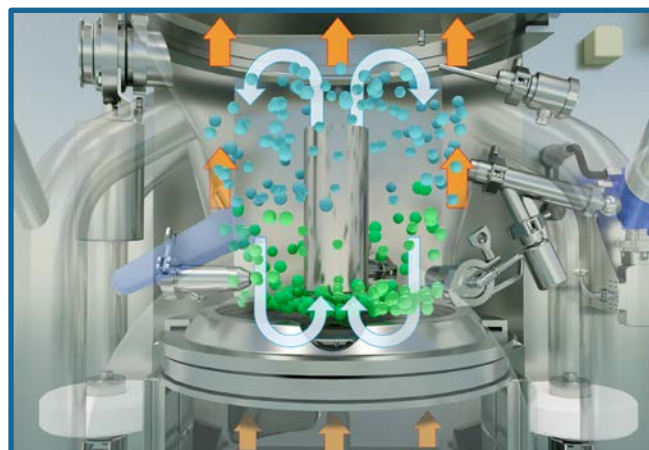


### BOTTOM SPRAY

The coating process in the TPS is carried out by combining the spraying of the coating suspension on the microgranules in fluid bed movement.

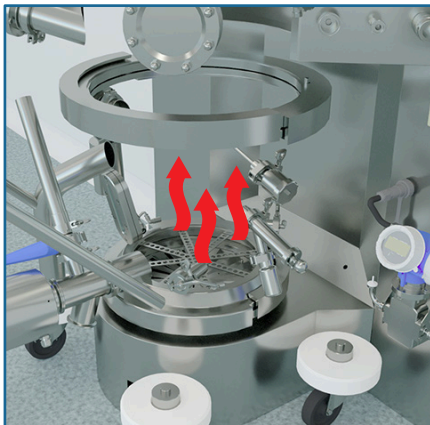
Spraying is done from the bottom and can be:

- Vertical through tubular (wurster system)
- Tangential rotation (tangential spray)





Automatic loading



Hot air flow



Fluidization

## ■ FEATURES

- In-Wall design concept.
- Built in AISI 316L with surfaces in contact with the product mirror polished with roughness Ra <0,5.
- PLC + HMI for machine control in manual and automatic mode, with recipe editing.
- 12 bar pressure-shock resistance.

### EXPANSOR

- Load valve to charge product by lance.
- Sight glass to see the internal process.
- WIP washing lance and top spray housings.
- Clamp connection for temperature probe.
- LED illuminator.
- Cleaning spray balls.

### PRODUCT CONTAINER

- Mobile container with 4 anti-static wheels and shock protection.
- Double inflatable joint, lower and upper to ensure tightness.
- Side valve for automatic loading from the high shear mixer.
- Clamp connection for temperature probe.
- Sampling point for process control.
- Longitudinal sight glass to see the product process.
- Container bottom with mesh or perforated plate (configurable).
- Discharge valve.

### INTERNAL FILTRATION

- Mobile filter plate with motorized lift. Peripheral inflatable joint to guarantee the tightness, with pneumatic connection.
- Filters with quick change system without tools.
- Cartridge or bag filters with cage (configurable).
- Filter cleaning sectorized blown with countercurrent pharmaceutical compressed air.
- Cleaning spray balls included.





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PROCESS TECHNOLOGY

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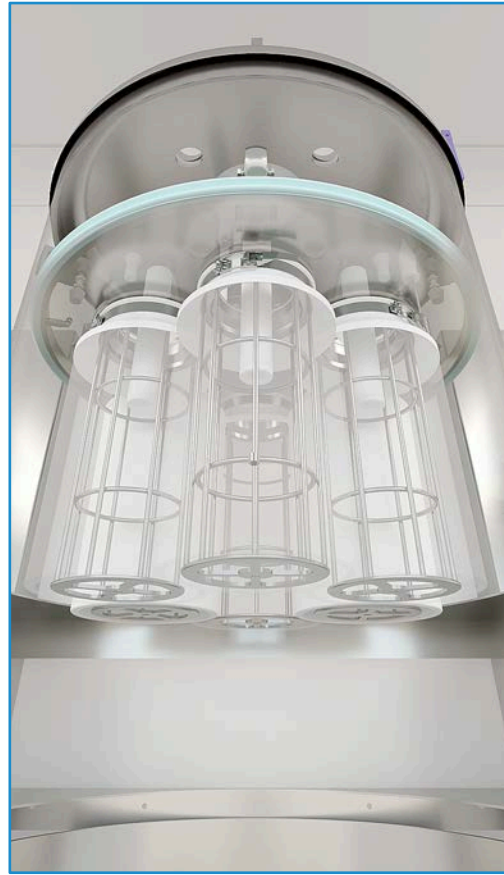
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# YOUR PARTNER FOR PROCESS

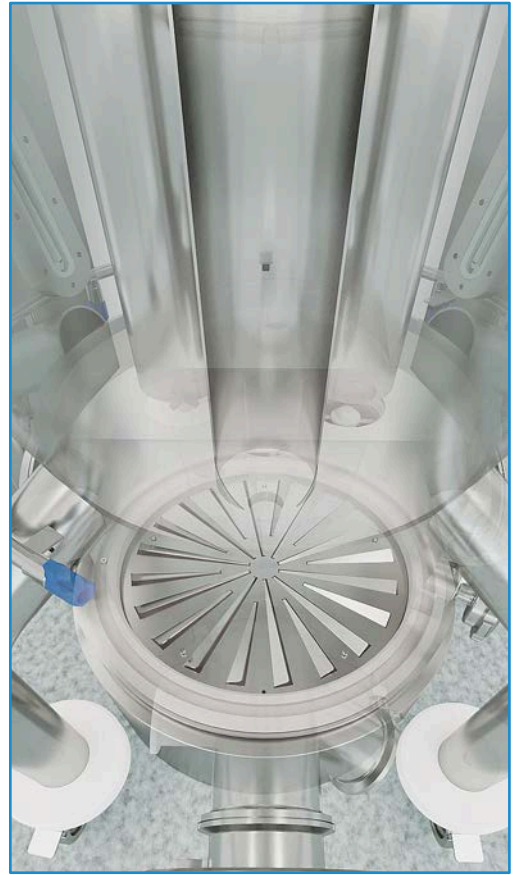
1. Internal filters group



2. Expansor

3. Loading valves

4. HMI touch screen



Filter cleaning sectorized blown with pharmaceutical compressed air.

Diffuser plate to optimize air rotational flow.

5. Dry conic mill (Optional)

6. Temperature probe

7. Sampling point

8. Container

9. Discharge valve



Pellets coating by means of Bottom Spray



Top Spray granulation



## OPTIONALS

- Top Spray granulation system
- Pellet coating by means of bottom spray system
- ATEX classification. Different classifications according to the client's requirement
- Central WIP unit
- Dry conic mill
- Automatic loading and unloading
- 21 CFR part11
- Containment execution up to OEB 5



# PERIPHERALS

## Inlet Air Handling Unit [AHU]

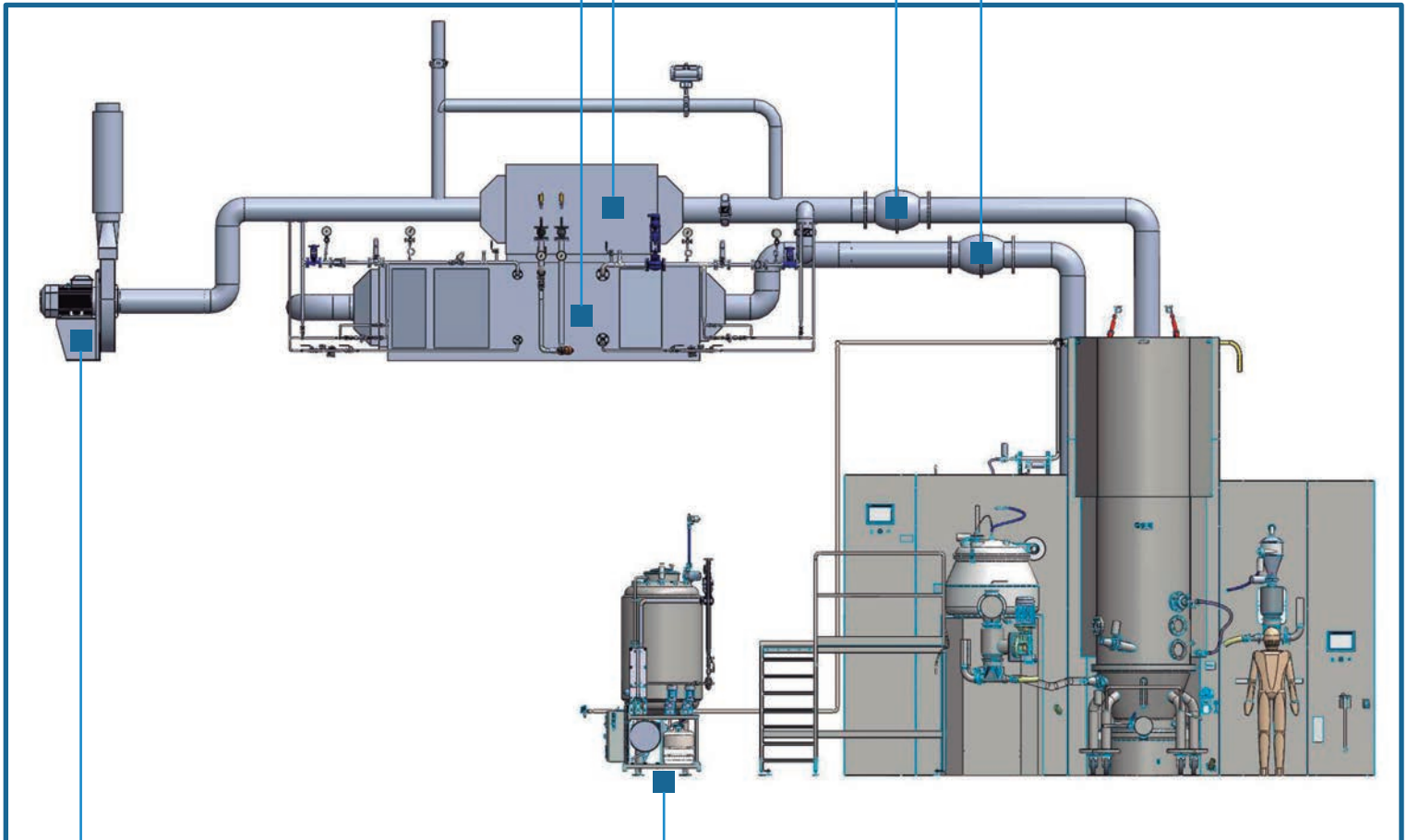
- Prefiltration stage G4 and F9
- Dehumidification unit by cold water
- Heating unit with steam battery or electric heaters
- HEPA 13 absolute filtration

## Exhaust air treatment [AHU o Dust collector]

- Prefiltration
- HEPA 13 absolute filtration

## Exhaust security valve (12 bars)

## Inlet security valve (12 bars)



High depression fan with output silencer.

## Central WIP Unit

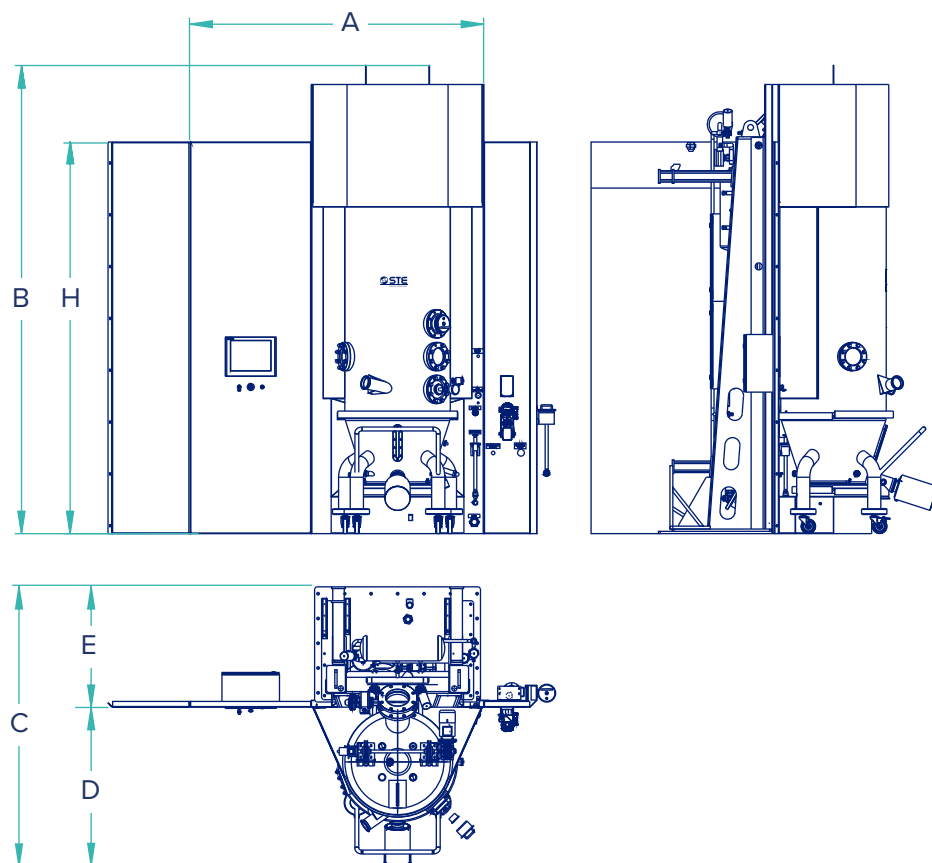
- Cleaning fluids preparation skid
- Heat-insulated tank
- Plate heat exchanger
- Detergent tanks with dosing pumps
- Drive pump

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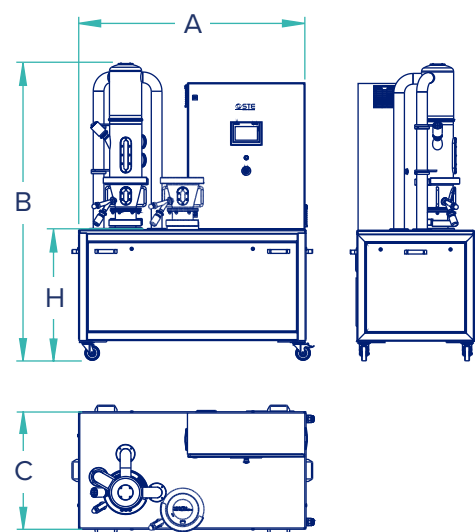
\*Approximate data / Other dimensions upon request

	CAPACITY	USEFUL CAPACITY		DIMENSIONS (mm)					
Model	(L)	Min. (L)	Max. (L)	A	B	C	D	E	H
TP SLAB	4,5	1	3	1.750	2.015	900	NA	NA	NA
TP S30	30	8	23	2.000	2.650	1.650	950	700	2.500
TP S60	60	15	45	2.075	3.250	2.100	1.150	950	3.000
TP S110	110	28	83	2.250	3.600	2.250	1.250	950	3.200
TP S220	220	55	165	2.300	3.900	2.450	1.400	1.050	3.400
TP S330	330	83	248	2.450	4.350	2.550	1.500	1.050	3.500
TP S440	440	110	330	2.600	4.750	2.650	1.600	1.050	3.600
TP S660	660	165	495	2.800	5.250	3.050	1.800	1.250	3.800
TP S880	880	220	660	3.000	5.800	3.250	2.000	1.250	3.900
TP S1100	1.100	275	825	3.100	6.357	3.650	2.107	1.543	4.000
TP S1320	1.320	330	990	3.200	6.475	3.900	2.250	1.650	4.000
TP S1540	1.540	385	1.155	3.350	6.600	4.250	2.400	1.850	4.500

## TP S Equipment



## TP S Lab



## We Work WorldWide

Find your agent/distributor in our website

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