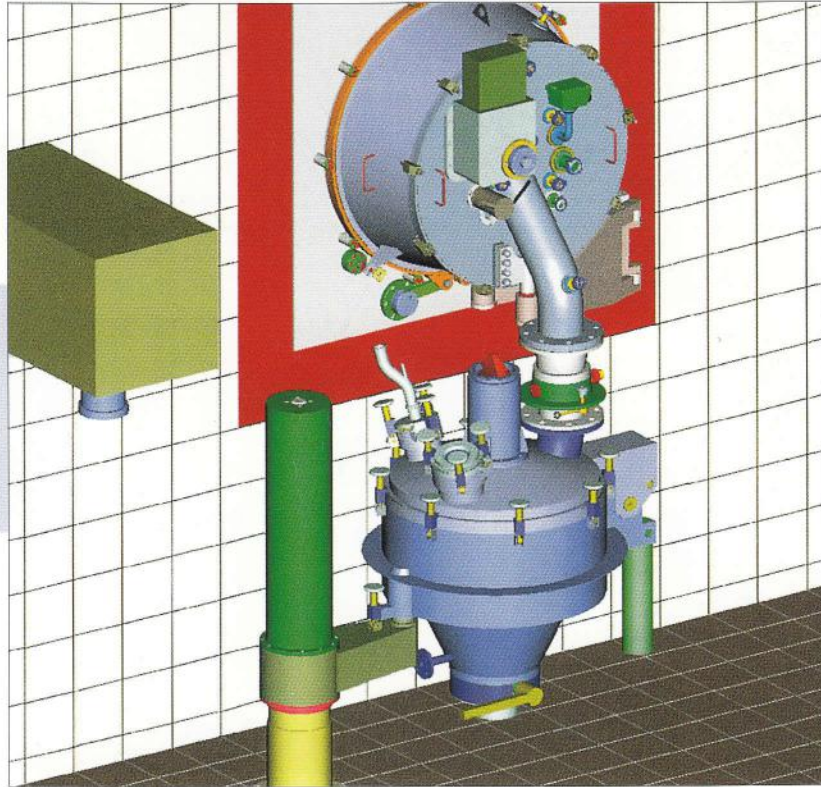


# Centrifuge-Dryer Systems

for pharmaceutical industries



## 1. Centrifuge

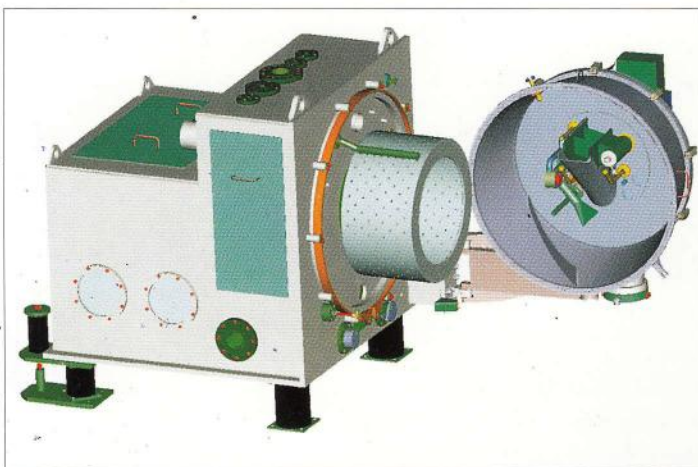
The centrifuge is a horizontal scraper centrifuge in pharmaceutical execution designed according to GMP standards and has the following characteristics:

The machine has the same basic design for both the «wall execution» and the conventional «free mounted execution».

In the «wall execution» the process end of the centrifuge is isolated by a special square flange which is the front of the mechanical end.

In the «free mounted execution» the mechanical end is sealed by a gas-tight cover. Cooling of the drive motors is provided. The centrifuge case can be opened to facilitate cloth changing and to verify CIP-cleaning or inspection.

This centrifuge-dryer system provides complete isolation of pharmaceutical products from the reaction step to the final packing.



The centrifuge is equipped with the following GMP accessories:

- CIP-cleaning with validation-programming possibilities
- Residual heel removal system with nozzles behind the basket (blow-back)
- Probe type cake thickness detector
- Imbalance and bearing temperature sensors

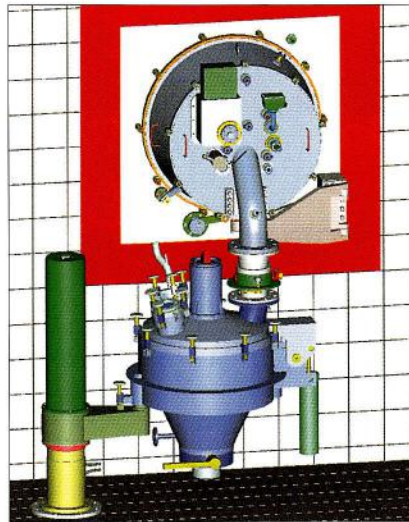
## 2. Dryer

The Drying System consists of a single drying vessel and a wall mounted power and utilities station. The drying vessel is designed as a vertical conical vacuum-rated vessel with pressure jacket for heating. The cover is provided with the vacuum flange, the product filling connection and the drive coupling with the agitator. The power and utilities station contains the frequency controlled drive motor, the vacuum pump with condenser and the customer furnished heating. By using different vessels for each product group cross contamination is virtually eliminated.



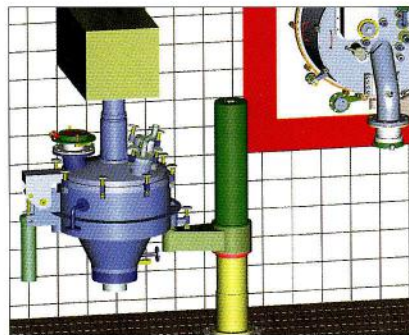
### Step One

The drying vessel is mounted on a lifting and swiveling column and connected to the centrifuge by means of a special double valve system. The active part of the valve is mounted on the centrifuge and the passive part on the vessel. This allows the drying vessel to be removed from the centrifuge totally closed and isolated.



### Step Two

After the product is discharged into the drying vessel, the vessel is lifted to the frequency controlled power station. The vacuum and the heat utilities are then connected and the drying process can be started according to drying characteristics of the product by controlling both the agitator speed and jacket heat.

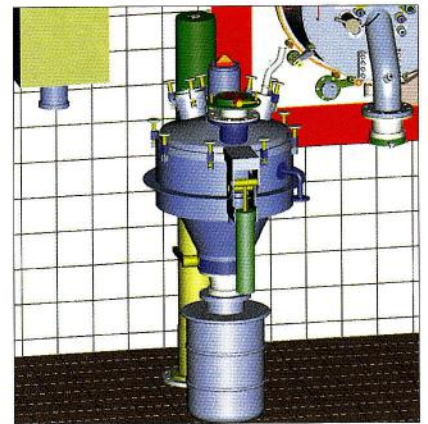


### Step Three

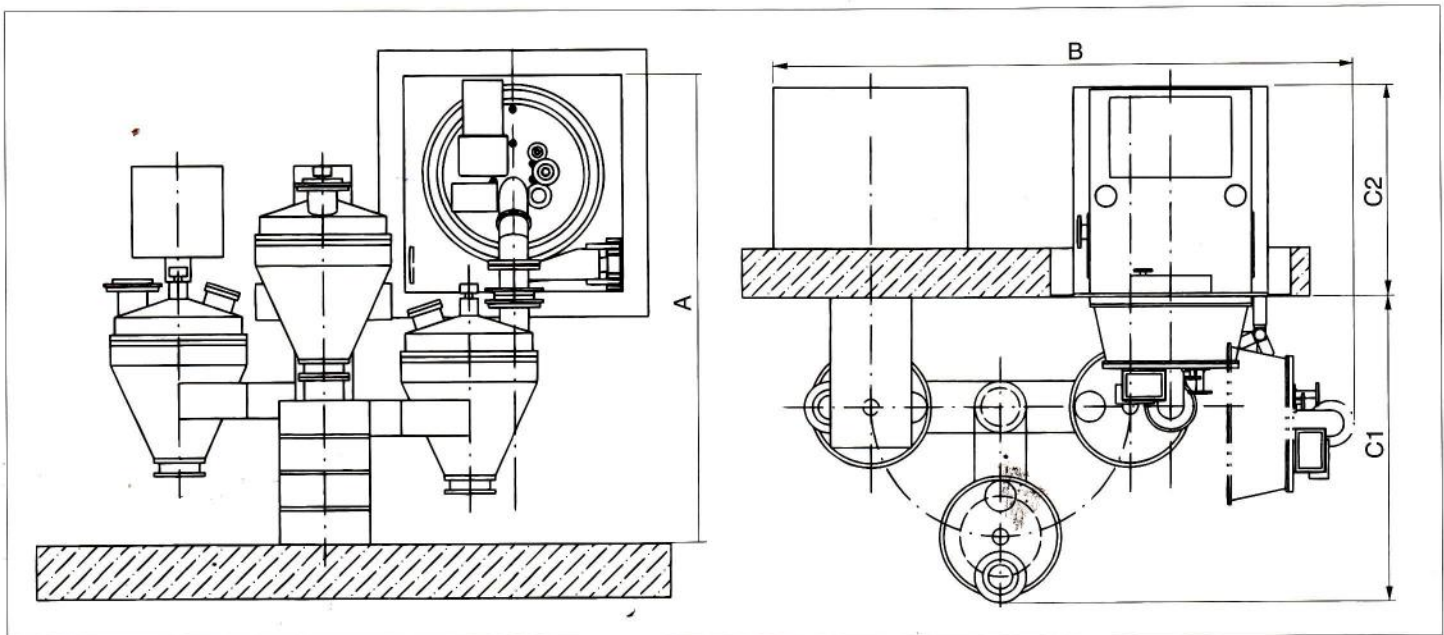
After drying, a stainless steel barrel is connected to the vessel with the same type of double valve used between the centrifuge and vessel, so that the product can be discharged in a totally isolated manner.

The cleaning of the vessel is done filling with washing solution and agitating at high speed.

The vessel can then be inspected by opening the cover.



SYSTEMS DIMENSIONS		SHP 630/160	SHP 630	SHP 800	SHP 1000
Total Height A	mm	2580	2805	3535	4450
Total Length B	mm	2765	3370	4245	5350
Depth before Wall C1	mm	1675	2125	2680	3375
Depth behind Wall C2	mm	1450	1450	1830	2300



**SUKHRAS MACHINES PVT. LTD.**

Office: 145, Adarsh Industrial Estate, Sahar Road, Chakala, Andheri (East), Mumbai-400 099, INDIA.

Tel.: 2832 2721 • 2832 5957 • 2832 5764 • Fax: 091-22-2836 3501.

E-mail: [sukhras@giasbm01.vsnl.net.in](mailto:sukhras@giasbm01.vsnl.net.in) • Website: [www.sukhras.com](http://www.sukhras.com).

Factory: Plot No. J-3, M.I.D.C., Tarapur Industrial Area, Dist. Thane, Maharashtra-401 506 Tel.: (02525) 72703/72614/70579