



Vacuum Dryers



Solids

Drymix



Drymix<sup>®</sup> DMX 4  
equipped with operator panel (in ex-proof execution)  
fit to control all process parameters.

## VACUUM DRYERS DRYMIX

In the pharmaceutical industry, the thermal instability of products requires vacuum drying at low temperatures. Olsa dryers, like the horizontal Drymix, are equipped with vacuum groups, heat transfer systems, and solvent recovery systems. The goal of the Olsa Dryer design is to create a comprehensive drying system that addresses all technical concerns, while being compliant for use in areas of different classification (clean rooms, explosive atmospheres, etc.).

A fully controlled and instrumented system, controlled by a PLC, is available with data

acquisition, as well as integration with DCS systems for consistent, repeatable product manufacturing.

### Main Features:

- **High thermal exchange coefficient.**

The speed of the thermal fluid is much higher in this kind of jacket than in regular configuration ones.

- **No thermal inertia.** The jacket volume is far lower than that of regular configuration ones.

- **Stepless speed variation by means**

**of frequency inverter** allowing perfect

matching of this parameter with the product and process characteristics.

- **Standard manufacturing featuring high geometric accuracy of the body surface** ensuring efficient remotion of the product from the heated walls.

- **Wide range of sealing systems** on the shaft: stuffing box, single-acting mechanical seal, double-acting mechanical seal; non-contact mechanical seal. Easy to disassemble from the outside.

- **Wide range of discharging systems:** self-cleanable, ball valve, "zero dead-leg" clapet valve, plug type valve mounted on the door.

- **Total recovery,** directly in the drying chamber, of powders stopped by the filter.

**B:** Mobile pilot unit having a useful capacity of 50 liters.



**A:** DRYMIX® DMX 3 with pivoting door, sleeve filter with pneumatic shaking device.



**C:** 3500 liters and 4000 liters industrial units.

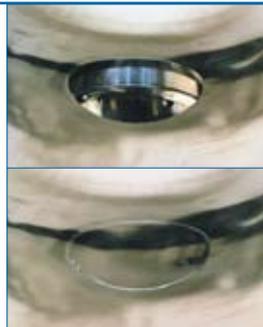
- Sleeve filter with built-in shaking device which can be programmed for either compressed air or nitrogen injection.
- Agitator driving group designed to process batches of wet product up to 75% of the chamber geometrical volume, featuring high exploitation of the unit size and heated surface.
- Heated agitator shaft with subsequent further increase of the thermal exchange surface.
- Chopper with rotary blades allowing drying of those products which tend to form lumps during the process.
- CIP system for a fast and effective cleaning.
- Skid-mounted CIP station equipped with sanitary recycling pump, buffer tank for detergent and safety devices.
- Large front door allowing an easy internal accessibility for cleaning operations.
- Easy separation by partition wall of driving group and other auxiliary groups (vacuum group, solvents recovery, heating fluid production and circulation unit) from classified loading/unloading area.
- Perfect homogeneity of the product treated and uniformity of batch.
- Materials in contact with the wet product: AISI 316L, Hastelloy, Uranus (DIN 1.4539) or other alloys.
- High flexibility of the loading capacity, allowing to dry even small quantities of product.
- Customized models and capacities to meet specific process needs.
- Drying time lower than other models of dryers. The action of the double series of blades fosters a forced replacement of the product in contact with the heated surface and facilitates the transfer of the heated product upwards, hastening the elimination of vapours.
- Fast discharge of the product thanks to the pushing action of the agitator blades towards the discharge valve.
- Vacuum group selected according to the required process parameters: water ring pump with or without auxiliary ejector, oil pump, dry pump.
- Auxiliary groups for thermal fluid production and circulation and for solvents condensing and recovery.
- Programmable process, run by PLC.



**F:** DRYMIX® DMX 0 equipped with system for wet powder loading by vacuum, butterfly valve (placed on a flanged manhole), clapet-type flush-fitting discharge valve, chopper, spoon-type extractable sample-drawer and sight-glass mounted on the door.

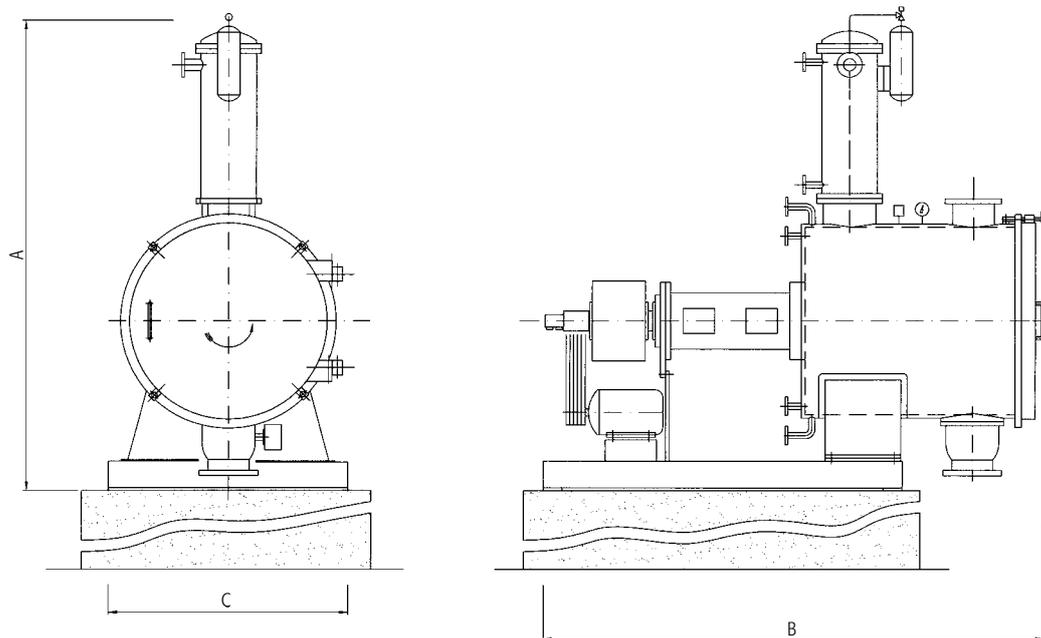


**D:** Discharge valve installed on the door.



**E:** Details of the discharge valve shutter, open position and closed position.

## TECHNICAL DATA



MODEL		DMX-P	DMX-0	DMX-1	DMX-2	DMX-3	DMX-4	DMX-5	DMX-6	DMX-7
total volume	L	120	300	510	700	1140	1580	2140	3000	4300
loading volume	L	85	220	370	500	820	1110	1510	2110	3040
max loading weight	kg	55	150	250	340	550	740	1000	1400	2000
vessel inner diameter	mm	500	700	850	900	1100	1200	1350	1500	1700
vessel length	mm	600	800	900	1100	1200	1400	1500	1700	1900
loading port	mm	150	150	150	200	200	200	250	250	300
discharge port	mm	100	150	150	150	200	200	200	250	250
dust filter	m <sup>2</sup>	0,25	0,25	0,5	0,5	0,75	0,75	1,5	1,5	2,5
<b>Overall dimensions</b>										
width (C)	mm	1000	1100	1100	1300	1450	1650	2000	2200	2400
length (B)	mm	2000	2300	2600	2900	3100	3400	3950	4250	4700
height, incl. dust filter (A)	mm	1650	2000	2380	2420	2900	3000	3430	3650	4350
<b>Ancillary units</b>										
vapor condenser	m <sup>2</sup>	1	1,5	2,5	3	4,5	6	9	11	15
solvent recovery tank	L	30	60	150	150	250	350	450	700	900
liquid ring vacuum pump at 60/33 mbara	m <sup>3</sup> /h	85/51	127/85	127/85	127/85	170/100	170/100	230/160	290/185	340/205
heating system	kcal/h	9.000	13.500	31.500	38.000	45.000	72.000	126.000	144.000	180.000

(preliminary overall dimensions, to be confirmed at final design)



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