



LUXOR

Central drying systems

Today's plastics processor expects not only a drying system that functions in accordance with technical specifications, but one that also meets the basic requirements for reliability, economy of operations, and finished product quality.

Innovations included in the LUXOR series of dryers, such as the ETA-process®, the DryingOrganizer and state-of-the-art PLC control technology has given Motan a position of unrivaled leadership in providing products and solutions that assure a consistent improvement in quality, and economy of operations.





Customer-centered drying solutions for plastic processors

Motan design and development engineers continuously focus their energies on providing innovations which are responsive to the needs of our customers.

Economy

Motan's systems operate at maximum efficiency and with a minimum of operating maintenance. The integration of central drying, dry air conveying, line purging and manifold systems (both manual and automatic) provides our customers with maximum flexibility, production up-time and minimal loss of valuable production time during material changes. Motan's patented ETA-process® technology provides the industry's most energy-efficient drying system.

Reliability

Plastic processors in every corner of the world rely on Motan's robust, efficient design to provide them with unrivaled reliability. At-the-bin heating with ETA-process® energy-recovery further enhances the efficiency of the operating process. The use of commercial PLC controls, and readily available system components, assure that Motan products are the industry's most reliable.

Quality

Ultimately, processors require systems that provide them with consistent finished-product quality. Motan's twin bed drying systems are designed with closed-loop cooling during the regeneration phase to give consistently low dew points throughout the drying process. The DryingOrganizer and at-the-bin heating of all materials assure precise temperature control. In addition the DryingOrganizer guarantees that materials do not become over or under-dried. Dry air conveying, line purging and self-diagnostic controls further assure that our customers have properly dried material, without the defects caused by improper drying.



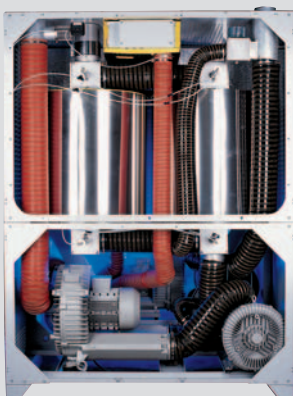
LUXOR

LUXOR controls

Simple handling by modern, PLC supported controls with Siemens technology. There are different types available to operate the dryer as an individual station or part of an integrated central system together with conveying systems and mixing units.

The LUXORnet control offers simple, user friendly operation via a colour graphic display with intuitive touch-screen controls. It incorporates comprehensive facilities for operation and process control. Enhanced

service functions include histograms, an optional integrated conveying control and the DryingOrganizer, for controlling drying temperature in relation to material throughput. A modern, open network architecture based on Internet technology enables easy linking to complementary components of the Motan CONTROLnet suite, for integration of controls for all stages of material handling and processing.



LUXOR central drying systems

The dryers of the LUXOR series are equipped with two stationary molecular sieves, efficiently insulated at critical points. Closed-loop aftercooling of the molecular sieve with dry air ensures a continuously low dew point and a maximum drying performance.

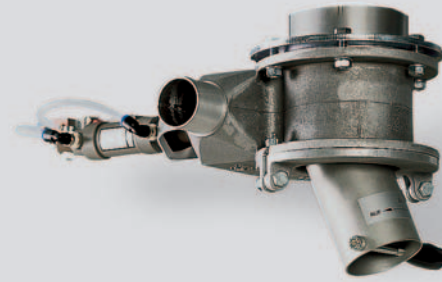


Conveying

A hopper loader made of stainless steel and glass is mounted directly on the drying bin. Motan's hopper loaders are equipped with an implosion valve for efficient filter cleaning after every conveying cycle.

Suction box

Precise metering of dried material into the vacuum stream is assured with Motan's suction box. It enables material to be conveyed to the processing machine after drying without any increase in moisture levels. Dry air conveying and line purging is available as an option.



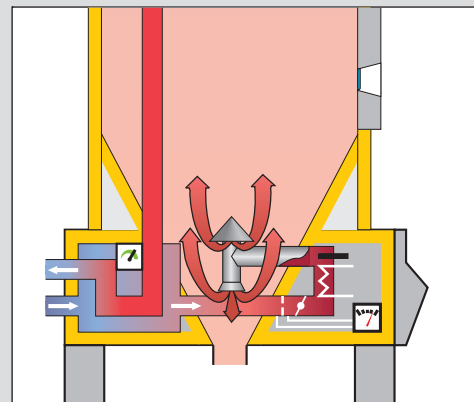
LUXOR drying bin

All Motan drying bins are made of stainless steel as standard, are fully insulated and are equipped with large clean out doors and a sight glass.



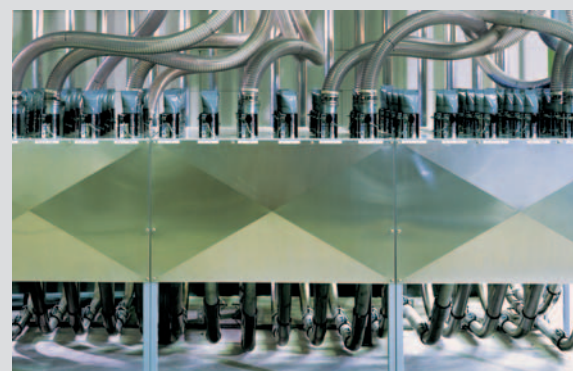
ETA-process®

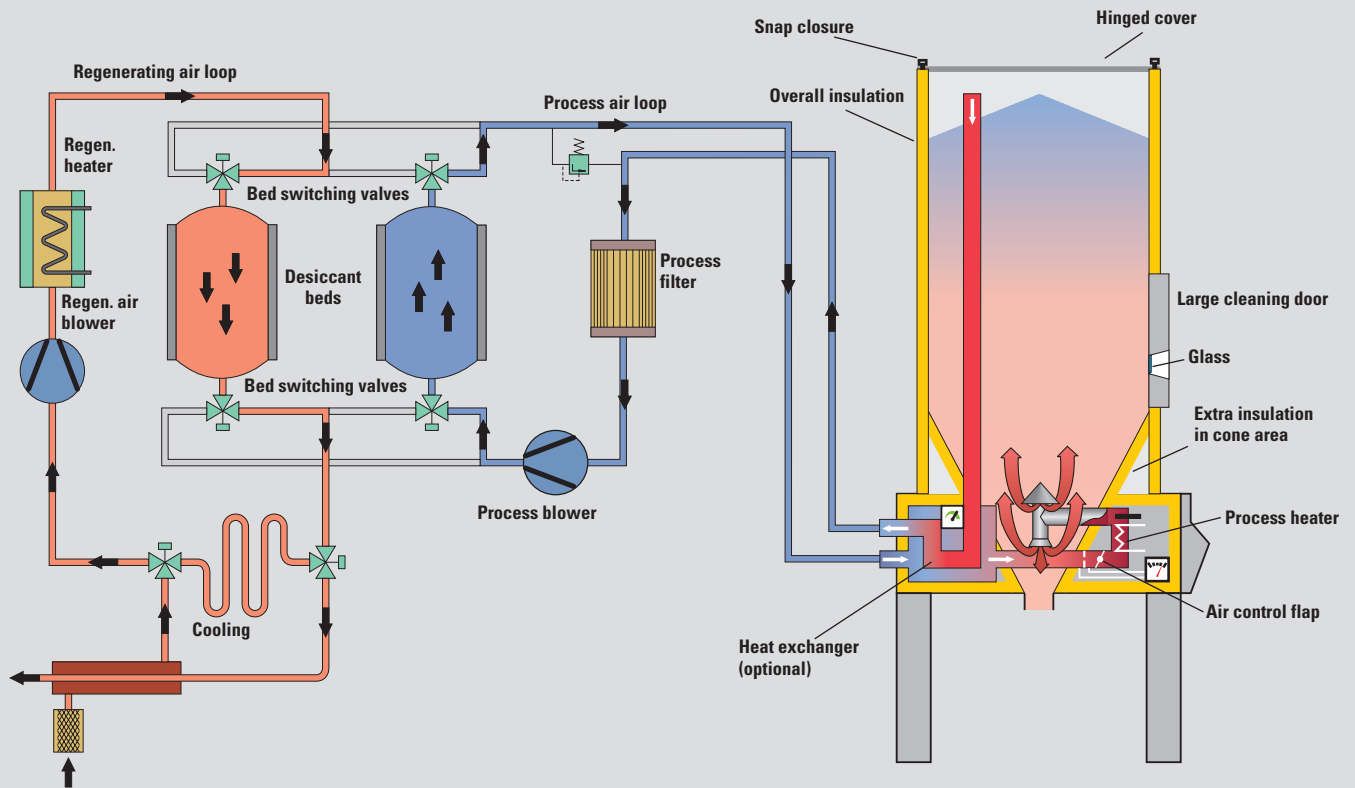
Motan's patented energy-recovery system saves a lot of energy by using the drying bin exhaust air to preheat incoming process air. This technology, coupled with DryingOrganizer, not only assures that the material is properly dried but also allows for precise temperature adjustments that virtually eliminate the danger of defect due to over-drying.



Material selection station

Motan's coupling station provides the operator with quick and easy methods of directing material from source to destination. Proofing and fully-automated stations are also available to give maximum security and effectiveness.





LUXOR drying with ETA-process® technology

Drying

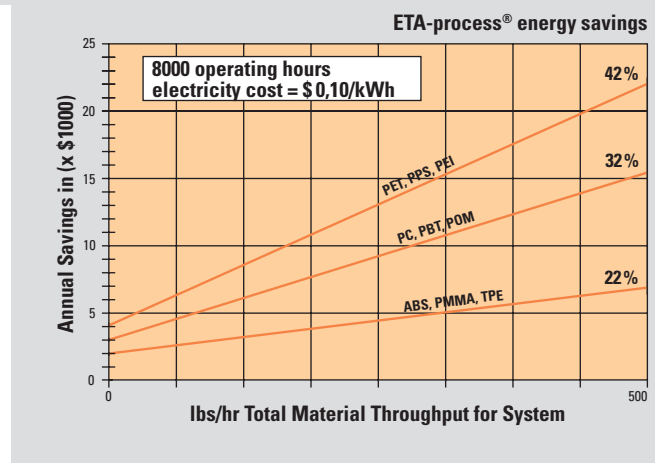
A clearly determined residual moisture of the material guarantees minimal production of scrap. The first step towards high quality products thus means drying of plastic granules even before processing.

For the correct drying of plastics an extremely low dew point of the dry air flow is required. The dry air also has to be hot enough to cause the moisture to be released by the material.

The air is first dehumidified by being passed through a molecular sieve and afterwards heated up to a material specific drying temperature. This hot dehumidified air is now passed through the material to remove the water molecules, and then back to the molecular sieve again in a continuous process. After the recommended drying time has elapsed the material can be processed without problems.

DryingOrganizer

Drying for too long at high temperatures may lead to thermal degradation with some plastics. The DryingOrganizer prevents this in lowering the temperature related to the material



throughput. In case of production interruption, the system lowers the actual temperature to the standby level. This saves energy and keeps the material dry. Sensing the material throughput and monitoring too high levels, is an additional advantage.

Motan's ETA-process®

Energy efficiency has always been a primary concern in the design of Motan central drying stations. A closed-loop cooling not only saves energy, it will also avoid the regaining of moisture by the molecular sieve during the regeneration phase. With the ETA-process® you regain energy from the return air directly at the bin via an integrated heat exchanger (optional). A thermal barrier in the drying bin prevents energy loss via the hopper loader.



Technical data

Luxor drying bin (lbs)*	100	200	400	600	800	1200	1600	2500	3500	ETA-Box
Max. drying temperature (°F)	360									
Drying bin volume (cu ft)	2.5	5	10	15	20	30	40	62	87	
Max. connected load at 350 °F (kW)	3	3	6	6	9	9	21	31.5	31.5	42
Power consumption at 180 °F (kW)	0.29	0.48	0.82	1.73	2.60	3.47	4.34	5.21	5.21	6.60
Power required	Available for both 240/3/60 and 480/3/60, with balanced load.									
Dimensions (in.)										
Width (W)	30	30	40	40	40	40	49	49	49	32
Height (H)	62	80	84	102	102	124	112	130	151	79
Depth (D)	38	38	48	48	48	48	62	62	62	59
Bin diameter (d')	21	21	26	26	34	34	40	46	46	

* Assuming a bulk density of 35 lbs/cu ft.

Material data

All data are approx. values applicable to commercially available material with a bulk density of 35 lbs/cu ft.

LUXOR dryer model

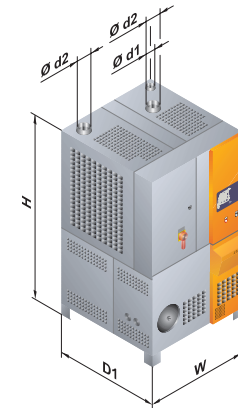
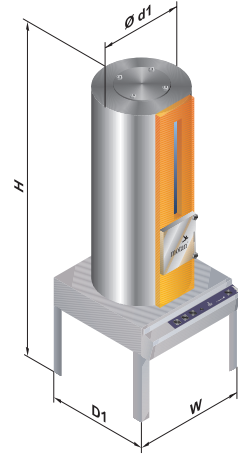
Material throughput in lbs/h**

Material	Initial moisture content H ₂ O in %	Final moisture content H ₂ O in %	Drying temperature °F	Residence time hours	200	400	800	1200
ABS	0.4	0.2	176	2-3	330	660	1320	1980
CA	1.0	0.2	170	2-3	250	500	1000	1500
CAB	0.9	0.2	170	2-3	225	450	900	1350
CP	1.0	0.2	170	3	210	420	840	1260
EPDM	0.5	0.1	170	4	185	370	740	1110
LCP	0.04	0.01	300	4	330	660	1320	1980
PA 6/66	1.0	0.1	170-180	4-6	230	460	920	1380
PA 6.10/11/12	1.0	0.06	180	4-6	200	400	800	1200
PAEK	0.1	0.05	320	4	310	620	1240	1860
PBT	0.5	0.03	230-285	3-4	340	680	1360	2040
PC	0.1	0.02	250	2-3	340	680	1360	2040
PE*	0.05	0.01	195	1	200	400	800	1200
PE black	0.5	0.02	195	2-3	185	370	740	1110
PEEK	0.5	0.05	300	3	340	680	1360	2040
PEI	0.25	0.01	300	3-4	330	660	1320	1980
PES	0.8	0.01	300-340	4	320	640	1280	1920
PET (Injection)	0.4	0.02	250	2-4	205	410	820	1230
PET (Preforms)	0.1	0.003	350	4-6	180	360	720	1080
PET-G	0.1	0.04	150-160	4	180	360	720	1080
PET (Extrusion)	0.2	0.005	320-360	4-6	220	440	880	1320
PMMA	0.3	0.04	160-210	2-3	310	620	1240	1860
PDM	0.8	0.1	230	2	370	740	1480	2220
PP*	0.1	0.01	195-250	3	260	520	1040	1560
PPE (PPO)	0.1	0.05	230	2-3	340	680	1360	2040
PPS	0.1	0.05	285	3-4	340	680	1360	2040
PS	0.05	0.02	175	1-2	400	800	1600	2400
PSU	0.3	0.05	265-300	3-4	370	740	1480	2220
PUR (TPU)	0.4	0.02	195	2-3	245	490	980	1470
PVC	0.3	0.2	160	1	380	760	1520	2280
SAN	0.3	0.2	175	2-3	370	740	1480	2220
SB	0.3	0.05	175	2	370	740	1480	2220

* Only filled materials are hygroscopic

** Indication only, actual material throughput dependent on drying bin size

LUXOR



Technical data

LUXOR dryer model	200	400	800	1200
Dry air flow rate (cfm)	120	240	500	700
Average power consumption (kW)	2.65	5.3	9.10	12.6
Max connected load (kW)	5.60	13.9	28.0	44.0
Compressed air req. (psi)	80			
Compressed air consumption (cfh)	2,3	3,5	4,3	4,3
Power required	480/3/60			
Dimensions (in.)				
Width (W)	32	40	54	64
Height (H)	65	80	86	88
Depth (D')	32	48	50	56
Ø d'	2.5	3	3	3
Ø d²	4	4	8	8
Weight (lbs)	615	1150	1925	2515

Subject to technical changes.

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