

HUBER Solar Active Dryer SRT



- True backmixing of sludge for a perfect drying bed without odour or dust generation
- Maximum flexibility of sludge feeding and removal, optionally even on the same end
- Modular system providing for the option of fully automated operation
- Optimally suitable to be combined with floor heating

➤➤ Solar biosolids drying

There are many good reasons for biosolids drying:

- Reduce disposal costs due to mass reduction
- Produce storable and easy-to-handle dried biosolids
- Open up new disposal options

Our solar dryers combine green technology with easy and safe operation.

➤➤ HUBER SRT system

The basic principle of the HUBER SRT system is drying of sewage sludge in a greenhouse using incident solar radiation and artificially generated wind to evaporate water from sludge. A special sludge turning system performs spreading, granulation, turning, mixing and backmixing of sludge as well as its transport from one end to the other.

This solution allows for continuous system operation so that the sludge bed in the greenhouse remains constant. Due to the special features of the sludge turning assembly, particularly its backmixing function, an open-porous and only slightly wet sludge bed is maintained, generating neither odor problems nor dust. The sludge is dry enough to prevent odor-generating biological processes, but still wet enough to prevent generation of dust under mechanical stress.

Sludge feeding can be adjusted to suit customer-specific requirements. Dewatered sludge can be fed into the greenhouse either manually, i.e. with a wheel loader, or automatically through special conveyors from the dewatering system. The dried sludge can be stored at the end of the greenhouse or forwarded via conveyors to a loading station.

The produced granulate is easy to handle due to its high solids concentration. The pea-sized granules are free-flowing.



The sludge turner on its way through the greenhouse



Free-flowing dried granulate



Automated sludge feeding with a screw conveyor

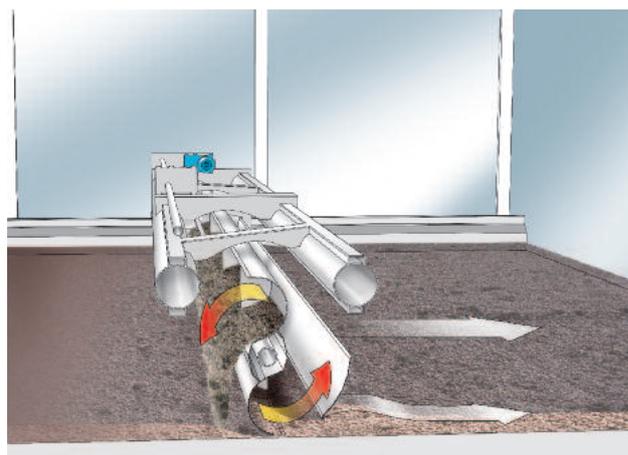
➤➤ Sludge turning device

The sludge turner is the core of the drying system and consists of a rotating double shovel mounted on a travelling frame. The double shovel fulfils two functions:

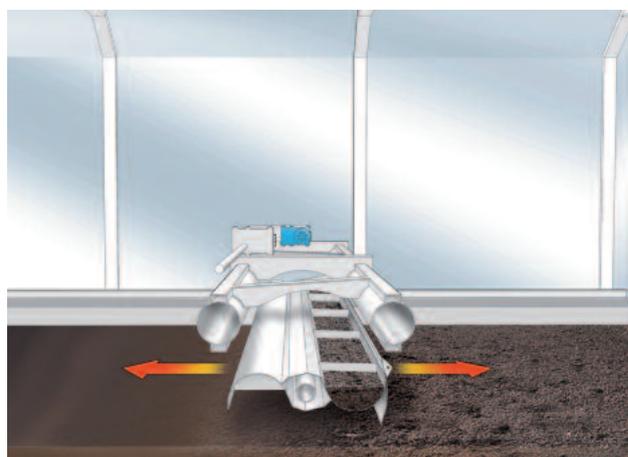
- **Sludge turning:** As the sludge turner travels forwards with the rotating double shovel, the sludge is mixed, broken up, aerated and transported. The sludge is completely restacked as the sludge turner travels from one end to the other. Each individual sludge grain inside the greenhouse is moved within a short period of time. This is ideal for a good drying result and prevents odors.
- **Sludge transport:** The sludge turner takes up some sludge at a defined point and transports it inside its shovel to another point. This permits backmixing of dry sludge into wet sludge. Sludge feeding and removal can take place at opposite ends or the same end, as requested.

Maximum flexibility of sludge feeding and removal gives freedom of design. It is for example possible to build the greenhouse up to the boundaries of the WWTP grounds and save space for roads or turning curves.

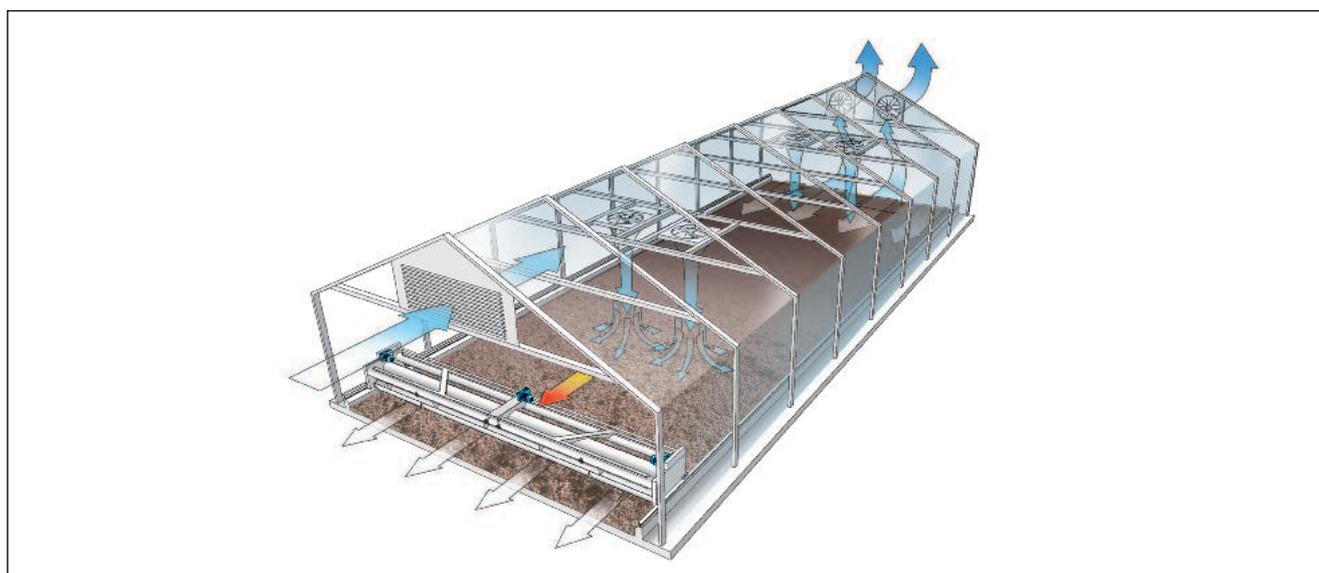
The sludge turner is made of corrosion resistant stainless steel and travels on low driveway walls to avoid shadows. The machine pulls itself through the greenhouse along chains and is safely guided. The electrical control system measures and records all relevant parameters. If requested, these data can be transferred to the main control station or made available for remote access via the internet.



The rotating shovel of the sludge turner takes up sludge and spreads it on the sludge bed; As the turning device gradually travels forward, the entire bed is mixed and restacked



Controlled sludge transport from one place to another as the turner moves with a filled shovel



General view of the system: sludge and air flows

►► Climate control

Climate probes, ventilators and ventilation flaps are installed in the drying plant to ensure ventilation at the right time and to generate sufficient air flow on the sludge surface. Ventilation is regulated on the basis of continuously measured water absorption capacity of outside and inside air; excessive water condensation is prevented. Ventilators blow dry air over the bed of freshly turned sludge. The climate control system uses not only theoretical calculations, but also empirical operation and measurement data.

►► Seasonal climate and external heat sources

Drying efficiency depends directly on the climatic conditions with less water being evaporated in winter than in summer. Different strategies can be applied to process continuously generated sludge volumes:

- Operator accepts greatly varying product dryness and selects sludge disposal options accordingly.
- A sludge buffer tank is used for sludge storage in winter and emptied in summer when dryer performance is high.
- Solar drying is supported with external energy sources in winter.
- Several of these options are combined.

An eco-friendly method of supplying additional energy is the use of a heat pump, which lifts thermal energy, extracted through heat exchangers from the WWTP effluent, to a higher temperature so that it can be used for sludge drying. Other heat sources can also be used as available (e.g. exhaust heat).

Supply of additional heat through highly efficient floor heating ensures maximum heat transfer with minor losses. Efficient evaporation permits space saving system design.



Backmixing and aeration of sludge



Ventilators blow dry air over the sludge bed.



Greenhouse with ridge flap for climate control