HUBER TECHNOLOGY
WASTE WATER Solutions

HUBER
Cold Air Dryer HPS®

Efficient and simple sludge drying

- Sewage sludge drying using a heat pump – an environmentally friendly and cost-effective solution for municipal and industrial wastewater treatment

More information, downloads and current news

www.huber.de

The compact containerised solution

The HUBER Cold Air Dryer HPS® has been developed to efficiently, safely and cost-effectively dry sewage sludge, all within a ready-to-operate, modular containerised design.

No additional structure is required!
The HUBER Cold Air Dryer HPS® can be delivered fully assembled in a container.

- No construction time
- No need for planning permission for a new building
- Minimal foundation requirements
- Quick to install at almost any location

In buildings, the dryer can be installed with or without a container.

Few interfaces – plug and dry

The container contains all the necessary components:

- Drying chamber
- Fans
- Heat pump
- Control cabinet with control technology

All that remains to be connected is:

- Electrical power supply
- Sludge supply
- Dry sludge removal
- Condensate removal
- Cooling water

Simple dryer installation thanks to the containerised design.

How does sludge drying with a heat pump work?

The process runs continuously in a closed loop.

Evaporator:
Moist air from the dryer flows over the heat exchanger, causing the refrigerant to evaporate.

Compressor:
The refrigerant is compressed, causing the pressure and temperature to rise.

Condenser:
Here, energy is released again, heating the process air for drying.

Expansion valve:
The refrigerant expands via the valve and is regulated to a constant, defined superheat after the evaporator.

The drying process – step by step

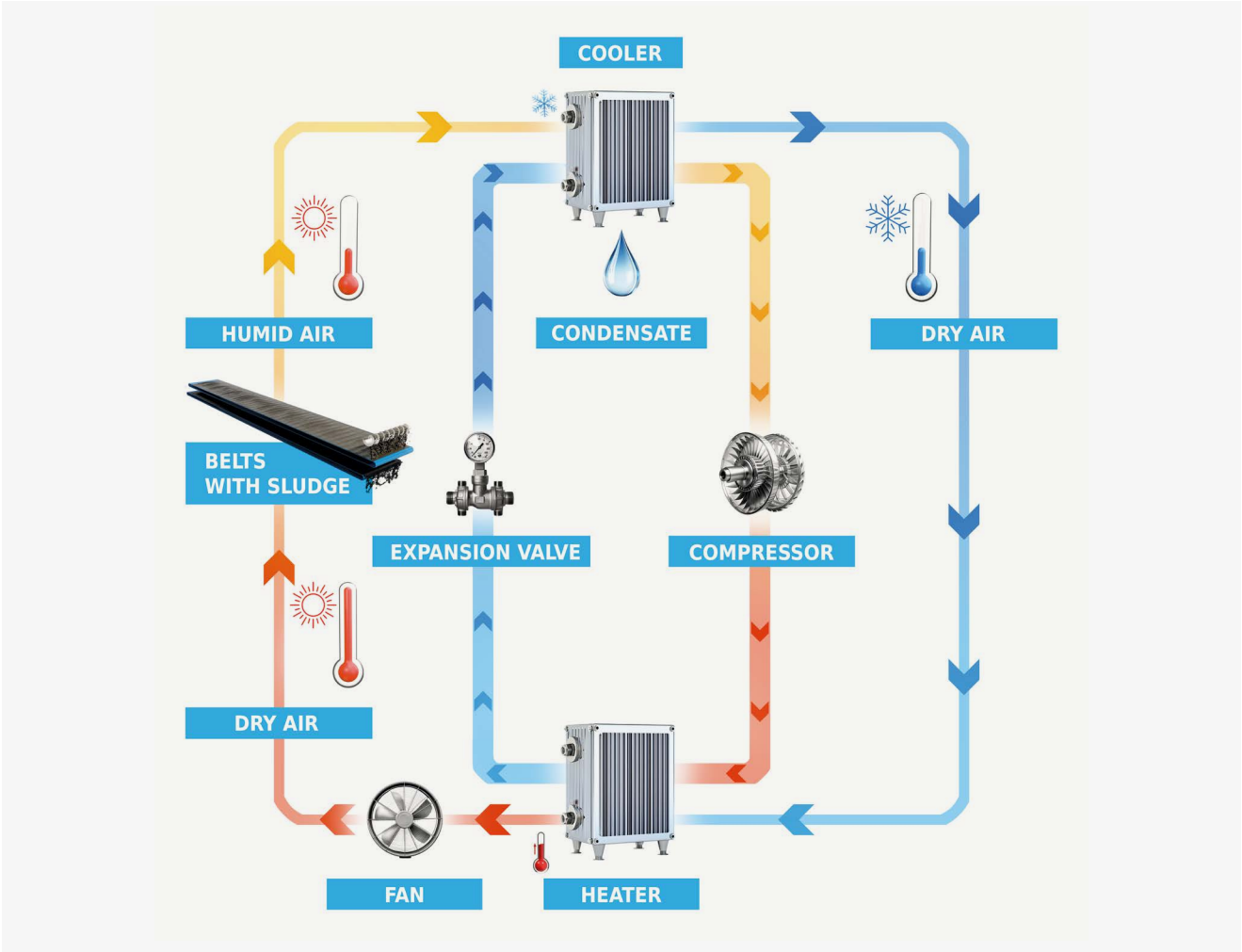
1. **The sludge is fed onto the drying belts.**
   The sewage sludge is evenly applied to perforated conveyor belts.

2. **The sludge dries on the belts.**
   Water evaporates by convection.

3. **Cooling and condensation.**
   The moist air is condensed by passing through heat exchangers.

4. **The air flow is heated.**
   The air is heated by the liquefaction of the refrigerant.

5. **A recirculation fan compensates for pressure loss.**
   Warm, dry air is directed to the belts.



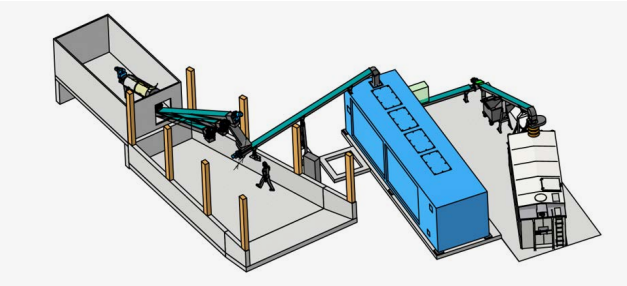
Process diagram for sewage sludge drying with a heat pump.

Who is the sludge dryer for?

- Specifically for small to medium-sized sewage treatment plants (10,000 to 50,000 p.e.)
- If there is no source of waste heat for drying but surplus electricity is available, for example from a solar PV system, the HUBER Cold Air Dryer HPS® really comes into its own.
- Due to the amendment of the Waste Sewage Sludge Ordinance (AbfKlärV), disposal costs for sewage sludge are set to rise in the foreseeable future.

Drying reduces the volume and mass of sludge whilst simultaneously creating a high-calorific fuel for mono- or co-incineration. This makes an immense contribution to CO_2 reduction.

Layout example



- Compact design in combination with the HUBER Screw Press Q-PRESS®
- Minimal space requirements for maximum cost savings on sewage sludge disposal
- Integration of sewage sludge dewatering, surplus energy and sewage sludge drying operations

Unit sizes / performance

Size*	HPS® 1	HPS® 2	HPS® 3	HPS® 4	HPS® 5
Maximum water evaporation*	50 kg/h	100 kg/h	150 kg/h	200 kg/h	250 kg/h
Sludge input	20 – 30 % DR				
Sludge output	70 – 90 % DR				
Throughput of dewatered sludge per dryer**	600 t/a	1.150 t/a	1.700 t/a	2.150 t/a	2.750 t/a

**Dependent on inlet and outlet DR and sewage sludge consistency.*
***Dependent on inlet and outlet DR and the annual operating hours.*

HUBER SE
Industriepark Erasbach A1 | 92334 Berching
Phone: +49 8462 201-0 | info@huber.de
www.huber.de