

AUTOMATIC SLUDGE DEHYDRATOR



An Automatic Sludge Dehydrator is a machine designed to remove water from sludge, reducing its volume and making it easier to handle, transport, and dispose of. It is commonly used in wastewater treatment plants.

APPLICATIONS:

Industrial ETP Plant (Hazardous & Non-Hazardous)

STP Plant of township, STP plant of malls & supermarkets, ETP Plant of food processing units

KEY FEATURES:

- 1) **Automatic Operation:** Sensors and controls allow for continuous operation with minimal manual input.
- 2) **Compact Design:** Takes up less space, making it suitable for facilities with limited room.
- 3) **Low Maintenance:** Minimal moving parts reduce wear and maintenance requirements

ADVANTAGES:

- 1) **Volume Reduction:** Significantly decreases sludge volume, reducing transportation and disposal costs.
- 2) **Environmental Compliance:** Improves sludge handling by environmental regulations.
- 3) **Continuous Operation:** Operates efficiently without frequent shutdowns for cleaning or adjustments

PROCESS:

Feeding: On the top of the machine through the inlet door wet sludge can be loaded.

Mixing:

- i) The sludge is introduced into the mixing unit.
- ii) Homogenization ensures even heating and prevents the formation of dry spots or localised overheating.

Heating:

- i) Thermal energy is applied to raise the sludge temperature.
- ii) Heating - indirect (via heat transfer surfaces).

Vaporization:

- i) As the temperature rises, water in the sludge begins to vaporise.
- ii) The system is often maintained under controlled pressure to optimise vaporization efficiency.

Moisture Removal:

- i) Vapors generated are carried away, either naturally (with airflow)
- ii) A vapour treatment unit condenses or scrubs the moisture to minimise environmental impacts.

Final Product:

- i) The dehydrated sludge is discharged as a semi-solid or solid material with significantly reduced water content.

The Automatic Sludge Dehydrator system incorporates advanced automation, enabling unmanned operation. The control panel provides adjustable parameters for mixing cycles and temperature settings, ensuring optimal performance. **The system's 12-hour batch cycle** is followed by automatic shutdown, minimising downtime.

The system's **volume reduction efficiency reaches up to 90%**, corresponding to a moisture content reduction of up to 85%