

Sludge Matters Newsletter - Sludge Thickening

HUBER Disc Thickener S-DISC - sludge thickener

The award winning HUBER **S-DISC** is the simplest and easiest to operate sludge thickener on the market. When compared to competing technologies, such as drums and gravity belt thickeners (GBT) the **S-DISC** outperforms in many categories:

- Lower capital cost.
- Smaller, more compact footprint (physical and carbon).
- Lower washwater and polymer requirements.
- Significantly reduced maintenance tasks.
- Lowest WLC.
- Excellent solids capture.

To establish the **S-DISC**, the bulk of the early installations were supplied and fitted in the traditional manner. Existing buildings were fitted out with HUBER mainly supplying the thickeners, flocculation reactors, poly mixing and injection rings and on occasions, the thin and thickened sludge pumps.

We also supplied some **S-DISC** thickeners that were installed outdoors with appropriate frost protection. Eventually, we worked with customers providing a DfMA solution- a complete package/sludge thickening process on a GMS skid - developed to meet the increasing demand for DfMA, - off site built solutions.

Having the poly make-up and dosing plant on-board the skid made outdoor installation impractical so we developed the same complete package in a 20-foot ISO container.

By doing so, we faced the usual questions about accessibility and maintainability normally associated with this type of solution. This approach required a real team effort involving engineering design, sales & technical sales but we believe we have reached the position where we can go to market with a simple to operate and easy safely maintainable solution. The containerised **S-DISC** sludge thickening package is now available.

S-DISC containerised Trial unit available



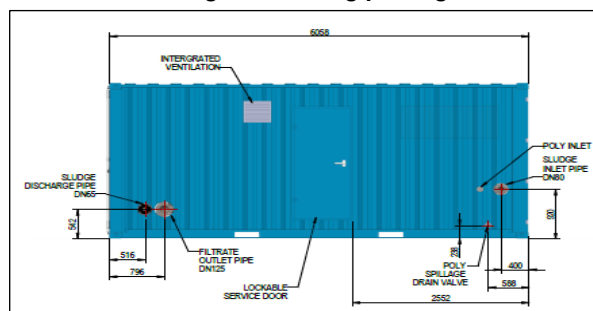
Call us to find out how you could trial/view the **S-DISC** sludge thickening package.



Traditionally installed S-DISC thickeners in a building and outdoors with frost protection above with skid package installed within a kiosk below



*DfMA, skid mounted complete thickening package with numerous UK installations
Ideal plug and play solution for fitting into new/existing buildings and kiosks.
Successful experience thickening sludge from the innovative Nereda process
20' High Cube ISO containerised S-DISC complete DfMA
sludge thickening package*



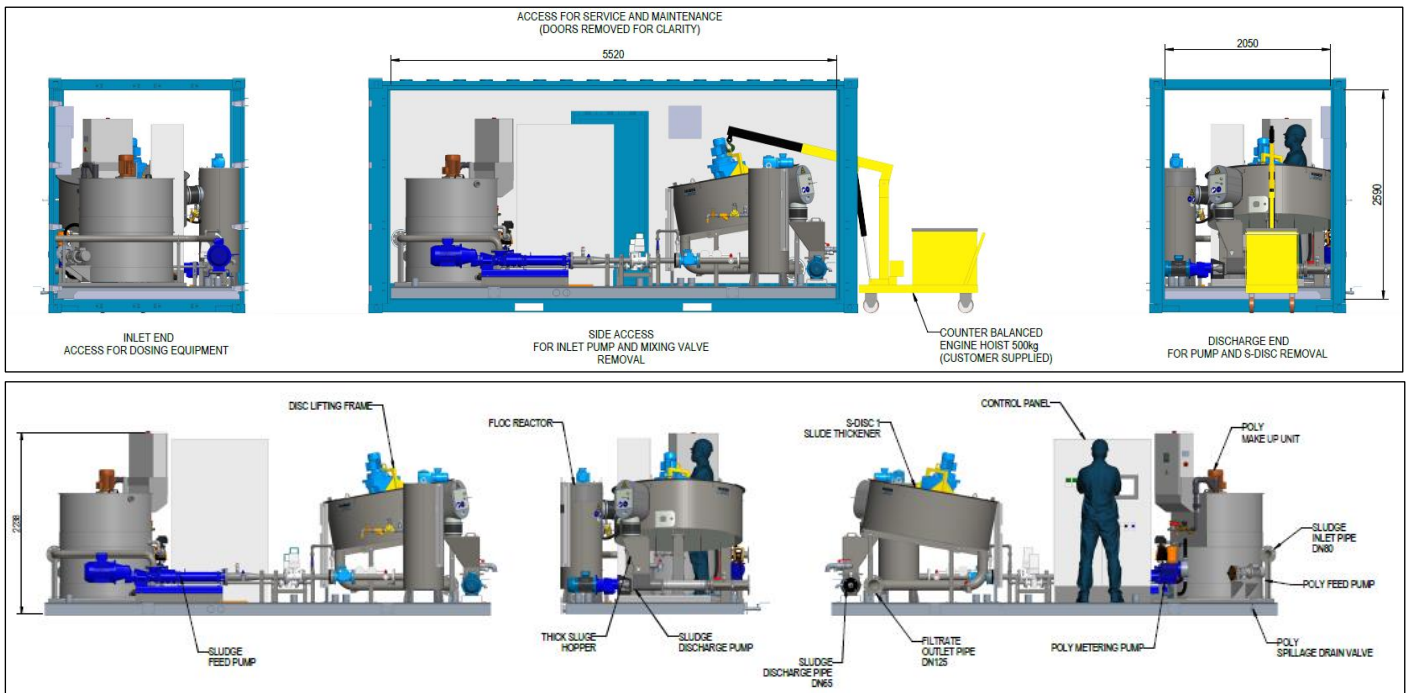
A well thought out design enabling in situ maintenance of all key components



Ideal plug and play solution suitable for outdoor installation

S-DISC containerised solution incorporates:

- All service inputs/outputs located on outside of container.
- Main personnel access door for day-to-day operation on one side of the container.
- Liquid polymer make up system with secondary dilution option c/w drip tray and side outlet drain for managing polymer spillage.
- Lighting, heating and integrated ventilation.
- Choice of Mono or Seepex pumps.
- Under floor cable/pipe ducts for uncluttered and safe working access.
- Opening doors at both ends and a pair of bi-folding doors on one side for maintenance access.
- Diaphragm or progressive cavity polymer dosing pump.
- Distribution board for power supply.
- Frost protection jacket with control from the on-board HUBER control panel for the polymer IBC that can be mounted alongside the plant.



Excellent and safe all round access enabling in situ maintenance of all key components

Major advantage of the DfMA, build off site philosophy



S-DISC sludge thickening package arrives on site



Package offloaded and placed onto a bogey



Package safely making its way into an existing building



Same DfMA Package installed within a kiosk with access for installation through end roller shutter door



Package in position and incorporated into a mezzanine floor to maximise the small floor

HUBER Rotary Screw Thickener S-DRUM – sludge thickener

With almost 100 **S-DRUM** units supplied into the UK and Ireland, we have expanded our portfolio of applications to provide sludge thickening solutions on two large projects where the **Nereda** process has been installed. This process has gained real traction within the UK and Ireland water industry sectors and has been adopted by many clients.

Before this, the bulk of **S-DRUM** units were used for thickening SAS, co-settled and mixed sludge from conventional processes. The experience gained with dealing with sludge arising from the Nereda process should stand us in good stead for the increased take up of this process in the future.

The **S-DRUM** thickener takes over throughput wise where the **S-DISC** thickener is too small and can provide thickening capacity of up to 120 m³/hour, obviously dependent upon the characteristics of the thin sludge.

Unlike other drum thickeners that are generally installed horizontally, the **S-DRUM** is installed at an inclined angle. This has several advantages, with the main one being there is no requirement to elevate them on support platforms to enable thickened sludge pumps to be located under the sludge discharge point and can significantly reduce the cost, footprint and the time taken to complete the installation of the overall solution as well reducing the overall carbon footprint.

Other advantages and features include:

- 20% reduction in operating costs versus GBT's.
- 50% reduction in maintenance costs.
- Low energy requirements.
- Lower volume and pressure washwater demand.
- Less susceptible to ragging.
- Reduced maintenance compared to drums/GBT.
- Slow rotation/operation results in significantly less wear.
- Robust stainless steel wedge wire 'screen' built to last the asset life of the equipment.

Again, like the **S-DISC** thickener, the **S-DRUM** can be supplied in the traditional manner for installation inside buildings or outdoors with frost protection. They can also be installed within kiosks, however, due to their size, installing them within containers does not provide sufficient access for safe operation and maintenance.



*Typical duty/standby **S-DRUM** sludge thickener installations on simple concrete pad without support platforms*

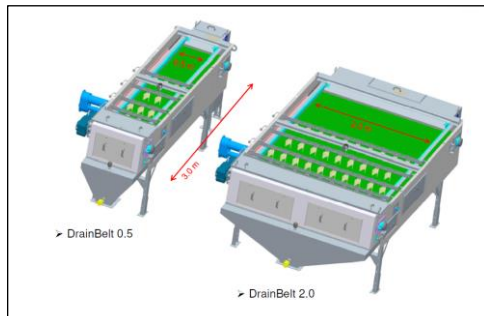


*Duty/assist/standby **S-DRUM** 4L sludge thickeners installed at a WwTW in the North West of England.*

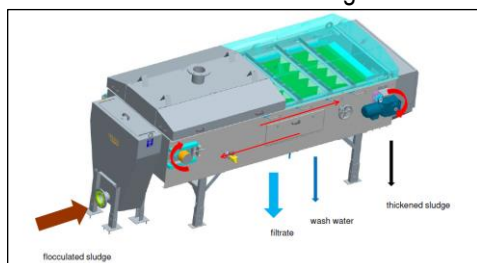
These units are designed to process sludge from the largest Nereda process installed in Europe.

HUBER Belt Thickener DrainBelt

To enhance our offerings for sludge thickening, the HUBER **DrainBelt** gravity belt thickener is available in four sizes from 0.5 m to 2 metres wide.



Typically, the throughputs range from 25 to 100 m³/hour, but as always, this is dependent on the characteristics of the sludge.



There are various belt options available. The most appropriate is selected following site trials or the collection of samples.

Some features and benefits of the **DrainBelt** are:

- Feed method provides gentle and equal distribution of sludge on the belt.
- Slow belt speed – 4 to 20 metres/minute.
- Minimum stress on floccs = low poly usage.
- 'Floating' and easy adjustable ploughs for longer belt life.
- User-friendly plough pivot system to make removing accumulations of debris safe and easy.
- Option for use of filtrate to wash belt.
- Excellent capture.
- Ramp at sludge discharge increases cake solids 1-3% points.
- Easy access to all moving parts.
- Noise level >70 dB (A).



Recent Thames Water installation



Recent Severn Trent Water installation with duty/standby **DrainBelt** units



Recent Severn Trent Water Installation

HUBER Solutions/Products include:

- Well proven **CSO/storm water screens** with novel screenings treatment solutions where required.
- Wide range of **inlet screens** to suit most applications, coarse or fine, large or small, deep or shallower channels, in tanks and DfMA.
- **Smaller, finer aperture screening** for the protection/enhancement of sensitive downstream treatment processes.
- Numerous options for **screenings transportation, washing dewatering and compaction**. Includes screenings launders systems and screw conveyors.
- **Grit separation, washing, classification and recycling** – Vortex, aerated longitudinal constant velocity and the novel Grit Wolf options plus grit washing classifiers to produce grit suitable for recycling.

- [Packaged inlet works](#) incorporating screening, screenings treatment, grit and optional FOG removal.
- [Stone traps](#) (static/automatic).
- [Fine screening instead of primary settlement tanks.](#)
- [Sludge screening](#) using gravity and STRAINPRESS® pressurised screens. A larger, higher throughput STRAINPRESS® is now available.
- [Septic waste screening](#) and dewatering.
- [Sludge thickening](#) using disc, belt and drum technologies as proven DfMA solutions.
- [Sludge dewatering](#) using the latest and best screw press design.
- Low/mid temperature [sludge drying](#).
- [Control panels](#).
- [Stainless steel safety and access equipment](#) including [pressure tight doors for service reservoirs](#) that are widely used within the UK.

You can also find out more about other services we can provide, such as:

- ✓ An extensive range of [hire equipment](#) including inlet and sludge screens and screenings handling plant.
- ✓ Service contracts including '**smart servicing**' – Remote condition monitoring supported by intervention and on site servicing as required.
- ✓ [Spares, servicing and refurbishment](#) provided from our regional depots in Yorkshire, Scotland, Northern Ireland and Wiltshire.
- ✓ Full [after sales technical support](#) from our area managers and technical sales engineers.

To find out more on our sludge thickening solutions please visit our website www.huber.co.uk



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