



**SPIRAC**<sup>®</sup>

Solid Handling Solutions

**INNOVATIVE HANDLING SOLUTIONS THAT WORK.**

RELIABLE. TRUSTED. COST EFFECTIVE.

- ▶ SHAFTLESS SPIRAL CONVEYORS
- ▶ SLUDGE AND GRIT HANDLING
- ▶ STORAGE AND RECEIVAL



## **SPIRAC® IS AN INNOVATOR AND WORLD LEADER IN SOLIDS RECEIVING, CONVEYING, STORING AND OUTLOADING.**

SPIRAC® enjoys more than 40 years of worldwide success and long-standing partnerships with customers.

Municipal dewatered sludge handling and storage systems are our primary focus, but SPIRAC® also offers conveying, dewatering and washing solutions for Screening and Grit handling.

With offices located around the world, SPIRAC® has the ability to offer technical solutions gained from international experience, designed to suit local needs. Our experience ensures cost effective solutions are always possible.

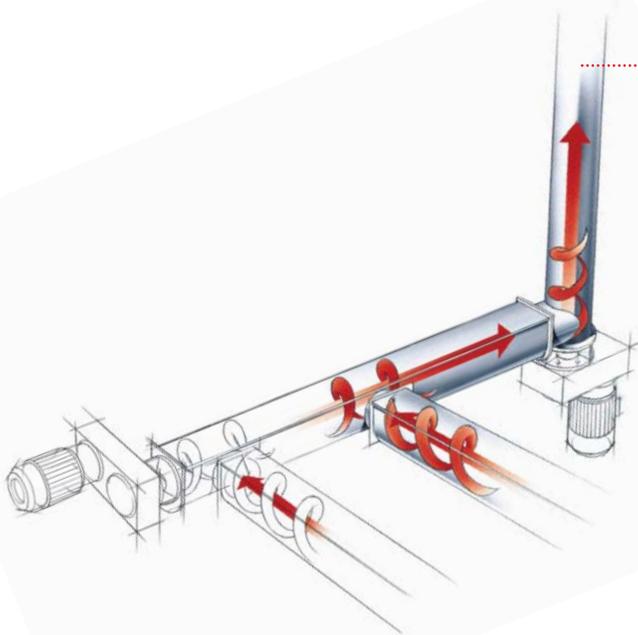
Skilled engineers are available to assist with selections and specifications at all times. Most importantly, SPIRAC® supports their equipment and takes pride in ensuring successful installations.

Your SPIRAC® team

## SHAFTLESS SPIRAL CONVEYORS

Shaftless spiral conveyors are designed for the transport of otherwise difficult to handle materials, such as municipal dewatered sludge, wastewater screenings, grit, industrial sludges or other sticky, viscous, stringy materials.

The SPIRAC<sup>®</sup> shaftless design eliminates the need for intermediate and end bearings and allows higher filling rates and lower RPM's. This results in less wear and consequently less maintenance and down time. Although the spirals can be made of many different materials, our primary special steel from Sweden has mechanical properties which allow us to convey great distances in single troughs.

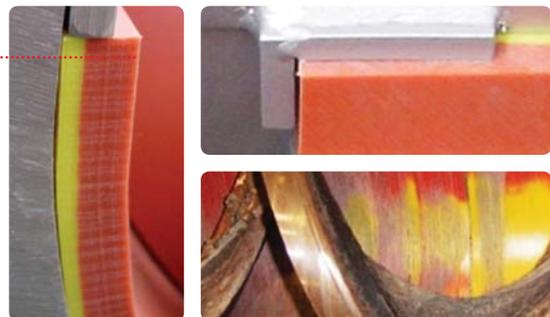


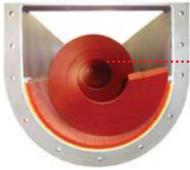
### FEATURES OF SHAFTLESS SPIRAL CONVEYORS

- ▶ Low RPM for long life expectancy to wear components = Virtually maintenance free
- ▶ Low power usage= Energy savings
- ▶ Less wear = Less down time
- ▶ Space saving
- ▶ Eliminating intermediate and end bearings allows efficient and direct transfer into another conveyor
- ▶ Handling of large objects, up to trough diameter
- ▶ Totally enclosed troughs: fully sealed lids, gasketed joints for tight odor and mess containment
- ▶ Direct drive: long continuous runs on a single gearbox

### SPIRAC<sup>®</sup> LINER DURAFLO<sup>®</sup> SPX

SPIRAC's<sup>®</sup> proprietary liner, DURAFLO<sup>®</sup> SPX, is an ultra-high molecular weight polyethylene with special fillers for abrasion resistance and a low coefficient of friction manufactured with a convenient two color wear indicator. DURAFLO<sup>®</sup> SPX, is designed specifically to ensure long life. The liner has a snap-in, snap-out feature enabling easy replacement.





*U-trough*

## HORIZONTAL CONVEYORS

U-troughs are used for horizontal conveying and inclines up to 30 degrees

- ▶ Fully enclosed with bolted or quick release lids and inspection ports
- ▶ Commonly stainless steel, also available in mild steel painted, galvanized or FRP/GRP

### HORIZONTAL CONVEYOR PROJECTS



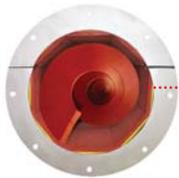
*Long continuous sludge run*



*Truck outloading system*



*High capacity sludge outloading system*



*Octagonal (OK-trough)*

## SPIROLIFT®

SPIROLIFT® uses an octagonal (OK) trough for steep inclines and vertical transport

- ▶ Commonly stainless steel, also available in mild steel painted, galvanized or FRP/GRP

### SPIROLIFT® PROJECTS



*Typical two stage vertical lift sludge conveyors feeding a storage silo*



*72 degree and 40 degree inclined OK trough sludge conveyors*

## GRIT HANDLING

SPIRAC® supplies well proven systems for the removal of grit from wastewater.



### SANDSEP®

The SANDSEP® is a highly efficient unit designed to separate grit from process and effluent streams.

The design of the inlet section reduces turbulence to a minimum and creates an optimum flow pattern for efficient settling. The solids settle in the bottom of the classifier which contains a spiral. The inclined shaftless conveyor transports the sediment slowly (speeds are kept low to minimize turbulence) to the vertical grit discharge.

## STORAGE AND RECEIVAL

SPIRAC® is a market leading supplier of live bottom and sliding frame silos for the wastewater industry. Successful installations are in operation around the world, many in service for several decades.



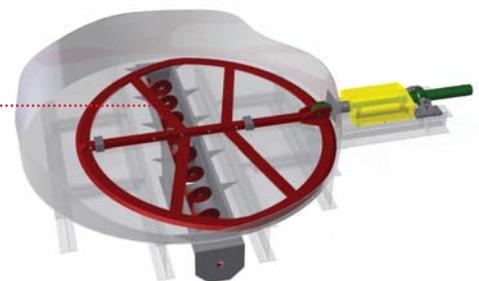
### SPIRAC® SLIDING FRAME SILOS

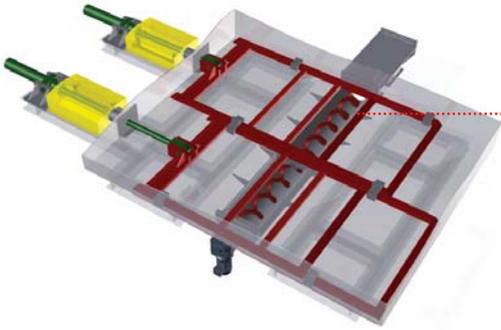
A sliding frame is an extremely efficient extraction system that allows non-free flowing material to be discharged from a flat bottom silo. These bulk materials can easily block the bottom of the silo by forming a bridge of material.

The action of the sliding frame breaks any bridges that may form by pushing and pulling the material towards the center of the silo where it can be discharged into the extraction conveyor. The sliding frame silo is suitable for non free flowing materials such as dewatered sewage sludge, wood chips, cellulose, gypsum and other waste.

### SPIRAC® ROUND SLIDING FRAME SILOS

The sliding frame is built as an elliptical frame, made of solid steel bars profiled to a wedge shape. This elliptical framework with its wedge profile, pushes under the sludge in one direction and draws it toward the discharge opening in the other, thereby allowing near total emptying of a flat bottom silo.





### SPIRAC® RECTANGULAR SLIDING FRAME SILOS

The sliding frame is constructed as a rectangular “ladder” shape, transferring material from one wedge shaped “step” of the “ladder” to the next as it oscillates back and forth. This design is suitable for steel or concrete silos or bunkers.

#### FEATURES OF SPIRAC® SLIDING FRAME SILOS

- ▶ A slowly reciprocating, hydraulically driven steel frame pushes or pulls sludge toward a central extraction screw
- ▶ Speed controlled to provide outloading rates suitable for fast truck filling down to pump feed
- ▶ Allows for vertical walls and cylindrical silo construction, optimizing volume utilization and
- ▶ reducing height or footprint
- ▶ Eliminates any opportunity for bridging, arching or flow hang ups, material flow is first in, first out.
- ▶ Reliable, quiet and simple operation
- ▶ Can also be applied to rectangular silos, concrete bunkers, and truck receival bunkers



### TRUCK RECEIVAL BUNKERS

Custom designed to suit the particular site and customer requirements, these bunkers employ either live bottom or sliding frame technology.

Both systems are designed to handle a wide range of sludge consistencies and flow rates.

#### FEATURES OF TRUCK RECEIVAL BUNKERS

- ▶ Precise flow rates
- ▶ Easy passage of foreign objects
- ▶ Simple and reliable operation
- ▶ Low RPM, high torque spirals to prevent blockages
- ▶ No product bridging
- ▶ Near zero maintenance



## SPIRAC® LIVE BOTTOM SILOS

SPIRAC® Live Bottom silos and hopper systems are purposely designed for the storage, transfer and outloading of dewatered sludge.

SPIRAC® Live Bottom systems ensure the elimination of arching, rat-holing or any bottle-neck type losses in flow ability, even for the stickiest or driest of sludges. The basic silo design incorporates aesthetic considerations through symmetry, consistency and fabrication precision.

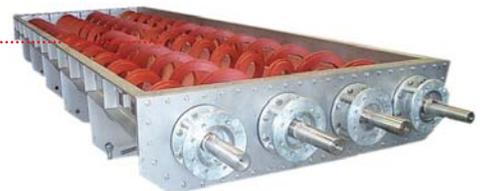
SPIRAC® silos and hoppers follow standardized design features, sizes and orientations that can be customized to suit customer requirements. Standard configurations provide a wide range of cost effective designs.

SPIRAC® silos are generally top loaded, typically by a SPIRAC® spiral conveying system. SPIRAC® utilizes horizontal, inclined and vertical conveyors to achieve a compact installation.

The SPIRAC® Live Bottom Silo can either discharge directly into a truck or into a SPIRAC® out loading conveying system.

## FEATURES OF SPIRAC® LIVE BOTTOM SILOS

- ▶ Multiple rotating spiral screws form a rectangular bed that eliminates bridging or blockage of the stickiest sludges
- ▶ Large diameter, large pitch spirals are capable of high torque and fast but controllable outloading rates, or very low out loading rates for pump feed
- ▶ Very low RPM ensures low wear
- ▶ Simple operation, direct drive and few moving parts ensure that maintenance is kept to a minimum





STORAGE AND RECEIVAL  
SPIROTAINER®



## SPIROTAINER®

SPIROTAINER® is an auto filling containment and road transport system designed for the hygienic and automatic handling of foul or objectionable waste materials.

SPIROTAINER® eliminates the need for a specialized building. Extending the system capacity is as easy as adding another SPIROTAINER®.

Combined with SPIRAC® spiral conveyor systems, offensive waste products are transported, stored and removed from site with minimal operator intervention, virtually odor, vermin and insect free. A permanent on board spiral conveyor and control system provide automated filling and level control while a robust door sealing system ensures leak proof transport even with a large liquefied component.

Standard truck lifting devices are incorporated into the design to facilitate transport. Once it has reached the destination, the SPIROTAINER® is easily unlatched, to be emptied by simply tilting.

## FEATURES OF A SPIROTAINER®

- ▶ Suitable for screenings, grit or sludge
- ▶ Typically deployed outdoors in warm climates and indoors for sub zero climates
- ▶ Even load distribution along full length of bin
- ▶ Heavy duty closure and locking mechanism with durable rubber gaskets for a positive seal against leakage
- ▶ Quick connect power and control sockets
- ▶ Ultrasonic level filling sensors to prevent overfilling
- ▶ Nominal 13, 20 or 26yd<sup>3</sup> capacity
- ▶ Ultrasonic level filling sensors to prevent overfilling
- ▶ Robust construction and extreme paint finish for the rigors of contract hauling

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