

ADVANCED CONTROL OF ACTIVATED SLUDGE RECYCLE SYSTEM

Rapid sludge removal

Sludge withdrawal rate regulation with
individual adjustable valves

Sludge quality control in sludge collection box

Trouble-free installation with low
maintenance requirements



Long lasting
durable design from
a company with over
80 years of proven
experience.

SUCTION PIPE CLARIFIERS (TYPE C3S)

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SUCTION TUBE CONFIGURATION

FEATURES OF THE SUCTION PIPE CLARIFIER

OVIVO'S SUCTION PIPE CLARIFIERS INCLUDE:

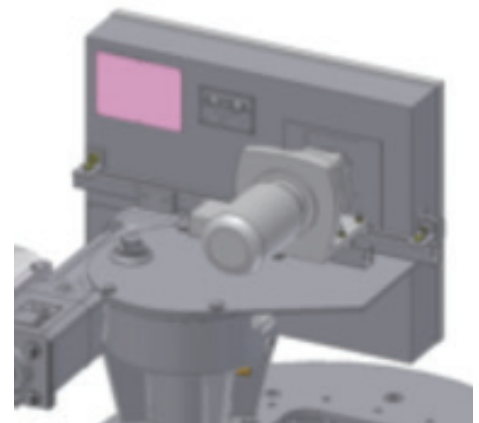
- Ovivo's premier EWT cast iron drive
- Influent center column with inner return sludge pipe
- Energy dissipating inlet (EDI), either conventional scoop design or EquaFlo 360® design.
- Flocculation feedwell
- Two rake arms with suction pipes
- Sludge collection box with adjustable open-top gate valves
- Scum skimming system

Suction sludge removal systems provide fast efficient solids withdrawal for activated sludge flow system requiring a steady return of fresh, active biomass.

Ovivo's suction pipe design provides operational simplicity along with advanced flexibility for removal of sludge solids.

The suction pipe clarifier (Type C3S) features separate riser pipes to convey solids from pick-up points along the structural rake arms and center cage to a sludge collection box at the top of the column. Each pipe ends up in the collection box with an open-top gate valve. The valves allow the relative flow rates to be individually adjusted, and permit both visual inspection of sludge flow and sampling to determine concentration. Return activated sludge is pumped from the sludge collection box via a discharge pipe within the center column (concentric).

Rakes arms are equipped with blades which direct the sludge to the riser pipes and provide additional heavy solids removal by raking to a sump at the base of the clarifier.



GATE VALVES



CLEARLY MARKED VALVE POSITION

DESIGN ADVANTAGE

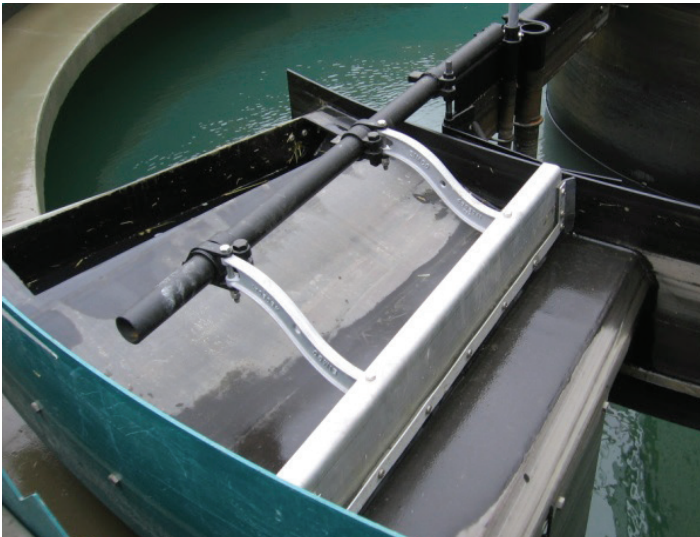
The ability of the Type C3S system to allow adjustment of the relative withdrawal rate from different areas of the basin floor means that irregularities in the depth, density and age of the sludge blanket can be remedied, giving operators "hands-on" quality control of the recycle stream. In addition, the relatively large diameter of the riser pipes – from 4" to 10" depending on the size of the clarifier - makes the C3S intrinsically clog-resistant. However, should a line become clogged, backflushing through the valve or concentrating the available head (increased flow) will usually free the obstruction without the need for dewatering the basin.

OPTIONS

Ovivo's C3S is equipped with a scum skimmer system. Ovivo offers a conventional scum box with skimmer blades supported by rake arms or an enhanced skimming design with a full radius scum trough (FTS) and two cantilevered skimming blades.



CONVENTIONAL SCUM BOX



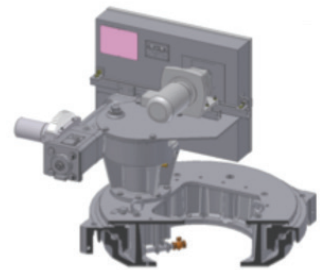
FULL TROUGH SKIMMER (FTS) SYSTEM SYSTEM



FULL TROUGH SKIMMER (FTS) SYSTEM SYSTEM

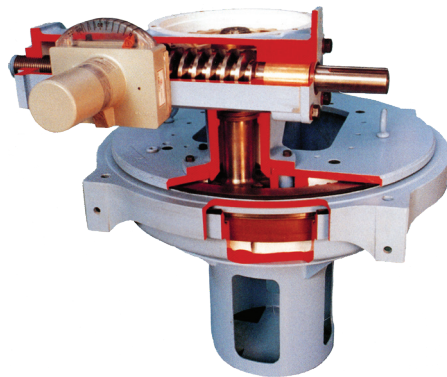
DRIVE UNITS

OVIVO PROVIDES STRONG, HIGHLY RELIABLE DRIVE MECHANISMS. THE STRENGTH OF OUR DRIVES IS DUE TO THEIR DESIGN, THE MATERIALS USED, FULL OIL BATH LUBRICATION AND THE PROPER ALIGNMENT OF THEIR COMPONENTS.



DRIVE

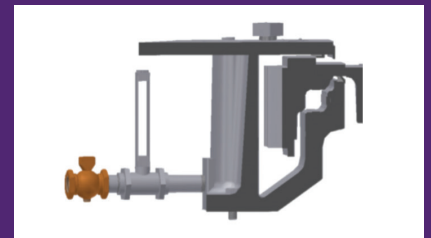
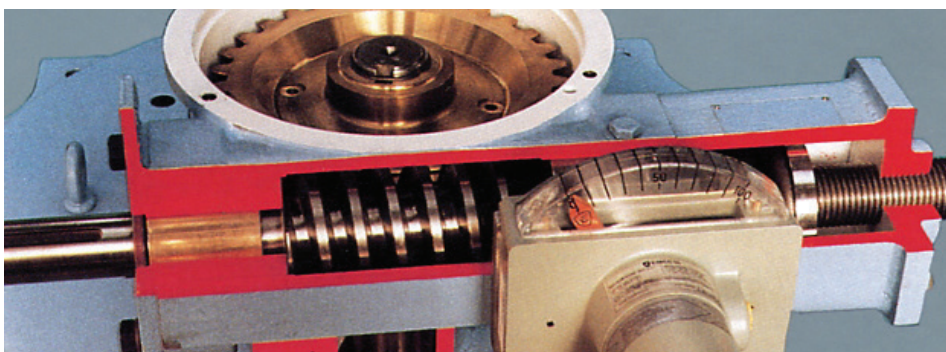
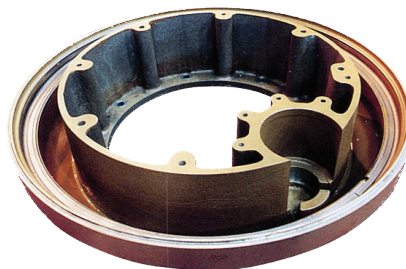
- Cast iron housing
- Oil lubrication
- Deep oil reservoir
- Strip liner bearings
- Worm gear reducer
- Single pinion
- Solid one piece main gear
- Meets latest AGMA standards



CAST IRON

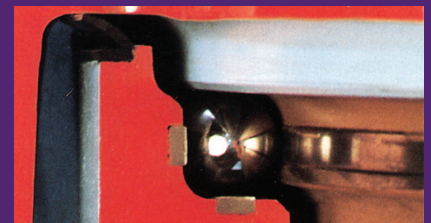
Our drives are built in cast iron per ASTM A48 Class 40A. Cast iron offers:

- Excellent corrosion protection. Cast iron has a natural resistance to corrosion and will not rust
- Resistance to heavy loads. Complex cross sections with a high degree of structural rigidity are more precisely formed than fabricated plates. Sections are easily varied to provide massive support in high load areas.
- Full inner and outer walls form a deep 'U' cross section, offering exceptional rigidity and an ample oil reservoir.
- Extra bulk under the main bearing, pinion bearing and intermediate reducer mounting surfaces ensures proper alignment under peak loads.



OIL LUBRICATION

Ovivo drive design includes a deep oil reservoir with full side wall. This design offers many advantages. The full sidewall avoids the possibility of oil leaking and provides good weather protection for the gear. The deep oil reservoir minimizes heat buildup, provides an area for condensate to accumulate well away from the main gear and bearings and allows complete immersion in the lubricant. The drain is located away from the main pinion gear at the lowest point to allow extraction of contaminants.



STRIP LINER BEARINGS

Ovivo drives use strip liner bearings and the largest chrome alloy bearing balls on the market. The strip liners are specially designed for wastewater treatment applications. These high quality strips are manufactured in AISI E4140, vacuum degassed and carbon deoxidized steel and offer high strength (43-46 Rc hardness).

QUALITY COMPONENTS

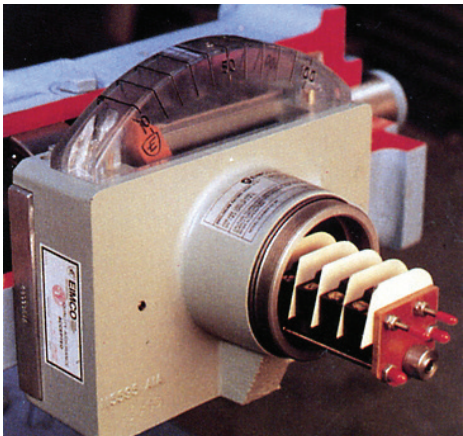
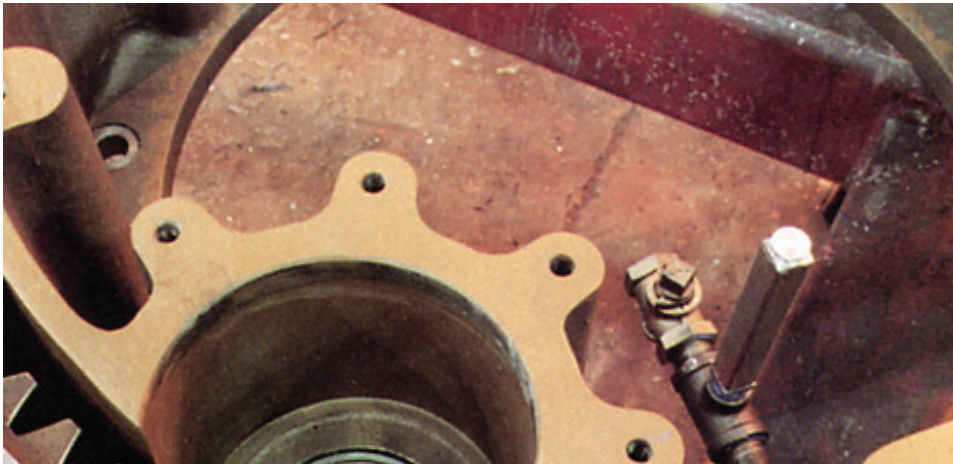
EWT drives are equipped with bearings, worms and pinion mounted on a precisely machined surface. In every drive a high quality solid pinion maintains alignment and gives better resistance to bending and deflection under loads. Mating parts are machined to precise tolerances to assure precise fit and alignment. Every drive part is fully restrained (top and bottom) with no overhung loads. Main bearings are fully restrained into base.

AGMA STANDARDS

Worm gear reducer, single solid pinion, single solid worm / worm shaft and main gear all meet the latest AGMA (American Gear Manufacturers’ Association) standards.

DRIVE CONTROL

Each drive is equipped with an overload control device activated by thrust from the worm shaft. This drive control includes a clear plastic enclosure and a weatherproof enclosure of epoxy coated aluminum construction with electro-mechanical switches.



DRIVE COMPONENTS MATERIAL

Main gear housing	Cast iron ASTM A48
Worm gear housing	Cast iron ASTM A48
Main gear	Ductile iron ASTM-A536 class 80-55-06
Worm gear	Cast alloy bronze
Worm	Alloy Steel AISI 4140/42H
Pinion	Alloy steel 4150 (26-33 Rc)
Strip liners	Steel AISI E4140
Bearing ball	Chrome alloy steel

Control enclosure	Cast aluminium
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SUCTION PIPE CLARIFIERS (TYPE C3S)

SERVICES

As well as a complete range of process equipment, Ovivo is your source for everything necessary to meet the total needs of a project, from inception to start-up and beyond.

FLOWSHEET CAPABILITIES

Ovivo can help you with the design of your total flowsheet, ensuring that all your equipment will work together for optimal performance and ease of operation.

TANKAGE AND ERECTION

Ovivo can take the hassle out of project management and coordinating independent contractors, who might not be familiar with all the details necessary for the installation of your thickener or clarifier. Our experienced tankage and erection crews can save you time and money by doing all the field work to deliver you a trouble-free machine.

UPGRADES AND RETROFITS

Sedimentation technology is constantly advancing. We can show you how to incorporate state-of-the-art design improvements into your existing thickener or clarifier. Many upgrades can pay for themselves in a matter of months and help increase capacity as well as improve performance.

SERVICING

Our team of skilled mechanical and process engineers can keep your equipment in top condition and help you to avoid costly, unscheduled interruptions.

OVIVO[®]connectSM

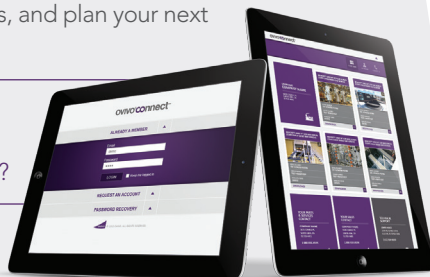
Ovivo[®] ConnectSM portal is an innovative and intuitive application that allows our customers to use 'SmartTags' installed on our equipment (or a web URL) to access a personalized customer zone. Access your equipment documentation, find contract references, track service logs, manage spare parts, and plan your next maintenance to get the most out of your equipment.

NEED **ACCESS** TO YOUR **O&M MANUAL**?
NEED **SPARE PARTS**?
WANT THE **LATEST TIPS AND NEWS** ON YOUR ASSET?



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