



# Pump Mixing Systems

*For sludge tanks and digesters*

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**THE ALTERNATIVE TO  
CONVENTIONAL  
SUBMERSIBLE  
& GAS MIXING**

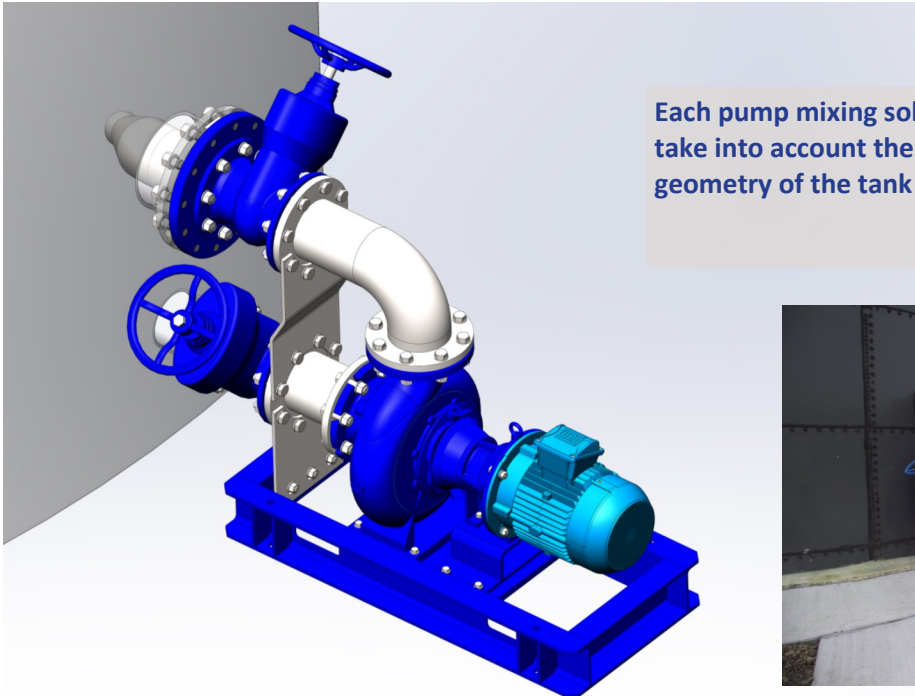
*Hidrostaal—Blockage free since 1960*



## The Alternative to Conventional Submersible & Gas Mixing



Unlike other mixing systems, the Hidrostal concept does not require structural steel work within the tank. The system is mounted at ground level and fixed to the outside of the tank. Large diameter nozzles are installed externally through the tank walls. The systems have simple pipework designs with short pipe run resulting in minimum friction losses and the maximum energy imparted to the fluid.



Each pump mixing solution is a bespoke design to take into account the sludge characteristics and the geometry of the tank

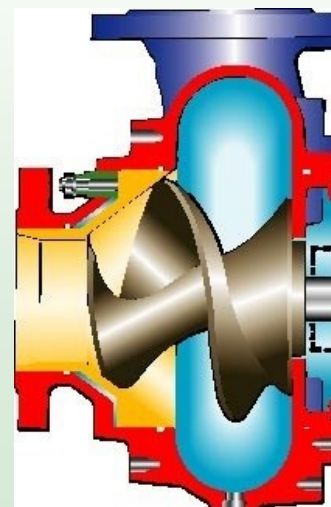


### Advantages of Hidrostal's Externally Mounted Pump Mixing Systems:

- The mixing energy is provided by an externally mounted pump and no moving parts are required in the tank
- Easy access for inspection and maintenance, low risk
- No requirement for high level lifting equipment and access platforms
- Can be fitted to new and existing tanks
- Pumps are clean to work on with no sludge or rags to be removed, improving Health & Safety environment
- Large diameter pipework and nozzles for effect solids handling
- Nozzles externally removable without any need for tank entry
- Tank/Digester turnover and nozzle energy can be selected to suit sludge characteristics and tank shape
- IP55 motors are generally cheaper and easier to repair than submersible motors
- IP55 TEFC motors are always to latest highest efficiency class IE3/IE4
- Routine maintenance can be done without removing the pump from the installed pipework
- A mixing pump can be used for transferring sludge to another process or to a road tanker
- Two adjacent tanks can sometimes be mixed by a single pump
- Off site manufactured skid mounted mixer sets possible

*Unlike other similar systems, Hidrostal supply the total system including pipework as an offsite manufactured package. Installation is also available if required.*

*The Hidrostal pump mixing solution is based upon the company's well-proven screw centrifugal impeller pump.*





**Hidrostal's Pump Mixing replaces the traditional methods of mixing sludge storage tanks and anaerobic sludge digesters.**

### Traditional method of mixing sludge storage tanks

- Submersible mixers
- Top entry vertical paddle mixers
- Side entry mixers
- VO2TM Venturi Ejectors combination of sludge and air re-circulation

### Traditional method of mixing anaerobic sludge digesters

- Gas mixing via bottom mounted diffusers
- Vertical draft tubes (internally mounted)
- Top entry paddle mixers

***Pumped re-circulation for a simple, reliable and cost effective method of mixing tank content***

### The Hidrostal Pump Mixing System

Hidrostal's Mixing System for sludge tanks and digesters employ a very simple system of pumped recirculation. This reduces maintenance problems due to the complete elimination of static and moving parts within the tank. Good compliance with CDM regulations reduces Health & Safety risk

By mounting the pump outside the tank at ground level it is easily accessible for installation, inspection and maintenance.

### Typical Hidrostal Mixing Solution



### Typical Problem



Typical ragged up submersible mixer, which has to be lifted out of the tank for cleaning



A bespoke design that takes into account the sludge characteristics, the tank geometry, and the unique requirements of the site

### Applications

- Digesters
- Balancing tanks
- Sludge storage tanks
- Mixing & tanker loading
- Secondary digesters
- Mixing & sludge transfer



### HIDROSTAL SCREW CENTRIFUGAL PUMPS

- High degree of reliability
- Resistant to wear/or corrosion by correct choice of materials
- Robust construction
- Short shaft overhang, tandem mechanical seals in oil bath
- Blockage free operation
- Big range of pumps 80 to 700 mm (3" to 28")
- High wire to water efficiency reduces running costs
- Pump efficiency maintained by simple external adjustment of casing liner
- IE3/IE4 motors

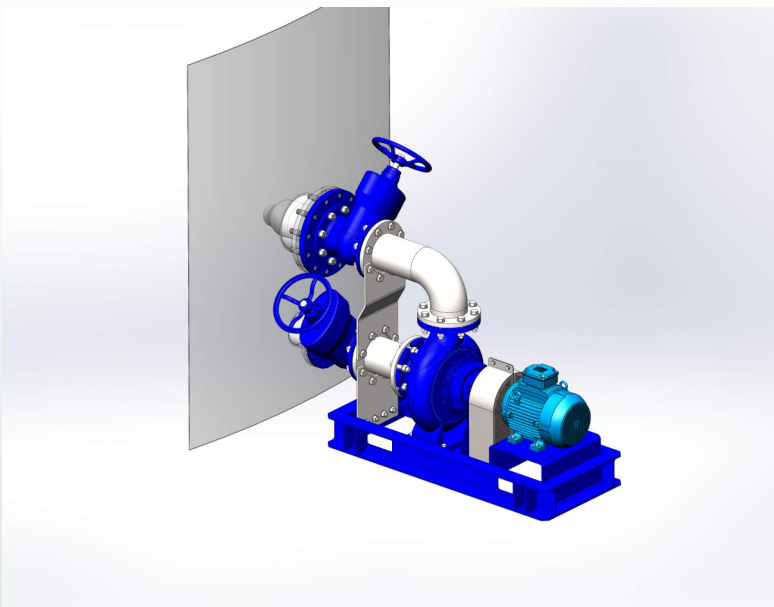


### Hidrostal are fully committed to offsite manufacture wherever possible.

A large number of our highly successful HidroMix range of tank mixers are now available as skid mounted pre-assembled units. These comprise of all the necessary design and build items such as pump, pipework, valves, brackets and supports, assembled as a manufactured package to ensure the units work to their optimum design. The onsite M&E requirement is then reduced to cable terminations at the local junction box and the mechanical connections to the tank.

Hidrostal see offsite manufacture as the future for numerous pumping applications and more Hidrostal products will be available in an offsite manufactured configuration in the near future.

Hidrostal believe utilising offsite manufacture greatly benefits the end user through benefits such as:



- Reduction in waste materials
- Less local disruption and time on site
- Environmental
- Standardisation
- Built in a controlled environment
- Economies of scale
- Repeatability & Traceability
- Health & Safety
- Whole Life Cost
- Lower Project Delivery costs