Horizontal & Vertical End Suction Pumps

Reliable & Energy Efficient

Hidrostal's End Suction Pumps are a range of high efficiency screw centrifugal pumps matched to a choice of robust bearing frame designs, purpose built to handle higher hydraulic loads with minimal shaft deflections. Freedom to fit latest and best in class standard high efficiency fan cooled motors.

Versatile Applications & Installation Types—Viscous sludge and slurry liquors, raw produce, activated sludge, unscreened sewage and oily water are all reliably pumped by a Hidrostal pump.

High Solids Handling Capability—Reduces probability of blockages thus reducing Opex.

Low Shear—Maintains particle cohesion in flocculants and emulsified oils, reducing process cost.

Delicate Handling—Keeps your product intact ensuring its quality adds value to your process or raw produce.

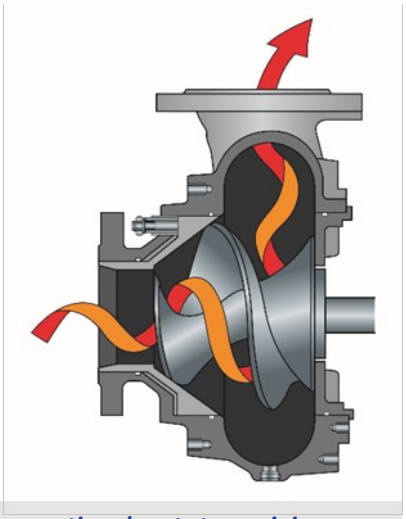
Simple Designs Deliver Reliability & Longevity

Hidrostal's experience over the past 40 years delivers an enviable reputation for simple designs ensuring reliability and longevity to the pump market.

The wide range of bearing frame pump configurations possible offers the end user flexibility in installation and application type.

The ability to fit a wide range of motors power sizes to a given hydraulic end ensures effective pump performance is maintained, even on viscous sludge, slurry or raw produce applications.

The unique hydraulic action of a Hidrostal impeller delivers a long slow turn from the axial to the radial direction. This coupled with a large free passage provides a unique combination of hydraulic characteristics with a good hydraulic efficiency.



Steep stable pump curves ensure minimal flow variations when fluctuations in delivery head occur. This helps to ensure your Hidrostal installation passes forward the required flow consistently and reliably, even on sludge applications.

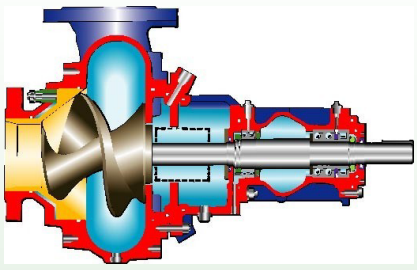
High pump efficiencies with non-overloading power curves, only drawing peak power at the best efficiency point, delivers optimum use of energy.

Non clog pumping keeps your reactive operational costs to a minimum. This offers significant savings to a waste water pump's whole life cost when pumping raw sewage.

Bearing Frame Types

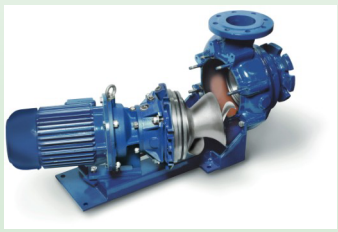
The Hidrostal hydraulic end can interface with either a heavy duty, traditional Long Bearing Frame or a Short Bearing Frame.

Long Bearing Frame



Short Bearing Frame

For a more compact and convenient design, on smaller pumps the direct Flexible Coupled Bearing Frame is an option. This features a convenient back pull out design for easier maintenance.



Direct Flexible Coupled

Materials of Construction

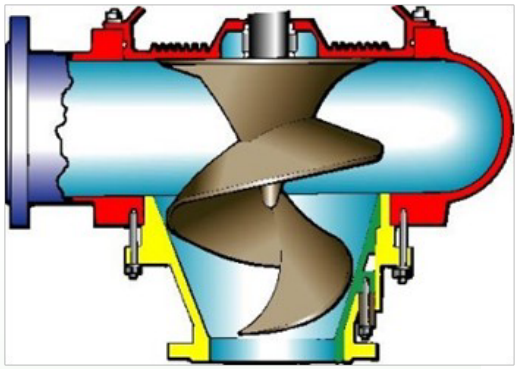
Interchangeability between bearing frames, motors and hydraulic ends allows the possibility of upgrading at any time to suit changing operating conditions. This can be important when working with unpredictable sludge that may require additional power reserves from larger motors or harder materials to offset abrasive or corrosive wear.

Code	Pump Casing	Impeller	Linear/Suction Cover
1	Cast Iron	Nodular Iron	Cast Iron
2	Cast Iron	Nodular Iron	Hidro Hard
3	Cast Iron	Cr Mo Steel	Hidro Hard
5	316 St Steel	316 St Steel	316 St Steel
6	Duplex St Steel	Duplex St Steel	Duplex St Steel

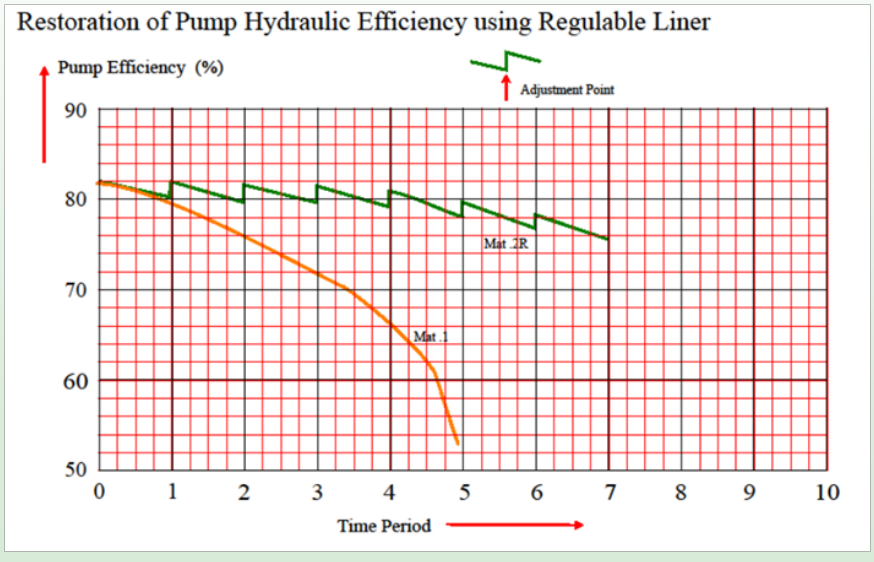
Sustainable Efficiency

An adjustable suction liner is an optional feature that carries the benefit of allowing easy restoration of pump performance after wear to the hydraulic end. This delivers immediate energy savings through simple site adjustment of external screws on the pump casing to restore efficiency.

In dry well applications, sustainable pump performance and efficiency are both practical and easily achievable as part of a routine maintenance inspection. The energy savings through restoring efficiency can more than cover the cost of the site maintenance activity. This is dependent upon the size of motor, utilisation and amount of energy it is possible to save.



Typically standard cast iron (Material 1) waste water pumps can lose 4-5% efficiency per year through wear. By using a hard iron adjustable liner (Material 2R) and making annual adjustments it is possible to sustain pump performance and efficiency for several years, thus saving energy.

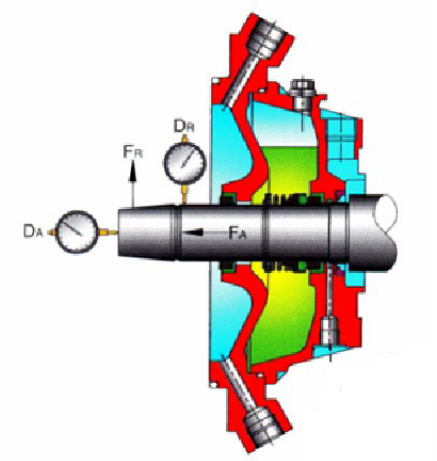


Reliability

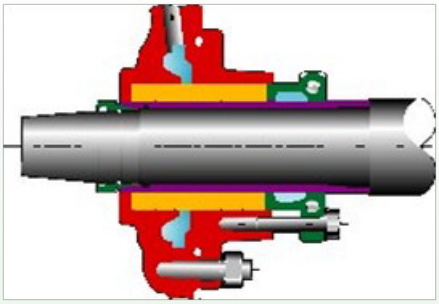
In order to sustain the integrity of mechanical seals and bearings it is important to keep shaft deflections to the minimum. Deflection can be both axial and radial as loads vary.

Shaft Sealing is normally tandem mechanical seals separated by an oil chamber. Cartridge shaft seals can also be fitted to some models of bearing frame if preferred or required.

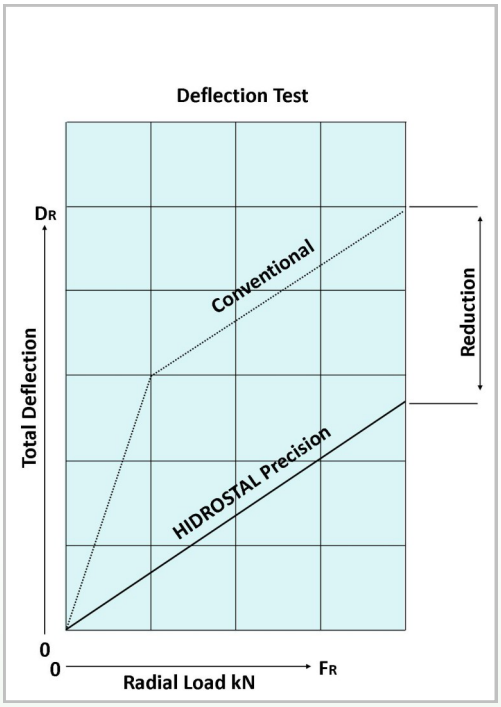
Shaft Deflection



Tandem Mechanical Sealing



Cartridge Type Sealing



The bearing arrangement for the two main styles of Hidrostal bearing frames are quite different but have a common feature that, once assembled, the bearing clearances D_A are virtually eliminated. This significantly reduces shaft deflection and allows much higher hydraulic loads F_A & F_R to be imposed without exceeding the permitted limits of 0.05 mm deflection. A conventional bearing arrangement without a means of controlling clearances can almost equal the permitted shaft deflections before any significant hydraulic loads are imposed.

Controlling clearances reduces shaft deflection thus contributing to reducing life time costs by providing the best possible environment for the mechanical seals to work to their full potential.

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