

ROTATING RIGHT

**SEEPEX
RANGE BTH
PROGRESSIVE CAVITY PUMPS**

An independent twist

the new **BTH**



We solve
Problems!

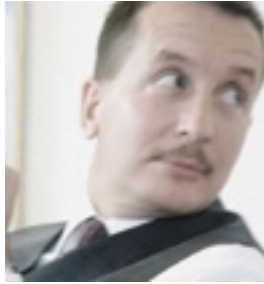


Peter Josten

For 15 years, **seepex** has handled dewatered sludges from belt presses, plate-and-frame filter presses and centrifuges. The **T** range open hopper pumps eliminated many of the shortcomings inherent in conventional handling systems.

The **BT**, however, could transport sludges only up to a DS content of 18 %. The **BTE** and the **BTI** followed the success of the **BT**, and could handle DS contents up to a maximum of 32 % to 40 %.

Now, the new **BTH** range consolidates the knowledge and skill in handling highly viscous and compact media that **seepex** has acquired through decades of experience in global markets.



Peter McGarian

The vertical hopper walls and the completely new variable speed auger technology make the **BTH** the ideal pump for most applications for transferring and metering viscous products.

BTH range pumps can be used for handling dewatered sludges in environmental applications as well as for the transport media with poor flow properties in the pulp and paper, food, chemical, pharmaceutical and cosmetics industries.

The optimal design of both feed hopper and the auger technology offers enhanced automated operation with computer aided control systems, guaranteeing a consistent, efficient operation with only minimal operation and maintenance personnel involved.

The new **BTH** range pump eliminates the specific disadvantages of conventional conveying systems. In environmental applications, handling of dewatered sludges with a DS content up to 45 % with metering accuracy is now possible for flow rates lower than 0.5 m³/h (2 gpm).

The **BTH** range pump, with its modular design and its adaptability to the most varied conveying and mixing requirements, sets new, higher technical standards, with significant reductions in both initial investment and life cycle costs.



Range **BTH**



Thank you Archimedes!

Often, a variation of the Archimedian ribbon screw is used to convey dewatered sludges over short distances. The bearing is the auger, so there is no clearance between the screw and the auger. The auger is supported by a plastic plate, minimizing the friction to the screw. By incorporating this technology in our pumps, we maximize the benefits and genius of the Archimedian screw.

Plant operators confirm that the **BTH** range pump design represents a universal solution for the handling of sludge from belt presses, filter presses and centrifuges, and for solids up to 45%. This allows us to solve conveying problems for which pumps could not be previously used.



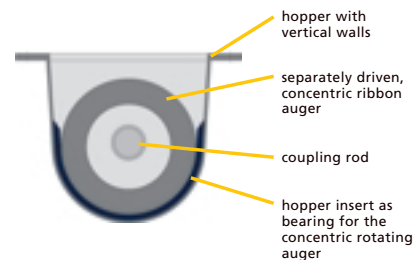
Klemens Fockenber

The auger – the leading edge

The new **BTH** range pump combines the many benefits of all the designs within the group T. This pump design consists of a separately driven concentric rotating ribbon auger with a maximized diameter and a long pitch. By means of separate control of the conveying screw speed, the **BTH** pump can be used for almost any conveying media. The control of the screw speed allows optimal filling of the pumping elements without any overcapacity in the compression zone.

Even media which tend to bridge can be handled with ease by the large screw diameter of the **BTH** pump.

Because reduction of the screw speed minimizes shearing, the **BTH** range is the technically optimal solution for shear sensitive liquids. It can also be used as a batch mixer by mounting a bridge breaker with either paddle shafts or bars. Identical to the ribbon auger, this unit can be controlled independently without simultaneous rotation of the pumping elements.

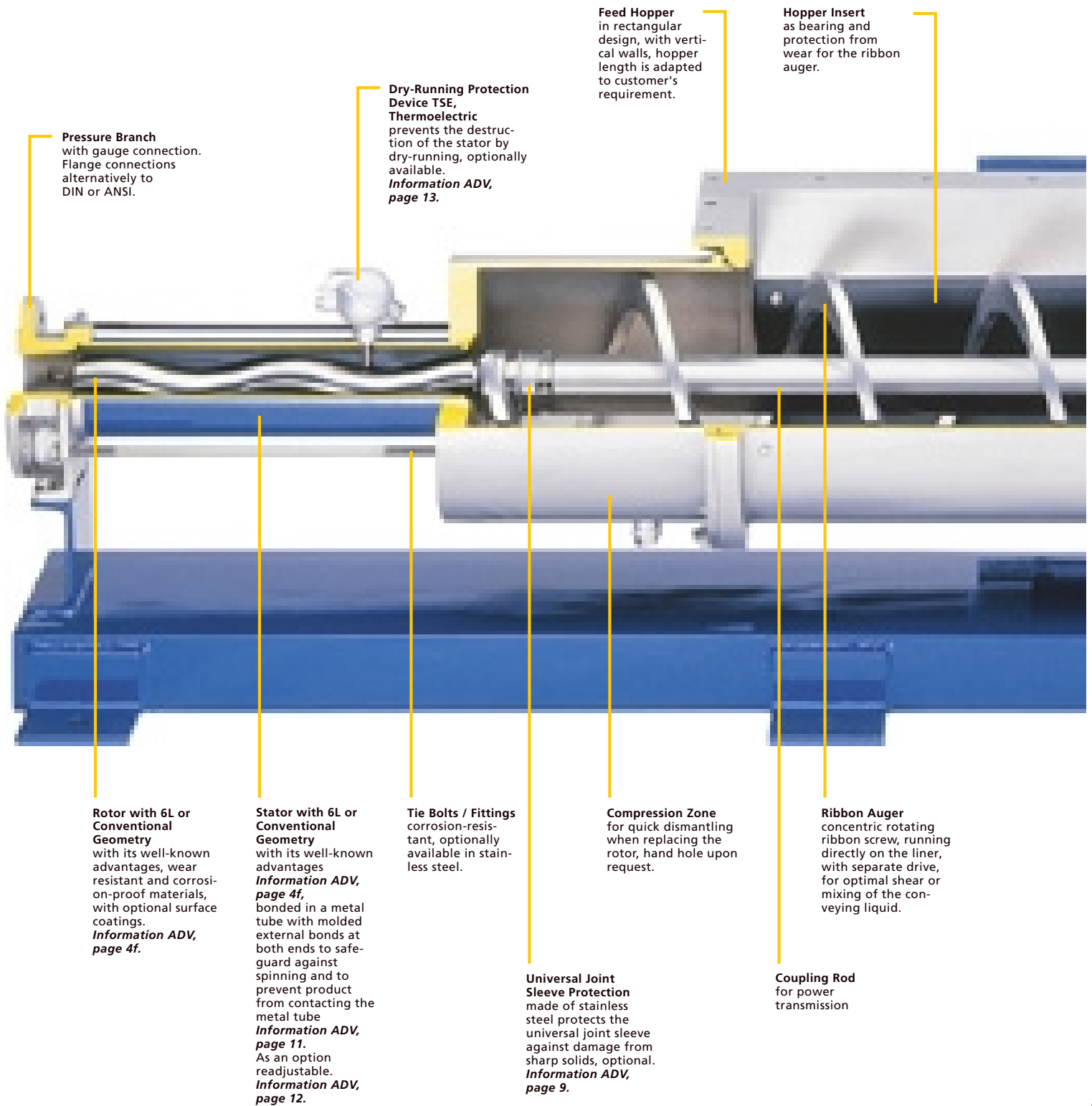


**Cross section of the BTH,
built on the Archimedian
Principle:**

The spiral inside the cylinder rotates, making contact with the cylinder wall, thereby creating the gasket effect.

seepex range BTH pumps are used in many industries to handle very viscous products with minimal flowability.

The modular design of the BTH pump consists of 5 sizes and allows flow rates up to 50 m³/h (220 gpm) at differential pressures of max. 36 bar (540 psi).



Pressure Branch with gauge connection. Flange connections alternatively to DIN or ANSI.

Dry-Running Protection Device TSE, Thermoelectric prevents the destruction of the stator by dry-running, optionally available. *Information ADV, page 13.*

Feed Hopper in rectangular design, with vertical walls, hopper length is adapted to customer's requirement.

Hopper Insert as bearing and protection from wear for the ribbon auger.

Rotor with 6L or Conventional Geometry with its well-known advantages, wear resistant and corrosion-proof materials, with optional surface coatings. *Information ADV, page 4f.*

Stator with 6L or Conventional Geometry with its well-known advantages *Information ADV, page 4f.*, bonded in a metal tube with molded external bonds at both ends to safeguard against spinning and to prevent product from contacting the metal tube *Information ADV, page 11.* As an option readjustable. *Information ADV, page 12.*

Tie Bolts / Fittings corrosion-resistant, optionally available in stainless steel.

Compression Zone for quick dismantling when replacing the rotor, hand hole upon request.

Ribbon Auger concentric rotating ribbon screw, running directly on the liner, with separate drive, for optimal shear or mixing of the conveying liquid.

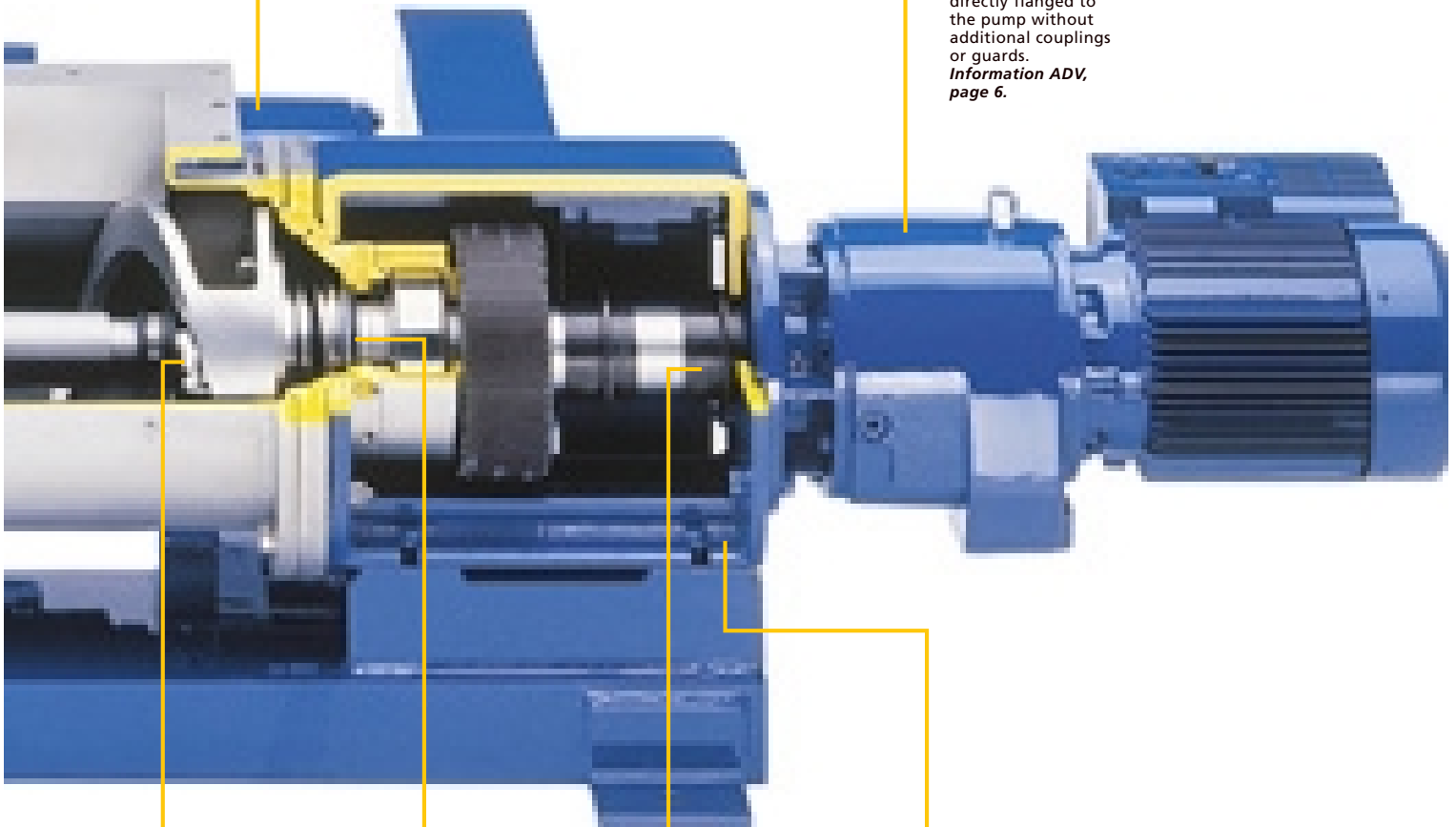
Universal Joint Sleeve Protection made of stainless steel protects the universal joint sleeve against damage from sharp solids, optional. *Information ADV, page 9.*

Coupling Rod for power transmission



Ribbon Auger Drive
geared motors, variable speed drives or frequency-controlled drives from all major manufacturers.

Pump Drive
geared motors, variable speed drives or frequency-controlled drives from all major manufacturers, directly flanged to the pump without additional couplings or guards.
Information ADV, page 6.



Universal Joint
consisting of just 5 components. Power transmission through wear resistant, hardened and replaceable joint parts; easily repaired.
Information ADV, page 9.

Universal Joint Sleeve With Holding Bands
protects the grease-filled joints from penetration of the pumped liquid, streamlined design to reduce turbulence and NPSHr.
Information ADV, page 9.

Shaft Sealing
designed as cartridge unit with quench.

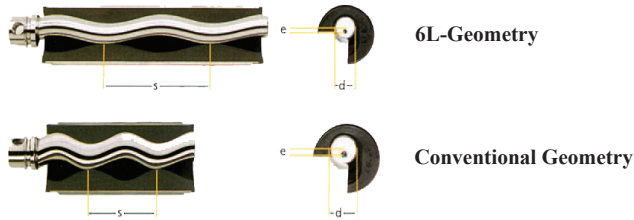
Plug-In Shaft Connection
for quick disassembly or repair of pump and drive, for quick replacement of the rotating parts; with plug-in shaft pin and splash ring to secure the plug-in shaft connection and additionally protect the bearing from contamination/gland leakage.

Lantern
for connection of pump and drive and to secure the assembly to the baseplate.
Information DRI.

User Advantages

Rotor - Stator-Geometries

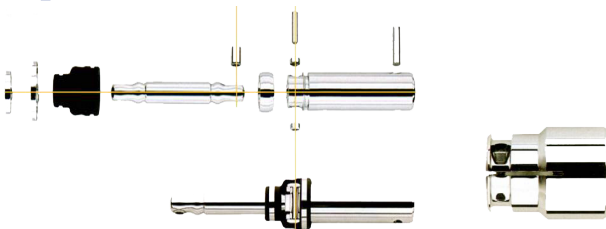
seepex 6L - conventional geometry comparison



smaller rotor diameter
 + reduced eccentricity
 + increased pitch length
 = 6L-Geometry with 20 % lower sliding velocity

- Improved service life (+35-50%) due to lower sliding velocity and longer sealing line
- Better pressure stability due to wider sealing line
- Reduced thrust loads on universal joints and bearings due to smaller rotor diameter and lower eccentricity
- Thrust loads of the conventional design exceed the thrust loads of the 6L-Geometry by approx. 50 %
- Smooth and almost pulsation-free operation
- The "stretched cavities" have a positive influence on vibrations, turbulences, pulsation and shear rates

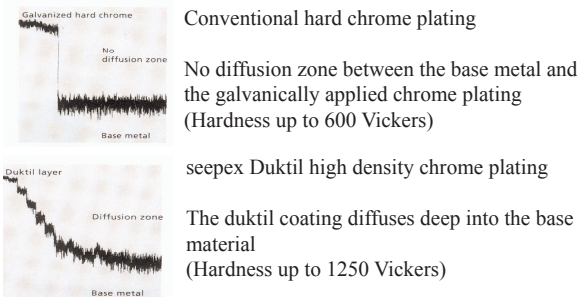
seepex Universal Joint Design



Benefits

- Only 4 hardened and wear resistant universal joint components (1 coupling rod bush, 2 guide bushes, 1 coupling rod pin)
- Positively sealed, gas and liquid tight elastomer universal joint sleeve
- Optional stainless steel universal joint sleeve protector with unconditioned - 10.000 h/24 months guarantee on the protected universal joint
- Simple and cost-effective to maintain
- Streamlined design, thus improved NPSH conditions
- Simple and cost-effective to maintain

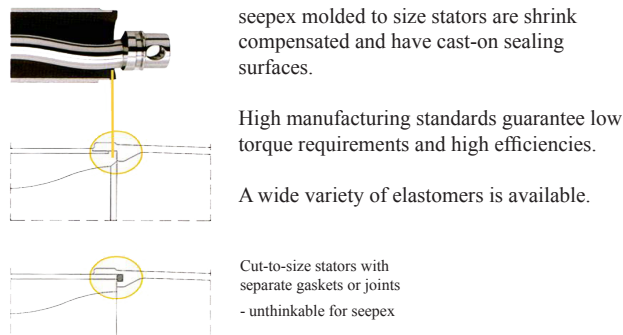
seepex has The Optimum Rotor Surface



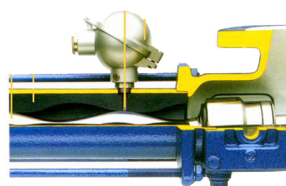
Benefits of the high quality seepex rotor surface

- Reduced starting and operating torque
- Improved efficiencies
- Smoother operations
- Increased service life
- The hardness of the coating is 1250 Vickers versus 180 of the base material
- The adhesion to the base material is excellent with no surface fissures

seepex Molded to size stators



seepex Optional TSE Dry Run Protection



Benefits

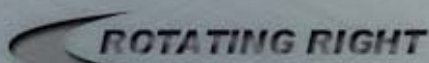
- Universal solution for all applications protects pump and stator against damages caused by frictional heat due to lack of liquid pumped
- Highly efficient low cost dry running protection system



TSE controller for panel mounting



Complete IP55 (NEMA 4) pump control panel with incorporated TSE controller



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