

ANDRITZ
Separation



Krauss-Maffei Pusher Centrifuges SZ
Continuous Separation

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Process Data & Applications

▪ Processing Parameters:

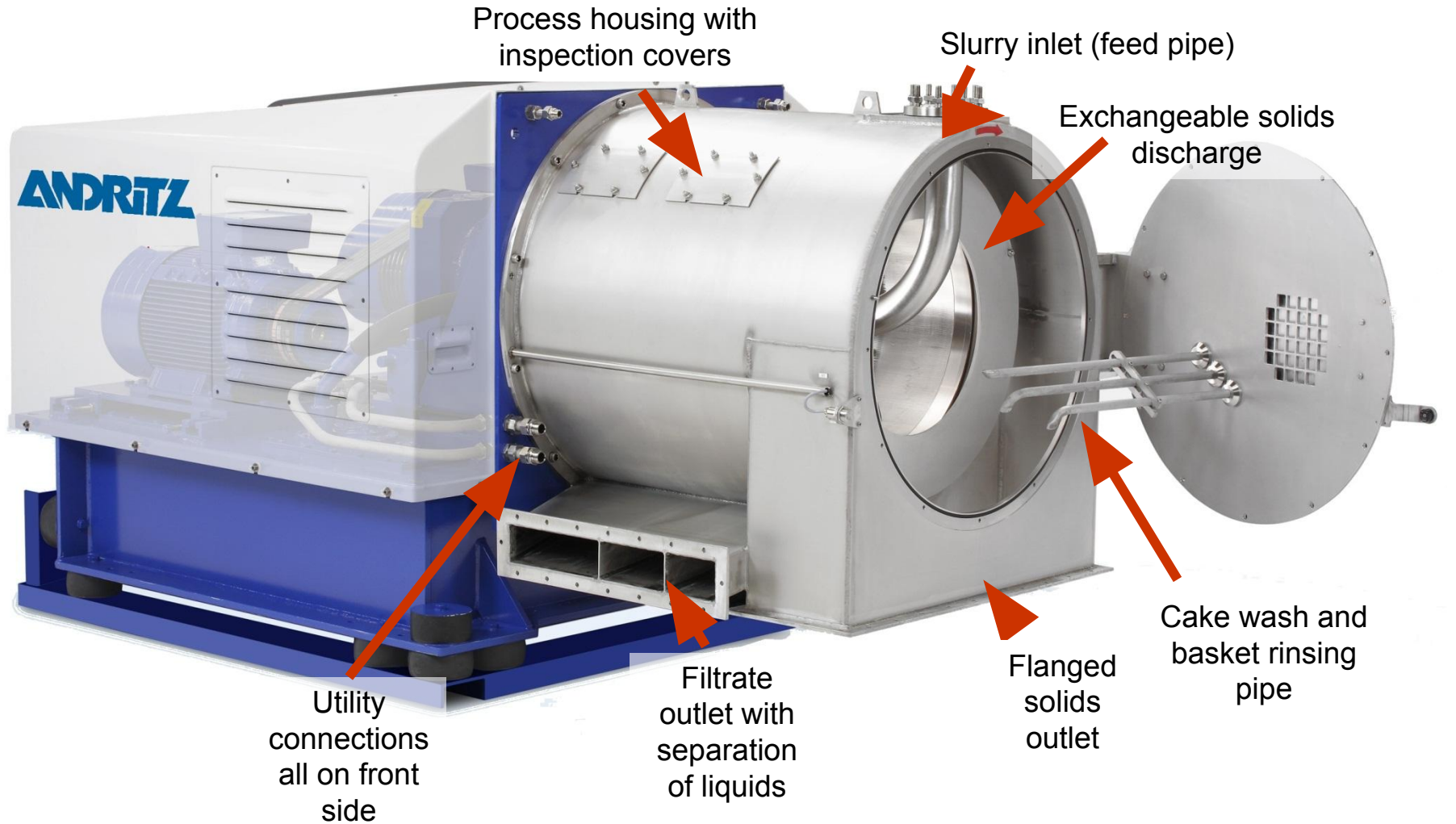
- Average Particle Size: 80 - 2000 μm
- Feed Solids Concentration: > 20 % wt (crystalline products)
- Solids Throughput: up to 150 t/h
- Basket Diameter: 250 mm – 1250 mm
- Solids Recovery: up to 99 % wt

▪ Applications:

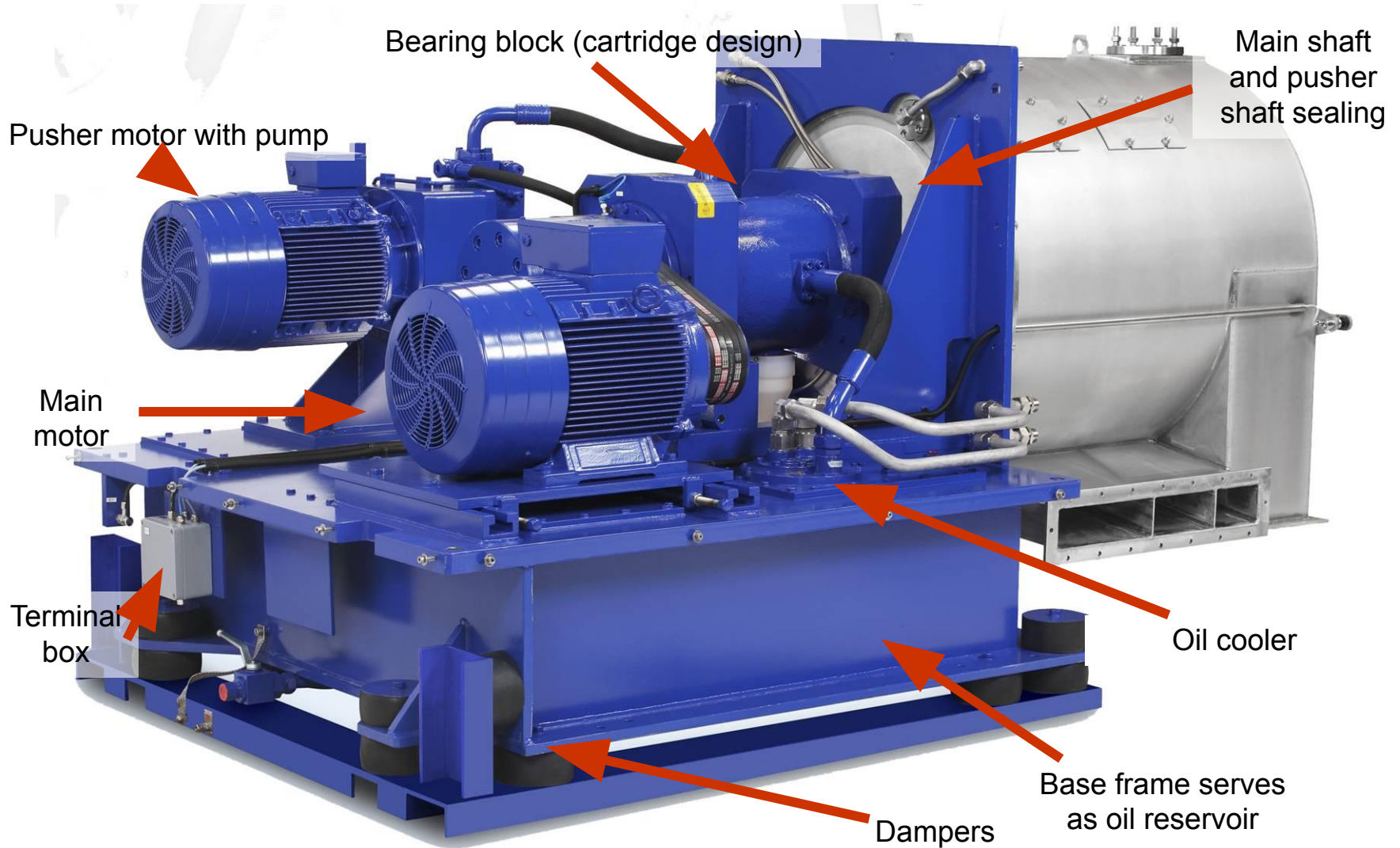
- Bulk Chemicals
(Soda applications, NaCl etc.)
- Agro Chemicals
(KCl, Ammonium sulphate, Urea etc.)
- Plastics/ related
(ABS, POM, Adipic acid etc.)
- Foodstuff/ related
(Sodium hydrogen carbonate, Phosphoric acid etc.)



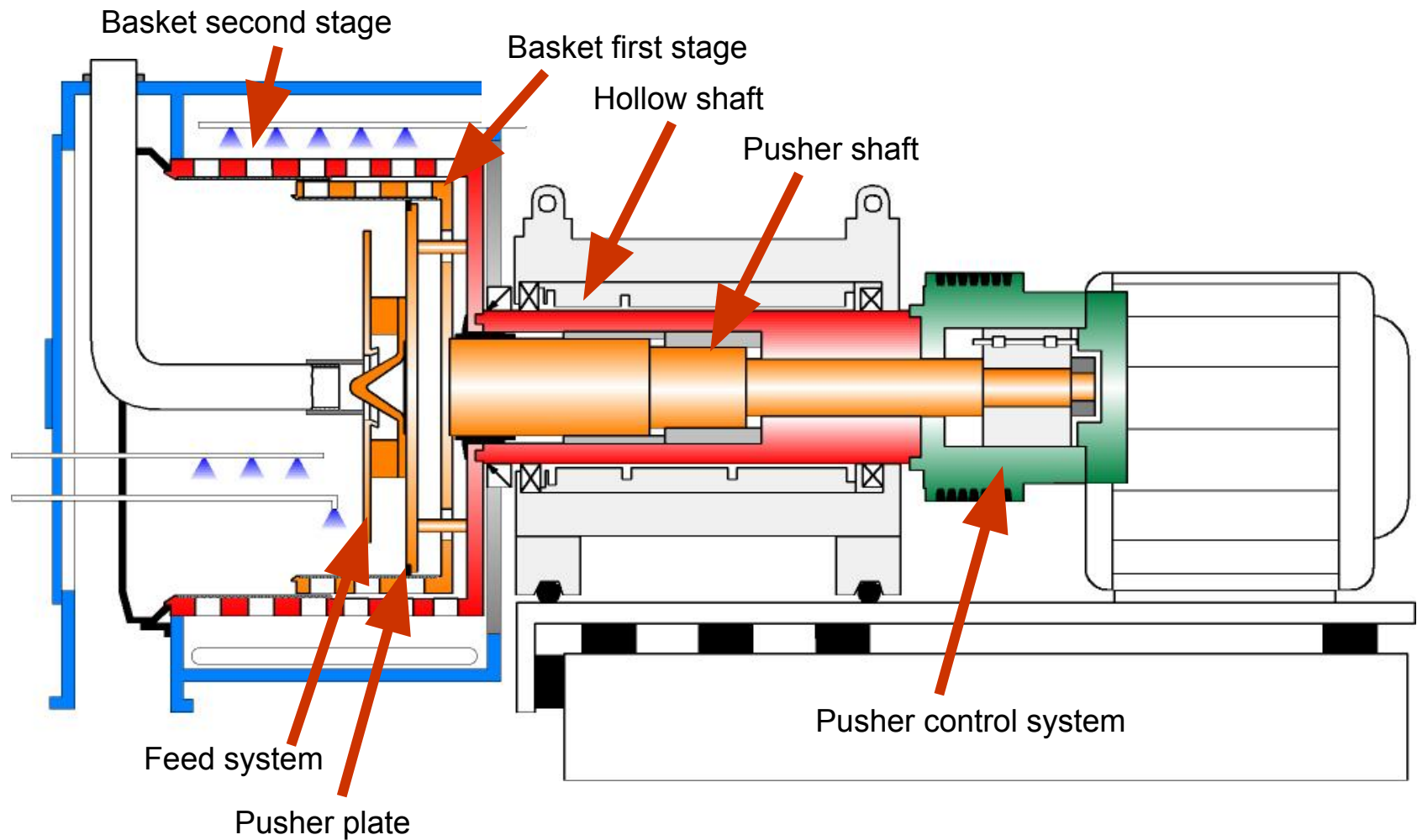
Layout: Process side overview



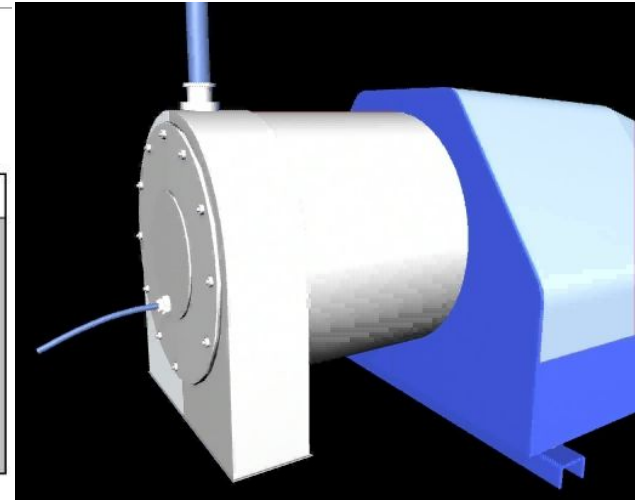
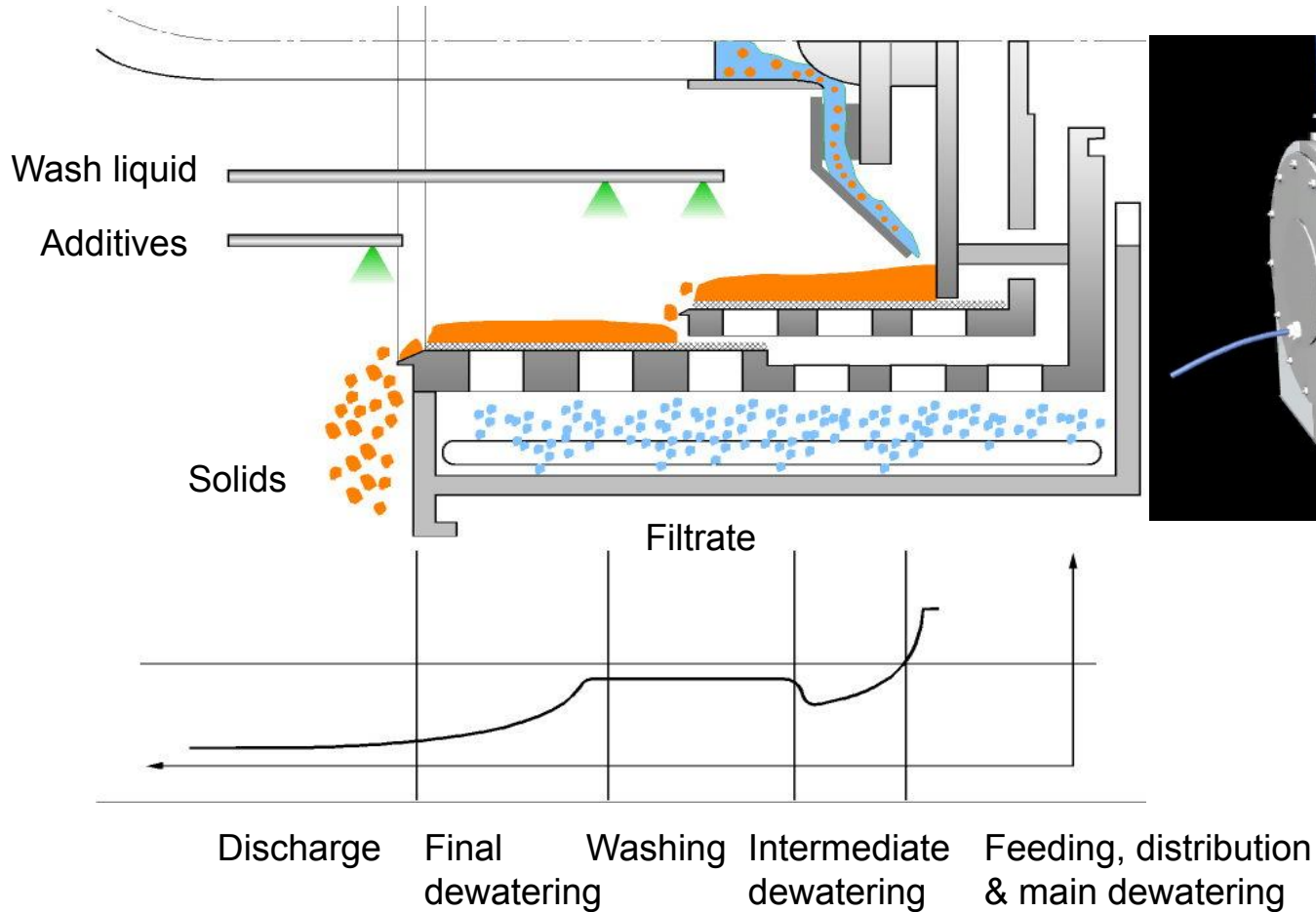
Layout: Drive Side Overview



Cross Section Pusher Centrifuge



Process Basics Pusher Centrifuge



Double Filtration Technology

Traditional Main Filtration steps

pusher plate

process

suspension is fed continuously



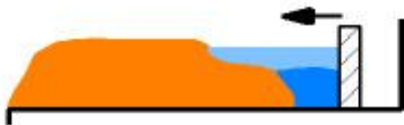
moves backward

The solids are retained on the screen



rear position

loose suspension slides backward



moves forward

Loose suspension becomes compressed



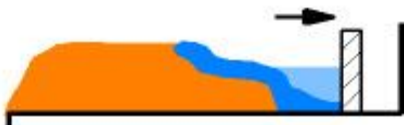
moves forward

Solids become pushable and pushes the cake to the front



forward position

feed zone is flooded up to the cake surface



moves backward

a portion of the newly created cake slides backward

Process Features

Process Housing

▪ Features:

- Removable inspection cover
- Large door to process area
- Feed pipe through top of housing
- Door hinge on SZ 630 and larger size
- Tangential Inspection covers for easy basket shell inspection

▪ User benefits:

- Best access to process area
- Easy maintenance without removal of connections and heavy parts



Process Features

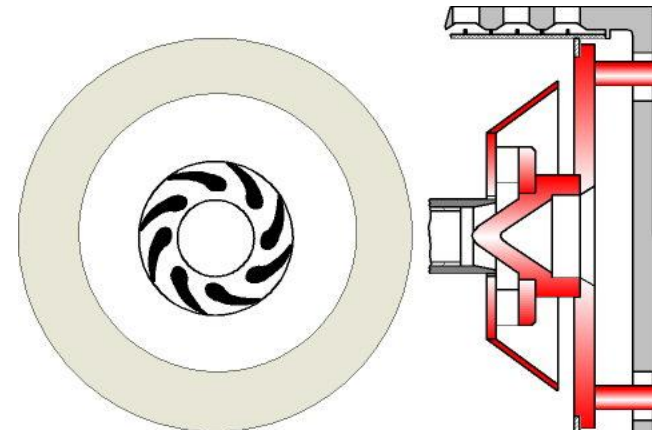
Slurry Feed System

▪ Features:

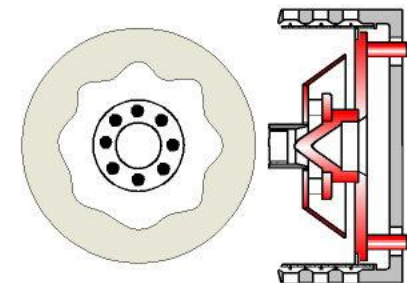
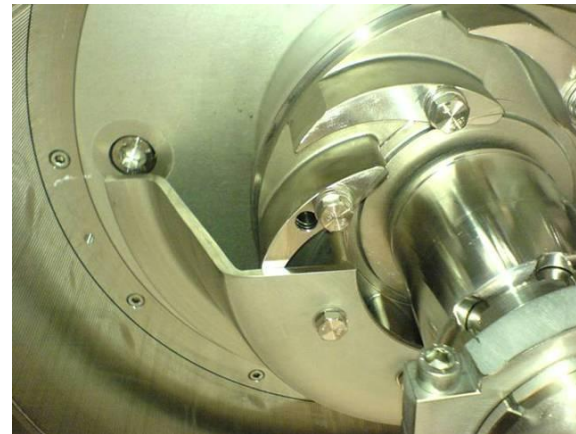
- Gentle product acceleration
- High filtration rate
- Homogeneous product distribution leads to smooth operation

▪ User benefits:

- High product quality
- Reduced maintenance costs
- High availability



Feed impeller with acceleration cone



Bolt distributor with acceleration cone

Process Features

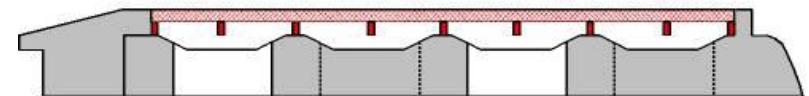
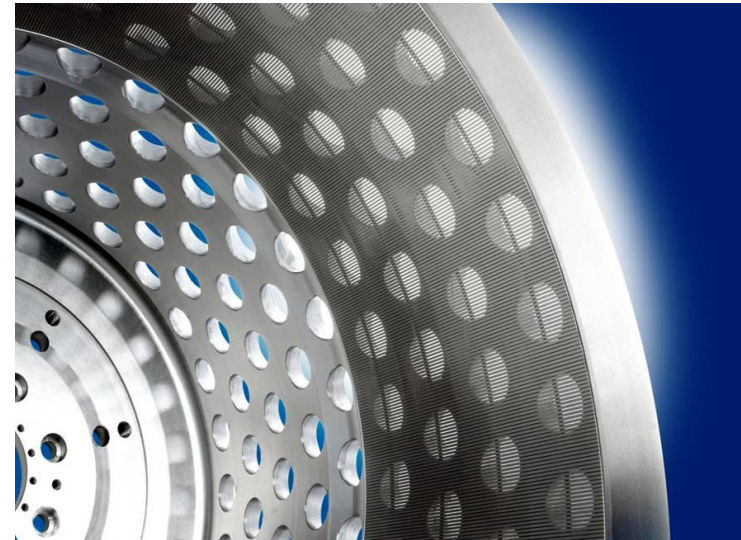
Slot Screen

▪ Features:

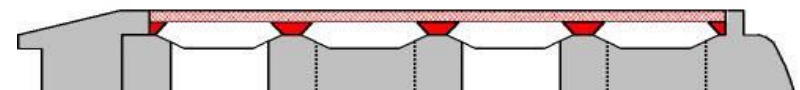
- Low profile screen
- Basket with tapered drain holes
- Only one or two sections per basket
- More free filtration area (open area)

▪ User benefits:

- Low solids attrition
- Easy installation
- Reduced sediments between basket and screen
- Easy cleaning of basket exterior
- Reduced down time of machine
- Accurate distance between wear ring and screen



Standard design welded screen



Milled slot screen (alternative)

Process Features

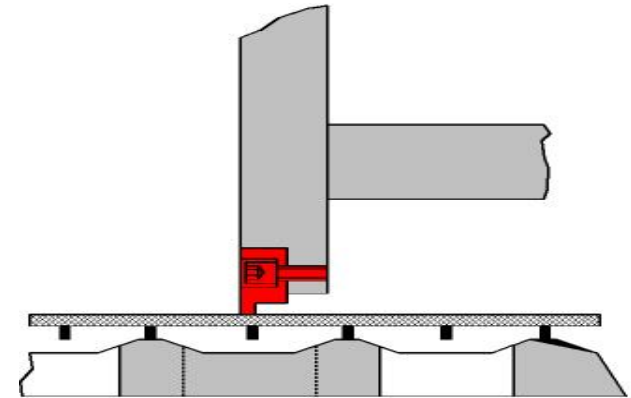
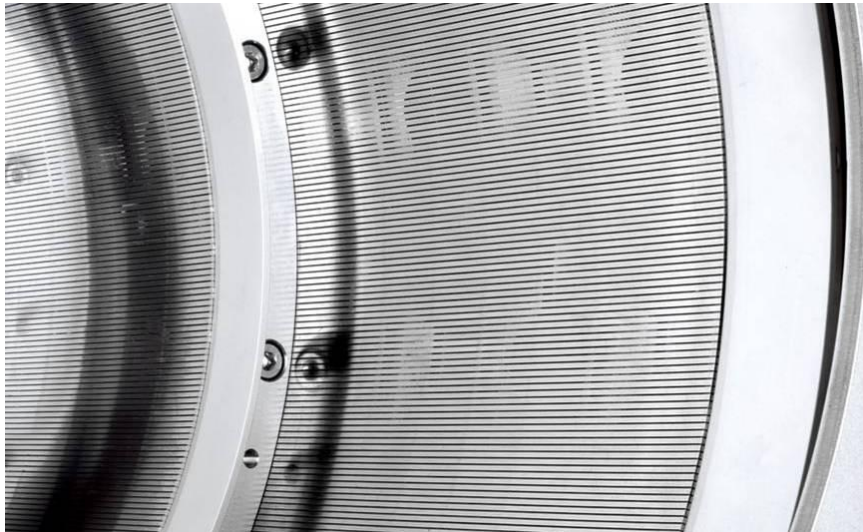
Wear Rings

▪ Features:

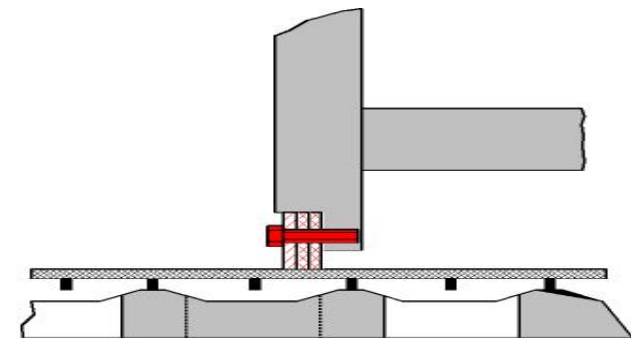
- Exchangeable wear rings
- Accurately manufactured slot to screen

▪ User benefits:

- Reduction of solids lost with filtrate
- Reduction of consumables to a minimum



Standard design wear ring



Wiper segments (alternative)

Mechanical Features

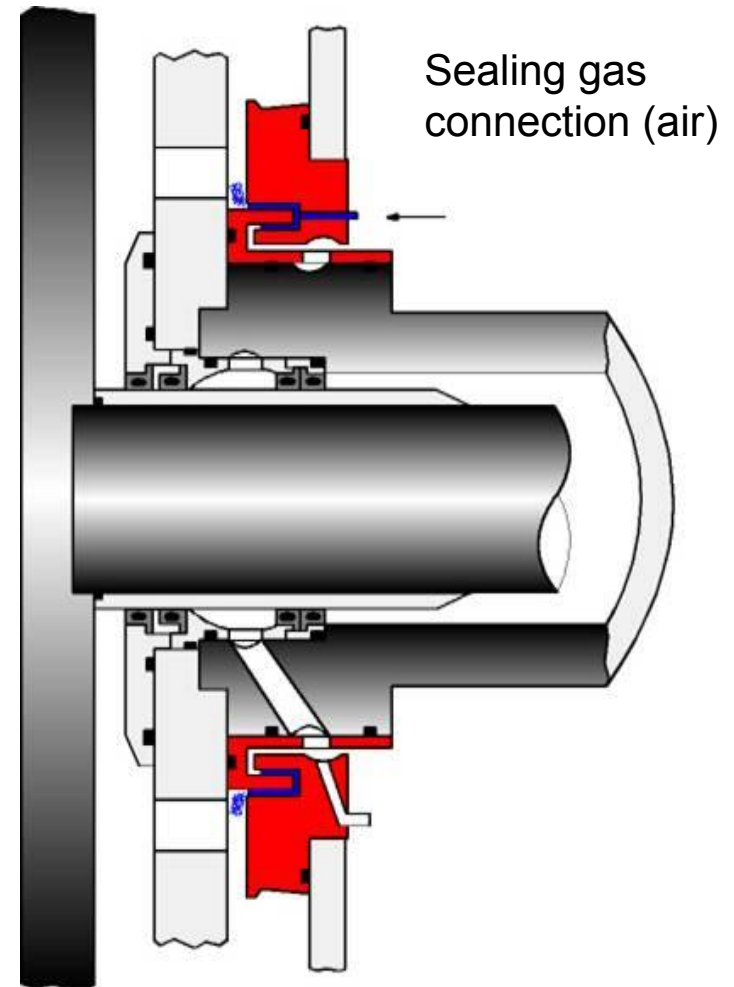
Housing Sealing

▪ Features:

- Simple and contact free sealing of process area(**absolute no product contamination**)
- Standard water free design
- Water design alternative available
- Gas tight alternative available

▪ User benefits:

- Safe operation
- Maintenance friendly



Mechanical Features

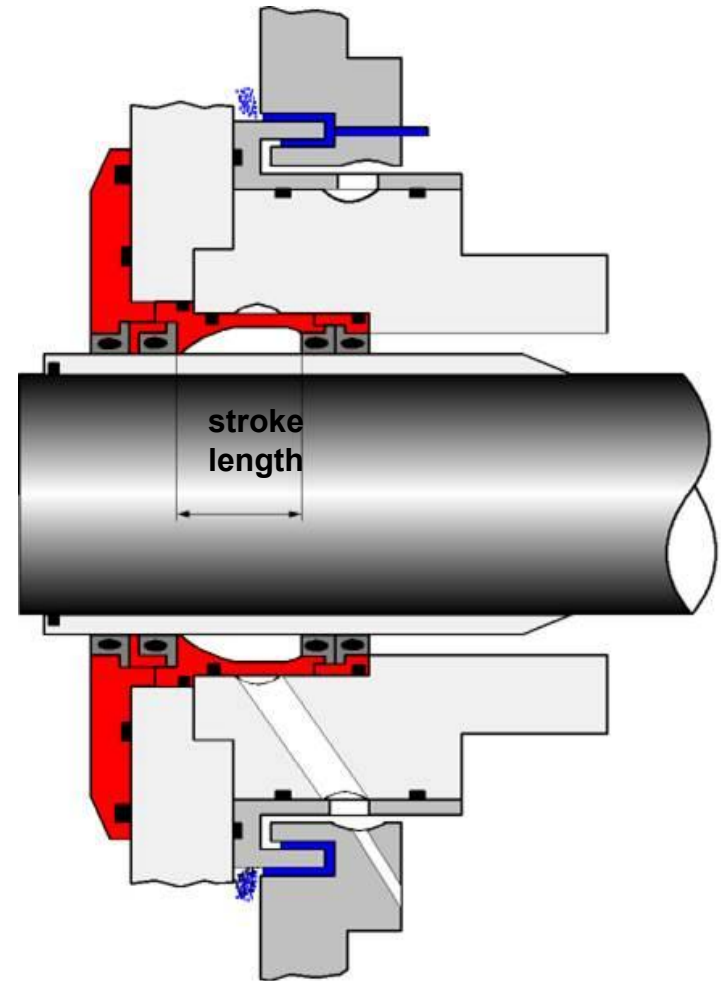
Pusher Shaft Sealing

▪ Features:

- Multiple seal rings
- Leakage control device

▪ User benefits:

- No possibility of cross -contamination product / lubricants
- Safe operation
- Simple check of sealing condition



Mechanical Features

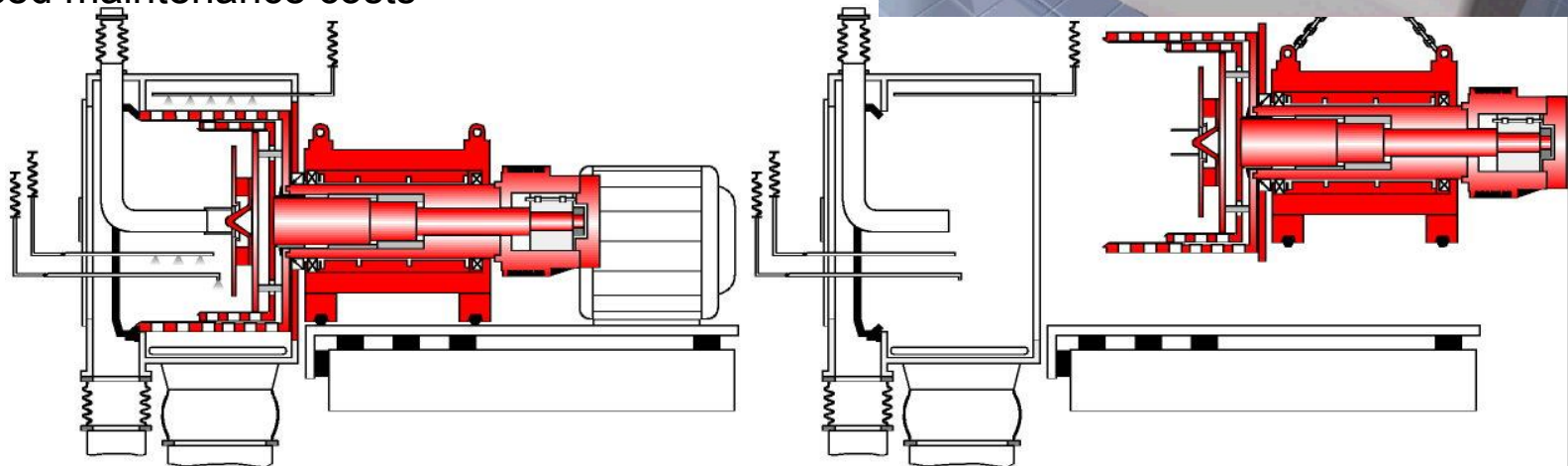
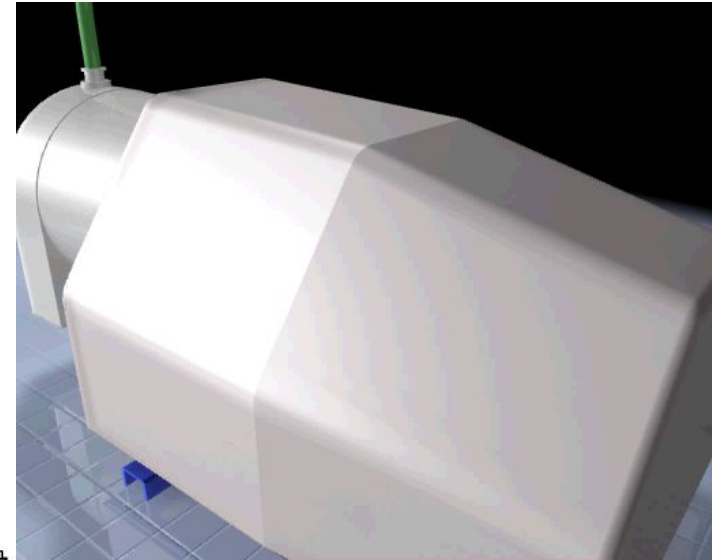
Cartridge

▪ Features:

- No disconnecting of process piping during maintenance
- Maintenance possible in a workshop
- Replacement against spare cartridge possible

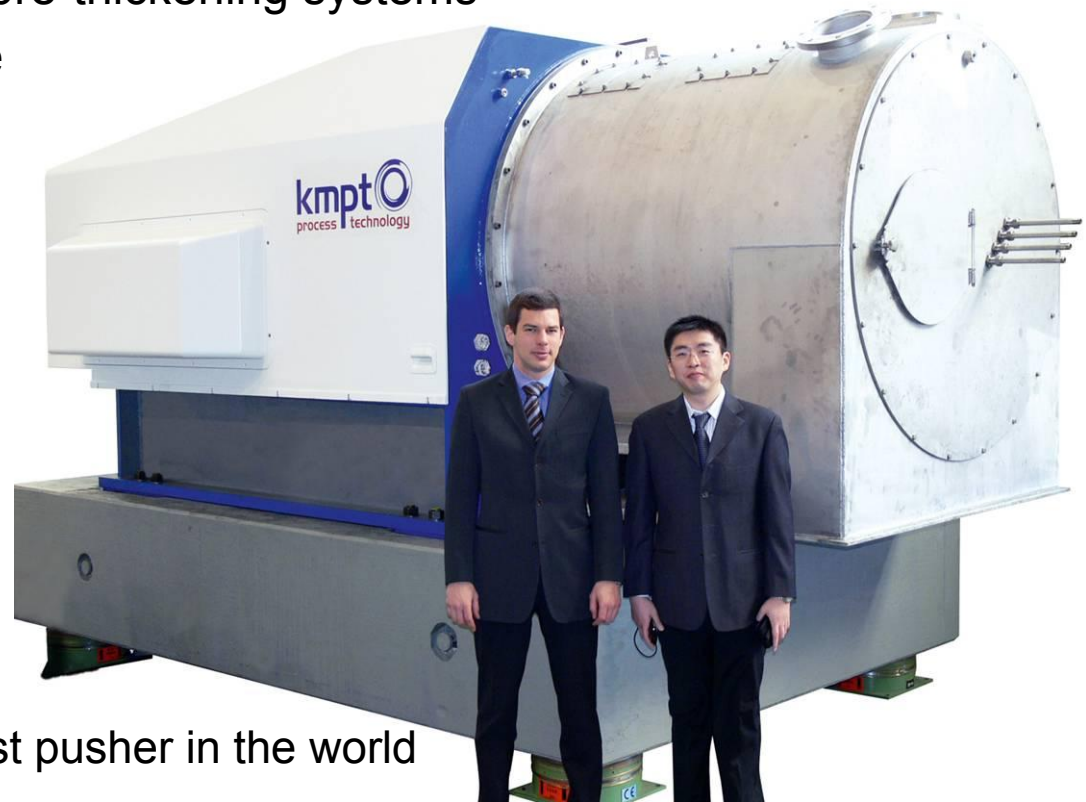
▪ User benefits:

- High availability
- Reduced maintenance costs



References

- 80 years of experience
- 3.500 pusher centrifuges world wide
- Pusher centrifuges including pre-thickening systems
- Test and rental units available



Krauss-Maffei SZ 1250 – largest pusher in the world



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Foundation Alternatives



Set up on rubber pads



Set up on concrete or steel foundation block