

**ANDRITZ**  
Separation



**Krauss-Maffei Pusher Centrifuges SZ**  
Continuous Separation

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# Process Data & Applications

## ▪ Processing Parameters:

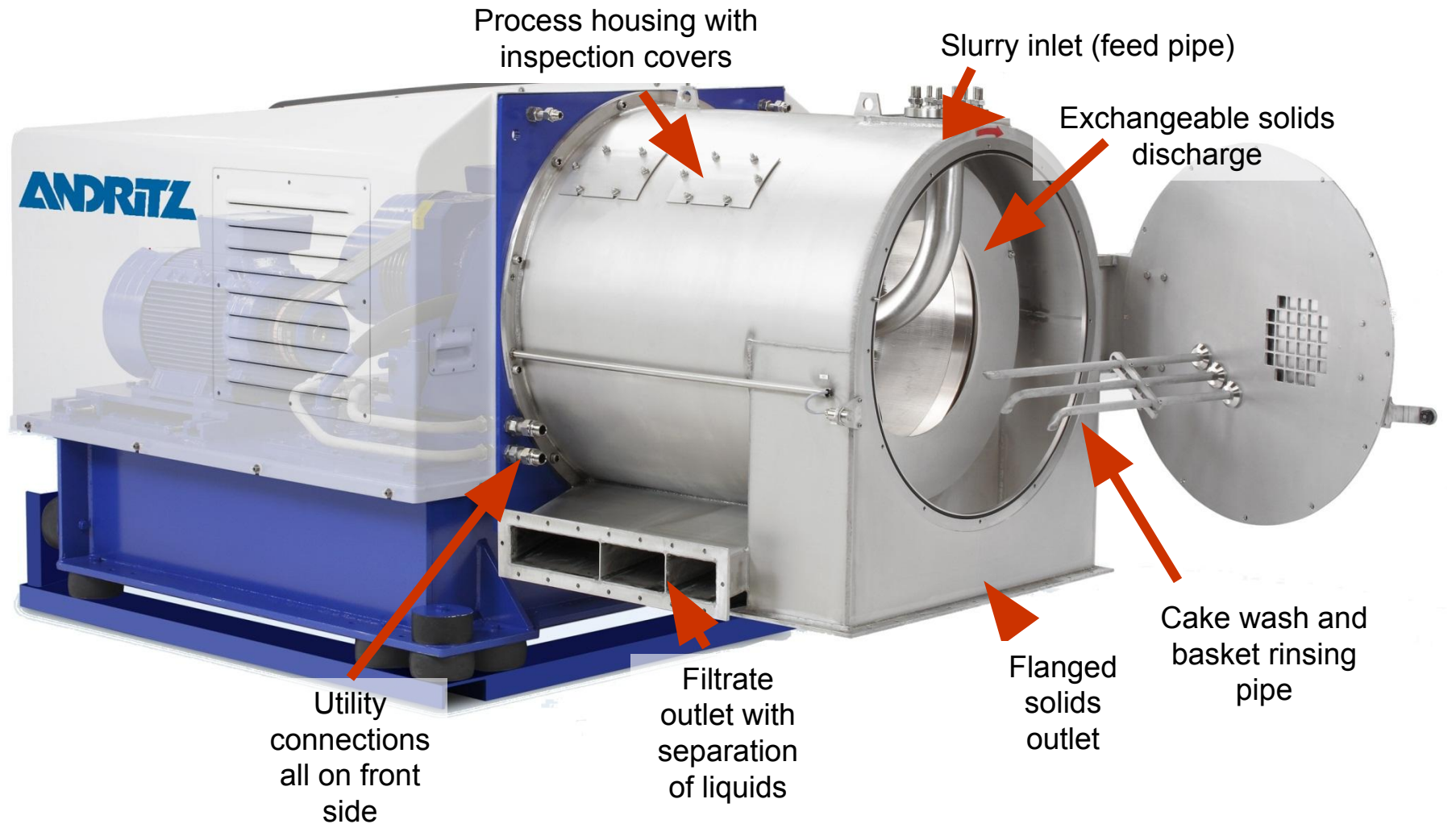
- Average Particle Size: 80 - 2000  $\mu\text{m}$
- Feed Solids Concentration: > 20 % wt (crystalline products)
- Solids Throughput: up to 150 t/h
- Basket Diameter: 250 mm – 1250 mm
- Solids Recovery: up to 99 % wt

## ▪ Applications:

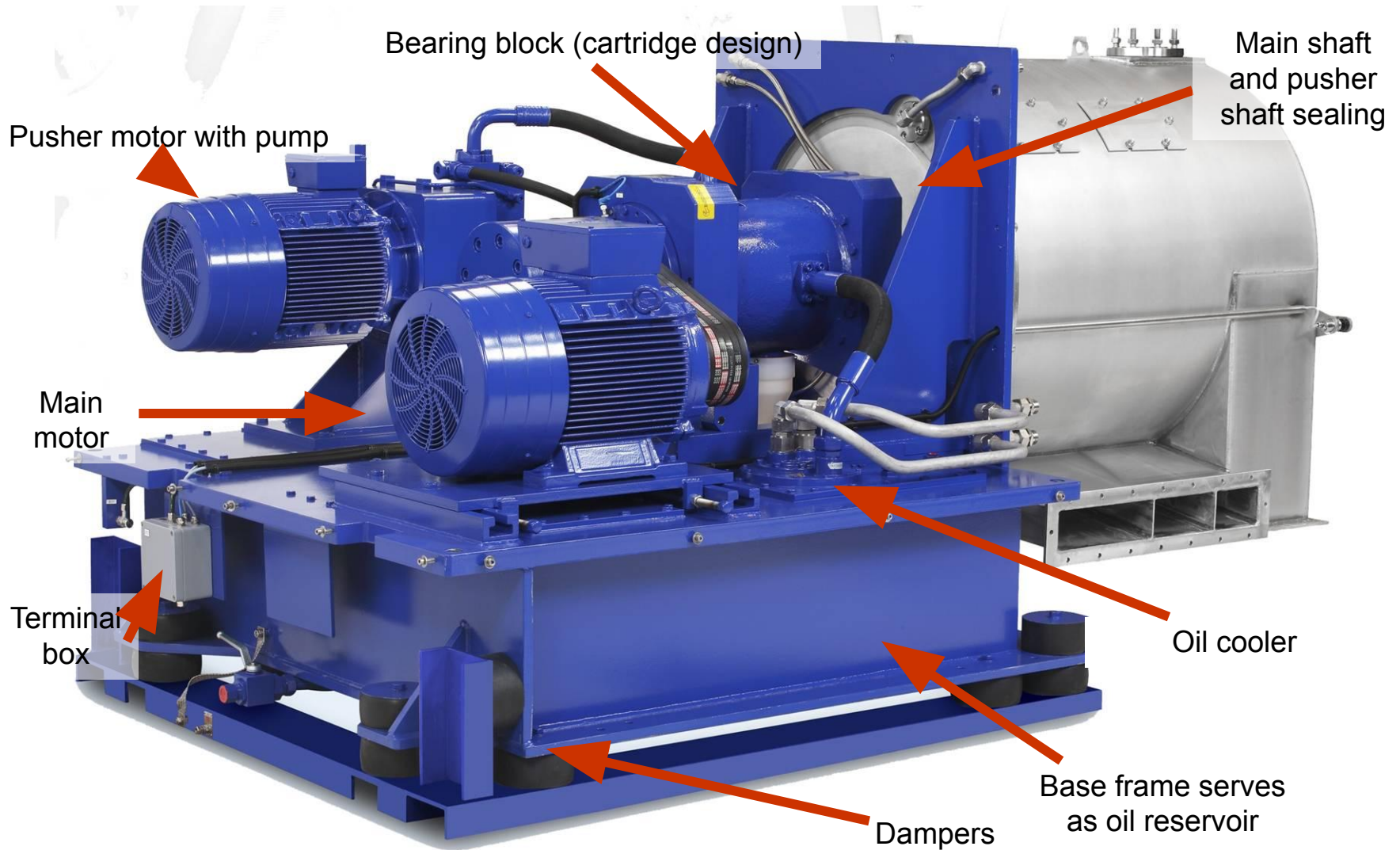
- Bulk Chemicals  
(Soda applications, NaCl etc.)
- Agro Chemicals  
(KCl, Ammonium sulphate, Urea etc.)
- Plastics/ related  
(ABS, POM, Adipic acid etc.)
- Foodstuff/ related  
(Sodium hydrogen carbonate, Phosphoric acid etc.)



# Layout: Process side overview

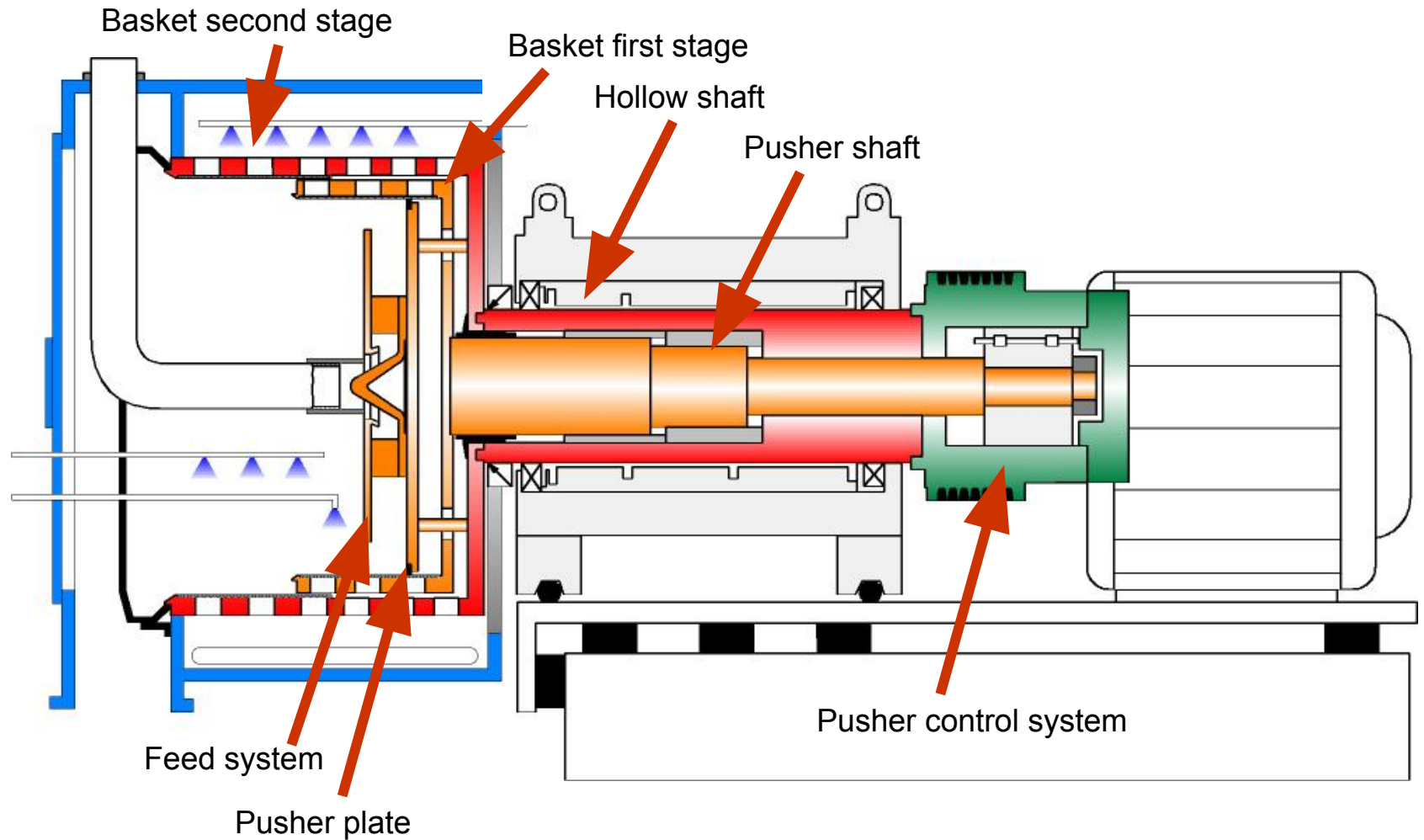


# Layout: Drive Side Overview

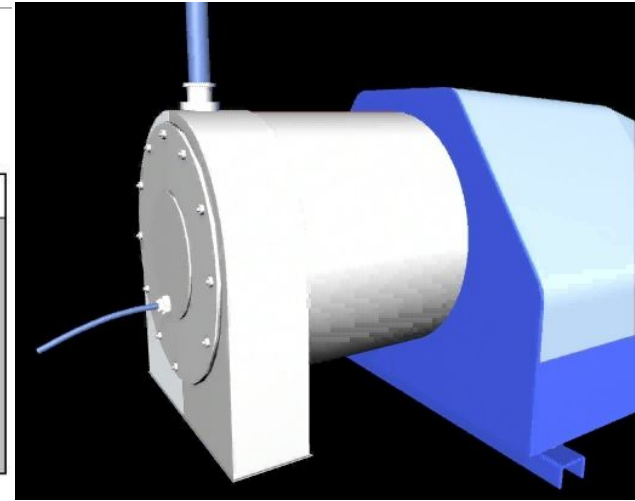
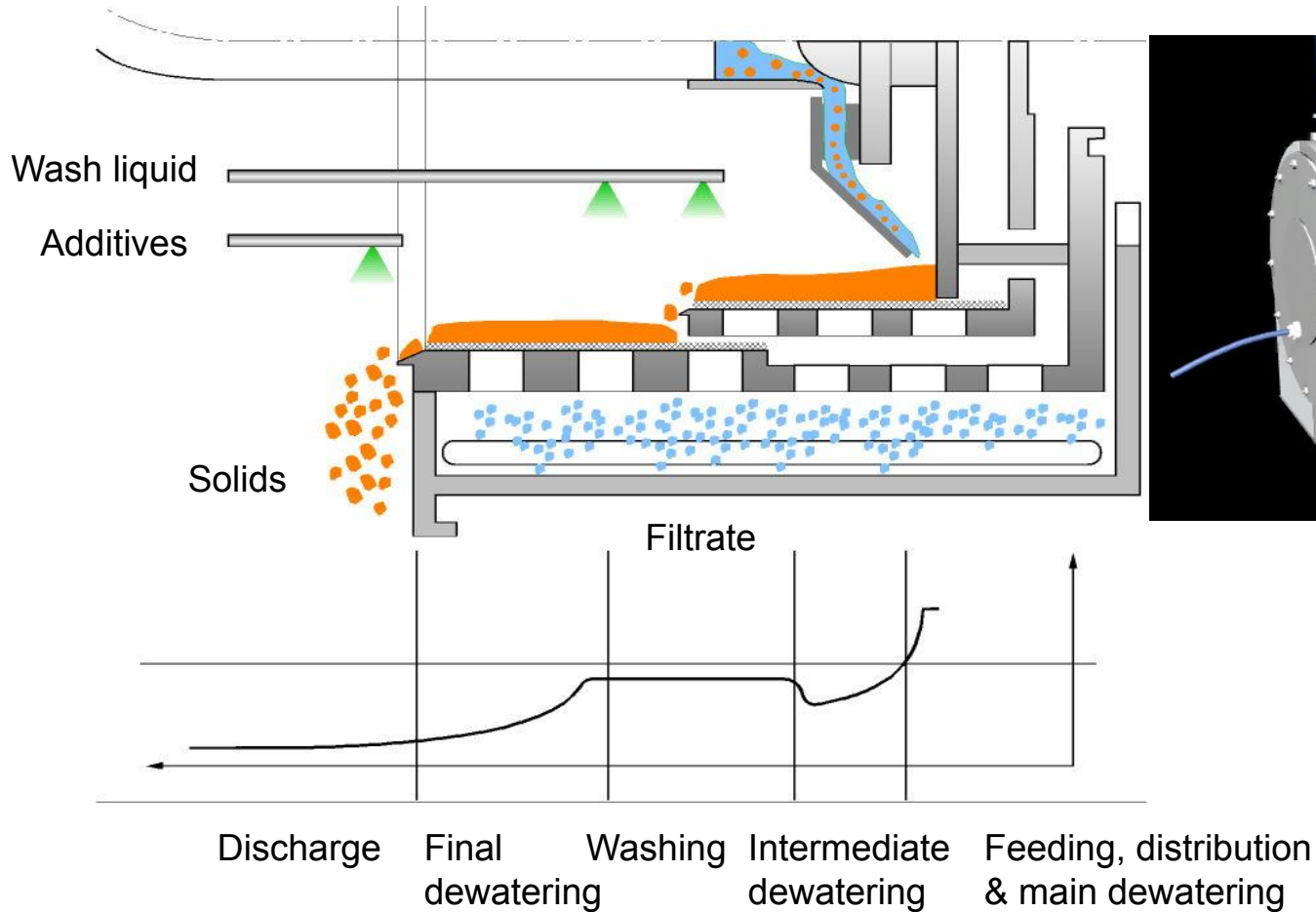




# Cross Section Pusher Centrifuge



# Process Basics Pusher Centrifuge



# Double Filtration Technology

## Traditional Main Filtration steps

*pusher plate*

*process*

suspension is fed continuously



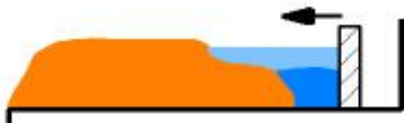
moves backward

The solids are retained on the screen



rear position

loose suspension slides backward



moves forward

Loose suspension becomes compressed



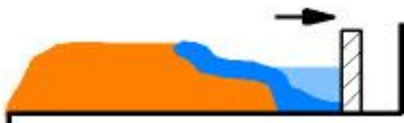
moves forward

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

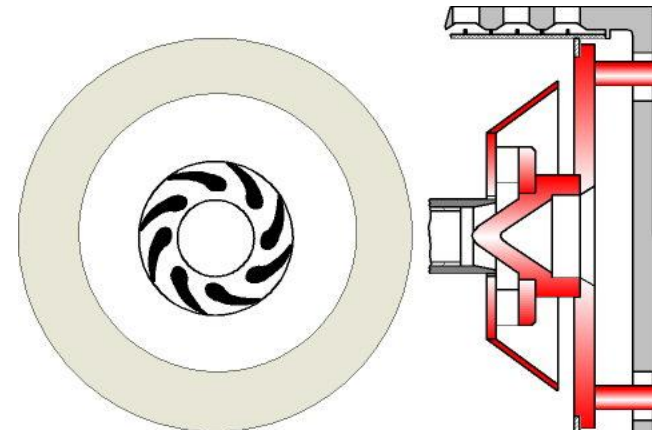
## Slurry Feed System

### ▪ Features:

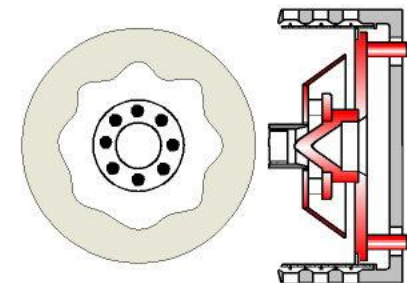
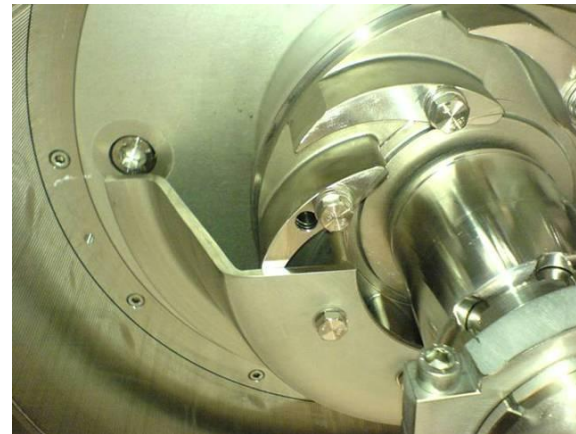
- Gentle product acceleration
- High filtration rate
- Homogeneous product distribution leads to smooth operation

### ▪ User benefits:

- High product quality
- Reduced maintenance costs
- High availability



*Feed impeller with acceleration cone*



*Bolt distributor with acceleration cone*

# Process Features

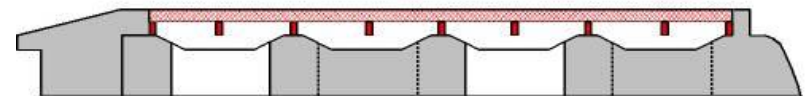
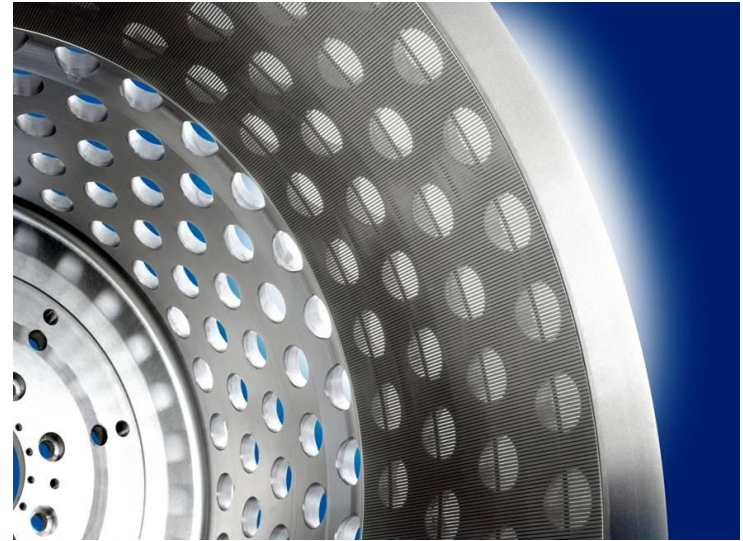
## Slot Screen

### ▪ Features:

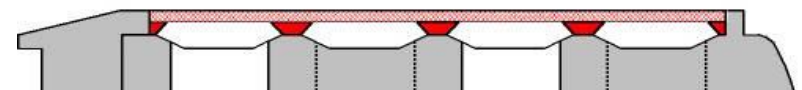
- Low profile screen
- Basket with tapered drain holes
- Only one or two sections per basket
- More free filtration area (open area)

### ▪ 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

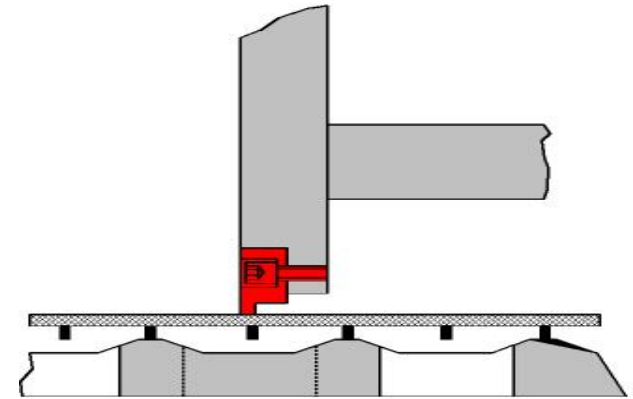
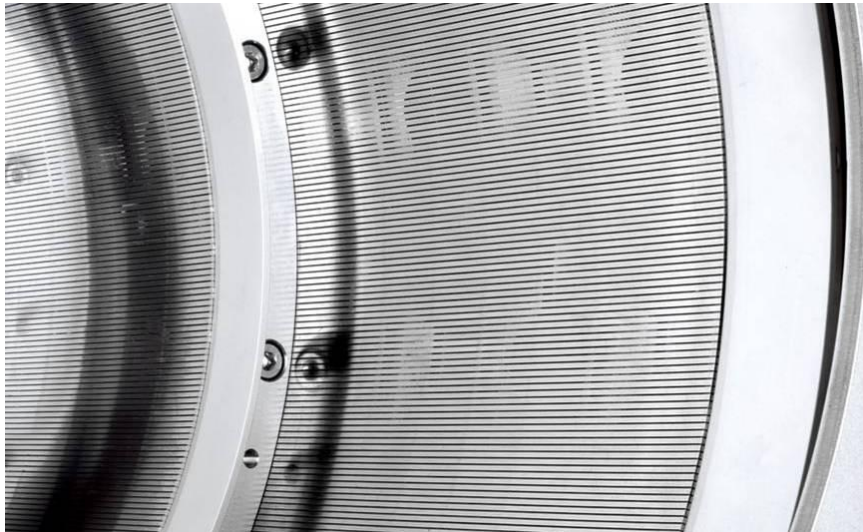
## Wear Rings

### ▪ Features:

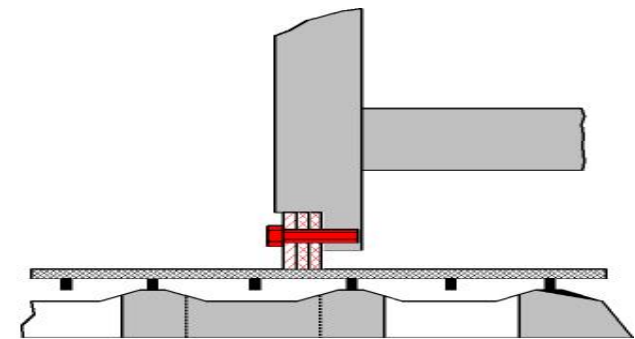
- Exchangeable wear rings
- Accurately manufactured slot to screen

### ▪ User benefits:

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



*Standard design wear ring*



*Wiper segments (alternative)*

# Mechanical Features

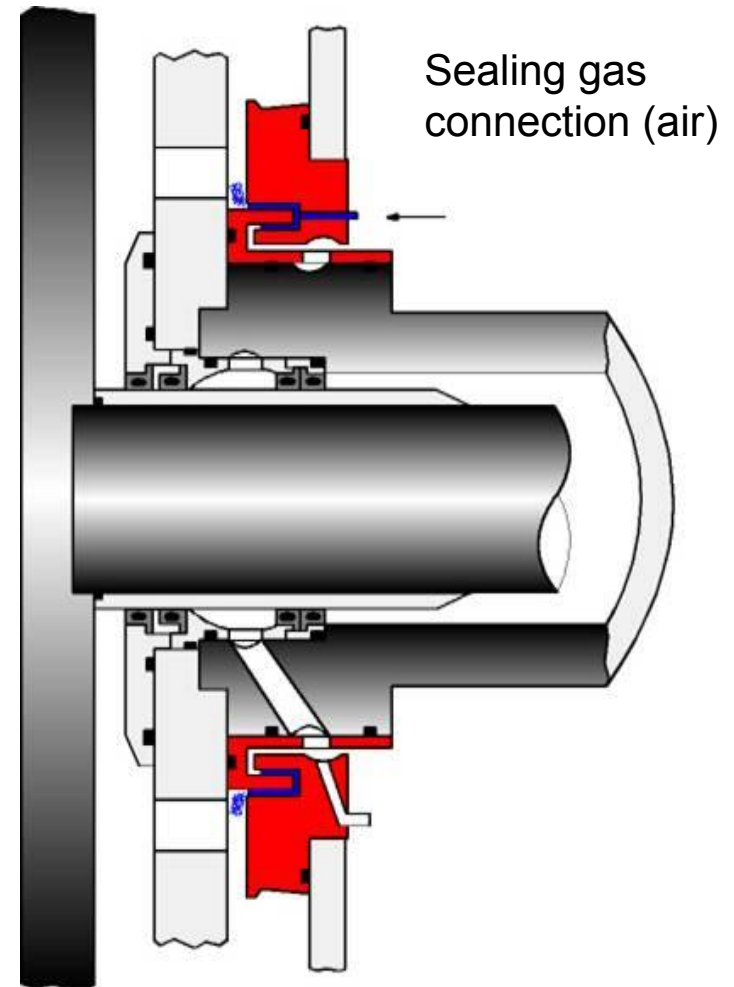
## Housing Sealing

### ▪ 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

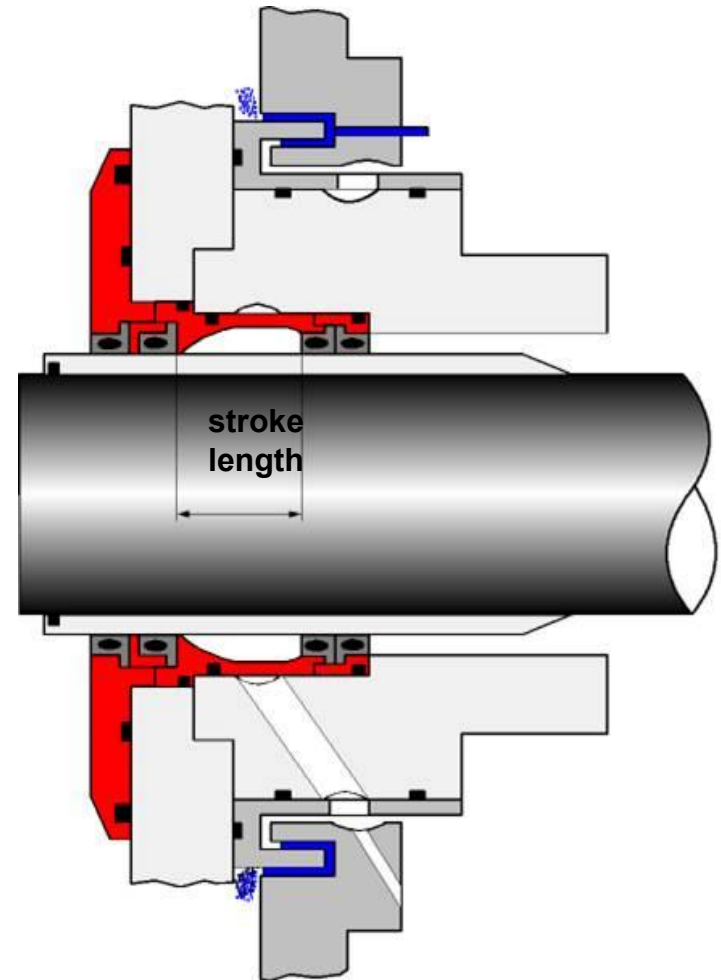
## Pusher Shaft Sealing

### ▪ 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

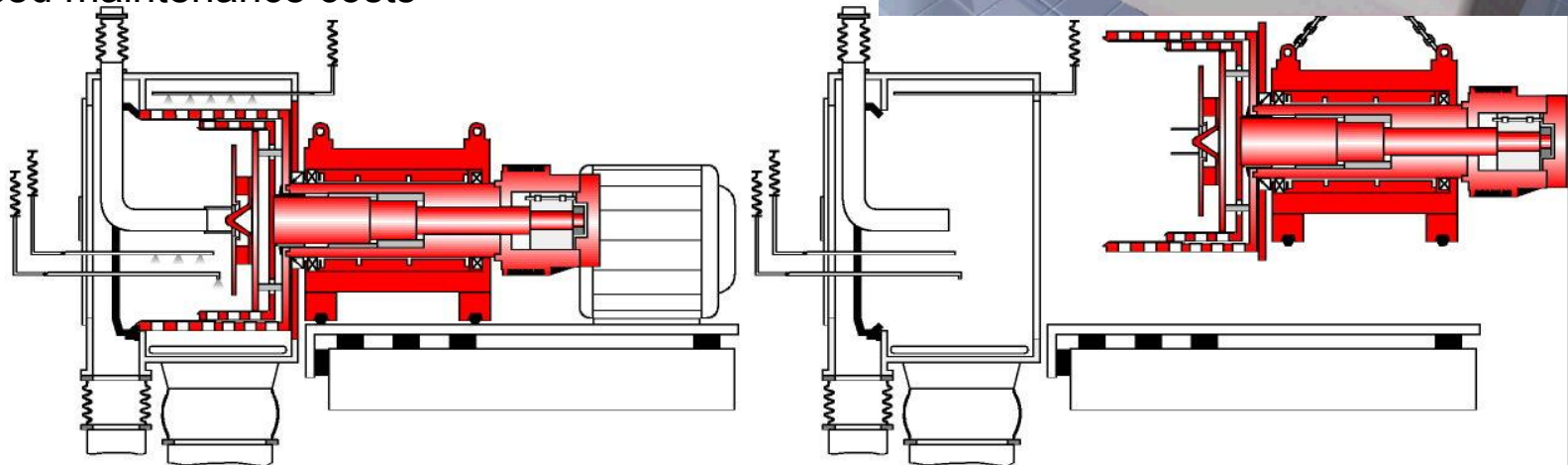
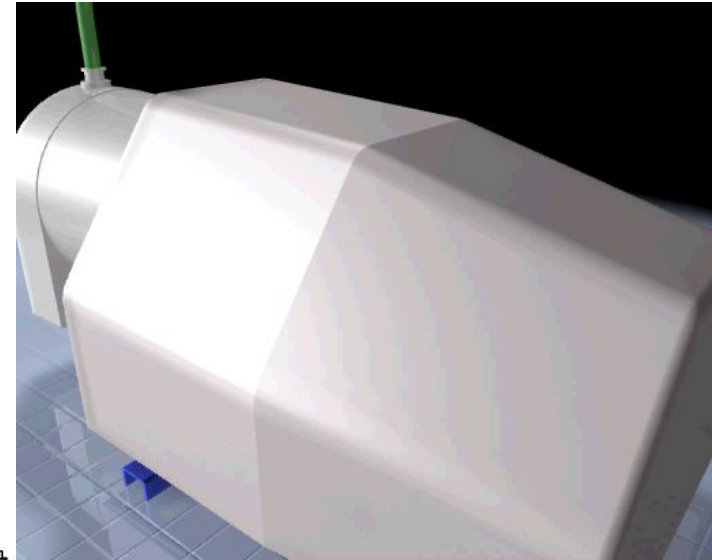
## Cartridge

### ▪ Features:

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

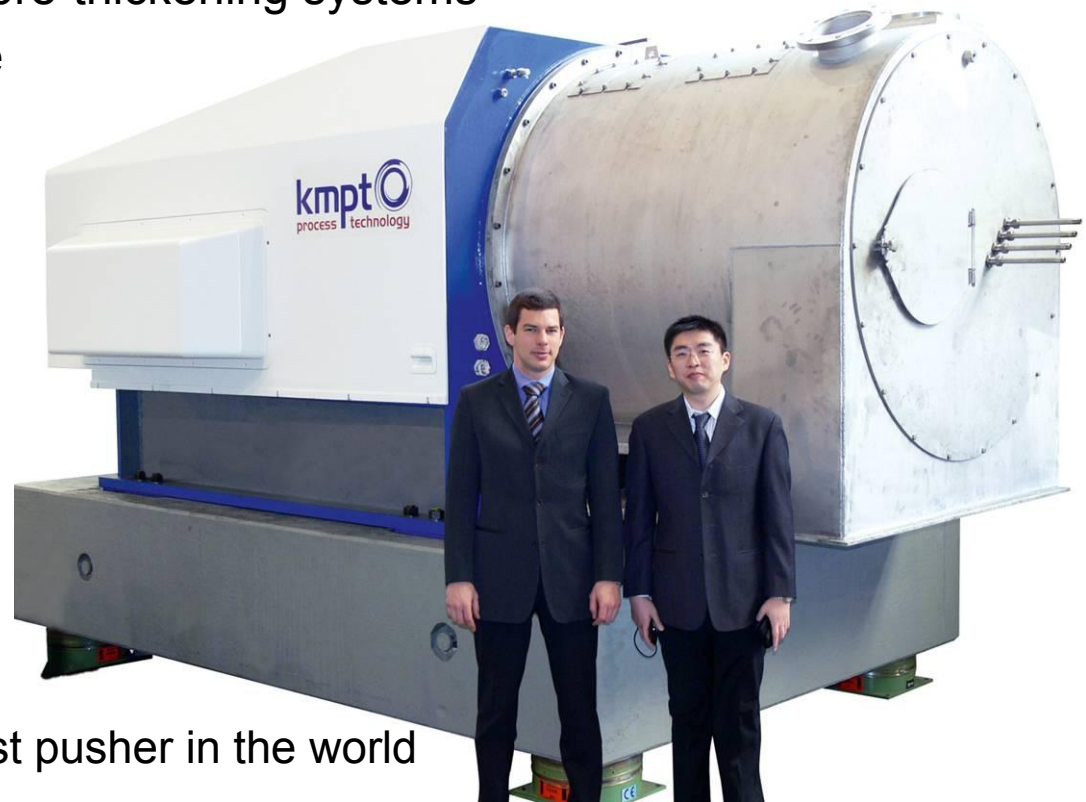
### ▪ User benefits:

- 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



**ANDRITZ KMPT GmbH**

Industriestrasse 1-3

D-85256 Vierkirchen

Phone: +49 8139 80 299 0

[kmpt@andritz.com](mailto:kmpt@andritz.com)

[www.kmpt.com](http://www.kmpt.com)

# Foundation Alternatives



Set up on rubber pads



Set up on concrete or steel foundation block