

## CONTINUOUS PERFORMANCE D-ACT<sup>®</sup> PUSHER CENTRIFUGES





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**FERRUM** MORE THAN  
**100 YEARS**  
SINCE 1917



# APPLICATIONS<sup>+</sup> SPECIFIC DESIGNS

## CHEMICAL INDUSTRY

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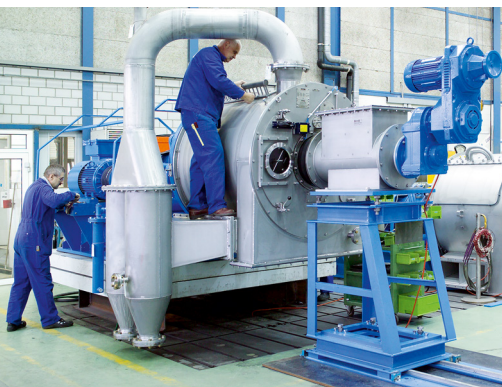
**Chlorides** | Sodium chloride | Sea - Lake salt | Potassium chloride

**Sulphates** | Sodium sulphate decahydrate | Ammonium sulphate

## MINERAL PROCESSING

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**Mining** | Rock phosphate | Rock salt (NaCl), Sea salt | Potassium chloride



## CUSTOMIZED SOLUTIONS

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Ferrum supplies innovative customised and special designs for a very wide range of applications and processes:

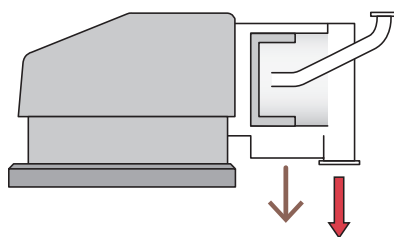
- + Product inlet and product distribution systems
- + Solids and filtrate discharge systems
- + Special protection against wear from abrasive products
- + State of the art control systems
- + Individual documentation to suit the needs of each client group
- + Remote maintenance solutions

# + D-ACT® PUSHER CENTRIFUGES TYPE PD-60 TO PD-100

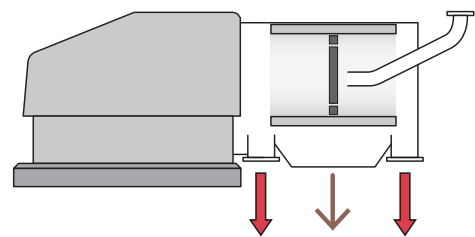
The D-ACT® pusher centrifuge System Escher Wyss extends the application range of the pusher centrifuge selection towards products with good dewatering characteristics. Its mechanical basis is built upon the highly successful pusher centrifuge range type P-60 to P-100.

The unique patented design of the D-ACT® pusher centrifuge leads to product discharge in both stroke directions resulting in substantially higher throughputs.

Standard pusher centrifuge

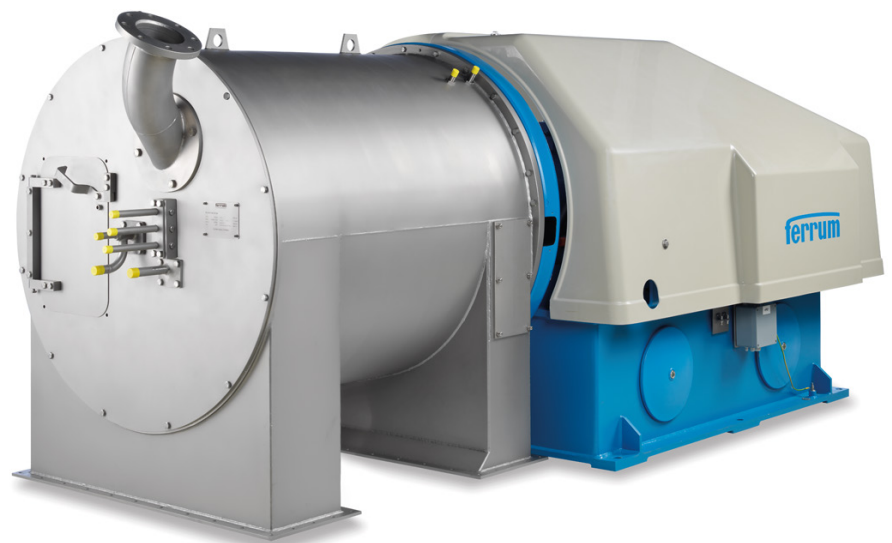


D-ACT® pusher centrifuge



## DESIGN FEATURES

- + Specially designed for products with medium to large particle size
- + Innovative suspension inlet zone where the cake is transported during both the forward as well as the return stroke.
- + Compact, robust and reliable design
- + Rinsing connection for easy rinsing of the centrifuge process area
- + Adjustable wash nozzles for the cake washing
- + Various peripheral components available for the basic model
- + High availability

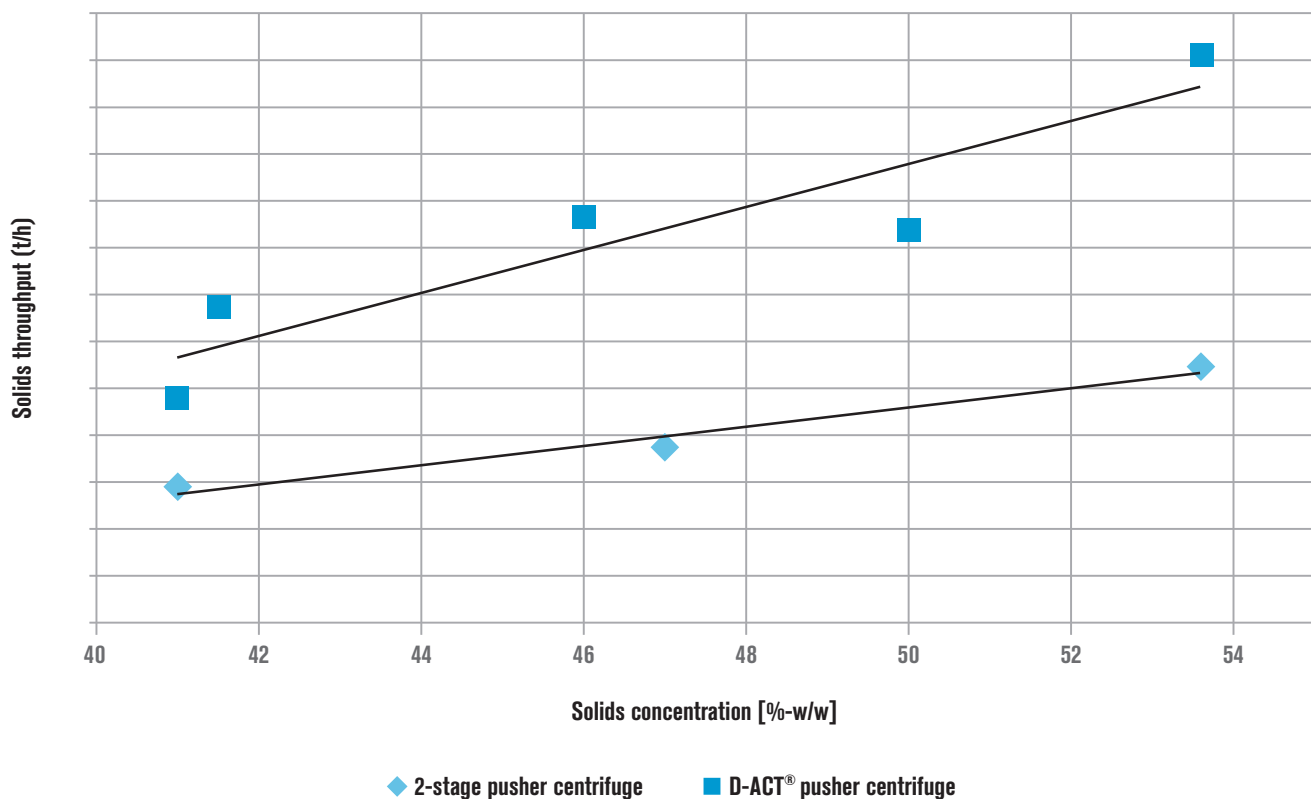


# ADVANTAGES

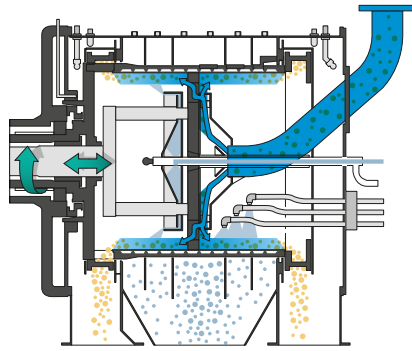
## ADVANTAGES OVER STANDARD PUSHER CENTRIFUGES

- + With the same stroke frequency up to 1.8 x the solids capacity resulting in a lower specific energy consumption
- + Lower solids content in the filtrate due to the reduced losses between pusher plate and sieve
- + Up to 80% higher throughput compared to a standard 2-stage pusher centrifuge of the same size
- + Up to 20% lower energy consumption compared to identically designed standard 2-stage pusher centrifuges
- + Lower specific foot print
- + Bearing and drive design of the centrifuge corresponds to the well-proven P-pusher centrifuge series
- + Higher throughput due to cake transport during both the forward and the return stroke

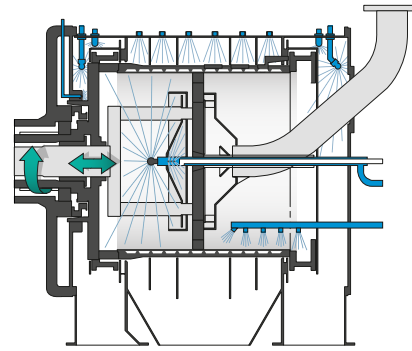
Comparison 2-stage pusher centrifuge / D-ACT® pusher centrifuge (with same basket diameter)



# + DOUBLE ACTION PRINCIPLE OF OPERATION



Solid-liquid separation



Rinsing the process area

## SOLID-LIQUID SEPARATION

**Suspension inlet** | The centrifuge is continuously fed with the suspension to be separated (solid-liquid mixture) via the inlet pipe.

**Suspension distributor** | The distributor accelerates and distributes the suspension over the entire periphery of the sieves in the filling area of the basket.

**Basket** | The greatest part (approx. 80%) of the liquid is already filtered out in the feed zone of the basket, where a stable cake forms. The pusher plate oscillates forward and backward and pushes the cake towards the rear AND front solids discharge.

**Solids discharge** | At EACH end of the basket, the solids leave the centrifuge via the discharge channels and the solids housing. Depending on the application, different discharge systems are used.

**Product washing** | If necessary, impurities in the mother liquor are washed out. The wash liquid is applied continuously over the cake via several adjustable wash nozzles on both sides of the pusher plate.

**Filtrate housing** | The filtrate (filtered mother liquor and wash liquid) is collected in the filtrate housing and drawn off. Depending on the application, different filtrate housings and filtrate cyclones are used.

## RINSING OF THE PROCESS AREA

The centrifuge process area is cleaned using rinsing liquid supplied through optimally arranged cleaning nozzles and 2 rinsing pipes. Periodic rinsing prevents crystal formation in the sieves and deposits in the solids housing.

# AUTOMATION SYSTEMS<sup>+</sup>

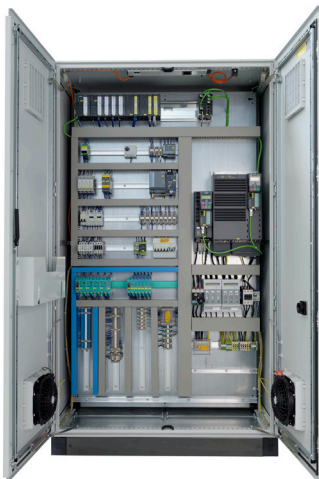
## RELIABLE CONTROL

Automation of centrifuges is of central importance to Ferrum. Ferrum has invested many years into the development of centrifuge automation systems. Proven, standardised hardware and software modules are used as a basis and are supplemented with customer specific elements.

### OVERVIEW OF THE RANGE OF CONTROL SYSTEMS AND DRIVES

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- + Safety analyses, safety circuits
- + Automation of the process, software programming
- + Design and installation of cabinets for control systems and drives, as well as operator panels
- + Connection to distributed control systems, remote maintenance
- + Explosion protection up to Ex zone 1 (according to Directive 2014/34/EU)
- + Documentation: diagrams, concept descriptions, operating instructions, safety certificates, etc.
- + Commissioning of complete systems on-site



### DRIVE SYSTEMS AND SAFETY CONTROL SYSTEMS

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Our drive systems and safety control systems guarantee safe and optimised operation of the centrifuge. The systems are state of the art. They are continuously developed and adapted to our risk analyses as well as to the latest directives and standards.

Frequency converters of the latest generation with integrated safety functions are used to control the speed.

### CONTROL SYSTEMS AND TERMINALS TO FACILITATE EASE OF USE

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Control and visualisation software permits easy operation and control of the solid-liquid separation process. Thanks to our extensive range of different control systems, operator panels and components from leading suppliers, we efficiently implement comprehensive customer requirements.

Ferrum can supply simple operator panels on which the basic functions are controlled manually using pushbuttons, to fully automated PLC systems with visualisation for large systems.



Operator panel with visualisation



Operator panel with push button

## WORLDWIDE



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