Passion

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Progress



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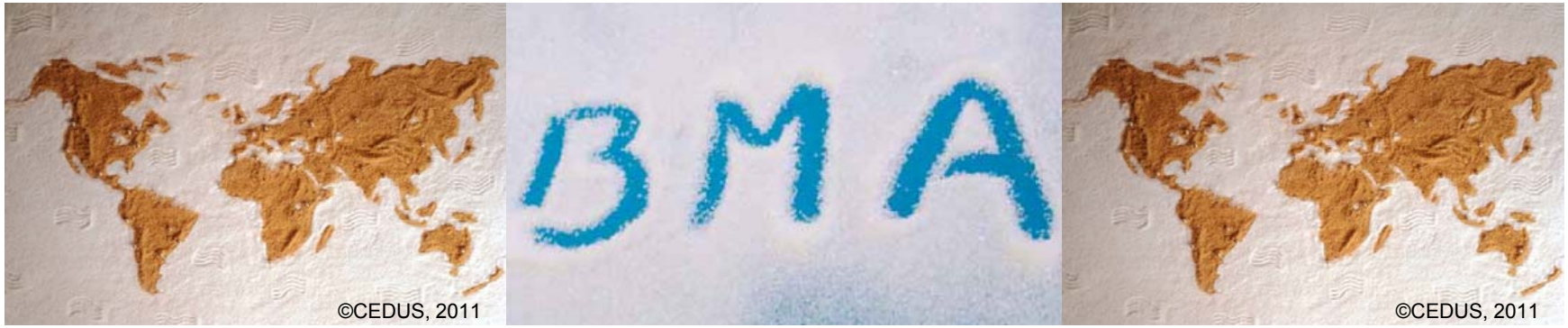
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Innovations of centrifugal design for low maintenance and long service life

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Irma Geyer
BMA Germany



Content

- ***Designing new equipment: What are the challenges?***
- ***Batch centrifugals***
- ***Continuous centrifugals***
- ***Conclusion***



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Designing new equipment
What are the challenges?

- ***Process***
  - Process improvement
  - Product quality and safety
  - High productivity, high throughputs
  - Process stability

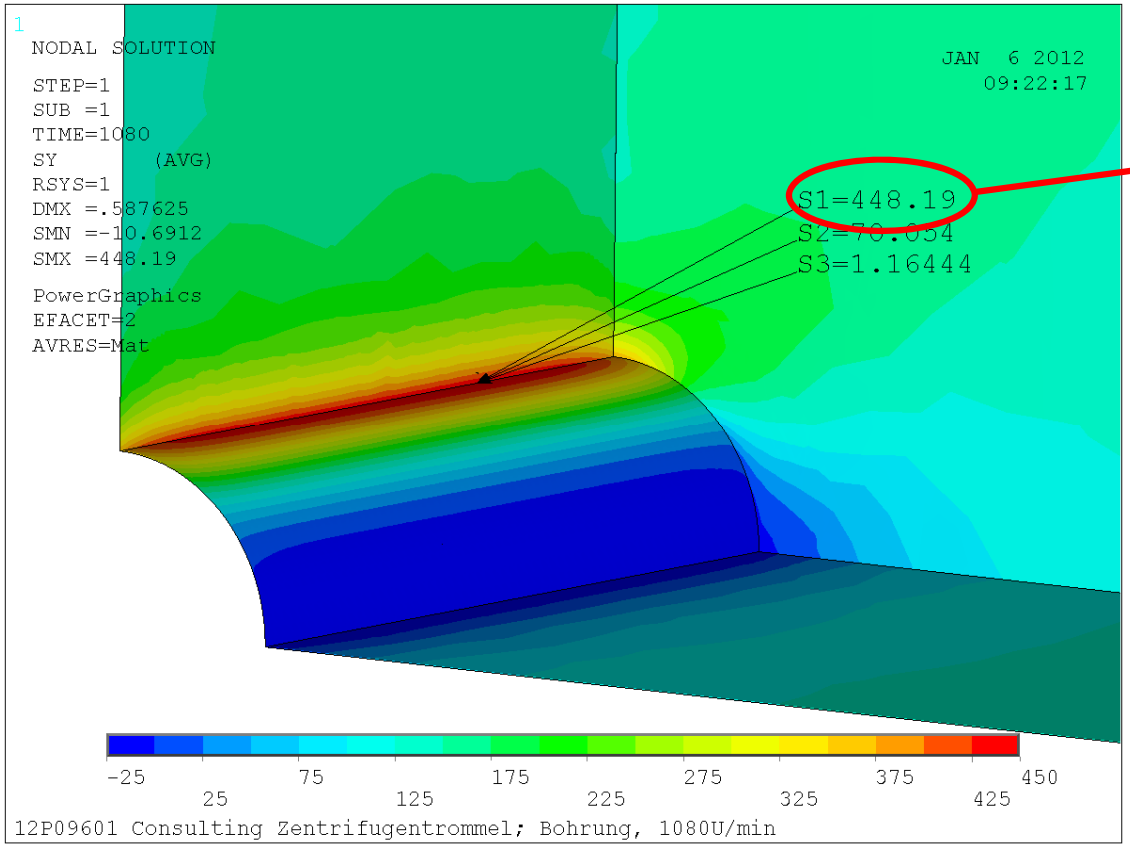
- ***Operation***
  - Long service life
  - Low wear and tear of the component
  - Maintenance friendly



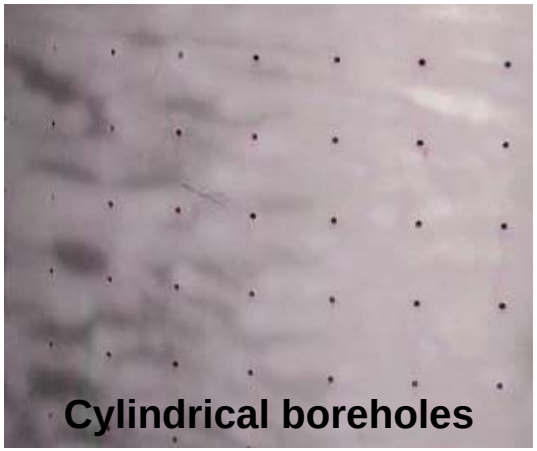
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Batch centrifugals
Previous basket design

- ***Operationally stable components***
- ***Cylindrical boreholes – limiting the calculated service life***



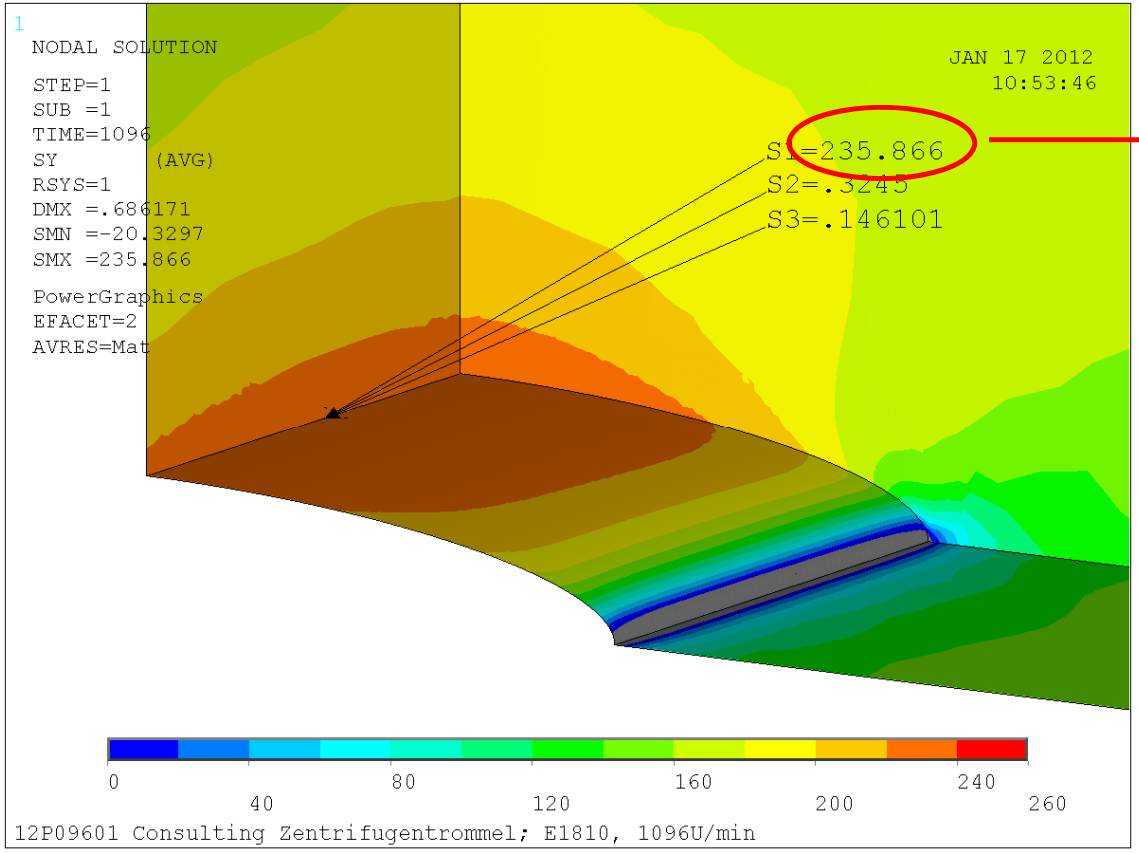
Maximum stress
448.19 N/mm²



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Batch centrifugals
Optimisation by BMA

- ***Elliptical outlet openings***
- ***Peak stresses reduced by more than 40 %***



Maximum stress
235.87 N/mm²

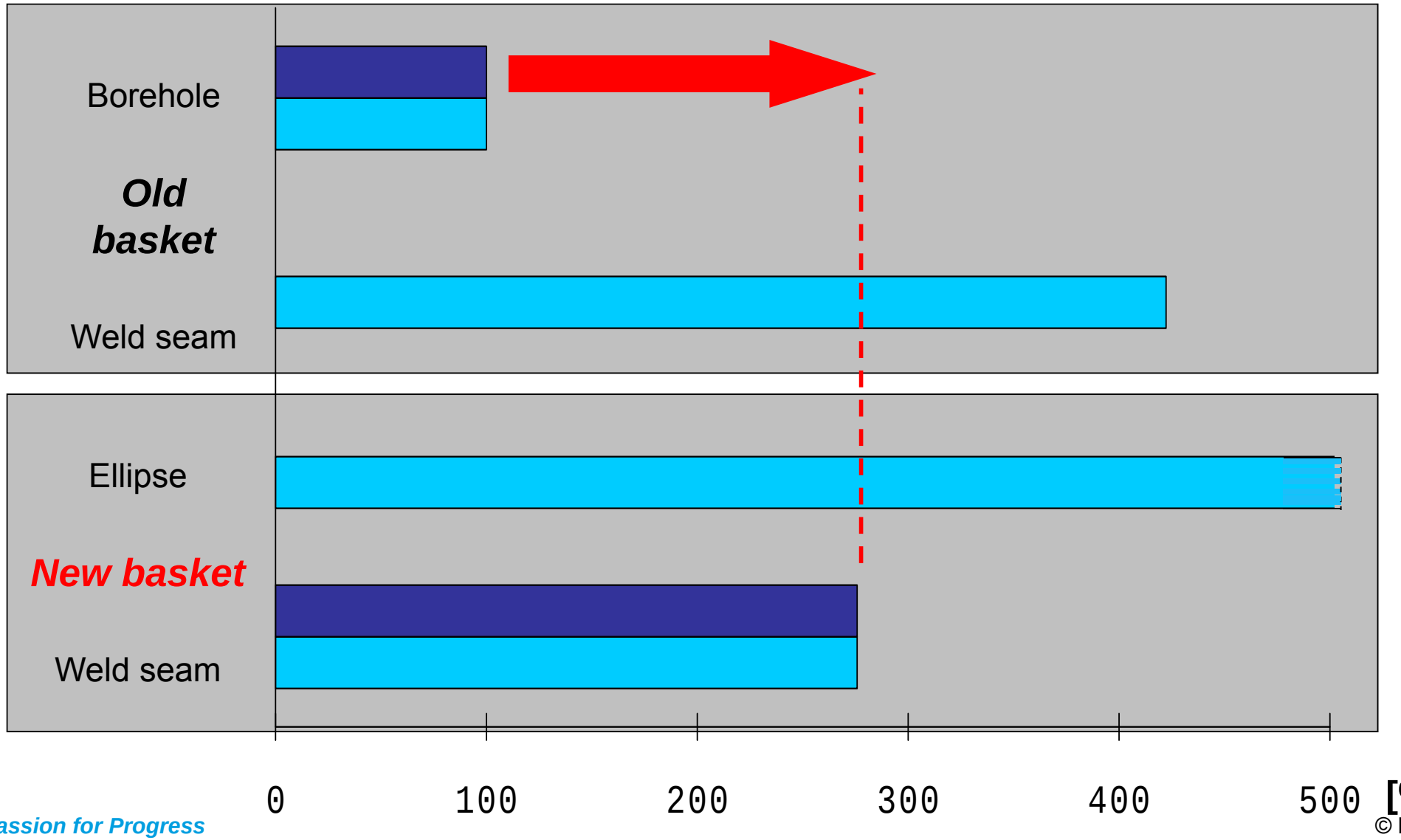


Elliptical outlet openings

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Batch centrifugals
Comparison of calculated service life (acc. to FKM)

Additional service life with the E series basket



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Discontinuous centrifugals
Service life of the basket

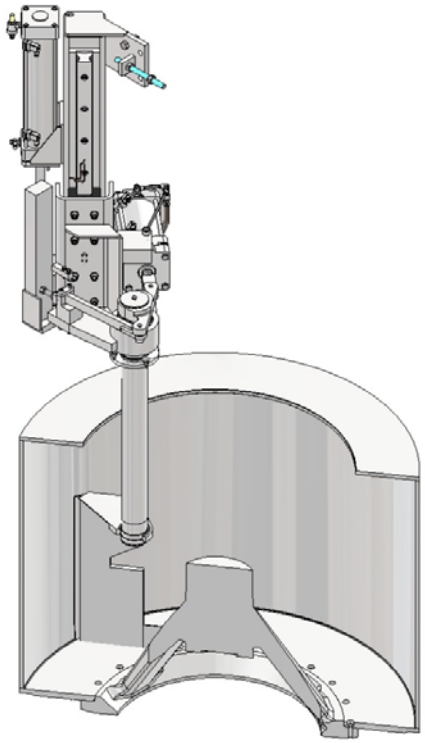
- ***Calculated service life:***
  More than 2.5 times higher than with previous baskets

- ***Practical service life:***
  Linear stress increases result in an exponential reduction of the number of batches

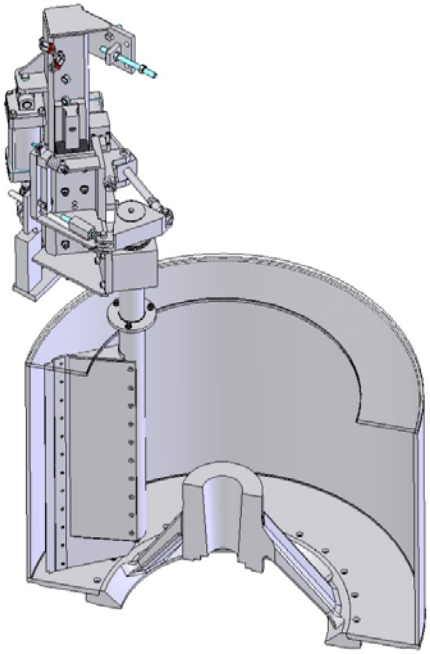
- ***Service-life-influencing factors:***
  - Speed has a square effect on stress
  - Filling level of the basket (linear)
  - Operating temperature (nearly linear)
  - Other influences (vibration, corrosion, …)

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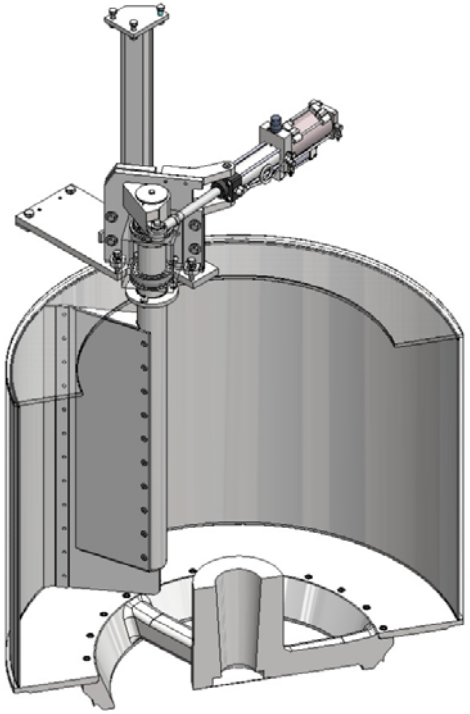
Batch centrifugals
Discharger optimisation



BMA's G series



BMA's B series



BMA's E series

- ***Number of components reduced by 40%***
- ***Low maintenance***
- ***Maintenance friendly***

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Batch centrifugals
Minimized maintenance

- ***Reduced mechanical complexity***
  - Monaxial discharger
  - Closing hood actuation from above, combined with basket centering
  - Syrup separation without internal mechanics

- ***Excellent accessibility***
  - Three-piece cover:
    1/3 can be opened without having to lift the framework
    e.g. for maintenance of discharger plough or screen replacement
  - Inspection openings over the whole basket height
  - Central maintenance unit



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Batch centrifugals

- ***Minimised maintenance***
  - Internal bus system
  - Central operating tower



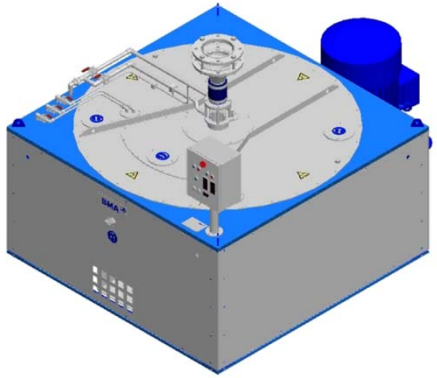




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Continuous centrifugal
Plug and Produce concept

- ***Fast & easy installation***
- ***Safe & secure operation***
- ***Very user-friendly design***
- ***Enhanced wear-resistance***
- ***Low maintenance***









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Continuous centrifugal
Intelligent screen arrangement

- *Longer service life*
- *Low maintenance*
- *Reduced shutdown time*
- *Fast & Easy replacement*
- *No special tools needed*





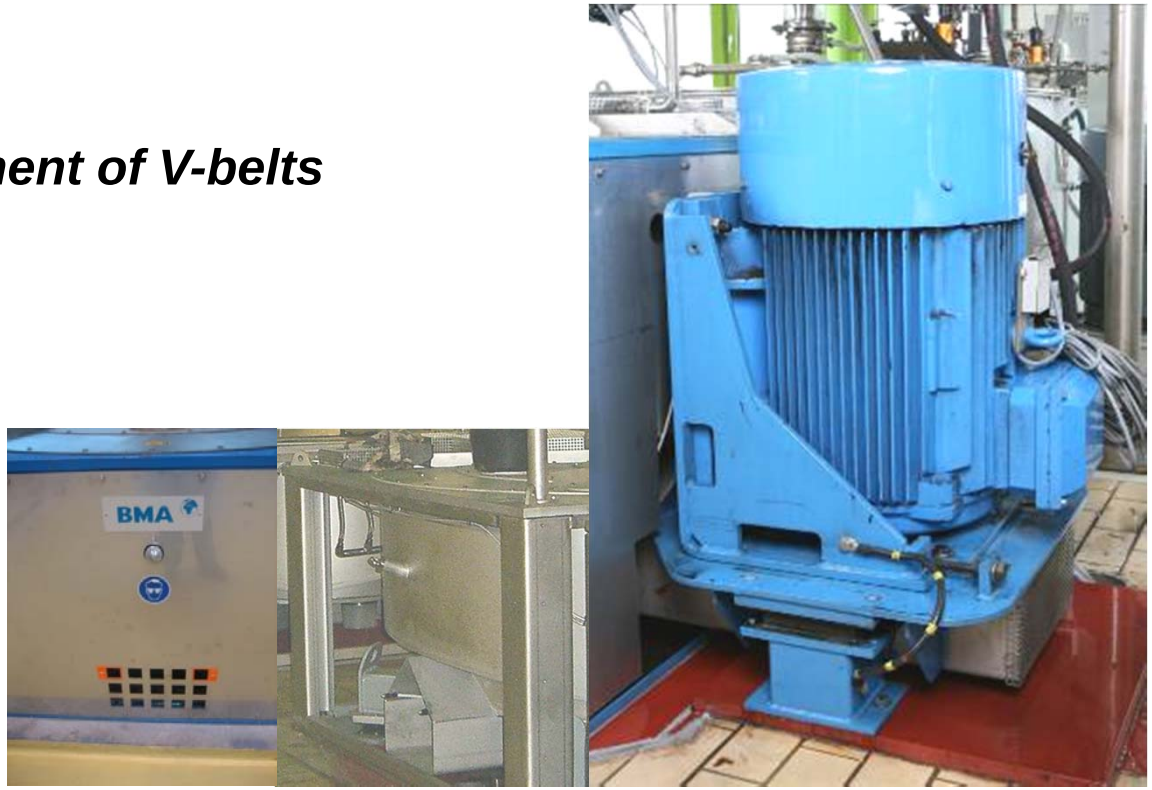




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Continuous centrifugal
New motor arrangement

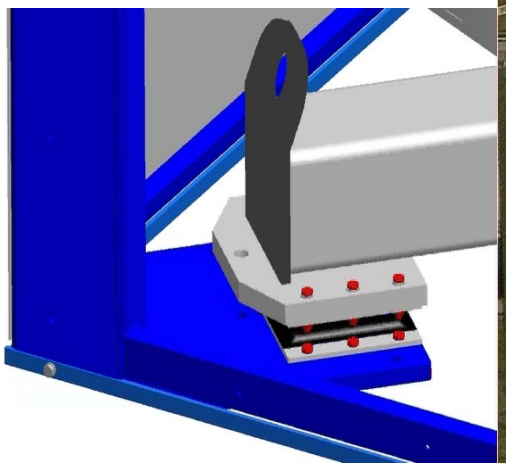
- ***Base plate: no risk of misalignment***
- ***Enhanced longevity of V-belts***
- ***Tension monitoring***
- ***Easy inspection and adjustment of V-belts***



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Continuous centrifugal
Replacement of rubber buffers

- *Placed outside the warm area*
- *Only 6 rubber buffers*
- *Considerably improved longevity*
- *Easy & quick replacement*



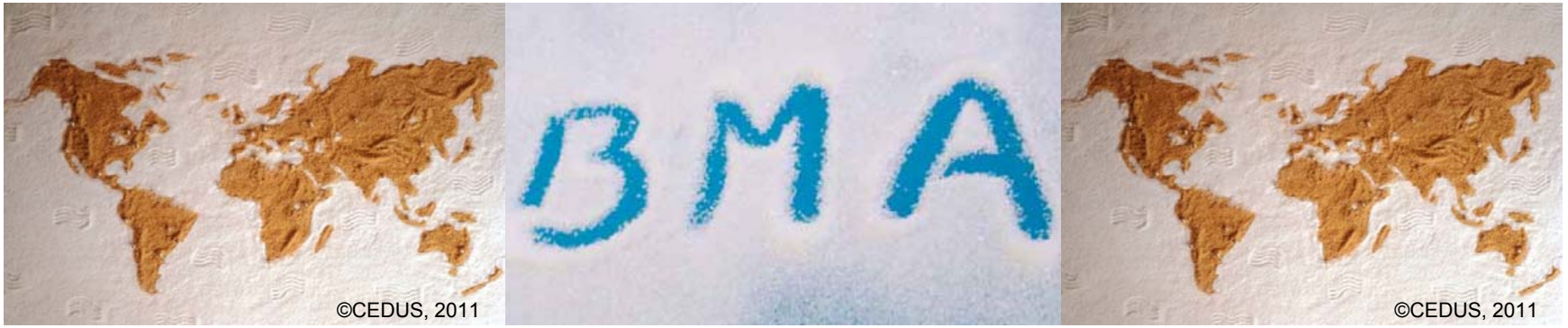


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Conclusion

- ***Innovations in centrifugal design***

  - Increase the service life of the component
  - Reduces the maintenance requirement
  - Keeps the maintenance friendly



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Thank you for your attention!

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