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Novel design of a continuous centrifugal and its operational benefits

ASSBT

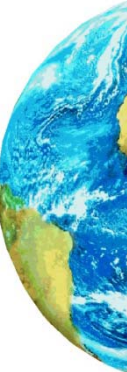
36th Biennial Meeting

March 2–5, 2011

Albuquerque, New Mexico

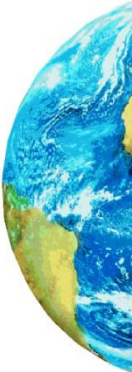
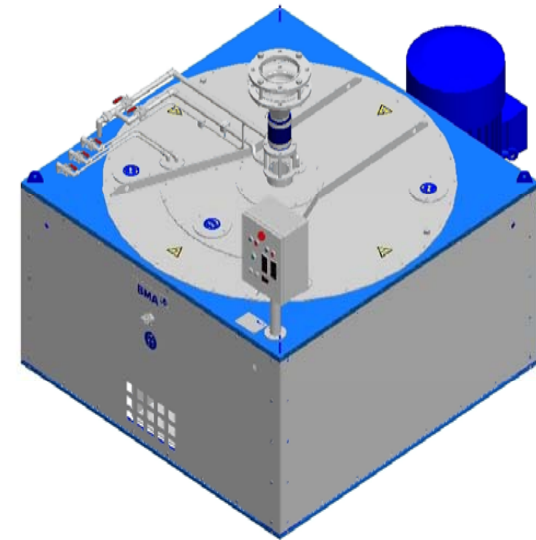
Irma Geyer, Hans J. Schmidt

BMA AG



Novel design of a continuous centrifugal and its operational benefits: K3300

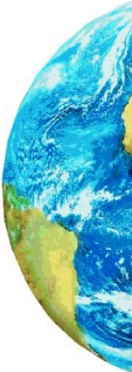
- *Optimized centrifugation concept*
- *Design features*
- *High degree of automation*
- *Long service life*



Optimized centrifugation concept (I)

2-stage basket

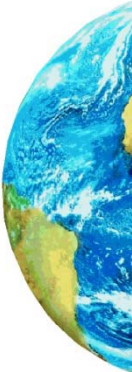
- *Uniform sugar layer during main separation*
- *Optimized sugar quality*
- *Improved throughput or*
- *Reduced energy consumption: 25%, depending on massecuite quality*



Optimized centrifugation concept (II)

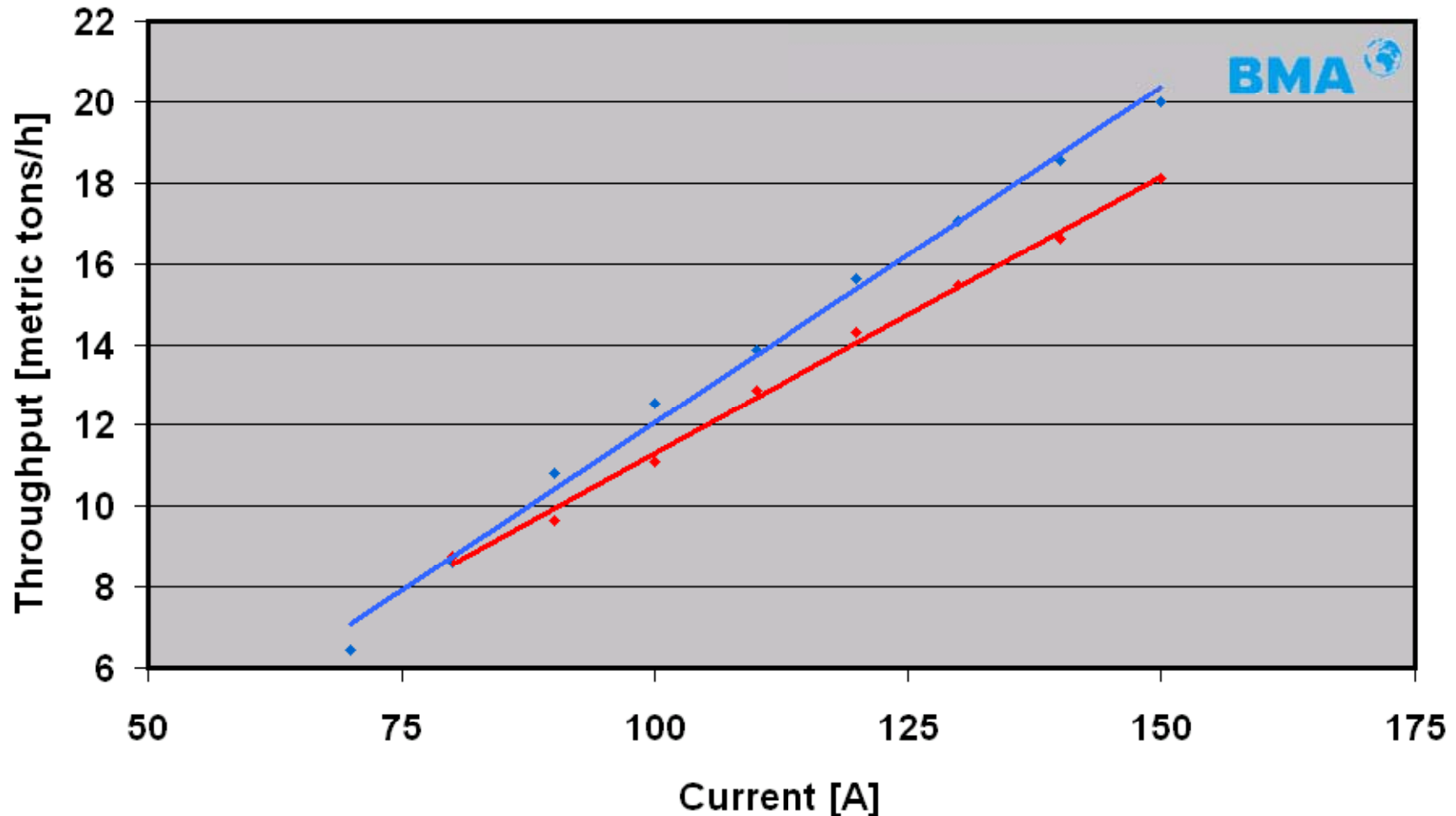
Turbo3 product distributor

- *Simplified design: one unit*
- *Efficient heating reduces masecuite viscosity*
- *Optimized masecuite distribution*
- *Improves mother liquor separation*
- *Significant performance increase*

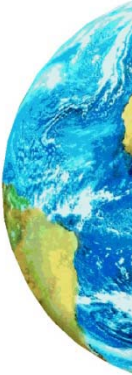


Optimized centrifugation concept (II)

Turbo3 product distributor



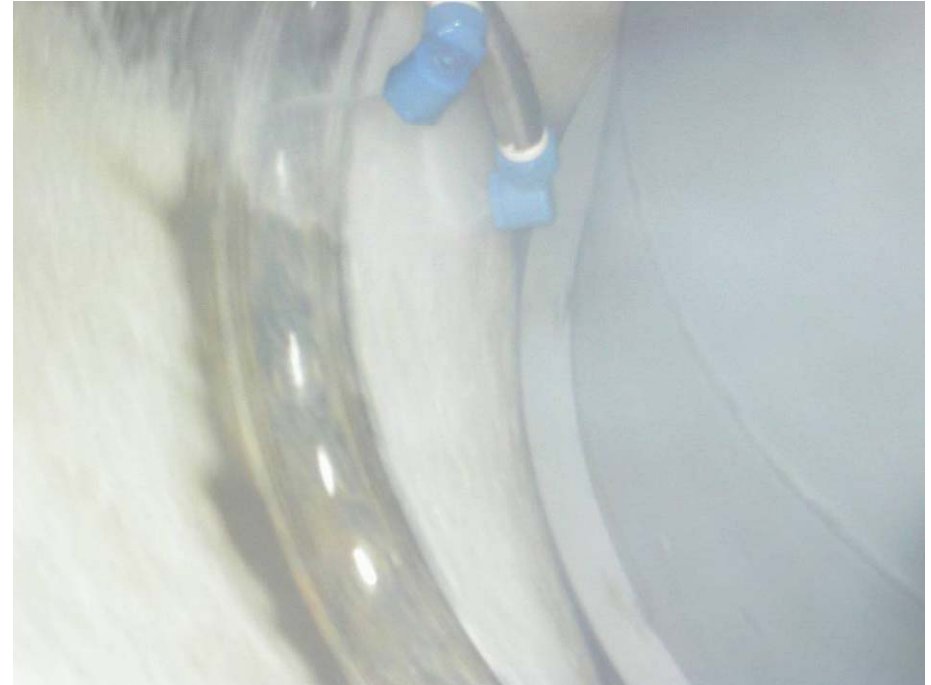
— K3300 New Turbo3 distributor — K3300 Standard distributor



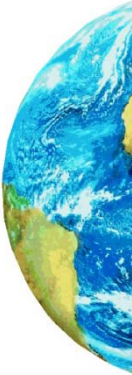
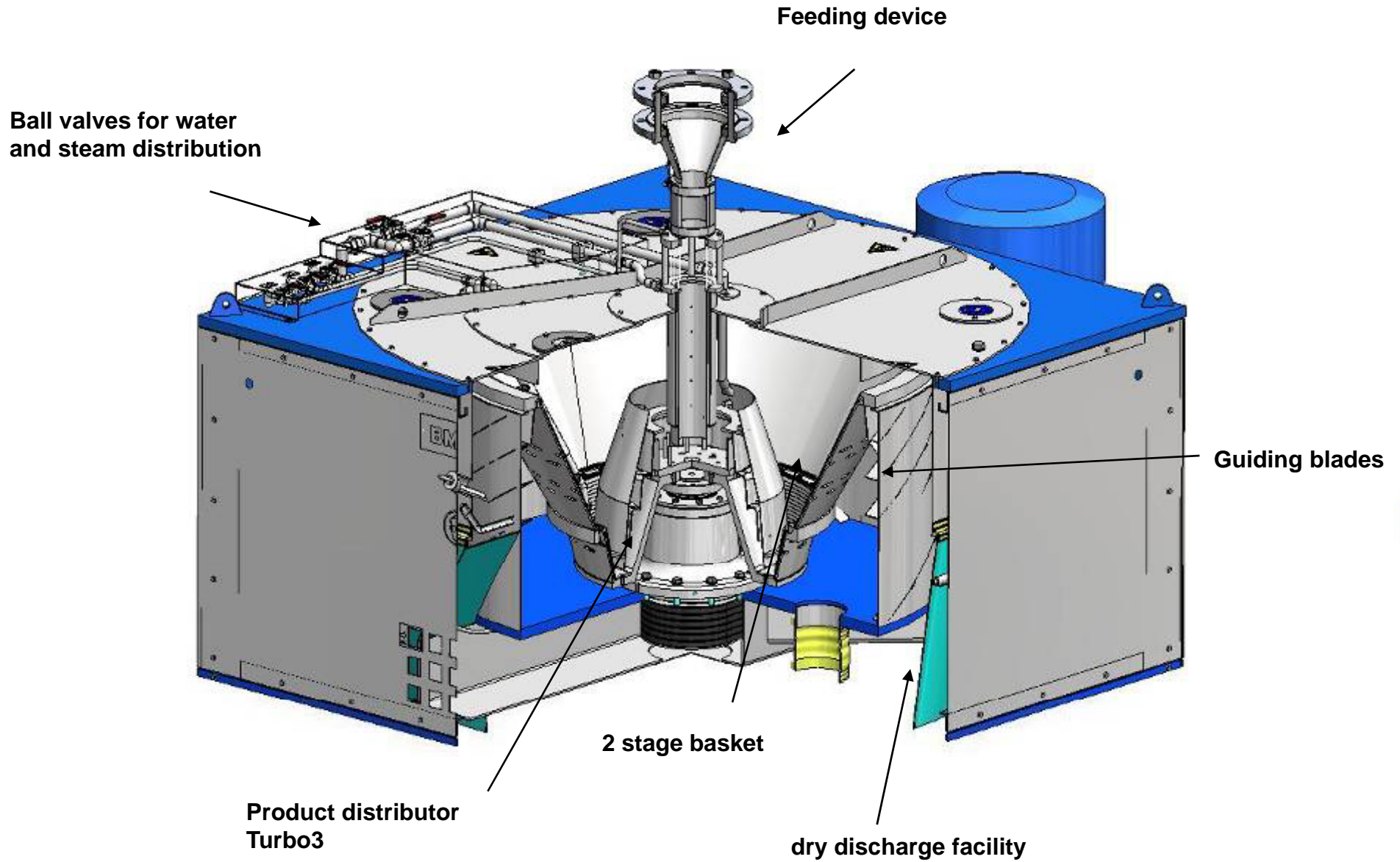
Optimized centrifugation concept (III)

Split spray nozzle lance

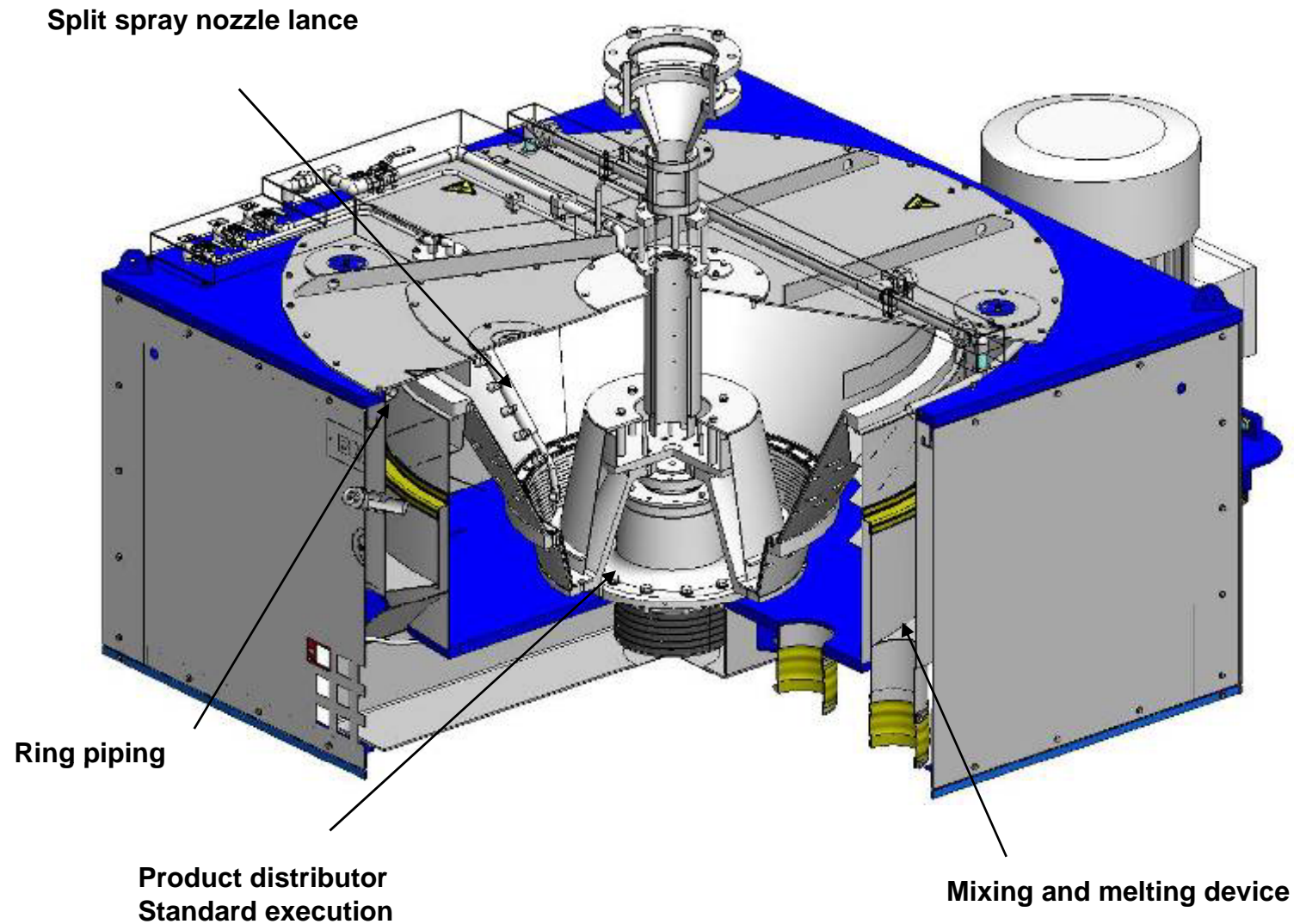
- *Selective wash water addition*
- *Optimized sugar quality*
- *Minimized crystal losses*



Innovative design features K3300 with dry discharging



Innovative design features K3300 with mixing / melting device



Operational experience (I)

High raw beet

■ **Product:**

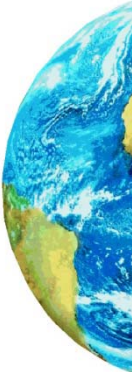
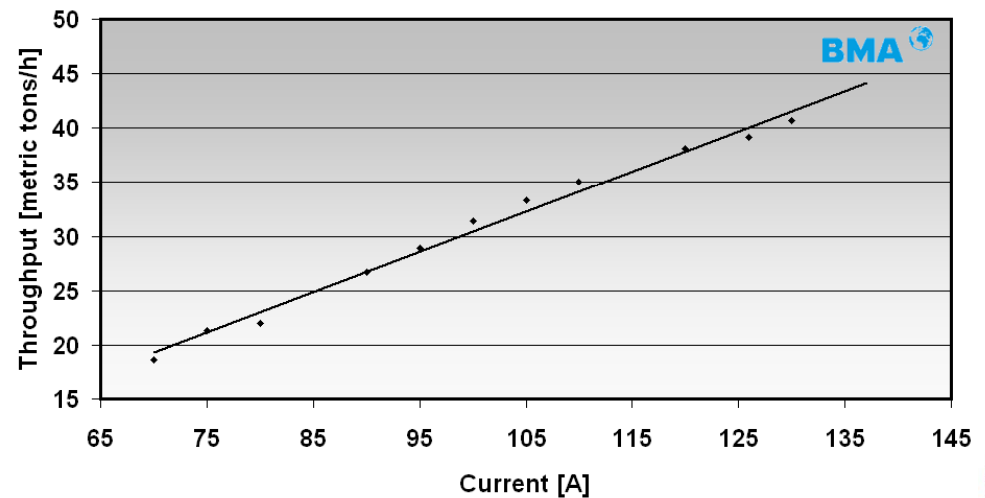
Massecuite	high raw beet
Brix	91.9
Purity [%]	87.8
Melting medium Bx	68

■ **Conditions**

Temperature [°C/°F]	75/167
Current [A]	120
Water [% / massecuite]	3.0
Steam [% / massecuite]	0.1

■ **Results**

Throughput [t/h]	40.9
Dry sugar purity [%]	98.14
Color [420nm]	833
Brix of run off	80.5
Purity of run off [%]	76.41



Operational experience (II)

Low raw cane

■ **Product**

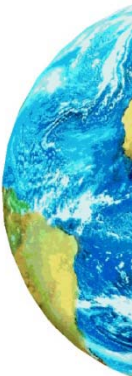
Massecuite	low raw cane
Brix	95.2
Purity [%]	59.5

■ **Conditions**

Temperature [°C/°F]	60/140
Current [A]	150
Water [% / massecuite]	8.4
Steam [% / massecuite]	0.4

■ **Results**

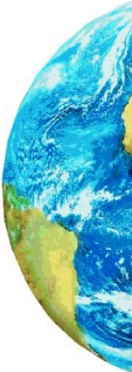
Throughput [t/h]	18.9
Dry sugar purity [%]	85.4
Brix of run off	85.8
Purity of run off [%]	41.3



Innovative Design Features (II)

Ball valves for water and steam supply

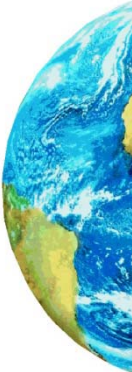
- *Safe & secure operation*
- *Enhanced wear-resistance*



Innovative Design Features (III)

Plug & Play

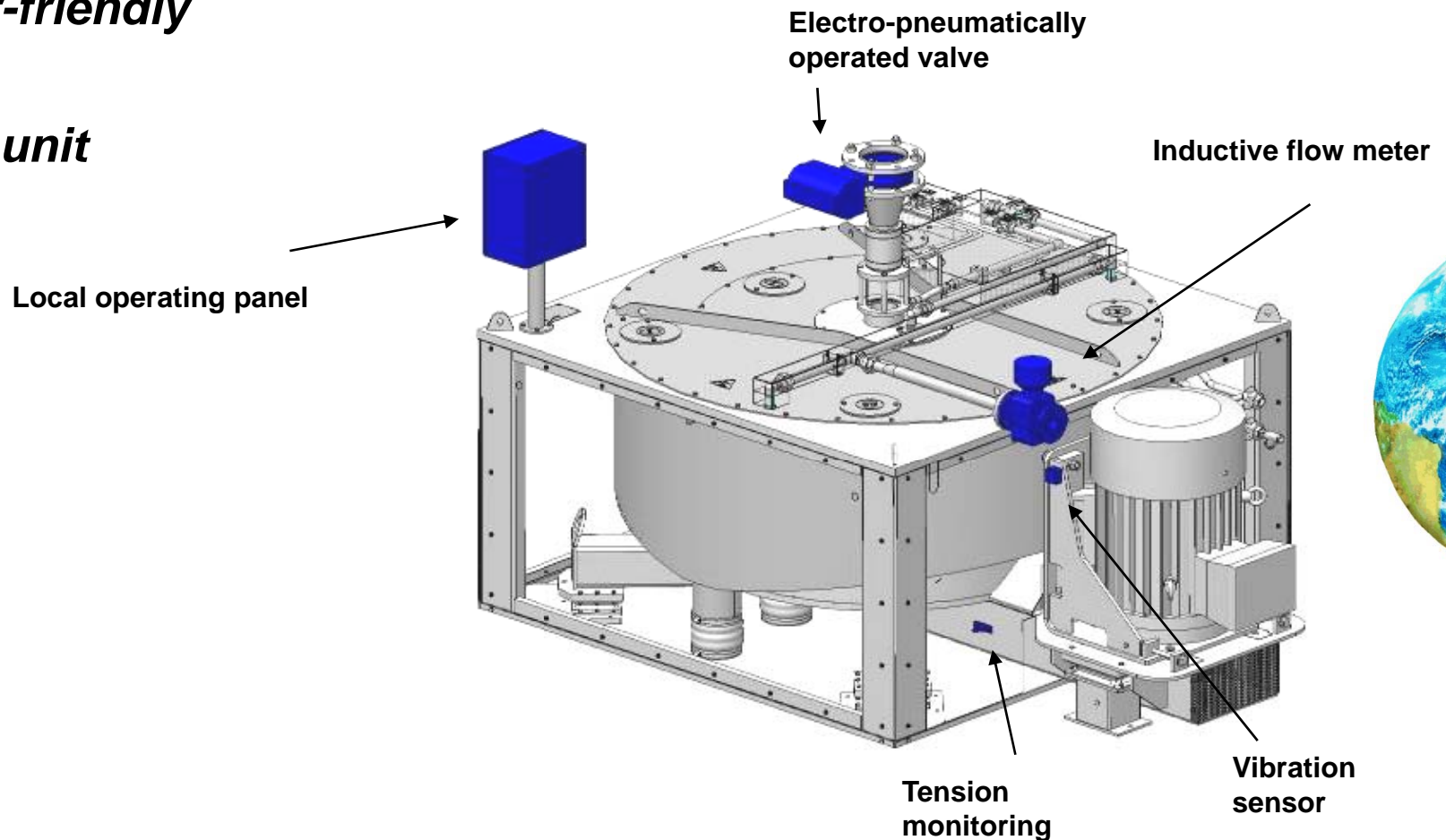
- *Clearly arranged connections for water and steam supply*
- *Fast & easy installation*



High degree of automation

Overview

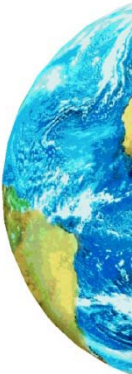
- *Enhanced process reliability*
- *Very user-friendly*
- *Prewired unit*



Long service life (I)

Intelligent screen arrangement

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



Long service life (II)

New motor arrangement

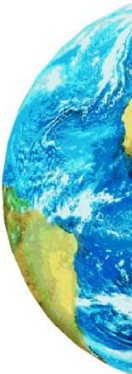
- *Easy inspection and adjustment of V-belts*
- *Enhanced longevity of V-belts*
- *Tension monitoring*



Adjustment bolt



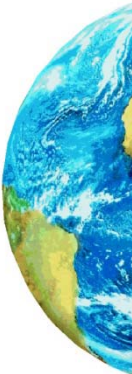
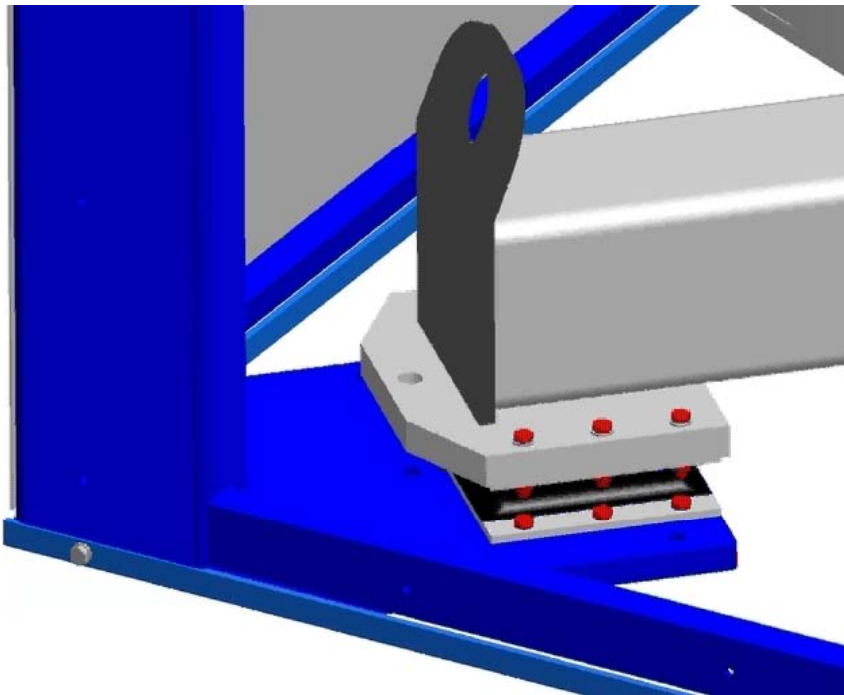
Rubber buffer



Long service life (III)

Replacement of rubber buffers

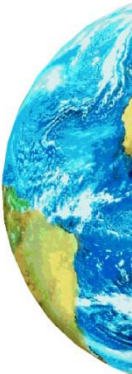
- *Considerably improved longevity*
- *Easy & quick replacement*



Summary

Your solution when it comes to continuous centrifugation:

- *High throughput*
- *Excellent quality of separation*
- *Compact square design*
- *Long service life*



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Thanks for your attention