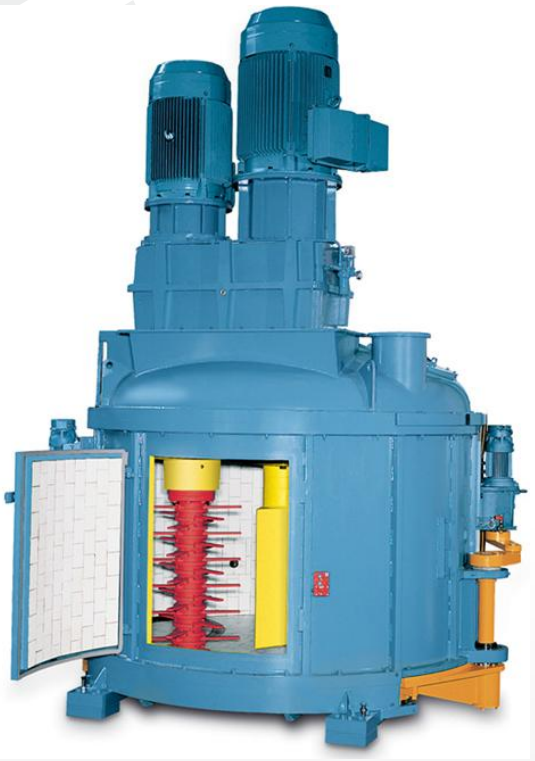
DISA SAM Mixer

DISA SAM mixer

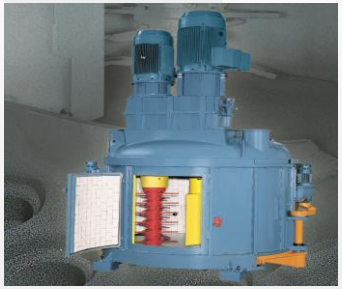
The superior sand quality of a
DISA SAM Mixer guarantees you the best moulds

Based on 20 years of experience from over 110 delivered SAM Mixers



Demands on moulding sand

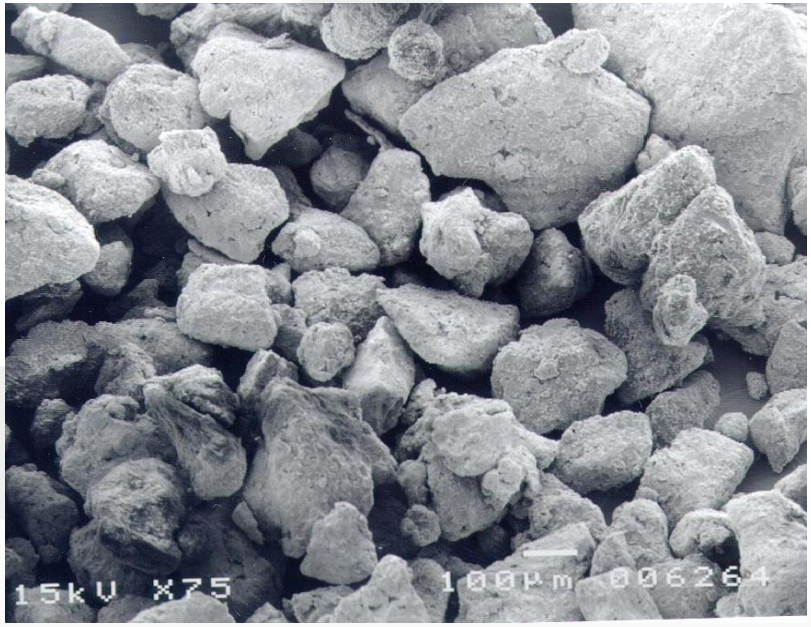
- High dimensional accuracy
- Adequate hot and dry strength
- Resistance against wash-out
- Good degassing
- Temperature resistance
- Good collapsibility at casting removal

Demands on moulding sand

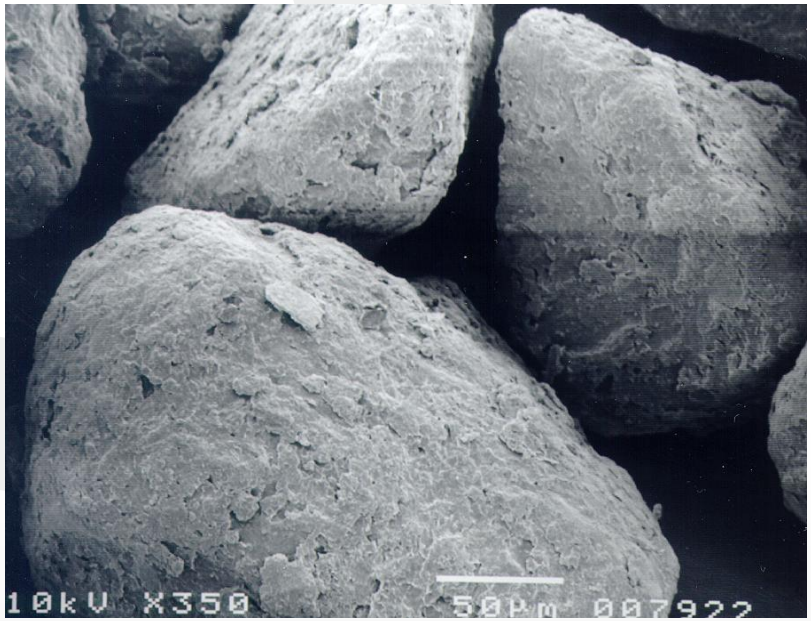
- Constant properties
- Correct grain size and distribution
- Correct binder and carbon content
- Constant moisture
- Good distribution of binder and water
- Perfect grain coating

Sand prepared in wheel-type mixer



Insufficient kneading work results in insufficient grain coating

Sand prepared in DISA SAM mixer



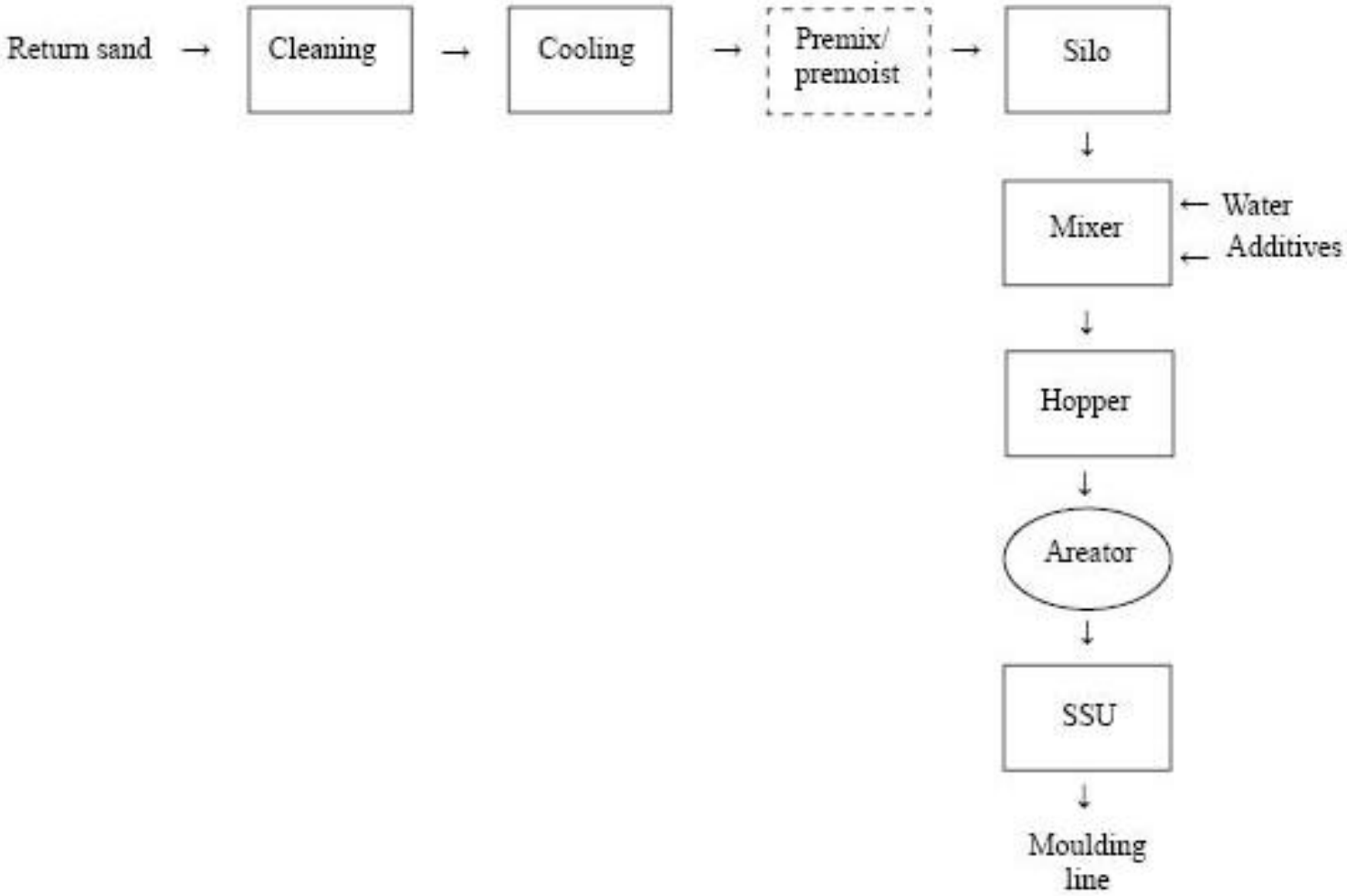
70 sec mixing time: very efficient and uniform grain coating

Sand quality

Good sand quality means

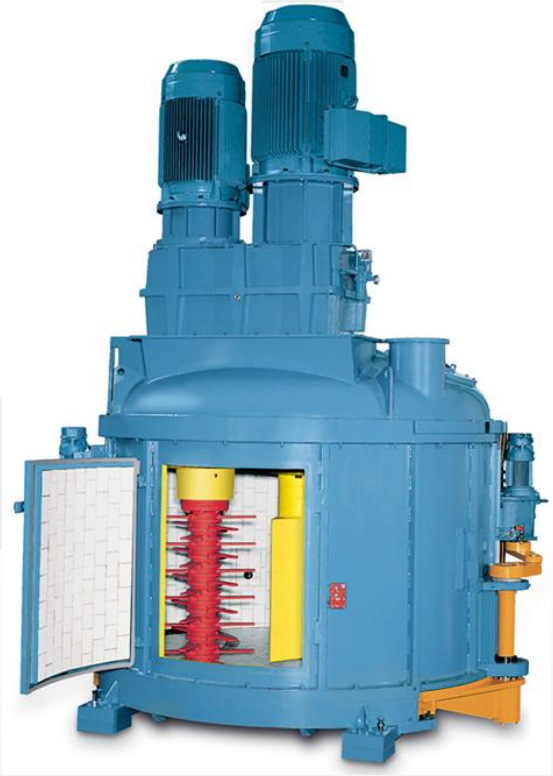
- Close dimensional tolerances of the castings
- Better pattern draw
- Consistent high density moulds
- High moulding plant efficiency
- Higher yield
- Reduced moulding material costs
- Reduced rejections
- Reduced fettling costs

Sand preparation



SAM turbine mixer

Wall scraper, rotator arm and plough



DISA SAM Mixer - benefits

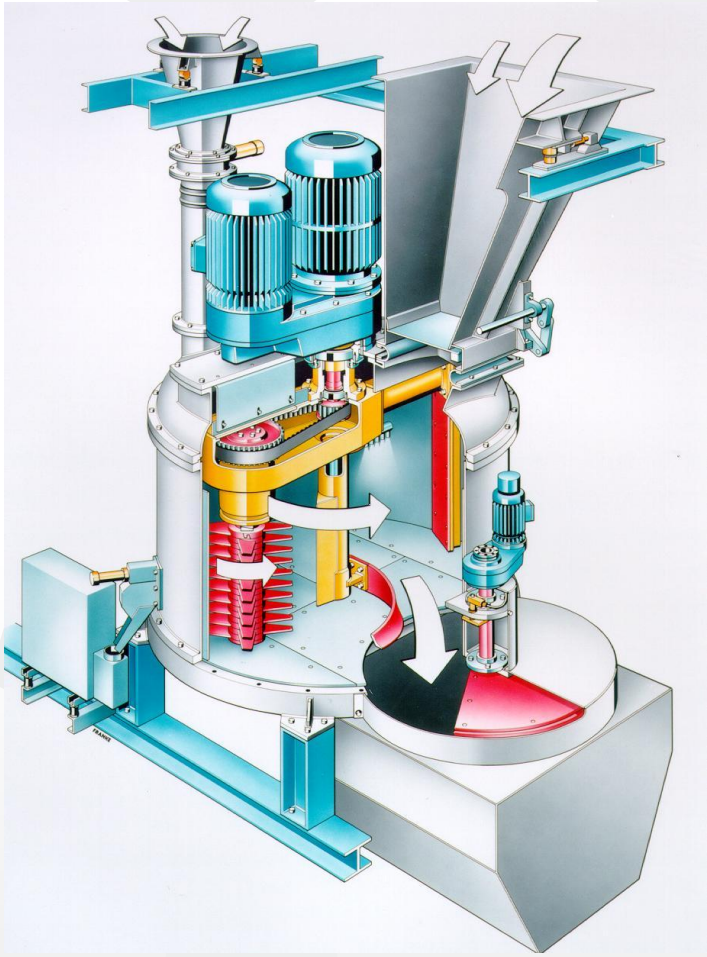
- Fast and efficient
- The SAM Mixer uses a very intensive mixing process which combined with efficient vertical charging and discharging makes the cycle time short and gives a fast and efficient mixer.
- Accurate control
- The SAM Mixer offers technical advantages, which are reflected in the accurate control of sand quality as well as in the low preparation costs.
- Robust and rugged design
- The SAM Mixer has an unusually robust and rugged design with optional ceramic lining on the walls and bottom.

DISA SAM Mixer - benefits

- Low maintenance

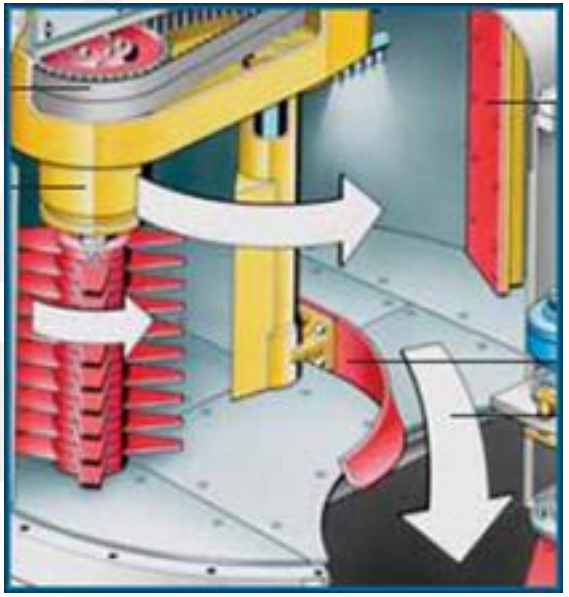
- Few wear parts which last longer. E.g. scrapers and turbine blades, timing belt and bearings
- Easy maintenance – top mounted drives, walk-in service door
- High up-time and less costs

SAM Turbine mixer



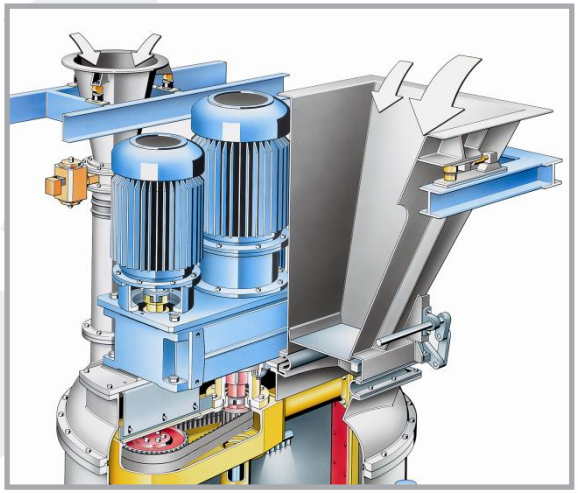
DISA SAM Mixer - features

- The SAM mixing system
  - High-efficient blending due to circulating turbine deeply submerged in the sand
  - Homogeneous and fluffy moulding sand of consistently high quality resulting in excellent castings
  - The wall scraper and the plough direct the sand into the operating area of the turbine to insure intensive mixing
  - Short cycle time due to fast unloading through a large discharge opening in the mixer bottom



DISA SAM Mixer - features

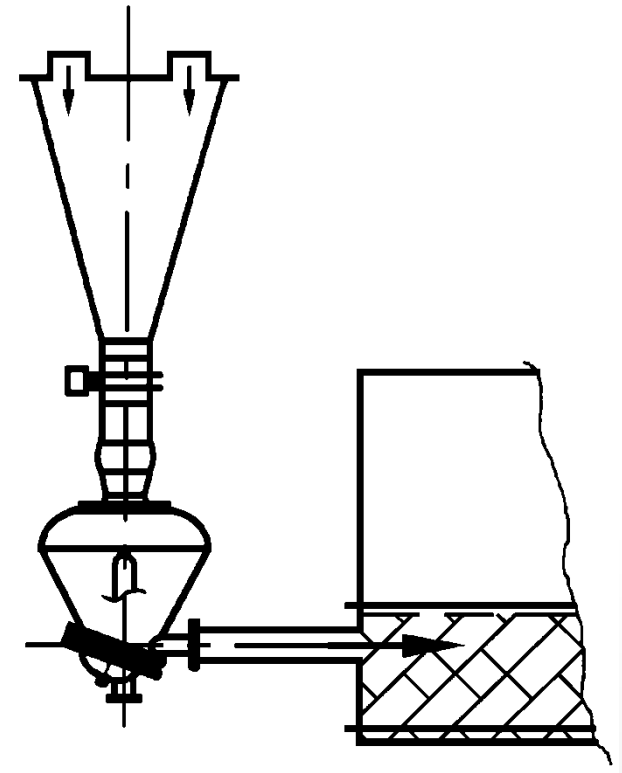
- The dosing and weighing techniques
- Optimal sand characteristics due to automatic moisture control and controlled material feed.
- Uniform covering of all sand grains, thereby reducing cost for excess bentonite and additives
- Short cycle times result in high output rates and moderate temperature increase



DISA SAM Mixer - features

- Pneumatic Bond Injection

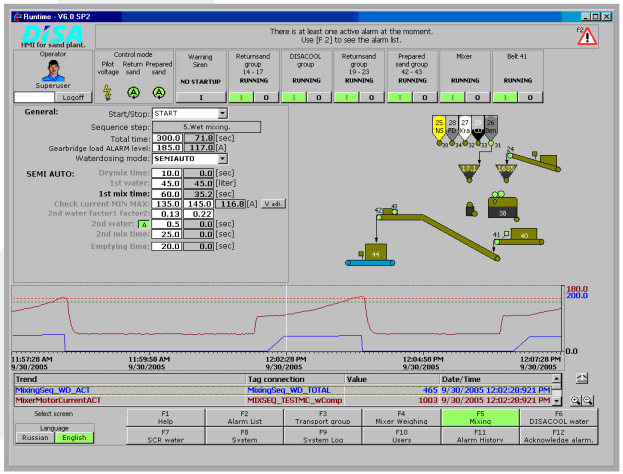
- Flexible solution which is particularly beneficial in the case of mixer replacements in confined or complex installations
- Injection directly into the sand improves the mixing efficiency and ensures consistent sand quality from batch to batch with minimal variations
- Reduces the formation of dust and thus the loss of additives into the dust extraction system



DISA SAM Mixer - features

- Optimum integration

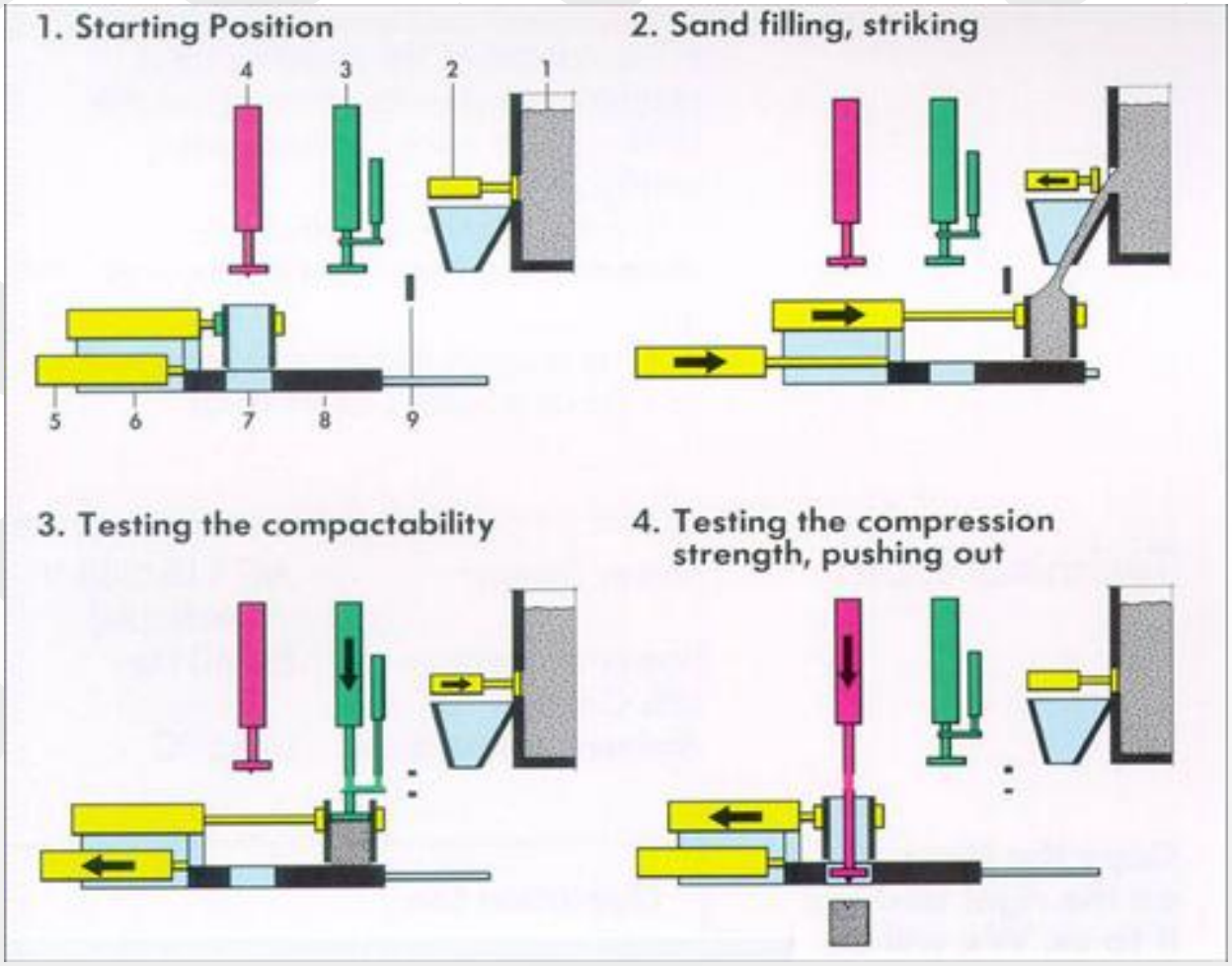
- An intelligent control system permits full integration into any sand circulation system
- Optimal integration with DISA moulding machines
- High degree of operational safety through a user-friendly and logic PC technology



DISA SMC sand controller

- Continuous control of sand quality; consistent properties
- Continuous monitoring and regulation of compactability and mould strength
- Addition of correct water and bentonite quantities
- Each batch is approved automatically before discharging
- Entry of up to 99 sand recipes
- Evaluation of measurement data
- Fault analysis
- Availability of data for quality management

DISA SMC sand controller



DISA SMC sand controller

- Integrated mixer solutions
- Dosing, mixing and moistening can take place in an integrated form when the mixer is equipped with a Sand Multi Controller
- Important sand properties such as compactability and mould strength are directly controlled and regulated to the desired value

DISA SAM Mixer – technical data

- The SAM Mixer is manufactured in 4 different families with a total of 13 mixer sizes
- SAM covers a range from15 to 200 t/h at a cycle time of 120 sec.
- Batch specifications from 500 kg to 5,000 kg

DISA SAM Mixer - summary

- Efficiency– a large, tall speed turbine
  - Efficient grain coating
  - Short mixing times

- Fast charging and discharging
  - Loading with large hopper scales
  - Unloading through bottom

- Maintenance
  - Long life wear parts and easy maintenance
  - Ceramic lining

Thank you for your attention