Smartmix X2

The mixing unit on the right move

Optimal mixing results due to:

_ a patented mixing blade geometry,

_ material-specific mixing parameters and

_ a brilliantly simple operating concept.

AMANNGIRRBACH

July 2009

Smartmix X2 …

- ✓ Is brilliantly simple to operate
- ✓ Creates conistent reproducible mixture quality
- ✓ All important mixing parameters available
- ✓ Why adjustable mixing parameters?
- ✓ Has a post-vacuum function
- ✓ Is a symbiosis between design and function
- ✓ Additional facts
- ✓ Mixing bowl with special mixing blade
- ✓ Why does a laboratory need Smartmix X2?
- ✓ Creates convincing mixing results
- ✓ Technical data

Smartmix X2

Is brilliantly simple to operate

- Most easy handling due to brilliantly simple operating concept
- Only one dial/push button for all functions:
  - quick selection of a program
  - starting the mixing process (press button briefly)
  - programming easily (press button longer)

Smartmix X2

Creates consistent mixture quality

- Homogeneous, consistent mixture quality
- Consistent reproducible mixing results
  - due to material-specific adjustable mixing parameters
- Less post processing time
  - due to consistent mixing results
- Smartmix X2 meets all needs of modern high performance plasters and investments
  - with its consistently homogeneous mixing results and the flexibly adjustable mixing parameters

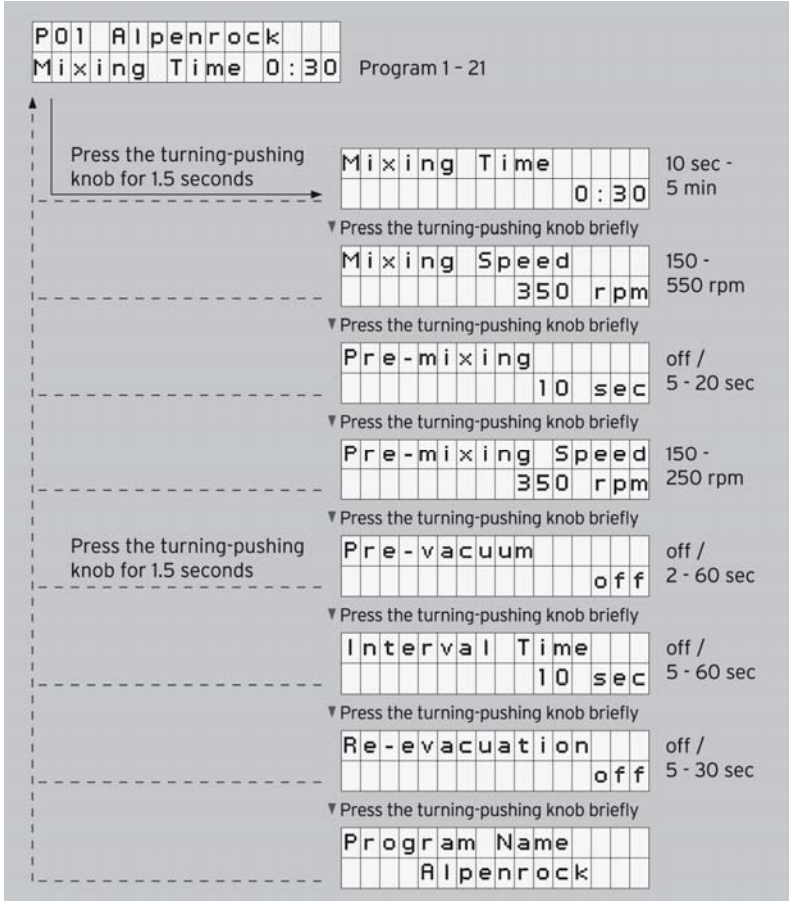
Smartmix X2

All important mixing parameters available

- Quick access to all mixing parameters:
  - pre-vacuum off / 2 ↔ 60s
  - pre-mixing off / 5 ↔ 20s
  - pre-mixing – rotational speed 150 ↔ 250rpm
  - mixing time 10s ↔ 5min
  - mixing - rotational speed 150 ↔ 550rpm
  - change in sense of rotation (CW / CCW) interval time off / 5 ↔ 60s
  - post-vacuum off / 5 – 30s
  - program name up to 12 digits

  - some mixing parameters are optional
    - off / x ↔ y
    - depending on material requirements

- The universal and future-proof vacuum mixing unit



Smartmix X2

Why adjustable mixing parameters?

- Pre-mixing with slow rotational speed
  - blending the powder without whirling up
- Pre-mixing function with adjustable rotational speed
  - variable between 150 and 250 rpm
- Mixing time and rotational speed
  - have an influence on the surface structure and the expansion of investments.
  - too short mixing time may result in a rough surface of the cast.
- High rotational speed (150 –550 rpm)
  - several investments nowadays require high rotational speed for mixing

Smartmix X2

Why adjustable mixing parameters?

- Adjustable rotational speed for plaster
  - plaster loses its flow properties (thixotropy) if mixed with too high rotational speed
  - e.g. Alpenrock rotational speed 350 rpm

- Maintain rotational speed constant (rotational speed adjustment)
  - mix 100g or 1000g, the rotational speed remains the same

- Change in direction of rotation
  - ensures homogeneous mixing of plasters and investments
  - in combination with the patented mixing blade geometry

Smartmix X2

With post-vacuum function

- Post-vacuum function
- The post-vacuum function provides reactive investments with the resting time required after mixing

Smartmix X2

Symbiosis between design and function

- Modern, ergonomic design in line with the Amann Girrbach design
- Small in size
- To be used as wall-mounted or upright unit
- 500ml - bowl delivered with mixer

Smartmix X2

More facts

- 20 programs
- 2-line display (blue light)
- Simple pre-filter system
- All new components tested more than 3500h
- All components operate on 24V
  - problems with vacuum-start in Asia solved

Smartmix X2

Mixing bowl with special mixing blade geometry

Mixing bowl with patented mixing blade geometry

- The specially shaped mixing blade ensures optimal movement of the mixture in the bowl.
- This steady circulation of the mixture in the bowl ensures a homogeneous result.
- Round bowl base
  - no edges or noses disturb the steady circulation
  - mixture can easily be withdrawn from the bowl.
- Wide range of bowls
  - 100ml; 250ml; 500ml; 750ml, 1000ml

Why Do You Need Smartmix X2 In The Laboratory?

Because Smartmix X2 meets the needs of modern high-performance plasters and investments

- **Smartmix X2 is future-proof**

Slow or quick mixing?
Why do plasters and investments require different mixing parameters?
A vacuum mixing unit must provide material-specific mixing parameters to be able to mix plasters and investments according to their needs and to ensure a homogeneous and reproducible mixture quality

Plasters can be influenced by the mixing process as far as properties are concerned
- Thixotropy/stability decreases if rotational speed is too high

investments nowadays require different mixing parameters
- Manufacturers demand different rotational speed, pre-mixing, post-vacuum etc.

Silicone must be mixed homogeneously to achieve Shore hardness throughout the entire material

Mixing and Mixing Processes (taken from German Wikipedia)

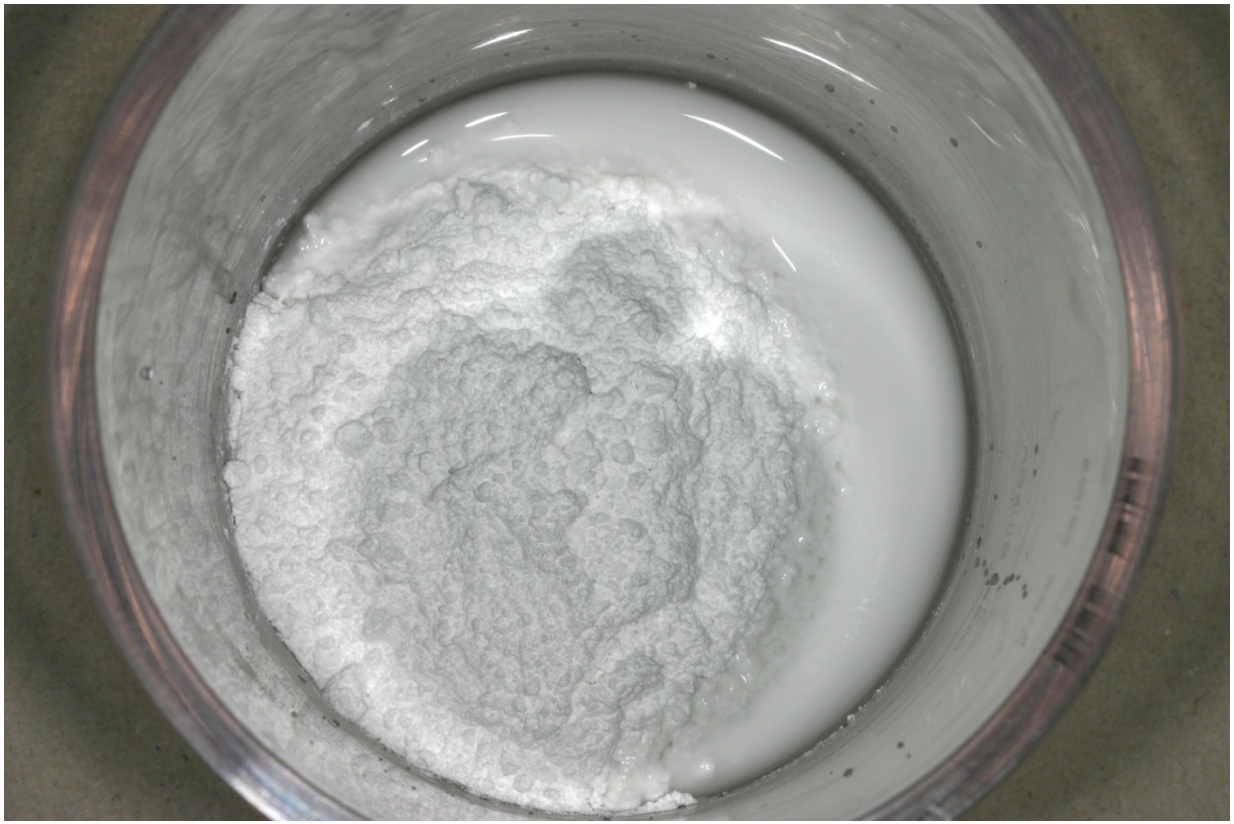
Definition:
Mixing serves to unite several basic substances with different properties and usually different compositions; it thus creates a new substance, a mixture (*conglomerate*). The aim is to achieve a high level of homogeneity of the new substance.

Evaluating a mixing process:
For the evaluation of different mixing processes and devices it is important to restrict the mixing time to a minimum and to still reliably achieve the desired degree of homogeneity.
When mixing substances that do not spontaneously mix homogeneously, it is important to create as much relative movement to the substances as possible. Ideally, the mixing device accelerates the mixture particles that are to be mixed so the intensity and the direction of the forces involved constantly change.

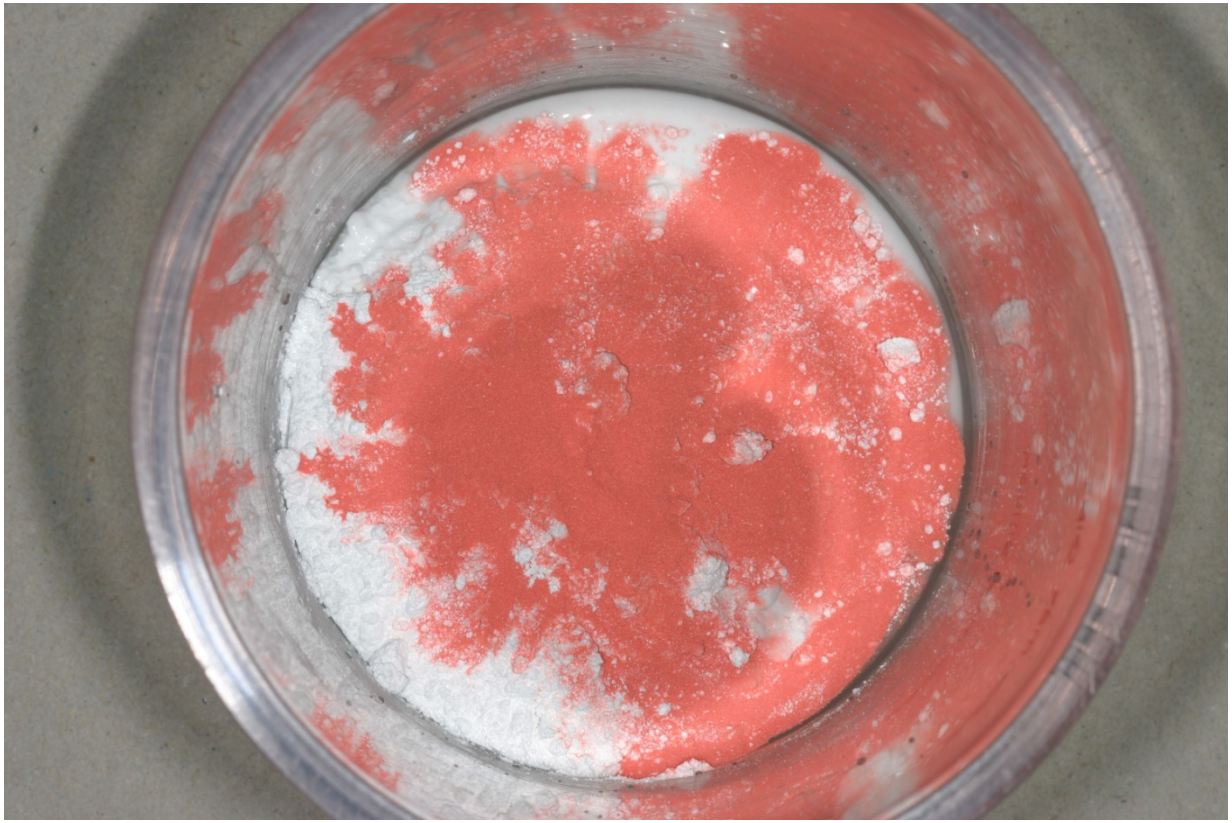
What Mixing Result Does Smartmix X2 Achieve?

The following pictures show the homogeneous mixing result achieved with the Smartmix X2.

Filling Plaster Into the Smartmix Mixing Bowl



Adding Colourant



Manually Pre-mixing Plaster With A Spatula

Manually Pre-mixing Plaster With A Spatula

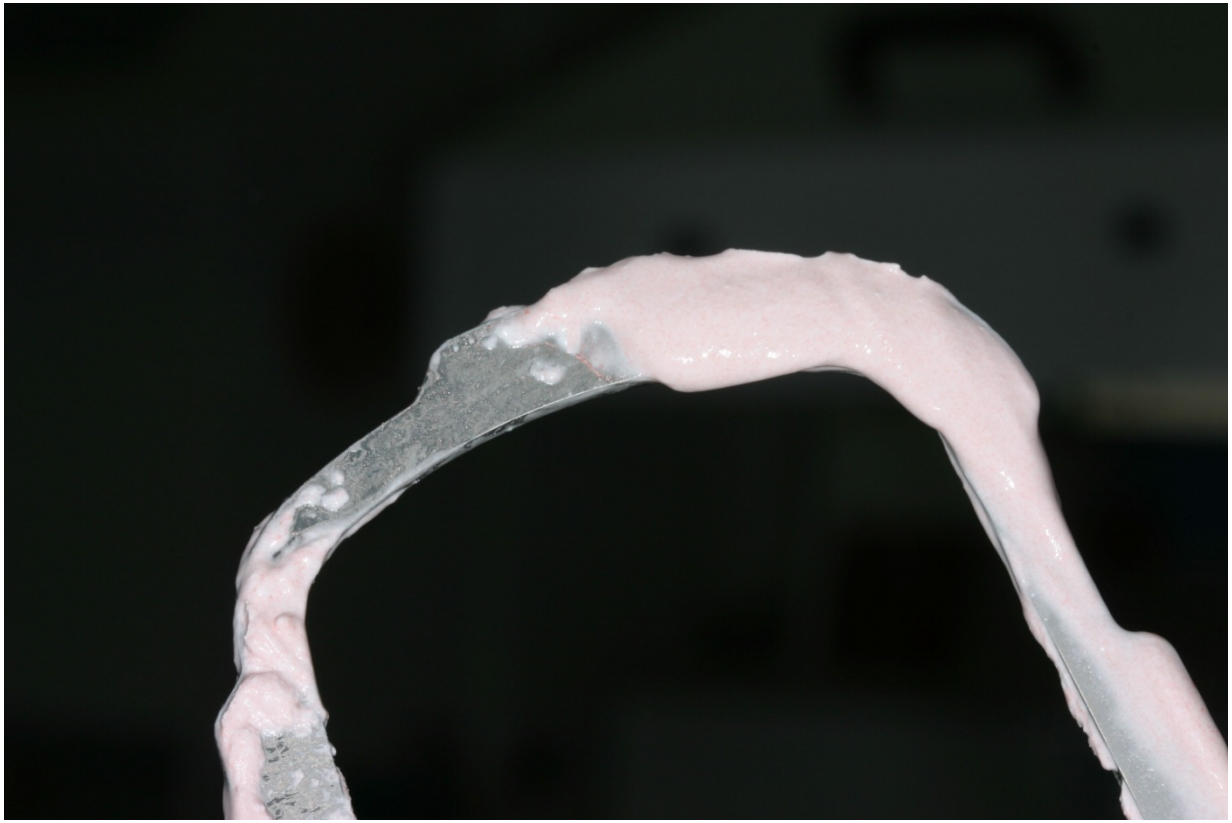
Starting Mixing Process With Smartmix

Automatic Mixing Process Under Vacuum

Plaster Homogeneously Spread In Bowl

Homogeneous Mixing Result In Bowl

No Colour Cords – Not Even In Marginal Areas

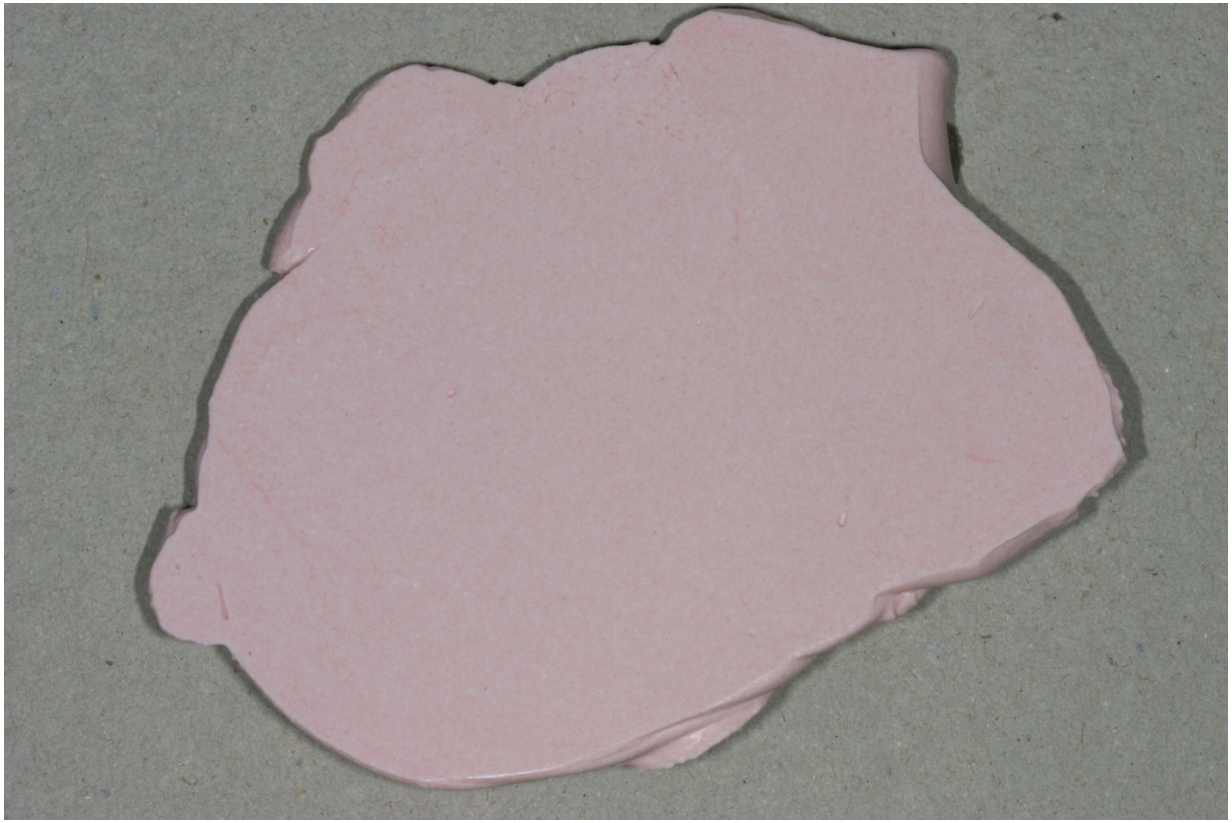


Homogeneous Mixing Result Taken From The Bowl

No Colour Acculumation During Glass Sheet Test

No Bubbles Or Colour Cords Underneath The Glass Sheet

A Homogeneous Mixing Result Just As It Should Be



Smartmix X2

115700 Smartmix X2

Technical Data

- Dimensions: L250 x W160 x H350 mm
- Weight: 8,5 kg dry
- Main voltage: 115/230V 50/60Hz
- Electronic fuse: T 2,5A
- Power: 210 watt
- Mixing speed: max. 550 rpm
- Vacuum: -800 mbar
- Rate of dispensing: 15,8 l/min