



MIXING GROUP



UMIX –
UNIVERSAL MIXER FOR
PRODUCTION AND LABORATORY

UMIX

Universal mixing and kneading machines **UMIX** and **UMIX-L** are designed to treat medium- and highly viscous products from various sectors of the industry. They are available in many sizes combined with different methods of product discharge – trough removal or tilting, discharge screw or bottom discharge.

As well as dispersion and distribution of the mixing components during batch process, the concept of the machines enable simultaneous procedures to take place such as:

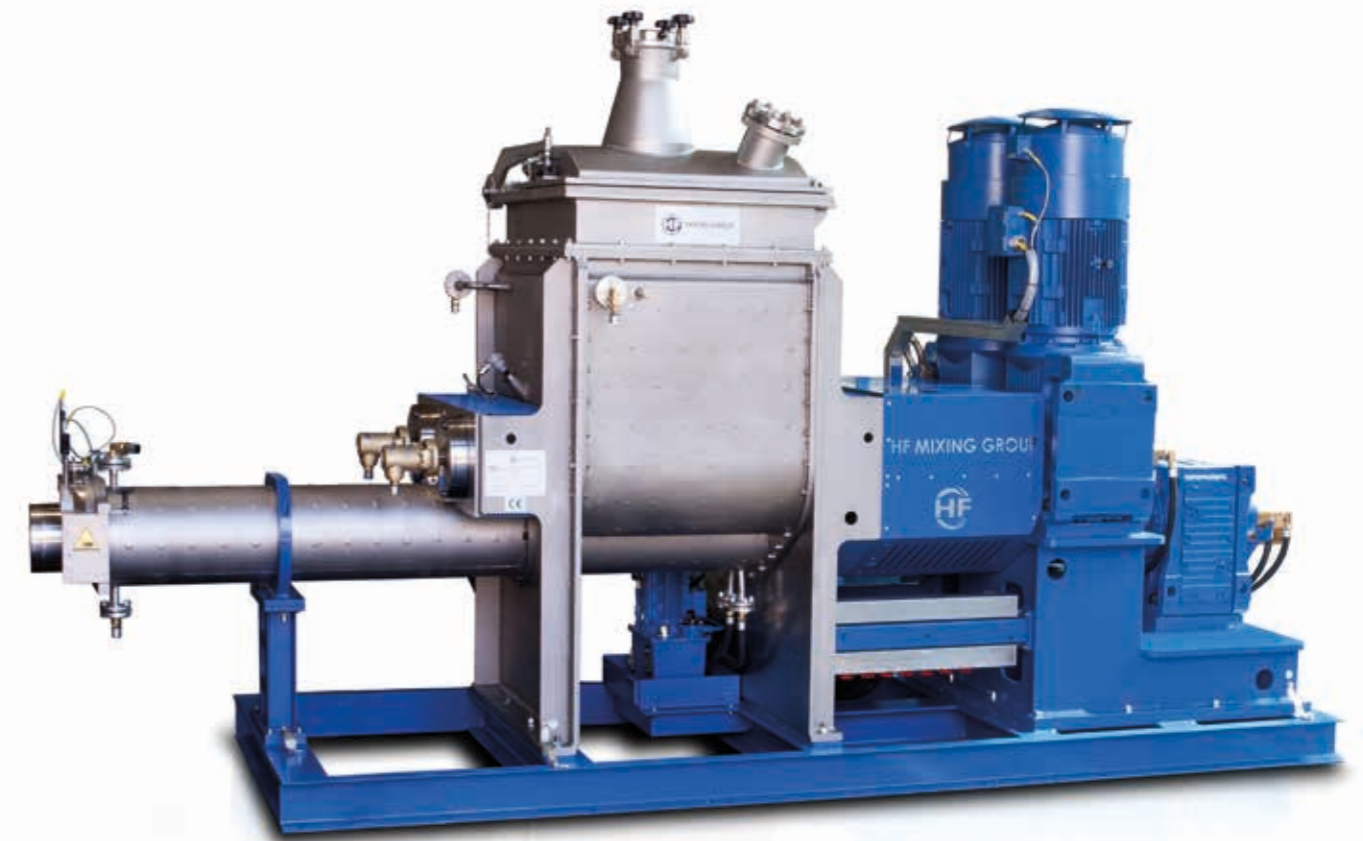
- Plasticising
- Homogenising
- Melting
- Cooling
- Degassing
- Evaporation
- Dissolving
- Reacting

UMIX – Size and available corresponding extraction technology

| Usable volume [l] | Total volume [l] | Removable trough | Tiltable trough | Discharge screw | Bottom discharge |
|-------------------|------------------|------------------|-----------------|-----------------|------------------|
| 0.25 | 0.40 | ■ | – | – | – |
| 0.75 | 1.10 | ■ | – | – | – |
| 1 | 1.50 | – | ■ | – | – |
| 2.50 | 3.75 | – | ■ | ■ | – |
| 5 | 7.50 | – | ■ | – | – |
| 8 | 12 | – | ■ | – | – |
| 20 | 30 | – | ■ | – | – |
| 80 | 120 | – | ■ | ■ | – |
| 200 | 260/300** | – | ■ | ■ | – |
| 450 | 570*/675** | – | ■ | ■ | – |
| 680 | 850*/1,020** | – | ■ | ■ | ■ |
| 900 | 1,120*/1,350** | – | ■ | ■ | ■ |
| 1,500 | 1,900*/2,250** | – | ■ | ■ | ■ |
| 2,000 | 2,600*/3,000** | – | ■ | ■ | ■ |
| 3,000 | 3,800*/4,500** | – | ■ | ■ | ■ |
| 4,300 | 6,450 | – | – | ■ | ■ |

* Machines with tiltable trough or bottom discharge.

** Machines with discharge screw.



UMIX 450 SDH

ALL UMIK FACTS AT A GLANCE:

- Two tangential counter rotating mixing and kneading blades
- Water- or thermal oil temperature control of the trough
- Trough made of carbon or stainless steel, depending on the process requirements (duplex steel on request)
- Different blade geometries – for an optimised adaption to the customers process
- Option: temperature controlled blades (UMIX 80 and bigger)



UMIX 80 SDH



UMIX 20 T

UMIX – MIXING AND KNEADING MACHINES FOR PRODUCTION

Production sized U MIX machines are available from useful volumes of 20 litres. All machines of 80 litre useful volume and above are equipped with separate drive trains per rotor; in combination with the variable speed control, which is included in the standard scope. They enable a free selection of speed and friction of the blades and make the machine fit for current and future mixing requirements. The adaption of the drive power and the arrangement of the rotors due the customer's process complete the abilities to optimise the machine.

Machines with a **tiltable trough** are equipped with a hydraulically or electromechanically actuated tilting mechanism rotating the mixing chamber around the front rotor axis. A tilting angle of 100° or more supports the discharge of the mixture.

Machines with a **discharge screw** are used when the mixture needs to be shaped for the next step of its treatment or as a ready-to-use product. The screw is arranged in a cavity located centrally underneath the rotors; during mixing, it rotates backwards thus

transferring the material to the area influenced by the mixing blades and enhancing their effect. The shape of the discharged product depends on the customer's requirements.

For further treatment of the product after discharge, it is possible to combine with different aggregates such as cutting devices, granulators, wrapping units, gear pumps or extruders. Typical applications: HTV silicone compounds, sealants.

Machines with **bottom discharge** are equipped with flaps or valves at the lower end of the trough. Pipelines arranged underneath enable the extraction of the mixture and forward it to the next step of its treatment. Typical applications: Glue production, pigment dispersion.

UMIX-L – LABORATORY MIXING AND KNEADING MACHINES

UMIX-L laboratory mixers fit best for the preparation of small batch sizes and preliminary tests and developments prior to a large scale production process. The temperature control of the mixing chamber make the machines fit for various kinds of mixtures.

ALL UMI-X-L FACTS AT A GLANCE:

- Useful volumes from 0.25 to 8 litres
- Standard version including
 - Sigma blades with standardised drive unit and variable rotor speed
 - Trough with temperature control

- Mixture discharge by trough removal for UMI-X-L 0.25 and UMI-X-L 0.75
- Mixture discharge by manual trough tilting for UMI-X-L 1.0 to UMI-X-L 8.0
- UMI-X-L 2.5 available with discharge screw
- Optionally available: operation with underpressure

UMIX – CONTROLS, ACCESSORIES, SERVICE

■ CONTROLS

UMIX and UMI-X-L are offered with different operator control systems.

BASIC CONTROL (UMIX-L ONLY):

The UMI-X basic control is better suited for less complex or manually executed mixing processes that do not require automated cycles or process data collection and indication.

Adjustments and indications:

- Rotor drive on/off
- Cover locking on/off
- Rotor speed/screw speed
- Rotor sense of rotation “mixing/reverse”
- Two-hand-operation of the rotors with open cover
- Mixture temperature

PROFI CONTROL:

Equipped with a 19” touch-panel screen, the professional control system ADVISE® CS provides various additional features:

- Mixing sequence definition by step control with different criteria of relaying
- Indication and storage of process parameters such as
 - Rotor speed
 - Mixture temperatures
 - Drive power
 - Torque

Option:

- Control of accessories such as TCUs and vacuum pumps

■ ACCESSORIES (OPTIONALLY AVAILABLE)

TEMPERATURE CONTROL UNIT TCU:

Used for temperature control of troughs and other components by water or thermal oil. The Unit has the ability to heat and cool the control medium and includes a circulation pump.

VACUUM PUMPS:

Used to reduce the inside pressure of the mixing chamber in order to extract inclusions of air from the mixture or for smooth drying.

WRAPPING UNITS/WIGWAGS:

Wrapping units are used to adapt a foil to shaped materials downstream of the discharge (i.e. silicone stripes) for the purpose of storage. The unit is available with and without a drive to pull the stripe. Machines, that place the wrapped stripe in a box for transportation purposes – so-called **WigWags** – are available in different versions, i.e. with automatic pallet changing system.

■ SERVICES

For our machines and those of the manufacturers “Werner & Pfleiderer” and “Coperion”, we offer spare parts and services such as inspections, installations and commissioning. The worldwide service network of the HF MIXING GROUP provides short-term reaction and professional support.

www.hf-mixinggroup.com