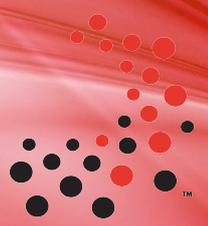




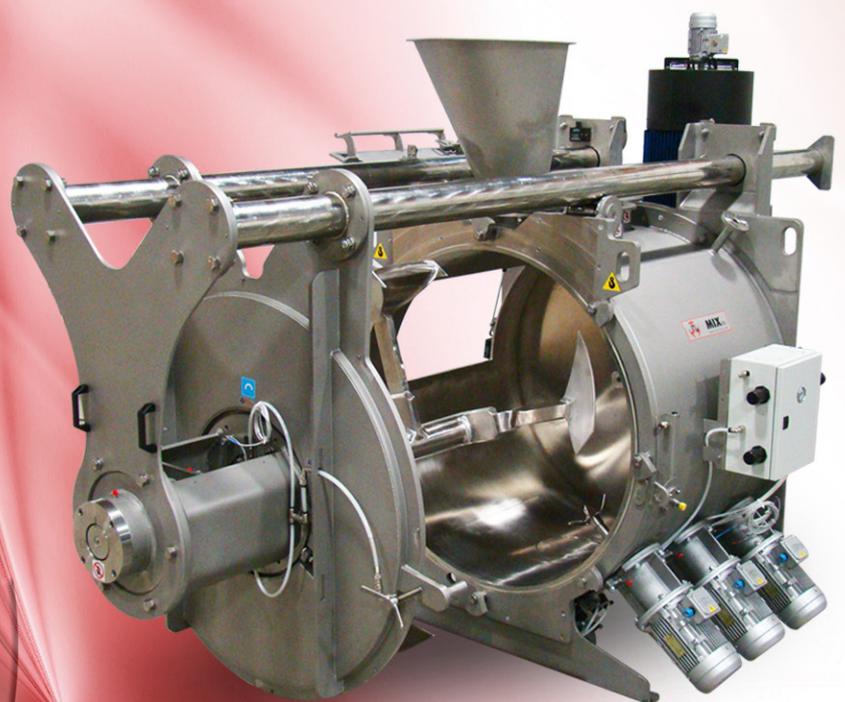
**MIXSYS**  
Adaptive Mixing &  
Process Technology



[www.mixer4u.com](http://www.mixer4u.com)

# Mixing Division

Industrial Mixers



 ATEX-rated products available

# Quality and Innovation

## MIX PRODUCTS AND SOLUTIONS

Company MIXSYS specialized in mixing processes, projects and manufacture Mixers, Stirred Bunkers, Granulators, Heaters, Coolers, Dryers, Reactors, Sterilizers complying with European Directive 2006/42/CE and, on demand, with Directive 2014/34/UE (former 94/9/CE) and 97/23/CE for ATEX and PED executions. Gross capacity from 2 to 30 litres for laboratory mixers and from 75 to 13.000 litres for industrial mixers. On demand MIX manufactures mixers up to 26.000 litres, for batch or continuous processes with different types of mixing tools.



# Mixing

## MIXING WITH THE RIGHT COMPANY

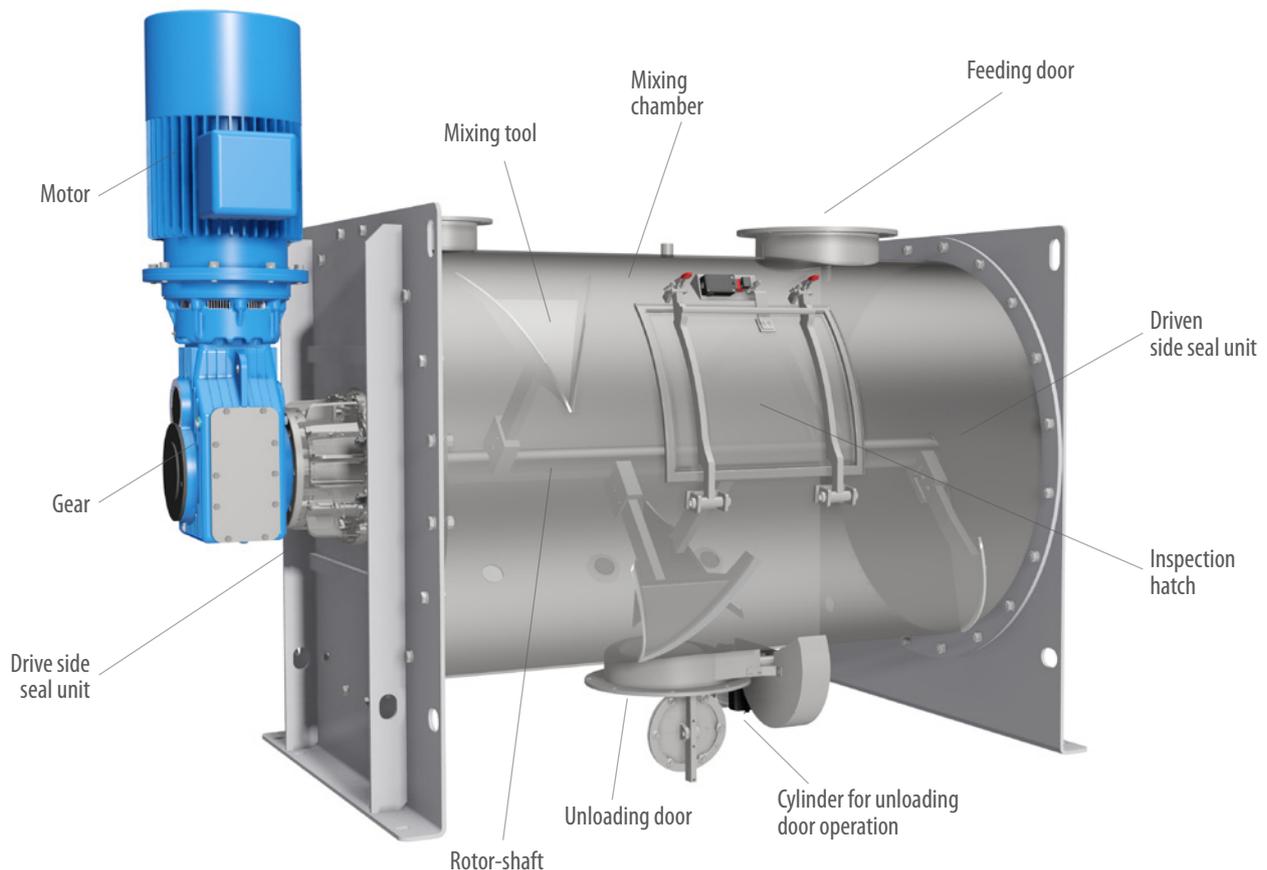
Customers purchasing MIX products obtain Technology - Experience - Support, Patented Solutions with technical and economic benefits. MIX means Creative Projects.

### *Quality in manufacture, certainty in the process.*

To satisfy the need for perfect processes, with controlled and repeatable quality, capable of meeting the demands coming from the different fields in the market, MIXSYS has invested continuously in the design and manufacture of new devices and well known devices. We are thus able to offer a range of different machineries: Mixers, Stirred bunkers, Granulators, Heating-and-cooling mixers, Dryers, Reactors, Sterilizers. These machineries are manufactured according to the customer's specification, that are distinguished in every batch or continuous process, and can be carried out with different rotor-shafts: with Ploughshare, with MIX-paddles, with fourfold screw Ribbon. Moreover they can be completed with specific optional items. MIX SRL process engineers, thanks to their wide experience and their knowledge, can select for each job the right solution, with the right technology, performance and cost, suitable for different fields of application: **Food – Chemicals - Cosmetics – Building - Ecology - Industry – Laboratory - Feed.** The most common construction materials utilized for our products are: stainless steel AISI 304 (L) - AISI 316 (L) - AISI 316 Ti, carbon steel, wear-resistant steel.

### *MIX mixers distinguish themselves because of their exclusive design and their effective construction for the intended process*

Our horizontal ploughshare mixer works with the principle of a three-dimensional, centrifugal, swirling, mechanical fluidization of the products. This principle comes through the utilization of ploughshare-shaped or paddle-shaped mixing tools, which create an high turbulence, resulting in a fast and exact compenetration / homogenization of the different ingredients (independently on their physical characteristics), and avoid dangerous blocks due to compression. To break lumps, and decrease the mixing time, it is possible to install one or more additional choppers.

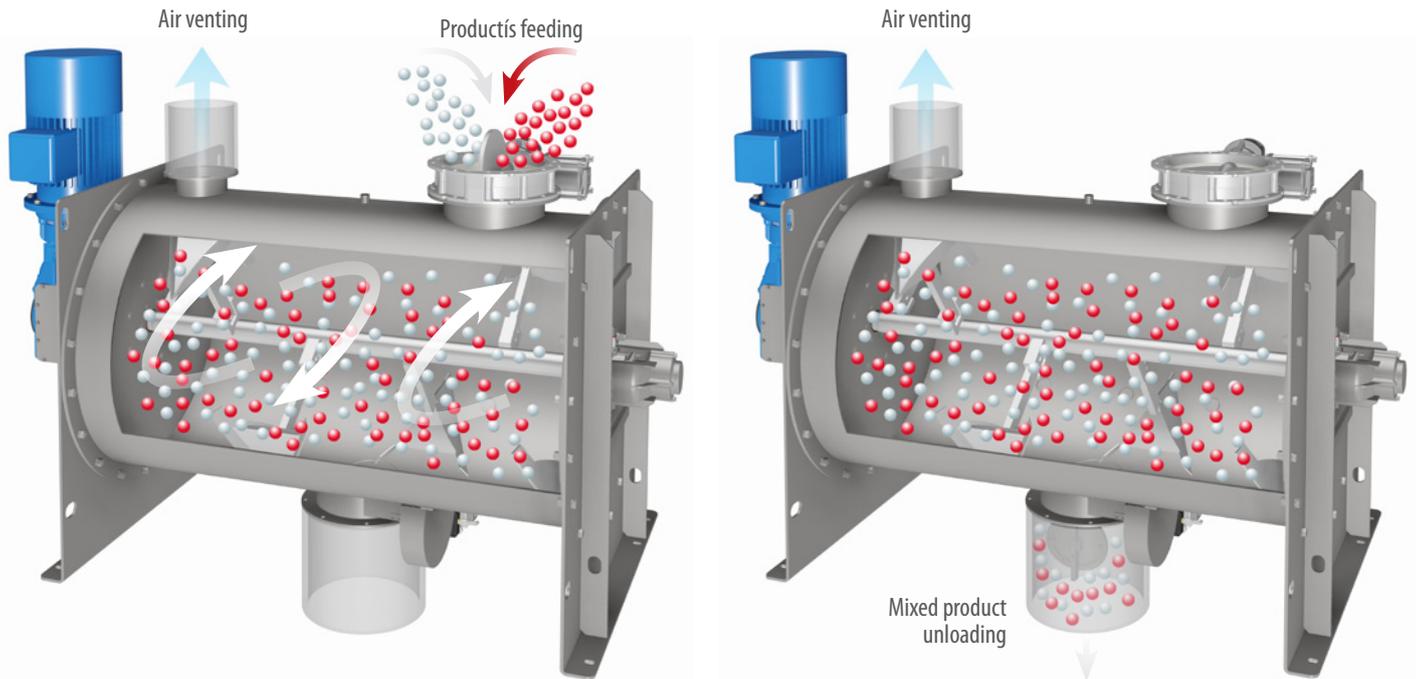


# Mixing Process

## BATCH

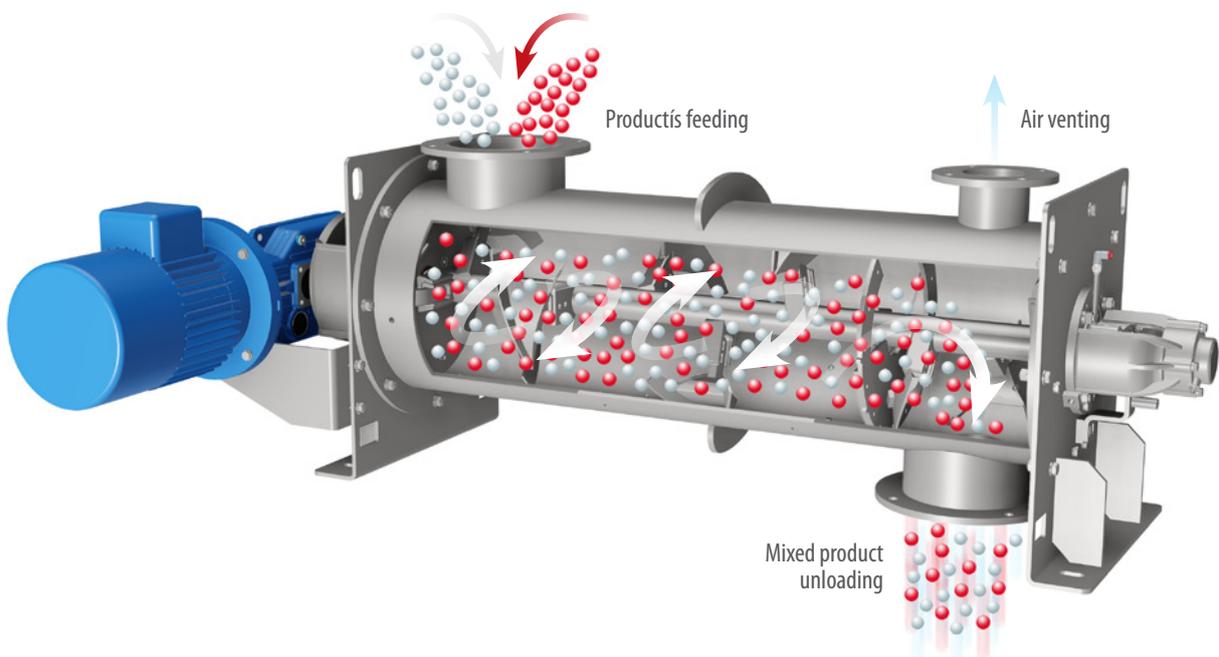
“Batch” process means discontinuous; the simplified production sequence is the following:

- venting spigot must be always open to vent air in a filter, preferably slightly under pressure ;
- filling of the mixer through the product inlet. Unloading door must be closed;
- mixing of products. Unloading door must be closed, product inlet must be closed, this can be open only if connected with a closed feeding hopper;
- emptying of the mixer through the unloading door.



## CONTINUOUS

“Continuous Process”. This kind of mixer means open system; the production sequence consists in a continuous flow of product that enters from the inlet, then it is mixed, and in the final stage it exits from the unloading outlet. Both inlet and outlet doors are always open. It is important to underline that the final quality of the mixed product is strictly related to the permanence time inside the mixing room, and to the production capacity of the mixer.



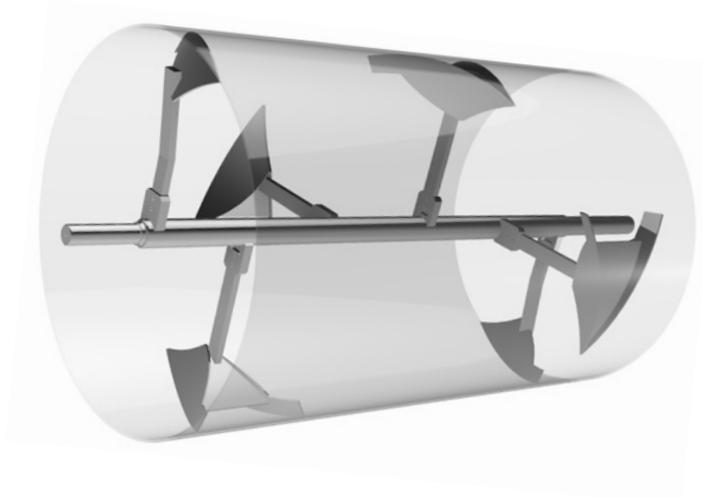
# Mixing Tools

The solid rotor shaft can be a single piece complete with welded tools, radially fixed at both ends, and axially fixed only at drive side, or the tools can be bolted to the rotor shaft with special self locking bolts.

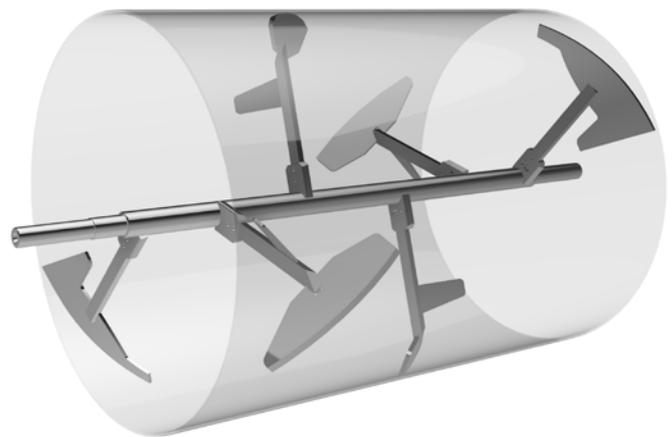
The solid rotor shaft has a properly dimensioned structure, according to the products and the process. The specific shape of tools is conceived to obtain the required mixing, homogenization, granulation, aeration, of the mixed products.

**ACCORDING TO DIFFERENT PRODUCTS AND PROCESSES, THE MIXER CAN BE EQUIPPED WITH THE FOLLOWING MIXING TOOLS:**

**MIXPLOW** - Ploughshares are composed by two symmetrical plough-shaped faces. This tool works on the principle of a three dimensional mechanical centrifugal fluidization of the products and obtains excellent mixing quality in very short time.

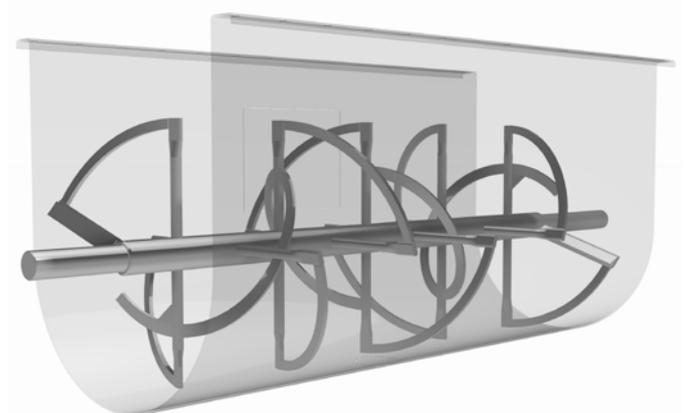


**MIXPADDLE** Paddles need a longer mixing time than ploughshare, but it is easier to get paddles clean. Paddles are normally used with pastes and moist or sticky products.



## **FOURFOLD SCREW RIBBON**

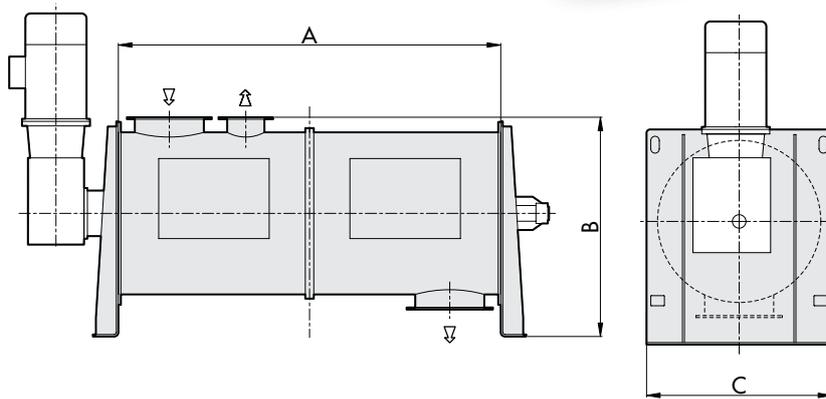
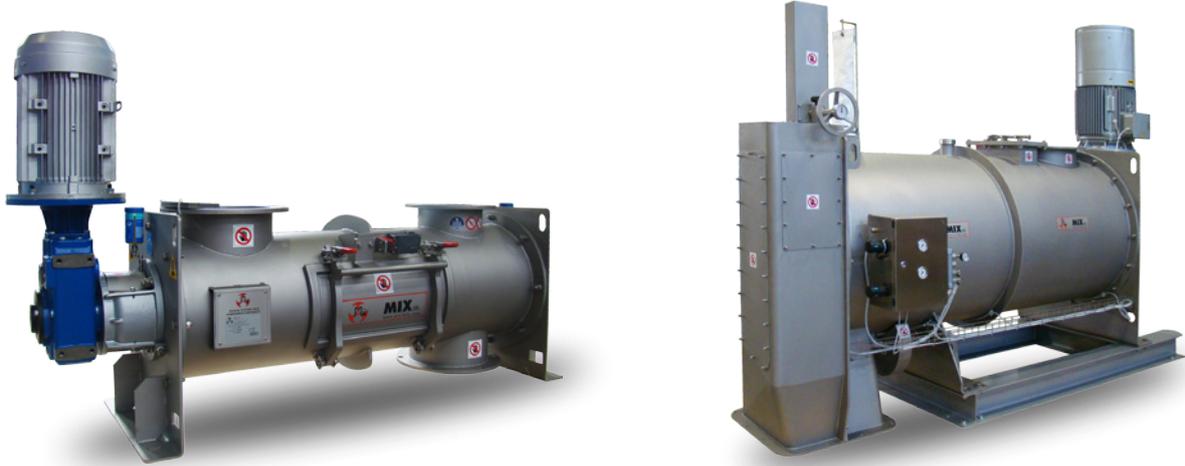
The ribbon is commonly used for non intensive and gentle mixing or to keep the product agitated to avoid lumps. This is used also to homogenize different batches obtained with ploughshare or paddle intensive mixers



# Mixer

**MXA** Ploughshare Continuous Mixer

**MXH** PalaMix Continuous Mixer



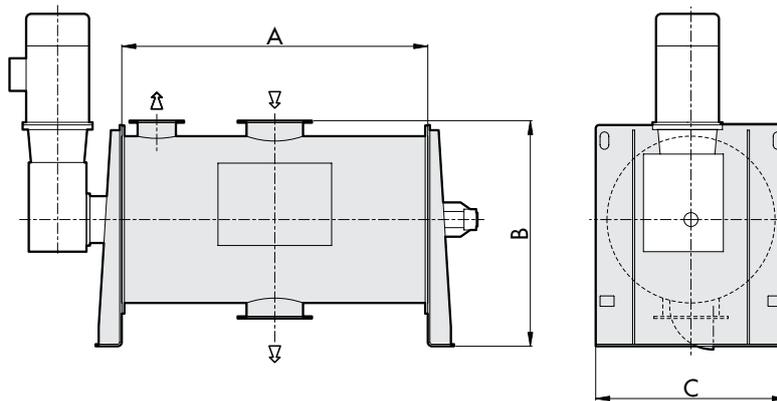
TYPE	USEFUL WORK CAPACITY IN LITERS		A	B	C
	MINIMUM	MAXIMUM			
MX.0075	27	41	750	580	510
MX.0150	52	79	1250	580	510
MX.0300	106	159	1750	665	590
MX.0420	161	242	1500	845	770
MX.0600	215	323	2000	845	770
MX.0850	294	442	1750	1015	930
MX.1200	421	631	2500	1015	930
MX.1700	544	816	2250	1200	1090
MX.2400	846	1269	3500	1200	1090
MX.3400	1074	1611	2500	1530	1450
MX.4800	1503	2255	3500	1530	1450
MX.7000	2345	3518	3500	1850	1780
MX.9500	3378	5067	3500	2210	2100
MX.H130	4342	6514	4500	2210	2100

On request it is possible to supply mixers with many product inlets.

# Mixer

**MXC** Ploughshare Batch Mixer

**MXK** PalaMix Batch Mixer

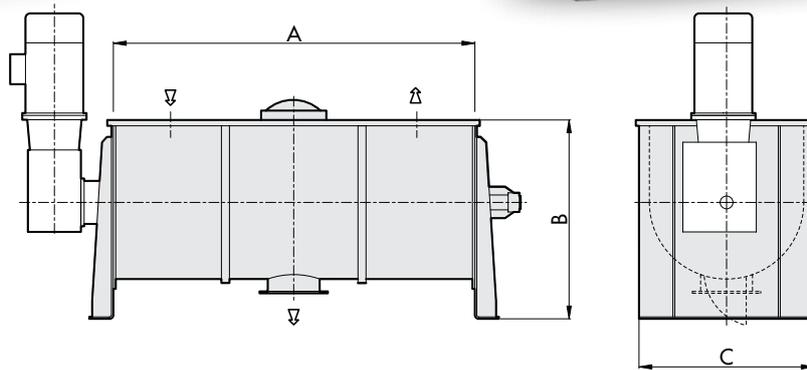
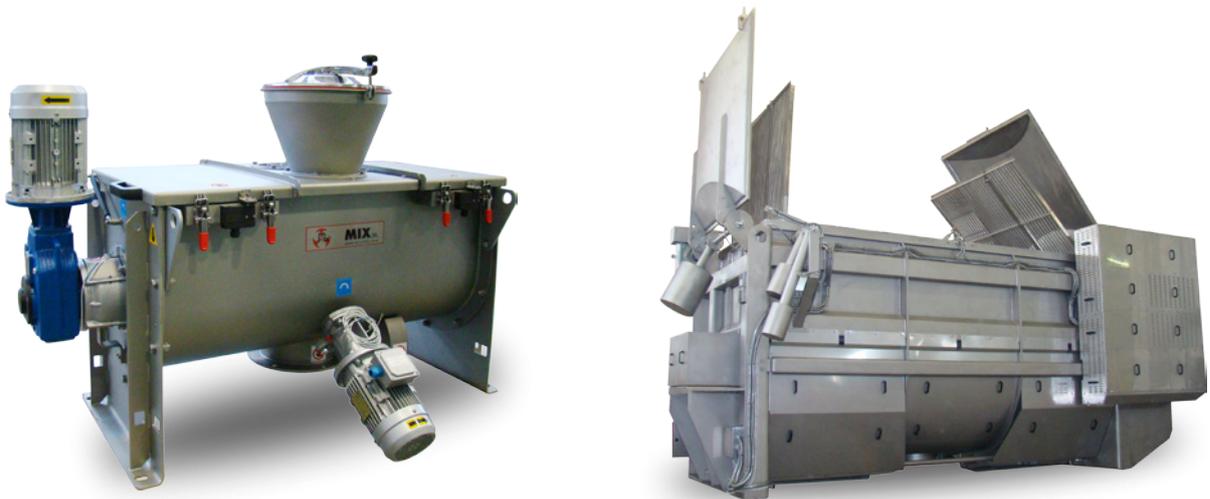


TYPE	USEFUL WORK CAPACITY IN LITERS		A	B	C
	MINIMUM	MAXIMUM			
MX.0075	27	65	750	710	510
MX.0150	18	125	1000	790	590
MX.0300	32	220	1000	950	770
MX.0420	48	330	1500	950	770
MX.0600	63	430	1250	1115	930
MX.0850	88	600	1750	1115	930
MX.1200	127	850	1750	1300	1090
MX.1700	160	1100	2250	1300	1090
MX.2400	260	1750	2000	1660	1450
MX.3400	320	2200	2500	1660	1450
MX.4800	500	3400	2500	1990	1780
MX.6700	650	4500	2250	2420	2100
MX.7000	700	4800	3500	1990	1780
MX.9500	1000	7000	3500	2420	2100
MX.H130	1300	9000	4500	2420	2100

On request it is possible to supply mixers with many product inlets.

# Mixer

## MXN Ribbon Batch Mixer

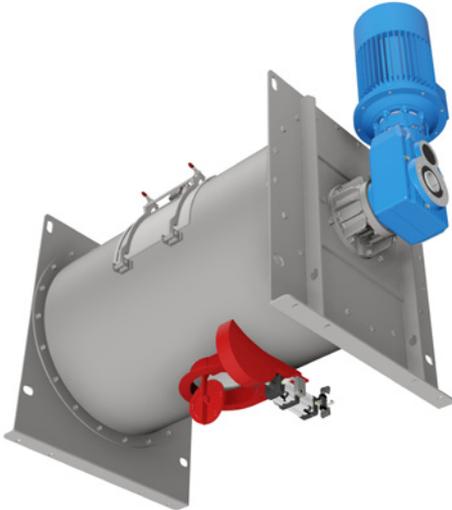


TYPE	USEFUL WORK CAPACITY IN LITERS		A	B	C
	MINIMUM	MAXIMUM			
MX.0150	80	135	1000	730	540
MX.0300	150	260	1250	850	660
MX.0420	250	450	1400	930	740
MX.0600	310	550	1800	930	740
MX.0850	440	780	1400	1200	960
MX.1200	630	1120	2000	1200	960
MX.1700	900	1550	2800	1200	960
MX.2400	1260	2200	2500	1450	1170
MX.3400	1840	3200	2500	1630	1390
MX.4800	2560	4450	3500	1630	1390
MX.6700	3370	6000	3000	2100	1700
MX.9500	5130	9000	4500	2100	1700
MX.H130	6660	11550	4000	2600	2000

On request it is possible to supply mixers with many product inlets.

# Unloading Door

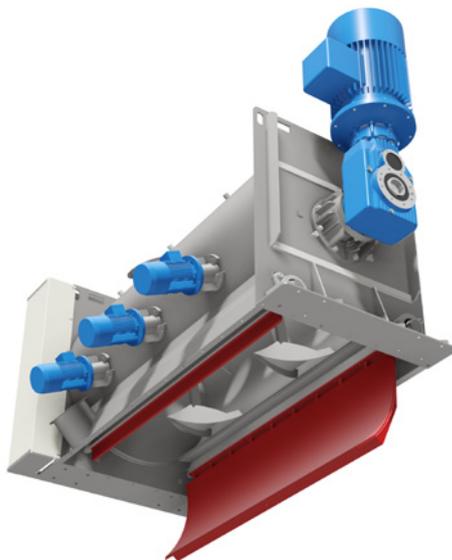
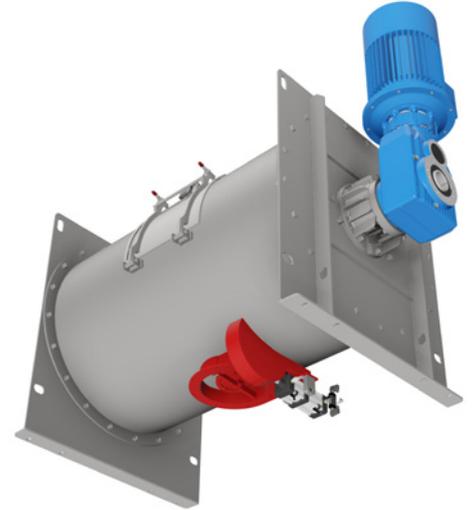
**OPEN**



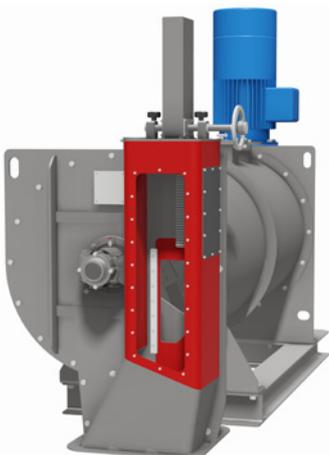
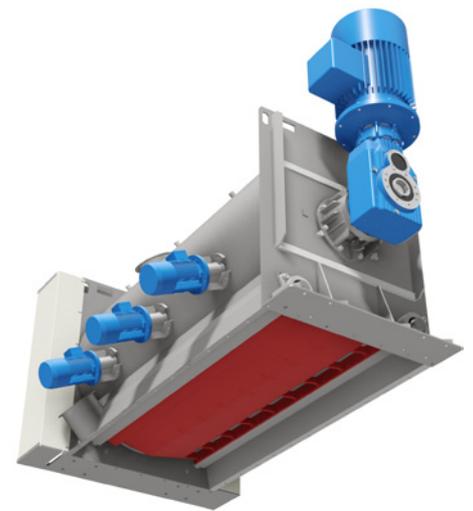
## **TOROIDAL UNLOADING DOOR**

The door rebuilds the circular shape of the mixing room, preventing the formation of areas where the product remains unmixed. The particular profile of the self cleaning gasket guarantees the perfect tightness even with sticky products as oxides pigments, sugar and flour with fats.

**CLOSED**

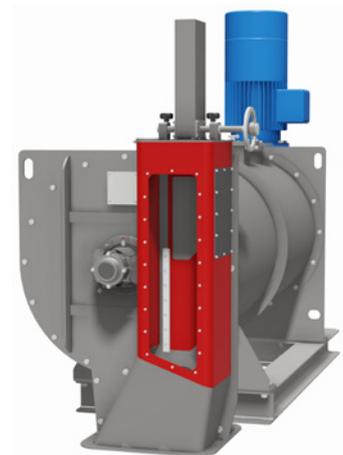


**MIXMOUTH** The door rebuilds the circular shape of the mixing room, preventing the formation of areas where the product remains un-mixed. With the bomb door it is possible to obtain the complete unloading of the mixer in few seconds. Thanks to an additional tightening systems, it guarantees the perfect seal even with heavy products during shaft rotation.



## **FRONT UNLOADING DOOR**

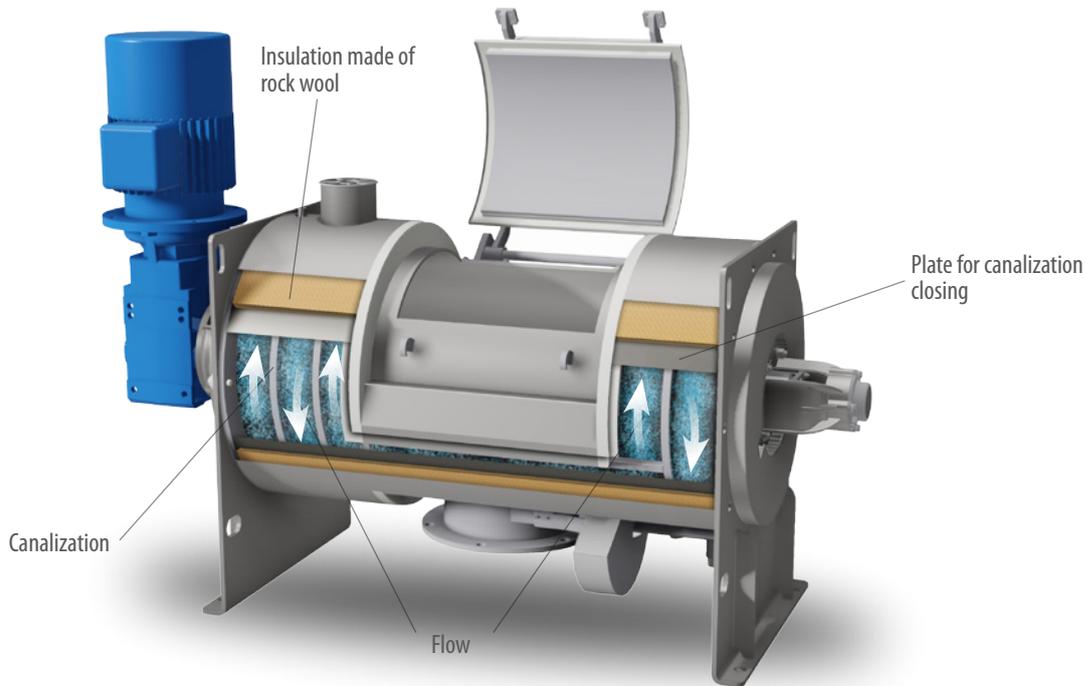
Front unloading door, complete with slide gate has been developed to calibrate the time of permanence of the product inside the mixing room.



# Process Solutions

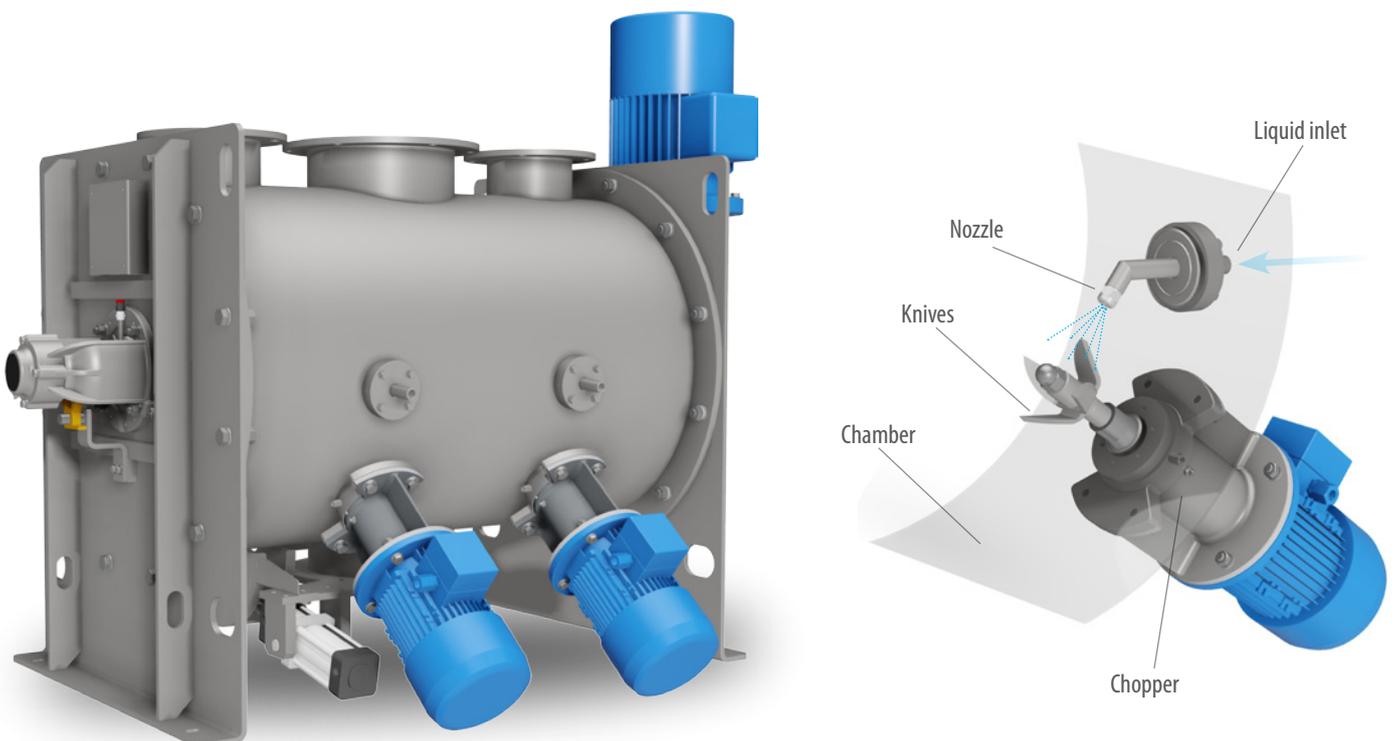
## HEAT EXCHANGER

MIX heat exchanger has a very high performance thanks to the heating / cooling fluid that is directly in contact with the mixing vessel. The exchange fluid, glycol water, cold water, hot water, hot oil, steam, has the duty to assume or to release heat to the product inside the mixing room, obtaining heating / cooling or drying. In the reactors, the heat exchange controls chemical and physical reactions.

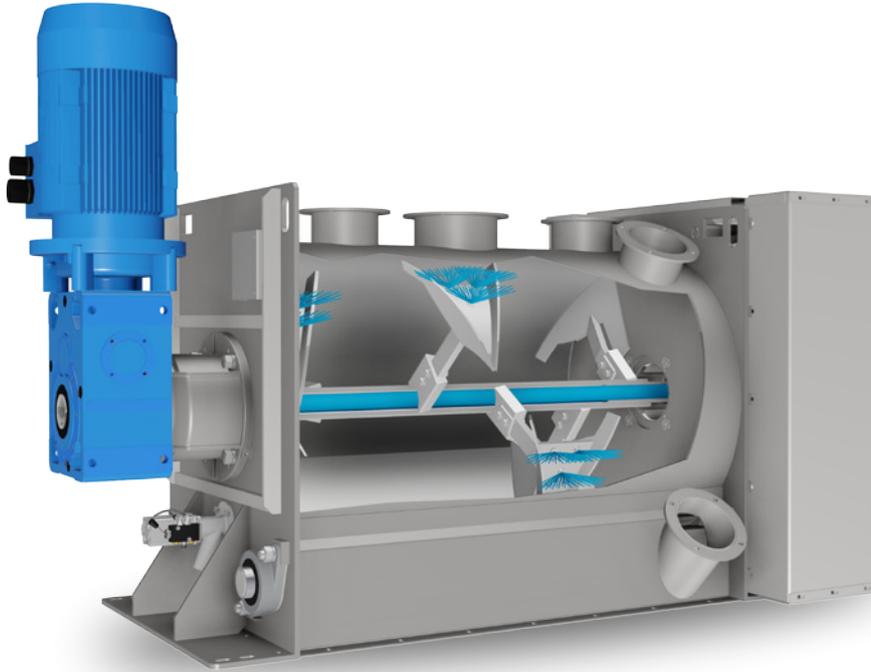


## HOMOGENIZERS AND LIQUID INJECTION

Side mounted homogenizers are equipped with high speed rotating blades that facilitate the homogenization of different products, reducing the mixing time and breaking lumps. Liquid Injection has the functions to add additives to the products inside the mixing vessel and to facilitate the elimination of powder and the granulation process.



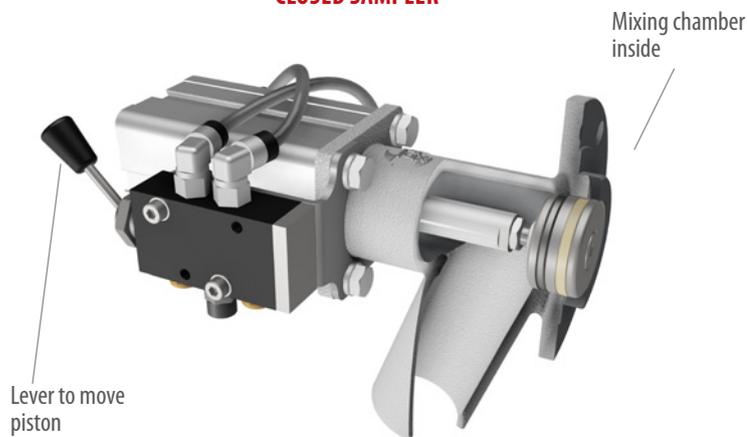
**MIXSWEEP PNEUMATIC CLEANING OF THE MIXER CHAMBER** This system is patent protected, inject some compressed air inside the mixing chamber, while the rotor-shaft is running. Some nozzles, installed in the rear of the ploughs send the air against the wall of the mixing chamber, and make the product to detach from the mixer walls. A combination of pneumatic cleaning and full-length bomb door enables the User to obtain a very high degree of cleaning, after the unloading, without other operation.



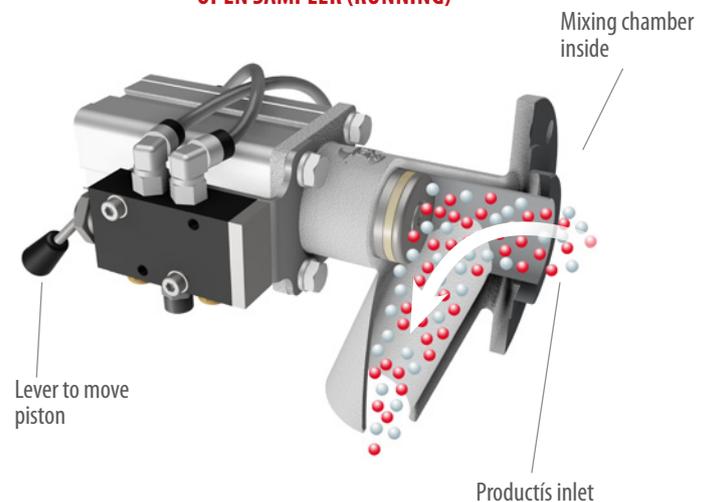
## SAMPLER

Pneumatic system to collect samples; it enables the User to get product samples during the mixing phase, while the rotor-shaft is running. The sampler, simple to use, is installed in the head of the mixer, and avoids that product can stop and settle.

**CLOSED SAMPLER**



**OPEN SAMPLER (RUNNING)**



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