

Flex-Mix™ Instant



Application

APV® Flex-Mix™ Instant is a highly efficient vacuum processing unit, suitable for use in a wide range of applications. It is designed to recombine, dissolve and disperse powders in liquids by means of high shear vacuum mixing.

The Flex-Mix Instant is among other things used for:

- Recombination/reconstitution of milk powders
- Infant formula preparation
- Fine food emulsions
- Slurries and gum dispersion
- Sugar dissolving
- Beverages
- Ice cream, yogurt and dessert mix
- Plant-based products

Capacity

Batch production: Up to 6,000 litres

Production per hour: Up to 100,000 litres per hour –

All depending on the type of production plant

Operation

The Flex-Mix Instant consists of an in-line rotor/stator mixer which is connected to a tangential outlet in the bottom of the tank. The In-line mixer is both pumping and mixing the product and thus creating a large liquid flow, which is recirculated over the tank through a bypass.

The bypass flow is returned tangentially into the tank thus creating a forced vortex. The forced vortex means that liquid will “rise” up along the tank wall and the free liquid surface area will be considerably larger than the tank diameter. The tank is a vacuum tank and the powder is transported into the tank by means of a special powder inlet valve. The powder/air mixture is led directly into the liquid below the liquid surface and due to the forced vortex and the difference in density, a separation of air/gas and liquid will take place very fast. The air/gas is centered in the middle of the tank and is subsequently drawn out. The large free liquid surface furthermore gives an effective and continuous deaeration of the product. Unlike traditional mixing that generally incorporates air during mixing. This will help to reduce oxidation, improve product quality and consistency.

The reversed cone shaped bottom of the tank and the forced vortex ensure that the liquid is dragged to the periphery of the tank, avoiding air in the tangential outlet, ensuring that no air is drawn into the mixed product.



Scan the QR code to learn more.

Standard Design

General:

- Sanitary design for CIP cleaning. Fully drainable for improved hygiene and minimal product waste
- Flex-Mix Instant tank with reversed cone bottom
- Flex-Mix In-line mixer/pump
- Vacuum system
- CIP system
- Optional with integrated control panel with PC/PLC
- Skid mounted
- Optional with powder hoppers, open as well as closed for CIP cleaning
- Seal material in EPDM or FPM (Viton) FDA quality
- All parts in contact with the product are made of stainless steel AISI 316L / DIN1.4404

Tank Design

- Cylindrical insulated vacuum tank in the following sizes: 500, 1000, 2000, 3000 and 6000 litres
- Internal/external tank surfaces in quality 2B finish with polished welds. Surfaces in contact with product: $Ra < 1 \mu m$
- Available with jacket on tank wall
- Top mounted manway with cover and safety lock
- Top mounted vent/safety valve
- Top mounted sight glass with light
- With one or two CIP-inlet branches, $\varnothing 25 \text{ mm}$, with rotating spray ball
- One or more product inlets for liquids
- One or more patented powder intake valves
- Available with side mounted minor ingredient funnels
- Available with level switches and/or load cells

In-line Mixer/Pump

- Two sizes with rotor diameter: Ø250 and Ø350mm
- Directly coupled motor (closed coupled design). Fully encapsulated, IEC or NEMA, IP55, covered by a stainless steel jacket
- Double mechanical shaft seal for water flushing in Silicon/Carbon alternatively in Silicon/Silicon seal ring material
- With inducer
- Stator ring with slots or holes

Vacuum System

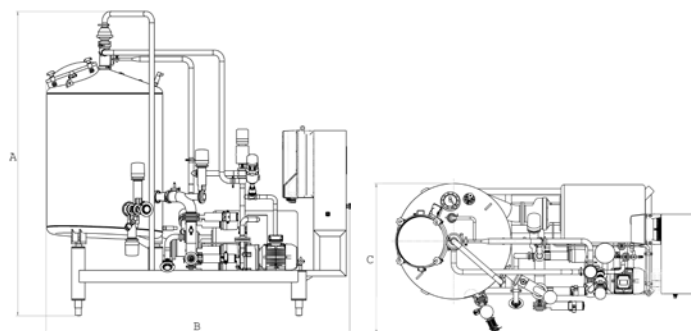
- Liquid ring vacuum pumps in stainless steel/plastic material resistant to CIP liquids
- Directly coupled motor (closed coupled design). Fully encapsulated, IEC or NEMA, IP55
- With water separator for reuse of service water
- With vacuum level regulation valve

Control Panel and Control

- Available for production in these modes:
 - Batch
 - Semi-continuous
- Available with either Siemens or Rockwell control systems and operation panels
- With or without frequency inverter

Technical Data

TYPE FLEX-MIX	TANK		IN-LINE MIXER					VACUUM PUMP			VALVES
	TANK VOLUME	PRESSURE RATING	INLINE MIXER SIZE	SHEAR RATE @ 50 HZ	MOTOR			DATA @ 500 MBAR ABS			MIN/MAX AIR PRESSURE
					SIZE TYPE IEC	POWER	SPEED @ 50 HZ	AIR CAPACITY	MOTOR @50 HZ	SEALING WATER	
	L	bar		S-1		kW	RPM	m³/h	kW	m³/h	bar
INSTANT-500-250	500	FULL VACUUM to 0.5	Ø250	25000	200	30 37	1450	150	4	0.9	6/8
INSTANT-1000-250	1000		Ø250		200	30 37				0.9	
INSTANT-2000-250	2000		Ø250		200	30 37				0.9	
INSTANT-3000-250	3000		Ø250		200	30 37	975	150	4 or 11	0.9	
INSTANT-3000-350			Ø350		315	55 75 90 110					
INSTANT-6000-350	6000		Ø350		315	55 75 90 110		300	11	1.8	



TYPE FLEX-MIX	APPROX. DIMENSIONS (mm)		
	A	B	C
INSTANT-500-250	2397	3039	1505
INSTANT-1000-250	3050	3041	1505
INSTANT-2000-250	2962	3304	1888
INSTANT-3000-250	3712		
INSTANT-3000-350	3820	3631	2185
INSTANT-6000-350	4325	4065	

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