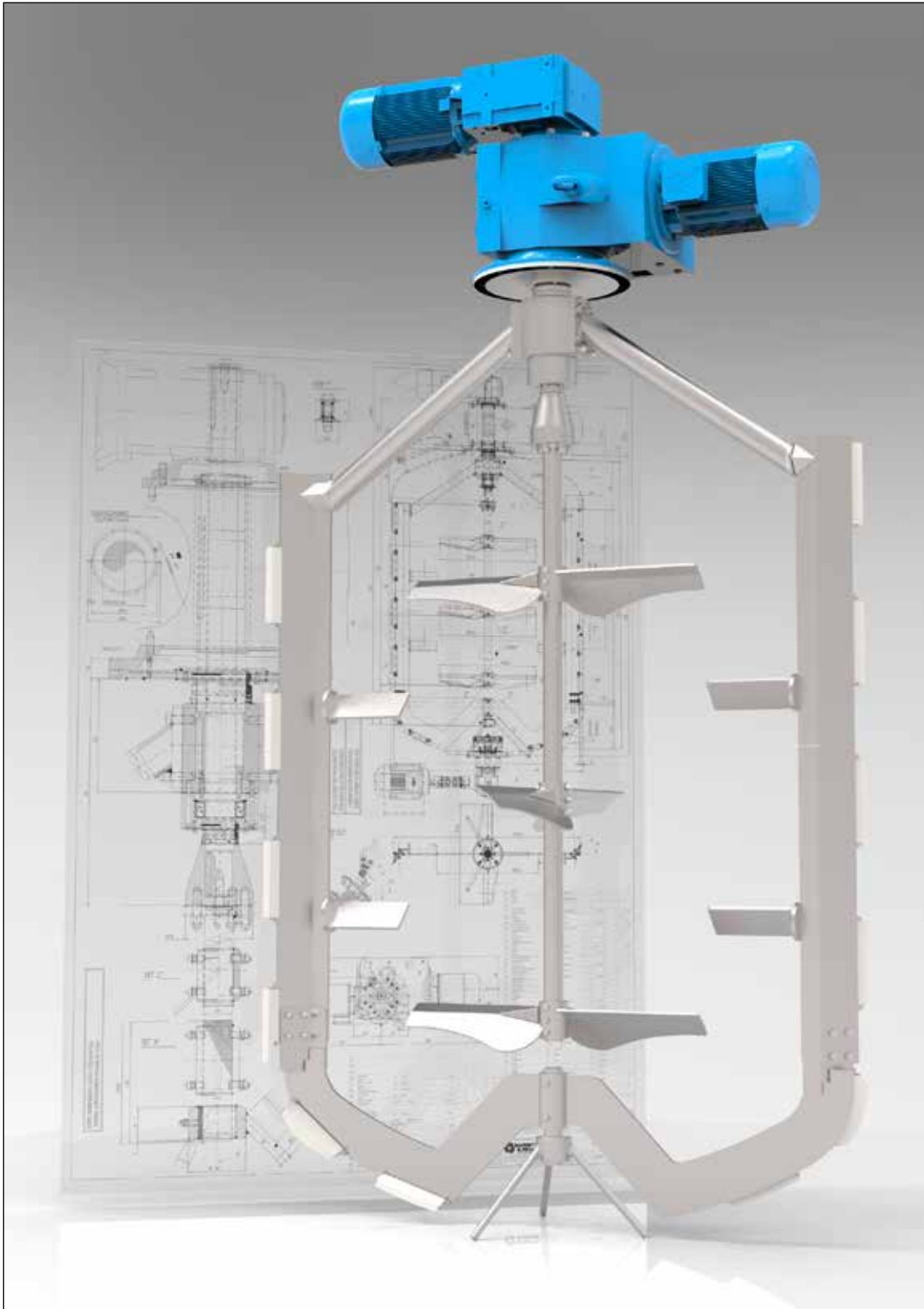




**MARIOTTI** s.r.l.  
**& PECINI**

**AGITATORI/POMPE PER ACIDI**



**DM - DOUBLE MOTION AGITATOR**



MEMBER OF  
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## COUNTER – ROTATING AGITATORS

In common and most demanding applications, multiple agitators are often required in a single vessel. In particular double-motion mixers equipped with two separate impellers and drive systems are the best solution for critical mixing processes where extremely high-viscosity products need to be handled.

### GENERAL PROCESS AND TECHNICAL FEATURES

The Mariotti & Pecini double – motion mixer is made of two independent drive units equipped with gear motors that can be controlled and driven with different shaft speed and rotation direction. The special combination of the two impeller systems represents a versatile and flexible solution that is normally used in the production of cosmetic creams and shampoos where high level performances need to be granted during the agitation process:

- **Improve and optimize heat transfer (cooling/heating) efficiency** within vessel content (even with higher viscosities)
- **Decrease process time** to achieve product homogeneity
- **Scrape internal vessel product contact surfaces** on which partially hydrated materials can build up or agglomerate

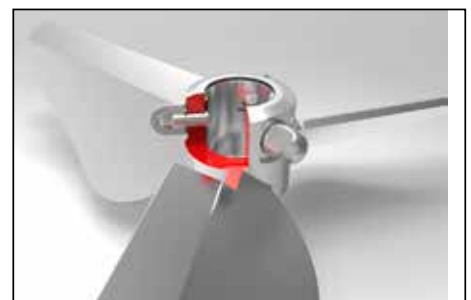
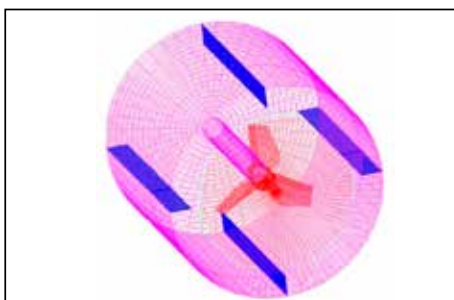
### SPECIAL ANCHOR DESIGN WITH DOUBLE DIRECTION SCRAPERS

In order to prevent product adhesion to the vessel wall, the anchor is equipped with scrapers that perfectly mate the tank's internal surface. Double – direction scrapers can be available as an option in case surface scraping is required in both rotation directions. On the internal vertical side of the anchor, inclined paddles are installed, operating as the axial pumping component of the flow in addition to the radial component provided by the anchor to improve product recirculation. To ensure the suitable robustness and stability in operation, the anchor can be engineered with a steady PTFE bearing guide system installed at the bottom of the vessel.



### HI – FLOW IMPELLER

With critical high-viscosity products, you need to reduce the horsepower and size of the gear drive, and optimal mixing results are required in terms of blending and solid suspension homogeneous distribution. The special design of the Mariotti & Pecini Hi – Flow impeller has been developed to cope with both needs, maximizing strength at lower weights, and improving axial flow.

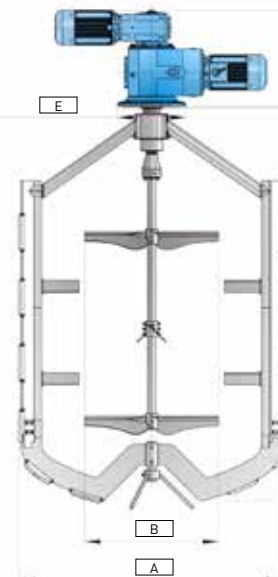


## TECHNICAL DATA

Selection table (*)							
Model	Recommended working volume [l] (Vessel H/D 1÷1,2)	Motor power [kW]		Nominal Speed (**) [RPM]		Agitator features	
		Anchor agitator	Impeller agitator	Anchor agitator	Impeller agitator	Anchor	Impeller
DM 015007	up to 50 l	1,1	0,55	50	110	Anchor with PTFE scrapers	HF type, two blades
DM 030020	50 ÷ 250 l	2,2	1,5	30	100		
DM 055030	250 ÷ 500 l	4	2,2	30	90		
DM 075055	500 ÷ 1000 l	5,5	4	30	90	Anchor with PTFE scrapers and lower steady bearing guide	HF type, two blades
DM 100100	1000 ÷ 1500 l	7,5	7,5	20	90		
	1500 ÷ 2500 l						
DM 150150	3000 ÷ 4000 l	11	11	20	70		
	4000 ÷ 6000 l						
DM 200200	6000 ÷ 8000 l	15	15	20	70	Anchor with PTFE scrapers and lower steady bearing guide	HF type, two blades
DM 300300	8000 ÷ 10000 l	22	22	20	70		
	10000 ÷ 15000 l						

(\*) Selection table for products with viscosity range from 30 000 to 50 000 cP. For other viscosities, please contact our technical department. (\*\*) Nominal speed can change according to specific application.

Nominal dimensions [mm] (***)						
Model	A	B	C	D	E	Impeller
DM 015007	φ 400	φ 200	380	600	200	2
DM 030020	φ 400 ÷ φ 650	φ 200 ÷ φ 325	410	600 ÷ 1050	350	
DM 055030	φ 650 ÷ φ 850	φ 325 ÷ φ 425	500	1050 ÷ 1250	350	
DM 075055	φ 850 ÷ φ 1000	φ 425 ÷ φ 500	600	1250 ÷ 1650	400	
DM 100100	φ 1000 ÷ φ 1200	φ 500 ÷ φ 600	700	1650 ÷ 1750	450	3
	φ 1200 ÷ φ 1400	φ 600 ÷ φ 700		1650 ÷ 2100		
	φ 1400 ÷ φ 1500	φ 700 ÷ φ 750		2100 ÷ 2150		
DM 150150	φ 1500 ÷ φ 1600	φ 750 ÷ φ 800	850	2150 ÷ 2450	550	
	φ 1600 ÷ φ 1900	φ 800 ÷ φ 950		2450 ÷ 2700		
DM 200200	φ 1900 ÷ φ 2000	φ 950 ÷ φ 1000	850	2700 ÷ 3150	660	
DM 300300	φ 2000 ÷ φ 2200	φ 1000 ÷ φ 1100	950	3150 ÷ 3000		
	φ 2200 ÷ φ 2600	φ 1100 ÷ φ 1250		3000 ÷ 3770		



(\*\*\*) Nominal dimensions are referred to basic vessel dimensions with torospherical bottom /top and H/D ratio 1÷1.2. For different vessel geometries and dimensions, please contact our technical department.

## GENERAL SPECIFICATIONS

**Product contact parts:** AISI 316L

**O-rings:** EPDM

**Surface treatment:** mechanically polished

**Vessel pressure:** F.V./+10 bar

**Agitator impeller:** HF type (2 blades, "HI-FLOW" design)

**Operating temperature:** 5°C - 150°C

**Surface roughness:** Ra ≤ 0,8 μm

**Sealing:** single mechanical, dismountable from vessel inside

**Scrapers:** PTFE

**Drive units RAL:** 5010

### Motor data

**Voltage:** 230/400 V AC - 50 Hz with PTC

**Level of protection:** IP55

### Mixer optionals

**Other impeller types for central agitator available on request**

**Roughness certificates**

**Execution according to ATEX (2014/34/UE)**

**Other materials for product contact parts availables**

**Traceability certificates**

**Anchor rotating in both directions with double scrapers**

**Lip or oil seal**

**Drive units RAL 9010 (pharma and cosmetic applications)**

### Mixer spare parts

**O-rings**

**Mechanical seals**

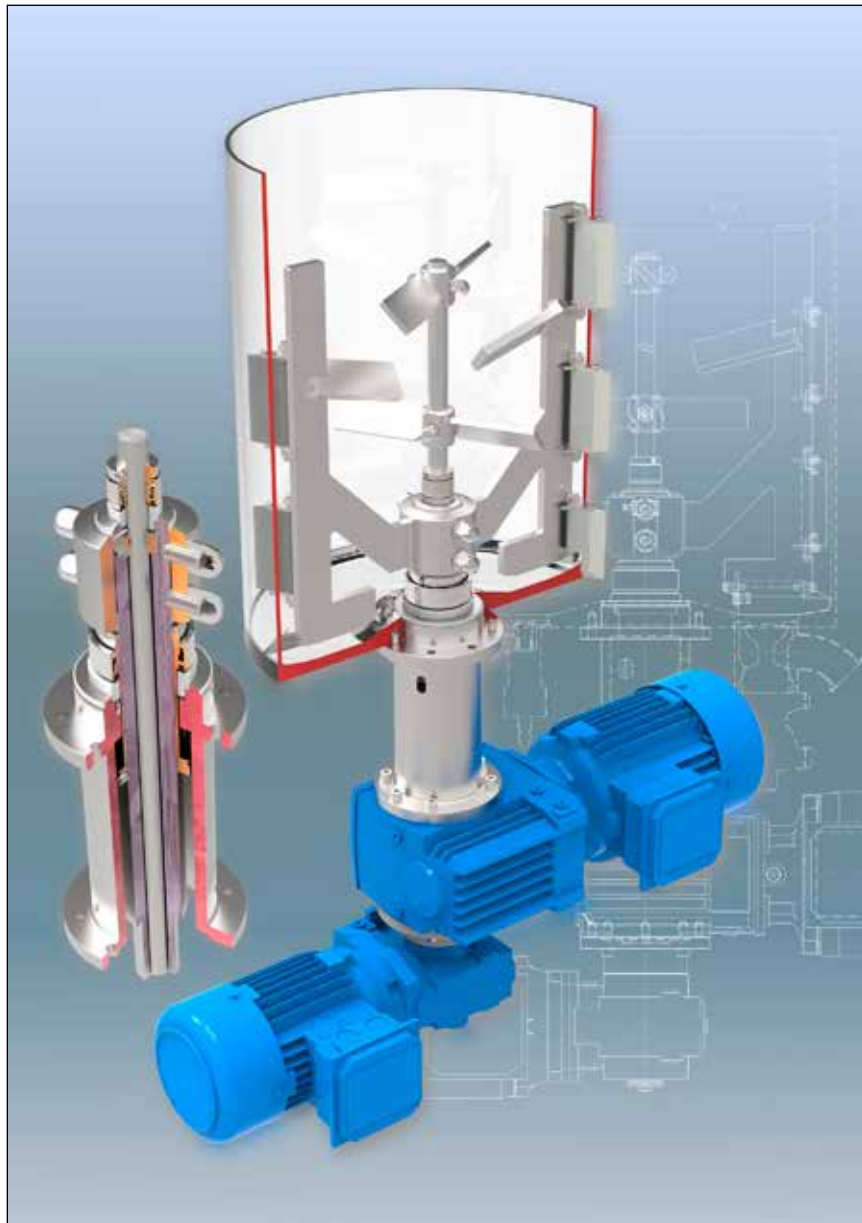
**Bearings**

**Shaft**

**Complete impellers**

## TAILOR MADE DESIGN

Mariotti & Pecini counter-rotating mixer can be designed to suit any tank geometry, installation and type (atmospheric or pressure vessel) and can be developed under specific user specifications in terms of configuration, materials and installed power. Mariotti & Pecini is supporting the customer with a specific design approval process during the engineering phase.



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## TRIPLE - MIXING CONFIGURATION

In high viscosity cosmetic and pharmaceutical processes, double motion agitators can be used in conjunction with bottom mounted shear mixers. The high shear micronized product will be evenly distributed in the vessel by the axial flow generated by the double motion stirrer impeller.



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