



## BOTTOM MOUNTED AGITATORS FOR BIOREACTORS

Safe process control over long periods of time

### State of the Art for Bioreactors:

Bottom mounted magnetic agitators are particularly suitable for the use in bioreactors. They allow safe process control over long periods of time and prevents contamination of the product. Another advantage of the reliable technology is the elimination of the complex supply system, which is a necessary prerequisite for double mechanical sealed agitators.

The number and type of impellers are designed according to the application. The impellers are preferably attached by sealed sliding hubs in sterile design. The strong dimensioned slide bearings of the BMRF agitators allow extended shafts of 3 meters or even longer. These bioreactor agitators are used from laboratory scale up to a fermentation volume of several hundred liters (microorganisms) or several thousand liters (cell cultures).



## Technical data ZETA BMRF:

PRODUCT WETTED PARTS			MOTORS			
<b>Male bearing:</b>	Standard	ZrO <sub>2</sub>	<b>Painting:</b>	Standard	RAL5015 - 2 comp.	
	Optional	SSiC		Optional	FDA- painting & other colors	
		TC-6N	<b>Protection class:</b>	Standard	IP 55	
		TC-NB		Optional	IP 65	
<b>Female bearing:</b>	Standard	SSiC			IP 66	
	Optional	TC-6N			IP 67	
		TC-NB				
			<b>Other motor options:</b>	ATEX, Stainless steel		
<b>Stirrer:</b>	Standard	1.4435	<b>MOUNTING:</b>	Standard	welding flange	
	Optional	1.4539		Optional	removeable containment shell	
		1.4529				
		Hastelloy-C22		<b>SPEED MEASUREMENT:</b>	optional available	
<b>O-Rings:</b>	Standard	EPDM	<b>MAX. VISCOSITY OF MEDIA:</b>		500 cp	
	Optional	FEP		<b>MAX, OPERATING TEMP.:</b>		130°C
		Silicone				
		Viton				
<b>Standards:</b>	According	FDA, USP-CI.VI, AD 2000-W2, ASME	<b>MOUNTING STIRRER:</b>	Standard	welded on shaft	
<b>Certificates:</b>	Standard	2.2, 3.1 Mat. certificates		Optional	Sealed sliding hubs, clamped or removable blades with welded hubs	
	Optional	3.2 Mat. certificates				
<b>Surface roughness:</b>	Standard	Ra: <0,6 μm	<b>SURFACE FINISHING:</b>		polishing & electropolishing are done in-house, according to customer specifications	
	Optional	ut to Ra: <0,2μm				

Other options available on request. ATEX also available.

## The number and type of stirrer depend on the customer-specific requirements.

Stirrer Mounting:



welded



clamped



sealed sliding hub



removable agitator blades with welded hubs

## Standard BMRF bottom mounted agitators for bioreactors

Drastically reduced contamination risk

Plain bearing design to minimize abrasion and damage

Excellent for retrofitting

Technology proven for years also for > 10,000 L bioreactors

References for bioreactors from 20 up to 30.000 L

Time savings in service and maintenance

Shaft length up to 3 m and longer

Coupling sizes: 0.3 -850 Nm

Motor power 0.09 - 22 kW