



## BOTTOM MOUNTED AGITATOR FOR BIOREACTORS

Powerful Agitators for applications in Pharma, Biotech and Food Industry.

### State of the Art for Bioreactors:

Bottom-mounted magnetic agitators in bioreactors enable the process to be run safely for longer periods than with shaft-driven stirrers. They avoid the contamination risks associated with the mechanical seals where the drive shaft penetrates the tank. The elaborate systems needed to operate these seals (i.e., flushing with condensate) are no longer required.

The number and type of impeller blades are designed to suit the specific application. Typically, the multi-stage impeller systems are mounted on the shaft by means of sealed slide hubs. Welded design can be done alternatively. The generously dimensioned product-lubricated bearings of the BMRF agitators allow the use of long shafts without a top bearing. These bioreactor agitators can be used at a wide range of scales, from lab scale through microbiological fermenters of several hundred litres up to cell-culture tanks of several thousand litres.



## Technical Data ZETA BMRF:

PRODUCT WETTED PARTS:			DRIVE UNITS:		
<b>Male bearing:</b>	Standard	ZrO2	<b>Painting:</b>	Standard	RAL5015 - 2 comp.
	Optional	SSiC		Optional	FDA painting & other colors
		TC-6N		<b>Protection class:</b>	Standard
<b>Female bearing:</b>	Standard	SSiC	Optional		IP 65
	Optional	TC-6N			IP 66
		TC-NB			IP 67
<b>Steel grade:</b>	Standard	1.4435	<b>other drive option:</b>		ATEX, Stainless Steel
	Optional	1.4539	<b>MOUNTING OPTIONS:</b>	Standard	welding flange
		1.4529		Optional	removeable containment shell (Plug In)
		Hastelloy-C22	<b>SPEED MEASUREMENT:</b>		optional available
<b>O-Rings:</b>	Standard	EPDM	<b>MOUNTING OF AGITATOR UNIT:</b>	Standard	slide hub
	Optional	FEP		Optional	sealed slide hub
		Silicone			welded to the shaft
		Viton		<b>MAX. OPERATION TEMPERATURE:</b>	
<b>Standards:</b>	according to	FDA, USP-CI.VI, AD 2000-W2, ASME			
<b>Certificates:</b>	Standard	2.2 & 3.1 Mat. certificates			
	Optional	3.2 Mat. certificates			
<b>Surface roughness:</b>	Standard	Ra: <0,6µm	<b>SURFACE FINISHING:</b>		grinding, polishing and in-house e-polishing, to customer specification
	Optional	min. Ra: <0,2µm			

Further options are available on demand.

Impeller type and quantity depend on the application. Often used impeller types are shown below:



Standard BMRF bottom entry magnetic agitators for bioreactors (Type / max. torque)

<b>BMRF 35</b>	<b>BMRF 50</b>	<b>BMRF 125</b>	<b>BMRF 400</b>	<b>BMRF 550</b>	<b>BMRF 800</b>	<b>BMRF 850</b>
35 Ncm	50 Ncm	125 Ncm	400 Ncm	550 Ncm	1800 Ncm	850 Ncm
<b>BMRF 2600</b>	<b>BMRF 5000</b>	<b>BMRF 10000</b>	<b>BMRF 17000</b>	<b>BMRF 21000</b>	<b>BMRF 30000</b>	<b>BMRF 40000</b>
2600 Ncm	5000 Ncm	10000 Ncm	17000 Ncm	21000 Ncm	30000 Ncm	40000 Ncm