




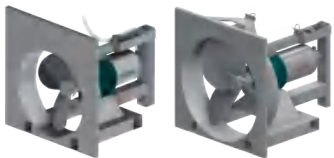


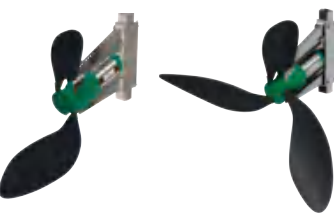
Erich Stallkamp ESTA GmbH  
德国Stallkamp（斯多康）机械集团公司  
斯多康（北京）科技有限公司

## 潜水搅拌机系列



可靠性高 | 维护费用低 | 使用寿命长  
Reliable | Low-maintenance | Durable

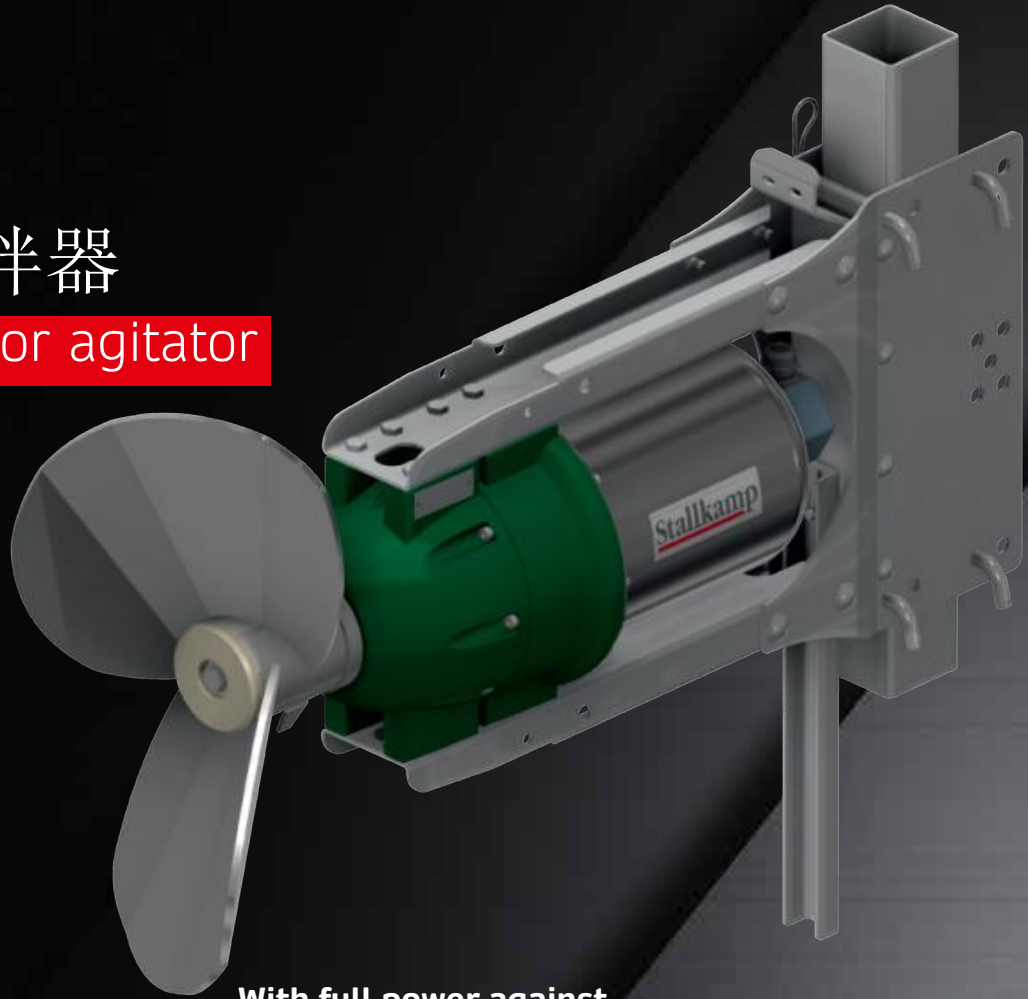


型号	样式   Agitator	应用领域说明	Application
<b>TMR3</b>		标准型搅拌机，适用于畜禽粪尿储存池、污水储存池、发酵罐等液体搅拌	Standard agitator for reliable operation in manure tanks, wastewater tanks and digester tanks
<b>TMR 3S</b>		高速搅拌机，尤其适合猪场粪尿的搅拌	The speedy with a very high rotational speed especially for pig manure!
<b>TMR3D</b>		3叶片搅拌机，适合于高浓度畜禽粪尿和发酵罐内生物质原料的搅拌	3 blade optimised agitator for thick manure and bio-mass in biogas plants
<b>TMR3-Z TMR3D-Z</b>		巷道推流搅拌机	Agitator in circulation frame for optimal stirring result underneath the animal shed
<b>TMR 3i</b>		全不锈钢搅拌机，适合于腐蚀性物料的搅拌 (pH 5.3 – pH 8,1)	Full stainless steel agitator for aggressive media (pH 5.3 – pH 8,1)
<b>TMR 3M</b>		中速节能型搅拌机，适合于发酵罐内含纤维物料的搅拌	Energy-saving intermediate speed motor for optimised circulation rate
<b>GFR-2 GFR-3</b>		低速大叶片搅拌机	Slow large-blade agitator for powerful movement in tough flowing substances

# TMR3

## 系列潜水搅拌机

Submersible motor agitator



### 对浮渣和沉淀物充分搅拌！

- 三相交流电机 400 V, 50 Hz, 1450 U/min,
- 隔热等级F = 155° C, 防护等级 IP68
- 过热保护：每项单独热动控制
- 电机外壳：V4A 1.4404不锈钢(中国316L不锈钢)
- 减速器外壳：铸铁，表面由双组份塑料漆喷涂
- 行星齿轮
- 叶轮转速：373 rpm
- 密封：高标准耐磨机械密封
- 电缆：10m。带橡胶套和不锈钢固定件
- 电缆整体防潮防水，带有内部FEP护套和外部聚氨酯护套
- 带限位装置的不锈钢导轨，材质V2A1.4301(中国304不锈钢)  
规格：100 x 100 mm
- 最大适合池深10 m (超过10m池深需定制)

适合对猪粪尿和牛粪尿(最大DM10%)和其它物料(如发酵罐内液体最大浓度DM12%)搅拌。

### With full power against floating and sinking layers!

- Three phase motor 400 V, 50 Hz, 1,450 rpm, electric motor with oil filling
- Insulating category F = 155 °C, protection category IP68
- Thermo-control for each phase as overheating protection
- Motor housing in stainless steel
- Gearbox housing and motor cover made of cast iron coated with 2-component plastic paint
- Planetary gear
- Propeller rotational speed 373 rpm
- As standard highly wear-resistant slide ring sealing
- Electric cable: 10 m with cast screw connection and 10 stainless steel cable clamps with rubber inserts and stainless steel shackles
- Special electric cable with source-bodies as protection against humidity along the length of the cable, with interior FEP sheath and exterior polyurethane sheath
- Stainless steel sliding guide with depth stop for guide rail 100 x 100 mm
- Submersion depth max. 10 m (other depths on request)

**For liquid pig and cow manure (up to a max. 10% DM content) and other effluent (fermentation like digester manure effluent, etc. up to around 12% DM content).**

**Stallkamp新一代潜水搅拌机**

将成熟的技术改进与高质量相结合，生产出第3代潜水搅拌机，转速上升至373rpm。焊接的电机外壳由不锈钢冲压外壳代替，一次成型。原螺栓连接叶片改为焊接连接。Stallkamp搅拌机将成为您的整套系统中最为经济耐久的设备。

**应用领域:**

• 各种沼气发酵罐，各种畜禽粪尿池，粪尿输送通道，工业废水池的搅拌、污水处理厂液体搅拌、食品厂原料混合等。

**设备特性**

- 搅拌深度可调节
- 液体射流和搅拌方向可调节
- 高性能搅拌
- 最佳的物料均匀效果
- 运行成本低
- 严格控制的高制造质量

The new generation of Stallkamp submersible motor agitators combines proven Stallkamp quality with technical improvements. The rotational speed of generation 3 rises to 373 rpm. The welded motor casing is replaced by a casing that is deepened from one part with the Stallkamp-press. And the screwed single blades for the impeller are replaced by welded blades. The Stallkamp agitator will be the durable turbo-charge in your system.

**Applications:**

- The agitator is intended for the following applications in medium to thin liquids: Agitation and/or homogenisation of manure in final storage sites, reception pits, manure channels and bio-mass in biogas plants. Agitation and/or homogenisation of industrial sewage in industrial systems is also possible.

**Your benefits:**

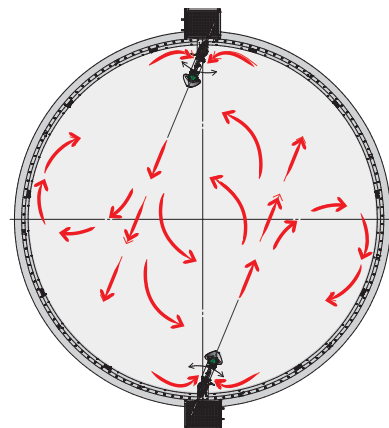
- Individually adjustable submersion depth
- Liquid jet and direction of flow can be adjusted as required
- High-powered agitation
- Optimum media homogenisation
- Excellent value for money
- High quality from our in-house manufacturing

型号  Type	电机功率	启动方式	额定电流		保险熔断器	电机/叶轮转速		搅拌能力	最大推力	单叶重量
	Motor power	Start-Up	Nominal current		Required protection (fuses)	Rotational speed		Circulation quantity	Max thrust orce	Compl. weight
	kW		A bei 50 Hz	A bei 60 Hz	A Träge (delay)	U/min rpm bei 50 Hz	U/min rpm bei 60 Hz	m³/h	N	kg
TMR3 040	4,0	direkt	9,0	-	16	1.450 / 373	-	2.238	673	105
TMR3 055	5,5	Y / Δ	11,4	-	20	1.450 / 373	-	2.826	857	110
TMR3 075	7,5	Y / Δ	16,0	13,3	25	1.450 / 373	1.750 / 447	3.544	1.095	137
TMR3 110	11,0	Y / Δ	22,1	19,3	32	1.450 / 373	1.750 / 447	5.103	1.965	177
TMR3 170	17,0	Y / Δ	33,0	30,1	50	1.450 / 373	1.750 / 447	6.392	2.697	187
TMR3 220	22,0	Y / Δ	43,0	37,0	63	1.450 / 373	1.750 / 447	7.359	3.376	197

**猪场粪尿专用搅拌机!**

Our Speedy with a very high rotational speed especially for pig manure!

<b>TMR 075S</b>	<b>7,5</b>	<b>Y / Δ</b>	<b>16,0</b>	<b>-</b>	<b>25</b>	<b>1.450 / 483</b>	<b>-</b>	<b>4.650</b>	<b>921</b>	<b>137</b>
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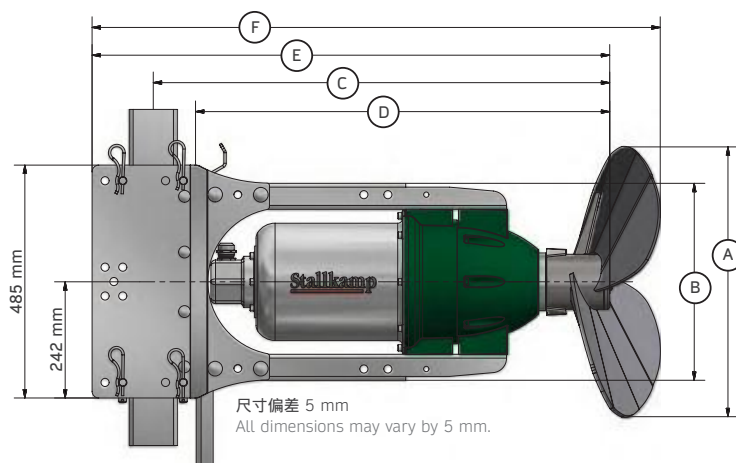


TMR 搅拌机安装位置举例  
Example setting of TMR in manure tanks.

TMR3

搅拌机支撑杆（不锈钢）：100 x 100 mm（常规），  
120 x 120 mm, 150 x 150 mm 加强型。

Can be retrofitted in any system with 100 x 100 mm,  
120 x 120 mm, 150 x 150 mm guide rail.



型号   Type	A bei 50 Hz	A bei 60 Hz	B	C	D	E	F
	mm	mm	mm	mm	mm	mm	mm
TMR3 040	450	-	368	829	739	956	992
TMR3 055	500	-	368	829	739	956	1.012
TMR3 075	550	450	368	829	739	956	1.034
TMR3 110	610	500	410	952	862	1.079	1.183
TMR3 170	650	550	410	952	862	1.079	1.208
TMR3 220	700	610	410	952	862	1.079	1.233
<b>TMR 075S</b>	<b>450</b>	<b>-</b>	<b>368</b>	<b>829</b>	<b>739</b>	<b>956</b>	<b>1.034</b>



TMR 潜水搅拌机（带气密装置）在混凝土发酵罐侧墙的安装  
(同样有适用于不锈钢罐的安装方案).  
TMR with gas-tight wall actuation for concrete tanks  
(available also for steel tanks).



带提升装置的TMR潜水搅拌机。  
TMR with lifting gear.

TMR2带ATEX 95认证（欧洲防爆认证）

ATEX 95认证的潜水搅拌机设计用于防爆区域（欧标，1区和2区）。

- 3套PTC热敏电阻用于过热保护
- ATEX认证的温度继电器
- 带有泄漏传感器的行星齿轮箱
- 具有ATEX认证的泄漏继电器

TMR2 with ATEX 95 certification

The submersible motor agitators with ATEX 95 certification are designed for operation in potentially explosive areas (Zones 1 and 2).

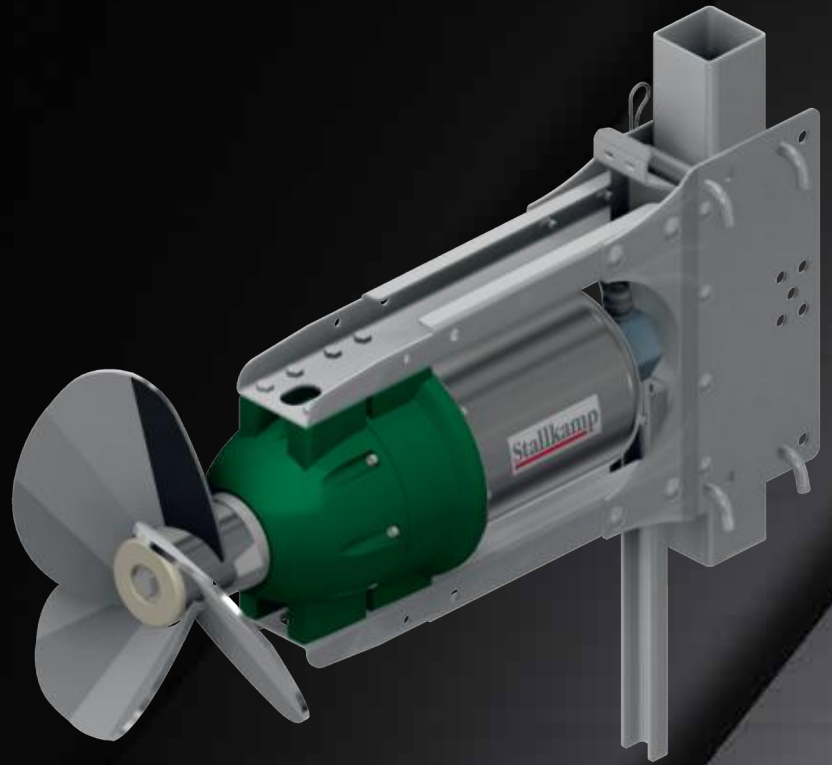
- 3 x PTC thermistors as overheating protection
- ATEX-certified temperature relay
- Planetary gear with leakage sensor
- ATEX-certified leakage evaluation relay

技术参数 | Technical data

型号 Type	电机功率 Motor power	启动方式 Start-up	额定电流 Nominal current	保险熔断器 Required protection (fuses)
	kW		A	A Träge (delay)
TMR2 075	7,5	Y / Δ	16,0	25
TMR2 100	10,0	Y / Δ	19,0	32
TMR2 150	15,0	Y / Δ	28,5	50
TMR2 185	18,5	Y / Δ	35,0	63



Ex Schutzklasse  
II 2 G k Ex e II T4 Gb



# TMR3D

## 潜水搅拌器

### Submersible motor agitator

效率最大化的搅拌器-尤其适合浮渣和沉淀物!

- 三相电机 400 V, 50 Hz, 1450 U/min, 电机带油池
- 隔热等级 F = 155° C, 防护等级 IP68
- 过热保护: 每项单独热动控制
- 电机外壳材质 V4A 1.4404 (中国不锈钢316L)
- 减速器外壳材质: 铸铁, 表面由双组份塑料漆喷涂
- 行星减速齿轮
- 叶轮转速 273rpm (转/分钟)
- 密封: 高标准耐磨机械密封
- 标准电缆: 10 m 带橡胶套和密封保护套, 不锈钢挂件
- 电缆设有防水防潮保护装置, 采用特殊的FEP保护套
- 不锈钢固定装置 V2A - 1.4301 (中国304不锈钢)
- 导向杆 100 x 100 mm 不锈钢
- 最大池深10 m (超过10m使用环节需要定制)

适合对猪粪尿和牛粪尿(最大DM10%)和其它物料(如发酵罐内液体最大浓度DM12%)搅拌。

### With full power against floating and sinking layers!

- Three phase motor 400 V, 50 Hz, 1,450 rpm, electric motor with oil filling
- Insulating category F = 155 °C, protection category IP68
- Thermo-control for each phase as overheating protection
- Motor housing in stainless steel
- Gearbox housing and motor cover made of cast iron coated with 2-component plastic paint
- Planetary gear
- Propeller rotational speed 273 rpm
- As standard highly wear-resistant slide ring sealing
- Electric cable: 10 m with cast screw connection and 10 stainless steel cable clamps with rubber inserts and stainless steel shackles
- Special electric cable with source-bodies as protection against humidity along the length of the cable, with interior FEP sheath and exterior polyurethane sheath
- Stainless steel sliding guide with depth stop for guide rail 100 x 100 mm
- Submersion depth max. 10 m (other depths on request)

**For liquid pig and cow manure (up to a max. 10% DM content) and other effluent (fermentation like digester manure effluent, etc. up to around 12% DM content).**

TMR3D

Anwendungen:

- 3叶轮搅拌器适合于浓度高的畜禽粪尿和沼气罐内液体的搅拌混合

Applications:

- 3 blade optimised agitator for thick manure and bio-mass in biogas plants

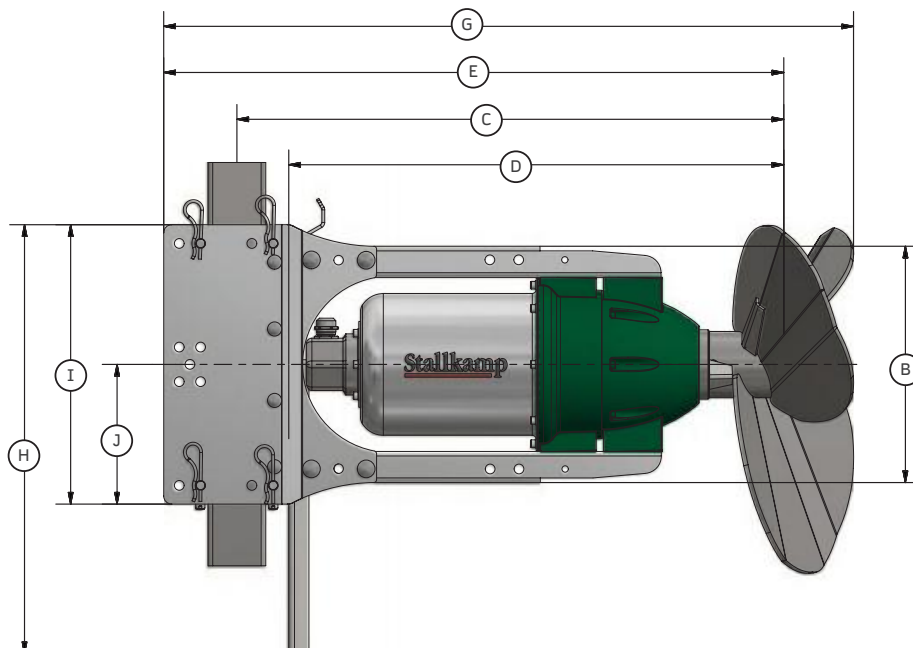
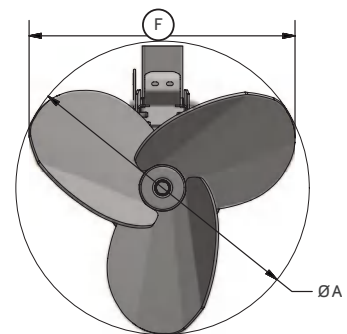
技术参数 | Technical data

型号   Type	电机功率 Motor power kW	启动方式 Start-Up	额定电流 Nominal current A bei 50 Hz	保险熔断器 Required protection (fuses) A Träge (delay)	电机叶轮转速 Motor/propeller rotational speed U/min rpm bei 50 Hz	搅拌能力 Circulation rate m³/h	最大推力 Max. thrust orce N	单叶重量 Compl. weight kg
TMR3D 040	4,0	direkt	8,5	16	1.450 / 273	2.374	842	109
TMR3D 055	5,5	Y / Δ	11,7	20	1.450 / 273	3.046	1.126	114
TMR3D 075	7,5	Y / Δ	15,6	25	1.450 / 273	3.798	1.547	141
TMR3D 110	11,0	Y / Δ	22,7	32	1.450 / 273	5.364	2.936	181
TMR3D 170	17,0	Y / Δ	35,4	50	1.450 / 273	6.638	3.723	191
TMR3D 220	22,0	Y / Δ	42,8	63	1.450 / 273	7.622	4.656	201

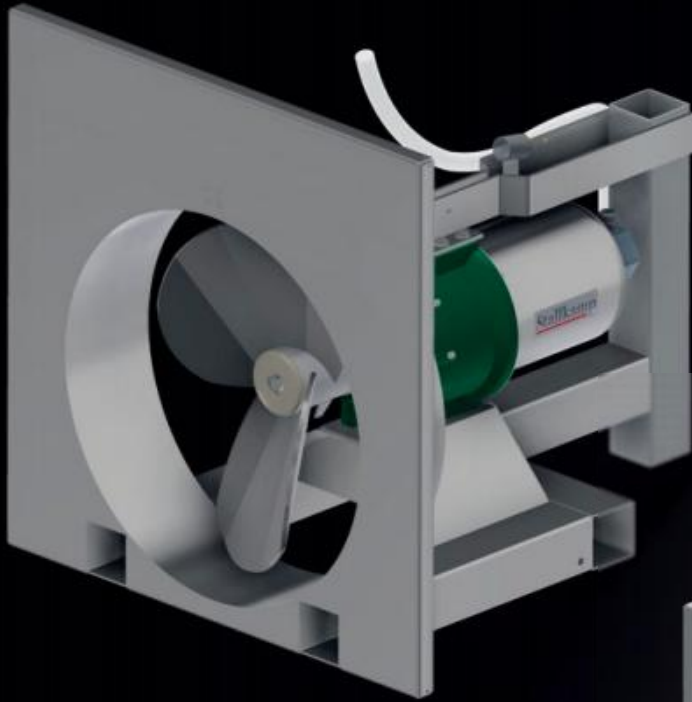
外形尺寸 | Dimensions

型号   Type	A bei 50 Hz mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm
TMR3D 040	500	368	829	739	956	350	1.000	615	453	226,5
TMR3D 055	550	368	829	739	956	400	1.020	615	453	226,5
TMR3D 075	600	368	829	739	956	440	1.040	615	453	226,5
TMR3D 110	650	410	952	862	1.079	500	1.150	745	453	242,5
TMR3D 170	725	410	952	862	1.079	550	1.170	745	453	242,5
TMR3D 220	775	410	952	862	1.079	610	1.215	745	453	242,5

尺寸偏差 5 mm  
All dimensions may vary by 5 mm.



位于不锈钢发酵罐中带有支架和导轨的 TMR3D潜水搅拌器 | TMR3D with guide rail in stainless steel storage tank.



# TMR3-Z TMR3D-Z

## 巷道循环搅拌器

Submersible motor agitator in the circulation frame



TMR3-Z

TMR3D-Z

巷道循环搅拌器

循环系统的潜水电机搅拌器适合于畜禽舍地沟粪尿的搅拌或循环。根据畜禽舍地沟总长度/通道宽度或深度来确定使用设备的数量（可以使用多台设备协同运行）。通过使用时间控制器等控制来实现高效的物料混合。

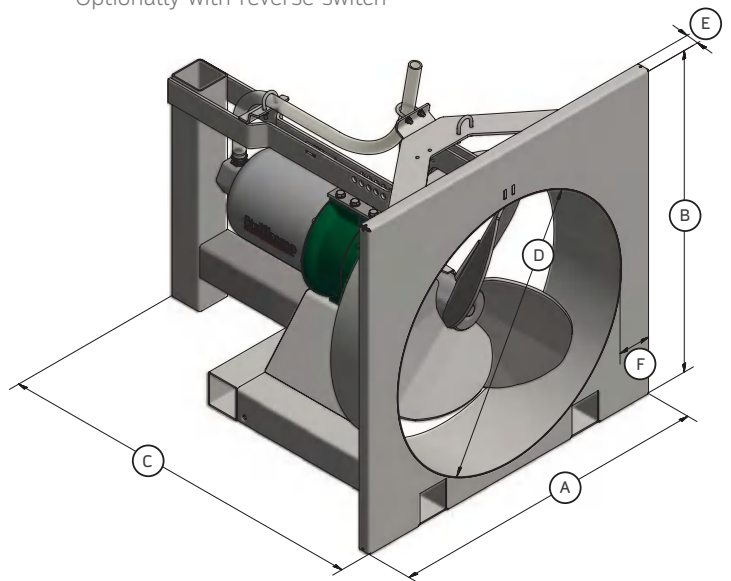
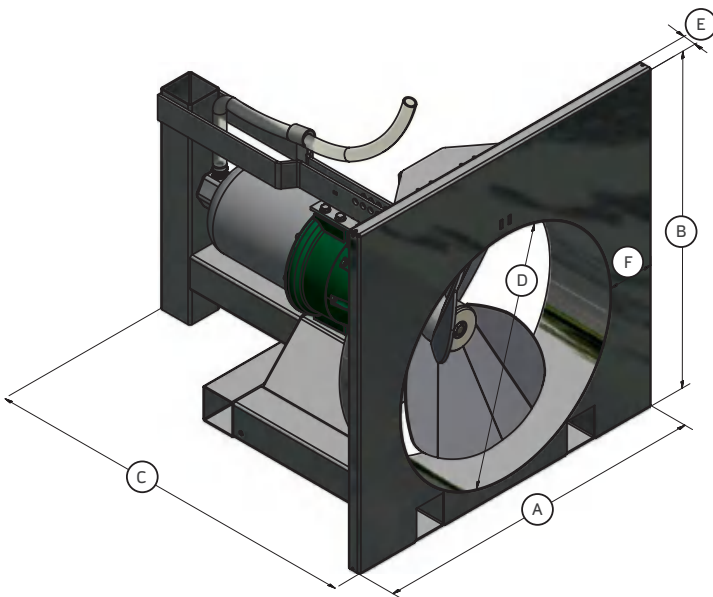
特性:

- 带固定装置
- 隐藏式安装
- 可用于U型或Z型通道
- 可以选择使用上下滑轨系统
- 用1.4301(中国304)不锈钢制成的支架
- 可达到所有物料的最佳搅拌效果
- 不需要额外的集污池
- 可选则反向搅拌/推送

The Stallkamp submersible motor agitators in circulation frame are optimally suited for agitating ring or circulation systems underneath the animal shed. It is possible to use more than one device, depending on the animal shed (system overall length / channel width or depth). Efficient results can be achieved thanks to a control, e.g. with time switches.

Your benefits:

- Stationary installation
- No motor visible outside the animal shed
- Can be used with U or Z-profile
- Optionally also for systems with sliding rails
- Bulkhead plates made from 1.4301 stainless steel
- Optimum agitation characteristics by forcing the medium through the agitator
- A reception pit is no longer necessary
- Optionally with reverse switch



外形尺寸 TMR3-Z | Dimensions TMR3-Z

型号  Type	A	B	C	Ø Flügel Ø blade	D	E	F
	mm	mm	mm	mm	mm	mm	mm
TMR3-Z 075	970	975	950	550	600	38	185
TMR3-Z 110	970	975	1.033	610	660	38	155
TMR3-Z 170	970	975	1.095	650	700	38	135
TMR3-Z 220	970	975	1.145	700	750	38	110
<b>TMR 075S</b>	<b>970</b>	<b>975</b>	<b>879</b>	<b>450</b>	<b>500</b>	<b>38</b>	<b>235</b>

外形尺寸TMR3D-Z | Dimensions TMR3D-Z

型号  Type	A	B	C	D	E	F
	mm	mm	mm	mm	mm	mm
TMR3D-Z 075	970	975	964	660	38	310
TMR3D-Z 110	970	975	1.095	700	38	270
TMR3D-Z 170	970	975	1.120	775	38	195
TMR3D-Z 220	970	975	1.145	825	38	145

尺寸偏差 5 mm  
All dimensions may vary by 5 mm.

TMR3-Z 适合用于干物质含量较低到中等的畜禽舍地沟粪尿的搅拌或循环，TMR3D-Z 适合用于干物质含量中等到较高的畜禽舍地沟粪尿的搅拌或循环。相关技术参数请参考第四页（TMR3）和第七页（TMR3D）。

TMR3-Z is intended for canals with medium to thin slurry, whereas, TMR3D-Z is applied in canals with medium to thick slurry. You can find the technical data on page 4 (TMR3) and page 7 (TMR3D).

### 各种形状和尺寸巷道的最佳物料循环/搅拌器

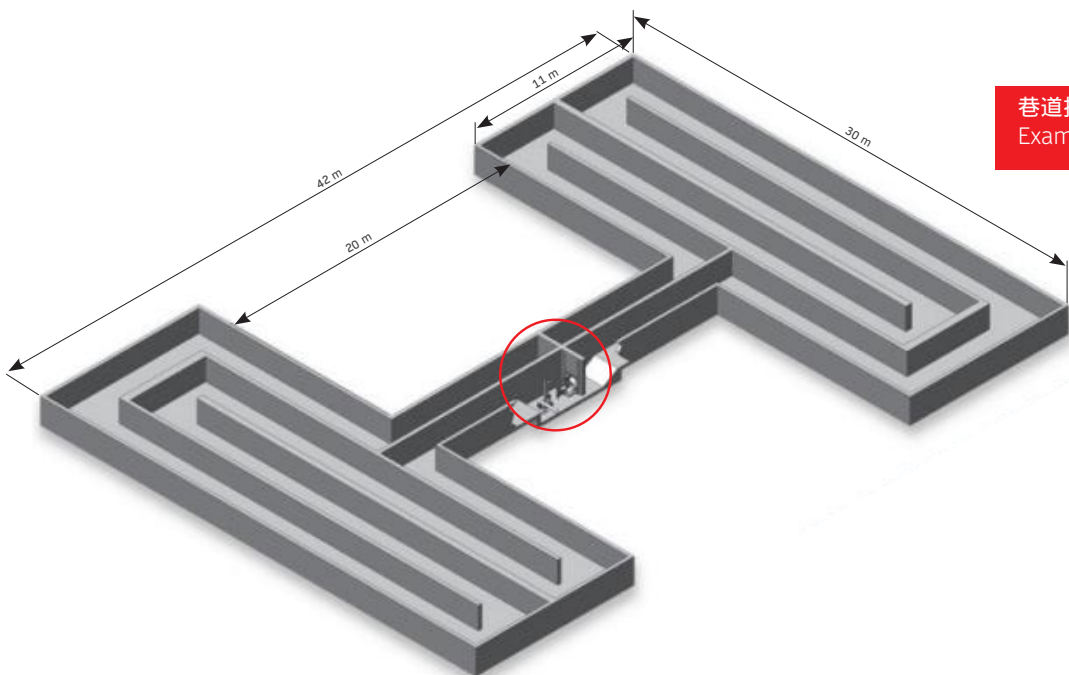
电机功率 7,5 - 22,0 kW

- 三相交流电机400V, 50Hz, 1,450rpm
- 防护等级IP68、隔热等级F=155
- 过热保护：每相单独热动控制
- 电机外壳材质：不锈钢V4A-1.4404 (中国316L不锈钢)
- 减速器外壳材质：铸铁，表面由双组分塑料漆喷涂
- 叶轮转速：373 rpm
- 密封：高标准耐磨机械密封
- 电缆带防水防潮保护装置，采用特殊的PU外保护套
- 框架：1.4301不锈钢(中国304不锈钢)
- 电机开关：手动星三角启动或带电机保护开关和CEE插头的自动星三角启动。

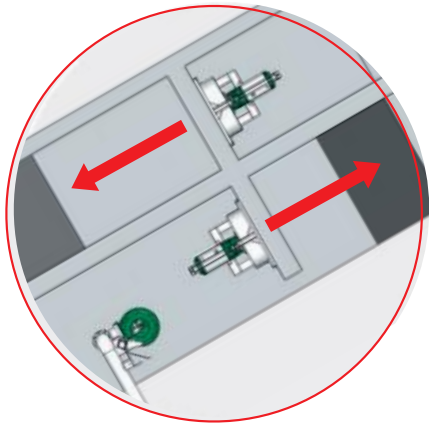
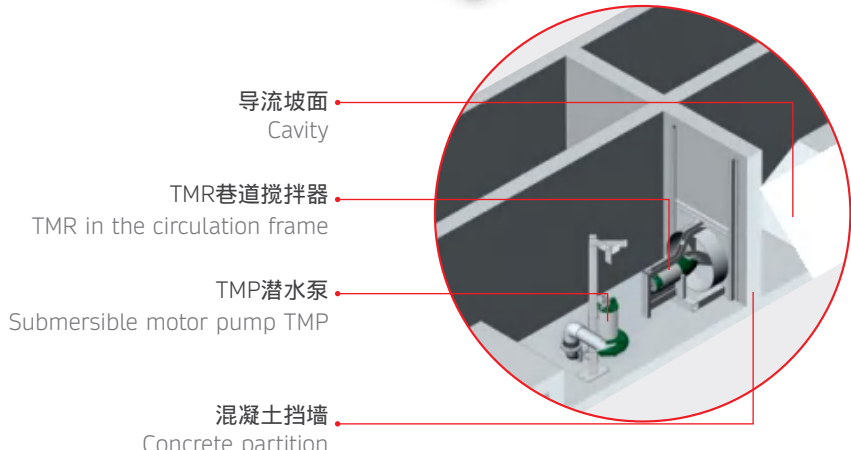
### Optimum circulation in every channel shape and size

7.5 - 22.0 kW electric motors

- Three phase motors 400 V, 50 Hz, 1,450 rpm
- IP68 protection category, insulating category F = 155 °C
- Thermo-control for each phase as overheating protection
- Motor housing in V4A - 1.4404 stainless steel
- Pump housing and motor cover made from cast iron material coated with 2-component plastic lacquer
- Propeller speed: 373 rpm
- Sealing: highly wear-resistant slide ring seal as standard
- Electric cable with moulded connection with water-blocking devices along the cable for moisture protection; special PU outer sheathing
- Circulation frame in V2A - 1.4301 stainless steel
- Electric switch: Manual star-delta or automatic star-delta starter with motor protection switch and CEE plug

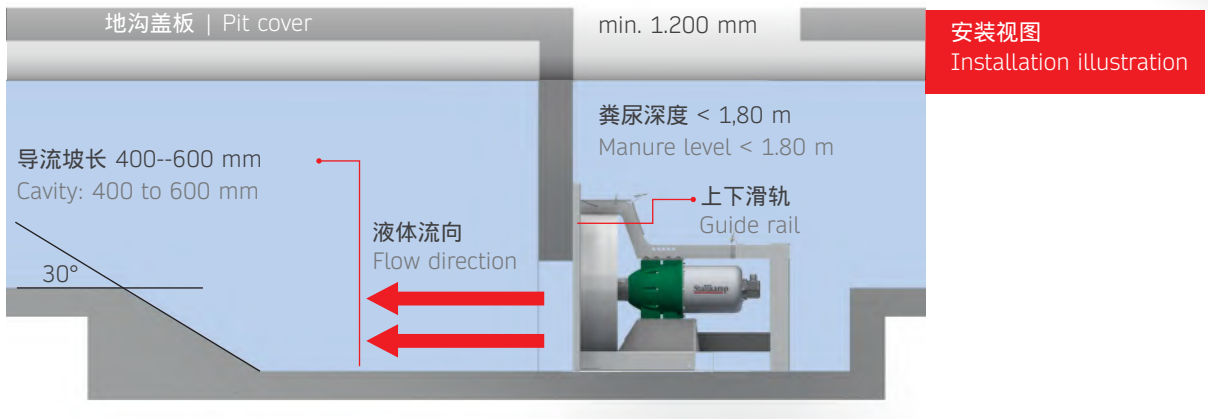
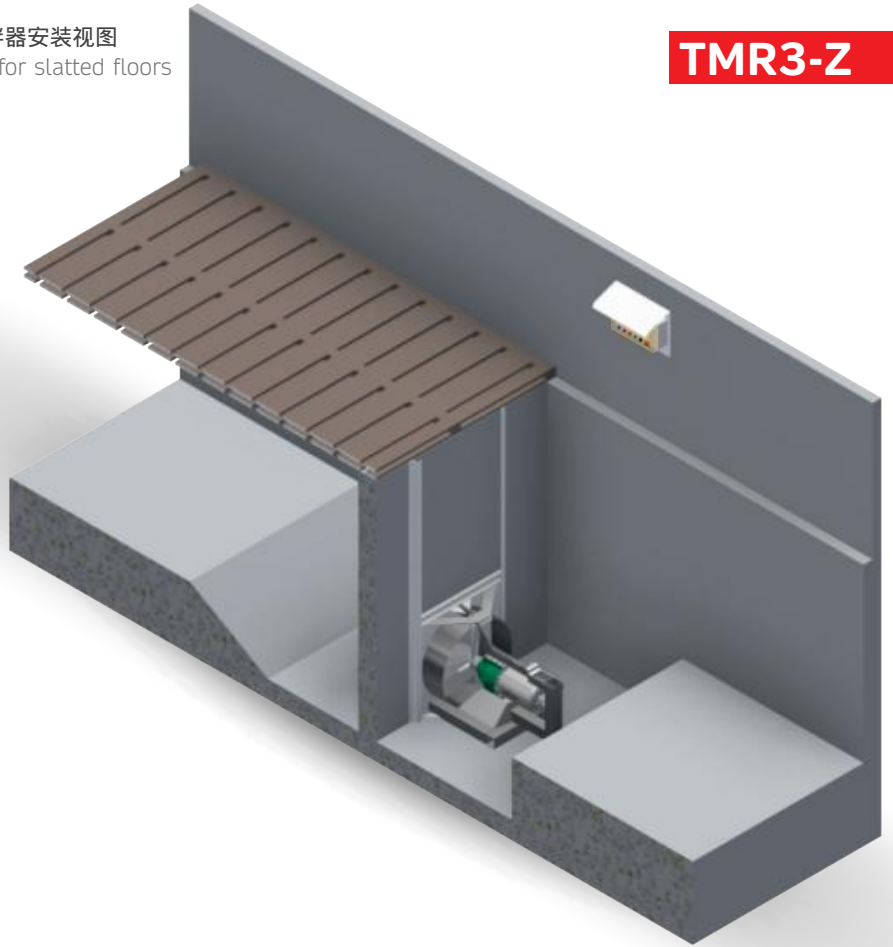


巷道搅拌举例  
Example of a circulation system

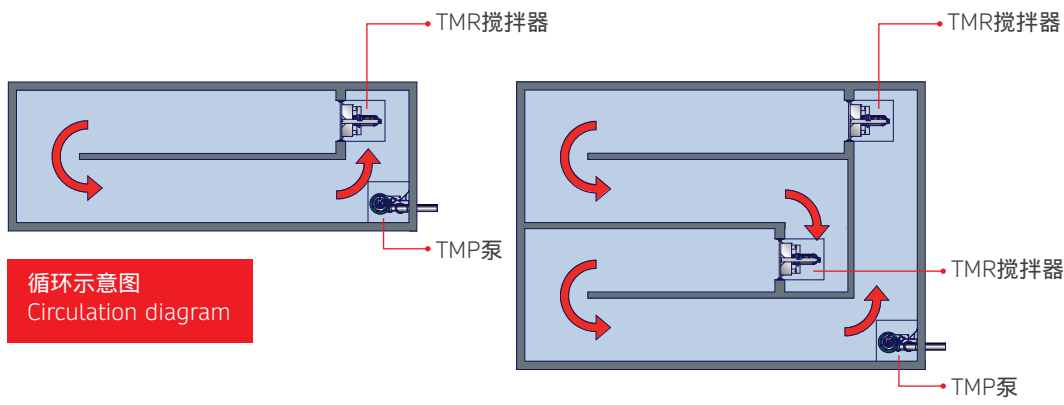


漏缝地板下的巷道搅拌机安装视图  
Installation diagram for slatted floors

TMR3-Z



安装视图  
Installation illustration



循环示意图  
Circulation diagram

**S/R轻型TMR3移动式搅拌器 | S/R chassis with TMR3**

**电机功率4.0kw (400V/50Hz)**

- 热镀锌底盘
- 最大底盘宽度：0.50m ( S型 ) , 0.60m ( R型 )
- 可搅拌深度：1.00m ( S型 ) , 2.0m ( R型 )
- 可旋转角度：360°

**双支撑“S”型**

- 带导轨
- 叶轮直径450mm,1.4301不锈钢
- 最小开孔：750x250mm
- 带16A CEE插头的电机保护手控开关

**双支撑“R”型**

- 共用伸缩轨和固定装置
- 叶轮直径450mm,1.4301不锈钢
- 最小开孔：700x300mm
- 带16A CEE插头的电机保护手控开关

**4.0 kW electric motors (400V/50Hz)**

- Chassis made of hot-dip galvanized steel
- Max. chassis width: 0.50 m (S) or 0.60 m (R)
- Can be lowered to 1.00 m (S) or 2.00 m (R)
- Can rotate 360°
- Optimum agitation characteristics

**Duo-Port "S" version**

- With guide rail
- Agitator blade Ø 450 mm in 1.4301 stainless steel
- Minimum pit opening: 750 x 250 mm
- Motor protection manual switch with 16A CEE plug

**Duo-Port "R" version**

- With shared extension rail and pit fixing
- Agitator blade Ø 450 mm in 1.4301 stainless steel
- Minimum pit opening: 700 x 300 mm
- Motor protection manual switch with 16A CEE plug



**三轮移动式 TMR3D搅拌器 | Trio-Port chassis with TMR3D**

**电机功率：5.5和7.5kw (400V/50Hz)**

- 热镀锌三轮底盘
- 低摩擦钢球轴承承载平台，可360°旋转
- 轨道宽度可调整 (1.05--1.50m)
- 底盘长度：2.0m
- 最大可搅拌深度：4.80m
- 1.4301不锈钢钢丝绳
- 安全自锁绞车
- 5.5kw和7.5kw型为热镀锌伸缩导轨
- 基坑支撑装置
- 制动装置
- 星三角角电机保护开关
- 最小开孔尺寸：
- TMR3D 5.5kw: 800 x 600mm
- TMR3D 7.5kw: 850 x 650mm

**5.5 and 7.5 kW electric motor (400V/50Hz)**

- Hot-dip galvanized three-wheeled chassis
- Low-friction slewing ring on ball bearings; can rotate 360°
- Track width adjustment of ( 1.05-1.50 m)
- Chassis length: 2.00 m
- Can be lowered to a pit depth of 4.80 m, depending on the version
- Safety cable winch with 1.4301 stainless steel wire cable
- Hot-dip galvanized telescopic guide rail for 5.5 kW and 7.5 kW versions
- Pit support
- Brake
- Star-delta motor protection switch with CEE plug
- Minimum pit opening: 800 x 600 mm on TMR3D with 5.5 kW 850 x 650 mm on TMR3D with 7.5 kW



# TMR3 搅拌机密封系统

## TMR3 sealing concept

### 滑动环密封

#### 适应性强，耐磨性好，使用寿命长

主轴与壳体部分的密封是由机械密封模块组成的。主要部件是相互滑动的两个组件（滑环）。两个滑环中的一个刚性地固定在固定部分（壳体）中，而另一个滑环安装在旋转轴上。

#### 特点：

- 滑环由耐腐蚀和高耐磨材料组成。因此，滑环不受压力波动和温度波动的影响
- 滑动环内部有一个标准的正弦弹簧机作为密封系统组件
- 滑动环密封兼容正反两个旋转方向
- 滑动环密封可以承受高达+ 70°C的介质温度

### Slide ring seal

#### Adaptable and highly wear-resistant

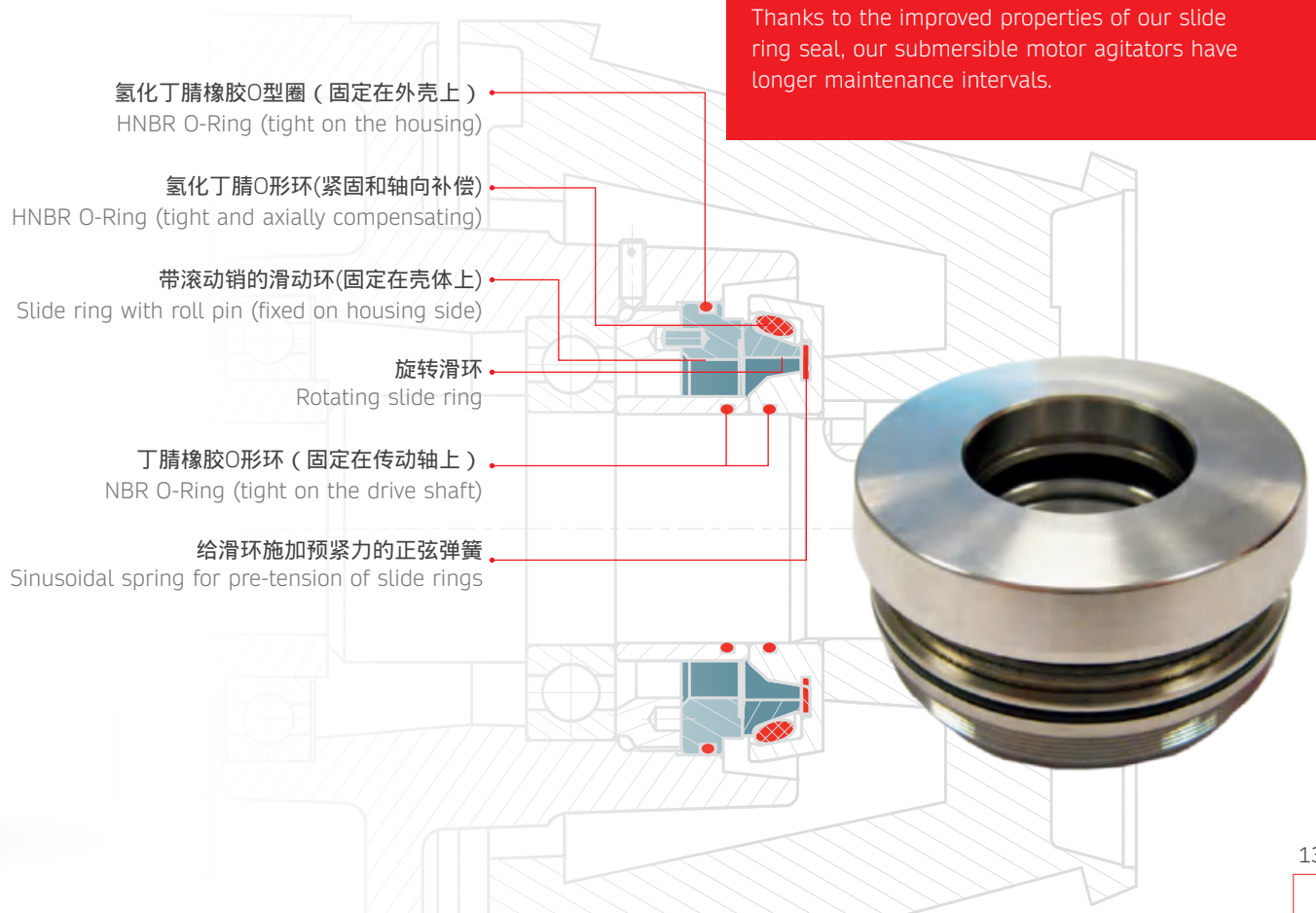
The sealing of rotating shafts against a housing part is performed by mechanical seals. The main components are two components (slide ring) that slide on each other. One of the two slide rings is seated rigidly in the stationary part (housing) whereas the other slide ring is mounted on the rotating shaft.

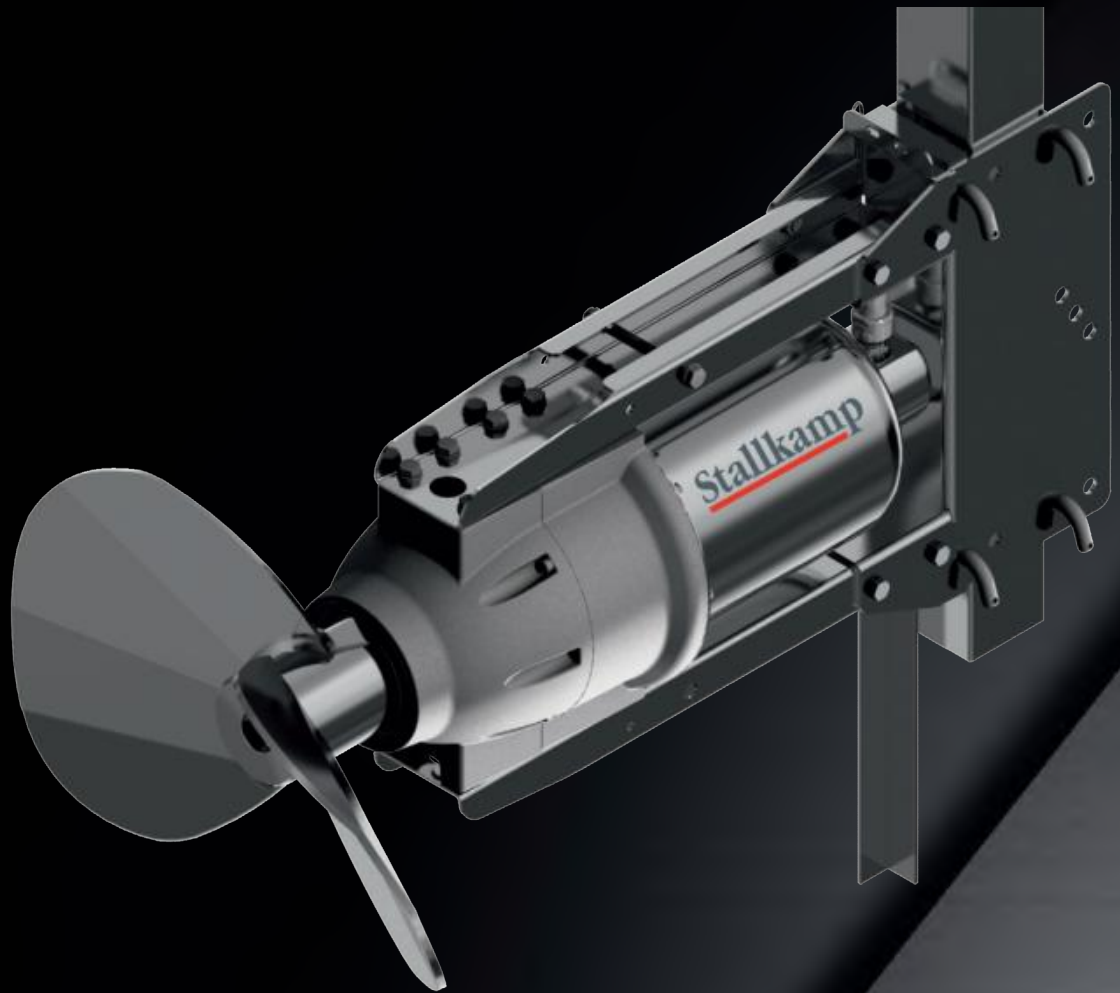
#### Your benefits:

- The slip rings consist of a corrosion-proof and highly wear-resistant material. The slide rings are therefore unaffected by pressure surges and temperature fluctuations.
- The slide rings have an internal sinusoidal spring mechanism as standard
- The slide ring seal works in both directions of rotation
- The slide ring seal can be immersed in a medium temperature of up to +70 °C

滑动环密封件的高性能，能够保证我们的潜水搅拌机拥有更长的使用寿命。

Thanks to the improved properties of our slide ring seal, our submersible motor agitators have longer maintenance intervals.





## TMR 3i潜水搅拌器（耐腐蚀镍合金）

### Submersible motor agitator (Ni-Resist)

用于腐蚀性强的物料搅拌器！

电机功率：11-22kw

- 三相电机400V，50Hz，1,450rpm
- 防护等级IP68，隔热等级F = 155°C
- 过热保护：每相单独热动控制
- 电机外壳材质：不锈钢 1.4404（德标，相当于中国316L不锈钢）
- 变速箱壳体和电机罩：不锈钢（耐腐蚀镍合金）
- 行星齿轮
- 叶轮转速：373rpm
- 密封：高标准耐磨滑环密封
- 电缆：防水防潮保护，采用特殊的PU外保护套
- 带有1.4301不锈钢深度止动装置的滑动轴承。
- 叶轮调整角度：向上或向下最大倾斜7°
- 叶轮材质：1.4301不锈钢（中国304）

**For use in extremely aggressive media!**

#### 11.0 - 22.0 kW electric motors

- Three phase motors 400 V, 50 Hz, 1,450 rpm
- IP 68 protection category, insulating category F = 155 °C
- Thermo-control for each phase as overheating protection
- Motor housing in 1.4404 stainless steel
- Gearbox housing and motor cover in cast stainless steel (Ni-Resist material)
- Planetary gear
- Propeller speed: 373 rpm
- Sealing: highly wear-resistant slide ring seal as standard
- Electric cable with moulded connection with water-blocking devices along the cable for moisture protection; special PU outer sheathing and cable protection hose
- Slide bearing with system to prove the capacitive level made of 1.4301 stainless steel, including adjustment option: Can be swivelled 7° upwards; 7° downwards
- Agitator blade version in 1.4301 stainless steel

由于它的高耐腐蚀性，这种搅拌器主要用于搅拌有高腐蚀性的原料。TMR3i搅拌器可以在较低的pH值或者在较高温度下的水解过程中使用。

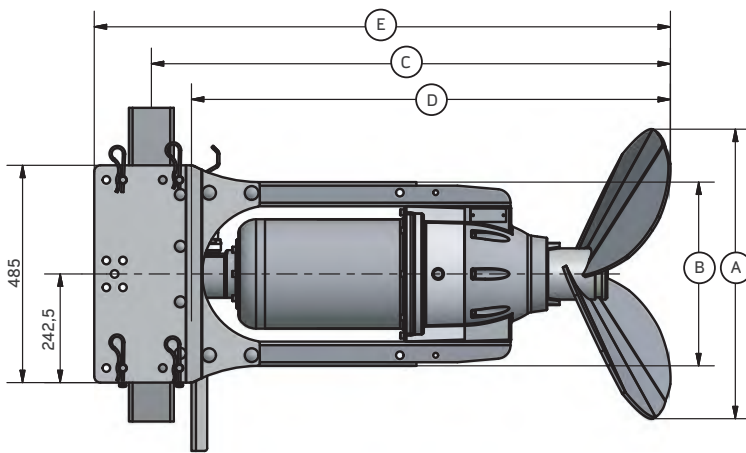
**应用领域：**

- 搅拌器被应用在各种领域。搅拌能力与其与功率消耗成比例。
- 搅拌器适用于以下领域：各种沼气发酵罐，各种畜禽粪尿池，粪尿输送通道，工业废水池的搅拌，屠宰厂废水处理、食品厂物料的混合等。
- 原则上，搅拌能力取决于液体的密度和粘度，以及储液池的形状。较大的储液池可能需要设置多个搅拌器。
- 搅拌器用于搅拌不同pH值的液体。在20°C温度条件下，一般pH值为5.3--8.1。在这一过程中必须考虑到介质的pH值、温度和介质的化学组成之间的关系，然后旋转合适型号的搅拌器。

**Thanks to its high corrosion resistance, this model is mainly used in processes** where a very aggressive substrate is fermented. The TMR 3i is distinguished by its high resistance at relatively low pH values or even with the use of hydrolysis processes at higher temperatures.

**Applications:**

- The agitator has been designed with a wide variety of fields of application in mind in which a high flow rate is required proportional to the power consumption.
- The agitator is intended for the following applications: Agitation or homogenisation of manure in final storage sites, reception pits, manure channels, bio-mass in biogas plants or in the context of waste fermentation processes. Agitation and/or homogenisation of industrial sewage in industrial systems is also possible.
- The agitation effect is fundamentally dependent on the density and viscosity of the liquid as well as on the contents of the tank and its shape. For larger tanks, more than one agitator may prove necessary.
- The agitator is designed for the thorough mixing of liquids with a varying pH; generally pH 5.3 – 8.1 at a room temperature of 20 °C. The relationship between the pH, temperature and chemical composition of the medium must, however, be taken into account in this process.



外形尺寸 | Dimensions

型号   Type	A	B	C	D	E
	mm	mm	mm	mm	mm
TMR 110	610	410	1.119	992	1.209
TMR 170	650	410	1.119	992	1.209
TMR 220	700	410	1.210	1.083	1.300

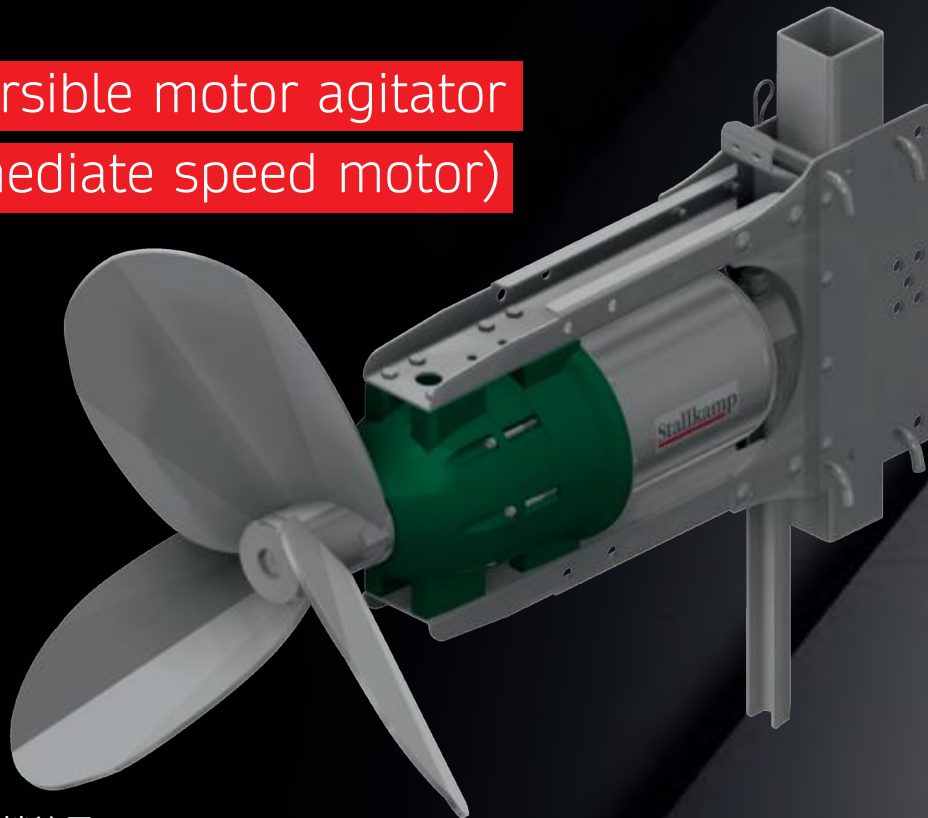
尺寸偏差5.0mm.  
All dimensions may vary by 5 mm.

技术参数 | Technical data

型号   Type	电机功率 Motor power kW	启动方式 Start-up	额定电流 Nominal current A	保险熔断器 Required protection (fuses) A Träge (delay)	电机转速/叶轮转速 Motor/propeller rotational speed U/min rpm	搅拌能力 Circulation quantity m³/h	重量 Compl. weight kg	最大推力 Max. thrust force N
TMR 110	11,0	Y / Δ	22,1	32	1.450 / 373	5.103	177	1964,9
TMR 170	17,0	Y / Δ	33,0	50	1.450 / 373	6.392	187	2696,7
TMR 220	22,0	Y / Δ	43,0	63	1.450 / 373	7.359	197	3376,1

# TMR 3M 中速搅拌器

Submersible motor agitator  
(intermediate speed motor)



## 低功耗/高搅拌效果

电机功率：11/17kw

- 三相交流电机400 V，50Hz，1,450 rpm
- 防护等级IP68，隔热等级F = 155°C
- 过热保护：每相单独热动控制
- 电机外壳：不锈钢 1.4404（德标，相当于中国316L不锈钢）
- 减速器外壳材质：铸铁，表面双组分塑料漆喷涂
- 叶轮转速：128rpm
- 密封：高标准耐磨滑环密封
- 电缆：防水防潮保护，采用特殊的PU外保护套
- 带有1.4301不锈钢深度止动装置的滑动轴承
- 叶轮调整角度：向上或向下最大倾斜7°
- 叶轮材质：1.4301（中国304）不锈钢。

## Cuts your energy costs and agitates effectively!

### 11.0 + 17.0 kW electric motors

- Three phase motors 400 V, 50 Hz, 1,450 rpm
- IP68 protection category, insulating category F = 155 °C
- Thermo-control for each phase as overheating protection
- Motor housing in 1.4404 stainless steel
- Pump housing and motor cover made from cast iron material coated with 2-component plastic lacquer
- Planetary gear with 128 rpm propeller speed
- Sealing: highly wear-resistant slide ring seal as standard
- Electric cable with moulded connection with water-blocking devices along the cable for moisture protection; special PU outer sheathing
- Slide bearing with system to prove the capacitive level made of 1.4301 stainless steel, including adjustment option: Can be swivelled 7° upwards; 7° downwards
- Agitator blade version in 1.4301 stainless steel



**TMR 3M搅拌器大优点：节能**

这种搅拌器的设计主要优化了循环能力和优化推力性能

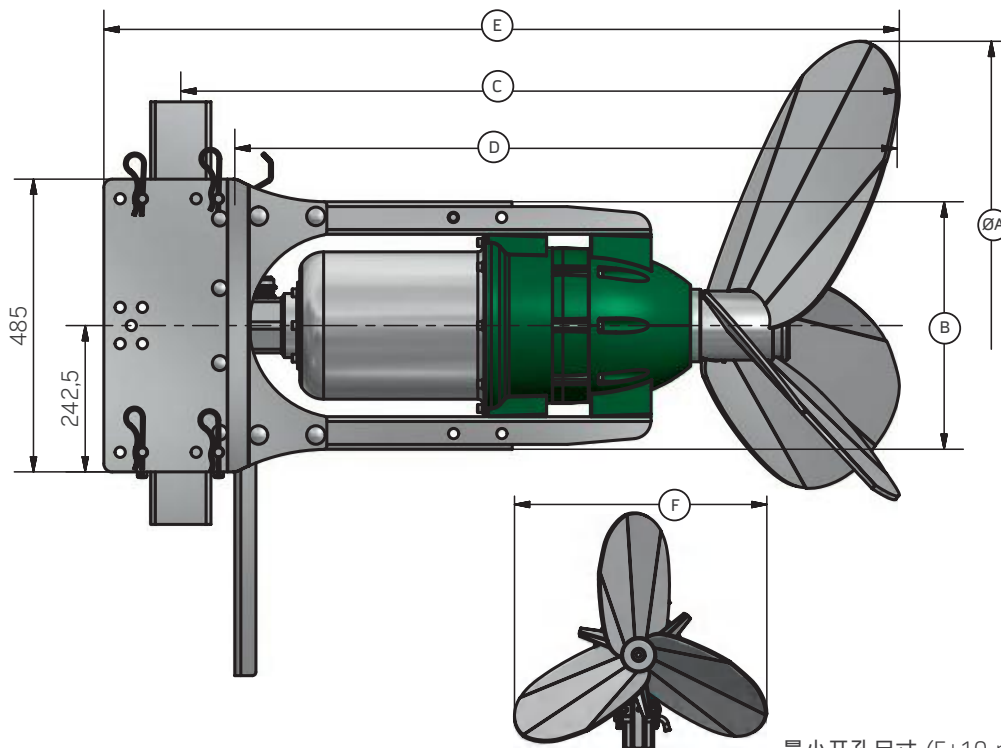
**The TMR 3M can be mainly used as an energy saver** because this agitator aims to optimise the circulation and thrust performance.

**应用**

- 搅拌器的设计可以适应各种应用场所，主要优点是能耗低！
- 搅拌器的用途是用于以下用途：**沼气发酵罐**和生物质能源工厂发酵罐物料的搅拌和均匀化
- 搅拌效果从根本上取决于液体的密度和粘度以及罐的形状。对于较大的罐体，可能需要多个搅拌器

**Applications:**

- The agitator has been designed with a wide variety of applications in mind, where an average yet constant flow rate is required in relation to the power consumption.
- The agitator is intended for the following applications: Agitation and/or homogenisation of bio-mass in biogas plants.
- The agitation effect is fundamentally dependent on the density and viscosity of the liquid as well as on the contents of the tank and its shape. For larger tanks, more than one agitator may prove necessary.



最小开孔尺寸 (E+10 mm) x (F+10 mm)  
Min. Pit opening (E+10 mm) x (F+10 mm)

外形尺寸   Dimensions	型号   Type	A	B	C	D	E	F
		mm	mm	mm	mm	mm	mm
	TMR 110	1.000	410	1.220	1.130	1.345	925
	TMR 170	1.200	410	1.220	1.130	1.345	1.058

技术参数   Technical data	型号   Type	电机功率 Motor power	启动方式 Start-up	额定电流 Nominal current	保险熔断器 Required protection (fuses)	电机转速/叶轮转速 Motor/propeller rotational speed	搅拌能力 Circulation quantity	重量 Compl. weight	最大推力 Max. thrust force
		kW		A	A Träge (delay)	U/min rpm	m <sup>3</sup> /h	kg	N
	TMR 110	11,0	软启动	22,1	32	1.450 / 128	10.400	216	3.950
	TMR 170	17,0	软启动	33,0	50	1.450 / 128	15.800	231	6.430

尺寸偏差±5.0mm.  
All dimensions may vary by 5 mm.



一个额外的叶片：更大的推力和更高的循环率！

1 extra blade does it – more thrust force and higher circulation rate!

## GFR-2 + GFR-3 大叶片搅拌器 (TMG)

### Large-blade agitator (TMG)

对粘稠物料有更好的搅拌效果

电机功率：7.5kw

- 三相电机400v, 50Hz, 1450rpm
- 防护等级IP68、隔热等级 F = 155°C
- 软起动器操作
- 电机外壳材质：不锈钢 1.4301（德标，相当于中国304不锈钢）
- 电机注油室
- 过热保护：每相单独热动控制
- 减速器外壳：铸铁，表面由双组分塑料漆喷涂
- 齿轮箱密封：滑动密封环
- 三级行星齿轮，叶轮转速：27rpm
- 电缆：防水防潮保护，采用特殊的PU外保护套
- 导轨：1.4301不锈钢轨，规格：100×100mm
- 搅拌介质温度最高50°C
- 叶轮材质：高强度铸造聚酰胺（内置钢制芯片）
- 叶轮直径：2.10 m

### Powerful movement for tough flowing substances

#### Electrical motors 7.5 kW

- Three phase motors 400 V, 50 Hz, 1,450 rpm
- IP68 protection category, insulating category F = 155 °C
- Operation only with soft starter
- Motor housing in 1.4301 stainless steel
- Oil filling in motor compartment
- Thermo-control for each phase as overheating protection
- Cast iron gearbox housing coated with 2-component plastic lacquer
- Slide ring seal as gearbox seal
- Oil filling in gearbox
- Three-stage planetary gear with 27 rpm propeller speed
- Electric cable with special double-shell PU external sheath
- 1.4301 stainless steel slide bearing for 100 x 100 mm guide rail
- Agitated medium temperature up to max. 50 °C
- Propeller made from high-strength cast polyamide with steel reinforcement Ø 2.10 m

GFR-2

GFR-3

专门为粘稠物料开发的GFR大叶片搅拌器，结合了Stallkamp高质量的制造理念，是一款全新的设备。计算机模拟设计的搅拌器叶片是由高强度的铸造聚酰胺与钢芯组成。搅动范围大（大直径叶片）确保了介质永久保持在流动中，气体可以更容易地溢出，热量更均匀分布在发酵罐中，为细菌的活性创造最佳条件。与此同时，低转速意味着更少的能量消耗。

搅拌效果取决于液体的密度和粘度以及罐的容量和形状。GFR与TMR的配合搅拌，可确保最佳的搅拌效果。

应用

- 大流量物料
- 沼气项目和生物质能源项目，污水处理厂等

特点：

- 平滑设计防止物料缠绕在搅拌器上
- 良好的水平和垂直混合
- 平稳和柔和的混合
- 无需调整
- 低能耗
- 由于螺旋桨直径大，可搅拌干物质含量高的物料。
- 导轨规格：  
100x100mm  
120x120mm  
150x150mm  
根据物料量和浓度（决定了推力）来选择。

**The GFR large-blade agitator developed specifically for tough flowing substances combines proven Stallkamp quality with a fundamentally new concept.** The computer-calculated agitator blades are made from high-strength cast polyamide with steel reinforcement. Their large diameter ensures that the mass remains permanently on the move, gases can escape more easily and heat is distributed evenly in the digestate tank – creating optimum conditions for bacteria. At the same time, the low rotational speed means that very little energy is consumed.

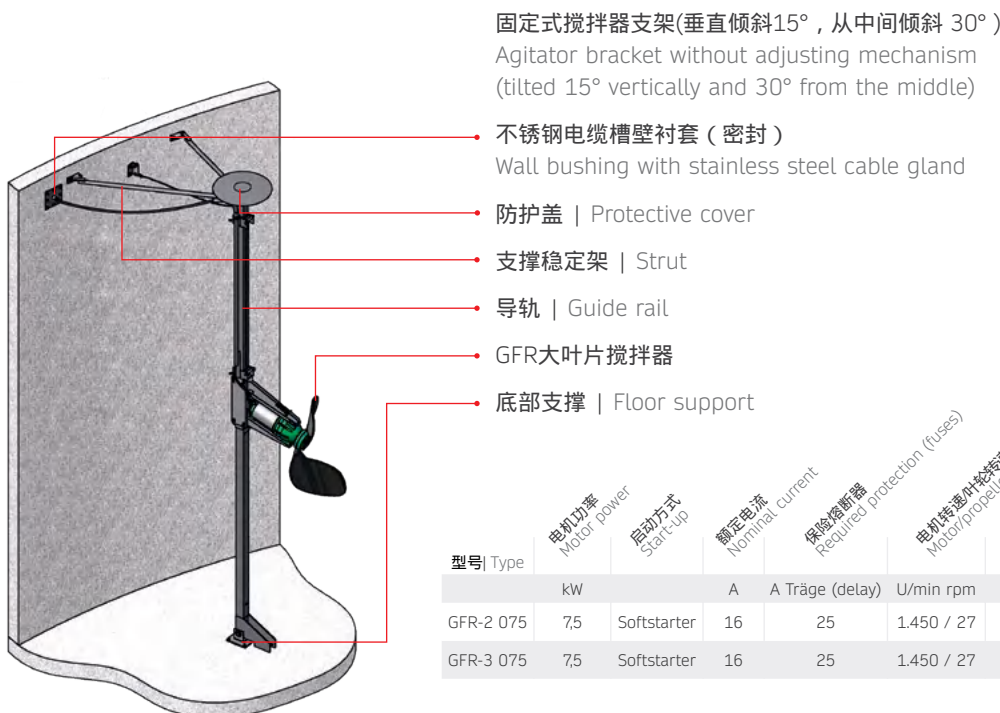
The agitation effect is dependent on the density and viscosity of the liquid as well as on the contents of the tank and its shape. The GFR, combined with the agitation properties of the Stallkamp TMR, ensures an optimum agitation result.

Applications:

- For exceptionally high flow rates
- Agitation and/or homogenisation of bio-mass in biogas plants and industrial sewage

Your benefits:

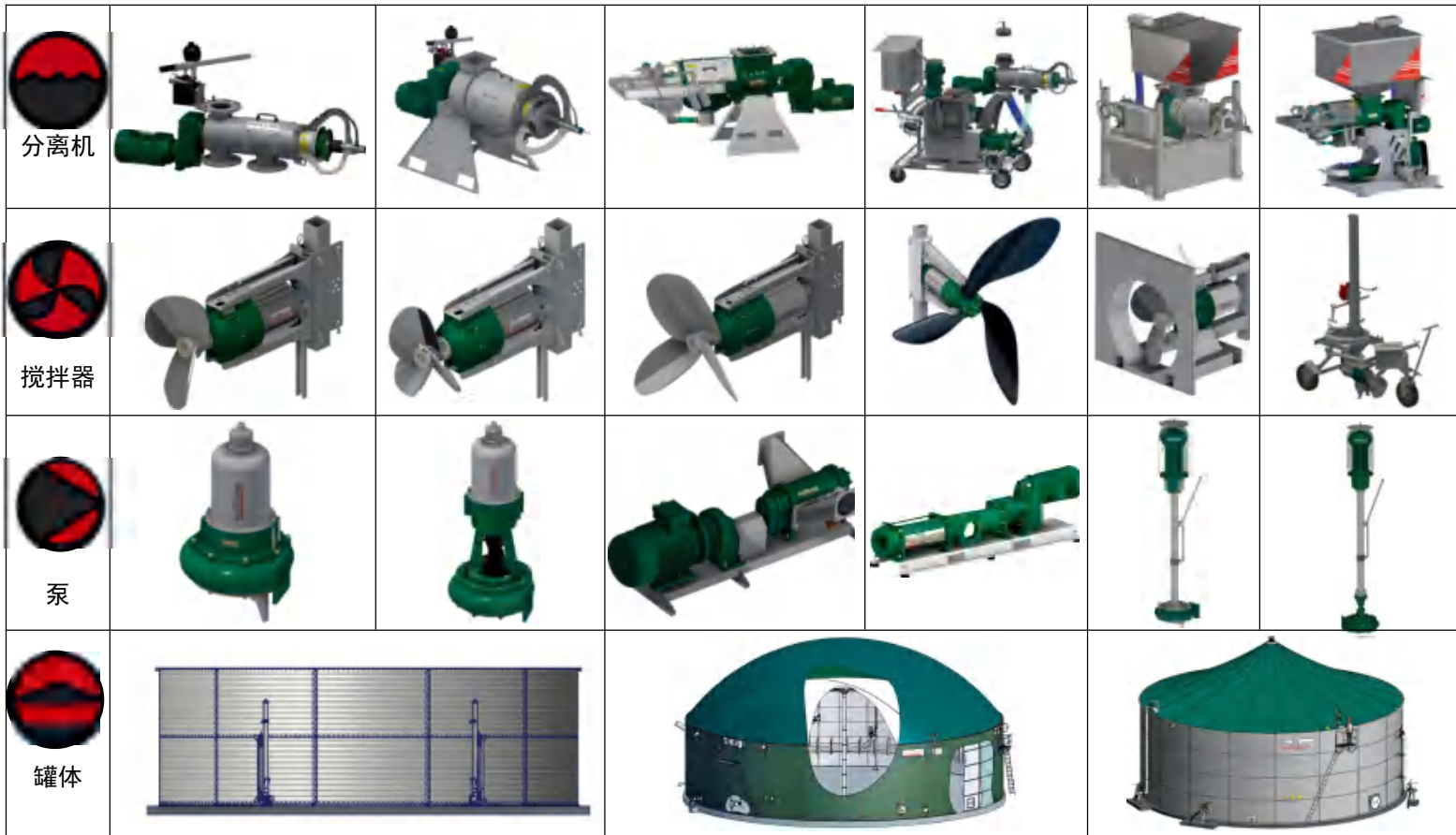
- Smooth design prevents fibrous materials from accumulating
- Good thorough mixing horizontally and vertically
- Smooth and gentle mixing
- No adjusting required
- Low energy consumption
- Good degree of effectiveness with high dry matter content thanks to a large propeller diameter
- Can be retrofitted in any system with 100 x 100 mm, 120 x 120 mm, 150 x 150 mm guide rail



型号   Type	电机功率 Motor power kW	启动方式 Start-up	额定电流 Nominal current A	保险熔断器 Required protection (fuses) A Träge (delay)	电机转速/轴转速 Motor/propeller rotational speed U/min rpm	搅拌能力 Circulation quantity m³/h	最大推力 Max thrust force N	整机重量 Compl. weight kg
GFR-2 075	7,5	Softstarter	16	25	1.450 / 27	14.718	2.273	195
GFR-3 075	7,5	Softstarter	16	25	1.450 / 27	20.178	3.462	215

# Stallkamp

德国制造品质保证



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