



上海川源机械工程有限公司
Shanghai GSD Industrial Co., Ltd



LFPH

阔叶桨低速推流器

LFPH low-speed flow propeller



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原理 Theory

- LFPH阔叶桨低速推流器，它依靠潜水电机提供的动力，经由旋转，利用对称性叶桨对液体的切分运动形成连续推流，获得在叶桨直径范围内，轴向流大于径向流的运动水流，利用水流运动阻止悬浮物的沉降，并达到混合和水体运动加速的目的。
- 阔叶型叶桨的设计，选用玻璃钢材质一次压模成型，迎水面积比传统型提高1/3；且具有重量轻、耐磨损、防腐性强、吸震效果好等优点，内衬金属骨架可有效防止叶桨断裂。叶桨采用后掠式防缠绕设计，具有永久性自动清洁功能。
- 表面光滑的流线型阔叶型叶桨能将推力平均分配在工作表面，特别适合在低、匀速条件下获得连续的推力。在配套功率没有增加的情况下推力却增加了30%。
- Relying on the power provided by the submersible motor, LFPH drives the wide vanes rotate after speed change is carried out by the fully new designed helical gear reducer. The continuous plug flow is formed under the cutting movement of liquid which is driven by symmetrical vanes, as a result, the movement water flow with axial flow more than radial flow is obtained within the diameter range of vanes, and the settlement of suspensions is prevented by means of the movement of water flow, therefore, the purpose of mixing and movement acceleration of water is realized.
- In respect of design of wide vane paddle, glass reinforced plastic is selected and press formed once only, with the upstream area ratio improved 1/3 than the traditional one. Besides, it has the advantages such as light in weight, wear resistant, strong anti-corrosion function and good vibration absorption result. The lined metallic frame can prevent effectively the paddle from being broken. The paddle adopts the sweepback anti-wind style, offering permanent self-cleaning function.
- The slim type wide vane paddle with smooth surface can distribute evenly the thrust force among the working surface, and is especially suitable to obtain continuous thrust force at the low and even speed condition. The thrust force is increased by 30% even though the matching power is not improved.

应用范围 Scope of application

- 污水处理厂曝气池、厌氧池和污泥池等含有悬浮物需混合搅拌、推流的场合；
- 池塘中生成水流、改善水体质量；
- 创建水流，有效阻止悬浮物沉积。
- Place where suspended substances exist and mixing and stirring is required such as aeration tank, anaerobic tank, sludge tank of sewage treatment factory;
- Pools where flow is generated to improve water quality;
- Tank where flow is created to prevent effectively suspended substance deposit.

特点 Features

- 两道独立的机械密封，保证潜水电机长期可靠运行。
- 高质量国际知名品牌一次性润滑轴承，耐磨韧度高，使用寿命长。
- 独特的电缆密封设计，排除了电缆漏水的隐患。
- 电机轴采用不锈钢材质，转子经动平衡检测，运转平稳。
- 内部设有泄漏传感器和定子绕组超温保护装置。
- 阔叶桨低速推流器所有接触介质的紧固件均采用不锈钢材质。
- The two rows of independent mechanical sealing ensure the longterm and reliable operation of the submersible motor.
- The international well-known high-quality one-service lubricated bearings, with high friction resistance and strong ductility, have longer service life.
- The unique sealing design for the cables removes the hidden danger of water leakage for the cables.
- The shaft of the motor employs the stainless steel, and the rotors are inspected with the use of dynamic balancing, leading to smooth rotation.
- The in-built leakage sensor and the device for the overtemperature protection for the windings of the stator.
- On the LFPH type low-speed flow propeller, all the fasteners for the contact media employ the stainless-steel material.

适用条件

- 介质温度：≤40℃
- 介质pH值：5~9
- 介质密度：≤1150kg/m³
- 潜水深度：≤20m
- 电源：380V 50Hz
- 电机：F级绝缘并符合IP68，24小时连续运行
- LFPH必须完全潜入水中工作

Operating conditions

- Maximum media temperature not exceeding 40 °C
- pH value of media within 5-9;
- Fluid density not exceeding 1150kg/m³
- Depth of submersion not exceeding 20m
- Electric power supply: 380V, 50Hz
- The motor: F class insulation and in accordance with IP68, continuous operating in 24hr
- The LFPH must operate in the complete submersion into water.

型号说明 Type description

LFPH 5 / 4 - 1800 - 51

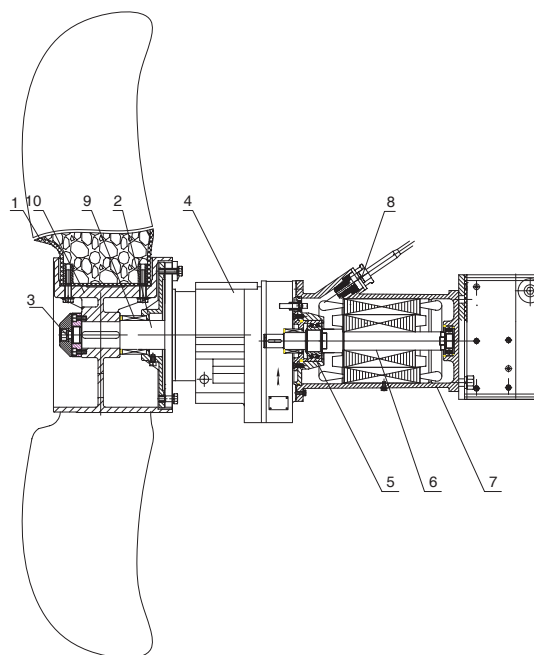
1800	额定转速(r/min)	Rated rotational speed(rpm)
4	叶桨直径	Diameter of impeller
5	电机极数	Cascade number of the motor
51	电机额定功率(kW)	Rated power of the motor(kW)
LFPH	LFPH:阔叶桨低速推流器	LFPH low-speed flow propeller

结构简图 Construction

NO.	名称	Name	材质
1	叶桨	Impeller	强化玻璃钢
2	输出轴	Output shaft	2Cr13
3	螺栓	Bolt	0Cr18Ni9
4	减速机本体	Decelerator casing	HT200
5	轴承	Bearing	--
6	定子轴	Stator shaft	2Cr13
7	机壳	Sheath	HT200
8	电缆密封组件	Splicing kits for power cable	--
9	机械密封	Mechanical sealing	SiC-SiC
10	轮毂	Wheel boss	HT200

注：不同结构功率略有不同。

Note: Different model has a little difference.

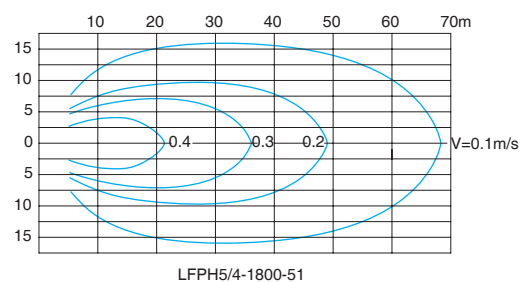
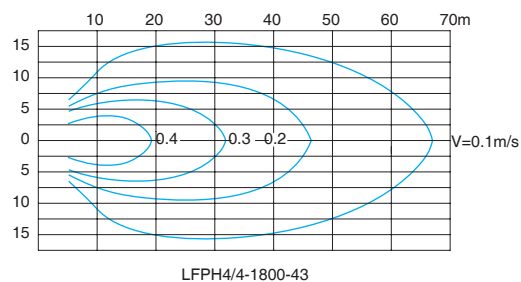
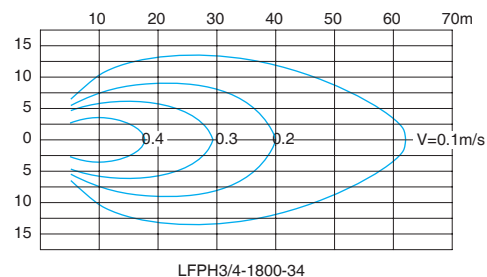
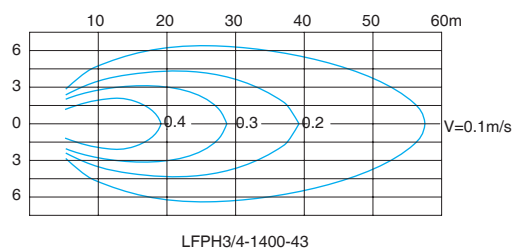
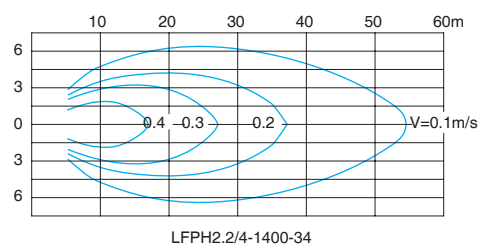
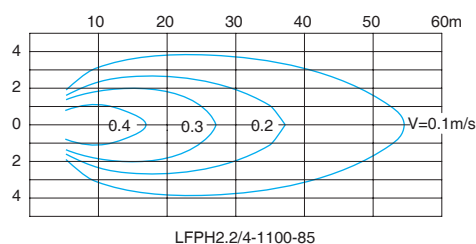


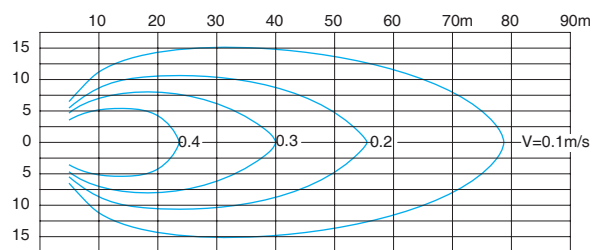
性能参数 Performance parameters

型号 Type	电机功率 Motor power (kW)	额定电流 Rated current (A)	叶轮转速 Impeller speed (r/min)	叶轮直径 Impeller diameter (mm)	推力 Thrust (N)	泵重量 Weight (kg)
LFPH2.2/4-1100-85	2.2	4.9	85	1100	1480	170
LFPH3/4-1800-34	3	6.8	34	1800	2380	210
LFPH4/4-1800-43	4	9	43	1800	2400	225
LFPH5/4-1800-51	5	11	51	1800	2600	225
LFPH4/4-2500-34	4	6.8	34	2500	3200	245
LFPH5/4-2500-43	5	11	43	2500	3420	260
LFPH7.5/4-2500-51	7.5	15	51	2500	4280	270

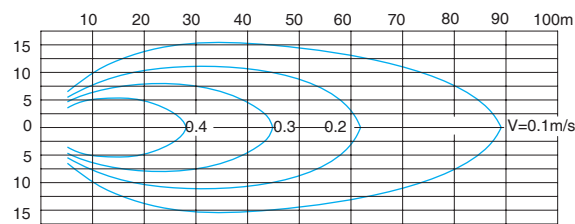
注：阔叶桨低速推流器为二叶片式
LFPH has two propeller wahes.

流场图 Diagrams of the flow field

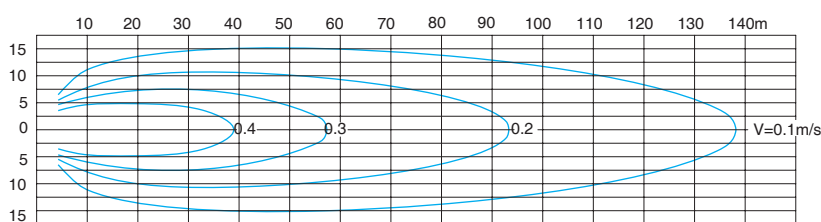




LFPH4/4-2500-34



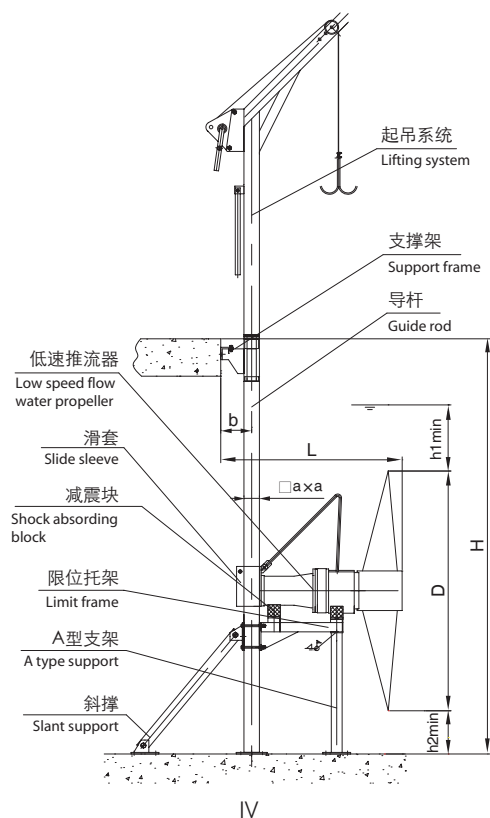
LFPH5/4-2500-43



LFPH7.5/4-2500-51

安装方式及尺寸

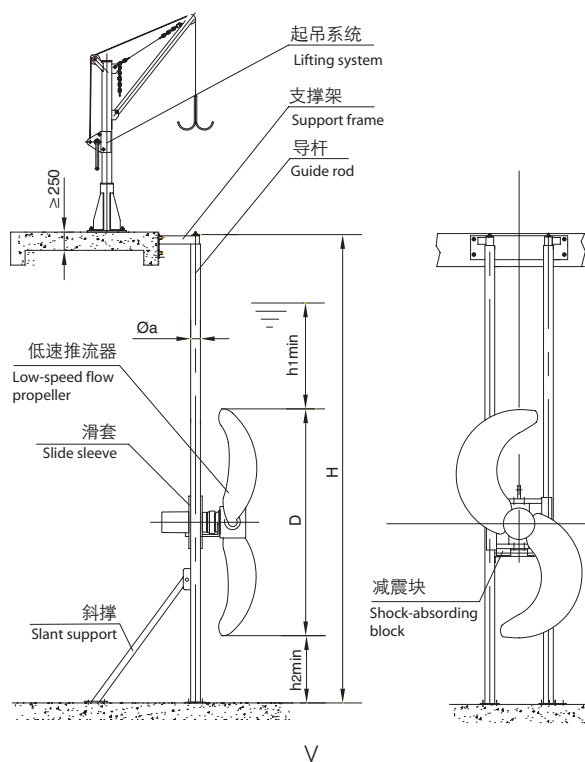
阔叶桨低速推流器可以有多种安装方式，这里提供几种最通用的方式供选择，尺寸可参考下表。我公司还可以根据用户的要求作特殊设计。



Installation modes and dimensions

The LFPH can be installed in a multiple of modes. Here are some generally accepted modes of installation or selection with reference made to the following table.

Our company can also provide the special designs in accordance with the demand of the users.



型号 Type	a	D	b	L	h1min	h2min	安装系统 Installation system
LFPH2.2/4-1100-85	□100	1100	200	1240	1000	270	IV
LFPH3/4-1800-34	Ø89	1800	200	1340	800	125	V
LFPH4/4-1800-43	Ø89	1800	200	1370	800	125	V
LFPH5/4-1800-51	Ø89	1800	200	1430	1000	125	V
LFPH4/4-2500-34	2-Ø89	2500	400	1370	1000	125	V
LFPH5/4-2500-43	2-Ø89	2500	400	1370	1000	125	V
LFPH7.5/4-2500-51	2-Ø89	2500	400	1430	1000	125	V

注：

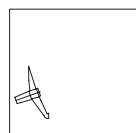
- 阔叶桨低速推流器的专用安装系统，可在无需排出池中污水的情况下，快速安装和拆卸推流器；
- 支撑架和下托架与池壁、池底固定方式（标配）采用预埋，如有其它需求，请注明；
- 客户订货时，需提供池深H及池型图，以便确定导杆尺寸和支撑架个数；
- 同一种安装系统，多台推流器可共用一套起吊系统；
- 安装系统可选择采用不锈钢或碳钢防腐材质。

Notes：

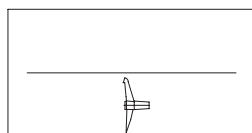
- The special installation systems for the LFPH can facilitate the quick installation and dismantling of the prepeller under the conditions of no need for draining off sewage from the pond.
- The supporting frame and the lower support shall be fixed onto the pond wall and the pond bottom, the fixing mode is to pre-embed. If the customer have other needs, pls notice.
- While placing an order by customer. Please supply the pond depth and the layout drawing so as to determine the dimensions of the guide rod and the number of the supporting frames.
- A multiple of propellers with the same installation system can share one lifting system.
- The installation systems may employ the material of stainless steel or carbon steel for the selection.

布置示意图

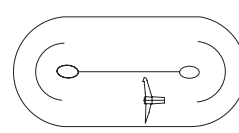
阔叶桨低速推流器的安装定位对其推流搅拌效果有很大的影响，为了达到良好的运行效果，我们建议用户按照专业设计人员的要求去做，要充分考虑到水池的形状，进出水的位置以及推流器的水流反射到构筑物而引起的涡流等情况，尽量减少短路循环和死角的产生，避免与池壁的撞击而降低流速。参照下面的布置示意图，可帮助您合理选择推流器和安装型式。



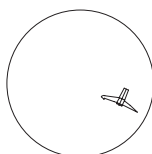
方形池 Square pond



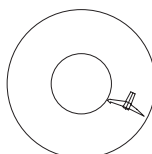
矩形池 Rectangular pond



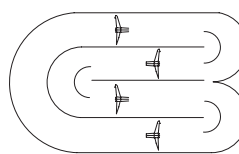
跑道形池 Track-shaped pond



圆形池 Circular pond



环形池 Ring-shaped pond



S曲线形池 S-shaped pond

Arranging sketch map

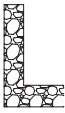

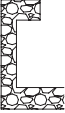
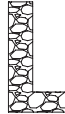


The installation and positioning of the LFPH will produce a great impact on the effect. In order to obtain the good operating result, it is suggested that the advice of the specialized designers shall be followed and full consideration given to the shape of the pond, position of the water inlet and outlet, the vortex resulting from the outflow from the LFPH onto the structures and some other conditions. Every effort shall be made to reduce the shortcircuit and the occurrence of dead corners and avoid the dashing of the flow against the wall for lowering the flow velocity. Making reference to the arranging sketch map below will help you to make a reasonable selection of the LFPH and their installation modes.

如蒙洽询请指示下列各项：
For further details, please fulfill the chart below.

客 户：_____ 承办人员：_____ 电 话：_____

工程名称：_____ 工程地点：_____

订购日期：_____年____月____日 订购机型：_____ 订购数量：_____

基本 选型 参数	* 工艺名称	氧化沟 <input type="checkbox"/>			A-O法 <input type="checkbox"/>			SBR法 <input type="checkbox"/>			其它(注)	
	* 安装位置										其它(注)	
	* 基本池型(m)	长	宽	深	长	宽	深	长	宽	深		
	* 有效水深(m)											
	介质参数	介质名称						密 度				
		主要成分						* PH 值				
		* 温 度						黏 度				
其 它												
工艺 要求 参数	* 主要搅拌混合方式			搅拌型 <input type="checkbox"/>			推流型 <input type="checkbox"/>			其它(注)		
	* 池底最低流速(m/s)											
	其它工艺要求											
池形 结构	* 池沿结构	 <input type="checkbox"/>			 <input type="checkbox"/>			 <input type="checkbox"/>			其它	
	* 池底结构	 <input type="checkbox"/>			 <input type="checkbox"/>			 <input type="checkbox"/>			其它	
材质 要求	* 主机壳体						* 水下导杆及支座					
	* 搅拌叶轮						* 水上吊架及支座					
	* 螺栓、螺母及垫圈						* 提升钢丝绳					
	* 提升钢丝绳											
搅拌 机结 构性 能参 数	传动方式						电机功率(kW)					
	密封形式						额定电流(A)					
	叶轮直径(mm)						电源					
	叶轮转速(rpm)						防护等级					
	推力(N)						工作制式					
其它 要求												

项目前加注“*”号者，请务必详加填写

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- 搅拌机系列
- 推流器系列



供氧曝气系列

- 曝气机系列
- 曝气盘系列
- 曝气管系列



风机系列

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