

SINCE 1986



ISO9001

搅拌装置系统

Mixer and Agitator

ZHEJIANG JHENTEN MACHINERY CO., LTD



浙江镇田机械有限公司

关于镇田

About Jhenten

浙江镇田机械有限公司成立于1986年，拥有超过30年的设计、制造和服务特殊不锈钢罐和容器的经验。在镇田，我们的工程技术和专业知识始终专注于存储容器、工艺罐和定制不锈钢制造的创新和复杂的卫生级设计。我们的客户认识到镇田正在为所在行业中最具挑战性的存储、混合和处理应用程序获得最高价值的产品和技术提供解决方案。镇田机械背后的技术能力确保了高质量的产品在混合、搅拌、加工和储存的广泛应用。

- 乳品
- 食品饮料
- 制药工程
- 日化
- 精细化工

镇田设计产品采用优质的原材料和最先进的制造工艺，在广泛的不锈钢容器(包括搅拌容器、压力容器、水平和立式储罐)应用中实现客户对产品的期望。

镇田可以根据特定容器体积、设计和使用的要求为客户提供合适的搅拌技术、传热解决方案和清洗方案。

- 我们为各类立式及卧式储罐制造独特的垂直和水平搅拌。
- 我们制造全系列搅拌器—推进式、涡轮式、桨叶式、锚框式、螺带式等—用于加工、混合和混合容器。
- 我们设计不同的传热表面形式，包括蜂窝板、盘管和半管夹套，用于几乎任何容器的加热和冷却。
- 我们选择各种清洁方式——CIP、喷淋球——有助各类容器的清洁，降低能耗，降低清洁周期的需水量。

镇田可以满足您所有特殊行业的应用，使用更高级的合金(如Hastalloy和钛等材料)定制不锈钢设备容器。如果压力容器需要美国机械工程师协会(ASME)认证，我们可以将其与其他规范一起提供，包括加拿大CRN和欧盟PED。

镇田机械制造的产品已经被认为不锈钢制造行业的一个标杆，我们始终秉承传统的价值观，对工作不懈努力和对产品可靠性保证。我们的员工始终以质量为导向，并不断利用创新的设计和简化流程。这显示了镇田在与客户分享我们的工程技术、设计能力和制造经验方面的优势。





Zhejiang Jhenten Machinery founded in 1986, has more than 30 years experience on designs, builds, and services exceptional stainless steel vessels. We focus our engineering skills and expertise on the innovative and sophisticated sanitary design of storage vessels, process tanks, and custom stainless steel fabrications. Our customers recognize that they are getting the highest value products and technology solutions for the most challenging storage, mixing and processing applications in their industries. The technology behind Jhenten Engineered Products ensures quality in a wide range of markets that mix, blend, process and store.

- Dairy
- Food & Beverage
- Pharmaceuticals
- Personal Care
- Fine Chemicals

Jhenten Engineered Products uses leading edge materials and state of the art fabrication to deliver on our customers' expectations across a broad range of stainless steel tanks for storage, mixing and processing, including agitated vessels, pressure vessels, horizontals and vertical storage tanks.

The agitation technologies, heat transfer solutions and cleaning options Jhenten provides to customers are designed for the demands of specific vessel content, design and use.

- We manufacture unique vertical and horizontal agitation for different tanks.
- We fabricate a full line of agitators—Propeller, turbine, paddle, anchor, ribbon and more—for processing, mixing, and blending vessels.
- We engineer heat transfer surfaces including dimple, channel and half pipe for heating and cooling of virtually any vessel.
- Various cleaning options—CIP, spray ball—facilitate the cleanability of vessels, reduce energy consumption, and lower water demand in the cleaning cycle.

Jhenten can meet the specifications of all your specialized applications with custom stainless steel fabrication using higher alloys such as Hastalloy and Titanium and so on. And if a pressure vessel requires ASME certification, we can provide that along with other codes, including CRN and PED.

Jhenten Engineered Products is perceived as a quality organization in stainless steel manufacturing, held in high regard for its traditional values of hard work and reliability. Our employees are quality driven, always ready to take advantage of new ideas and streamline processes. And this shows in the pride they take in sharing our engineering know-how, design capabilities and fabrication experience with our customers.



专业服务洁净工程 Professional Service For Sanitary Project

设计研发 Design and R&D

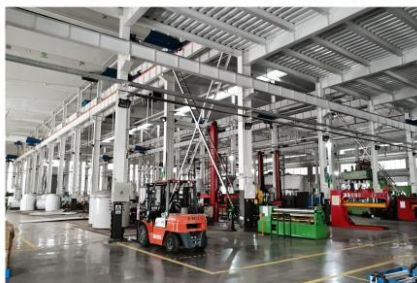


镇田全面的创新技术，拥有国内领先的硬件、软件设施、专业的技术研发队伍，在项目开发阶段，项目小组承建工艺、工程设计，通过大量使用工业工程电脑辅助设计及工艺模拟系统，通过CAD电脑辅助设计，三维的模拟效果，镇田能够优化整个生产过程的效果，使客户对整个项目一目了然。

Jhenten has a comprehensive range of innovative technologies, with leading hardware, software facilities, and professional technical R&D teams. In the project development stage, the project team has built process and engineering designs. Through the use of industrial engineering computer-aided design and process simulation systems, CAD Computer-aided design, three-dimensional simulation results, Jhenten can optimize the effect of the entire production process, allowing customers to see the entire project at a glance.



生产车间 Production Workshop



科学技术是第一生产力，科学技术也是企业的核心竞争力。不断加强核心技术的研发和创新，不断追求卓越，精益求精，以先进的生产设备，严格的质量管理，精密的生产检测流程，保证每一款产品的优良性能。

生产工具是生产力发展水平的标志，先进的生产设备代表了先进的生产力。公司积极引进先进的技术和生产设备，使产品内在品质与外在个性化紧密结合，完全满足并引领工业现代化的需求。

Science and technology are the primary productive forces, and science and technology are also the core competitiveness of enterprises. Continuously strengthen the research and development of core technologies, innovate continuously, strive for excellence, keep improving, use advanced production equipment, strict quality control, and precise production testing procedures to ensure the excellent performance of each product.

Production tools are a sign of the level of productivity development. Advanced production equipment represents advanced productivity. The company actively introduces advanced technology and production equipment to closely integrate the intrinsic quality of the product with the external personalization, fully satisfying and leading the needs of industrial modernization.

高品质产品要求

精心设计、精心制造、精益求精

High quality products require elaborate design, well-crafted manufacturing and continuous improvement.

Qualification Certificate



合作伙伴 Cooperative Partner



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divided successively.

制药 Pharmaceutical



食品饮料 Food and beverage



精细化工 Fine Chemicals



工程公司 Engineering Company



CFJ 齿轮传动侧入式搅拌机

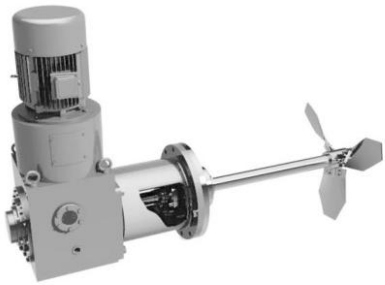
CFJ Series Gera Drive Side-entry Mixers

CFJ系列侧入式搅拌机采用一对螺旋齿轮传动，结构紧凑，传动效率高。箱式结构设计，外型简洁美观，电动机和安装机架直接固定在箱体上，安装调速方便快捷。搅拌轴通过锥面安装在箱体体的空心轴内，取消了联轴器，缩短了整机长度，增加了系统稳定性。配合261型侧搅拌专用机械密封和危机遮断机构，适合于含固体颗粒等的复杂工况。

主要参数表 Main Parameters

型号 Model	电机功率 Power(kw)	出轴转速(r/min) Rotation speed of output shaft			
		配4级电机 Use 4-pole motor		配6级电机 Use 6-pole motor	
		i I	i II	i I	i II
CFJ-1	0.55,0.75,1.1,1.5	350	280	230	190
CFJ-2	2.2,3,4	350	280	230	190
CFJ-3	5.5,7.5,11	350	280	230	190
CFJ-4	15,18.5,22	350	280	230	190
CFJ-5	30,37,45	340	250	230	170

CFJ series side-entry mixer is driven by a pair of spiral gears, so the structure is compact and the transmission efficiency is high. with box structure design, the appearance is nice. the motor and pedestal are all mounted on the box, and the adjustment is convenient. the shaft is fastened by cone sleeve in the box. the coupling is cancelled, so the length is shortened and the stability is strengthened. with 261 mechanical seal for side-entry mixers and special shut-off device, the mixer is suitable for complex conditions, such as fluid with solids.



CFJ搅拌机 CFJ mixers

TD 带传动侧入式搅拌机

TD Belt Drive Side-Entry Mixers

TD系列侧入式搅拌机采用同步齿形带传动，结构紧凑，传动效率高。设计带有内伸式支撑结构，适合于无固体颗粒的、轴伸较长的工况。内支撑架端部的危机遮断结构可实现带料进行机械密封和减速机的维修。

选型表 Selection Table

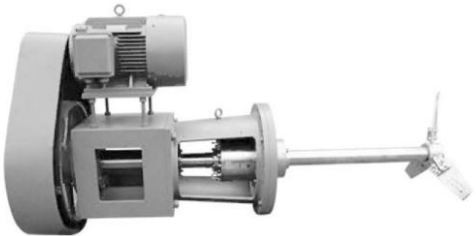
输出转速 n Output speed (r/min)	200	240	300	370	470	600
传动比 i Reduction ratio	5	4	5	4	3.15	2.5
电机功率 p Motor power (kw)	6极电机 6-pole motor		4极电机 4-pole motor			
0.55						
0.75						
1.1				TD ₁		
1.5						
2.2						
3.0						
4.0			TD ₂			
5.5						
7.5						
11						
15						
18.5			TD ₃			
32	x					
30	x	x	x			

备注：TD型搅拌机安装形式按其输入功率大小分悬挂式和落地式两种，输入功率0.55~7.5kw为悬挂式结构，11~30kw为落地式结构。
Notes: The mixer of 0.55~7.5kw is hanged by rope and 11~30kw is foot-mounted type.

TD series side-entry mixers use synchronize tooth belt, so the structure is compact and the transmission efficiency is high, with inner pedestal structure, this mixer is suitable for such conditions as fluid without solids, or long extended shaft. the shut-off device at the head of the pedestal permit the maintenance of the seal or reducer without discharge the tank fluid.



TD搅拌机 TD mixers



CPT搅拌机 CPT mixers

MTS 底入式卫生级磁力搅拌机

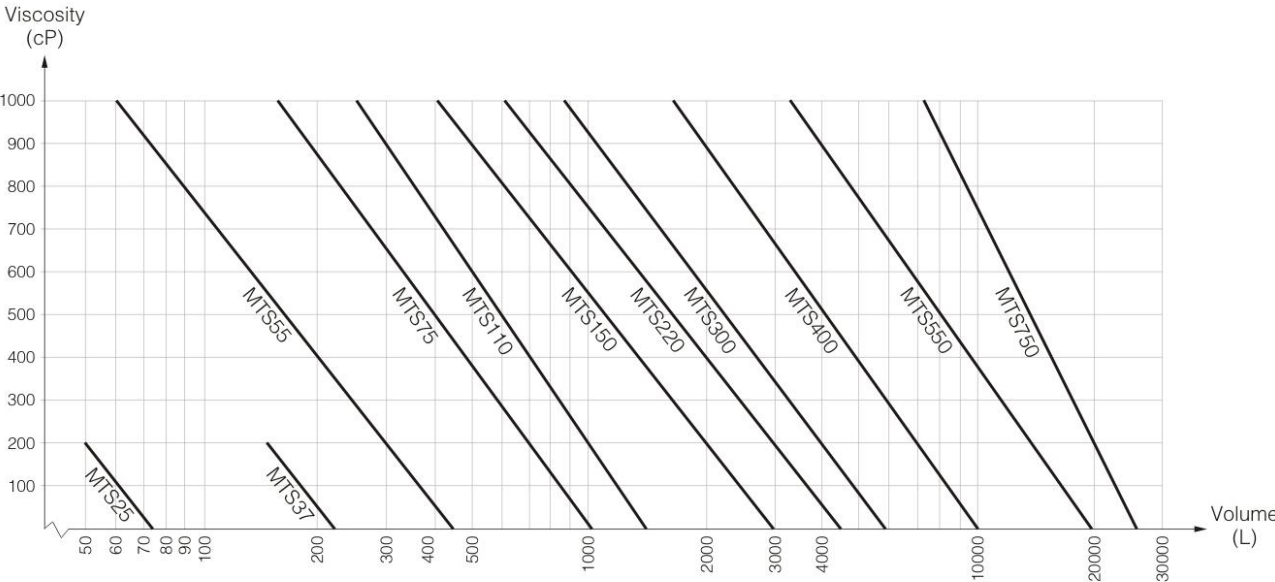
MTS Sanitary Magnetic Bottom-entry Mixers



MTS系列底入式卫生级磁力搅拌机同样是由磁力耦合器无接触传递力矩，克服了泄漏问题。适合应用于要求高清洁性和持久性的场合。其具有耐温和高效率磁性等特点，轴承采用陶瓷轴承，一体化焊接隔离套，物料能够在搅拌器内部流通，从而消除了死角，可以实现在线清洗和灭菌。接液部件采用不锈钢316L材质。能适应容积范围到30000L，粘度能达到1000cP。

MTS Series magnetic drive mixers also use permanent magnets for the transfer of torque in order to prevent leakage. it suits applications which demand high levels of cleanability and durability. features include temperature-resistant and high-efficiency magnets, ceramic bearing design, one-piece tank plate, flow-through channels can be cleaned in place and all wetted parts of the impeller and the tank plate made of AISI 316L stainless steel. it is suitable for up to 30000 liters and viscosity up to 1000cP.

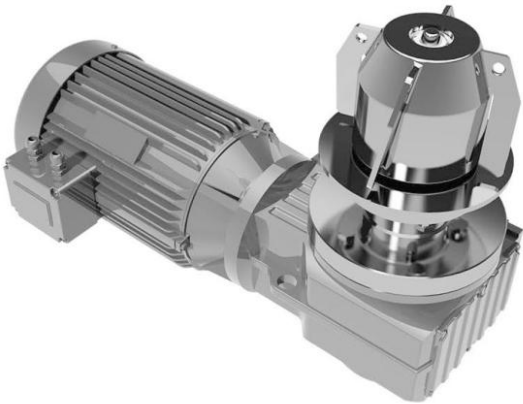
按粘度和体积选型图 Selection Guide And Options



选型表 Selection Table

型号 Model	功率 Power (kw)	转速 Speed (rpm)	桨叶直径 Impeller diameter (mm)	设计扭矩 Design torque (N.m)
MTS25	0.25	358	140	5
MTS37	0.37	358	140	5
MTS55	0.55	347	190	10
MTS75	0.75	347	190	30
MTS110	1.1	354	220	30
MTS150	1.5	352	280	63
MTS220	2.2	352	280	63
MTS300	3	302	330	100
MTS400	4	306	380	160
MTS550	5.5	278	420	250
MTS750	7.5	200	550	315

备注：1、速度通过安装变频器条件；2、搅拌器直径等参数也可以定制。
Notes: 1. Speed varies when equipped with VFD. 2. Parametes such as diameter of impeller etc. can be customized.



MTS 搅拌机 MTS mixers

HDM 一机多缸高速分散机

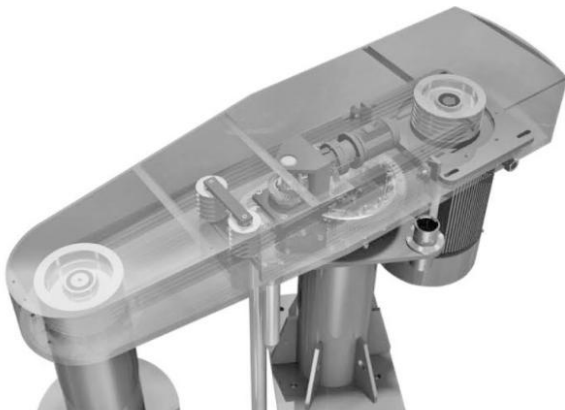
HDM High-speed Disperser With Multi-tanks

一机多缸调速分散机(HDM系列)是一款具有分散、混合功能的批量化作业设备,具备使用寿命长、操作方便、噪音低等特点。可搭配不同规格及形式的分散搅拌器来满足不同的工艺需求,搅拌器更换方便。提升机构通常采用液压动力源,集成式的油路系统性能稳定、环保无泄漏。配备电动转向机构,可方便快捷的实现搅拌执行机构在多个工位间的切换,实现一机多缸,一般可根据需求配备2-4个缸体。

一机多缸调速分散机的应用领域及物料特性:涂料、油漆、油墨、胶黏剂、染料、农药、生物、医药等行业中物料的分散、混合应用。物料粘度在50,000cps以下,固含量在60%以下的各种浆料,水性漆、油漆、水性油墨、农药、粘合剂等。

High-speed disperser with multi-tank (HDM) is designed to disperse and mix materials in production lines with durability, reliability and minimal noise. the HDM can use a variety of mixing blades for various industrial applications. the HDM is very mobile due to it's reliable, environmentally friendly, non-leaking hydraulic system. the HDM's swivel system is capable of high turnover working with 2-4 tanks at once.

Applications for the HDM will involve the industrial mixing of organic materials, pharmaceuticals, food, paints, inks, adhesives and pesticides to name a few. the HDM can mix liquids with a maximum viscosity of 50,000 cps and solid content of less than 60% like emulsion paints, industrial paints, water-based inks, pesticides and adhesives.



HDM一机多缸调速分散机 HDM series high-speed disperser with multi-tanks

HDM系列一机多缸调速分散机由转向机构、动力传递机构、搅拌执行机构、电动机和提升机构组成(见上图)。搅拌器通常配锯齿圆盘型搅拌器(见下图)。

HDM Series high-speed disperser includes swivel system, force transmitter, disperser, motor and hydraulic system (See picture above). toothed disc turbines (See below) usually be employed.



FY



TZC



FYM



FYU

搅拌器图 Toothed disc turbines

HDM 分散机及缸体选型推荐

HDM Selection Guide And Options



物料的粘度

调速分散机通常使用的物料粘度在50,000cP以内，该设备非常适用于具有触变作用及流动性较好的物料搅拌。

容积

根据客户的搅拌容量要求选择与之匹配的设备，并根据客户现有的设备和人员配备进行优化选型。

缸体的设计选型

最好选择圆罐配合椭圆封头的缸体，椭圆封头的设计可以有效加速物料的循环流动以及减少死区，平底和斜底容器也是可选项，在设计上尽量采用1:1的高径比。考虑到非挡板条件下形成的旋涡，一般液位比缸侧壁低30%，搅拌器直径一般是缸体直径的1/3，搅拌器离底距离应为搅拌器直径的一半，搅拌器埋液深度一般为搅拌器直径的1.5倍。实际消耗功率由出轴转数、搅拌器的类型及直径、物料的密度和粘度等因素决定。

Viscosity

The upper viscosity range of materials is 50,000 centipoise. materials are thixotropic and good liquidity under shearing conditions.

Volume

The volume of the product to meet production forecasts needs to be provided, please consider the optimum production volume to match your capabilities considering your facilities and available staff.

Tank design

The most suitable tank is one that has an elliptical bottom because this design optimizes the flow and minimizes the possibility of a dead zone. flat and sloped bottom tanks can also be used but are not as optimal. ideally a tank that has approximately the same diameter as the height is preferred for the dispersers. the liquid should only be filled up to 70% of the tank to allow for the vortex when in operation. the mixing blade should be half its diameter from the bottom of the tank, the tank diameter should be triple the diameter of the mixing blade. the liquid level should only go above the mixing blade by 1.5 times its diameter. power consumption is determined by the diameter of the mixing blade, density of the material and rotational speed of the mixing blade.

选型表 Selection Table

型号 Model	功率 Power(kw)	转速 Speed(rpm)	搅拌器直径 Impeller diameter(mm)	容积 Capacity(L)	液压功率 Hydraulic power	提升行程 Lift(mm)
HDM750	7.5	0~1450	230	~400	0.55	900
HDM110	11	0~1450	250	~500	0.55	900
HDM1500	15	0~1450	280	~700	0.55	900
HDM1850	18.5	0~1450	300	~800	0.75	1100
HDM220	22	0~1450	350	~1000	0.75	1100
HDM3000	30	0~1450	400	~1500	0.75	1100
HDM3700	37	0~1450	420	~2000	1.1	1600
HDM4500	45	0~1450	450	~2200	1.1	1600
HDM5500	55	0~1450	500	~2500	1.1	1600
HDM7500	75	0~1450	550	~4000	2.2	1800
HDM9000	90	0~950	600	~6000	2.2	1800
HDM11000	110	0~950	700	~8000	3	2100
HDM13200	132	0~950	800	~10000	3	2300

备注：1、表中容积是按水的物性参数，选型时应更具实际物料参数进行调整。

2、表中所有参数可以根据用户需求进行调整。

Notes: 1. The capacity assumes materials with a viscosity of roughly 1000 cps and specific gravity of 1g/cm³.

2. All technical parameters can be adjusted to suit the application.

搅拌器 Impellers

搅拌器概述

搅拌器的种类繁多，根据结构划分，常用的有十几个大类，有桨式，开启涡轮式，圆盘涡轮式，圆盘锯齿式，推进式、轴流式、布鲁马金式、螺杆式、螺带式、锚框式及特殊类；根据使用工况，搅拌器一般可分为低粘液体用和高粘液体用两大类。

桨式，开启涡轮式，圆盘涡轮式，圆盘锯齿式，推进式、轴流式、布鲁马金式通常用于低粘度液体的搅拌，在湍流状态下操作，其叶轮直径与槽内径之比通常为0.3~0.6左右。

锚框式、螺杆式和螺带式适合于高粘度液体的搅拌，在层流或过渡流状态下操作。

General Description For Impellers



There are lots of types of impellers, according to the structure difference, there are more than ten types, such as paddle, open turbine, disc turbine, saw-teeth type, propeller, hydrofoil, bulmarking type, screw, helical ribbon, anchor and gate type, and other special types, according to the usage, there are two types, low viscosity type and high viscosity type.





Paddle, open turbine, disc turbine, saw-teeth type, propeller, hydrofoil, bulmarking type are low viscosity type impellers, operating at turbulent conditions, the ratio of impeller diameter to tank diameter is usually 0.3~0.6.

Screw, helical ribbon, anchor and gate type are high viscosity type impellers, usually operating at laminar or transition flow.


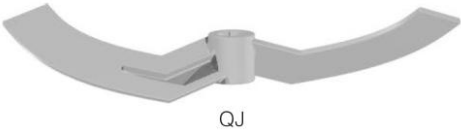


搅拌器的种类 Types Of Impellers

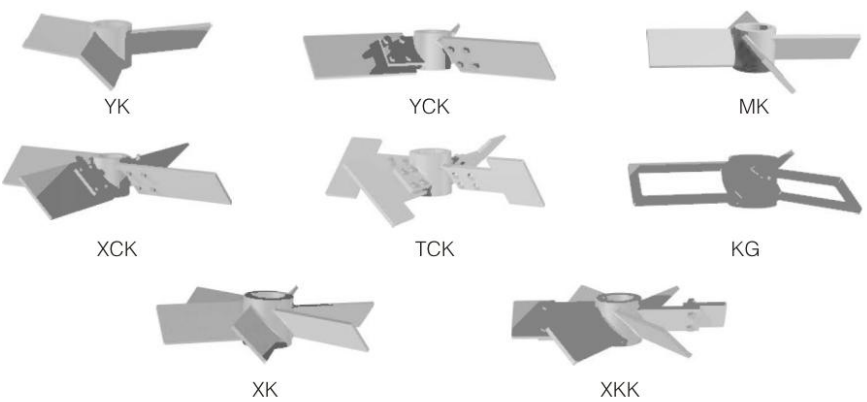

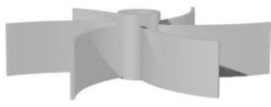
搅拌器的分类、特点及应用 Classification, Characteristics And Application Of Agitators

形式 Type	简述 Description	应用条件 Condition		
		桨叶直径 Impeller diameter(mm) d/D	粘度 Viscosity(cp)	线速度 Tip speed(m/s)
二叶桨式搅拌器 Paddle type impeller 平直叶桨式 Type PJ,PCJ	<div>  <p>PJ</p>  <p>PCJ</p> </div> <p>此类型为最基本的一种桨型，低速时以水平环流为主，高速时为径向流，有挡板时，为上下循环流。适用于低粘度液体的混合、均匀、调和、溶解、传热或结晶，或在高粘度下一般在层流状态下工作，采用多层大直径低速搅拌。</p> <p>This general paddle acts as horizontal circular flow at low speed and as radial flow at high speed. if there are baffles, result in axial circular flow. it is suitable for mixing, homogenizing, dissolving, heat transfer and crystallization in low viscosity medium, or operates in laminar region in high viscosity medium, be adopted multi-layer impellers of big diameter at low speed.</p>	0.35~0.9	100~6000 < 2000 100000(Maximum)	1~5



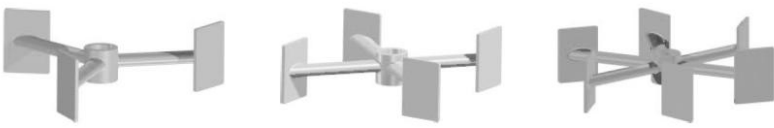
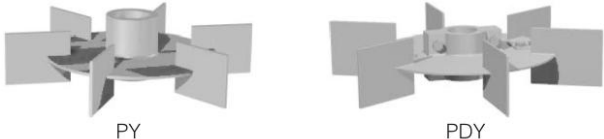
I 1 古桨式搅拌机 Paddle type impeller	斜叶桨式 Type XJ,XCJ	 <p>XJ XCJ</p> <p>此类搅拌机可制成24°、45°或60°倾角，有轴向和径向分流，流型比平直叶桨式复杂，排出性能比平直叶高，综合效果更好，其适用条件等同PJ、PCJ，因此使用频率比平直叶桨式高。 The oblique angle of the impeller is 24°, 45° or 60°, it produces radial and axial flow and the flow is more complex than type PJ paddle. it features larger output energy compared to type PJ paddle and has same applications as type PJ, PCJ, so type XJ, ZJ are used more frequently.</p>	0.35~0.9	100~6000	< 2000 100000(Maximum)	1~5
	弧叶桨式 Type HJ,HCJ	 <p>HJ HCJ</p> <p>此类型为新开发的一种桨型，可替代XJ、ZJ，在同等使用条件，它的排出性能比XJ高30%，而功率水平可持平，综合性能也优于XJ。 This new paddle can substitute for type CJ and ZJ, in the same condition, the capability of discharging is 30% higher than XJ and the integrated capability is better than XJ.</p>	0.35~0.9	100~6000	< 2000 100000(Maximum)	1~5
	双折叶桨式 Type SCJ,CCJ	 <p>SCJ CCJ</p> <p>多段逆流型搅拌机，CJ型为SJ型的改进型，在运行时，可促进液体形成较大的轴向循环，可比传统的XJ减少30%的混合时间，一般多层搅拌机组合使用。特别适用于过渡流域下的混合、固液悬浮、液体分散、溶解、传热等。 The contranantant paddle of several segments, type CJ is improved on type SJ. When it works, the paddle expedite liquid to come into being axial circulation flow, its mixing time is 30% less than type XJ. usually multi-impellers are used together. it is suitable for mixing, solid-liquid dispersing, dissolving and heat transfer of transition region.</p>	0.4~0.95	100~6500	< 10000	1~10
	复合折叶桨式 Type GJ,GCJ	 <p>GJ GCJ</p> <p>这是一种高效轴向流叶轮，它的主叶片上再增加了一个辅助叶片，该辅助叶片有消除主叶片后方发生的流动剥离现象，使搅拌功率减少；同时在叶端能产生交叉的垂直分流，提高了混合效果，适用于中、低粘度的混合、分散、传热。特别适用于大型罐槽的固液悬浮。 This is a high efficiency and axial flow impeller. the assistant paddles which are on the master paddle can dispel the phenomenon whose flow peels off, and saves on the power of mixer, at the same time comes into being separate flow which is crossed and vertical to improve the mixing effect. it is suitable for mixing, dispersing, and heat transfer of low viscosity medium, especially for solid-liquid suspending of large-sized vessel.</p>	0.35~0.6	100~6500	< 5000	1~10

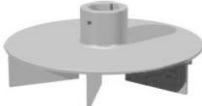
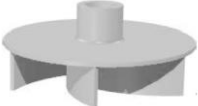







搅拌机 Impellers

11 七 桨式搅拌机 Paddle type impeller	螺旋桨式 Type AJ, ACJ  <p>AJ ACJ</p> <p>与罐体相适应的弧形叶片并与斜叶桨式组合，适用于中高粘度的混合、均质、传热、反应等操作，一般多层组合使用，具有双螺带桨的特点。</p> <p>The paddle is made up of the are paddle and the pitch paddle. it is suitable for mixing, homogenizing, heat transfer and reaetion, etc. usually multi-impellers are used together, it has the same feature as screw ribbon type.</p>	0.85~0.95	100~5000	< 50000	< 3
	曲边斜叶 Type QJ  <p>QJ</p> <p>本类搅拌机是斜叶桨式的一种变型，桨底旋转面接近容器的椭圆面，桨叶平面与旋转轴垂直面又成倾角45°，兼起刮板作用，多为低转速运行，可在过流或层流区操作。</p> <p>These types are derived form type XJ paddle, they are used at low speed in laminar region.</p>	0.6~0.9	100~5000	< 5000	1~5
	菱臂弧叶 Type BJ, BCJ  <p>BJ BCJ</p> <p>本类搅拌机桨叶形状特别，是一些行业的专用搅拌机，适合漂洗、浸染类的操作，多为低速范围在层流下操作。</p> <p>These types with special blades are used for situations like low circulating flow rate and low shearing force, it produces shake and turbulent flow inside and is applicable in process of bleaching and dip-dye.</p>	0.4~0.8	100~5000	< 5000	1~4
	花板孔式 Type FJ, FCJ  <p>FJ FCJ</p> <p>本类搅拌机形状特别，左右两桨叶一高一低，不以轴对称，能在低转速，层流条件下产生较好的微观剪切效应，是一些行业的专用搅拌机，常用于纤维物料的操作，也可作摆操作。</p> <p>The two blades of the impeller are unsymmetrically distributed. one is high, the other is low. it makes good shearing effect at low rotation speed in laminar flow region. usually, it is used for agitating fiber medium. n=1~80rpm.</p>		100~5000		


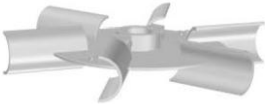







开启涡轮式搅拌机	斜叶开启涡轮 Type YK, YCK, ...	 <p>轴流型搅拌机，有较好对流循环能力，并有一定的湍流扩散能力，适合应用于混合、分散、微粒结晶、反应、溶解、固液悬浮、传热等操作。带稳定片结构是这类涡轮的一种改变形式，主要应用在轴设计在临界点附近，轴需要径向扶正作用的场合。三框叶刮板式搅拌机，在层流区操作，防止重组份沉积底部，适用于结晶、萃取、洗涤等过程，也可用于高粘度液的传热过程。</p> <p>The axial flow paddles which have convection circulation and onflow diffusivity capacities. It is suitable for mixing, dispersing, crystallization, reaction, dissolving, solid suspending and heat transfer, etc, the betterment type which has stabilizer uses for the occasion where the shaft which is designed critical point need radial support. type KG works in laminar region to avoid heavy element depositing. it is also suitable for crystallization, extraction and washing, and heat transfer of high viscosity medium.</p>	0.3~0.6	100~3000	< 50000	2~8
	平直开启涡轮 Type PK, ...	 <p>径流型搅拌机，使用转速范围大，使用粘度范围广，具有高剪切力及湍流扩散能力。因其没有圆盘，不会阻碍桨叶上下液层混合，在有挡板槽中可以形成较大的对流循环，特别适用于剪切分散操作，同时因其具有良好的循环和剪切能力，也用于一般的固体溶解、反应、传热、乳化、结晶、固定悬浮操作。</p> <p>Radial flow type impeller with high shearing force and onflow diffusivity is used widely in varied speed and viscosity. without disc, they don't counteract mixing and can become convection circulation. make it especially for shearing and dispersing, and for dissolving, reaction, heat transfer, emulsification, crystallization and solid suspending.</p>	0.2~0.5	100~3000	< 50000	3~10
	弯叶开启涡轮 Type WK	 <p>具有平直叶涡轮几乎所有的特点，又因其具有特殊的后结构，排出性能更好，桨叶也不易磨损，特别适用于固体含量多时固液悬浮的操作，一般配挡板使用，同时也适用于一般的反应、传热、乳化等操作。</p> <p>The types which have back angle paddles have large output flow. make it especially for solid suspending.</p>	0.2~0.5	100~3000	< 50000	2~8







搅拌器 Impellers

<div> 三直叶锥底式 Type SZP </div> <div> 开启涡轮式搅拌器 </div> <div> 布鲁马金式 Type BM </div> <div> 平直叶圆盘涡轮 Type PY, PDY </div>	 <p>SZP</p>	<p>本类搅拌器为径流型搅拌器，使用条件同平直叶开启涡轮，适用于锥形容器搅拌的最下层搅拌，可应用于一般的反应、溶解、悬浮、传热、乳化、结晶等操作。</p> <p>The radial flow paddles are used in the lowest layer of conical bottom tanks, make is suitable for reaction, dissolving, suspending, heat transfer, emulsification and crystallization.</p>	0.2~0.5	100~3000	< 10000	2~8
	 <p>HQ SQ</p>	<p>为径流型搅拌器，配合指型挡板，能得到大流量的上下循环流，且剪切作用好，适合应用于传热、传质、固体溶解、悬浮等。</p> <p>Type HQ, SQ are axial flow type impellers. they produce strong circulation and good shearing force with finger baffles. they are used in processes of heat transfer, mass transfer, dissolving, suspending.</p>	0.2~0.5	100~3000	< 10000	2~8
	 <p>BM</p>	<p>为径流型搅拌器，桨叶前端带有后掠角的大宽叶桨叶，排出性能优于直叶和弯叶开启涡轮，功耗低，剪切力小，有挡板时，可产生对流循环及湍流扩散，适用于传热、传质、混合、纤维物料的溶解。</p> <p>These radial flow type impellers with good pumping rate, reduced shearing force and lower power consumption. circulation flow and onflow diffuse can be produced when baffles are set. it is used in processes of heat transfer, mass transfer mixing and fiber dissolving.</p>	0.2~0.5	100~3500	< 50000	2~8
	 <p>PY PDY</p>	<p>径流型搅拌器，具有极高的剪切力，分散能力强。循环能力较好，一般在圆盘上下形成两股循环环流，因有圆盘的作用，能使气体分散更平稳、均匀。特别适用于气体的分散、吸收操作，同样也适用于固体悬浮、传热、非均相反应操作。</p> <p>The radial flow type impellers have powerful shearing force and good circulation power and good dispersing power, because of the disc, it can disperse gas smoothly. it is used specially in processes of dispersing, absorbing, and it is also suitable for suspending, heat transfer and non-homogeneous phase reaction.</p>	0.2~0.5	100~3500	< 50000	4~10


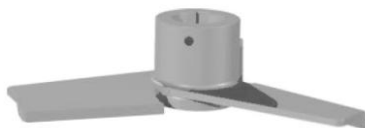






开启涡轮式搅拌器	单 向 圆 盘 涡 轮 Type BP, BWY	   <p>BPY BWY GSL</p> <p>单向涡轮为径流型搅拌器，有较大的离心辐射状流线，BYP与BWY一般在中高速段使用，有类似叶片泵的功能，有较高的泵送能力，剪切力和分散能力高，特别适合于高强度要求的气体分散、吸收、萃取等操作；也适用于固体悬浮、传热、非均相反应操作。GSL一般在低速段使用，适用于水处理行业。</p> <p>The radial flow type impellers BYP and BWY have higher pumping-feeding power similar to pump and powerful shearing force and powerful dispersing force and used in high speed. it is used specially in processes of gas dispersing, absorbing, leaching, and it is also suitable for suspending, heat transfer and non-homogeneous phase reaction. GSL is generally used at low speed and is suitable for water treatment.</p>	0.2~0.5	100~3500	< 50000	4~10
	弯 叶 圆 盘 涡 轮 WY	  <p>WY WDY</p> <p>此类搅拌器性能基本同平直叶圆盘涡轮，后弯的桨叶并具有一定的后掠角，排出性能好，动力消耗低，桨叶不易磨损，适合气体分散、吸收及因液悬浮操作等。</p> <p>The capabilities of these impellers are similar to type PY. type WY impellers installed back bend blades with big sweepback can generate good pumping rate at low power consumption. it is used in processes of gas dispersing, absorbing, suspending.</p>	0.2~0.5	100~3500	< 50000	4~10
	斜 叶 圆 盘 涡 轮 Type ZJ...	  <p>ZY ZDY</p> <p>斜叶圆盘涡轮的桨叶具有一个倾角，有一定的轴向流，循环性能好，剪切力低于直叶圆盘涡轮，螺距叶圆盘涡轮的桨叶有一个较大的后退角，排出性能好，动力消耗低，特别适合于非均相的混合、分散，也用于一般的传热、乳化等操作。</p> <p>Pitch-blade types have slope angle and can produce axial flow, it has good circulation power but the shearing force is lower than straight-blade type. curved blade types have back angle and have large output flow rate and low power consumption. it is used specially in processes of mixing, dispersing, and heat transfer, emulsification.</p>	0.2~0.5	100~3500	< 10000	2~8
	箭 叶 式 圆 盘 涡 轮 Type ...	  <p>JY JDY</p> <p>箭叶式圆盘涡轮式搅拌器也是一种以径流为主的搅拌器，但其桨叶剖面为抛物面，因而轴向有上下两股斜向循环流，相对PY功耗低，且具有较高的剪切力，适用于气体分散、吸收、传质、混合、固液悬浮等操作。</p> <p>The main radial flow type impellers have low power consumption and powerful shearing force. make it suitable for gas dispersing, absorbing, mass transferring, mixing and suspending.</p>	0.2~0.5	100~3500	< 10000	4~10


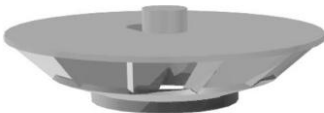
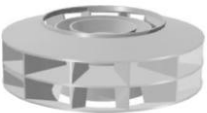
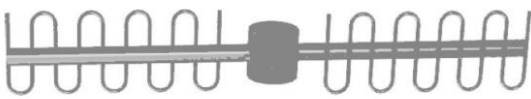


搅拌机 Impellers

<div> 半管及抛物线圆盘涡轮 Type HY... </div> <div> 开启涡轮式搅拌机 </div>	<div>    </div> <div> <div>HY</div> <div>HDY</div> <div>BDT</div> </div>				
	<p>HDY、BDT都是径流式搅拌机，它们的叶片分别为凹圆绵型及抛物面，具有极强的径向排量及分散能力，在相同功率下，其传质系数比平直叶圆盘涡轮高30%以上，持气能力提高40%以上，且功耗比甚低，因此特别适用类似发酵工艺的溶氧操作，也适用于其它要求下的气体分散、吸收、混合、传质等操作。</p> <p>The radial flow type impellers have large radial flux and powerful dispersing force. its coefficient of mass transfer is advanced 30% and its power of gas holding is advanced 30% at same power. so it is used specially in processes of oxygen dissolving, and it is also suitable for gas dispersing, absorbing, mixing and mass transferring.</p>	0.2~0.5	100~3500	< 10000	4~10
<div> 三、四叶推进式 Type TXL... </div> <div> 推进式搅拌机 </div>	<div>    </div> <div> <div>TXL</div> <div>TVL</div> <div>TTL</div> </div> <div>    </div> <div> <div>SXL</div> <div>TXH</div> <div>SXH</div> </div>				
	<p>三叶推进式是最典型的轴流型搅拌机，高排量，低剪切性能，采用挡板或导流筒则轴向循环更强。排出性能明显提高，因为它循环能力强，动力消耗低，在大容量均相、混合过程中应用最能体现其优势，在低粘度的液体传热、反应、固液比小时的悬浮、溶解等过程中应用广泛。可调推进式的桨叶可转动±15°，调整倾角，在试验性的工艺过程中作用很大，可拆推进式的桨连轮毂分成三瓣，组装方便，用在需要拆成小件的场合。带稳定环结构，可在高速运行中靠液体阻尼的作用起径向扶正作用，一般情况下可提高10~20%的临界转速。</p> <p>Triple-blade propellers are typical axial flow type impellers with high output flow rate and low shearing force. axial circulation is stronger and output rate is larger when baffles of flow guide tube is selected, their powerful circulation capacity and low power loss can be fully applied in mixing processes of low viscosity, large volume homogenous medium they are widely used in heat transfer, reaction of low viscosity and suspension, dissolving low content solute. blades of adjustable propeller type impellers can be adjusted in a range of ± 15° . that will take important effect in experimental technique process. separable propellers have three blades which can be assembled expediently. the types with stabilizer ring are used to keep shaft stable in high speed, and its critical speed advance 10~20 percent.</p>	0.1~0.5	100~2000	< 2000	3~15

<div> <div>变截面旋桨式 Type ZHX...</div> <div>旋桨式搅拌机</div> <div>三、四宽叶旋桨式 Type KHX...</div> </div>	<div>  <div> <div>ZHX</div> <div>ZCX</div> </div> </div>	<div>  <div> <div>ZHX</div> <div>ZCX</div> </div> </div>	<p>三窄叶旋桨式是一种应用范围广泛的轴流型搅拌机，它的桨叶是一种近似等螺距曲面，排出性能好，剪切力低，可在过渡流及湍流操作中得到较高的流动场，排出流量比推进式高出20%，适用于低粘度液体的混合、溶解、固体悬浮、传热、反应、结晶等，是大型搅拌罐替代推进式搅拌器的最好形式。</p> <p>The axial flow paddles are widely used. it has high output flow rate and low shearing force. its output flow is advanced 20%, make it suitable for gas mixing, dissolving, suspending, heat transfer, crystallization and reaction. it is the best type for large-sized mixing tank.</p>	2~15	< 2000	100~6600	0.2~0.5
	<div>  <div> <div>GXL</div> <div>ZSX</div> </div> </div>	<div>  <div> <div>GXL</div> <div>ZSX</div> </div> </div>	<p>此类搅拌机属轴流型搅拌机，具有推进式及开启涡轮式的特点，动力消耗小，循环能力大，剪切性能低，适用范围广，对低、中、高粘度的混合、传热、溶解、反应中应用广泛。</p> <p>The axial flow paddles are widely used. it has large circulation flow rate and low shearing force.</p>	2~15	< 2000	100~6600	0.2~0.5
	<div>  <div> <div>KHX</div> <div>KCX</div> <div>KSX</div> </div> </div>	<div>  <div> <div>KHX</div> <div>KCX</div> <div>KSX</div> </div> </div>	<p>轴流型搅拌机，螺旋圆锥曲面型叶片，具有很大的湍流扩散能力和较低的剪切力，相对于PY型搅拌机，在相同的搅拌强度下，可节约30~40%的电耗，相同功耗时提高20%以上的传质系数，特别适用于要求传质、传热、固体悬浮及要求低剪切力的生物发酵溶氧操作。</p> <p>The axial flow paddles have large onflow diffusivity and low shearing force. it economizes power 30~40% in the same mixing intensity, and its mass transfer coefficient advanced 20% in the same power, it is used specially in processes of mass transferring, heat transfer, suspending and oxygen dissolving of biology ferment.</p>	2~10	< 25000	100~4000	0.2~0.5

搅拌器 Impellers

高速分散式搅拌器	三叶后齿、翘曲式 Type CL, QL	  <div>CL</div> <div>QL</div> <p>三叶后齿相当于三斜叶开启涡轮式的叶子后缘成锯齿状，增大的剪切界面强化了小涡流的产生，溶解、分散能力更优，还具有分裂粉碎的作用，适用于低粘度介质固体溶解、分散及高粘度分散相的混合、分散。三叶翘曲式为轴流型搅拌器，翘曲弧叶面可控制液体的排出方向，产生较大的轴向流，功耗低，适用于溶解、混合、液液反应等操作。</p> <p>Type CL increases small-vortex amount, improves performance of dissolving, dispersing and function of splitting and smashing. they can be used for dissolving and dispersing in low viscosity solid medium and mixing and dispersing in high viscosity dispersed phase. type QL is an axial flow impeller, and has low power, make it suitable for dissolving, mixing and liquid-liquid reaction.</p>	0.2~0.5	100~4000	≤2000	8~15
	齿形圆盘 Type CY...	    <div>CY</div> <div>TY</div> <div>FY</div> <div>TZC</div> <p>盘外缘呈锯齿形，高速旋转下剪切性能很高，循环能力相能弱、分散、粉碎、剥离作用强烈，两相物性差异大的分散混合很适用，如涂料的分散过程。平齿形为一层水平的锯齿，翻齿形和贴齿形为上下两向立式锯齿，前者为齿和圆盘一体冲成上下翻出，齿粗疏，后者为两边锯齿条焊于圆盘外缘，齿细密。</p> <p>At htgh rotation speed, toothed disc turbine has high shearing force, but low circulation capacity. dispersiong and comminution are strong.they are used in mixing and smashing two different phases such as dope dispersing process. type CY has horizontal teeth, thick and sparse. type FY and TY have two layers of vertical teeth, thin and dense.</p>	0.2~0.5	100~2000	≤50000	10~30
	稳定环 Type WH, WF	  <div>WH</div> <div>WF</div> <p>稳定环是配合搅拌器同时使用，使搅拌轴在工作过程中能起到径向扶正的作用。</p> <p>Stabilizers are used with impellers to keep shaft stable.</p>				

特殊用途搅拌机	曝气叶轮 Type BAY, BDY, BQY	 <p>BAY</p>  <p>BQY</p> <p>此类搅拌机专用于气液吸收，分散的搅拌机，它相当于低水头大流量的水泵高速旋转时中心吸入气体随液体离心抛出，桨叶对气相及液相产生剪切力，使气体破碎成大量微小的气泡，分散于液相中，它加强了相表面更新及湍动有利于相际扩散。常用于污水处理，传氧等过程。</p> <p>These are special impellers used in gas-liquid absorbing and dispersing, they rotate with high speed and absorb gas, liquid will be thrown off by centrifugal force. inside the impeller, gas will be sheared into a lot of air bubble by paddle. with air bubble dispersing into liquid medium, turbulent flow will be increased. they are used in processes of wastewater treatment and oxygen transfer.</p>	0.2~0.5	100~3500	< 2000	2~15
	消泡搅拌机 Type XPY, XPJ	 <p>XPY</p>  <p>XPJ</p> <p>此类搅拌机是为消除液面上覆盖的大量泡沫而用，消泡叶轮为高速型，其高速旋转下产生的离心作用，使从中心吸进的泡沫，沿壁面汇成液珠抛出，消泡效果好，消泡桨为中低速型，旋转蛇形栅条桨，不断破坏生成的气泡，控制了泡沫的增加，发酵罐应用广泛、效果良好。</p> <p>These impellers have a special usage, which can clear foam above liquid level. type XPY is a high-speed impeller, foam can be imbibed and thrown off through middle section. it has good performance of clearing foam, but it consumes much energy and increases cost. type XPJ is a middle or low speed impeller, the rotating impeller strikes and breaks foam continuously and foam amount is under control, it is widely used in fermenter.</p>		100~4000		
	螺杆式、带导流筒螺杆式 Type LG, LGH	 <p>LG</p>  <p>LGH</p> <p>此类搅拌机为慢速型搅拌机，在层流区操作，适用于中高粘度液的混和和传热等过程，螺杆搅拌直径小，轴向推力大，螺杆带上导流筒，轴向流动加强，在导流筒内外形成向下向上的循环。</p> <p>These low speed impellers operate in laminar region. they are used in processes of mixing and heat transfer of middle, high viscosity medium. the screw type impeller has the feature of small agitating diameter, strong axial thrust, along the screwed plane, medium appears axial circulation flow.</p>	0.4~0.5	100~1500	≤50000	< 2

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